

Duke Harvill & Rider
Plot Plan PPT190039
Riverside County, California

Preliminary Drainage Study

Prepared for:

Duke Realty Corporation
Attn: Adam Schmid
300 Spectrum Center Drive, Suite 1450
Irvine, CA 92618
(949) 797 – 7000

Prepared By:



3788 McCray Street
Riverside, CA 92506

Originally Prepared: October 2019
Revised: November 2020, June 2020, April 2020



DJ Arellano, P.E.
Senior Engineer



www.webbassociates.com

TABLE OF CONTENTS

SECTION 1 - SUMMARY	1-1
PURPOSE.....	1-1
DESCRIPTION OF WATERSHED.....	1-1
PROPOSED CONDITIONS.....	1-2
METHODOLOGY	1-2
FIG. 1 VICINITY MAP	
FIG. 2 USGS TOPOGRAPHY MAP	
FIG. 3 AERIAL PHOTOGRAPH	
FIG. 4 RECEIVING WATERBODIES	
FIG. 5 SOILS MAP	
SECTION 2 - HYDROLOGY ANALYSIS	2-1
HYDROLOGY PARAMETERS	2-1
ONSITE RATIONAL METHOD HYDROLOGY	2-2
OFFSITE RATIONAL METHOD HYDROLOGY	2-2
ONSITE UNIT HYDROGRAPH METHOD HYDROLOGY	2-3
OFFSITE UNIT HYDROGRAPH METHOD HYDROLOGY	2-3
SECTION 3 - HYDRAULIC ANALYSIS	3-1
STORM DRAIN FACILITIES	3-1
BASIN ROUTING.....	3-3
SECTION 4 - CONCLUSION	4-1
APPENDIX A - ONSITE HYDROLOGY	A
HYDROLOGIC PARAMETERS	
RATIONAL METHOD HYDROLOGY	
LATERAL H-11.1 TRIBUTARY AREA	
LATERAL H-12TRIBUTARY AREA	
UNIT HYDROGRAPH HYDROLOGY - EXISTING CONDITION	
LATERAL H-11.1 TRIBUTARY AREA	
LATERAL H-12 TRIBUTARY AREA	
UNIT HYDROGRAPH HYDROLOGY - PROPOSED CONDITION	
LATERAL H-11.1 TRIBUTARY AREA	
LATERAL H-12 TRIBUTARY AREA	
ONSITE HYDROLOGY MAPS	
APPENDIX B - OFFSITE HYDROLOGY	B
UNIT HYDROGRAPH HYDROLOGY - EXISTING CONDITION	
100-YEAR, 1-HOUR STORM EVENT	
100-YEAR, 3-HOUR STORM EVENT	
100-YEAR, 6-HOUR STORM EVENT	
100-YEAR, 24-HOUR STORM EVENT	
OFFSITE UNIT HYDROGRAPH MAP	
APPENDIX C - ONSITE HYDRAULICS	C
LINE A-1	

LINE A-2
LINE B
LATERAL H-12
INLET CALCULATIONS
OUTLET STRUCTURE B

APPENDIX D – BASIN ROUTINGD

STAGE STORAGE DISCHARGE TABLE
HIGH FLOW MITIGATION CHAMBERS
BASIN ROUTING: H-12 ONSITE TRIBUTARY AREA
 2-YEAR 24-HOUR ROUTING
 5-YEAR 24-HOUR ROUTING
 10-YEAR 24-HOUR ROUTING
 100-YEAR 24-HOUR ROUTING

APPENDIX E – OFFSITE HYDRAULICS E

LATERAL H-11.1A
LATERAL H-11.1B
HEC-RAS EXHIBITS
STRUCTURAL CALCULATIONS FOR JUNCTION STRUCTURE EDGE BEAM

APPENDIX F – REFERENCESF

PERRIS VALLEY MDP LINE H-11 PLANS
PERRIS VALLEY MDP LINE H-11.1 PLANS
PERRIS VALLEY MDP HYDROLOGY MAPS
“A” STREET SOUTH – STREET IMPROVEMENT PLANS (FILE NO. 8710383-907H)

SECTION 1 - SUMMARY

PURPOSE

The purpose of this report is to document the hydrologic and hydraulic analyses performed in support of the Duke Harvill & Rider project, Plot Plan PPT190039, located in the County of Riverside, California. The project site is bounded by Rider Street to the south, Harvill Avenue to the west, undeveloped to the north and BNFS Railroad to the east. The project proposes to build a new commercial/industrial distribution warehouse (tilt up type construction) on approximately 15 acres. This report summarizes the hydrology and hydraulic analyses that were completed to determine the necessary drainage improvements required for the project to safely convey runoff through the site.

The scope of this report includes the following:

- Determine the peak 100-year and 10-year flow rates for the developed condition using the Riverside County Flood Control and Water Conservation District (RCFC&WCD) Rational Method.
- Determine the onsite 100-year, 10-year, 5-year, and 2-year 24-hour durations flow rates and flood volumes for existing and developed conditions using the RCFC&WCD Unit Hydrograph Method to be used for basin routing analysis. (The 1-hour through 6-hour events will be completed during final; the 24-hour storm events model the worst-case routing scenario to preliminarily demonstrate proof of concept).
- Determine the offsite impacting 100-year 3-hour, 6-hour, and 24-hour durations flow rates and flood volumes for using the RCFC&WCD Unit Hydrograph Method to be used for a HEC-RAS analysis.
- Determine the required storm drain facilities, alignment, and sizes required to flood protect the project site.
- Determine the required storage volume to adequately mitigate for increased runoff.
- Preparation of a preliminary report summarizing the hydrology and hydraulic results.

DESCRIPTION OF WATERSHED

The project is proposing a large distribution warehouse (approximately 328,000 square feet) on approximately 15 acres of partially developed land. Existing elevations of the site vary from 1510 in the southwest corner to as low as 1502 along the middle of the easterly property line (NAVD88 datum). The existing site drains to the east into an existing culvert under the railroad and Highway 215.

There is a large area tributary to the future Seaton Basin per the Perris Valley Area Master Drainage Plan (PVMDP). Currently, these flows drain over a low point in Harvill Avenue to the north of the proposed project site at a water surface elevation of 1508± (NAVD88) per an existing condition HEC-RAS model. Because this runoff encroaches into the project's northwest corner, the finished floor of the proposed building will be set to 1509.0 (NAVD88); the HEC-RAS model will be ran again with the proposed grading surface combined with the existing surface to see the offsite drainage impact of the proposed grading. All offsite flows will cross Harvill Avenue at this low point and make their way northeast through a series of culverts under the railroad, railroad spur, and Interstate 215.

The Perris Valley MDP H-12, H-11.1 tributary boundary runs through the middle of the existing project site. Currently, 40% of the site (roughly 6.0 acres) is tabled to drain to H-11.1 and the remaining 60% (roughly 8.4 acres) will drain to H-12.

PROPOSED CONDITIONS

The project site is impacted by the offsite flows stated above; the building finished floor will be set at 1509.0 (NAVD88). Onsite flows generated by the proposed project will be conveyed through the site using curb and gutter and minimal subsurface storm drain. The proposed project is separated into two tributary areas.

The western portion of the site (roughly 4.5 acres) is tributary to Lat H-11.1. It will drain to and be treated by a proposed bioretention basin in the southwest corner; the basin will discharge to Lat H-11.1A before out falling to Lat H-11.1. The existing area is currently developed with existing grain silos, hardscape, and buildings; they will be demolished before construction of the proposed warehouse facility. The existing imperviousness of the Lat-H11.1 tributary area is currently 65% and surrounded by open space; the existing condition runoff flowrates and volumes are slightly higher than the proposed condition (see Onsite Unit Hydrograph in Section 2). No routing will need to be completed for the proposed Lat-H11.1 tributary area.

The easterly portion (roughly 9.5 acres) is tributary to Lat H-12. It will drain to a series of underground polymer-coated CMP storage chambers in the truck court and parking areas. One set of chambers will completely contain the water quality volume and pump it into a proposed bioretention area that is sized using the long-term media filtration rate and required drawdown time. Once the water quality chambers fill, runoff from the eastern portion will be detained in separate increased runoff chambers to be routed to existing flowrates before discharging into proposed Lat H-12.

The storage chambers will mitigate all 1-, 3-, 6-, and 24- hour storm durations for the 2-, 5-, 10-, and 100-year storm events. However, only the 24-hour events were analyzed in this preliminary report since they are worst case scenarios for routing; all storms will be routed for the final report.

The project also proposes to construct an offsite storm drain (Lat H-11.1B) to connect the existing catch basins in Harvill Avenue to PVMDP Lateral H-11.1. This project will require design flexibility for backwater conditions from Lat H-11.1 during extreme intensity peak flow periods since the slope of Lat H-11.1 is incredibly limiting. The proposed Lateral H-11.1A design will provide a private flapgate onsite to prevent a backwater condition from H-11.1 into the southwest basin.

The proposed drainage design will provide emergency escapes that flood protect the building. For the easterly, the runoff will exit east through slots in the truck court easterly screen wall at an elevation 1505.5 (NAVD88). For the westerly site, the runoff will exit into Harvill Avenue from the proposed drainage swale/storm drain, or it will overtop the southwest basin and continue east along Rider Street.

METHODOLOGY

HYDROLOGY

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

The hydrological parameters, including rainfall values and soil types were derived from the RCFC&WCD Hydrology Manual. The isohyetal maps and soil map have been included in Section 2. The land use was assumed to be commercial for the developed as recommended in the hydrology manual.

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

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

The Unit Hydrograph Method was used to determine the peak flow rates and volumes associated with the site. Calculations were performed for both the existing condition and developed condition to be used in analyzing the proposed basin. See Section 2 for additional information and results regarding the hydrology analyses performed for this project.

HYDRAULICS

Based on the results from the Rational Method Hydrology, a steady state hydraulic analysis of the storm drain system was performed to size/analyze onsite subsurface storm drain systems. The facilities were analyzed under the established 100-year flow rates. The computer program, Water Surface and Pressure Gradient (WSPG) from CivilDesign, Corp. Version 14.06 (originally Los Angeles County Flood Control District Program F0515P) was used to analyze the system.

Basin routing calculations were performed using the CivilD computer program. The CivilD program utilizes the Modified-Puls methodology to routes unit hydrographs through a basin using the stage-storage and stage-discharge curves determined from the proposed basin design. See Section 3 for additional discussion and results.

Water quality basin calculations were performed using spreadsheets that were created by RCFC&WCD. Calculations and additional details can be found in the Preliminary Water Quality Management Plan (P-WQMP).

FIG. 1 VICINITY MAP

FIG. 2 USGS TOPOGRAPHY MAP

FIG. 3 AERIAL PHOTOGRAPH

FIG. 4 RECEIVING WATERBODIES

FIG. 5 SOILS MAP



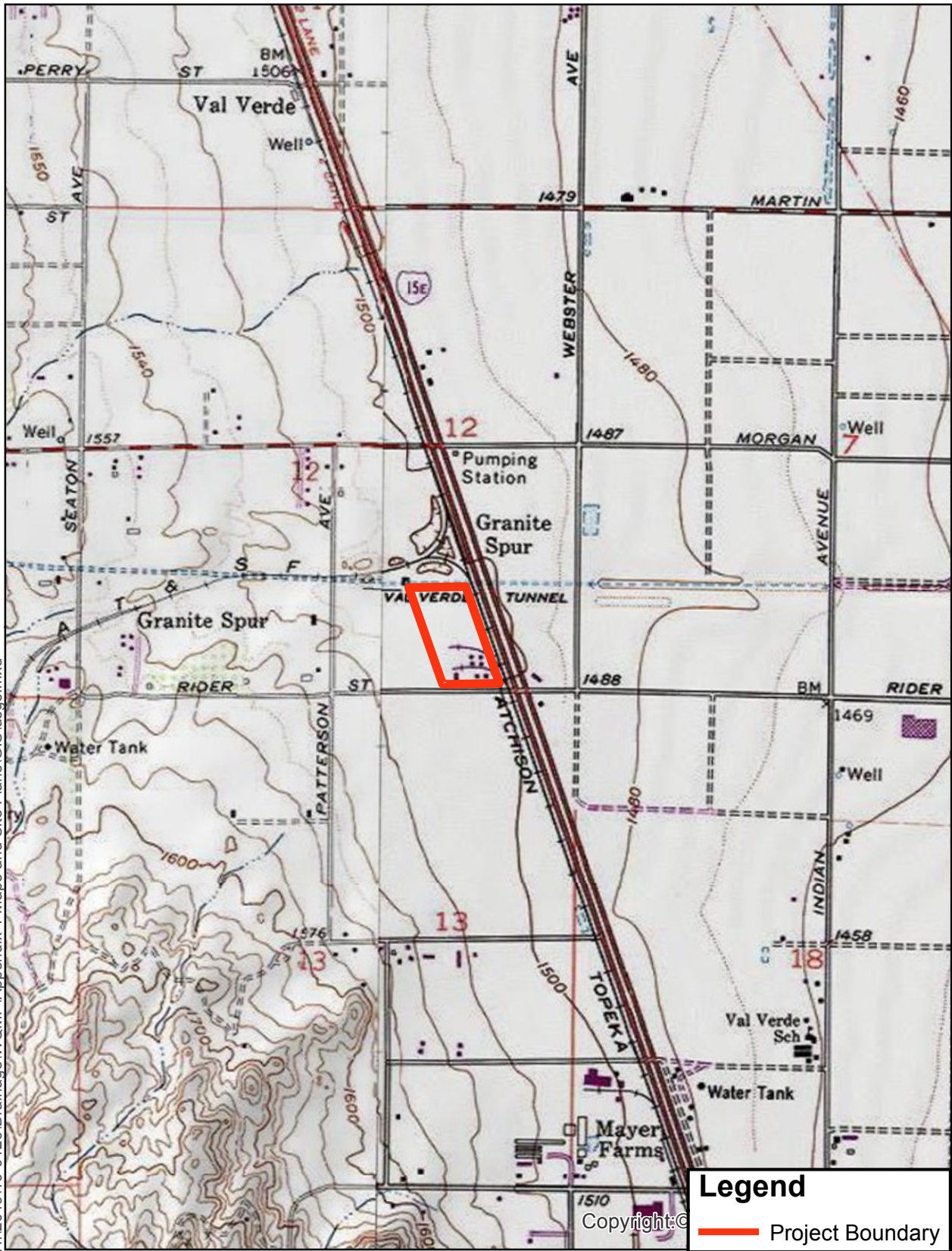
H:\2019\19-0126\Drainage\WQMP\Appendix 1-Maps and Site Plans\GIS\vicinity.mxd

Figure 1. Vicinity Map

0 2.5 5
Miles

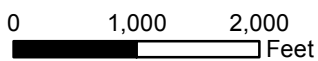


H:\201919-0126\Drainage\WQMP\Appendix 1-Maps and Site Plans\GIS\usgs.mxd



Sources: ESRI / USGS 7.5min Quad
DRGs: PERRIS / STEELE PEAK

Figure 2. USGS Topography Map



H:\2019\19-0126\Drainage\WQMP\Appendix 1-Maps and Site Plans\GIS\Aerial.mxd



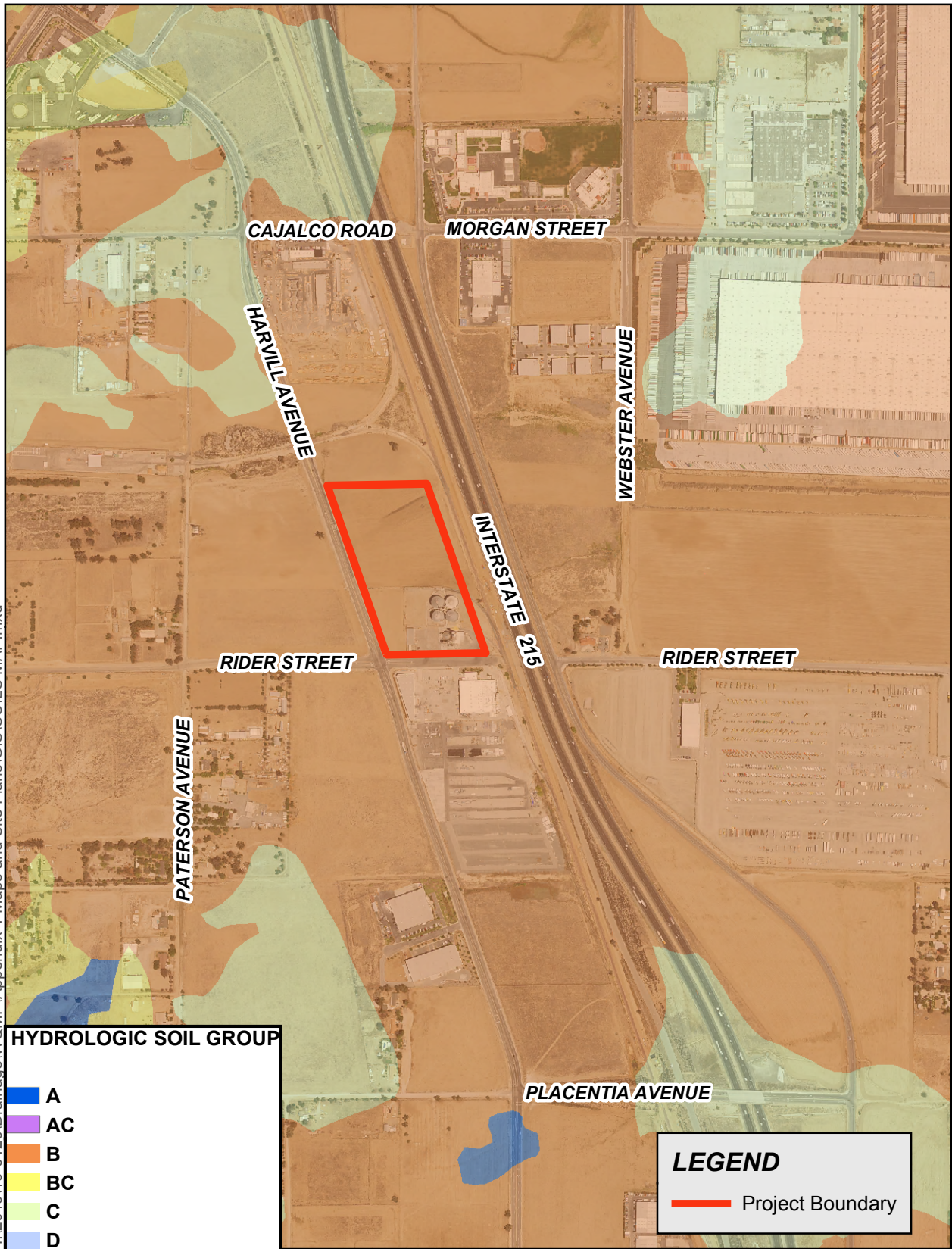
Sources: County of Riverside GIS, 2013;
Eagle Aerial, April 2012.

Figure 3. Aerial Photograph

0 400 800
Feet

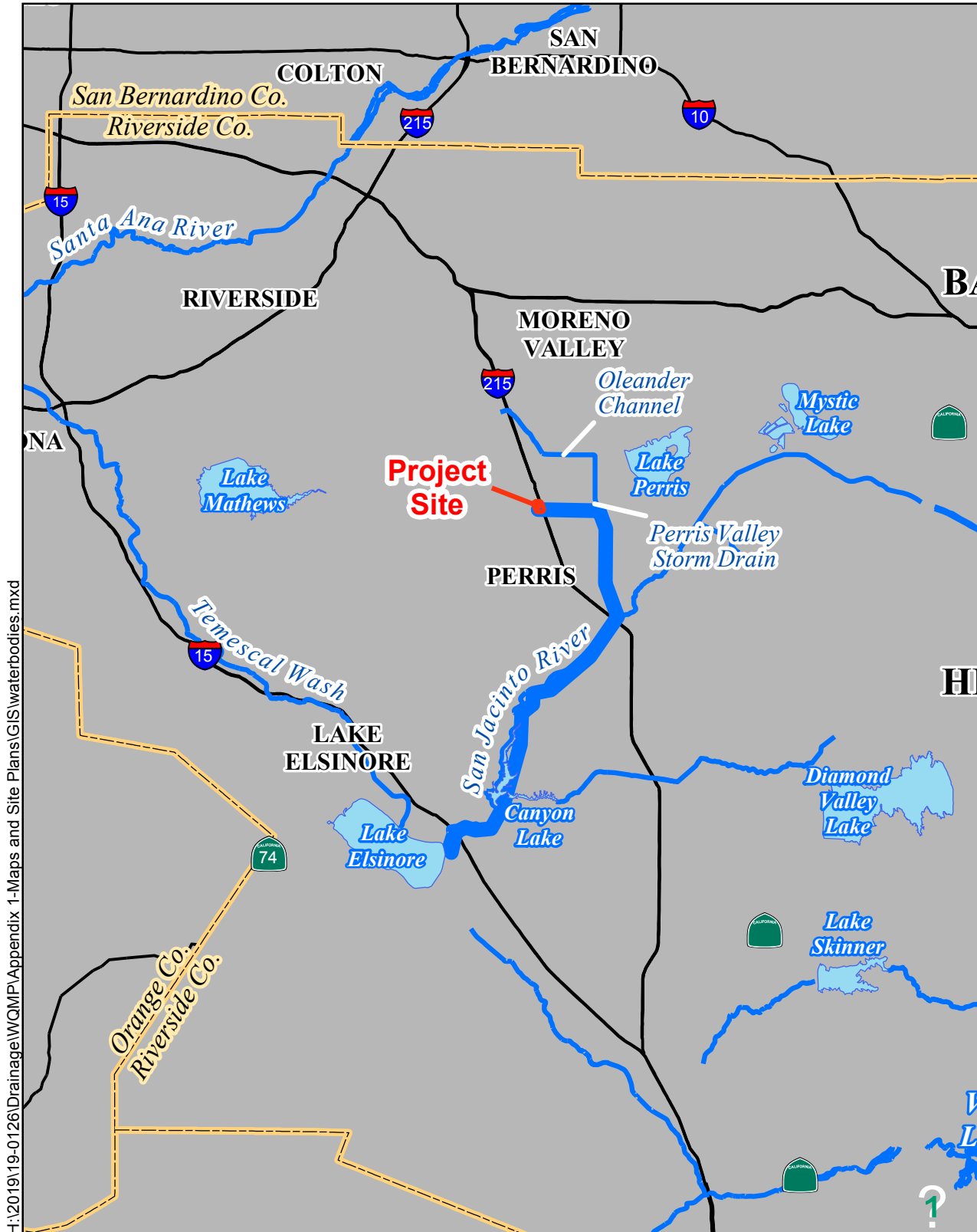


H:\2019\19-0126\Drainage\WQMP\Appendix 1-Maps and Site Plans\GIS\SOILS MAP.mxd



Eagle Aerial, April 2010;
Riverside County GIS, 2012
RCFC&WCD Hydology Manual Plate C-1.30

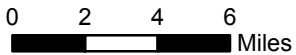
Figure 5. Soils Map



H:\2019\19-0126\Drainage\WQMP\Appendix 1-Maps and Site Plans\GIS\waterbodies.mxd

Sources: USGS 30 Meter DEM;
USGS Digital Line Graph

Figure 4. Receiving Waterbodies



Flowpath

SECTION 2 - HYDROLOGY ANALYSIS

HYDROLOGY PARAMETERS

The RCFC&WCD Hydrology Manual was used to determine the hydrological parameters. The following rainfall depths were utilized in the hydrology analyses; they were obtained from the standard intensity-duration curve data for Perris Valley per Plate D-4.1:

Table 1 - Precipitation Values

	Duration
Storm Event	1-Hour (inches)
10-Year	0.78
100-Year	1.12

The value for slope of intensity was determined to be 0.49 from Plate D-4.1 and has been included in Appendix A.

Based on the Plate C-1.30 (Perris) in the RCFC&WCD Hydrology Manual, the project site is comprised of soil type B. The soils map is included in Appendix A.

The cover type was determined based on the proposed use of the site and utilizing Plates D-5.5 and D-5.6 from the Hydrology Manual. The commercial landscaping cover type was used to represent the onsite developed condition.

For offsite areas, a combination of open space conservation habitat, residential and commercial cover was used. The ultimate land use cover per the Mead Valley General Plan was used to determine the RI numbers and the RCFC&WCD Hydrology Manual was used to determine recommended impervious percentages based on the land use. The land use areas and impervious percentages were taken from an ArcGIS analysis and used to create a composite RI number and impervious percentage.

The table below summarizes the runoff index values and recommended values for percentage each category of impervious cover:

Table 2 - Cover Type

Cover Type	Soil Group A	Soil Group B	Soil Group C	Soil Group D	Assumed % Impervious
Commercial Landscaping	32	56	69	75	90
Rural Residential	32	56	69	75	40
Rural Community - Very Low Density	32	56	69	75	20
Public Facility	32	56	69	75	90

Light Industrial	32	56	69	75	90
Medium Density	32	56	69	75	60
Rural Mountainous	78	86	91	83	0
Open Space Conservation Habitat	67	78	86	89	0
Business Park	32	56	69	75	90
City	32	56	69	75	90
Freeway	32	56	69	75	90

ONSITE RATIONAL METHOD HYDROLOGY

The rational method was used to determine peak flow rates in order to adequately size all onsite proposed storm drain. The project is divided into two watersheds – A and B. Watershed A is tributary to Lat H-12, and Watershed B is tributary to Lat H11.1.

The following table summarizes the rational method results at key points:

Table 3A – Rational Method Results

Point of Interest	10-Year Peak Flow Rate (cfs)	100-Year Peak Flow Rate (cfs)
Node 101 Runoff tributary to Line A-1	7.0	10.2
Node 102 Runoff tributary to high flow mitigation chambers	13.6	19.7
Node 202 Runoff tributary to Line B	6.4	9.3
Node 203 Runoff tributary to Lat H11.1A	6.9	10.1

The rational method output files and hydrology map have been included in Appendix A. An outlet structure in the southwest basin (BMP-B) will have an outlet structure to convey runoff to Lateral H-11.1; the structure will be sized to handle the 100-yr peak flow rate and keep the HGL in the basin. All flow will leave the basin in Lateral H-11.1A which will discharge into the portion of the H-11.1 storm drain facility that will be built as part of the Crow project. See Basin Routing in Section 3 for high flow mitigation chamber analysis.

OFFSITE RATIONAL METHOD HYDROLOGY

In addition to the onsite hydrology analysis, a hydrologic analysis was conducted to determine the offsite flows that would impact the project site. There are two existing catch basins that are located along

Harvill Avenue that currently drain into Line-L per “A” Street Street Improvement Plans, File No. 8710383 – 907H. See Appendix F. Line-L will be replaced by Lateral H-11.1B and the flows will be conveyed into Line H-11.1. The flows from the As-Built plans will be used to preliminarily size Lateral H-11.1B and a rational method analysis will be provided during final engineering.

ONSITE UNIT HYDROGRAPH METHOD HYDROLOGY

The synthetic unit hydrograph method was used to determine existing and proposed flood volumes and peak flow rates in order to adequately size the proposed storage and outflow for the routing analysis. The site splits into two watershed areas for the existing condition; the areas tributary to H-12 and H-11.1 based on the MDP boundary. The proposed site will drain to the two MDP facilities in roughly the same proportional area. For this preliminary report, only the 24-hour duration unit hydrographs were completed. This was because the 24-hour duration is the worst-case scenario for basin routing. For further explanation of the basin routing analysis, see Section 3.

Table 4A: Unit Hydrograph Results Tributary to H-11.1

Storm Event	Existing Condition		Proposed Condition	
	Peak Flow Rate (CFS)	Volume (AC-FT)	Peak Flow Rate (CFS)	Volume (AC-FT)
2-Year, 24-Hour	1.1	0.622	1.1	0.615
5-Year, 24-Hour	1.6	0.866	1.4	0.831
10-Year, 24-Hour	2.1	1.071	1.6	0.995
100-Year, 24-Hour	3.5	1.800	2.7	1.556

Table 4B: Unit Hydrograph Results Tributary to H-12

Storm Event	Existing Condition		Proposed Condition	
	Peak Flow Rate (CFS)	Volume (AC-FT)	Peak Flow Rate (CFS)	Volume (AC-FT)
2-Year, 24-Hour	0.4	0.144	2.1	1.230
5-Year, 24-Hour	1.2	0.273	2.9	1.755
10-Year, 24-Hour	1.8	0.442	3.5	2.010
100-Year, 24-Hour	3.8	1.160	5.7	3.285

OFFSITE UNIT HYDROGRAPH METHOD HYDROLOGY

A unit hydrograph analysis was conducted to determine the offsite flows that would impact the project site. The area tributary to the westerly property line is approximately 1,800 acres; it also the area tributary to the future Seaton Basin. The 100-year, 3-hour through 24-hour unit hydrographs were found and utilized in a HEC-RAS analysis to find the flooding impact to the proposed project.

The HEC-RAS analysis showed an insignificant flooding hazard to the proposed project due to the offsite runoff encroaching into the proposed northwest corner parking lot. However, the water surface elevation will remain below the finishing floor of the building. After overtopping Harvill, the runoff is directed northeast under the existing railroad, railroad spur, and Interstate 215, through a series of culverts. See Appendix E for HEC-RAS exhibits showing existing and proposed flooding areas. In addition, the existing and proposed HEC-RAS model files will be provided to RCFC&WCD for review.

SECTION 3 - HYDRAULIC ANALYSIS

STORM DRAIN FACILITIES

The project proposes minimal subsurface storm drain for onsite conveyance. The proposed site is separated into two watersheds; one tributary to Lat H-11.1 and one tributary to Lat H-12.

The runoff tributary to H-12 will be conveyed to a low flow splitter manhole. Low flows will be directed into underground water quality storage chambers before being pumped into BMP-A. High flows will enter the high flow mitigation chambers where they will be routed down to existing condition flowrates before discharging to Lat H-12.

The runoff tributary to H-11.1 will be conveyed to BMP-B, a proposed bioretention basin in the southwest corner. Low flows will be treated by the basin. High flows will enter Outlet Structure B unrestricted before enter Lat H-11.A and out falling at H-11.1; the high flows are unrestricted since there is no change in flowrates from the existing condition.

Both watersheds will have emergency escapes which avoid any impacts to building flooding. The area tributary to Lat H-12 will escape through wall openings and continue east to the I-215 culvert. The area tributary to Lat H-11.1 will escape through the southeast corner of BMP-B and continue east along Rider Street.

A brief summary of each system has been provided and the results of the hydraulic analyses are included in Appendix C. The peak flow rates determined during the 100-year rational method onsite hydrology analysis were utilized to evaluate the proposed storm drain systems.

Outlet Structure B

The outlet structure was sized using the peak 100-year flow rate of 10.1 cfs. A weir calculation was utilized to size the outlet. A grated inlet with 2 grates is proposed to handle the emergency 100-year overflow. Based on a peak flow rate of 10.1 cfs, a total of 0.4-feet of head is required to bypass the 100-year flow rate resulting in a water surface elevation of 1505.4 feet. The calculation has been included in Appendix C.

Lines A-1, A-2 (Onsite)

Lines A-1 and A-2 are both proposed 24" diameter HDPE storm drain pipes that will convey 10.2 cfs and 9.5 cfs, respectively, from the eastern half of the site to the low flow splitter manhole. A hydraulic model for this storm drain system will be created during final engineering. A normal depth calculation using Hydraulic Toolbox was used to preliminarily size the storm drain facility.

Line B (Onsite)

Line B is a proposed 18" to 24" diameter HDPE storm drain pipe that will convey 9.2 cfs from western half of the project site. A hydraulic model for this storm drain system will be created during final engineering. A normal depth calculation using Hydraulic Toolbox was used to preliminarily size the storm drain facility.

Water Quality Storage Chambers (Onsite)

The water quality storage chambers are 8' diameter perforated, polymer-coated CMP pipes. They are sized to fully contain the water quality volume before the natural head pushes runoff into the high flow mitigation chambers. The soffit of the water quality chambers will match the invert of the low flow splitter manhole to ensure full V_{bmp} capture. The low flow splitter manhole will also have a raised weir for the same purpose. See project specific PWQMP for more information.

High Flow Mitigation Chambers (Onsite)

The high flow mitigation chambers are 6' diameter perforated, polymer-coated CMP pipes. They will detain runoff before discharging to Lat H-12 at existing condition flowrates by the orifice vault structure. The chambers will slope away from the splitter manhole to ensure positive drainage.

Lateral H-12 (Onsite)

Lateral H-12 is a proposed 7'Hx10'W R.C.B. that will convey the tributary MDP flowrate of 720 cfs downstream of Seaton Basin. This project will only construct the portion running through the site; a 30' easement will be provided. A bulkhead and bubbler structure will be provided at the easterly property line in the interim; in the future RCFC&WCD will connect the remaining portion under the railroad to the existing Interstate-215 box culvert. A preliminary profile has been included in Appendix C.

Lateral H-11.1A (Onsite/Offsite)

Lateral H-11.1A is a proposed 24" diameter RCP/HDPE storm drain that will convey 10.1 cfs from the proposed Outlet Structure-A located along the south side of the property. A hydraulic model for this storm drain will be created during final engineering. A normal depth calculation using Hydraulic Toolbox was used to preliminarily size the storm drain facility.

Lateral H-11.1B (Offsite)

Lateral H-11.1A is a proposed 18" diameter RCP storm drain that will convey connecting the existing catch basins in Harvill Avenue to PVMDP Lat H-11.1. A hydraulic model for this storm drain will be created during final engineering. A normal depth calculation us Hydraulic Toolbox was used to preliminarily size the storm drain facility.

Onsite and offsite hydraulic results have been included in Appendix C and E, respectively.

BASIN ROUTING

Basin routing was completed for the Lat H-12 onsite tributary area. The Lat H-11.1 onsite tributary area did not see an increase in runoff with the proposed landcover.

For the area tributary to Lat H-12 a rating curve was found by utilizing orifice equations with the total head corresponding to the stage and available storage of the high flow mitigation chambers. See Appendix D for rating curve in the stage-storage-discharge table.

The 24-hour duration for the 2-, 5-, 10-, and 100-year storm events were routed through the basin as these represent the worst-case routing scenarios and demonstrate proof of drainage concept. All storm events were mitigated below existing condition flow rates.

Table 5 – Basin Routing Results Tributary to H-12

Storm Event	Existing Condition		Proposed Condition		Basin Routing Results		
	Peak Flow Rate (CFS)	Volume (AC-FT)	Peak Flow Rate (CFS)	Volume (AC-FT)	Peak Outflow (CFS)	Water Surface Elevation (NAVD88)	Truck Court Ponding (FT)
2-Year, 24-Hour	0.4	0.144	2.1	1.230	0.4	1500.5	-
5-Year, 24-Hour	1.2	0.273	2.9	1.755	1.2	1501.7	-
10-Year, 24-Hour	1.8	0.442	3.5	2.010	1.8	1502.5	-
100-Year, 24-Hour	3.8	1.160	5.7	3.285	3.7	1504.4	0.5

All basin routing results and supporting calculations have been provided in Appendix D.

SECTION 4 - CONCLUSION

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

- The proposed onsite drainage concept will provide flood protection to the proposed building pad.
- The proposed basins will adequately treat onsite flows, and the proposed detention chambers will mitigate for increased runoff.
- The offsite drainage improvements will adequately protect the site from offsite flow and prevent offsite flows from commingling with onsite flows.
- The proposed project will not impact flooding conditions to upstream or downstream properties.

APPENDIX A – ONSITE HYDROLOGY

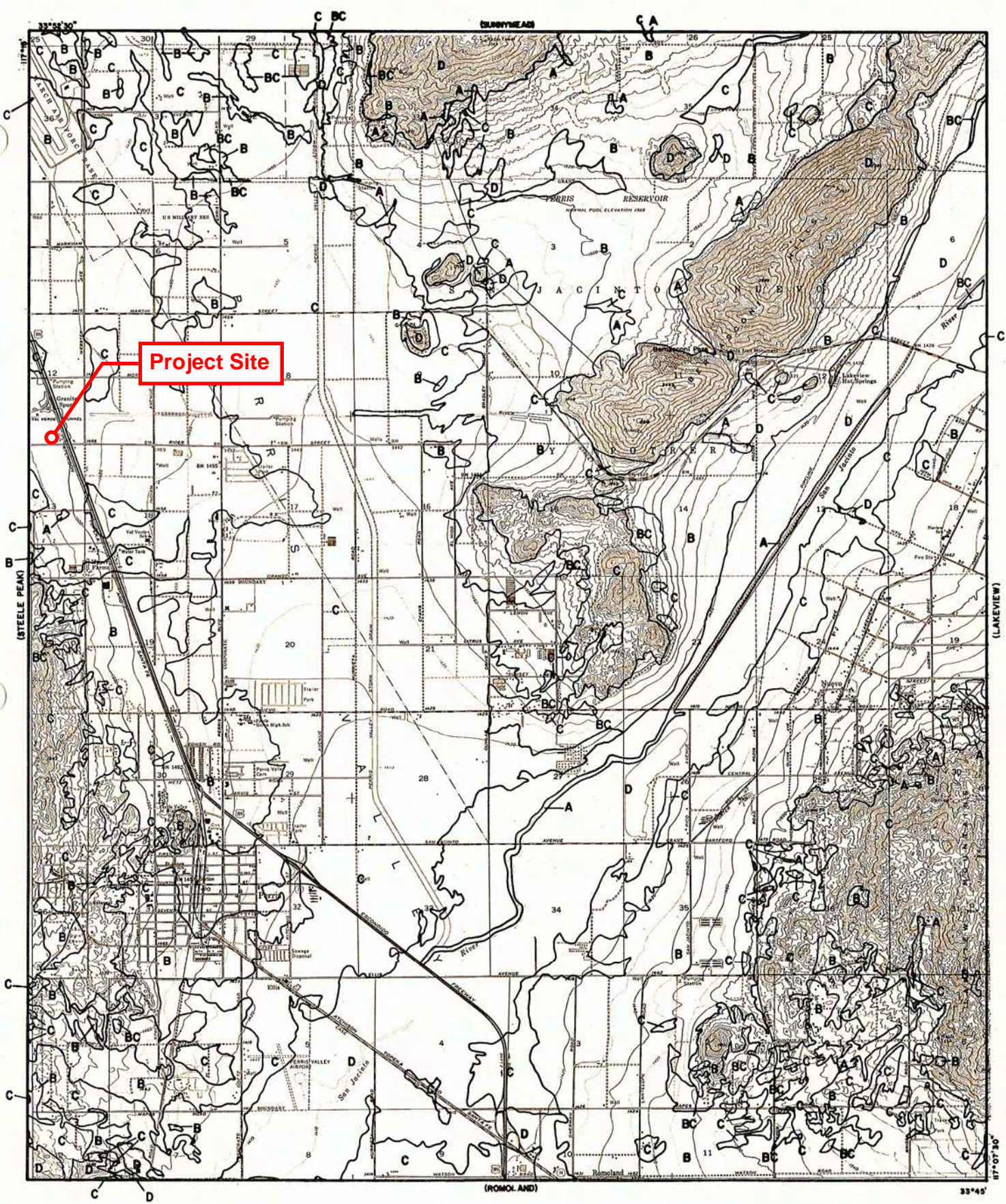
HYDROLOGIC PARAMETERS

RAINFALL INTENSITY—INCHES PER HOUR

RCFC & WCD
 HYDROLOGY MANUAL

STANDARD
 INTENSITY - DURATION
 CURVES DATA

MIRA LOMA			MURRIETA - TEMECULA & RANCHO CALIFORNIA			NORCO			PALM SPRINGS			PERRIS VALLEY		
DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY	
	10 YEAR	100 YEAR		10 YEAR	100 YEAR		10 YEAR	100 YEAR		10 YEAR	100 YEAR		10 YEAR	100 YEAR
5	2.84	4.48	5	3.45	5.10	5	2.77	4.16	5	4.23	6.76	5	2.64	3.78
6	2.58	4.07	6	3.12	4.61	6	2.53	3.79	6	3.80	6.08	6	2.41	3.46
7	2.37	3.75	7	2.87	4.24	7	2.34	3.51	7	3.48	5.56	7	2.24	3.21
8	2.21	3.49	8	2.67	3.94	8	2.19	3.29	8	3.22	5.15	8	2.09	3.01
9	2.08	3.28	9	2.50	3.69	9	2.07	3.10	9	3.01	4.81	9	1.98	2.84
10	1.96	3.10	10	2.36	3.48	10	1.96	2.94	10	2.83	4.52	10	1.88	2.69
11	1.87	2.95	11	2.24	3.30	11	1.87	2.80	11	2.67	4.28	11	1.79	2.57
12	1.78	2.82	12	2.13	3.15	12	1.79	2.68	12	2.54	4.07	12	1.72	2.46
13	1.71	2.70	13	2.04	3.01	13	1.72	2.58	13	2.43	3.88	13	1.65	2.37
14	1.64	2.60	14	1.96	2.89	14	1.66	2.48	14	2.33	3.72	14	1.59	2.29
15	1.58	2.50	15	1.89	2.79	15	1.60	2.40	15	2.23	3.58	15	1.54	2.21
16	1.53	2.42	16	1.82	2.69	16	1.55	2.32	16	2.15	3.44	16	1.49	2.14
17	1.48	2.34	17	1.76	2.60	17	1.50	2.25	17	2.08	3.32	17	1.45	2.08
18	1.44	2.27	18	1.71	2.52	18	1.46	2.19	18	2.01	3.22	18	1.41	2.02
19	1.40	2.21	19	1.66	2.45	19	1.42	2.13	19	1.95	3.12	19	1.37	1.97
20	1.36	2.15	20	1.61	2.38	20	1.39	2.08	20	1.89	3.03	20	1.34	1.92
22	1.29	2.04	22	1.53	2.26	22	1.32	1.98	22	1.79	2.86	22	1.28	1.83
24	1.24	1.95	24	1.46	2.15	24	1.26	1.90	24	1.70	2.72	24	1.22	1.75
26	1.18	1.87	26	1.39	2.06	26	1.22	1.82	26	1.62	2.60	26	1.18	1.69
28	1.14	1.80	28	1.34	1.98	28	1.17	1.76	28	1.56	2.49	28	1.13	1.63
30	1.10	1.73	30	1.29	1.90	30	1.13	1.70	30	1.49	2.39	30	1.10	1.57
32	1.06	1.67	32	1.24	1.84	32	1.10	1.64	32	1.44	2.30	32	1.06	1.52
34	1.03	1.62	34	1.20	1.78	34	1.06	1.59	34	1.39	2.22	34	1.03	1.48
36	1.00	1.57	36	1.17	1.72	36	1.03	1.55	36	1.34	2.15	36	1.00	1.44
38	.97	1.53	38	1.13	1.67	38	1.01	1.51	38	1.30	2.09	38	.98	1.40
40	.94	1.49	40	1.10	1.62	40	.98	1.47	40	1.27	2.02	40	.95	1.37
45	.89	1.40	45	1.03	1.52	45	.92	1.39	45	1.18	1.89	45	.90	1.29
50	.84	1.32	50	.97	1.44	50	.88	1.31	50	1.11	1.78	50	.85	1.22
55	.80	1.26	55	.92	1.36	55	.84	1.25	55	1.05	1.68	55	.81	1.17
60	.76	1.20	60	.88	1.30	60	.80	1.20	60	1.00	1.60	60	.78	1.12
65	.73	1.15	65	.84	1.24	65	.77	1.15	65	.95	1.53	65	.75	1.08
70	.70	1.11	70	.81	1.19	70	.74	1.11	70	.91	1.46	70	.72	1.04
75	.68	1.07	75	.78	1.15	75	.72	1.07	75	.88	1.41	75	.70	1.00
80	.65	1.03	80	.75	1.11	80	.69	1.04	80	.85	1.35	80	.68	.97
85	.63	1.00	85	.73	1.07	85	.67	1.01	85	.82	1.31	85	.66	.94
SLOPE = .530			SLOPE = .550			SLOPE = .500			SLOPE = .580			SLOPE = .490		

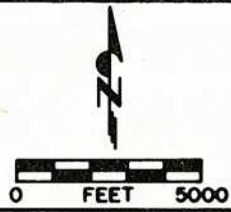


Project Site

LEGEND

- SOILS GROUP BOUNDARY
- A SOILS GROUP DESIGNATION

RCFC & WCD
HYDROLOGY MANUAL



**HYDROLOGIC SOILS GROUP MAP
FOR
PERRIS**

RATIONAL METHOD HYDROLOGY

LATERAL H-11.1 TRIBUTARY AREA

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 11/11/20 File:PROP10.out

19-0126 - DUKE HARVILL & RIDER
ONSITE RATIONAL METHOD HYDROLOGY
10 YEAR STORM EVENT, H-11.1 TRIBUTARY AREA
FN: PROP10.OUT TSW

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

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

Program License Serial Number 4010

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

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

Standard intensity-duration curves data (Plate D-4.1)
For the [Perris Valley] area used.
10 year storm 10 minute intensity = 1.880(In/Hr)
10 year storm 60 minute intensity = 0.780(In/Hr)
100 year storm 10 minute intensity = 2.690(In/Hr)
100 year storm 60 minute intensity = 1.120(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.780(In/Hr)
Slope of intensity duration curve = 0.4900

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

Initial area flow distance = 470.000(Ft.)
Top (of initial area) elevation = 1510.000(Ft.)
Bottom (of initial area) elevation = 1508.000(Ft.)
Difference in elevation = 2.000(Ft.)
Slope = 0.00426 s(percent)= 0.43
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 10.475 min.
Rainfall intensity = 1.834(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.867
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 3.341(CFS)
Total initial stream area = 2.100(Ac.)
Pervious area fraction = 0.100

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

Upstream point/station elevation = 1505.800(Ft.)
Downstream point/station elevation = 1504.700(Ft.)
Pipe length = 450.00(Ft.) Manning's N = 0.012
No. of pipes = 1 Required pipe flow = 3.341(CFS)
Nearest computed pipe diameter = 15.00(In.)
Calculated individual pipe flow = 3.341(CFS)
Normal flow depth in pipe = 11.86(In.)
Flow top width inside pipe = 12.21(In.)
Critical depth = 8.85(In.)
Pipe flow velocity = 3.21(Ft/s)
Travel time through pipe = 2.34 min.
Time of concentration (TC) = 12.81 min.

+++++
 Process from Point/Station 202.000 to Point/Station 202.000
 **** SUBAREA FLOW ADDITION ****

COMMERCIAL subarea type
 Runoff Coefficient = 0.865
 Decimal fraction soil group A = 0.000
 Decimal fraction soil group B = 1.000
 Decimal fraction soil group C = 0.000
 Decimal fraction soil group D = 0.000
 RI index for soil(AMC 2) = 56.00
 Pervious area fraction = 0.100; Impervious fraction = 0.900
 Time of concentration = 12.81 min.
 Rainfall intensity = 1.662(In/Hr) for a 10.0 year storm
 Subarea runoff = 3.020(CFS) for 2.100(Ac.)
 Total runoff = 6.361(CFS) Total area = 4.200(Ac.)

+++++
 Process from Point/Station 202.000 to Point/Station 203.000
 **** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 1504.700(Ft.)
 Downstream point/station elevation = 1504.000(Ft.)
 Pipe length = 270.00(Ft.) Manning's N = 0.012
 No. of pipes = 1 Required pipe flow = 6.361(CFS)
 Nearest computed pipe diameter = 21.00(In.)
 Calculated individual pipe flow = 6.361(CFS)
 Normal flow depth in pipe = 13.29(In.)
 Flow top width inside pipe = 20.25(In.)
 Critical depth = 11.17(In.)
 Pipe flow velocity = 3.96(Ft/s)
 Travel time through pipe = 1.14 min.
 Time of concentration (TC) = 13.95 min.

+++++
 Process from Point/Station 203.000 to Point/Station 203.000
 **** SUBAREA FLOW ADDITION ****

COMMERCIAL subarea type
 Runoff Coefficient = 0.864
 Decimal fraction soil group A = 0.000
 Decimal fraction soil group B = 1.000
 Decimal fraction soil group C = 0.000
 Decimal fraction soil group D = 0.000
 RI index for soil(AMC 2) = 56.00
 Pervious area fraction = 0.100; Impervious fraction = 0.900
 Time of concentration = 13.95 min.
 Rainfall intensity = 1.594(In/Hr) for a 10.0 year storm
 Subarea runoff = 0.551(CFS) for 0.400(Ac.)
 Total runoff = 6.912(CFS) Total area = 4.600(Ac.)
 End of computations, total study area = 4.60 (Ac.)
 The following figures may
 be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
 Area averaged RI index number = 56.0

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 11/11/20 File:PROP100.out

19-0126 - DUKE HARVILL & RIDER
ONSITE RATIONAL METHOD HYDROLOGY
100 YEAR STORM EVENT, H-11.1 TRIBUTARY AREA
FN: PROP100.OUT TSW

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

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

Program License Serial Number 4010

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

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

Standard intensity-duration curves data (Plate D-4.1)
For the [Perris Valley] area used.
10 year storm 10 minute intensity = 1.880(In/Hr)
10 year storm 60 minute intensity = 0.780(In/Hr)
100 year storm 10 minute intensity = 2.690(In/Hr)
100 year storm 60 minute intensity = 1.120(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.120(In/Hr)
Slope of intensity duration curve = 0.4900

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

Initial area flow distance = 470.000(Ft.)
Top (of initial area) elevation = 1510.000(Ft.)
Bottom (of initial area) elevation = 1508.000(Ft.)
Difference in elevation = 2.000(Ft.)
Slope = 0.00426 s(percent)= 0.43
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 10.475 min.
Rainfall intensity = 2.634(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.874
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 4.837(CFS)
Total initial stream area = 2.100(Ac.)
Pervious area fraction = 0.100

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

Upstream point/station elevation = 1505.800(Ft.)
Downstream point/station elevation = 1504.700(Ft.)
Pipe length = 450.00(Ft.) Manning's N = 0.012
No. of pipes = 1 Required pipe flow = 4.837(CFS)
Nearest computed pipe diameter = 18.00(In.)
Calculated individual pipe flow = 4.837(CFS)
Normal flow depth in pipe = 12.87(In.)
Flow top width inside pipe = 16.25(In.)
Critical depth = 10.14(In.)
Pipe flow velocity = 3.58(Ft/s)
Travel time through pipe = 2.09 min.
Time of concentration (TC) = 12.57 min.

+++++
 Process from Point/Station 202.000 to Point/Station 202.000
 **** SUBAREA FLOW ADDITION ****

COMMERCIAL subarea type
 Runoff Coefficient = 0.873
 Decimal fraction soil group A = 0.000
 Decimal fraction soil group B = 1.000
 Decimal fraction soil group C = 0.000
 Decimal fraction soil group D = 0.000
 RI index for soil(AMC 2) = 56.00
 Pervious area fraction = 0.100; Impervious fraction = 0.900
 Time of concentration = 12.57 min.
 Rainfall intensity = 2.409(In/Hr) for a 100.0 year storm
 Subarea runoff = 4.415(CFS) for 2.100(Ac.)
 Total runoff = 9.252(CFS) Total area = 4.200(Ac.)

+++++
 Process from Point/Station 202.000 to Point/Station 203.000
 **** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 1504.700(Ft.)
 Downstream point/station elevation = 1504.000(Ft.)
 Pipe length = 270.00(Ft.) Manning's N = 0.012
 No. of pipes = 1 Required pipe flow = 9.252(CFS)
 Nearest computed pipe diameter = 24.00(In.)
 Calculated individual pipe flow = 9.252(CFS)
 Normal flow depth in pipe = 15.38(In.)
 Flow top width inside pipe = 23.03(In.)
 Critical Depth = 13.03(In.)
 Pipe flow velocity = 4.35(Ft/s)
 Travel time through pipe = 1.03 min.
 Time of concentration (TC) = 13.61 min.

+++++
 Process from Point/Station 203.000 to Point/Station 203.000
 **** SUBAREA FLOW ADDITION ****

COMMERCIAL subarea type
 Runoff Coefficient = 0.872
 Decimal fraction soil group A = 0.000
 Decimal fraction soil group B = 1.000
 Decimal fraction soil group C = 0.000
 Decimal fraction soil group D = 0.000
 RI index for soil(AMC 2) = 56.00
 Pervious area fraction = 0.100; Impervious fraction = 0.900
 Time of concentration = 13.61 min.
 Rainfall intensity = 2.317(In/Hr) for a 100.0 year storm
 Subarea runoff = 0.808(CFS) for 0.400(Ac.)
 Total runoff = 10.060(CFS) Total area = 4.600(Ac.)
 End of computations, total study area = 4.60 (Ac.)
 The following figures may
 be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
 Area averaged RI index number = 56.0

LATERAL H-12TRIBUTARY AREA

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 11/11/20 File:PROP10.out

19-0126 - DUKE HARVILL & RIDER
ONSITE RATIONAL METHOD HYDROLOGY
10 YEAR STORM EVENT, H-12 TRIBUTARY AREA
FN: PROP10.OUT TSW

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

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

Program License Serial Number 4010

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

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

Standard intensity-duration curves data (Plate D-4.1)
For the [Perris Valley] area used.
10 year storm 10 minute intensity = 1.880(In/Hr)
10 year storm 60 minute intensity = 0.780(In/Hr)
100 year storm 10 minute intensity = 2.690(In/Hr)
100 year storm 60 minute intensity = 1.120(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.780(In/Hr)
Slope of intensity duration curve = 0.4900

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

Initial area flow distance = 730.000(Ft.)
Top (of initial area) elevation = 1508.000(Ft.)
Bottom (of initial area) elevation = 1503.900(Ft.)
Difference in elevation = 4.100(Ft.)
Slope = 0.00562 s(percent)= 0.56
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 11.818 min.
Rainfall intensity = 1.729(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.866
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 7.038(CFS)
Total initial stream area = 4.700(Ac.)
Pervious area fraction = 0.100

++++++
Process from Point/Station 101.000 to Point/Station 102.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 1500.200(Ft.)
Downstream point/station elevation = 1497.100(Ft.)
Pipe length = 610.00(Ft.) Manning's N = 0.012
No. of pipes = 1 Required pipe flow = 7.038(CFS)
Nearest computed pipe diameter = 18.00(In.)
Calculated individual pipe flow = 7.038(CFS)
Normal flow depth in pipe = 12.96(In.)
Flow top width inside pipe = 16.16(In.)
Critical depth = 12.33(In.)
Pipe flow velocity = 5.17(Ft/s)
Travel time through pipe = 1.97 min.
Time of concentration (TC) = 13.79 min.

+++++
Process from Point/Station 102.000 to Point/Station 102.000
*** SUBAREA FLOW ADDITION ***

COMMERCIAL subarea type
Runoff Coefficient = 0.864
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Time of concentration = 13.79 min.
Rainfall intensity = 1.604(In/Hr) for a 10.0 year storm
Subarea runoff = 6.515(CFS) for 4.700(Ac.)
Total runoff = 13.553(CFS) Total area = 9.400(Ac.)
End of computations, total study area = 9.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(A_p) = 0.100
Area averaged RI index number = 56.0

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 11/12/20 File:PROP100.out

19-0126 - DUKE HARVILL & RIDER
ONSITE RATIONAL METHOD HYDROLOGY
100 YEAR STORM EVENT, H-12 TRIBUTARY AREA
FN: PROP100.OUT TSW

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

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

Program License Serial Number 4010

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

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

Standard intensity-duration curves data (Plate D-4.1)
For the [Perris Valley] area used.
10 year storm 10 minute intensity = 1.880(In/Hr)
10 year storm 60 minute intensity = 0.780(In/Hr)
100 year storm 10 minute intensity = 2.690(In/Hr)
100 year storm 60 minute intensity = 1.120(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.120(In/Hr)
Slope of intensity duration curve = 0.4900

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

Initial area flow distance = 730.000(Ft.)
Top (of initial area) elevation = 1508.000(Ft.)
Bottom (of initial area) elevation = 1503.900(Ft.)
Difference in elevation = 4.100(Ft.)
Slope = 0.00562 s(percent)= 0.56
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 11.818 min.
Rainfall intensity = 2.483(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.873
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 10.191(CFS)
Total initial stream area = 4.700(Ac.)
Pervious area fraction = 0.100

Process from Point/Station 101.000 to Point/Station 102.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 1500.200(Ft.)
Downstream point/station elevation = 1497.100(Ft.)
Pipe length = 610.00(Ft.) Manning's N = 0.012
No. of pipes = 1 Required pipe flow = 10.191(CFS)
Nearest computed pipe diameter = 21.00(In.)
Calculated individual pipe flow = 10.191(CFS)
Normal flow depth in pipe = 14.65(In.)
Flow top width inside pipe = 19.29(In.)
Critical depth = 14.26(In.)
Pipe flow velocity = 5.69(Ft/s)
Travel time through pipe = 1.79 min.
Time of concentration (TC) = 13.60 min.

Process from Point/Station 102.000 to Point/Station 102.000
*** SUBAREA FLOW ADDITION ***

COMMERCIAL subarea type
Runoff Coefficient = 0.872
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Time of concentration = 13.60 min.
Rainfall intensity = 2.317(In/Hr) for a 100.0 year storm
Subarea runoff = 9.498(CFS) for 4.700(Ac.)
Total runoff = 19.689(CFS) Total area = 9.400(Ac.)
End of computations, total study area = 9.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(A_p) = 0.100
Area averaged RI index number = 56.0

UNIT HYDROGRAPH HYDROLOGY – EXISTING CONDITION

LATERAL H-11.1 TRIBUTARY AREA

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPRE242.out

 +-----+

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 EXISTING CONDITION H-11.1 TRIBUTARY, 2-YEAR 24-HOUR
 FN: ONSITEPRE242.OUT- TSW

 Drainage Area = 6.00(Ac.) = 0.009 Sq. Mi.
 Drainage Area for Depth-Area Adjustment = 6.00(Ac.) = 0.009 Sq. Mi.
 Length along longest watercourse = 768.00(Ft.)
 Length along longest watercourse measured to centroid = 255.00(Ft.)
 Length along longest watercourse = 0.145 Mi.
 Length along longest watercourse measured to centroid = 0.048 Mi.
 Difference in elevation = 6.20(Ft.)
 Slope along watercourse = 42.6250 Ft./Mi.
 Average Manning's 'N' = 0.020
 Lag time = 0.036 Hr.
 Lag time = 2.15 Min.
 25% of lag time = 0.54 Min.
 40% of lag time = 0.86 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
6.00	2.00	12.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
6.00	5.00	30.00

STORM EVENT (YEAR) = 2.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.000(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.000(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 6.000 78.00 0.650
 Total Area Entered = 6.00(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
78.0	60.6	0.464	0.650	0.192	1.000	0.192
						Sum (F) =
						0.192

Area averaged mean soil loss (F) (In/Hr) = 0.111
 Minimum soil loss rate ((In/Hr)) = 0.056
 (for 24 hour storm duration)
 Note: User entry of the f value
 Soil low loss rate (decimal) = 0.380

ONSITEPRE242.out
Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	233.074	48.590	2.938
2	0.167	466.147	41.127	2.487
3	0.250	699.221	7.586	0.459
4	0.333	932.294	2.697	0.163
			Sum = 100.000	Sum= 6.047

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.016	(0.197)	0.006	0.010
2	0.17	0.07	0.016	(0.196)	0.006	0.010
3	0.25	0.07	0.016	(0.195)	0.006	0.010
4	0.33	0.10	0.024	(0.195)	0.009	0.015
5	0.42	0.10	0.024	(0.194)	0.009	0.015
6	0.50	0.10	0.024	(0.193)	0.009	0.015
7	0.58	0.10	0.024	(0.192)	0.009	0.015
8	0.67	0.10	0.024	(0.192)	0.009	0.015
9	0.75	0.10	0.024	(0.191)	0.009	0.015
10	0.83	0.13	0.032	(0.190)	0.012	0.020
11	0.92	0.13	0.032	(0.189)	0.012	0.020
12	1.00	0.13	0.032	(0.189)	0.012	0.020
13	1.08	0.10	0.024	(0.188)	0.009	0.015
14	1.17	0.10	0.024	(0.187)	0.009	0.015
15	1.25	0.10	0.024	(0.186)	0.009	0.015
16	1.33	0.10	0.024	(0.186)	0.009	0.015
17	1.42	0.10	0.024	(0.185)	0.009	0.015
18	1.50	0.10	0.024	(0.184)	0.009	0.015
19	1.58	0.10	0.024	(0.183)	0.009	0.015
20	1.67	0.10	0.024	(0.183)	0.009	0.015
21	1.75	0.10	0.024	(0.182)	0.009	0.015
22	1.83	0.13	0.032	(0.181)	0.012	0.020
23	1.92	0.13	0.032	(0.180)	0.012	0.020
24	2.00	0.13	0.032	(0.180)	0.012	0.020
25	2.08	0.13	0.032	(0.179)	0.012	0.020
26	2.17	0.13	0.032	(0.178)	0.012	0.020
27	2.25	0.13	0.032	(0.178)	0.012	0.020
28	2.33	0.13	0.032	(0.177)	0.012	0.020
29	2.42	0.13	0.032	(0.176)	0.012	0.020
30	2.50	0.13	0.032	(0.175)	0.012	0.020
31	2.58	0.17	0.040	(0.175)	0.015	0.025
32	2.67	0.17	0.040	(0.174)	0.015	0.025
33	2.75	0.17	0.040	(0.173)	0.015	0.025
34	2.83	0.17	0.040	(0.173)	0.015	0.025
35	2.92	0.17	0.040	(0.172)	0.015	0.025
36	3.00	0.17	0.040	(0.171)	0.015	0.025
37	3.08	0.17	0.040	(0.170)	0.015	0.025
38	3.17	0.17	0.040	(0.170)	0.015	0.025
39	3.25	0.17	0.040	(0.169)	0.015	0.025
40	3.33	0.17	0.040	(0.168)	0.015	0.025
41	3.42	0.17	0.040	(0.168)	0.015	0.025
42	3.50	0.17	0.040	(0.167)	0.015	0.025
43	3.58	0.17	0.040	(0.166)	0.015	0.025
44	3.67	0.17	0.040	(0.165)	0.015	0.025
45	3.75	0.17	0.040	(0.165)	0.015	0.025
46	3.83	0.20	0.048	(0.164)	0.018	0.030
47	3.92	0.20	0.048	(0.163)	0.018	0.030
48	4.00	0.20	0.048	(0.163)	0.018	0.030
49	4.08	0.20	0.048	(0.162)	0.018	0.030
50	4.17	0.20	0.048	(0.161)	0.018	0.030
51	4.25	0.20	0.048	(0.161)	0.018	0.030
52	4.33	0.23	0.056	(0.160)	0.021	0.035
53	4.42	0.23	0.056	(0.159)	0.021	0.035
54	4.50	0.23	0.056	(0.159)	0.021	0.035
55	4.58	0.23	0.056	(0.158)	0.021	0.035
56	4.67	0.23	0.056	(0.157)	0.021	0.035
57	4.75	0.23	0.056	(0.157)	0.021	0.035
58	4.83	0.27	0.064	(0.156)	0.024	0.040
59	4.92	0.27	0.064	(0.155)	0.024	0.040
60	5.00	0.27	0.064	(0.155)	0.024	0.040
61	5.08	0.20	0.048	(0.154)	0.018	0.030
62	5.17	0.20	0.048	(0.153)	0.018	0.030
63	5.25	0.20	0.048	(0.153)	0.018	0.030

ONSITEPRE242.out

64	5.33	0.23	0.056	(0.152)	0.021	0.035
65	5.42	0.23	0.056	(0.151)	0.021	0.035
66	5.50	0.23	0.056	(0.151)	0.021	0.035
67	5.58	0.27	0.064	(0.150)	0.024	0.040
68	5.67	0.27	0.064	(0.149)	0.024	0.040
69	5.75	0.27	0.064	(0.149)	0.024	0.040
70	5.83	0.27	0.064	(0.148)	0.024	0.040
71	5.92	0.27	0.064	(0.147)	0.024	0.040
72	6.00	0.27	0.064	(0.147)	0.024	0.040
73	6.08	0.30	0.072	(0.146)	0.027	0.045
74	6.17	0.30	0.072	(0.145)	0.027	0.045
75	6.25	0.30	0.072	(0.145)	0.027	0.045
76	6.33	0.30	0.072	(0.144)	0.027	0.045
77	6.42	0.30	0.072	(0.143)	0.027	0.045
78	6.50	0.30	0.072	(0.143)	0.027	0.045
79	6.58	0.33	0.080	(0.142)	0.030	0.050
80	6.67	0.33	0.080	(0.141)	0.030	0.050
81	6.75	0.33	0.080	(0.141)	0.030	0.050
82	6.83	0.33	0.080	(0.140)	0.030	0.050
83	6.92	0.33	0.080	(0.140)	0.030	0.050
84	7.00	0.33	0.080	(0.139)	0.030	0.050
85	7.08	0.33	0.080	(0.138)	0.030	0.050
86	7.17	0.33	0.080	(0.138)	0.030	0.050
87	7.25	0.33	0.080	(0.137)	0.030	0.050
88	7.33	0.37	0.088	(0.136)	0.033	0.055
89	7.42	0.37	0.088	(0.136)	0.033	0.055
90	7.50	0.37	0.088	(0.135)	0.033	0.055
91	7.58	0.40	0.096	(0.135)	0.036	0.060
92	7.67	0.40	0.096	(0.134)	0.036	0.060
93	7.75	0.40	0.096	(0.133)	0.036	0.060
94	7.83	0.43	0.104	(0.133)	0.040	0.064
95	7.92	0.43	0.104	(0.132)	0.040	0.064
96	8.00	0.43	0.104	(0.131)	0.040	0.064
97	8.08	0.50	0.120	(0.131)	0.046	0.074
98	8.17	0.50	0.120	(0.130)	0.046	0.074
99	8.25	0.50	0.120	(0.130)	0.046	0.074
100	8.33	0.50	0.120	(0.129)	0.046	0.074
101	8.42	0.50	0.120	(0.128)	0.046	0.074
102	8.50	0.50	0.120	(0.128)	0.046	0.074
103	8.58	0.53	0.128	(0.127)	0.049	0.079
104	8.67	0.53	0.128	(0.127)	0.049	0.079
105	8.75	0.53	0.128	(0.126)	0.049	0.079
106	8.83	0.57	0.136	(0.125)	0.052	0.084
107	8.92	0.57	0.136	(0.125)	0.052	0.084
108	9.00	0.57	0.136	(0.124)	0.052	0.084
109	9.08	0.63	0.152	(0.124)	0.058	0.094
110	9.17	0.63	0.152	(0.123)	0.058	0.094
111	9.25	0.63	0.152	(0.122)	0.058	0.094
112	9.33	0.67	0.160	(0.122)	0.061	0.099
113	9.42	0.67	0.160	(0.121)	0.061	0.099
114	9.50	0.67	0.160	(0.121)	0.061	0.099
115	9.58	0.70	0.168	(0.120)	0.064	0.104
116	9.67	0.70	0.168	(0.120)	0.064	0.104
117	9.75	0.70	0.168	(0.119)	0.064	0.104
118	9.83	0.73	0.176	(0.118)	0.067	0.109
119	9.92	0.73	0.176	(0.118)	0.067	0.109
120	10.00	0.73	0.176	(0.117)	0.067	0.109
121	10.08	0.50	0.120	(0.117)	0.046	0.074
122	10.17	0.50	0.120	(0.116)	0.046	0.074
123	10.25	0.50	0.120	(0.116)	0.046	0.074
124	10.33	0.50	0.120	(0.115)	0.046	0.074
125	10.42	0.50	0.120	(0.114)	0.046	0.074
126	10.50	0.50	0.120	(0.114)	0.046	0.074
127	10.58	0.67	0.160	(0.113)	0.061	0.099
128	10.67	0.67	0.160	(0.113)	0.061	0.099
129	10.75	0.67	0.160	(0.112)	0.061	0.099
130	10.83	0.67	0.160	(0.112)	0.061	0.099
131	10.92	0.67	0.160	(0.111)	0.061	0.099
132	11.00	0.67	0.160	(0.111)	0.061	0.099
133	11.08	0.63	0.152	(0.110)	0.058	0.094
134	11.17	0.63	0.152	(0.110)	0.058	0.094
135	11.25	0.63	0.152	(0.109)	0.058	0.094
136	11.33	0.63	0.152	(0.108)	0.058	0.094
137	11.42	0.63	0.152	(0.108)	0.058	0.094
138	11.50	0.63	0.152	(0.107)	0.058	0.094
139	11.58	0.57	0.136	(0.107)	0.052	0.084
140	11.67	0.57	0.136	(0.106)	0.052	0.084
141	11.75	0.57	0.136	(0.106)	0.052	0.084
142	11.83	0.60	0.144	(0.105)	0.055	0.089
143	11.92	0.60	0.144	(0.105)	0.055	0.089
144	12.00	0.60	0.144	(0.104)	0.055	0.089
145	12.08	0.83	0.200	(0.104)	0.076	0.124
146	12.17	0.83	0.200	(0.103)	0.076	0.124
147	12.25	0.83	0.200	(0.103)	0.076	0.124

ONSITEPRE242.out

148	12.33	0.87	0.208	(0.102)	0.079	0.129
149	12.42	0.87	0.208	(0.102)	0.079	0.129
150	12.50	0.87	0.208	(0.101)	0.079	0.129
151	12.58	0.93	0.224	(0.101)	0.085	0.139
152	12.67	0.93	0.224	(0.100)	0.085	0.139
153	12.75	0.93	0.224	(0.100)	0.085	0.139
154	12.83	0.97	0.232	(0.099)	0.088	0.144
155	12.92	0.97	0.232	(0.099)	0.088	0.144
156	13.00	0.97	0.232	(0.098)	0.088	0.144
157	13.08	1.13	0.272	0.098 (0.103)		0.174
158	13.17	1.13	0.272	0.097 (0.103)		0.175
159	13.25	1.13	0.272	0.097 (0.103)		0.175
160	13.33	1.13	0.272	0.096 (0.103)		0.176
161	13.42	1.13	0.272	0.096 (0.103)		0.176
162	13.50	1.13	0.272	0.095 (0.103)		0.177
163	13.58	0.77	0.184	(0.095)	0.070	0.114
164	13.67	0.77	0.184	(0.094)	0.070	0.114
165	13.75	0.77	0.184	(0.094)	0.070	0.114
166	13.83	0.77	0.184	(0.093)	0.070	0.114
167	13.92	0.77	0.184	(0.093)	0.070	0.114
168	14.00	0.77	0.184	(0.092)	0.070	0.114
169	14.08	0.90	0.216	(0.092)	0.082	0.134
170	14.17	0.90	0.216	(0.091)	0.082	0.134
171	14.25	0.90	0.216	(0.091)	0.082	0.134
172	14.33	0.87	0.208	(0.090)	0.079	0.129
173	14.42	0.87	0.208	(0.090)	0.079	0.129
174	14.50	0.87	0.208	(0.089)	0.079	0.129
175	14.58	0.87	0.208	(0.089)	0.079	0.129
176	14.67	0.87	0.208	(0.089)	0.079	0.129
177	14.75	0.87	0.208	(0.088)	0.079	0.129
178	14.83	0.83	0.200	(0.088)	0.076	0.124
179	14.92	0.83	0.200	(0.087)	0.076	0.124
180	15.00	0.83	0.200	(0.087)	0.076	0.124
181	15.08	0.80	0.192	(0.086)	0.073	0.119
182	15.17	0.80	0.192	(0.086)	0.073	0.119
183	15.25	0.80	0.192	(0.085)	0.073	0.119
184	15.33	0.77	0.184	(0.085)	0.070	0.114
185	15.42	0.77	0.184	(0.085)	0.070	0.114
186	15.50	0.77	0.184	(0.084)	0.070	0.114
187	15.58	0.63	0.152	(0.084)	0.058	0.094
188	15.67	0.63	0.152	(0.083)	0.058	0.094
189	15.75	0.63	0.152	(0.083)	0.058	0.094
190	15.83	0.63	0.152	(0.082)	0.058	0.094
191	15.92	0.63	0.152	(0.082)	0.058	0.094
192	16.00	0.63	0.152	(0.082)	0.058	0.094
193	16.08	0.13	0.032	(0.081)	0.012	0.020
194	16.17	0.13	0.032	(0.081)	0.012	0.020
195	16.25	0.13	0.032	(0.080)	0.012	0.020
196	16.33	0.13	0.032	(0.080)	0.012	0.020
197	16.42	0.13	0.032	(0.079)	0.012	0.020
198	16.50	0.13	0.032	(0.079)	0.012	0.020
199	16.58	0.10	0.024	(0.079)	0.009	0.015
200	16.67	0.10	0.024	(0.078)	0.009	0.015
201	16.75	0.10	0.024	(0.078)	0.009	0.015
202	16.83	0.10	0.024	(0.077)	0.009	0.015
203	16.92	0.10	0.024	(0.077)	0.009	0.015
204	17.00	0.10	0.024	(0.077)	0.009	0.015
205	17.08	0.17	0.040	(0.076)	0.015	0.025
206	17.17	0.17	0.040	(0.076)	0.015	0.025
207	17.25	0.17	0.040	(0.076)	0.015	0.025
208	17.33	0.17	0.040	(0.075)	0.015	0.025
209	17.42	0.17	0.040	(0.075)	0.015	0.025
210	17.50	0.17	0.040	(0.074)	0.015	0.025
211	17.58	0.17	0.040	(0.074)	0.015	0.025
212	17.67	0.17	0.040	(0.074)	0.015	0.025
213	17.75	0.17	0.040	(0.073)	0.015	0.025
214	17.83	0.13	0.032	(0.073)	0.012	0.020
215	17.92	0.13	0.032	(0.073)	0.012	0.020
216	18.00	0.13	0.032	(0.072)	0.012	0.020
217	18.08	0.13	0.032	(0.072)	0.012	0.020
218	18.17	0.13	0.032	(0.072)	0.012	0.020
219	18.25	0.13	0.032	(0.071)	0.012	0.020
220	18.33	0.13	0.032	(0.071)	0.012	0.020
221	18.42	0.13	0.032	(0.070)	0.012	0.020
222	18.50	0.13	0.032	(0.070)	0.012	0.020
223	18.58	0.10	0.024	(0.070)	0.009	0.015
224	18.67	0.10	0.024	(0.069)	0.009	0.015
225	18.75	0.10	0.024	(0.069)	0.009	0.015
226	18.83	0.07	0.016	(0.069)	0.006	0.010
227	18.92	0.07	0.016	(0.068)	0.006	0.010
228	19.00	0.07	0.016	(0.068)	0.006	0.010
229	19.08	0.10	0.024	(0.068)	0.009	0.015
230	19.17	0.10	0.024	(0.068)	0.009	0.015
231	19.25	0.10	0.024	(0.067)	0.009	0.015

0+35	0.0033	0.09	Q			
0+40	0.0039	0.09	Q			
0+45	0.0046	0.09	Q			
0+50	0.0053	0.10	Q			
0+55	0.0061	0.12	Q			
1+ 0	0.0069	0.12	Q			
1+ 5	0.0076	0.11	Q			
1+10	0.0083	0.09	Q			
1+15	0.0089	0.09	Q			
1+20	0.0095	0.09	Q			
1+25	0.0101	0.09	Q			
1+30	0.0108	0.09	Q			
1+35	0.0114	0.09	Q			
1+40	0.0120	0.09	Q			
1+45	0.0126	0.09	Q			
1+50	0.0133	0.10	Q			
1+55	0.0141	0.12	Q			
2+ 0	0.0150	0.12	Q			
2+ 5	0.0158	0.12	QV			
2+10	0.0166	0.12	QV			
2+15	0.0174	0.12	QV			
2+20	0.0183	0.12	QV			
2+25	0.0191	0.12	QV			
2+30	0.0199	0.12	QV			
2+35	0.0209	0.13	QV			
2+40	0.0219	0.15	QV			
2+45	0.0229	0.15	QV			
2+50	0.0239	0.15	QV			
2+55	0.0250	0.15	QV			
3+ 0	0.0260	0.15	QV			
3+ 5	0.0270	0.15	QV			
3+10	0.0281	0.15	QV			
3+15	0.0291	0.15	QV			
3+20	0.0301	0.15	QV			
3+25	0.0312	0.15	Q V			
3+30	0.0322	0.15	Q V			
3+35	0.0332	0.15	Q V			
3+40	0.0343	0.15	Q V			
3+45	0.0353	0.15	Q V			
3+50	0.0364	0.16	Q V			
3+55	0.0376	0.18	Q V			
4+ 0	0.0389	0.18	Q V			
4+ 5	0.0401	0.18	Q V			
4+10	0.0414	0.18	Q V			
4+15	0.0426	0.18	Q V			
4+20	0.0439	0.19	Q V			
4+25	0.0454	0.21	Q V			
4+30	0.0468	0.21	Q V			
4+35	0.0483	0.21	Q V			
4+40	0.0497	0.21	Q V			
4+45	0.0511	0.21	Q V			
4+50	0.0527	0.22	Q V			
4+55	0.0543	0.24	Q V			
5+ 0	0.0560	0.24	Q V			
5+ 5	0.0574	0.21	Q V			
5+10	0.0587	0.19	Q V			
5+15	0.0600	0.18	Q V			
5+20	0.0613	0.19	Q V			
5+25	0.0627	0.21	Q V			
5+30	0.0642	0.21	Q V			
5+35	0.0657	0.22	Q V			
5+40	0.0673	0.24	Q V			
5+45	0.0690	0.24	Q V			
5+50	0.0706	0.24	Q V			
5+55	0.0723	0.24	Q V			
6+ 0	0.0740	0.24	Q V			
6+ 5	0.0757	0.25	Q V			
6+10	0.0775	0.27	Q V			
6+15	0.0794	0.27	Q V			
6+20	0.0813	0.27	Q V			
6+25	0.0831	0.27	Q V			
6+30	0.0850	0.27	Q V			
6+35	0.0869	0.28	Q V			
6+40	0.0890	0.30	Q V			
6+45	0.0910	0.30	Q V			
6+50	0.0931	0.30	Q V			
6+55	0.0952	0.30	Q V			
7+ 0	0.0972	0.30	Q V			
7+ 5	0.0993	0.30	Q V			
7+10	0.1014	0.30	Q V			
7+15	0.1034	0.30	Q V			
7+20	0.1056	0.31	Q V			
7+25	0.1079	0.33	Q V			
7+30	0.1101	0.33	Q V			

7+35	0.1125	0.34	Q	V					
7+40	0.1150	0.36	Q	V					
7+45	0.1174	0.36	Q	V					
7+50	0.1200	0.37	Q	V					
7+55	0.1227	0.39	Q	V					
8+ 0	0.1254	0.39	Q	V					
8+ 5	0.1283	0.42	Q	V					
8+10	0.1313	0.44	Q	V					
8+15	0.1344	0.45	Q	V					
8+20	0.1375	0.45	Q	V					
8+25	0.1406	0.45	Q	V					
8+30	0.1437	0.45	Q	V					
8+35	0.1469	0.46	Q	V					
8+40	0.1502	0.48	Q	V					
8+45	0.1535	0.48	Q	V					
8+50	0.1569	0.49	Q	V					
8+55	0.1604	0.51	Q	V					
9+ 0	0.1639	0.51	Q	V					
9+ 5	0.1676	0.54	Q	V					
9+10	0.1715	0.56	Q	V					
9+15	0.1754	0.57	Q	V					
9+20	0.1794	0.58	Q	V					
9+25	0.1835	0.60	Q	V					
9+30	0.1877	0.60	Q	V					
9+35	0.1919	0.61	Q	V					
9+40	0.1962	0.63	Q	V					
9+45	0.2006	0.63	Q	V					
9+50	0.2050	0.64	Q	V					
9+55	0.2095	0.66	Q	V					
10+ 0	0.2141	0.66	Q	V					
10+ 5	0.2179	0.56	Q	V					
10+10	0.2212	0.47	Q	V					
10+15	0.2243	0.46	Q	V					
10+20	0.2274	0.45	Q	V					
10+25	0.2305	0.45	Q	V					
10+30	0.2336	0.45	Q	V					
10+35	0.2372	0.52	Q	V					
10+40	0.2412	0.58	Q	V					
10+45	0.2453	0.60	Q	V					
10+50	0.2495	0.60	Q	V					
10+55	0.2536	0.60	Q	V					
11+ 0	0.2577	0.60	Q	V					
11+ 5	0.2618	0.59	Q	V					
11+10	0.2657	0.57	Q	V					
11+15	0.2696	0.57	Q	V					
11+20	0.2736	0.57	Q	V					
11+25	0.2775	0.57	Q	V					
11+30	0.2814	0.57	Q	V					
11+35	0.2852	0.54	Q	V					
11+40	0.2887	0.52	Q	V					
11+45	0.2922	0.51	Q	V					
11+50	0.2958	0.52	Q	V					
11+55	0.2995	0.54	Q	V					
12+ 0	0.3033	0.54	Q	V					
12+ 5	0.3077	0.64	Q	V					
12+10	0.3127	0.73	Q	V					
12+15	0.3178	0.74	Q	V					
12+20	0.3231	0.76	Q	V					
12+25	0.3284	0.78	Q	V					
12+30	0.3338	0.78	Q	V					
12+35	0.3394	0.81	Q	V					
12+40	0.3451	0.83	Q	V					
12+45	0.3509	0.84	Q	V					
12+50	0.3568	0.85	Q	V					
12+55	0.3628	0.87	Q	V					
13+ 0	0.3688	0.87	Q	V					
13+ 5	0.3754	0.96	Q	V					
13+10	0.3825	1.04	Q	V					
13+15	0.3898	1.05	Q	V					
13+20	0.3971	1.06	Q	V					
13+25	0.4044	1.07	Q	V					
13+30	0.4118	1.07	Q	V					
13+35	0.4179	0.89	Q	V					
13+40	0.4229	0.73	Q	V					
13+45	0.4277	0.70	Q	V					
13+50	0.4325	0.69	Q	V					
13+55	0.4372	0.69	Q	V					
14+ 0	0.4420	0.69	Q	V					
14+ 5	0.4471	0.75	Q	V					
14+10	0.4526	0.80	Q	V					
14+15	0.4582	0.81	Q	V					
14+20	0.4637	0.80	Q	V					
14+25	0.4691	0.78	Q	V					
14+30	0.4744	0.78	Q	V					

14+35	0.4798	0.78	Q	V
14+40	0.4852	0.78	Q	V
14+45	0.4906	0.78	Q	V
14+50	0.4958	0.77	Q	V
14+55	0.5010	0.75	Q	V
15+ 0	0.5062	0.75	Q	V
15+ 5	0.5113	0.74	Q	V
15+10	0.5162	0.72	Q	V
15+15	0.5212	0.72	Q	V
15+20	0.5261	0.71	Q	V
15+25	0.5308	0.69	Q	V
15+30	0.5356	0.69	Q	V
15+35	0.5400	0.63	Q	V
15+40	0.5440	0.58	Q	V
15+45	0.5479	0.57	Q	V
15+50	0.5518	0.57	Q	V
15+55	0.5558	0.57	Q	V
16+ 0	0.5597	0.57	Q	V
16+ 5	0.5621	0.35	Q	V
16+10	0.5633	0.17	Q	V
16+15	0.5642	0.13	Q	V
16+20	0.5650	0.12	Q	V
16+25	0.5658	0.12	Q	V
16+30	0.5667	0.12	Q	V
16+35	0.5674	0.11	Q	V
16+40	0.5680	0.09	Q	V
16+45	0.5686	0.09	Q	V
16+50	0.5693	0.09	Q	V
16+55	0.5699	0.09	Q	V
17+ 0	0.5705	0.09	Q	V
17+ 5	0.5713	0.12	Q	V
17+10	0.5723	0.14	Q	V
17+15	0.5733	0.15	Q	V
17+20	0.5744	0.15	Q	V
17+25	0.5754	0.15	Q	V
17+30	0.5764	0.15	Q	V
17+35	0.5775	0.15	Q	V
17+40	0.5785	0.15	Q	V
17+45	0.5795	0.15	Q	V
17+50	0.5805	0.14	Q	V
17+55	0.5813	0.12	Q	V
18+ 0	0.5822	0.12	Q	V
18+ 5	0.5830	0.12	Q	V
18+10	0.5838	0.12	Q	V
18+15	0.5846	0.12	Q	V
18+20	0.5855	0.12	Q	V
18+25	0.5863	0.12	Q	V
18+30	0.5871	0.12	Q	V
18+35	0.5878	0.11	Q	V
18+40	0.5885	0.09	Q	V
18+45	0.5891	0.09	Q	V
18+50	0.5896	0.08	Q	V
18+55	0.5901	0.06	Q	V
19+ 0	0.5905	0.06	Q	V
19+ 5	0.5910	0.07	Q	V
19+10	0.5916	0.09	Q	V
19+15	0.5922	0.09	Q	V
19+20	0.5929	0.10	Q	V
19+25	0.5937	0.12	Q	V
19+30	0.5946	0.12	Q	V
19+35	0.5953	0.11	Q	V
19+40	0.5959	0.09	Q	V
19+45	0.5965	0.09	Q	V
19+50	0.5971	0.08	Q	V
19+55	0.5975	0.06	Q	V
20+ 0	0.5979	0.06	Q	V
20+ 5	0.5984	0.07	Q	V
20+10	0.5990	0.09	Q	V
20+15	0.5996	0.09	Q	V
20+20	0.6003	0.09	Q	V
20+25	0.6009	0.09	Q	V
20+30	0.6015	0.09	Q	V
20+35	0.6021	0.09	Q	V
20+40	0.6027	0.09	Q	V
20+45	0.6034	0.09	Q	V
20+50	0.6039	0.08	Q	V
20+55	0.6043	0.06	Q	V
21+ 0	0.6047	0.06	Q	V
21+ 5	0.6053	0.07	Q	V
21+10	0.6059	0.09	Q	V
21+15	0.6065	0.09	Q	V
21+20	0.6070	0.08	Q	V
21+25	0.6074	0.06	Q	V
21+30	0.6078	0.06	Q	V

ONSITEPRE242.out

21+35	0.6084	0.07	Q			V
21+40	0.6090	0.09	Q			V
21+45	0.6096	0.09	Q			V
21+50	0.6101	0.08	Q			V
21+55	0.6105	0.06	Q			V
22+ 0	0.6109	0.06	Q			V
22+ 5	0.6115	0.07	Q			V
22+10	0.6121	0.09	Q			V
22+15	0.6127	0.09	Q			V
22+20	0.6132	0.08	Q			V
22+25	0.6136	0.06	Q			V
22+30	0.6140	0.06	Q			V
22+35	0.6145	0.06	Q			V
22+40	0.6149	0.06	Q			V
22+45	0.6153	0.06	Q			V
22+50	0.6157	0.06	Q			V
22+55	0.6161	0.06	Q			V
23+ 0	0.6165	0.06	Q			V
23+ 5	0.6169	0.06	Q			V
23+10	0.6173	0.06	Q			V
23+15	0.6178	0.06	Q			V
23+20	0.6182	0.06	Q			V
23+25	0.6186	0.06	Q			V
23+30	0.6190	0.06	Q			V
23+35	0.6194	0.06	Q			V
23+40	0.6198	0.06	Q			V
23+45	0.6202	0.06	Q			V
23+50	0.6207	0.06	Q			V
23+55	0.6211	0.06	Q			V
24+ 0	0.6215	0.06	Q			V
24+ 5	0.6217	0.03	Q			V
24+10	0.6217	0.01	Q			V
24+15	0.6217	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPRE245.out

 +-----+

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 EXISTING CONDITION H-11.1 TRIBUTARY, 5-YEAR 24-HOUR
 FN: ONSITEPRE245.OUT- TSW

 Drainage Area = 6.00(Ac.) = 0.009 Sq. Mi.
 Drainage Area for Depth-Area Adjustment = 6.00(Ac.) = 0.009 Sq. Mi.
 Length along longest watercourse = 768.00(Ft.)
 Length along longest watercourse measured to centroid = 255.00(Ft.)
 Length along longest watercourse = 0.145 Mi.
 Length along longest watercourse measured to centroid = 0.048 Mi.
 Difference in elevation = 6.20(Ft.)
 Slope along watercourse = 42.6250 Ft./Mi.
 Average Manning's 'N' = 0.020
 Lag time = 0.036 Hr.
 Lag time = 2.15 Min.
 25% of lag time = 0.54 Min.
 40% of lag time = 0.86 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
6.00	2.00	12.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
6.00	5.00	30.00

STORM EVENT (YEAR) = 5.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.703(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.703(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 6.000 78.00 0.650
 Total Area Entered = 6.00(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
78.0	60.6	0.464	0.650	0.192	1.000	0.192
						Sum (F) =
						0.192

Area averaged mean soil loss (F) (In/Hr) = 0.111
 Minimum soil loss rate ((In/Hr)) = 0.056
 (for 24 hour storm duration)
 Note: User entry of the f value
 Soil low loss rate (decimal) = 0.380

ONSITEPRE245.out
Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	233.074	48.590	2.938
2	0.167	466.147	41.127	2.487
3	0.250	699.221	7.586	0.459
4	0.333	932.294	2.697	0.163
Sum = 100.000			Sum=	6.047

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.022	(0.197)	0.008	0.013
2	0.17	0.07	0.022	(0.196)	0.008	0.013
3	0.25	0.07	0.022	(0.195)	0.008	0.013
4	0.33	0.10	0.032	(0.195)	0.012	0.020
5	0.42	0.10	0.032	(0.194)	0.012	0.020
6	0.50	0.10	0.032	(0.193)	0.012	0.020
7	0.58	0.10	0.032	(0.192)	0.012	0.020
8	0.67	0.10	0.032	(0.192)	0.012	0.020
9	0.75	0.10	0.032	(0.191)	0.012	0.020
10	0.83	0.13	0.043	(0.190)	0.016	0.027
11	0.92	0.13	0.043	(0.189)	0.016	0.027
12	1.00	0.13	0.043	(0.189)	0.016	0.027
13	1.08	0.10	0.032	(0.188)	0.012	0.020
14	1.17	0.10	0.032	(0.187)	0.012	0.020
15	1.25	0.10	0.032	(0.186)	0.012	0.020
16	1.33	0.10	0.032	(0.186)	0.012	0.020
17	1.42	0.10	0.032	(0.185)	0.012	0.020
18	1.50	0.10	0.032	(0.184)	0.012	0.020
19	1.58	0.10	0.032	(0.183)	0.012	0.020
20	1.67	0.10	0.032	(0.183)	0.012	0.020
21	1.75	0.10	0.032	(0.182)	0.012	0.020
22	1.83	0.13	0.043	(0.181)	0.016	0.027
23	1.92	0.13	0.043	(0.180)	0.016	0.027
24	2.00	0.13	0.043	(0.180)	0.016	0.027
25	2.08	0.13	0.043	(0.179)	0.016	0.027
26	2.17	0.13	0.043	(0.178)	0.016	0.027
27	2.25	0.13	0.043	(0.178)	0.016	0.027
28	2.33	0.13	0.043	(0.177)	0.016	0.027
29	2.42	0.13	0.043	(0.176)	0.016	0.027
30	2.50	0.13	0.043	(0.175)	0.016	0.027
31	2.58	0.17	0.054	(0.175)	0.021	0.034
32	2.67	0.17	0.054	(0.174)	0.021	0.034
33	2.75	0.17	0.054	(0.173)	0.021	0.034
34	2.83	0.17	0.054	(0.173)	0.021	0.034
35	2.92	0.17	0.054	(0.172)	0.021	0.034
36	3.00	0.17	0.054	(0.171)	0.021	0.034
37	3.08	0.17	0.054	(0.170)	0.021	0.034
38	3.17	0.17	0.054	(0.170)	0.021	0.034
39	3.25	0.17	0.054	(0.169)	0.021	0.034
40	3.33	0.17	0.054	(0.168)	0.021	0.034
41	3.42	0.17	0.054	(0.168)	0.021	0.034
42	3.50	0.17	0.054	(0.167)	0.021	0.034
43	3.58	0.17	0.054	(0.166)	0.021	0.034
44	3.67	0.17	0.054	(0.165)	0.021	0.034
45	3.75	0.17	0.054	(0.165)	0.021	0.034
46	3.83	0.20	0.065	(0.164)	0.025	0.040
47	3.92	0.20	0.065	(0.163)	0.025	0.040
48	4.00	0.20	0.065	(0.163)	0.025	0.040
49	4.08	0.20	0.065	(0.162)	0.025	0.040
50	4.17	0.20	0.065	(0.161)	0.025	0.040
51	4.25	0.20	0.065	(0.161)	0.025	0.040
52	4.33	0.23	0.076	(0.160)	0.029	0.047
53	4.42	0.23	0.076	(0.159)	0.029	0.047
54	4.50	0.23	0.076	(0.159)	0.029	0.047
55	4.58	0.23	0.076	(0.158)	0.029	0.047
56	4.67	0.23	0.076	(0.157)	0.029	0.047
57	4.75	0.23	0.076	(0.157)	0.029	0.047
58	4.83	0.27	0.086	(0.156)	0.033	0.054
59	4.92	0.27	0.086	(0.155)	0.033	0.054
60	5.00	0.27	0.086	(0.155)	0.033	0.054
61	5.08	0.20	0.065	(0.154)	0.025	0.040
62	5.17	0.20	0.065	(0.153)	0.025	0.040
63	5.25	0.20	0.065	(0.153)	0.025	0.040

ONSITEPRE245.out

64	5.33	0.23	0.076	(0.152)	0.029	0.047
65	5.42	0.23	0.076	(0.151)	0.029	0.047
66	5.50	0.23	0.076	(0.151)	0.029	0.047
67	5.58	0.27	0.086	(0.150)	0.033	0.054
68	5.67	0.27	0.086	(0.149)	0.033	0.054
69	5.75	0.27	0.086	(0.149)	0.033	0.054
70	5.83	0.27	0.086	(0.148)	0.033	0.054
71	5.92	0.27	0.086	(0.147)	0.033	0.054
72	6.00	0.27	0.086	(0.147)	0.033	0.054
73	6.08	0.30	0.097	(0.146)	0.037	0.060
74	6.17	0.30	0.097	(0.145)	0.037	0.060
75	6.25	0.30	0.097	(0.145)	0.037	0.060
76	6.33	0.30	0.097	(0.144)	0.037	0.060
77	6.42	0.30	0.097	(0.143)	0.037	0.060
78	6.50	0.30	0.097	(0.143)	0.037	0.060
79	6.58	0.33	0.108	(0.142)	0.041	0.067
80	6.67	0.33	0.108	(0.141)	0.041	0.067
81	6.75	0.33	0.108	(0.141)	0.041	0.067
82	6.83	0.33	0.108	(0.140)	0.041	0.067
83	6.92	0.33	0.108	(0.140)	0.041	0.067
84	7.00	0.33	0.108	(0.139)	0.041	0.067
85	7.08	0.33	0.108	(0.138)	0.041	0.067
86	7.17	0.33	0.108	(0.138)	0.041	0.067
87	7.25	0.33	0.108	(0.137)	0.041	0.067
88	7.33	0.37	0.119	(0.136)	0.045	0.074
89	7.42	0.37	0.119	(0.136)	0.045	0.074
90	7.50	0.37	0.119	(0.135)	0.045	0.074
91	7.58	0.40	0.130	(0.135)	0.049	0.080
92	7.67	0.40	0.130	(0.134)	0.049	0.080
93	7.75	0.40	0.130	(0.133)	0.049	0.080
94	7.83	0.43	0.141	(0.133)	0.053	0.087
95	7.92	0.43	0.141	(0.132)	0.053	0.087
96	8.00	0.43	0.141	(0.131)	0.053	0.087
97	8.08	0.50	0.162	(0.131)	0.062	0.101
98	8.17	0.50	0.162	(0.130)	0.062	0.101
99	8.25	0.50	0.162	(0.130)	0.062	0.101
100	8.33	0.50	0.162	(0.129)	0.062	0.101
101	8.42	0.50	0.162	(0.128)	0.062	0.101
102	8.50	0.50	0.162	(0.128)	0.062	0.101
103	8.58	0.53	0.173	(0.127)	0.066	0.107
104	8.67	0.53	0.173	(0.127)	0.066	0.107
105	8.75	0.53	0.173	(0.126)	0.066	0.107
106	8.83	0.57	0.184	(0.125)	0.070	0.114
107	8.92	0.57	0.184	(0.125)	0.070	0.114
108	9.00	0.57	0.184	(0.124)	0.070	0.114
109	9.08	0.63	0.205	(0.124)	0.078	0.127
110	9.17	0.63	0.205	(0.123)	0.078	0.127
111	9.25	0.63	0.205	(0.122)	0.078	0.127
112	9.33	0.67	0.216	(0.122)	0.082	0.134
113	9.42	0.67	0.216	(0.121)	0.082	0.134
114	9.50	0.67	0.216	(0.121)	0.082	0.134
115	9.58	0.70	0.227	(0.120)	0.086	0.141
116	9.67	0.70	0.227	(0.120)	0.086	0.141
117	9.75	0.70	0.227	(0.119)	0.086	0.141
118	9.83	0.73	0.238	(0.118)	0.090	0.147
119	9.92	0.73	0.238	(0.118)	0.090	0.147
120	10.00	0.73	0.238	(0.117)	0.090	0.147
121	10.08	0.50	0.162	(0.117)	0.062	0.101
122	10.17	0.50	0.162	(0.116)	0.062	0.101
123	10.25	0.50	0.162	(0.116)	0.062	0.101
124	10.33	0.50	0.162	(0.115)	0.062	0.101
125	10.42	0.50	0.162	(0.114)	0.062	0.101
126	10.50	0.50	0.162	(0.114)	0.062	0.101
127	10.58	0.67	0.216	(0.113)	0.082	0.134
128	10.67	0.67	0.216	(0.113)	0.082	0.134
129	10.75	0.67	0.216	(0.112)	0.082	0.134
130	10.83	0.67	0.216	(0.112)	0.082	0.134
131	10.92	0.67	0.216	(0.111)	0.082	0.134
132	11.00	0.67	0.216	(0.111)	0.082	0.134
133	11.08	0.63	0.205	(0.110)	0.078	0.127
134	11.17	0.63	0.205	(0.110)	0.078	0.127
135	11.25	0.63	0.205	(0.109)	0.078	0.127
136	11.33	0.63	0.205	(0.108)	0.078	0.127
137	11.42	0.63	0.205	(0.108)	0.078	0.127
138	11.50	0.63	0.205	(0.107)	0.078	0.127
139	11.58	0.57	0.184	(0.107)	0.070	0.114
140	11.67	0.57	0.184	(0.106)	0.070	0.114
141	11.75	0.57	0.184	(0.106)	0.070	0.114
142	11.83	0.60	0.195	(0.105)	0.074	0.121
143	11.92	0.60	0.195	(0.105)	0.074	0.121
144	12.00	0.60	0.195	(0.104)	0.074	0.121
145	12.08	0.83	0.270	(0.104)	0.103	0.168
146	12.17	0.83	0.270	(0.103)	0.103	0.168
147	12.25	0.83	0.270	0.103 (0.103)	0.103	0.168

ONSITEPRE245.out

148	12.33	0.87	0.281	0.102	(0.107)	0.179
149	12.42	0.87	0.281	0.102	(0.107)	0.179
150	12.50	0.87	0.281	0.101	(0.107)	0.180
151	12.58	0.93	0.303	0.101	(0.115)	0.202
152	12.67	0.93	0.303	0.100	(0.115)	0.203
153	12.75	0.93	0.303	0.100	(0.115)	0.203
154	12.83	0.97	0.314	0.099	(0.119)	0.214
155	12.92	0.97	0.314	0.099	(0.119)	0.215
156	13.00	0.97	0.314	0.098	(0.119)	0.215
157	13.08	1.13	0.368	0.098	(0.140)	0.270
158	13.17	1.13	0.368	0.097	(0.140)	0.270
159	13.25	1.13	0.368	0.097	(0.140)	0.271
160	13.33	1.13	0.368	0.096	(0.140)	0.271
161	13.42	1.13	0.368	0.096	(0.140)	0.272
162	13.50	1.13	0.368	0.095	(0.140)	0.272
163	13.58	0.77	0.249	(0.095)	0.094	0.154
164	13.67	0.77	0.249	0.094	(0.094)	0.154
165	13.75	0.77	0.249	0.094	(0.094)	0.155
166	13.83	0.77	0.249	0.093	(0.094)	0.155
167	13.92	0.77	0.249	0.093	(0.094)	0.156
168	14.00	0.77	0.249	0.092	(0.094)	0.156
169	14.08	0.90	0.292	0.092	(0.111)	0.200
170	14.17	0.90	0.292	0.091	(0.111)	0.201
171	14.25	0.90	0.292	0.091	(0.111)	0.201
172	14.33	0.87	0.281	0.090	(0.107)	0.191
173	14.42	0.87	0.281	0.090	(0.107)	0.191
174	14.50	0.87	0.281	0.089	(0.107)	0.192
175	14.58	0.87	0.281	0.089	(0.107)	0.192
176	14.67	0.87	0.281	0.089	(0.107)	0.193
177	14.75	0.87	0.281	0.088	(0.107)	0.193
178	14.83	0.83	0.270	0.088	(0.103)	0.183
179	14.92	0.83	0.270	0.087	(0.103)	0.183
180	15.00	0.83	0.270	0.087	(0.103)	0.184
181	15.08	0.80	0.259	0.086	(0.099)	0.173
182	15.17	0.80	0.259	0.086	(0.099)	0.174
183	15.25	0.80	0.259	0.085	(0.099)	0.174
184	15.33	0.77	0.249	0.085	(0.094)	0.164
185	15.42	0.77	0.249	0.085	(0.094)	0.164
186	15.50	0.77	0.249	0.084	(0.094)	0.165
187	15.58	0.63	0.205	(0.084)	0.078	0.127
188	15.67	0.63	0.205	(0.083)	0.078	0.127
189	15.75	0.63	0.205	(0.083)	0.078	0.127
190	15.83	0.63	0.205	(0.082)	0.078	0.127
191	15.92	0.63	0.205	(0.082)	0.078	0.127
192	16.00	0.63	0.205	(0.082)	0.078	0.127
193	16.08	0.13	0.043	(0.081)	0.016	0.027
194	16.17	0.13	0.043	(0.081)	0.016	0.027
195	16.25	0.13	0.043	(0.080)	0.016	0.027
196	16.33	0.13	0.043	(0.080)	0.016	0.027
197	16.42	0.13	0.043	(0.079)	0.016	0.027
198	16.50	0.13	0.043	(0.079)	0.016	0.027
199	16.58	0.10	0.032	(0.079)	0.012	0.020
200	16.67	0.10	0.032	(0.078)	0.012	0.020
201	16.75	0.10	0.032	(0.078)	0.012	0.020
202	16.83	0.10	0.032	(0.077)	0.012	0.020
203	16.92	0.10	0.032	(0.077)	0.012	0.020
204	17.00	0.10	0.032	(0.077)	0.012	0.020
205	17.08	0.17	0.054	(0.076)	0.021	0.034
206	17.17	0.17	0.054	(0.076)	0.021	0.034
207	17.25	0.17	0.054	(0.076)	0.021	0.034
208	17.33	0.17	0.054	(0.075)	0.021	0.034
209	17.42	0.17	0.054	(0.075)	0.021	0.034
210	17.50	0.17	0.054	(0.074)	0.021	0.034
211	17.58	0.17	0.054	(0.074)	0.021	0.034
212	17.67	0.17	0.054	(0.074)	0.021	0.034
213	17.75	0.17	0.054	(0.073)	0.021	0.034
214	17.83	0.13	0.043	(0.073)	0.016	0.027
215	17.92	0.13	0.043	(0.073)	0.016	0.027
216	18.00	0.13	0.043	(0.072)	0.016	0.027
217	18.08	0.13	0.043	(0.072)	0.016	0.027
218	18.17	0.13	0.043	(0.072)	0.016	0.027
219	18.25	0.13	0.043	(0.071)	0.016	0.027
220	18.33	0.13	0.043	(0.071)	0.016	0.027
221	18.42	0.13	0.043	(0.070)	0.016	0.027
222	18.50	0.13	0.043	(0.070)	0.016	0.027
223	18.58	0.10	0.032	(0.070)	0.012	0.020
224	18.67	0.10	0.032	(0.069)	0.012	0.020
225	18.75	0.10	0.032	(0.069)	0.012	0.020
226	18.83	0.07	0.022	(0.069)	0.008	0.013
227	18.92	0.07	0.022	(0.068)	0.008	0.013
228	19.00	0.07	0.022	(0.068)	0.008	0.013
229	19.08	0.10	0.032	(0.068)	0.012	0.020
230	19.17	0.10	0.032	(0.068)	0.012	0.020
231	19.25	0.10	0.032	(0.067)	0.012	0.020

0+35	0.0045	0.12	Q
0+40	0.0053	0.12	Q
0+45	0.0062	0.12	Q
0+50	0.0071	0.14	Q
0+55	0.0082	0.16	Q
1+ 0	0.0093	0.16	Q
1+ 5	0.0103	0.14	Q
1+10	0.0112	0.13	Q
1+15	0.0120	0.12	Q
1+20	0.0129	0.12	Q
1+25	0.0137	0.12	Q
1+30	0.0145	0.12	Q
1+35	0.0154	0.12	Q
1+40	0.0162	0.12	Q
1+45	0.0171	0.12	Q
1+50	0.0180	0.14	Q
1+55	0.0191	0.16	Q
2+ 0	0.0202	0.16	Q
2+ 5	0.0213	0.16	Q
2+10	0.0225	0.16	QV
2+15	0.0236	0.16	QV
2+20	0.0247	0.16	QV
2+25	0.0258	0.16	QV
2+30	0.0269	0.16	QV
2+35	0.0282	0.18	QV
2+40	0.0295	0.20	QV
2+45	0.0309	0.20	QV
2+50	0.0323	0.20	QV
2+55	0.0337	0.20	QV
3+ 0	0.0351	0.20	QV
3+ 5	0.0365	0.20	QV
3+10	0.0379	0.20	QV
3+15	0.0393	0.20	QV
3+20	0.0407	0.20	QV
3+25	0.0421	0.20	QV
3+30	0.0435	0.20	Q V
3+35	0.0449	0.20	Q V
3+40	0.0463	0.20	Q V
3+45	0.0477	0.20	Q V
3+50	0.0492	0.22	Q V
3+55	0.0509	0.24	Q V
4+ 0	0.0525	0.24	Q V
4+ 5	0.0542	0.24	Q V
4+10	0.0559	0.24	Q V
4+15	0.0576	0.24	Q V
4+20	0.0594	0.26	QV
4+25	0.0613	0.28	QV
4+30	0.0633	0.28	QV
4+35	0.0652	0.28	Q V
4+40	0.0672	0.28	Q V
4+45	0.0691	0.28	Q V
4+50	0.0712	0.30	Q V
4+55	0.0734	0.32	Q V
5+ 0	0.0756	0.32	Q V
5+ 5	0.0776	0.28	Q V
5+10	0.0793	0.25	Q V
5+15	0.0810	0.25	Q V
5+20	0.0828	0.26	Q V
5+25	0.0848	0.28	Q V
5+30	0.0867	0.28	Q V
5+35	0.0888	0.30	Q V
5+40	0.0910	0.32	Q V
5+45	0.0932	0.32	Q V
5+50	0.0955	0.32	Q V
5+55	0.0977	0.32	Q V
6+ 0	0.0999	0.32	Q V
6+ 5	0.1023	0.34	Q V
6+10	0.1048	0.36	Q V
6+15	0.1073	0.36	Q V
6+20	0.1098	0.36	Q V
6+25	0.1123	0.36	Q V
6+30	0.1148	0.36	Q V
6+35	0.1175	0.38	Q V
6+40	0.1203	0.40	Q V
6+45	0.1230	0.40	Q V
6+50	0.1258	0.41	Q V
6+55	0.1286	0.41	Q V
7+ 0	0.1314	0.41	Q V
7+ 5	0.1342	0.41	Q V
7+10	0.1370	0.41	Q V
7+15	0.1398	0.41	Q V
7+20	0.1427	0.43	Q V
7+25	0.1458	0.44	Q V
7+30	0.1488	0.44	Q V

7+35	0.1520	0.47	Q	V		
7+40	0.1554	0.48	Q	V		
7+45	0.1587	0.49	Q	V		
7+50	0.1622	0.51	Q	V		
7+55	0.1658	0.52	Q	V		
8+ 0	0.1694	0.53	Q	V		
8+ 5	0.1733	0.57	Q	V		
8+10	0.1774	0.60	Q	V		
8+15	0.1816	0.61	Q	V		
8+20	0.1858	0.61	Q	V		
8+25	0.1900	0.61	Q	V		
8+30	0.1942	0.61	Q	V		
8+35	0.1985	0.63	Q	V		
8+40	0.2030	0.64	Q	V		
8+45	0.2074	0.65	Q	V		
8+50	0.2120	0.67	Q	V		
8+55	0.2167	0.69	Q	V		
9+ 0	0.2215	0.69	Q	V		
9+ 5	0.2265	0.73	Q	V		
9+10	0.2317	0.76	Q	V		
9+15	0.2370	0.77	Q	V		
9+20	0.2425	0.79	Q	V		
9+25	0.2480	0.81	Q	V		
9+30	0.2536	0.81	Q	V		
9+35	0.2593	0.83	Q	V		
9+40	0.2652	0.85	Q	V		
9+45	0.2710	0.85	Q	V		
9+50	0.2770	0.87	Q	V		
9+55	0.2831	0.89	Q	V		
10+ 0	0.2893	0.89	Q	V		
10+ 5	0.2945	0.75	Q	V		
10+10	0.2989	0.64	Q	V		
10+15	0.3031	0.62	Q	V		
10+20	0.3073	0.61	Q	V		
10+25	0.3115	0.61	Q	V		
10+30	0.3157	0.61	Q	V		
10+35	0.3205	0.71	Q	V		
10+40	0.3260	0.79	Q	V		
10+45	0.3315	0.81	Q	V		
10+50	0.3371	0.81	Q	V		
10+55	0.3427	0.81	Q	V		
11+ 0	0.3483	0.81	Q	V		
11+ 5	0.3537	0.79	Q	V		
11+10	0.3591	0.77	Q	V		
11+15	0.3644	0.77	Q	V		
11+20	0.3697	0.77	Q	V		
11+25	0.3750	0.77	Q	V		
11+30	0.3803	0.77	Q	V		
11+35	0.3853	0.73	Q	V		
11+40	0.3901	0.70	Q	V		
11+45	0.3949	0.69	Q	V		
11+50	0.3998	0.71	Q	V		
11+55	0.4048	0.73	Q	V		
12+ 0	0.4098	0.73	Q	V		
12+ 5	0.4158	0.87	Q	V		
12+10	0.4226	0.98	Q	V		
12+15	0.4295	1.01	Q	V		
12+20	0.4367	1.05	Q	V		
12+25	0.4441	1.08	Q	V		
12+30	0.4516	1.09	Q	V		
12+35	0.4595	1.15	Q	V		
12+40	0.4679	1.21	Q	V		
12+45	0.4763	1.22	Q	V		
12+50	0.4850	1.26	Q	V		
12+55	0.4939	1.29	Q	V		
13+ 0	0.5028	1.30	Q	V		
13+ 5	0.5129	1.46	Q	V		
13+10	0.5239	1.60	Q	V		
13+15	0.5352	1.63	Q	V		
13+20	0.5465	1.64	Q	V		
13+25	0.5578	1.64	Q	V		
13+30	0.5691	1.65	Q	V		
13+35	0.5781	1.30	Q	V		
13+40	0.5850	1.01	Q	V		
13+45	0.5916	0.96	Q	V		
13+50	0.5981	0.94	Q	V		
13+55	0.6045	0.94	Q	V		
14+ 0	0.6110	0.94	Q	V		
14+ 5	0.6184	1.07	Q	V		
14+10	0.6266	1.18	Q	V		
14+15	0.6349	1.21	Q	V		
14+20	0.6431	1.19	Q	V		
14+25	0.6511	1.16	Q	V		
14+30	0.6591	1.16	Q	V		

14+35	0.6671	1.16	Q	V
14+40	0.6751	1.16	Q	V
14+45	0.6831	1.17	Q	V
14+50	0.6909	1.14	Q	V
14+55	0.6986	1.11	Q	V
15+ 0	0.7062	1.11	Q	V
15+ 5	0.7137	1.08	Q	V
15+10	0.7209	1.06	Q	V
15+15	0.7282	1.05	Q	V
15+20	0.7352	1.02	Q	V
15+25	0.7421	1.00	Q	V
15+30	0.7490	1.00	Q	V
15+35	0.7551	0.89	Q	V
15+40	0.7605	0.79	Q	V
15+45	0.7659	0.78	Q	V
15+50	0.7712	0.77	Q	V
15+55	0.7765	0.77	Q	V
16+ 0	0.7818	0.77	Q	V
16+ 5	0.7851	0.47	Q	V
16+10	0.7866	0.22	Q	V
16+15	0.7878	0.18	Q	V
16+20	0.7890	0.16	Q	V
16+25	0.7901	0.16	Q	V
16+30	0.7912	0.16	Q	V
16+35	0.7922	0.14	Q	V
16+40	0.7930	0.13	Q	V
16+45	0.7939	0.12	Q	V
16+50	0.7947	0.12	Q	V
16+55	0.7956	0.12	Q	V
17+ 0	0.7964	0.12	Q	V
17+ 5	0.7975	0.16	Q	V
17+10	0.7988	0.19	Q	V
17+15	0.8002	0.20	Q	V
17+20	0.8016	0.20	Q	V
17+25	0.8030	0.20	Q	V
17+30	0.8044	0.20	Q	V
17+35	0.8058	0.20	Q	V
17+40	0.8072	0.20	Q	V
17+45	0.8086	0.20	Q	V
17+50	0.8099	0.18	Q	V
17+55	0.8110	0.17	Q	V
18+ 0	0.8121	0.16	Q	V
18+ 5	0.8132	0.16	Q	V
18+10	0.8144	0.16	Q	V
18+15	0.8155	0.16	Q	V
18+20	0.8166	0.16	Q	V
18+25	0.8177	0.16	Q	V
18+30	0.8188	0.16	Q	V
18+35	0.8198	0.14	Q	V
18+40	0.8207	0.13	Q	V
18+45	0.8215	0.12	Q	V
18+50	0.8222	0.10	Q	V
18+55	0.8228	0.09	Q	V
19+ 0	0.8234	0.08	Q	V
19+ 5	0.8241	0.10	Q	V
19+10	0.8249	0.12	Q	V
19+15	0.8257	0.12	Q	V
19+20	0.8267	0.14	Q	V
19+25	0.8278	0.16	Q	V
19+30	0.8289	0.16	Q	V
19+35	0.8299	0.14	Q	V
19+40	0.8307	0.13	Q	V
19+45	0.8316	0.12	Q	V
19+50	0.8323	0.10	Q	V
19+55	0.8329	0.09	Q	V
20+ 0	0.8334	0.08	Q	V
20+ 5	0.8341	0.10	Q	V
20+10	0.8349	0.12	Q	V
20+15	0.8358	0.12	Q	V
20+20	0.8366	0.12	Q	V
20+25	0.8374	0.12	Q	V
20+30	0.8383	0.12	Q	V
20+35	0.8391	0.12	Q	V
20+40	0.8400	0.12	Q	V
20+45	0.8408	0.12	Q	V
20+50	0.8415	0.10	Q	V
20+55	0.8421	0.09	Q	V
21+ 0	0.8427	0.08	Q	V
21+ 5	0.8433	0.10	Q	V
21+10	0.8442	0.12	Q	V
21+15	0.8450	0.12	Q	V
21+20	0.8457	0.10	Q	V
21+25	0.8463	0.09	Q	V
21+30	0.8468	0.08	Q	V

ONSITEPRE245.out

21+35	0.8475	0.10	Q			V
21+40	0.8483	0.12	Q			V
21+45	0.8492	0.12	Q			V
21+50	0.8499	0.10	Q			V
21+55	0.8505	0.09	Q			V
22+ 0	0.8510	0.08	Q			V
22+ 5	0.8517	0.10	Q			V
22+10	0.8525	0.12	Q			V
22+15	0.8534	0.12	Q			V
22+20	0.8541	0.10	Q			V
22+25	0.8547	0.09	Q			V
22+30	0.8552	0.08	Q			V
22+35	0.8558	0.08	Q			V
22+40	0.8563	0.08	Q			V
22+45	0.8569	0.08	Q			V
22+50	0.8575	0.08	Q			V
22+55	0.8580	0.08	Q			V
23+ 0	0.8586	0.08	Q			V
23+ 5	0.8591	0.08	Q			V
23+10	0.8597	0.08	Q			V
23+15	0.8602	0.08	Q			V
23+20	0.8608	0.08	Q			V
23+25	0.8614	0.08	Q			V
23+30	0.8619	0.08	Q			V
23+35	0.8625	0.08	Q			V
23+40	0.8630	0.08	Q			V
23+45	0.8636	0.08	Q			V
23+50	0.8642	0.08	Q			V
23+55	0.8647	0.08	Q			V
24+ 0	0.8653	0.08	Q			V
24+ 5	0.8656	0.04	Q			V
24+10	0.8656	0.01	Q			V
24+15	0.8656	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPRE2410.out

 +-----

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 EXISTING CONDITION H-11.1 TRIBUTARY, 10-YEAR 24-HOUR
 FN: ONSITEPRE2410.OUT- TSW

 Drainage Area = 6.00(Ac.) = 0.009 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 6.00(Ac.) = 0.009 Sq. Mi.
 Length along longest watercourse = 768.00(Ft.)
 Length along longest watercourse measured to centroid = 255.00(Ft.)
 Length along longest watercourse = 0.145 Mi.
 Length along longest watercourse measured to centroid = 0.048 Mi.
 Difference in elevation = 6.20(Ft.)
 Slope along watercourse = 42.6250 Ft./Mi.
 Average Manning's 'N' = 0.020
 Lag time = 0.036 Hr.
 Lag time = 2.15 Min.
 25% of lag time = 0.54 Min.
 40% of lag time = 0.86 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
6.00	2.00	12.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
6.00	5.00	30.00

STORM EVENT (YEAR) = 10.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 3.234(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 3.234(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 6.000 78.00 0.650
 Total Area Entered = 6.00(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
78.0	78.0	0.268	0.650	0.111	1.000	0.111
						Sum (F) =
						0.111

Area averaged mean soil loss (F) (In/Hr) = 0.111
 Minimum soil loss rate ((In/Hr)) = 0.056
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.380

ONSITEPRE2410.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	233.074	48.590	2.938
2	0.167	466.147	41.127	2.487
3	0.250	699.221	7.586	0.459
4	0.333	932.294	2.697	0.163
Sum = 100.000			Sum=	6.047

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.026	(0.197)	0.010	0.016
2	0.17	0.07	0.026	(0.196)	0.010	0.016
3	0.25	0.07	0.026	(0.195)	0.010	0.016
4	0.33	0.10	0.039	(0.195)	0.015	0.024
5	0.42	0.10	0.039	(0.194)	0.015	0.024
6	0.50	0.10	0.039	(0.193)	0.015	0.024
7	0.58	0.10	0.039	(0.192)	0.015	0.024
8	0.67	0.10	0.039	(0.192)	0.015	0.024
9	0.75	0.10	0.039	(0.191)	0.015	0.024
10	0.83	0.13	0.052	(0.190)	0.020	0.032
11	0.92	0.13	0.052	(0.189)	0.020	0.032
12	1.00	0.13	0.052	(0.189)	0.020	0.032
13	1.08	0.10	0.039	(0.188)	0.015	0.024
14	1.17	0.10	0.039	(0.187)	0.015	0.024
15	1.25	0.10	0.039	(0.186)	0.015	0.024
16	1.33	0.10	0.039	(0.186)	0.015	0.024
17	1.42	0.10	0.039	(0.185)	0.015	0.024
18	1.50	0.10	0.039	(0.184)	0.015	0.024
19	1.58	0.10	0.039	(0.183)	0.015	0.024
20	1.67	0.10	0.039	(0.183)	0.015	0.024
21	1.75	0.10	0.039	(0.182)	0.015	0.024
22	1.83	0.13	0.052	(0.181)	0.020	0.032
23	1.92	0.13	0.052	(0.180)	0.020	0.032
24	2.00	0.13	0.052	(0.180)	0.020	0.032
25	2.08	0.13	0.052	(0.179)	0.020	0.032
26	2.17	0.13	0.052	(0.178)	0.020	0.032
27	2.25	0.13	0.052	(0.178)	0.020	0.032
28	2.33	0.13	0.052	(0.177)	0.020	0.032
29	2.42	0.13	0.052	(0.176)	0.020	0.032
30	2.50	0.13	0.052	(0.175)	0.020	0.032
31	2.58	0.17	0.065	(0.175)	0.025	0.040
32	2.67	0.17	0.065	(0.174)	0.025	0.040
33	2.75	0.17	0.065	(0.173)	0.025	0.040
34	2.83	0.17	0.065	(0.173)	0.025	0.040
35	2.92	0.17	0.065	(0.172)	0.025	0.040
36	3.00	0.17	0.065	(0.171)	0.025	0.040
37	3.08	0.17	0.065	(0.170)	0.025	0.040
38	3.17	0.17	0.065	(0.170)	0.025	0.040
39	3.25	0.17	0.065	(0.169)	0.025	0.040
40	3.33	0.17	0.065	(0.168)	0.025	0.040
41	3.42	0.17	0.065	(0.168)	0.025	0.040
42	3.50	0.17	0.065	(0.167)	0.025	0.040
43	3.58	0.17	0.065	(0.166)	0.025	0.040
44	3.67	0.17	0.065	(0.165)	0.025	0.040
45	3.75	0.17	0.065	(0.165)	0.025	0.040
46	3.83	0.20	0.078	(0.164)	0.029	0.048
47	3.92	0.20	0.078	(0.163)	0.029	0.048
48	4.00	0.20	0.078	(0.163)	0.029	0.048
49	4.08	0.20	0.078	(0.162)	0.029	0.048
50	4.17	0.20	0.078	(0.161)	0.029	0.048
51	4.25	0.20	0.078	(0.161)	0.029	0.048
52	4.33	0.23	0.091	(0.160)	0.034	0.056
53	4.42	0.23	0.091	(0.159)	0.034	0.056
54	4.50	0.23	0.091	(0.159)	0.034	0.056
55	4.58	0.23	0.091	(0.158)	0.034	0.056
56	4.67	0.23	0.091	(0.157)	0.034	0.056
57	4.75	0.23	0.091	(0.157)	0.034	0.056
58	4.83	0.27	0.103	(0.156)	0.039	0.064
59	4.92	0.27	0.103	(0.155)	0.039	0.064
60	5.00	0.27	0.103	(0.155)	0.039	0.064
61	5.08	0.20	0.078	(0.154)	0.029	0.048
62	5.17	0.20	0.078	(0.153)	0.029	0.048
63	5.25	0.20	0.078	(0.153)	0.029	0.048
64	5.33	0.23	0.091	(0.152)	0.034	0.056

ONSITEPRE2410.out

65	5.42	0.23	0.091	(0.151)	0.034	0.056
66	5.50	0.23	0.091	(0.151)	0.034	0.056
67	5.58	0.27	0.103	(0.150)	0.039	0.064
68	5.67	0.27	0.103	(0.149)	0.039	0.064
69	5.75	0.27	0.103	(0.149)	0.039	0.064
70	5.83	0.27	0.103	(0.148)	0.039	0.064
71	5.92	0.27	0.103	(0.147)	0.039	0.064
72	6.00	0.27	0.103	(0.147)	0.039	0.064
73	6.08	0.30	0.116	(0.146)	0.044	0.072
74	6.17	0.30	0.116	(0.145)	0.044	0.072
75	6.25	0.30	0.116	(0.145)	0.044	0.072
76	6.33	0.30	0.116	(0.144)	0.044	0.072
77	6.42	0.30	0.116	(0.143)	0.044	0.072
78	6.50	0.30	0.116	(0.143)	0.044	0.072
79	6.58	0.33	0.129	(0.142)	0.049	0.080
80	6.67	0.33	0.129	(0.141)	0.049	0.080
81	6.75	0.33	0.129	(0.141)	0.049	0.080
82	6.83	0.33	0.129	(0.140)	0.049	0.080
83	6.92	0.33	0.129	(0.140)	0.049	0.080
84	7.00	0.33	0.129	(0.139)	0.049	0.080
85	7.08	0.33	0.129	(0.138)	0.049	0.080
86	7.17	0.33	0.129	(0.138)	0.049	0.080
87	7.25	0.33	0.129	(0.137)	0.049	0.080
88	7.33	0.37	0.142	(0.136)	0.054	0.088
89	7.42	0.37	0.142	(0.136)	0.054	0.088
90	7.50	0.37	0.142	(0.135)	0.054	0.088
91	7.58	0.40	0.155	(0.135)	0.059	0.096
92	7.67	0.40	0.155	(0.134)	0.059	0.096
93	7.75	0.40	0.155	(0.133)	0.059	0.096
94	7.83	0.43	0.168	(0.133)	0.064	0.104
95	7.92	0.43	0.168	(0.132)	0.064	0.104
96	8.00	0.43	0.168	(0.131)	0.064	0.104
97	8.08	0.50	0.194	(0.131)	0.074	0.120
98	8.17	0.50	0.194	(0.130)	0.074	0.120
99	8.25	0.50	0.194	(0.130)	0.074	0.120
100	8.33	0.50	0.194	(0.129)	0.074	0.120
101	8.42	0.50	0.194	(0.128)	0.074	0.120
102	8.50	0.50	0.194	(0.128)	0.074	0.120
103	8.58	0.53	0.207	(0.127)	0.079	0.128
104	8.67	0.53	0.207	(0.127)	0.079	0.128
105	8.75	0.53	0.207	(0.126)	0.079	0.128
106	8.83	0.57	0.220	(0.125)	0.084	0.136
107	8.92	0.57	0.220	(0.125)	0.084	0.136
108	9.00	0.57	0.220	(0.124)	0.084	0.136
109	9.08	0.63	0.246	(0.124)	0.093	0.152
110	9.17	0.63	0.246	(0.123)	0.093	0.152
111	9.25	0.63	0.246	(0.122)	0.093	0.152
112	9.33	0.67	0.259	(0.122)	0.098	0.160
113	9.42	0.67	0.259	(0.121)	0.098	0.160
114	9.50	0.67	0.259	(0.121)	0.098	0.160
115	9.58	0.70	0.272	(0.120)	0.103	0.168
116	9.67	0.70	0.272	(0.120)	0.103	0.168
117	9.75	0.70	0.272	(0.119)	0.103	0.168
118	9.83	0.73	0.285	(0.118)	0.108	0.176
119	9.92	0.73	0.285	(0.118)	0.108	0.176
120	10.00	0.73	0.285	(0.117)	0.108	0.176
121	10.08	0.50	0.194	(0.117)	0.074	0.120
122	10.17	0.50	0.194	(0.116)	0.074	0.120
123	10.25	0.50	0.194	(0.116)	0.074	0.120
124	10.33	0.50	0.194	(0.115)	0.074	0.120
125	10.42	0.50	0.194	(0.114)	0.074	0.120
126	10.50	0.50	0.194	(0.114)	0.074	0.120
127	10.58	0.67	0.259	(0.113)	0.098	0.160
128	10.67	0.67	0.259	(0.113)	0.098	0.160
129	10.75	0.67	0.259	(0.112)	0.098	0.160
130	10.83	0.67	0.259	(0.112)	0.098	0.160
131	10.92	0.67	0.259	(0.111)	0.098	0.160
132	11.00	0.67	0.259	(0.111)	0.098	0.160
133	11.08	0.63	0.246	(0.110)	0.093	0.152
134	11.17	0.63	0.246	(0.110)	0.093	0.152
135	11.25	0.63	0.246	(0.109)	0.093	0.152
136	11.33	0.63	0.246	(0.108)	0.093	0.152
137	11.42	0.63	0.246	(0.108)	0.093	0.152
138	11.50	0.63	0.246	(0.107)	0.093	0.152
139	11.58	0.57	0.220	(0.107)	0.084	0.136
140	11.67	0.57	0.220	(0.106)	0.084	0.136
141	11.75	0.57	0.220	(0.106)	0.084	0.136
142	11.83	0.60	0.233	(0.105)	0.088	0.144
143	11.92	0.60	0.233	(0.105)	0.088	0.144
144	12.00	0.60	0.233	(0.104)	0.088	0.144
145	12.08	0.83	0.323	0.104 (0.123)		0.220
146	12.17	0.83	0.323	0.103 (0.123)		0.220
147	12.25	0.83	0.323	0.103 (0.123)		0.221
148	12.33	0.87	0.336	0.102 (0.128)		0.234

ONSITEPRE2410.out

149	12.42	0.87	0.336	0.102	(0.128)	0.235
150	12.50	0.87	0.336	0.101	(0.128)	0.235
151	12.58	0.93	0.362	0.101	(0.138)	0.262
152	12.67	0.93	0.362	0.100	(0.138)	0.262
153	12.75	0.93	0.362	0.100	(0.138)	0.263
154	12.83	0.97	0.375	0.099	(0.143)	0.276
155	12.92	0.97	0.375	0.099	(0.143)	0.277
156	13.00	0.97	0.375	0.098	(0.143)	0.277
157	13.08	1.13	0.440	0.098	(0.167)	0.342
158	13.17	1.13	0.440	0.097	(0.167)	0.343
159	13.25	1.13	0.440	0.097	(0.167)	0.343
160	13.33	1.13	0.440	0.096	(0.167)	0.344
161	13.42	1.13	0.440	0.096	(0.167)	0.344
162	13.50	1.13	0.440	0.095	(0.167)	0.345
163	13.58	0.77	0.298	0.095	(0.113)	0.203
164	13.67	0.77	0.298	0.094	(0.113)	0.203
165	13.75	0.77	0.298	0.094	(0.113)	0.204
166	13.83	0.77	0.298	0.093	(0.113)	0.204
167	13.92	0.77	0.298	0.093	(0.113)	0.205
168	14.00	0.77	0.298	0.092	(0.113)	0.205
169	14.08	0.90	0.349	0.092	(0.133)	0.258
170	14.17	0.90	0.349	0.091	(0.133)	0.258
171	14.25	0.90	0.349	0.091	(0.133)	0.258
172	14.33	0.87	0.336	0.090	(0.128)	0.246
173	14.42	0.87	0.336	0.090	(0.128)	0.246
174	14.50	0.87	0.336	0.089	(0.128)	0.247
175	14.58	0.87	0.336	0.089	(0.128)	0.247
176	14.67	0.87	0.336	0.089	(0.128)	0.248
177	14.75	0.87	0.336	0.088	(0.128)	0.248
178	14.83	0.83	0.323	0.088	(0.123)	0.236
179	14.92	0.83	0.323	0.087	(0.123)	0.236
180	15.00	0.83	0.323	0.087	(0.123)	0.237
181	15.08	0.80	0.310	0.086	(0.118)	0.224
182	15.17	0.80	0.310	0.086	(0.118)	0.225
183	15.25	0.80	0.310	0.085	(0.118)	0.225
184	15.33	0.77	0.298	0.085	(0.113)	0.213
185	15.42	0.77	0.298	0.085	(0.113)	0.213
186	15.50	0.77	0.298	0.084	(0.113)	0.213
187	15.58	0.63	0.246	0.084	(0.093)	0.162
188	15.67	0.63	0.246	0.083	(0.093)	0.163
189	15.75	0.63	0.246	0.083	(0.093)	0.163
190	15.83	0.63	0.246	0.082	(0.093)	0.163
191	15.92	0.63	0.246	0.082	(0.093)	0.164
192	16.00	0.63	0.246	0.082	(0.093)	0.164
193	16.08	0.13	0.052	(0.081)	0.020	0.032
194	16.17	0.13	0.052	(0.081)	0.020	0.032
195	16.25	0.13	0.052	(0.080)	0.020	0.032
196	16.33	0.13	0.052	(0.080)	0.020	0.032
197	16.42	0.13	0.052	(0.079)	0.020	0.032
198	16.50	0.13	0.052	(0.079)	0.020	0.032
199	16.58	0.10	0.039	(0.079)	0.015	0.024
200	16.67	0.10	0.039	(0.078)	0.015	0.024
201	16.75	0.10	0.039	(0.078)	0.015	0.024
202	16.83	0.10	0.039	(0.077)	0.015	0.024
203	16.92	0.10	0.039	(0.077)	0.015	0.024
204	17.00	0.10	0.039	(0.077)	0.015	0.024
205	17.08	0.17	0.065	(0.076)	0.025	0.040
206	17.17	0.17	0.065	(0.076)	0.025	0.040
207	17.25	0.17	0.065	(0.076)	0.025	0.040
208	17.33	0.17	0.065	(0.075)	0.025	0.040
209	17.42	0.17	0.065	(0.075)	0.025	0.040
210	17.50	0.17	0.065	(0.074)	0.025	0.040
211	17.58	0.17	0.065	(0.074)	0.025	0.040
212	17.67	0.17	0.065	(0.074)	0.025	0.040
213	17.75	0.17	0.065	(0.073)	0.025	0.040
214	17.83	0.13	0.052	(0.073)	0.020	0.032
215	17.92	0.13	0.052	(0.073)	0.020	0.032
216	18.00	0.13	0.052	(0.072)	0.020	0.032
217	18.08	0.13	0.052	(0.072)	0.020	0.032
218	18.17	0.13	0.052	(0.072)	0.020	0.032
219	18.25	0.13	0.052	(0.071)	0.020	0.032
220	18.33	0.13	0.052	(0.071)	0.020	0.032
221	18.42	0.13	0.052	(0.070)	0.020	0.032
222	18.50	0.13	0.052	(0.070)	0.020	0.032
223	18.58	0.10	0.039	(0.070)	0.015	0.024
224	18.67	0.10	0.039	(0.069)	0.015	0.024
225	18.75	0.10	0.039	(0.069)	0.015	0.024
226	18.83	0.07	0.026	(0.069)	0.010	0.016
227	18.92	0.07	0.026	(0.068)	0.010	0.016
228	19.00	0.07	0.026	(0.068)	0.010	0.016
229	19.08	0.10	0.039	(0.068)	0.015	0.024
230	19.17	0.10	0.039	(0.068)	0.015	0.024
231	19.25	0.10	0.039	(0.067)	0.015	0.024
232	19.33	0.13	0.052	(0.067)	0.020	0.032

0+40	0.0064	0.15	Q
0+45	0.0074	0.15	Q
0+50	0.0085	0.17	Q
0+55	0.0098	0.19	Q
1+ 0	0.0112	0.19	Q
1+ 5	0.0123	0.17	Q
1+10	0.0134	0.15	Q
1+15	0.0144	0.15	Q
1+20	0.0154	0.15	Q
1+25	0.0164	0.15	Q
1+30	0.0174	0.15	Q
1+35	0.0184	0.15	Q
1+40	0.0194	0.15	Q
1+45	0.0204	0.15	Q
1+50	0.0216	0.17	Q
1+55	0.0229	0.19	Q
2+ 0	0.0242	0.19	Q
2+ 5	0.0255	0.19	Q
2+10	0.0269	0.19	QV
2+15	0.0282	0.19	QV
2+20	0.0296	0.19	QV
2+25	0.0309	0.19	QV
2+30	0.0322	0.19	QV
2+35	0.0337	0.22	QV
2+40	0.0354	0.24	QV
2+45	0.0370	0.24	QV
2+50	0.0387	0.24	QV
2+55	0.0404	0.24	QV
3+ 0	0.0420	0.24	QV
3+ 5	0.0437	0.24	QV
3+10	0.0454	0.24	QV
3+15	0.0470	0.24	QV
3+20	0.0487	0.24	QV
3+25	0.0504	0.24	QV
3+30	0.0521	0.24	QV
3+35	0.0537	0.24	Q V
3+40	0.0554	0.24	Q V
3+45	0.0571	0.24	Q V
3+50	0.0589	0.27	QV
3+55	0.0609	0.29	QV
4+ 0	0.0629	0.29	QV
4+ 5	0.0649	0.29	QV
4+10	0.0669	0.29	QV
4+15	0.0689	0.29	QV
4+20	0.0711	0.31	QV
4+25	0.0734	0.33	QV
4+30	0.0757	0.34	QV
4+35	0.0780	0.34	QV
4+40	0.0804	0.34	Q V
4+45	0.0827	0.34	Q V
4+50	0.0852	0.36	Q V
4+55	0.0879	0.38	Q V
5+ 0	0.0905	0.39	Q V
5+ 5	0.0929	0.34	Q V
5+10	0.0949	0.30	Q V
5+15	0.0970	0.29	Q V
5+20	0.0991	0.31	Q V
5+25	0.1014	0.33	Q V
5+30	0.1038	0.34	Q V
5+35	0.1063	0.36	Q V
5+40	0.1089	0.38	Q V
5+45	0.1116	0.39	Q V
5+50	0.1142	0.39	Q V
5+55	0.1169	0.39	Q V
6+ 0	0.1196	0.39	Q V
6+ 5	0.1224	0.41	Q V
6+10	0.1254	0.43	Q V
6+15	0.1284	0.44	Q V
6+20	0.1314	0.44	Q V
6+25	0.1344	0.44	Q V
6+30	0.1374	0.44	Q V
6+35	0.1406	0.46	Q V
6+40	0.1439	0.48	Q V
6+45	0.1472	0.48	Q V
6+50	0.1506	0.49	Q V
6+55	0.1539	0.49	Q V
7+ 0	0.1573	0.49	Q V
7+ 5	0.1606	0.49	Q V
7+10	0.1639	0.49	Q V
7+15	0.1673	0.49	Q V
7+20	0.1708	0.51	Q V
7+25	0.1744	0.53	Q V
7+30	0.1781	0.53	Q V
7+35	0.1819	0.56	Q V

7+40	0.1859	0.58	Q	V		
7+45	0.1899	0.58	Q	V		
7+50	0.1941	0.61	Q	V		
7+55	0.1984	0.63	Q	V		
8+ 0	0.2027	0.63	Q	V		
8+ 5	0.2074	0.68	Q	V		
8+10	0.2123	0.72	Q	V		
8+15	0.2173	0.73	Q	V		
8+20	0.2224	0.73	Q	V		
8+25	0.2274	0.73	Q	V		
8+30	0.2324	0.73	Q	V		
8+35	0.2376	0.75	Q	V		
8+40	0.2429	0.77	Q	V		
8+45	0.2482	0.78	Q	V		
8+50	0.2537	0.80	Q	V		
8+55	0.2594	0.82	Q	V		
9+ 0	0.2650	0.82	Q	V		
9+ 5	0.2710	0.87	Q	V		
9+10	0.2773	0.91	Q	V		
9+15	0.2837	0.92	Q	V		
9+20	0.2902	0.95	Q	V		
9+25	0.2968	0.97	Q	V		
9+30	0.3035	0.97	Q	V		
9+35	0.3103	0.99	Q	V		
9+40	0.3173	1.01	Q	V		
9+45	0.3243	1.02	Q	V		
9+50	0.3315	1.04	Q	V		
9+55	0.3388	1.06	Q	V		
10+ 0	0.3462	1.07	Q	V		
10+ 5	0.3524	0.90	Q	V		
10+10	0.3576	0.76	Q	V		
10+15	0.3627	0.74	Q	V		
10+20	0.3677	0.73	Q	V		
10+25	0.3727	0.73	Q	V		
10+30	0.3778	0.73	Q	V		
10+35	0.3836	0.85	Q	V		
10+40	0.3901	0.95	Q	V		
10+45	0.3967	0.96	Q	V		
10+50	0.4034	0.97	Q	V		
10+55	0.4101	0.97	Q	V		
11+ 0	0.4168	0.97	Q	V		
11+ 5	0.4233	0.95	Q	V		
11+10	0.4297	0.93	Q	V		
11+15	0.4361	0.92	Q	V		
11+20	0.4424	0.92	Q	V		
11+25	0.4488	0.92	Q	V		
11+30	0.4551	0.92	Q	V		
11+35	0.4611	0.87	Q	V		
11+40	0.4669	0.83	Q	V		
11+45	0.4726	0.83	Q	V		
11+50	0.4784	0.85	Q	V		
11+55	0.4844	0.87	Q	V		
12+ 0	0.4904	0.87	Q	V		
12+ 5	0.4979	1.10	Q	V		
12+10	0.5068	1.28	Q	V		
12+15	0.5159	1.32	Q	V		
12+20	0.5254	1.37	Q	V		
12+25	0.5351	1.41	Q	V		
12+30	0.5448	1.42	Q	V		
12+35	0.5552	1.50	Q	V		
12+40	0.5660	1.57	Q	V		
12+45	0.5769	1.58	Q	V		
12+50	0.5881	1.63	Q	V		
12+55	0.5996	1.66	Q	V		
13+ 0	0.6111	1.67	Q	V		
13+ 5	0.6239	1.87	Q	V		
13+10	0.6379	2.03	Q	V		
13+15	0.6521	2.06	Q	V		
13+20	0.6665	2.08	Q	V		
13+25	0.6808	2.08	Q	V		
13+30	0.6951	2.08	Q	V		
13+35	0.7066	1.67	Q	V		
13+40	0.7157	1.32	Q	V		
13+45	0.7243	1.25	Q	V		
13+50	0.7328	1.23	Q	V		
13+55	0.7414	1.24	Q	V		
14+ 0	0.7499	1.24	Q	V		
14+ 5	0.7595	1.40	Q	V		
14+10	0.7700	1.53	Q	V		
14+15	0.7807	1.55	Q	V		
14+20	0.7912	1.53	Q	V		
14+25	0.8015	1.50	Q	V		
14+30	0.8118	1.49	Q	V		
14+35	0.8221	1.49	Q	V		

14+40	0.8324	1.50			V
14+45	0.8428	1.50			V
14+50	0.8529	1.46			V
14+55	0.8628	1.44			V
15+ 0	0.8726	1.43			V
15+ 5	0.8822	1.39			V
15+10	0.8916	1.37			V
15+15	0.9010	1.36			V
15+20	0.9101	1.32			V
15+25	0.9191	1.30			V
15+30	0.9279	1.29			V
15+35	0.9358	1.14			V
15+40	0.9428	1.01			V
15+45	0.9496	0.99			V
15+50	0.9564	0.99			V
15+55	0.9632	0.99			V
16+ 0	0.9701	0.99			V
16+ 5	0.9742	0.60			V
16+10	0.9761	0.28			V
16+15	0.9776	0.22			V
16+20	0.9790	0.19	Q		V
16+25	0.9803	0.19	Q		V
16+30	0.9816	0.19	Q		V
16+35	0.9828	0.17	Q		V
16+40	0.9838	0.15	Q		V
16+45	0.9849	0.15	Q		V
16+50	0.9859	0.15	Q		V
16+55	0.9869	0.15	Q		V
17+ 0	0.9879	0.15	Q		V
17+ 5	0.9892	0.19	Q		V
17+10	0.9908	0.23	Q		V
17+15	0.9924	0.24	Q		V
17+20	0.9941	0.24	Q		V
17+25	0.9958	0.24	Q		V
17+30	0.9975	0.24	Q		V
17+35	0.9991	0.24	Q		V
17+40	1.0008	0.24	Q		V
17+45	1.0025	0.24	Q		V
17+50	1.0040	0.22	Q		V
17+55	1.0053	0.20	Q		V
18+ 0	1.0067	0.20	Q		V
18+ 5	1.0080	0.19	Q		V
18+10	1.0094	0.19	Q		V
18+15	1.0107	0.19	Q		V
18+20	1.0120	0.19	Q		V
18+25	1.0134	0.19	Q		V
18+30	1.0147	0.19	Q		V
18+35	1.0159	0.17	Q		V
18+40	1.0169	0.15	Q		V
18+45	1.0179	0.15	Q		V
18+50	1.0188	0.12	Q		V
18+55	1.0195	0.10	Q		V
19+ 0	1.0202	0.10	Q		V
19+ 5	1.0210	0.12	Q		V
19+10	1.0220	0.14	Q		V
19+15	1.0229	0.14	Q		V
19+20	1.0241	0.17	Q		V
19+25	1.0254	0.19	Q		V
19+30	1.0267	0.19	Q		V
19+35	1.0279	0.17	Q		V
19+40	1.0290	0.15	Q		V
19+45	1.0300	0.15	Q		V
19+50	1.0308	0.12	Q		V
19+55	1.0315	0.10	Q		V
20+ 0	1.0322	0.10	Q		V
20+ 5	1.0330	0.12	Q		V
20+10	1.0340	0.14	Q		V
20+15	1.0350	0.14	Q		V
20+20	1.0360	0.15	Q		V
20+25	1.0370	0.15	Q		V
20+30	1.0380	0.15	Q		V
20+35	1.0390	0.15	Q		V
20+40	1.0400	0.15	Q		V
20+45	1.0410	0.15	Q		V
20+50	1.0418	0.12	Q		V
20+55	1.0425	0.10	Q		V
21+ 0	1.0432	0.10	Q		V
21+ 5	1.0440	0.12	Q		V
21+10	1.0450	0.14	Q		V
21+15	1.0460	0.14	Q		V
21+20	1.0468	0.12	Q		V
21+25	1.0476	0.10	Q		V
21+30	1.0482	0.10	Q		V
21+35	1.0491	0.12	Q		V

ONSITEPRE2410.out

21+40	1.0500	0.14	Q			V
21+45	1.0510	0.14	Q			V
21+50	1.0519	0.12	Q			V
21+55	1.0526	0.10	Q			V
22+ 0	1.0532	0.10	Q			V
22+ 5	1.0541	0.12	Q			V
22+10	1.0550	0.14	Q			V
22+15	1.0560	0.14	Q			V
22+20	1.0569	0.12	Q			V
22+25	1.0576	0.10	Q			V
22+30	1.0583	0.10	Q			V
22+35	1.0589	0.10	Q			V
22+40	1.0596	0.10	Q			V
22+45	1.0603	0.10	Q			V
22+50	1.0609	0.10	Q			V
22+55	1.0616	0.10	Q			V
23+ 0	1.0623	0.10	Q			V
23+ 5	1.0629	0.10	Q			V
23+10	1.0636	0.10	Q			V
23+15	1.0643	0.10	Q			V
23+20	1.0649	0.10	Q			V
23+25	1.0656	0.10	Q			V
23+30	1.0663	0.10	Q			V
23+35	1.0669	0.10	Q			V
23+40	1.0676	0.10	Q			V
23+45	1.0683	0.10	Q			V
23+50	1.0689	0.10	Q			V
23+55	1.0696	0.10	Q			V
24+ 0	1.0703	0.10	Q			V
24+ 5	1.0706	0.05	Q			V
24+10	1.0707	0.01	Q			V
24+15	1.0707	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPRE24100.out

 +-----

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 EXISTING CONDITION H-11.1 TRIBUTARY, 100-YEAR 24-HOUR
 FN: ONSITEPRE24100.OUT- TSW

 Drainage Area = 6.00(Ac.) = 0.009 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 6.00(Ac.) = 0.009 Sq. Mi.
 Length along longest watercourse = 768.00(Ft.)
 Length along longest watercourse measured to centroid = 255.00(Ft.)
 Length along longest watercourse = 0.145 Mi.
 Length along longest watercourse measured to centroid = 0.048 Mi.
 Difference in elevation = 6.20(Ft.)
 Slope along watercourse = 42.6250 Ft./Mi.
 Average Manning's 'N' = 0.020
 Lag time = 0.036 Hr.
 Lag time = 2.15 Min.
 25% of lag time = 0.54 Min.
 40% of lag time = 0.86 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
6.00	2.00	12.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
6.00	5.00	30.00

STORM EVENT (YEAR) = 100.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 5.000(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 5.000(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 6.000 78.00 0.650
 Total Area Entered = 6.00(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
78.0	78.0	0.268	0.650	0.111	1.000	0.111
						Sum (F) =
						0.111

Area averaged mean soil loss (F) (In/Hr) = 0.111
 Minimum soil loss rate ((In/Hr)) = 0.056
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.380

ONSITEPRE24100.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	233.074	48.590	2.938
2	0.167	466.147	41.127	2.487
3	0.250	699.221	7.586	0.459
4	0.333	932.294	2.697	0.163
Sum = 100.000			Sum=	6.047

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.040	(0.197)	0.015	0.025
2	0.17	0.07	0.040	(0.196)	0.015	0.025
3	0.25	0.07	0.040	(0.195)	0.015	0.025
4	0.33	0.10	0.060	(0.195)	0.023	0.037
5	0.42	0.10	0.060	(0.194)	0.023	0.037
6	0.50	0.10	0.060	(0.193)	0.023	0.037
7	0.58	0.10	0.060	(0.192)	0.023	0.037
8	0.67	0.10	0.060	(0.192)	0.023	0.037
9	0.75	0.10	0.060	(0.191)	0.023	0.037
10	0.83	0.13	0.080	(0.190)	0.030	0.050
11	0.92	0.13	0.080	(0.189)	0.030	0.050
12	1.00	0.13	0.080	(0.189)	0.030	0.050
13	1.08	0.10	0.060	(0.188)	0.023	0.037
14	1.17	0.10	0.060	(0.187)	0.023	0.037
15	1.25	0.10	0.060	(0.186)	0.023	0.037
16	1.33	0.10	0.060	(0.186)	0.023	0.037
17	1.42	0.10	0.060	(0.185)	0.023	0.037
18	1.50	0.10	0.060	(0.184)	0.023	0.037
19	1.58	0.10	0.060	(0.183)	0.023	0.037
20	1.67	0.10	0.060	(0.183)	0.023	0.037
21	1.75	0.10	0.060	(0.182)	0.023	0.037
22	1.83	0.13	0.080	(0.181)	0.030	0.050
23	1.92	0.13	0.080	(0.180)	0.030	0.050
24	2.00	0.13	0.080	(0.180)	0.030	0.050
25	2.08	0.13	0.080	(0.179)	0.030	0.050
26	2.17	0.13	0.080	(0.178)	0.030	0.050
27	2.25	0.13	0.080	(0.178)	0.030	0.050
28	2.33	0.13	0.080	(0.177)	0.030	0.050
29	2.42	0.13	0.080	(0.176)	0.030	0.050
30	2.50	0.13	0.080	(0.175)	0.030	0.050
31	2.58	0.17	0.100	(0.175)	0.038	0.062
32	2.67	0.17	0.100	(0.174)	0.038	0.062
33	2.75	0.17	0.100	(0.173)	0.038	0.062
34	2.83	0.17	0.100	(0.173)	0.038	0.062
35	2.92	0.17	0.100	(0.172)	0.038	0.062
36	3.00	0.17	0.100	(0.171)	0.038	0.062
37	3.08	0.17	0.100	(0.170)	0.038	0.062
38	3.17	0.17	0.100	(0.170)	0.038	0.062
39	3.25	0.17	0.100	(0.169)	0.038	0.062
40	3.33	0.17	0.100	(0.168)	0.038	0.062
41	3.42	0.17	0.100	(0.168)	0.038	0.062
42	3.50	0.17	0.100	(0.167)	0.038	0.062
43	3.58	0.17	0.100	(0.166)	0.038	0.062
44	3.67	0.17	0.100	(0.165)	0.038	0.062
45	3.75	0.17	0.100	(0.165)	0.038	0.062
46	3.83	0.20	0.120	(0.164)	0.046	0.074
47	3.92	0.20	0.120	(0.163)	0.046	0.074
48	4.00	0.20	0.120	(0.163)	0.046	0.074
49	4.08	0.20	0.120	(0.162)	0.046	0.074
50	4.17	0.20	0.120	(0.161)	0.046	0.074
51	4.25	0.20	0.120	(0.161)	0.046	0.074
52	4.33	0.23	0.140	(0.160)	0.053	0.087
53	4.42	0.23	0.140	(0.159)	0.053	0.087
54	4.50	0.23	0.140	(0.159)	0.053	0.087
55	4.58	0.23	0.140	(0.158)	0.053	0.087
56	4.67	0.23	0.140	(0.157)	0.053	0.087
57	4.75	0.23	0.140	(0.157)	0.053	0.087
58	4.83	0.27	0.160	(0.156)	0.061	0.099
59	4.92	0.27	0.160	(0.155)	0.061	0.099
60	5.00	0.27	0.160	(0.155)	0.061	0.099
61	5.08	0.20	0.120	(0.154)	0.046	0.074
62	5.17	0.20	0.120	(0.153)	0.046	0.074
63	5.25	0.20	0.120	(0.153)	0.046	0.074
64	5.33	0.23	0.140	(0.152)	0.053	0.087

ONSITEPRE24100.out

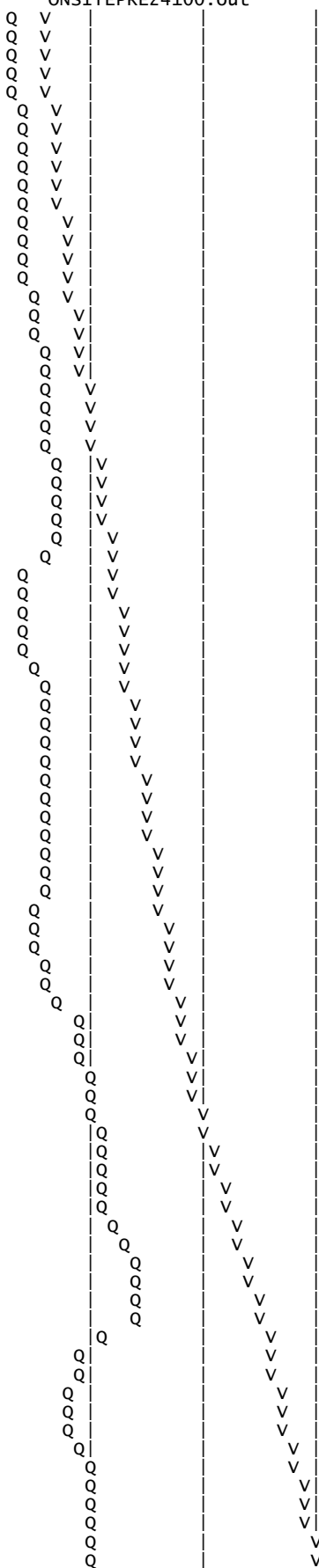
65	5.42	0.23	0.140	(0.151)	0.053	0.087
66	5.50	0.23	0.140	(0.151)	0.053	0.087
67	5.58	0.27	0.160	(0.150)	0.061	0.099
68	5.67	0.27	0.160	(0.149)	0.061	0.099
69	5.75	0.27	0.160	(0.149)	0.061	0.099
70	5.83	0.27	0.160	(0.148)	0.061	0.099
71	5.92	0.27	0.160	(0.147)	0.061	0.099
72	6.00	0.27	0.160	(0.147)	0.061	0.099
73	6.08	0.30	0.180	(0.146)	0.068	0.112
74	6.17	0.30	0.180	(0.145)	0.068	0.112
75	6.25	0.30	0.180	(0.145)	0.068	0.112
76	6.33	0.30	0.180	(0.144)	0.068	0.112
77	6.42	0.30	0.180	(0.143)	0.068	0.112
78	6.50	0.30	0.180	(0.143)	0.068	0.112
79	6.58	0.33	0.200	(0.142)	0.076	0.124
80	6.67	0.33	0.200	(0.141)	0.076	0.124
81	6.75	0.33	0.200	(0.141)	0.076	0.124
82	6.83	0.33	0.200	(0.140)	0.076	0.124
83	6.92	0.33	0.200	(0.140)	0.076	0.124
84	7.00	0.33	0.200	(0.139)	0.076	0.124
85	7.08	0.33	0.200	(0.138)	0.076	0.124
86	7.17	0.33	0.200	(0.138)	0.076	0.124
87	7.25	0.33	0.200	(0.137)	0.076	0.124
88	7.33	0.37	0.220	(0.136)	0.084	0.136
89	7.42	0.37	0.220	(0.136)	0.084	0.136
90	7.50	0.37	0.220	(0.135)	0.084	0.136
91	7.58	0.40	0.240	(0.135)	0.091	0.149
92	7.67	0.40	0.240	(0.134)	0.091	0.149
93	7.75	0.40	0.240	(0.133)	0.091	0.149
94	7.83	0.43	0.260	(0.133)	0.099	0.161
95	7.92	0.43	0.260	(0.132)	0.099	0.161
96	8.00	0.43	0.260	(0.131)	0.099	0.161
97	8.08	0.50	0.300	(0.131)	0.114	0.186
98	8.17	0.50	0.300	(0.130)	0.114	0.186
99	8.25	0.50	0.300	(0.130)	0.114	0.186
100	8.33	0.50	0.300	(0.129)	0.114	0.186
101	8.42	0.50	0.300	(0.128)	0.114	0.186
102	8.50	0.50	0.300	(0.128)	0.114	0.186
103	8.58	0.53	0.320	(0.127)	0.122	0.198
104	8.67	0.53	0.320	(0.127)	0.122	0.198
105	8.75	0.53	0.320	(0.126)	0.122	0.198
106	8.83	0.57	0.340	0.125 (0.129)	0.125	0.215
107	8.92	0.57	0.340	0.125 (0.129)	0.125	0.215
108	9.00	0.57	0.340	0.124 (0.129)	0.124	0.216
109	9.08	0.63	0.380	0.124 (0.144)	0.124	0.256
110	9.17	0.63	0.380	0.123 (0.144)	0.123	0.257
111	9.25	0.63	0.380	0.122 (0.144)	0.122	0.258
112	9.33	0.67	0.400	0.122 (0.152)	0.122	0.278
113	9.42	0.67	0.400	0.121 (0.152)	0.121	0.279
114	9.50	0.67	0.400	0.121 (0.152)	0.121	0.279
115	9.58	0.70	0.420	0.120 (0.160)	0.120	0.300
116	9.67	0.70	0.420	0.120 (0.160)	0.120	0.300
117	9.75	0.70	0.420	0.119 (0.160)	0.119	0.301
118	9.83	0.73	0.440	0.118 (0.167)	0.118	0.322
119	9.92	0.73	0.440	0.118 (0.167)	0.118	0.322
120	10.00	0.73	0.440	0.117 (0.167)	0.117	0.323
121	10.08	0.50	0.300	(0.117)	0.114	0.186
122	10.17	0.50	0.300	(0.116)	0.114	0.186
123	10.25	0.50	0.300	(0.116)	0.114	0.186
124	10.33	0.50	0.300	(0.115)	0.114	0.186
125	10.42	0.50	0.300	(0.114)	0.114	0.186
126	10.50	0.50	0.300	0.114 (0.114)	0.114	0.186
127	10.58	0.67	0.400	0.113 (0.152)	0.113	0.287
128	10.67	0.67	0.400	0.113 (0.152)	0.113	0.287
129	10.75	0.67	0.400	0.112 (0.152)	0.112	0.288
130	10.83	0.67	0.400	0.112 (0.152)	0.112	0.288
131	10.92	0.67	0.400	0.111 (0.152)	0.111	0.289
132	11.00	0.67	0.400	0.111 (0.152)	0.111	0.289
133	11.08	0.63	0.380	0.110 (0.144)	0.110	0.270
134	11.17	0.63	0.380	0.110 (0.144)	0.110	0.270
135	11.25	0.63	0.380	0.109 (0.144)	0.109	0.271
136	11.33	0.63	0.380	0.108 (0.144)	0.108	0.272
137	11.42	0.63	0.380	0.108 (0.144)	0.108	0.272
138	11.50	0.63	0.380	0.107 (0.144)	0.107	0.273
139	11.58	0.57	0.340	0.107 (0.129)	0.107	0.233
140	11.67	0.57	0.340	0.106 (0.129)	0.106	0.234
141	11.75	0.57	0.340	0.106 (0.129)	0.106	0.234
142	11.83	0.60	0.360	0.105 (0.137)	0.105	0.255
143	11.92	0.60	0.360	0.105 (0.137)	0.105	0.255
144	12.00	0.60	0.360	0.104 (0.137)	0.104	0.256
145	12.08	0.83	0.500	0.104 (0.190)	0.104	0.396
146	12.17	0.83	0.500	0.103 (0.190)	0.103	0.397
147	12.25	0.83	0.500	0.103 (0.190)	0.103	0.397
148	12.33	0.87	0.520	0.102 (0.198)	0.102	0.418

ONSITEPRE24100.out

149	12.42	0.87	0.520	0.102	(0.198)	0.418
150	12.50	0.87	0.520	0.101	(0.198)	0.419
151	12.58	0.93	0.560	0.101	(0.213)	0.459
152	12.67	0.93	0.560	0.100	(0.213)	0.460
153	12.75	0.93	0.560	0.100	(0.213)	0.460
154	12.83	0.97	0.580	0.099	(0.220)	0.481
155	12.92	0.97	0.580	0.099	(0.220)	0.481
156	13.00	0.97	0.580	0.098	(0.220)	0.482
157	13.08	1.13	0.680	0.098	(0.258)	0.582
158	13.17	1.13	0.680	0.097	(0.258)	0.583
159	13.25	1.13	0.680	0.097	(0.258)	0.583
160	13.33	1.13	0.680	0.096	(0.258)	0.584
161	13.42	1.13	0.680	0.096	(0.258)	0.584
162	13.50	1.13	0.680	0.095	(0.258)	0.585
163	13.58	0.77	0.460	0.095	(0.175)	0.365
164	13.67	0.77	0.460	0.094	(0.175)	0.366
165	13.75	0.77	0.460	0.094	(0.175)	0.366
166	13.83	0.77	0.460	0.093	(0.175)	0.367
167	13.92	0.77	0.460	0.093	(0.175)	0.367
168	14.00	0.77	0.460	0.092	(0.175)	0.368
169	14.08	0.90	0.540	0.092	(0.205)	0.448
170	14.17	0.90	0.540	0.091	(0.205)	0.449
171	14.25	0.90	0.540	0.091	(0.205)	0.449
172	14.33	0.87	0.520	0.090	(0.198)	0.430
173	14.42	0.87	0.520	0.090	(0.198)	0.430
174	14.50	0.87	0.520	0.089	(0.198)	0.431
175	14.58	0.87	0.520	0.089	(0.198)	0.431
176	14.67	0.87	0.520	0.089	(0.198)	0.431
177	14.75	0.87	0.520	0.088	(0.198)	0.432
178	14.83	0.83	0.500	0.088	(0.190)	0.412
179	14.92	0.83	0.500	0.087	(0.190)	0.413
180	15.00	0.83	0.500	0.087	(0.190)	0.413
181	15.08	0.80	0.480	0.086	(0.182)	0.394
182	15.17	0.80	0.480	0.086	(0.182)	0.394
183	15.25	0.80	0.480	0.085	(0.182)	0.395
184	15.33	0.77	0.460	0.085	(0.175)	0.375
185	15.42	0.77	0.460	0.085	(0.175)	0.375
186	15.50	0.77	0.460	0.084	(0.175)	0.376
187	15.58	0.63	0.380	0.084	(0.144)	0.296
188	15.67	0.63	0.380	0.083	(0.144)	0.297
189	15.75	0.63	0.380	0.083	(0.144)	0.297
190	15.83	0.63	0.380	0.082	(0.144)	0.298
191	15.92	0.63	0.380	0.082	(0.144)	0.298
192	16.00	0.63	0.380	0.082	(0.144)	0.298
193	16.08	0.13	0.080	(0.081)	0.030	0.050
194	16.17	0.13	0.080	(0.081)	0.030	0.050
195	16.25	0.13	0.080	(0.080)	0.030	0.050
196	16.33	0.13	0.080	(0.080)	0.030	0.050
197	16.42	0.13	0.080	(0.079)	0.030	0.050
198	16.50	0.13	0.080	(0.079)	0.030	0.050
199	16.58	0.10	0.060	(0.079)	0.023	0.037
200	16.67	0.10	0.060	(0.078)	0.023	0.037
201	16.75	0.10	0.060	(0.078)	0.023	0.037
202	16.83	0.10	0.060	(0.077)	0.023	0.037
203	16.92	0.10	0.060	(0.077)	0.023	0.037
204	17.00	0.10	0.060	(0.077)	0.023	0.037
205	17.08	0.17	0.100	(0.076)	0.038	0.062
206	17.17	0.17	0.100	(0.076)	0.038	0.062
207	17.25	0.17	0.100	(0.076)	0.038	0.062
208	17.33	0.17	0.100	(0.075)	0.038	0.062
209	17.42	0.17	0.100	(0.075)	0.038	0.062
210	17.50	0.17	0.100	(0.074)	0.038	0.062
211	17.58	0.17	0.100	(0.074)	0.038	0.062
212	17.67	0.17	0.100	(0.074)	0.038	0.062
213	17.75	0.17	0.100	(0.073)	0.038	0.062
214	17.83	0.13	0.080	(0.073)	0.030	0.050
215	17.92	0.13	0.080	(0.073)	0.030	0.050
216	18.00	0.13	0.080	(0.072)	0.030	0.050
217	18.08	0.13	0.080	(0.072)	0.030	0.050
218	18.17	0.13	0.080	(0.072)	0.030	0.050
219	18.25	0.13	0.080	(0.071)	0.030	0.050
220	18.33	0.13	0.080	(0.071)	0.030	0.050
221	18.42	0.13	0.080	(0.070)	0.030	0.050
222	18.50	0.13	0.080	(0.070)	0.030	0.050
223	18.58	0.10	0.060	(0.070)	0.023	0.037
224	18.67	0.10	0.060	(0.069)	0.023	0.037
225	18.75	0.10	0.060	(0.069)	0.023	0.037
226	18.83	0.07	0.040	(0.069)	0.015	0.025
227	18.92	0.07	0.040	(0.068)	0.015	0.025
228	19.00	0.07	0.040	(0.068)	0.015	0.025
229	19.08	0.10	0.060	(0.068)	0.023	0.037
230	19.17	0.10	0.060	(0.068)	0.023	0.037
231	19.25	0.10	0.060	(0.067)	0.023	0.037
232	19.33	0.13	0.080	(0.067)	0.030	0.050

0+40	0.0099	0.23	Q
0+45	0.0114	0.23	Q
0+50	0.0132	0.26	VQ
0+55	0.0152	0.29	VQ
1+ 0	0.0173	0.30	VQ
1+ 5	0.0191	0.26	VQ
1+10	0.0207	0.23	Q
1+15	0.0223	0.23	Q
1+20	0.0238	0.23	Q
1+25	0.0254	0.23	Q
1+30	0.0269	0.23	Q
1+35	0.0285	0.23	Q
1+40	0.0300	0.23	Q
1+45	0.0316	0.23	Q
1+50	0.0334	0.26	VQ
1+55	0.0354	0.29	VQ
2+ 0	0.0374	0.30	VQ
2+ 5	0.0395	0.30	VQ
2+10	0.0416	0.30	VQ
2+15	0.0436	0.30	VQ
2+20	0.0457	0.30	Q
2+25	0.0478	0.30	Q
2+30	0.0498	0.30	Q
2+35	0.0521	0.34	Q
2+40	0.0547	0.37	Q
2+45	0.0572	0.37	Q
2+50	0.0598	0.38	Q
2+55	0.0624	0.38	Q
3+ 0	0.0650	0.38	Q
3+ 5	0.0676	0.38	Q
3+10	0.0702	0.38	Q
3+15	0.0727	0.38	Q
3+20	0.0753	0.38	Q
3+25	0.0779	0.38	Q
3+30	0.0805	0.38	Q
3+35	0.0831	0.38	Q
3+40	0.0857	0.38	Q
3+45	0.0882	0.38	Q
3+50	0.0911	0.41	QV
3+55	0.0941	0.44	QV
4+ 0	0.0972	0.45	QV
4+ 5	0.1003	0.45	QV
4+10	0.1034	0.45	QV
4+15	0.1065	0.45	QV
4+20	0.1099	0.49	QV
4+25	0.1134	0.52	Q
4+30	0.1170	0.52	Q
4+35	0.1206	0.53	Q
4+40	0.1243	0.53	Q
4+45	0.1279	0.53	Q
4+50	0.1317	0.56	Q
4+55	0.1358	0.59	QV
5+ 0	0.1399	0.60	QV
5+ 5	0.1436	0.53	QV
5+10	0.1468	0.47	Q V
5+15	0.1499	0.45	Q V
5+20	0.1533	0.49	Q V
5+25	0.1568	0.52	QV
5+30	0.1604	0.52	QV
5+35	0.1643	0.56	QV
5+40	0.1684	0.59	QV
5+45	0.1725	0.60	QV
5+50	0.1766	0.60	QV
5+55	0.1808	0.60	Q V
6+ 0	0.1849	0.60	Q V
6+ 5	0.1893	0.64	Q V
6+10	0.1939	0.67	Q V
6+15	0.1985	0.67	Q V
6+20	0.2032	0.68	Q V
6+25	0.2078	0.68	Q V
6+30	0.2125	0.68	Q V
6+35	0.2174	0.71	Q V
6+40	0.2225	0.74	Q V
6+45	0.2276	0.75	Q V
6+50	0.2328	0.75	Q V
6+55	0.2380	0.75	Q V
7+ 0	0.2431	0.75	Q V
7+ 5	0.2483	0.75	Q V
7+10	0.2535	0.75	Q V
7+15	0.2586	0.75	Q V
7+20	0.2640	0.79	Q V
7+25	0.2697	0.82	Q V
7+30	0.2753	0.82	Q V
7+35	0.2813	0.86	Q V

7+40	0.2874	0.89
7+45	0.2936	0.90
7+50	0.3001	0.94
7+55	0.3067	0.97
8+ 0	0.3134	0.97
8+ 5	0.3206	1.05
8+10	0.3283	1.11
8+15	0.3360	1.12
8+20	0.3438	1.13
8+25	0.3515	1.13
8+30	0.3593	1.13
8+35	0.3673	1.16
8+40	0.3755	1.19
8+45	0.3837	1.20
8+50	0.3923	1.25
8+55	0.4012	1.29
9+ 0	0.4102	1.30
9+ 5	0.4200	1.42
9+10	0.4305	1.53
9+15	0.4412	1.55
9+20	0.4523	1.62
9+25	0.4638	1.67
9+30	0.4754	1.68
9+35	0.4875	1.75
9+40	0.4999	1.80
9+45	0.5124	1.82
9+50	0.5253	1.88
9+55	0.5387	1.93
10+ 0	0.5521	1.95
10+ 5	0.5627	1.55
10+10	0.5711	1.21
10+15	0.5790	1.15
10+20	0.5867	1.13
10+25	0.5945	1.13
10+30	0.6022	1.13
10+35	0.6120	1.42
10+40	0.6235	1.67
10+45	0.6354	1.72
10+50	0.6474	1.74
10+55	0.6594	1.75
11+ 0	0.6715	1.75
11+ 5	0.6831	1.69
11+10	0.6945	1.65
11+15	0.7058	1.64
11+20	0.7171	1.64
11+25	0.7284	1.64
11+30	0.7397	1.65
11+35	0.7503	1.53
11+40	0.7602	1.44
11+45	0.7700	1.42
11+50	0.7802	1.48
11+55	0.7907	1.53
12+ 0	0.8013	1.54
12+ 5	0.8148	1.96
12+10	0.8307	2.31
12+15	0.8471	2.38
12+20	0.8641	2.46
12+25	0.8814	2.52
12+30	0.8989	2.53
12+35	0.9171	2.65
12+40	0.9361	2.76
12+45	0.9552	2.78
12+50	0.9748	2.85
12+55	0.9948	2.90
13+ 0	1.0148	2.91
13+ 5	1.0369	3.21
13+10	1.0608	3.46
13+15	1.0850	3.51
13+20	1.1093	3.53
13+25	1.1336	3.53
13+30	1.1580	3.54
13+35	1.1779	2.89
13+40	1.1941	2.35
13+45	1.2096	2.25
13+50	1.2248	2.22
13+55	1.2401	2.22
14+ 0	1.2554	2.22
14+ 5	1.2724	2.46
14+10	1.2907	2.66
14+15	1.3093	2.70
14+20	1.3277	2.66
14+25	1.3457	2.61
14+30	1.3636	2.61
14+35	1.3815	2.61



14+40	1.3995	2.61	Q	V
14+45	1.4175	2.61	Q	V
14+50	1.4351	2.56	Q	V
14+55	1.4524	2.51	Q	V
15+ 0	1.4696	2.50	Q	V
15+ 5	1.4864	2.44	Q	V
15+10	1.5029	2.40	Q	V
15+15	1.5194	2.39	Q	V
15+20	1.5354	2.33	Q	V
15+25	1.5511	2.28	Q	V
15+30	1.5668	2.28	Q	V
15+35	1.5809	2.04	Q	V
15+40	1.5935	1.84	Q	V
15+45	1.6060	1.81	Q	V
15+50	1.6184	1.80	Q	V
15+55	1.6308	1.80	Q	V
16+ 0	1.6432	1.80	Q	V
16+ 5	1.6506	1.07	Q	V
16+10	1.6538	0.45	Q	V
16+15	1.6561	0.34	Q	V
16+20	1.6582	0.30	Q	V
16+25	1.6602	0.30	Q	V
16+30	1.6623	0.30	Q	V
16+35	1.6641	0.26	Q	V
16+40	1.6657	0.23	Q	V
16+45	1.6673	0.23	Q	V
16+50	1.6688	0.23	Q	V
16+55	1.6704	0.23	Q	V
17+ 0	1.6719	0.23	Q	V
17+ 5	1.6740	0.30	Q	V
17+10	1.6765	0.36	Q	V
17+15	1.6790	0.37	Q	V
17+20	1.6816	0.38	Q	V
17+25	1.6842	0.38	Q	V
17+30	1.6868	0.38	Q	V
17+35	1.6894	0.38	Q	V
17+40	1.6919	0.38	Q	V
17+45	1.6945	0.38	Q	V
17+50	1.6969	0.34	Q	V
17+55	1.6990	0.31	Q	V
18+ 0	1.7011	0.30	Q	V
18+ 5	1.7031	0.30	Q	V
18+10	1.7052	0.30	Q	V
18+15	1.7073	0.30	Q	V
18+20	1.7093	0.30	Q	V
18+25	1.7114	0.30	Q	V
18+30	1.7135	0.30	Q	V
18+35	1.7153	0.26	Q	V
18+40	1.7169	0.23	Q	V
18+45	1.7184	0.23	Q	V
18+50	1.7197	0.19	Q	V
18+55	1.7208	0.16	Q	V
19+ 0	1.7219	0.15	Q	V
19+ 5	1.7232	0.19	Q	V
19+10	1.7246	0.22	Q	V
19+15	1.7262	0.22	Q	V
19+20	1.7280	0.26	Q	V
19+25	1.7300	0.29	Q	V
19+30	1.7321	0.30	Q	V
19+35	1.7339	0.26	Q	V
19+40	1.7355	0.23	Q	V
19+45	1.7370	0.23	Q	V
19+50	1.7383	0.19	Q	V
19+55	1.7394	0.16	Q	V
20+ 0	1.7405	0.15	Q	V
20+ 5	1.7417	0.19	Q	V
20+10	1.7432	0.22	Q	V
20+15	1.7448	0.22	Q	V
20+20	1.7463	0.23	Q	V
20+25	1.7479	0.23	Q	V
20+30	1.7494	0.23	Q	V
20+35	1.7510	0.23	Q	V
20+40	1.7525	0.23	Q	V
20+45	1.7541	0.23	Q	V
20+50	1.7554	0.19	Q	V
20+55	1.7565	0.16	Q	V
21+ 0	1.7575	0.15	Q	V
21+ 5	1.7588	0.19	Q	V
21+10	1.7603	0.22	Q	V
21+15	1.7618	0.22	Q	V
21+20	1.7631	0.19	Q	V
21+25	1.7642	0.16	Q	V
21+30	1.7653	0.15	Q	V
21+35	1.7665	0.19	Q	V

ONSITEPRE24100.out

21+40	1.7680	0.22	Q	V
21+45	1.7696	0.22	Q	V
21+50	1.7709	0.19	Q	V
21+55	1.7720	0.16	Q	V
22+ 0	1.7730	0.15	Q	V
22+ 5	1.7743	0.19	Q	V
22+10	1.7758	0.22	Q	V
22+15	1.7773	0.22	Q	V
22+20	1.7786	0.19	Q	V
22+25	1.7797	0.16	Q	V
22+30	1.7808	0.15	Q	V
22+35	1.7818	0.15	Q	V
22+40	1.7828	0.15	Q	V
22+45	1.7839	0.15	Q	V
22+50	1.7849	0.15	Q	V
22+55	1.7859	0.15	Q	V
23+ 0	1.7870	0.15	Q	V
23+ 5	1.7880	0.15	Q	V
23+10	1.7890	0.15	Q	V
23+15	1.7901	0.15	Q	V
23+20	1.7911	0.15	Q	V
23+25	1.7921	0.15	Q	V
23+30	1.7932	0.15	Q	V
23+35	1.7942	0.15	Q	V
23+40	1.7952	0.15	Q	V
23+45	1.7963	0.15	Q	V
23+50	1.7973	0.15	Q	V
23+55	1.7983	0.15	Q	V
24+ 0	1.7994	0.15	Q	V
24+ 5	1.7999	0.08	Q	V
24+10	1.8000	0.02	Q	V
24+15	1.8000	0.00	Q	V

LATERAL H-12 TRIBUTARY AREA

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPRE242.out

 +-----+

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 EXISTING CONDITION H-12 TRIBUTARY, 2-YEAR 24-HOUR
 FN: ONSITEPRE242.OUT- TSW

 Drainage Area = 8.40(Ac.) = 0.013 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 8.40(Ac.) = 0.013 Sq. Mi.
 Length along longest watercourse = 765.00(Ft.)
 Length along longest watercourse measured to centroid = 421.00(Ft.)
 Length along longest watercourse = 0.145 Mi.
 Length along longest watercourse measured to centroid = 0.080 Mi.
 Difference in elevation = 7.60(Ft.)
 Slope along watercourse = 52.4549 Ft./Mi.
 Average Manning's 'N' = 0.030
 Lag time = 0.062 Hr.
 Lag time = 3.74 Min.
 25% of lag time = 0.93 Min.
 40% of lag time = 1.49 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
8.40	2.00	16.80

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
8.40	5.00	42.00

STORM EVENT (YEAR) = 2.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.000(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.000(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 8.400 78.00 0.000
 Total Area Entered = 8.40(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
78.0	60.6	0.464	0.000	0.464	1.000	0.464
						Sum (F) =
						0.464

Area averaged mean soil loss (F) (In/Hr) = 0.268
 Minimum soil loss rate ((In/Hr)) = 0.134
 (for 24 hour storm duration)
 Note: User entry of the f value
 Soil low loss rate (decimal) = 0.900

ONSITEPRE242.out
Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	133.792	29.047	2.459
2	0.167	267.583	48.085	4.071
3	0.250	401.375	12.228	1.035
4	0.333	535.166	5.433	0.460
5	0.417	668.958	2.964	0.251
6	0.500	802.750	2.243	0.190
		Sum = 100.000	Sum=	8.466

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.016	(0.474)	0.014	0.002
2	0.17	0.07	0.016	(0.473)	0.014	0.002
3	0.25	0.07	0.016	(0.471)	0.014	0.002
4	0.33	0.10	0.024	(0.469)	0.022	0.002
5	0.42	0.10	0.024	(0.467)	0.022	0.002
6	0.50	0.10	0.024	(0.465)	0.022	0.002
7	0.58	0.10	0.024	(0.463)	0.022	0.002
8	0.67	0.10	0.024	(0.462)	0.022	0.002
9	0.75	0.10	0.024	(0.460)	0.022	0.002
10	0.83	0.13	0.032	(0.458)	0.029	0.003
11	0.92	0.13	0.032	(0.456)	0.029	0.003
12	1.00	0.13	0.032	(0.454)	0.029	0.003
13	1.08	0.10	0.024	(0.453)	0.022	0.002
14	1.17	0.10	0.024	(0.451)	0.022	0.002
15	1.25	0.10	0.024	(0.449)	0.022	0.002
16	1.33	0.10	0.024	(0.447)	0.022	0.002
17	1.42	0.10	0.024	(0.445)	0.022	0.002
18	1.50	0.10	0.024	(0.444)	0.022	0.002
19	1.58	0.10	0.024	(0.442)	0.022	0.002
20	1.67	0.10	0.024	(0.440)	0.022	0.002
21	1.75	0.10	0.024	(0.438)	0.022	0.002
22	1.83	0.13	0.032	(0.437)	0.029	0.003
23	1.92	0.13	0.032	(0.435)	0.029	0.003
24	2.00	0.13	0.032	(0.433)	0.029	0.003
25	2.08	0.13	0.032	(0.431)	0.029	0.003
26	2.17	0.13	0.032	(0.430)	0.029	0.003
27	2.25	0.13	0.032	(0.428)	0.029	0.003
28	2.33	0.13	0.032	(0.426)	0.029	0.003
29	2.42	0.13	0.032	(0.424)	0.029	0.003
30	2.50	0.13	0.032	(0.423)	0.029	0.003
31	2.58	0.17	0.040	(0.421)	0.036	0.004
32	2.67	0.17	0.040	(0.419)	0.036	0.004
33	2.75	0.17	0.040	(0.417)	0.036	0.004
34	2.83	0.17	0.040	(0.416)	0.036	0.004
35	2.92	0.17	0.040	(0.414)	0.036	0.004
36	3.00	0.17	0.040	(0.412)	0.036	0.004
37	3.08	0.17	0.040	(0.411)	0.036	0.004
38	3.17	0.17	0.040	(0.409)	0.036	0.004
39	3.25	0.17	0.040	(0.407)	0.036	0.004
40	3.33	0.17	0.040	(0.405)	0.036	0.004
41	3.42	0.17	0.040	(0.404)	0.036	0.004
42	3.50	0.17	0.040	(0.402)	0.036	0.004
43	3.58	0.17	0.040	(0.400)	0.036	0.004
44	3.67	0.17	0.040	(0.399)	0.036	0.004
45	3.75	0.17	0.040	(0.397)	0.036	0.004
46	3.83	0.20	0.048	(0.395)	0.043	0.005
47	3.92	0.20	0.048	(0.394)	0.043	0.005
48	4.00	0.20	0.048	(0.392)	0.043	0.005
49	4.08	0.20	0.048	(0.390)	0.043	0.005
50	4.17	0.20	0.048	(0.389)	0.043	0.005
51	4.25	0.20	0.048	(0.387)	0.043	0.005
52	4.33	0.23	0.056	(0.385)	0.050	0.006
53	4.42	0.23	0.056	(0.384)	0.050	0.006
54	4.50	0.23	0.056	(0.382)	0.050	0.006
55	4.58	0.23	0.056	(0.381)	0.050	0.006
56	4.67	0.23	0.056	(0.379)	0.050	0.006
57	4.75	0.23	0.056	(0.377)	0.050	0.006
58	4.83	0.27	0.064	(0.376)	0.058	0.006
59	4.92	0.27	0.064	(0.374)	0.058	0.006
60	5.00	0.27	0.064	(0.372)	0.058	0.006
61	5.08	0.20	0.048	(0.371)	0.043	0.005

ONSITEPRE242.out

62	5.17	0.20	0.048	(0.369)	0.043	0.005
63	5.25	0.20	0.048	(0.368)	0.043	0.005
64	5.33	0.23	0.056	(0.366)	0.050	0.006
65	5.42	0.23	0.056	(0.364)	0.050	0.006
66	5.50	0.23	0.056	(0.363)	0.050	0.006
67	5.58	0.27	0.064	(0.361)	0.058	0.006
68	5.67	0.27	0.064	(0.360)	0.058	0.006
69	5.75	0.27	0.064	(0.358)	0.058	0.006
70	5.83	0.27	0.064	(0.356)	0.058	0.006
71	5.92	0.27	0.064	(0.355)	0.058	0.006
72	6.00	0.27	0.064	(0.353)	0.058	0.006
73	6.08	0.30	0.072	(0.352)	0.065	0.007
74	6.17	0.30	0.072	(0.350)	0.065	0.007
75	6.25	0.30	0.072	(0.349)	0.065	0.007
76	6.33	0.30	0.072	(0.347)	0.065	0.007
77	6.42	0.30	0.072	(0.345)	0.065	0.007
78	6.50	0.30	0.072	(0.344)	0.065	0.007
79	6.58	0.33	0.080	(0.342)	0.072	0.008
80	6.67	0.33	0.080	(0.341)	0.072	0.008
81	6.75	0.33	0.080	(0.339)	0.072	0.008
82	6.83	0.33	0.080	(0.338)	0.072	0.008
83	6.92	0.33	0.080	(0.336)	0.072	0.008
84	7.00	0.33	0.080	(0.335)	0.072	0.008
85	7.08	0.33	0.080	(0.333)	0.072	0.008
86	7.17	0.33	0.080	(0.332)	0.072	0.008
87	7.25	0.33	0.080	(0.330)	0.072	0.008
88	7.33	0.37	0.088	(0.329)	0.079	0.009
89	7.42	0.37	0.088	(0.327)	0.079	0.009
90	7.50	0.37	0.088	(0.326)	0.079	0.009
91	7.58	0.40	0.096	(0.324)	0.086	0.010
92	7.67	0.40	0.096	(0.323)	0.086	0.010
93	7.75	0.40	0.096	(0.321)	0.086	0.010
94	7.83	0.43	0.104	(0.320)	0.094	0.010
95	7.92	0.43	0.104	(0.318)	0.094	0.010
96	8.00	0.43	0.104	(0.317)	0.094	0.010
97	8.08	0.50	0.120	(0.315)	0.108	0.012
98	8.17	0.50	0.120	(0.314)	0.108	0.012
99	8.25	0.50	0.120	(0.312)	0.108	0.012
100	8.33	0.50	0.120	(0.311)	0.108	0.012
101	8.42	0.50	0.120	(0.309)	0.108	0.012
102	8.50	0.50	0.120	(0.308)	0.108	0.012
103	8.58	0.53	0.128	(0.306)	0.115	0.013
104	8.67	0.53	0.128	(0.305)	0.115	0.013
105	8.75	0.53	0.128	(0.304)	0.115	0.013
106	8.83	0.57	0.136	(0.302)	0.122	0.014
107	8.92	0.57	0.136	(0.301)	0.122	0.014
108	9.00	0.57	0.136	(0.299)	0.122	0.014
109	9.08	0.63	0.152	(0.298)	0.137	0.015
110	9.17	0.63	0.152	(0.296)	0.137	0.015
111	9.25	0.63	0.152	(0.295)	0.137	0.015
112	9.33	0.67	0.160	(0.294)	0.144	0.016
113	9.42	0.67	0.160	(0.292)	0.144	0.016
114	9.50	0.67	0.160	(0.291)	0.144	0.016
115	9.58	0.70	0.168	(0.289)	0.151	0.017
116	9.67	0.70	0.168	(0.288)	0.151	0.017
117	9.75	0.70	0.168	(0.287)	0.151	0.017
118	9.83	0.73	0.176	(0.285)	0.158	0.018
119	9.92	0.73	0.176	(0.284)	0.158	0.018
120	10.00	0.73	0.176	(0.283)	0.158	0.018
121	10.08	0.50	0.120	(0.281)	0.108	0.012
122	10.17	0.50	0.120	(0.280)	0.108	0.012
123	10.25	0.50	0.120	(0.278)	0.108	0.012
124	10.33	0.50	0.120	(0.277)	0.108	0.012
125	10.42	0.50	0.120	(0.276)	0.108	0.012
126	10.50	0.50	0.120	(0.274)	0.108	0.012
127	10.58	0.67	0.160	(0.273)	0.144	0.016
128	10.67	0.67	0.160	(0.272)	0.144	0.016
129	10.75	0.67	0.160	(0.270)	0.144	0.016
130	10.83	0.67	0.160	(0.269)	0.144	0.016
131	10.92	0.67	0.160	(0.268)	0.144	0.016
132	11.00	0.67	0.160	(0.266)	0.144	0.016
133	11.08	0.63	0.152	(0.265)	0.137	0.015
134	11.17	0.63	0.152	(0.264)	0.137	0.015
135	11.25	0.63	0.152	(0.263)	0.137	0.015
136	11.33	0.63	0.152	(0.261)	0.137	0.015
137	11.42	0.63	0.152	(0.260)	0.137	0.015
138	11.50	0.63	0.152	(0.259)	0.137	0.015
139	11.58	0.57	0.136	(0.257)	0.122	0.014
140	11.67	0.57	0.136	(0.256)	0.122	0.014
141	11.75	0.57	0.136	(0.255)	0.122	0.014
142	11.83	0.60	0.144	(0.254)	0.130	0.014
143	11.92	0.60	0.144	(0.252)	0.130	0.014
144	12.00	0.60	0.144	(0.251)	0.130	0.014
145	12.08	0.83	0.200	(0.250)	0.180	0.020

ONSITEPRE242.out

146	12.17	0.83	0.200	(	0.249)	0.180	0.020
147	12.25	0.83	0.200	(	0.247)	0.180	0.020
148	12.33	0.87	0.208	(	0.246)	0.187	0.021
149	12.42	0.87	0.208	(	0.245)	0.187	0.021
150	12.50	0.87	0.208	(	0.244)	0.187	0.021
151	12.58	0.93	0.224	(	0.242)	0.202	0.022
152	12.67	0.93	0.224	(	0.241)	0.202	0.022
153	12.75	0.93	0.224	(	0.240)	0.202	0.022
154	12.83	0.97	0.232	(	0.239)	0.209	0.023
155	12.92	0.97	0.232	(	0.238)	0.209	0.023
156	13.00	0.97	0.232	(	0.236)	0.209	0.023
157	13.08	1.13	0.272		0.235	(0.245)	0.037
158	13.17	1.13	0.272		0.234	(0.245)	0.038
159	13.25	1.13	0.272		0.233	(0.245)	0.039
160	13.33	1.13	0.272		0.232	(0.245)	0.040
161	13.42	1.13	0.272		0.230	(0.245)	0.042
162	13.50	1.13	0.272		0.229	(0.245)	0.043
163	13.58	0.77	0.184	(	0.228)	0.166	0.018
164	13.67	0.77	0.184	(	0.227)	0.166	0.018
165	13.75	0.77	0.184	(	0.226)	0.166	0.018
166	13.83	0.77	0.184	(	0.225)	0.166	0.018
167	13.92	0.77	0.184	(	0.223)	0.166	0.018
168	14.00	0.77	0.184	(	0.222)	0.166	0.018
169	14.08	0.90	0.216	(	0.221)	0.194	0.022
170	14.17	0.90	0.216	(	0.220)	0.194	0.022
171	14.25	0.90	0.216	(	0.219)	0.194	0.022
172	14.33	0.87	0.208	(	0.218)	0.187	0.021
173	14.42	0.87	0.208	(	0.217)	0.187	0.021
174	14.50	0.87	0.208	(	0.216)	0.187	0.021
175	14.58	0.87	0.208	(	0.214)	0.187	0.021
176	14.67	0.87	0.208	(	0.213)	0.187	0.021
177	14.75	0.87	0.208	(	0.212)	0.187	0.021
178	14.83	0.83	0.200	(	0.211)	0.180	0.020
179	14.92	0.83	0.200	(	0.210)	0.180	0.020
180	15.00	0.83	0.200	(	0.209)	0.180	0.020
181	15.08	0.80	0.192	(	0.208)	0.173	0.019
182	15.17	0.80	0.192	(	0.207)	0.173	0.019
183	15.25	0.80	0.192	(	0.206)	0.173	0.019
184	15.33	0.77	0.184	(	0.205)	0.166	0.018
185	15.42	0.77	0.184	(	0.204)	0.166	0.018
186	15.50	0.77	0.184	(	0.203)	0.166	0.018
187	15.58	0.63	0.152	(	0.202)	0.137	0.015
188	15.67	0.63	0.152	(	0.201)	0.137	0.015
189	15.75	0.63	0.152	(	0.200)	0.137	0.015
190	15.83	0.63	0.152	(	0.199)	0.137	0.015
191	15.92	0.63	0.152	(	0.198)	0.137	0.015
192	16.00	0.63	0.152	(	0.197)	0.137	0.015
193	16.08	0.13	0.032	(	0.196)	0.029	0.003
194	16.17	0.13	0.032	(	0.195)	0.029	0.003
195	16.25	0.13	0.032	(	0.194)	0.029	0.003
196	16.33	0.13	0.032	(	0.193)	0.029	0.003
197	16.42	0.13	0.032	(	0.192)	0.029	0.003
198	16.50	0.13	0.032	(	0.191)	0.029	0.003
199	16.58	0.10	0.024	(	0.190)	0.022	0.002
200	16.67	0.10	0.024	(	0.189)	0.022	0.002
201	16.75	0.10	0.024	(	0.188)	0.022	0.002
202	16.83	0.10	0.024	(	0.187)	0.022	0.002
203	16.92	0.10	0.024	(	0.186)	0.022	0.002
204	17.00	0.10	0.024	(	0.185)	0.022	0.002
205	17.08	0.17	0.040	(	0.184)	0.036	0.004
206	17.17	0.17	0.040	(	0.183)	0.036	0.004
207	17.25	0.17	0.040	(	0.182)	0.036	0.004
208	17.33	0.17	0.040	(	0.181)	0.036	0.004
209	17.42	0.17	0.040	(	0.180)	0.036	0.004
210	17.50	0.17	0.040	(	0.179)	0.036	0.004
211	17.58	0.17	0.040	(	0.178)	0.036	0.004
212	17.67	0.17	0.040	(	0.178)	0.036	0.004
213	17.75	0.17	0.040	(	0.177)	0.036	0.004
214	17.83	0.13	0.032	(	0.176)	0.029	0.003
215	17.92	0.13	0.032	(	0.175)	0.029	0.003
216	18.00	0.13	0.032	(	0.174)	0.029	0.003
217	18.08	0.13	0.032	(	0.173)	0.029	0.003
218	18.17	0.13	0.032	(	0.172)	0.029	0.003
219	18.25	0.13	0.032	(	0.172)	0.029	0.003
220	18.33	0.13	0.032	(	0.171)	0.029	0.003
221	18.42	0.13	0.032	(	0.170)	0.029	0.003
222	18.50	0.13	0.032	(	0.169)	0.029	0.003
223	18.58	0.10	0.024	(	0.168)	0.022	0.002
224	18.67	0.10	0.024	(	0.167)	0.022	0.002
225	18.75	0.10	0.024	(	0.167)	0.022	0.002
226	18.83	0.07	0.016	(	0.166)	0.014	0.002
227	18.92	0.07	0.016	(	0.165)	0.014	0.002
228	19.00	0.07	0.016	(	0.164)	0.014	0.002
229	19.08	0.10	0.024	(	0.163)	0.022	0.002

ONSITEPRE242.out

230	19.17	0.10	0.024	(0.163)	0.022	0.002
231	19.25	0.10	0.024	(0.162)	0.022	0.002
232	19.33	0.13	0.032	(0.161)	0.029	0.003
233	19.42	0.13	0.032	(0.160)	0.029	0.003
234	19.50	0.13	0.032	(0.160)	0.029	0.003
235	19.58	0.10	0.024	(0.159)	0.022	0.002
236	19.67	0.10	0.024	(0.158)	0.022	0.002
237	19.75	0.10	0.024	(0.157)	0.022	0.002
238	19.83	0.07	0.016	(0.157)	0.014	0.002
239	19.92	0.07	0.016	(0.156)	0.014	0.002
240	20.00	0.07	0.016	(0.155)	0.014	0.002
241	20.08	0.10	0.024	(0.155)	0.022	0.002
242	20.17	0.10	0.024	(0.154)	0.022	0.002
243	20.25	0.10	0.024	(0.153)	0.022	0.002
244	20.33	0.10	0.024	(0.153)	0.022	0.002
245	20.42	0.10	0.024	(0.152)	0.022	0.002
246	20.50	0.10	0.024	(0.151)	0.022	0.002
247	20.58	0.10	0.024	(0.151)	0.022	0.002
248	20.67	0.10	0.024	(0.150)	0.022	0.002
249	20.75	0.10	0.024	(0.150)	0.022	0.002
250	20.83	0.07	0.016	(0.149)	0.014	0.002
251	20.92	0.07	0.016	(0.148)	0.014	0.002
252	21.00	0.07	0.016	(0.148)	0.014	0.002
253	21.08	0.10	0.024	(0.147)	0.022	0.002
254	21.17	0.10	0.024	(0.147)	0.022	0.002
255	21.25	0.10	0.024	(0.146)	0.022	0.002
256	21.33	0.07	0.016	(0.145)	0.014	0.002
257	21.42	0.07	0.016	(0.145)	0.014	0.002
258	21.50	0.07	0.016	(0.144)	0.014	0.002
259	21.58	0.10	0.024	(0.144)	0.022	0.002
260	21.67	0.10	0.024	(0.143)	0.022	0.002
261	21.75	0.10	0.024	(0.143)	0.022	0.002
262	21.83	0.07	0.016	(0.142)	0.014	0.002
263	21.92	0.07	0.016	(0.142)	0.014	0.002
264	22.00	0.07	0.016	(0.141)	0.014	0.002
265	22.08	0.10	0.024	(0.141)	0.022	0.002
266	22.17	0.10	0.024	(0.140)	0.022	0.002
267	22.25	0.10	0.024	(0.140)	0.022	0.002
268	22.33	0.07	0.016	(0.139)	0.014	0.002
269	22.42	0.07	0.016	(0.139)	0.014	0.002
270	22.50	0.07	0.016	(0.139)	0.014	0.002
271	22.58	0.07	0.016	(0.138)	0.014	0.002
272	22.67	0.07	0.016	(0.138)	0.014	0.002
273	22.75	0.07	0.016	(0.137)	0.014	0.002
274	22.83	0.07	0.016	(0.137)	0.014	0.002
275	22.92	0.07	0.016	(0.137)	0.014	0.002
276	23.00	0.07	0.016	(0.136)	0.014	0.002
277	23.08	0.07	0.016	(0.136)	0.014	0.002
278	23.17	0.07	0.016	(0.136)	0.014	0.002
279	23.25	0.07	0.016	(0.136)	0.014	0.002
280	23.33	0.07	0.016	(0.135)	0.014	0.002
281	23.42	0.07	0.016	(0.135)	0.014	0.002
282	23.50	0.07	0.016	(0.135)	0.014	0.002
283	23.58	0.07	0.016	(0.135)	0.014	0.002
284	23.67	0.07	0.016	(0.134)	0.014	0.002
285	23.75	0.07	0.016	(0.134)	0.014	0.002
286	23.83	0.07	0.016	(0.134)	0.014	0.002
287	23.92	0.07	0.016	(0.134)	0.014	0.002
288	24.00	0.07	0.016	(0.134)	0.014	0.002

(Loss Rate Not Used)

Sum = 100.0 Sum = 2.5

Flood volume = Effective rainfall 0.21(In)
 times area 8.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
 Total soil loss = 1.79(In)
 Total soil loss = 1.256(Ac.Ft)
 Total rainfall = 2.00(In)
 Flood volume = 6291.1 Cubic Feet
 Total soil loss = 54691.9 Cubic Feet

 Peak flow rate of this hydrograph = 0.351(CFS)

+++++

24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.01	Q				
0+15	0.0002	0.01	Q				
0+20	0.0003	0.01	Q				

0+25	0.0004	0.02	Q			
0+30	0.0005	0.02	Q			
0+35	0.0007	0.02	Q			
0+40	0.0008	0.02	Q			
0+45	0.0010	0.02	Q			
0+50	0.0011	0.02	Q			
0+55	0.0013	0.03	Q			
1+ 0	0.0015	0.03	Q			
1+ 5	0.0016	0.02	Q			
1+10	0.0018	0.02	Q			
1+15	0.0019	0.02	Q			
1+20	0.0021	0.02	Q			
1+25	0.0022	0.02	Q			
1+30	0.0024	0.02	Q			
1+35	0.0025	0.02	Q			
1+40	0.0026	0.02	Q			
1+45	0.0028	0.02	Q			
1+50	0.0029	0.02	Q			
1+55	0.0031	0.03	Q			
2+ 0	0.0033	0.03	Q			
2+ 5	0.0035	0.03	Q			
2+10	0.0037	0.03	QV			
2+15	0.0039	0.03	QV			
2+20	0.0040	0.03	QV			
2+25	0.0042	0.03	QV			
2+30	0.0044	0.03	QV			
2+35	0.0046	0.03	QV			
2+40	0.0048	0.03	QV			
2+45	0.0051	0.03	QV			
2+50	0.0053	0.03	QV			
2+55	0.0055	0.03	QV			
3+ 0	0.0058	0.03	QV			
3+ 5	0.0060	0.03	QV			
3+10	0.0062	0.03	QV			
3+15	0.0065	0.03	QV			
3+20	0.0067	0.03	QV			
3+25	0.0069	0.03	QV			
3+30	0.0072	0.03	QV			
3+35	0.0074	0.03	Q V			
3+40	0.0076	0.03	Q V			
3+45	0.0079	0.03	Q V			
3+50	0.0081	0.04	Q V			
3+55	0.0084	0.04	Q V			
4+ 0	0.0086	0.04	Q V			
4+ 5	0.0089	0.04	Q V			
4+10	0.0092	0.04	Q V			
4+15	0.0095	0.04	Q V			
4+20	0.0098	0.04	Q V			
4+25	0.0101	0.05	Q V			
4+30	0.0104	0.05	Q V			
4+35	0.0107	0.05	Q V			
4+40	0.0111	0.05	Q V			
4+45	0.0114	0.05	Q V			
4+50	0.0117	0.05	Q V			
4+55	0.0121	0.05	Q V			
5+ 0	0.0125	0.05	Q V			
5+ 5	0.0128	0.05	Q V			
5+10	0.0131	0.04	Q V			
5+15	0.0134	0.04	Q V			
5+20	0.0137	0.04	Q V			
5+25	0.0140	0.05	Q V			
5+30	0.0143	0.05	Q V			
5+35	0.0147	0.05	Q V			
5+40	0.0150	0.05	Q V			
5+45	0.0154	0.05	Q V			
5+50	0.0158	0.05	Q V			
5+55	0.0161	0.05	Q V			
6+ 0	0.0165	0.05	Q V			
6+ 5	0.0169	0.06	Q V			
6+10	0.0173	0.06	Q V			
6+15	0.0177	0.06	Q V			
6+20	0.0182	0.06	Q V			
6+25	0.0186	0.06	Q V			
6+30	0.0190	0.06	Q V			
6+35	0.0194	0.06	Q V			
6+40	0.0199	0.07	Q V			
6+45	0.0203	0.07	Q V			
6+50	0.0208	0.07	Q V			
6+55	0.0213	0.07	Q V			
7+ 0	0.0217	0.07	Q V			
7+ 5	0.0222	0.07	Q V			
7+10	0.0227	0.07	Q V			
7+15	0.0231	0.07	Q V			
7+20	0.0236	0.07	Q V			

7+25	0.0241	0.07	Q	V					
7+30	0.0246	0.07	Q	V					
7+35	0.0252	0.08	Q	V					
7+40	0.0257	0.08	Q	V					
7+45	0.0263	0.08	Q	V					
7+50	0.0268	0.08	Q	V					
7+55	0.0274	0.09	Q	V					
8+ 0	0.0280	0.09	Q	V					
8+ 5	0.0287	0.09	Q	V					
8+10	0.0293	0.10	Q	V					
8+15	0.0300	0.10	Q	V					
8+20	0.0307	0.10	Q	V					
8+25	0.0314	0.10	Q	V					
8+30	0.0321	0.10	Q	V					
8+35	0.0328	0.10	Q	V					
8+40	0.0336	0.11	Q	V					
8+45	0.0343	0.11	Q	V					
8+50	0.0351	0.11	Q	V					
8+55	0.0358	0.11	Q	V					
9+ 0	0.0366	0.11	Q	V					
9+ 5	0.0375	0.12	Q	V					
9+10	0.0383	0.13	Q	V					
9+15	0.0392	0.13	Q	V					
9+20	0.0401	0.13	Q	V					
9+25	0.0410	0.13	Q	V					
9+30	0.0419	0.13	Q	V					
9+35	0.0429	0.14	Q	V					
9+40	0.0439	0.14	Q	V					
9+45	0.0448	0.14	Q	V					
9+50	0.0458	0.14	Q	V					
9+55	0.0468	0.15	Q	V					
10+ 0	0.0479	0.15	Q	V					
10+ 5	0.0488	0.13	Q	V					
10+10	0.0496	0.11	Q	V					
10+15	0.0503	0.11	Q	V					
10+20	0.0510	0.10	Q	V					
10+25	0.0517	0.10	Q	V					
10+30	0.0524	0.10	Q	V					
10+35	0.0532	0.11	Q	V					
10+40	0.0541	0.13	Q	V					
10+45	0.0550	0.13	Q	V					
10+50	0.0559	0.13	Q	V					
10+55	0.0568	0.13	Q	V					
11+ 0	0.0578	0.14	Q	V					
11+ 5	0.0587	0.13	Q	V					
11+10	0.0596	0.13	Q	V					
11+15	0.0605	0.13	Q	V					
11+20	0.0614	0.13	Q	V					
11+25	0.0622	0.13	Q	V					
11+30	0.0631	0.13	Q	V					
11+35	0.0640	0.12	Q	V					
11+40	0.0648	0.12	Q	V					
11+45	0.0656	0.12	Q	V					
11+50	0.0664	0.12	Q	V					
11+55	0.0672	0.12	Q	V					
12+ 0	0.0681	0.12	Q	V					
12+ 5	0.0690	0.14	Q	V					
12+10	0.0701	0.16	Q	V					
12+15	0.0712	0.16	Q	V					
12+20	0.0724	0.17	Q	V					
12+25	0.0736	0.17	Q	V					
12+30	0.0748	0.18	Q	V					
12+35	0.0760	0.18	Q	V					
12+40	0.0773	0.19	Q	V					
12+45	0.0786	0.19	Q	V					
12+50	0.0799	0.19	Q	V					
12+55	0.0813	0.19	Q	V					
13+ 0	0.0826	0.20	Q	V					
13+ 5	0.0842	0.23	Q	V					
13+10	0.0862	0.29	Q	V					
13+15	0.0883	0.31	Q	V					
13+20	0.0906	0.33	Q	V					
13+25	0.0929	0.34	Q	V					
13+30	0.0953	0.35	Q	V					
13+35	0.0974	0.30	Q	V					
13+40	0.0988	0.20	Q	V					
13+45	0.1000	0.18	Q	V					
13+50	0.1011	0.17	Q	V					
13+55	0.1022	0.16	Q	V					
14+ 0	0.1033	0.16	Q	V					
14+ 5	0.1045	0.16	Q	V					
14+10	0.1057	0.18	Q	V					
14+15	0.1069	0.18	Q	V					
14+20	0.1081	0.18	Q	V					

14+25	0.1094	0.18	Q	V
14+30	0.1106	0.18	Q	V
14+35	0.1118	0.18	Q	V
14+40	0.1130	0.18	Q	V
14+45	0.1142	0.18	Q	V
14+50	0.1154	0.17	Q	V
14+55	0.1166	0.17	Q	V
15+ 0	0.1178	0.17	Q	V
15+ 5	0.1189	0.17	Q	V
15+10	0.1201	0.16	Q	V
15+15	0.1212	0.16	Q	V
15+20	0.1223	0.16	Q	V
15+25	0.1234	0.16	Q	V
15+30	0.1245	0.16	Q	V
15+35	0.1255	0.15	Q	V
15+40	0.1264	0.14	Q	V
15+45	0.1273	0.13	Q	V
15+50	0.1282	0.13	Q	V
15+55	0.1291	0.13	Q	V
16+ 0	0.1300	0.13	Q	V
16+ 5	0.1307	0.10	Q	V
16+10	0.1310	0.05	Q	V
16+15	0.1313	0.04	Q	V
16+20	0.1315	0.03	Q	V
16+25	0.1317	0.03	Q	V
16+30	0.1319	0.03	Q	V
16+35	0.1321	0.03	Q	V
16+40	0.1322	0.02	Q	V
16+45	0.1324	0.02	Q	V
16+50	0.1325	0.02	Q	V
16+55	0.1326	0.02	Q	V
17+ 0	0.1328	0.02	Q	V
17+ 5	0.1330	0.02	Q	V
17+10	0.1332	0.03	Q	V
17+15	0.1334	0.03	Q	V
17+20	0.1336	0.03	Q	V
17+25	0.1338	0.03	Q	V
17+30	0.1341	0.03	Q	V
17+35	0.1343	0.03	Q	V
17+40	0.1345	0.03	Q	V
17+45	0.1348	0.03	Q	V
17+50	0.1350	0.03	Q	V
17+55	0.1352	0.03	Q	V
18+ 0	0.1354	0.03	Q	V
18+ 5	0.1356	0.03	Q	V
18+10	0.1358	0.03	Q	V
18+15	0.1360	0.03	Q	V
18+20	0.1361	0.03	Q	V
18+25	0.1363	0.03	Q	V
18+30	0.1365	0.03	Q	V
18+35	0.1367	0.03	Q	V
18+40	0.1368	0.02	Q	V
18+45	0.1370	0.02	Q	V
18+50	0.1371	0.02	Q	V
18+55	0.1372	0.02	Q	V
19+ 0	0.1373	0.01	Q	V
19+ 5	0.1374	0.02	Q	V
19+10	0.1376	0.02	Q	V
19+15	0.1377	0.02	Q	V
19+20	0.1378	0.02	Q	V
19+25	0.1380	0.03	Q	V
19+30	0.1382	0.03	Q	V
19+35	0.1384	0.02	Q	V
19+40	0.1385	0.02	Q	V
19+45	0.1387	0.02	Q	V
19+50	0.1388	0.02	Q	V
19+55	0.1389	0.02	Q	V
20+ 0	0.1390	0.01	Q	V
20+ 5	0.1391	0.02	Q	V
20+10	0.1392	0.02	Q	V
20+15	0.1394	0.02	Q	V
20+20	0.1395	0.02	Q	V
20+25	0.1396	0.02	Q	V
20+30	0.1398	0.02	Q	V
20+35	0.1399	0.02	Q	V
20+40	0.1401	0.02	Q	V
20+45	0.1402	0.02	Q	V
20+50	0.1403	0.02	Q	V
20+55	0.1404	0.02	Q	V
21+ 0	0.1405	0.01	Q	V
21+ 5	0.1406	0.02	Q	V
21+10	0.1408	0.02	Q	V
21+15	0.1409	0.02	Q	V
21+20	0.1410	0.02	Q	V

ONSITEPRE242.out

21+25	0.1411	0.01	Q			V
21+30	0.1412	0.01	Q			V
21+35	0.1413	0.02	Q			V
21+40	0.1415	0.02	Q			V
21+45	0.1416	0.02	Q			V
21+50	0.1417	0.02	Q			V
21+55	0.1418	0.01	Q			V
22+ 0	0.1419	0.01	Q			V
22+ 5	0.1420	0.02	Q			V
22+10	0.1422	0.02	Q			V
22+15	0.1423	0.02	Q			V
22+20	0.1424	0.02	Q			V
22+25	0.1425	0.01	Q			V
22+30	0.1426	0.01	Q			V
22+35	0.1427	0.01	Q			V
22+40	0.1428	0.01	Q			V
22+45	0.1429	0.01	Q			V
22+50	0.1430	0.01	Q			V
22+55	0.1431	0.01	Q			V
23+ 0	0.1432	0.01	Q			V
23+ 5	0.1433	0.01	Q			V
23+10	0.1434	0.01	Q			V
23+15	0.1435	0.01	Q			V
23+20	0.1436	0.01	Q			V
23+25	0.1437	0.01	Q			V
23+30	0.1438	0.01	Q			V
23+35	0.1439	0.01	Q			V
23+40	0.1439	0.01	Q			V
23+45	0.1440	0.01	Q			V
23+50	0.1441	0.01	Q			V
23+55	0.1442	0.01	Q			V
24+ 0	0.1443	0.01	Q			V
24+ 5	0.1444	0.01	Q			V
24+10	0.1444	0.00	Q			V
24+15	0.1444	0.00	Q			V
24+20	0.1444	0.00	Q			V
24+25	0.1444	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPRE245.out

 +-----+

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 EXISTING CONDITION H-12 TRIBUTARY, 5-YEAR 24-HOUR
 FN: ONSITEPRE245.OUT- TSW

 Drainage Area = 8.40(Ac.) = 0.013 Sq. Mi.
 Drainage Area for Depth-Area Adjustment = 8.40(Ac.) = 0.013 Sq. Mi.
 Length along longest watercourse = 765.00(Ft.)
 Length along longest watercourse measured to centroid = 421.00(Ft.)
 Length along longest watercourse = 0.145 Mi.
 Length along longest watercourse measured to centroid = 0.080 Mi.
 Difference in elevation = 7.60(Ft.)
 Slope along watercourse = 52.4549 Ft./Mi.
 Average Manning's 'N' = 0.030
 Lag time = 0.062 Hr.
 Lag time = 3.74 Min.
 25% of lag time = 0.93 Min.
 40% of lag time = 1.49 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
8.40	2.00	16.80

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
8.40	5.00	42.00

STORM EVENT (YEAR) = 5.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.703(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.703(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 8.400 78.00 0.000
 Total Area Entered = 8.40(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
78.0	60.6	0.464	0.000	0.464	1.000	0.464
						Sum (F) =
						0.464

Area averaged mean soil loss (F) (In/Hr) = 0.268
 Minimum soil loss rate ((In/Hr)) = 0.134
 (for 24 hour storm duration)
 Note: User entry of the f value
 Soil loss rate (decimal) = 0.900

ONSITEPRE245.out
Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	133.792	29.047	2.459
2	0.167	267.583	48.085	4.071
3	0.250	401.375	12.228	1.035
4	0.333	535.166	5.433	0.460
5	0.417	668.958	2.964	0.251
6	0.500	802.750	2.243	0.190
Sum = 100.000			Sum=	8.466

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.022	(0.474)	0.019	0.002
2	0.17	0.07	0.022	(0.473)	0.019	0.002
3	0.25	0.07	0.022	(0.471)	0.019	0.002
4	0.33	0.10	0.032	(0.469)	0.029	0.003
5	0.42	0.10	0.032	(0.467)	0.029	0.003
6	0.50	0.10	0.032	(0.465)	0.029	0.003
7	0.58	0.10	0.032	(0.463)	0.029	0.003
8	0.67	0.10	0.032	(0.462)	0.029	0.003
9	0.75	0.10	0.032	(0.460)	0.029	0.003
10	0.83	0.13	0.043	(0.458)	0.039	0.004
11	0.92	0.13	0.043	(0.456)	0.039	0.004
12	1.00	0.13	0.043	(0.454)	0.039	0.004
13	1.08	0.10	0.032	(0.453)	0.029	0.003
14	1.17	0.10	0.032	(0.451)	0.029	0.003
15	1.25	0.10	0.032	(0.449)	0.029	0.003
16	1.33	0.10	0.032	(0.447)	0.029	0.003
17	1.42	0.10	0.032	(0.445)	0.029	0.003
18	1.50	0.10	0.032	(0.444)	0.029	0.003
19	1.58	0.10	0.032	(0.442)	0.029	0.003
20	1.67	0.10	0.032	(0.440)	0.029	0.003
21	1.75	0.10	0.032	(0.438)	0.029	0.003
22	1.83	0.13	0.043	(0.437)	0.039	0.004
23	1.92	0.13	0.043	(0.435)	0.039	0.004
24	2.00	0.13	0.043	(0.433)	0.039	0.004
25	2.08	0.13	0.043	(0.431)	0.039	0.004
26	2.17	0.13	0.043	(0.430)	0.039	0.004
27	2.25	0.13	0.043	(0.428)	0.039	0.004
28	2.33	0.13	0.043	(0.426)	0.039	0.004
29	2.42	0.13	0.043	(0.424)	0.039	0.004
30	2.50	0.13	0.043	(0.423)	0.039	0.004
31	2.58	0.17	0.054	(0.421)	0.049	0.005
32	2.67	0.17	0.054	(0.419)	0.049	0.005
33	2.75	0.17	0.054	(0.417)	0.049	0.005
34	2.83	0.17	0.054	(0.416)	0.049	0.005
35	2.92	0.17	0.054	(0.414)	0.049	0.005
36	3.00	0.17	0.054	(0.412)	0.049	0.005
37	3.08	0.17	0.054	(0.411)	0.049	0.005
38	3.17	0.17	0.054	(0.409)	0.049	0.005
39	3.25	0.17	0.054	(0.407)	0.049	0.005
40	3.33	0.17	0.054	(0.405)	0.049	0.005
41	3.42	0.17	0.054	(0.404)	0.049	0.005
42	3.50	0.17	0.054	(0.402)	0.049	0.005
43	3.58	0.17	0.054	(0.400)	0.049	0.005
44	3.67	0.17	0.054	(0.399)	0.049	0.005
45	3.75	0.17	0.054	(0.397)	0.049	0.005
46	3.83	0.20	0.065	(0.395)	0.058	0.006
47	3.92	0.20	0.065	(0.394)	0.058	0.006
48	4.00	0.20	0.065	(0.392)	0.058	0.006
49	4.08	0.20	0.065	(0.390)	0.058	0.006
50	4.17	0.20	0.065	(0.389)	0.058	0.006
51	4.25	0.20	0.065	(0.387)	0.058	0.006
52	4.33	0.23	0.076	(0.385)	0.068	0.008
53	4.42	0.23	0.076	(0.384)	0.068	0.008
54	4.50	0.23	0.076	(0.382)	0.068	0.008
55	4.58	0.23	0.076	(0.381)	0.068	0.008
56	4.67	0.23	0.076	(0.379)	0.068	0.008
57	4.75	0.23	0.076	(0.377)	0.068	0.008
58	4.83	0.27	0.086	(0.376)	0.078	0.009
59	4.92	0.27	0.086	(0.374)	0.078	0.009
60	5.00	0.27	0.086	(0.372)	0.078	0.009
61	5.08	0.20	0.065	(0.371)	0.058	0.006

ONSITEPRE245.out

62	5.17	0.20	0.065	(0.369)	0.058	0.006
63	5.25	0.20	0.065	(0.368)	0.058	0.006
64	5.33	0.23	0.076	(0.366)	0.068	0.008
65	5.42	0.23	0.076	(0.364)	0.068	0.008
66	5.50	0.23	0.076	(0.363)	0.068	0.008
67	5.58	0.27	0.086	(0.361)	0.078	0.009
68	5.67	0.27	0.086	(0.360)	0.078	0.009
69	5.75	0.27	0.086	(0.358)	0.078	0.009
70	5.83	0.27	0.086	(0.356)	0.078	0.009
71	5.92	0.27	0.086	(0.355)	0.078	0.009
72	6.00	0.27	0.086	(0.353)	0.078	0.009
73	6.08	0.30	0.097	(0.352)	0.088	0.010
74	6.17	0.30	0.097	(0.350)	0.088	0.010
75	6.25	0.30	0.097	(0.349)	0.088	0.010
76	6.33	0.30	0.097	(0.347)	0.088	0.010
77	6.42	0.30	0.097	(0.345)	0.088	0.010
78	6.50	0.30	0.097	(0.344)	0.088	0.010
79	6.58	0.33	0.108	(0.342)	0.097	0.011
80	6.67	0.33	0.108	(0.341)	0.097	0.011
81	6.75	0.33	0.108	(0.339)	0.097	0.011
82	6.83	0.33	0.108	(0.338)	0.097	0.011
83	6.92	0.33	0.108	(0.336)	0.097	0.011
84	7.00	0.33	0.108	(0.335)	0.097	0.011
85	7.08	0.33	0.108	(0.333)	0.097	0.011
86	7.17	0.33	0.108	(0.332)	0.097	0.011
87	7.25	0.33	0.108	(0.330)	0.097	0.011
88	7.33	0.37	0.119	(0.329)	0.107	0.012
89	7.42	0.37	0.119	(0.327)	0.107	0.012
90	7.50	0.37	0.119	(0.326)	0.107	0.012
91	7.58	0.40	0.130	(0.324)	0.117	0.013
92	7.67	0.40	0.130	(0.323)	0.117	0.013
93	7.75	0.40	0.130	(0.321)	0.117	0.013
94	7.83	0.43	0.141	(0.320)	0.126	0.014
95	7.92	0.43	0.141	(0.318)	0.126	0.014
96	8.00	0.43	0.141	(0.317)	0.126	0.014
97	8.08	0.50	0.162	(0.315)	0.146	0.016
98	8.17	0.50	0.162	(0.314)	0.146	0.016
99	8.25	0.50	0.162	(0.312)	0.146	0.016
100	8.33	0.50	0.162	(0.311)	0.146	0.016
101	8.42	0.50	0.162	(0.309)	0.146	0.016
102	8.50	0.50	0.162	(0.308)	0.146	0.016
103	8.58	0.53	0.173	(0.306)	0.156	0.017
104	8.67	0.53	0.173	(0.305)	0.156	0.017
105	8.75	0.53	0.173	(0.304)	0.156	0.017
106	8.83	0.57	0.184	(0.302)	0.165	0.018
107	8.92	0.57	0.184	(0.301)	0.165	0.018
108	9.00	0.57	0.184	(0.299)	0.165	0.018
109	9.08	0.63	0.205	(0.298)	0.185	0.021
110	9.17	0.63	0.205	(0.296)	0.185	0.021
111	9.25	0.63	0.205	(0.295)	0.185	0.021
112	9.33	0.67	0.216	(0.294)	0.195	0.022
113	9.42	0.67	0.216	(0.292)	0.195	0.022
114	9.50	0.67	0.216	(0.291)	0.195	0.022
115	9.58	0.70	0.227	(0.289)	0.204	0.023
116	9.67	0.70	0.227	(0.288)	0.204	0.023
117	9.75	0.70	0.227	(0.287)	0.204	0.023
118	9.83	0.73	0.238	(0.285)	0.214	0.024
119	9.92	0.73	0.238	(0.284)	0.214	0.024
120	10.00	0.73	0.238	(0.283)	0.214	0.024
121	10.08	0.50	0.162	(0.281)	0.146	0.016
122	10.17	0.50	0.162	(0.280)	0.146	0.016
123	10.25	0.50	0.162	(0.278)	0.146	0.016
124	10.33	0.50	0.162	(0.277)	0.146	0.016
125	10.42	0.50	0.162	(0.276)	0.146	0.016
126	10.50	0.50	0.162	(0.274)	0.146	0.016
127	10.58	0.67	0.216	(0.273)	0.195	0.022
128	10.67	0.67	0.216	(0.272)	0.195	0.022
129	10.75	0.67	0.216	(0.270)	0.195	0.022
130	10.83	0.67	0.216	(0.269)	0.195	0.022
131	10.92	0.67	0.216	(0.268)	0.195	0.022
132	11.00	0.67	0.216	(0.266)	0.195	0.022
133	11.08	0.63	0.205	(0.265)	0.185	0.021
134	11.17	0.63	0.205	(0.264)	0.185	0.021
135	11.25	0.63	0.205	(0.263)	0.185	0.021
136	11.33	0.63	0.205	(0.261)	0.185	0.021
137	11.42	0.63	0.205	(0.260)	0.185	0.021
138	11.50	0.63	0.205	(0.259)	0.185	0.021
139	11.58	0.57	0.184	(0.257)	0.165	0.018
140	11.67	0.57	0.184	(0.256)	0.165	0.018
141	11.75	0.57	0.184	(0.255)	0.165	0.018
142	11.83	0.60	0.195	(0.254)	0.175	0.019
143	11.92	0.60	0.195	(0.252)	0.175	0.019
144	12.00	0.60	0.195	(0.251)	0.175	0.019
145	12.08	0.83	0.270	(0.250)	0.243	0.027

ONSITEPRE245.out

146	12.17	0.83	0.270	(0.249)	0.243	0.027
147	12.25	0.83	0.270	(0.247)	0.243	0.027
148	12.33	0.87	0.281	(0.246	(0.253)	0.035
149	12.42	0.87	0.281	0.245	(0.253)	0.036
150	12.50	0.87	0.281	0.244	(0.253)	0.037
151	12.58	0.93	0.303	0.242	(0.272)	0.060
152	12.67	0.93	0.303	0.241	(0.272)	0.062
153	12.75	0.93	0.303	0.240	(0.272)	0.063
154	12.83	0.97	0.314	0.239	(0.282)	0.075
155	12.92	0.97	0.314	0.238	(0.282)	0.076
156	13.00	0.97	0.314	0.236	(0.282)	0.077
157	13.08	1.13	0.368	0.235	(0.331)	0.132
158	13.17	1.13	0.368	0.234	(0.331)	0.134
159	13.25	1.13	0.368	0.233	(0.331)	0.135
160	13.33	1.13	0.368	0.232	(0.331)	0.136
161	13.42	1.13	0.368	0.230	(0.331)	0.137
162	13.50	1.13	0.368	0.229	(0.331)	0.138
163	13.58	0.77	0.249	(0.228)	0.224	0.025
164	13.67	0.77	0.249	(0.227)	0.224	0.025
165	13.75	0.77	0.249	(0.226)	0.224	0.025
166	13.83	0.77	0.249	(0.225)	0.224	0.025
167	13.92	0.77	0.249	0.223	(0.224)	0.025
168	14.00	0.77	0.249	0.222	(0.224)	0.026
169	14.08	0.90	0.292	0.221	(0.263)	0.071
170	14.17	0.90	0.292	0.220	(0.263)	0.072
171	14.25	0.90	0.292	0.219	(0.263)	0.073
172	14.33	0.87	0.281	0.218	(0.253)	0.063
173	14.42	0.87	0.281	0.217	(0.253)	0.064
174	14.50	0.87	0.281	0.216	(0.253)	0.066
175	14.58	0.87	0.281	0.214	(0.253)	0.067
176	14.67	0.87	0.281	0.213	(0.253)	0.068
177	14.75	0.87	0.281	0.212	(0.253)	0.069
178	14.83	0.83	0.270	0.211	(0.243)	0.059
179	14.92	0.83	0.270	0.210	(0.243)	0.060
180	15.00	0.83	0.270	0.209	(0.243)	0.061
181	15.08	0.80	0.259	0.208	(0.234)	0.052
182	15.17	0.80	0.259	0.207	(0.234)	0.053
183	15.25	0.80	0.259	0.206	(0.234)	0.054
184	15.33	0.77	0.249	0.205	(0.224)	0.044
185	15.42	0.77	0.249	0.204	(0.224)	0.045
186	15.50	0.77	0.249	0.203	(0.224)	0.046
187	15.58	0.63	0.205	(0.202)	0.185	0.021
188	15.67	0.63	0.205	(0.201)	0.185	0.021
189	15.75	0.63	0.205	(0.200)	0.185	0.021
190	15.83	0.63	0.205	(0.199)	0.185	0.021
191	15.92	0.63	0.205	(0.198)	0.185	0.021
192	16.00	0.63	0.205	(0.197)	0.185	0.021
193	16.08	0.13	0.043	(0.196)	0.039	0.004
194	16.17	0.13	0.043	(0.195)	0.039	0.004
195	16.25	0.13	0.043	(0.194)	0.039	0.004
196	16.33	0.13	0.043	(0.193)	0.039	0.004
197	16.42	0.13	0.043	(0.192)	0.039	0.004
198	16.50	0.13	0.043	(0.191)	0.039	0.004
199	16.58	0.10	0.032	(0.190)	0.029	0.003
200	16.67	0.10	0.032	(0.189)	0.029	0.003
201	16.75	0.10	0.032	(0.188)	0.029	0.003
202	16.83	0.10	0.032	(0.187)	0.029	0.003
203	16.92	0.10	0.032	(0.186)	0.029	0.003
204	17.00	0.10	0.032	(0.185)	0.029	0.003
205	17.08	0.17	0.054	(0.184)	0.049	0.005
206	17.17	0.17	0.054	(0.183)	0.049	0.005
207	17.25	0.17	0.054	(0.182)	0.049	0.005
208	17.33	0.17	0.054	(0.181)	0.049	0.005
209	17.42	0.17	0.054	(0.180)	0.049	0.005
210	17.50	0.17	0.054	(0.179)	0.049	0.005
211	17.58	0.17	0.054	(0.178)	0.049	0.005
212	17.67	0.17	0.054	(0.178)	0.049	0.005
213	17.75	0.17	0.054	(0.177)	0.049	0.005
214	17.83	0.13	0.043	(0.176)	0.039	0.004
215	17.92	0.13	0.043	(0.175)	0.039	0.004
216	18.00	0.13	0.043	(0.174)	0.039	0.004
217	18.08	0.13	0.043	(0.173)	0.039	0.004
218	18.17	0.13	0.043	(0.172)	0.039	0.004
219	18.25	0.13	0.043	(0.172)	0.039	0.004
220	18.33	0.13	0.043	(0.171)	0.039	0.004
221	18.42	0.13	0.043	(0.170)	0.039	0.004
222	18.50	0.13	0.043	(0.169)	0.039	0.004
223	18.58	0.10	0.032	(0.168)	0.029	0.003
224	18.67	0.10	0.032	(0.167)	0.029	0.003
225	18.75	0.10	0.032	(0.167)	0.029	0.003
226	18.83	0.07	0.022	(0.166)	0.019	0.002
227	18.92	0.07	0.022	(0.165)	0.019	0.002
228	19.00	0.07	0.022	(0.164)	0.019	0.002
229	19.08	0.10	0.032	(0.163)	0.029	0.003

0+25	0.0006	0.02	Q
0+30	0.0007	0.03	Q
0+35	0.0009	0.03	Q
0+40	0.0011	0.03	Q
0+45	0.0013	0.03	Q
0+50	0.0015	0.03	Q
0+55	0.0017	0.03	Q
1+ 0	0.0020	0.04	Q
1+ 5	0.0022	0.03	Q
1+10	0.0024	0.03	Q
1+15	0.0026	0.03	Q
1+20	0.0028	0.03	Q
1+25	0.0030	0.03	Q
1+30	0.0032	0.03	Q
1+35	0.0034	0.03	Q
1+40	0.0036	0.03	Q
1+45	0.0038	0.03	Q
1+50	0.0040	0.03	Q
1+55	0.0042	0.03	Q
2+ 0	0.0045	0.04	Q
2+ 5	0.0047	0.04	Q
2+10	0.0050	0.04	Q
2+15	0.0052	0.04	Q
2+20	0.0055	0.04	Q
2+25	0.0057	0.04	Q
2+30	0.0060	0.04	Q
2+35	0.0062	0.04	Q
2+40	0.0065	0.04	Q
2+45	0.0068	0.04	QV
2+50	0.0072	0.05	QV
2+55	0.0075	0.05	QV
3+ 0	0.0078	0.05	QV
3+ 5	0.0081	0.05	QV
3+10	0.0084	0.05	QV
3+15	0.0087	0.05	QV
3+20	0.0090	0.05	QV
3+25	0.0094	0.05	QV
3+30	0.0097	0.05	QV
3+35	0.0100	0.05	QV
3+40	0.0103	0.05	QV
3+45	0.0106	0.05	QV
3+50	0.0110	0.05	QV
3+55	0.0113	0.05	QV
4+ 0	0.0117	0.05	QV
4+ 5	0.0121	0.05	QV
4+10	0.0124	0.05	QV
4+15	0.0128	0.05	QV
4+20	0.0132	0.06	QV
4+25	0.0136	0.06	QV
4+30	0.0141	0.06	Q V
4+35	0.0145	0.06	Q V
4+40	0.0150	0.06	Q V
4+45	0.0154	0.06	Q V
4+50	0.0159	0.07	Q V
4+55	0.0163	0.07	Q V
5+ 0	0.0168	0.07	Q V
5+ 5	0.0173	0.07	Q V
5+10	0.0177	0.06	Q V
5+15	0.0181	0.06	Q V
5+20	0.0185	0.06	Q V
5+25	0.0189	0.06	Q V
5+30	0.0194	0.06	Q V
5+35	0.0198	0.07	Q V
5+40	0.0203	0.07	Q V
5+45	0.0208	0.07	Q V
5+50	0.0213	0.07	Q V
5+55	0.0218	0.07	Q V
6+ 0	0.0223	0.07	Q V
6+ 5	0.0228	0.08	Q V
6+10	0.0234	0.08	Q V
6+15	0.0240	0.08	Q V
6+20	0.0245	0.08	Q V
6+25	0.0251	0.08	Q V
6+30	0.0257	0.08	Q V
6+35	0.0262	0.09	Q V
6+40	0.0269	0.09	Q V
6+45	0.0275	0.09	Q V
6+50	0.0281	0.09	Q V
6+55	0.0287	0.09	Q V
7+ 0	0.0294	0.09	Q V
7+ 5	0.0300	0.09	Q V
7+10	0.0306	0.09	Q V
7+15	0.0313	0.09	Q V
7+20	0.0319	0.09	Q V

7+25	0.0326	0.10	Q	V					
7+30	0.0333	0.10	Q	V					
7+35	0.0340	0.10	Q	V					
7+40	0.0347	0.11	Q	V					
7+45	0.0355	0.11	Q	V					
7+50	0.0363	0.11	Q	V					
7+55	0.0371	0.12	Q	V					
8+ 0	0.0379	0.12	Q	V					
8+ 5	0.0387	0.12	Q	V					
8+10	0.0396	0.13	Q	V					
8+15	0.0406	0.14	Q	V					
8+20	0.0415	0.14	Q	V					
8+25	0.0425	0.14	Q	V					
8+30	0.0434	0.14	Q	V					
8+35	0.0444	0.14	Q	V					
8+40	0.0454	0.14	Q	V					
8+45	0.0464	0.15	Q	V					
8+50	0.0474	0.15	Q	V					
8+55	0.0484	0.15	Q	V					
9+ 0	0.0495	0.15	Q	V					
9+ 5	0.0506	0.16	Q	V					
9+10	0.0518	0.17	Q	V					
9+15	0.0530	0.17	Q	V					
9+20	0.0542	0.18	Q	V					
9+25	0.0554	0.18	Q	V					
9+30	0.0567	0.18	Q	V					
9+35	0.0579	0.19	Q	V					
9+40	0.0593	0.19	Q	V					
9+45	0.0606	0.19	Q	V					
9+50	0.0619	0.19	Q	V					
9+55	0.0633	0.20	Q	V					
10+ 0	0.0647	0.20	Q	V					
10+ 5	0.0659	0.18	Q	V					
10+10	0.0670	0.15	Q	V					
10+15	0.0680	0.14	Q	V					
10+20	0.0689	0.14	Q	V					
10+25	0.0699	0.14	Q	V					
10+30	0.0708	0.14	Q	V					
10+35	0.0719	0.15	Q	V					
10+40	0.0731	0.17	Q	V					
10+45	0.0743	0.18	Q	V					
10+50	0.0755	0.18	Q	V					
10+55	0.0768	0.18	Q	V					
11+ 0	0.0780	0.18	Q	V					
11+ 5	0.0793	0.18	Q	V					
11+10	0.0805	0.18	Q	V					
11+15	0.0817	0.17	Q	V					
11+20	0.0829	0.17	Q	V					
11+25	0.0841	0.17	Q	V					
11+30	0.0853	0.17	Q	V					
11+35	0.0865	0.17	Q	V					
11+40	0.0876	0.16	Q	V					
11+45	0.0887	0.16	Q	V					
11+50	0.0898	0.16	Q	V					
11+55	0.0909	0.16	Q	V					
12+ 0	0.0920	0.16	Q	V					
12+ 5	0.0933	0.18	Q	V					
12+10	0.0947	0.21	Q	V					
12+15	0.0963	0.22	Q	V					
12+20	0.0980	0.25	Q	V					
12+25	0.0999	0.28	Q	V					
12+30	0.1020	0.30	Q	V					
12+35	0.1045	0.37	Q	V					
12+40	0.1077	0.47	Q	V					
12+45	0.1112	0.50	Q	V					
12+50	0.1149	0.55	Q	V					
12+55	0.1191	0.61	Q	V					
13+ 0	0.1235	0.63	Q	V					
13+ 5	0.1288	0.78	Q	V					
13+10	0.1358	1.01	Q	V					
13+15	0.1433	1.08	Q	V					
13+20	0.1510	1.12	Q	V					
13+25	0.1588	1.14	Q	V					
13+30	0.1668	1.16	Q	V					
13+35	0.1729	0.89	Q	V					
13+40	0.1759	0.43	Q	V					
13+45	0.1780	0.31	Q	V					
13+50	0.1798	0.26	Q	V					
13+55	0.1814	0.23	Q	V					
14+ 0	0.1829	0.22	Q	V					
14+ 5	0.1852	0.33	Q	V					
14+10	0.1887	0.51	Q	V					
14+15	0.1927	0.57	Q	V					
14+20	0.1966	0.57	Q	V					

14+25	0.2004	0.55	Q	V
14+30	0.2042	0.55	Q	V
14+35	0.2080	0.56	Q	V
14+40	0.2119	0.57	Q	V
14+45	0.2159	0.57	Q	V
14+50	0.2197	0.56	Q	V
14+55	0.2233	0.52	Q	V
15+ 0	0.2268	0.52	Q	V
15+ 5	0.2303	0.50	Q	V
15+10	0.2334	0.46	Q	V
15+15	0.2365	0.45	Q	V
15+20	0.2395	0.43	Q	V
15+25	0.2422	0.39	Q	V
15+30	0.2449	0.39	Q	V
15+35	0.2472	0.33	Q	V
15+40	0.2487	0.22	Q	V
15+45	0.2501	0.20	Q	V
15+50	0.2513	0.18	Q	V
15+55	0.2526	0.18	Q	V
16+ 0	0.2538	0.17	Q	V
16+ 5	0.2547	0.13	Q	V
16+10	0.2552	0.07	Q	V
16+15	0.2555	0.05	Q	V
16+20	0.2558	0.04	Q	V
16+25	0.2561	0.04	Q	V
16+30	0.2563	0.04	Q	V
16+35	0.2566	0.03	Q	V
16+40	0.2568	0.03	Q	V
16+45	0.2570	0.03	Q	V
16+50	0.2572	0.03	Q	V
16+55	0.2573	0.03	Q	V
17+ 0	0.2575	0.03	Q	V
17+ 5	0.2578	0.03	Q	V
17+10	0.2580	0.04	Q	V
17+15	0.2584	0.04	Q	V
17+20	0.2587	0.04	Q	V
17+25	0.2590	0.05	Q	V
17+30	0.2593	0.05	Q	V
17+35	0.2596	0.05	Q	V
17+40	0.2599	0.05	Q	V
17+45	0.2602	0.05	Q	V
17+50	0.2605	0.04	Q	V
17+55	0.2608	0.04	Q	V
18+ 0	0.2611	0.04	Q	V
18+ 5	0.2613	0.04	Q	V
18+10	0.2616	0.04	Q	V
18+15	0.2618	0.04	Q	V
18+20	0.2621	0.04	Q	V
18+25	0.2623	0.04	Q	V
18+30	0.2626	0.04	Q	V
18+35	0.2628	0.03	Q	V
18+40	0.2630	0.03	Q	V
18+45	0.2632	0.03	Q	V
18+50	0.2634	0.03	Q	V
18+55	0.2635	0.02	Q	V
19+ 0	0.2637	0.02	Q	V
19+ 5	0.2638	0.02	Q	V
19+10	0.2640	0.03	Q	V
19+15	0.2642	0.03	Q	V
19+20	0.2644	0.03	Q	V
19+25	0.2646	0.03	Q	V
19+30	0.2648	0.04	Q	V
19+35	0.2651	0.03	Q	V
19+40	0.2653	0.03	Q	V
19+45	0.2655	0.03	Q	V
19+50	0.2657	0.03	Q	V
19+55	0.2658	0.02	Q	V
20+ 0	0.2659	0.02	Q	V
20+ 5	0.2661	0.02	Q	V
20+10	0.2663	0.03	Q	V
20+15	0.2664	0.03	Q	V
20+20	0.2666	0.03	Q	V
20+25	0.2668	0.03	Q	V
20+30	0.2670	0.03	Q	V
20+35	0.2672	0.03	Q	V
20+40	0.2674	0.03	Q	V
20+45	0.2676	0.03	Q	V
20+50	0.2677	0.02	Q	V
20+55	0.2679	0.02	Q	V
21+ 0	0.2680	0.02	Q	V
21+ 5	0.2682	0.02	Q	V
21+10	0.2683	0.03	Q	V
21+15	0.2685	0.03	Q	V
21+20	0.2687	0.02	Q	V

ONSITEPRE245.out

21+25	0.2688	0.02	Q			V
21+30	0.2690	0.02	Q			V
21+35	0.2691	0.02	Q			V
21+40	0.2693	0.03	Q			V
21+45	0.2695	0.03	Q			V
21+50	0.2696	0.02	Q			V
21+55	0.2698	0.02	Q			V
22+ 0	0.2699	0.02	Q			V
22+ 5	0.2700	0.02	Q			V
22+10	0.2702	0.03	Q			V
22+15	0.2704	0.03	Q			V
22+20	0.2706	0.02	Q			V
22+25	0.2707	0.02	Q			V
22+30	0.2708	0.02	Q			V
22+35	0.2710	0.02	Q			V
22+40	0.2711	0.02	Q			V
22+45	0.2712	0.02	Q			V
22+50	0.2714	0.02	Q			V
22+55	0.2715	0.02	Q			V
23+ 0	0.2716	0.02	Q			V
23+ 5	0.2717	0.02	Q			V
23+10	0.2719	0.02	Q			V
23+15	0.2720	0.02	Q			V
23+20	0.2721	0.02	Q			V
23+25	0.2722	0.02	Q			V
23+30	0.2724	0.02	Q			V
23+35	0.2725	0.02	Q			V
23+40	0.2726	0.02	Q			V
23+45	0.2727	0.02	Q			V
23+50	0.2729	0.02	Q			V
23+55	0.2730	0.02	Q			V
24+ 0	0.2731	0.02	Q			V
24+ 5	0.2732	0.01	Q			V
24+10	0.2732	0.00	Q			V
24+15	0.2733	0.00	Q			V
24+20	0.2733	0.00	Q			V
24+25	0.2733	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPRE2410.out

 +-----+

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 EXISTING CONDITION H-12 TRIBUTARY, 10-YEAR 24-HOUR
 FN: ONSITEPRE2410.OUT- TSW

 Drainage Area = 8.40(Ac.) = 0.013 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 8.40(Ac.) = 0.013 Sq. Mi.
 Length along longest watercourse = 765.00(Ft.)
 Length along longest watercourse measured to centroid = 421.00(Ft.)
 Length along longest watercourse = 0.145 Mi.
 Length along longest watercourse measured to centroid = 0.080 Mi.
 Difference in elevation = 7.60(Ft.)
 Slope along watercourse = 52.4549 Ft./Mi.
 Average Manning's 'N' = 0.030
 Lag time = 0.062 Hr.
 Lag time = 3.74 Min.
 25% of lag time = 0.93 Min.
 40% of lag time = 1.49 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
8.40	2.00	16.80

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
8.40	5.00	42.00

STORM EVENT (YEAR) = 10.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 3.234(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 3.234(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 8.400 78.00 0.000
 Total Area Entered = 8.40(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
78.0	78.0	0.268	0.000	0.268	1.000	0.268
						Sum (F) =
						0.268

Area averaged mean soil loss (F) (In/Hr) = 0.268
 Minimum soil loss rate ((In/Hr)) = 0.134
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.900

ONSITEPRE2410.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	133.792	29.047	2.459
2	0.167	267.583	48.085	4.071
3	0.250	401.375	12.228	1.035
4	0.333	535.166	5.433	0.460
5	0.417	668.958	2.964	0.251
6	0.500	802.750	2.243	0.190
			Sum = 100.000	Sum= 8.466

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1	0.08	0.026	(0.474)	0.023	0.003
2	0.17	0.026	(0.473)	0.023	0.003
3	0.25	0.026	(0.471)	0.023	0.003
4	0.33	0.039	(0.469)	0.035	0.004
5	0.42	0.039	(0.467)	0.035	0.004
6	0.50	0.039	(0.465)	0.035	0.004
7	0.58	0.039	(0.463)	0.035	0.004
8	0.67	0.039	(0.462)	0.035	0.004
9	0.75	0.039	(0.460)	0.035	0.004
10	0.83	0.052	(0.458)	0.047	0.005
11	0.92	0.052	(0.456)	0.047	0.005
12	1.00	0.052	(0.454)	0.047	0.005
13	1.08	0.039	(0.453)	0.035	0.004
14	1.17	0.039	(0.451)	0.035	0.004
15	1.25	0.039	(0.449)	0.035	0.004
16	1.33	0.039	(0.447)	0.035	0.004
17	1.42	0.039	(0.445)	0.035	0.004
18	1.50	0.039	(0.444)	0.035	0.004
19	1.58	0.039	(0.442)	0.035	0.004
20	1.67	0.039	(0.440)	0.035	0.004
21	1.75	0.039	(0.438)	0.035	0.004
22	1.83	0.052	(0.437)	0.047	0.005
23	1.92	0.052	(0.435)	0.047	0.005
24	2.00	0.052	(0.433)	0.047	0.005
25	2.08	0.052	(0.431)	0.047	0.005
26	2.17	0.052	(0.430)	0.047	0.005
27	2.25	0.052	(0.428)	0.047	0.005
28	2.33	0.052	(0.426)	0.047	0.005
29	2.42	0.052	(0.424)	0.047	0.005
30	2.50	0.052	(0.423)	0.047	0.005
31	2.58	0.065	(0.421)	0.058	0.006
32	2.67	0.065	(0.419)	0.058	0.006
33	2.75	0.065	(0.417)	0.058	0.006
34	2.83	0.065	(0.416)	0.058	0.006
35	2.92	0.065	(0.414)	0.058	0.006
36	3.00	0.065	(0.412)	0.058	0.006
37	3.08	0.065	(0.411)	0.058	0.006
38	3.17	0.065	(0.409)	0.058	0.006
39	3.25	0.065	(0.407)	0.058	0.006
40	3.33	0.065	(0.405)	0.058	0.006
41	3.42	0.065	(0.404)	0.058	0.006
42	3.50	0.065	(0.402)	0.058	0.006
43	3.58	0.065	(0.400)	0.058	0.006
44	3.67	0.065	(0.399)	0.058	0.006
45	3.75	0.065	(0.397)	0.058	0.006
46	3.83	0.078	(0.395)	0.070	0.008
47	3.92	0.078	(0.394)	0.070	0.008
48	4.00	0.078	(0.392)	0.070	0.008
49	4.08	0.078	(0.390)	0.070	0.008
50	4.17	0.078	(0.389)	0.070	0.008
51	4.25	0.078	(0.387)	0.070	0.008
52	4.33	0.091	(0.385)	0.082	0.009
53	4.42	0.091	(0.384)	0.082	0.009
54	4.50	0.091	(0.382)	0.082	0.009
55	4.58	0.091	(0.381)	0.082	0.009
56	4.67	0.091	(0.379)	0.082	0.009
57	4.75	0.091	(0.377)	0.082	0.009
58	4.83	0.103	(0.376)	0.093	0.010
59	4.92	0.103	(0.374)	0.093	0.010
60	5.00	0.103	(0.372)	0.093	0.010
61	5.08	0.078	(0.371)	0.070	0.008
62	5.17	0.078	(0.369)	0.070	0.008

ONSITEPRE2410.out						
63	5.25	0.20	0.078	(0.368)	0.070	0.008
64	5.33	0.23	0.091	(0.366)	0.082	0.009
65	5.42	0.23	0.091	(0.364)	0.082	0.009
66	5.50	0.23	0.091	(0.363)	0.082	0.009
67	5.58	0.27	0.103	(0.361)	0.093	0.010
68	5.67	0.27	0.103	(0.360)	0.093	0.010
69	5.75	0.27	0.103	(0.358)	0.093	0.010
70	5.83	0.27	0.103	(0.356)	0.093	0.010
71	5.92	0.27	0.103	(0.355)	0.093	0.010
72	6.00	0.27	0.103	(0.353)	0.093	0.010
73	6.08	0.30	0.116	(0.352)	0.105	0.012
74	6.17	0.30	0.116	(0.350)	0.105	0.012
75	6.25	0.30	0.116	(0.349)	0.105	0.012
76	6.33	0.30	0.116	(0.347)	0.105	0.012
77	6.42	0.30	0.116	(0.345)	0.105	0.012
78	6.50	0.30	0.116	(0.344)	0.105	0.012
79	6.58	0.33	0.129	(0.342)	0.116	0.013
80	6.67	0.33	0.129	(0.341)	0.116	0.013
81	6.75	0.33	0.129	(0.339)	0.116	0.013
82	6.83	0.33	0.129	(0.338)	0.116	0.013
83	6.92	0.33	0.129	(0.336)	0.116	0.013
84	7.00	0.33	0.129	(0.335)	0.116	0.013
85	7.08	0.33	0.129	(0.333)	0.116	0.013
86	7.17	0.33	0.129	(0.332)	0.116	0.013
87	7.25	0.33	0.129	(0.330)	0.116	0.013
88	7.33	0.37	0.142	(0.329)	0.128	0.014
89	7.42	0.37	0.142	(0.327)	0.128	0.014
90	7.50	0.37	0.142	(0.326)	0.128	0.014
91	7.58	0.40	0.155	(0.324)	0.140	0.016
92	7.67	0.40	0.155	(0.323)	0.140	0.016
93	7.75	0.40	0.155	(0.321)	0.140	0.016
94	7.83	0.43	0.168	(0.320)	0.151	0.017
95	7.92	0.43	0.168	(0.318)	0.151	0.017
96	8.00	0.43	0.168	(0.317)	0.151	0.017
97	8.08	0.50	0.194	(0.315)	0.175	0.019
98	8.17	0.50	0.194	(0.314)	0.175	0.019
99	8.25	0.50	0.194	(0.312)	0.175	0.019
100	8.33	0.50	0.194	(0.311)	0.175	0.019
101	8.42	0.50	0.194	(0.309)	0.175	0.019
102	8.50	0.50	0.194	(0.308)	0.175	0.019
103	8.58	0.53	0.207	(0.306)	0.186	0.021
104	8.67	0.53	0.207	(0.305)	0.186	0.021
105	8.75	0.53	0.207	(0.304)	0.186	0.021
106	8.83	0.57	0.220	(0.302)	0.198	0.022
107	8.92	0.57	0.220	(0.301)	0.198	0.022
108	9.00	0.57	0.220	(0.299)	0.198	0.022
109	9.08	0.63	0.246	(0.298)	0.221	0.025
110	9.17	0.63	0.246	(0.296)	0.221	0.025
111	9.25	0.63	0.246	(0.295)	0.221	0.025
112	9.33	0.67	0.259	(0.294)	0.233	0.026
113	9.42	0.67	0.259	(0.292)	0.233	0.026
114	9.50	0.67	0.259	(0.291)	0.233	0.026
115	9.58	0.70	0.272	(0.289)	0.245	0.027
116	9.67	0.70	0.272	(0.288)	0.245	0.027
117	9.75	0.70	0.272	(0.287)	0.245	0.027
118	9.83	0.73	0.285	(0.285)	0.256	0.028
119	9.92	0.73	0.285	(0.284)	0.256	0.028
120	10.00	0.73	0.285	(0.283)	0.256	0.028
121	10.08	0.50	0.194	(0.281)	0.175	0.019
122	10.17	0.50	0.194	(0.280)	0.175	0.019
123	10.25	0.50	0.194	(0.278)	0.175	0.019
124	10.33	0.50	0.194	(0.277)	0.175	0.019
125	10.42	0.50	0.194	(0.276)	0.175	0.019
126	10.50	0.50	0.194	(0.274)	0.175	0.019
127	10.58	0.67	0.259	(0.273)	0.233	0.026
128	10.67	0.67	0.259	(0.272)	0.233	0.026
129	10.75	0.67	0.259	(0.270)	0.233	0.026
130	10.83	0.67	0.259	(0.269)	0.233	0.026
131	10.92	0.67	0.259	(0.268)	0.233	0.026
132	11.00	0.67	0.259	(0.266)	0.233	0.026
133	11.08	0.63	0.246	(0.265)	0.221	0.025
134	11.17	0.63	0.246	(0.264)	0.221	0.025
135	11.25	0.63	0.246	(0.263)	0.221	0.025
136	11.33	0.63	0.246	(0.261)	0.221	0.025
137	11.42	0.63	0.246	(0.260)	0.221	0.025
138	11.50	0.63	0.246	(0.259)	0.221	0.025
139	11.58	0.57	0.220	(0.257)	0.198	0.022
140	11.67	0.57	0.220	(0.256)	0.198	0.022
141	11.75	0.57	0.220	(0.255)	0.198	0.022
142	11.83	0.60	0.233	(0.254)	0.210	0.023
143	11.92	0.60	0.233	(0.252)	0.210	0.023
144	12.00	0.60	0.233	(0.251)	0.210	0.023
145	12.08	0.83	0.323	0.250 (0.291)	0.074	0.074
146	12.17	0.83	0.323	0.249 (0.291)	0.075	0.075

ONSITEPRE2410.out

147	12.25	0.83	0.323	0.247	(0.291)	0.076
148	12.33	0.87	0.336	0.246	(0.303)	0.090
149	12.42	0.87	0.336	0.245	(0.303)	0.092
150	12.50	0.87	0.336	0.244	(0.303)	0.093
151	12.58	0.93	0.362	0.242	(0.326)	0.120
152	12.67	0.93	0.362	0.241	(0.326)	0.121
153	12.75	0.93	0.362	0.240	(0.326)	0.122
154	12.83	0.97	0.375	0.239	(0.338)	0.136
155	12.92	0.97	0.375	0.238	(0.338)	0.138
156	13.00	0.97	0.375	0.236	(0.338)	0.139
157	13.08	1.13	0.440	0.235	(0.396)	0.205
158	13.17	1.13	0.440	0.234	(0.396)	0.206
159	13.25	1.13	0.440	0.233	(0.396)	0.207
160	13.33	1.13	0.440	0.232	(0.396)	0.208
161	13.42	1.13	0.440	0.230	(0.396)	0.209
162	13.50	1.13	0.440	0.229	(0.396)	0.211
163	13.58	0.77	0.298	0.228	(0.268)	0.070
164	13.67	0.77	0.298	0.227	(0.268)	0.071
165	13.75	0.77	0.298	0.226	(0.268)	0.072
166	13.83	0.77	0.298	0.225	(0.268)	0.073
167	13.92	0.77	0.298	0.223	(0.268)	0.074
168	14.00	0.77	0.298	0.222	(0.268)	0.075
169	14.08	0.90	0.349	0.221	(0.314)	0.128
170	14.17	0.90	0.349	0.220	(0.314)	0.129
171	14.25	0.90	0.349	0.219	(0.314)	0.130
172	14.33	0.87	0.336	0.218	(0.303)	0.119
173	14.42	0.87	0.336	0.217	(0.303)	0.120
174	14.50	0.87	0.336	0.216	(0.303)	0.121
175	14.58	0.87	0.336	0.214	(0.303)	0.122
176	14.67	0.87	0.336	0.213	(0.303)	0.123
177	14.75	0.87	0.336	0.212	(0.303)	0.124
178	14.83	0.83	0.323	0.211	(0.291)	0.112
179	14.92	0.83	0.323	0.210	(0.291)	0.113
180	15.00	0.83	0.323	0.209	(0.291)	0.114
181	15.08	0.80	0.310	0.208	(0.279)	0.103
182	15.17	0.80	0.310	0.207	(0.279)	0.104
183	15.25	0.80	0.310	0.206	(0.279)	0.105
184	15.33	0.77	0.298	0.205	(0.268)	0.093
185	15.42	0.77	0.298	0.204	(0.268)	0.094
186	15.50	0.77	0.298	0.203	(0.268)	0.095
187	15.58	0.63	0.246	0.202	(0.221)	0.044
188	15.67	0.63	0.246	0.201	(0.221)	0.045
189	15.75	0.63	0.246	0.200	(0.221)	0.046
190	15.83	0.63	0.246	0.199	(0.221)	0.047
191	15.92	0.63	0.246	0.198	(0.221)	0.048
192	16.00	0.63	0.246	0.197	(0.221)	0.049
193	16.08	0.13	0.052	(0.196)	0.047	0.005
194	16.17	0.13	0.052	(0.195)	0.047	0.005
195	16.25	0.13	0.052	(0.194)	0.047	0.005
196	16.33	0.13	0.052	(0.193)	0.047	0.005
197	16.42	0.13	0.052	(0.192)	0.047	0.005
198	16.50	0.13	0.052	(0.191)	0.047	0.005
199	16.58	0.10	0.039	(0.190)	0.035	0.004
200	16.67	0.10	0.039	(0.189)	0.035	0.004
201	16.75	0.10	0.039	(0.188)	0.035	0.004
202	16.83	0.10	0.039	(0.187)	0.035	0.004
203	16.92	0.10	0.039	(0.186)	0.035	0.004
204	17.00	0.10	0.039	(0.185)	0.035	0.004
205	17.08	0.17	0.065	(0.184)	0.058	0.006
206	17.17	0.17	0.065	(0.183)	0.058	0.006
207	17.25	0.17	0.065	(0.182)	0.058	0.006
208	17.33	0.17	0.065	(0.181)	0.058	0.006
209	17.42	0.17	0.065	(0.180)	0.058	0.006
210	17.50	0.17	0.065	(0.179)	0.058	0.006
211	17.58	0.17	0.065	(0.178)	0.058	0.006
212	17.67	0.17	0.065	(0.178)	0.058	0.006
213	17.75	0.17	0.065	(0.177)	0.058	0.006
214	17.83	0.13	0.052	(0.176)	0.047	0.005
215	17.92	0.13	0.052	(0.175)	0.047	0.005
216	18.00	0.13	0.052	(0.174)	0.047	0.005
217	18.08	0.13	0.052	(0.173)	0.047	0.005
218	18.17	0.13	0.052	(0.172)	0.047	0.005
219	18.25	0.13	0.052	(0.172)	0.047	0.005
220	18.33	0.13	0.052	(0.171)	0.047	0.005
221	18.42	0.13	0.052	(0.170)	0.047	0.005
222	18.50	0.13	0.052	(0.169)	0.047	0.005
223	18.58	0.10	0.039	(0.168)	0.035	0.004
224	18.67	0.10	0.039	(0.167)	0.035	0.004
225	18.75	0.10	0.039	(0.167)	0.035	0.004
226	18.83	0.07	0.026	(0.166)	0.023	0.003
227	18.92	0.07	0.026	(0.165)	0.023	0.003
228	19.00	0.07	0.026	(0.164)	0.023	0.003
229	19.08	0.10	0.039	(0.163)	0.035	0.004
230	19.17	0.10	0.039	(0.163)	0.035	0.004

ONSITEPRE2410.out

231	19.25	0.10	0.039	(0.162)	0.035	0.004
232	19.33	0.13	0.052	(0.161)	0.047	0.005
233	19.42	0.13	0.052	(0.160)	0.047	0.005
234	19.50	0.13	0.052	(0.160)	0.047	0.005
235	19.58	0.10	0.039	(0.159)	0.035	0.004
236	19.67	0.10	0.039	(0.158)	0.035	0.004
237	19.75	0.10	0.039	(0.157)	0.035	0.004
238	19.83	0.07	0.026	(0.157)	0.023	0.003
239	19.92	0.07	0.026	(0.156)	0.023	0.003
240	20.00	0.07	0.026	(0.155)	0.023	0.003
241	20.08	0.10	0.039	(0.155)	0.035	0.004
242	20.17	0.10	0.039	(0.154)	0.035	0.004
243	20.25	0.10	0.039	(0.153)	0.035	0.004
244	20.33	0.10	0.039	(0.153)	0.035	0.004
245	20.42	0.10	0.039	(0.152)	0.035	0.004
246	20.50	0.10	0.039	(0.151)	0.035	0.004
247	20.58	0.10	0.039	(0.151)	0.035	0.004
248	20.67	0.10	0.039	(0.150)	0.035	0.004
249	20.75	0.10	0.039	(0.150)	0.035	0.004
250	20.83	0.07	0.026	(0.149)	0.023	0.003
251	20.92	0.07	0.026	(0.148)	0.023	0.003
252	21.00	0.07	0.026	(0.148)	0.023	0.003
253	21.08	0.10	0.039	(0.147)	0.035	0.004
254	21.17	0.10	0.039	(0.147)	0.035	0.004
255	21.25	0.10	0.039	(0.146)	0.035	0.004
256	21.33	0.07	0.026	(0.145)	0.023	0.003
257	21.42	0.07	0.026	(0.145)	0.023	0.003
258	21.50	0.07	0.026	(0.144)	0.023	0.003
259	21.58	0.10	0.039	(0.144)	0.035	0.004
260	21.67	0.10	0.039	(0.143)	0.035	0.004
261	21.75	0.10	0.039	(0.143)	0.035	0.004
262	21.83	0.07	0.026	(0.142)	0.023	0.003
263	21.92	0.07	0.026	(0.142)	0.023	0.003
264	22.00	0.07	0.026	(0.141)	0.023	0.003
265	22.08	0.10	0.039	(0.141)	0.035	0.004
266	22.17	0.10	0.039	(0.140)	0.035	0.004
267	22.25	0.10	0.039	(0.140)	0.035	0.004
268	22.33	0.07	0.026	(0.139)	0.023	0.003
269	22.42	0.07	0.026	(0.139)	0.023	0.003
270	22.50	0.07	0.026	(0.139)	0.023	0.003
271	22.58	0.07	0.026	(0.138)	0.023	0.003
272	22.67	0.07	0.026	(0.138)	0.023	0.003
273	22.75	0.07	0.026	(0.137)	0.023	0.003
274	22.83	0.07	0.026	(0.137)	0.023	0.003
275	22.92	0.07	0.026	(0.137)	0.023	0.003
276	23.00	0.07	0.026	(0.136)	0.023	0.003
277	23.08	0.07	0.026	(0.136)	0.023	0.003
278	23.17	0.07	0.026	(0.136)	0.023	0.003
279	23.25	0.07	0.026	(0.136)	0.023	0.003
280	23.33	0.07	0.026	(0.135)	0.023	0.003
281	23.42	0.07	0.026	(0.135)	0.023	0.003
282	23.50	0.07	0.026	(0.135)	0.023	0.003
283	23.58	0.07	0.026	(0.135)	0.023	0.003
284	23.67	0.07	0.026	(0.134)	0.023	0.003
285	23.75	0.07	0.026	(0.134)	0.023	0.003
286	23.83	0.07	0.026	(0.134)	0.023	0.003
287	23.92	0.07	0.026	(0.134)	0.023	0.003
288	24.00	0.07	0.026	(0.134)	0.023	0.003

(Loss Rate Not Used)

Sum = 100.0 Sum = 7.6

Flood volume = Effective rainfall 0.63(In)
 times area 8.4(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)
 Total soil loss = 2.60(In)
 Total soil loss = 1.822(Ac.Ft)
 Total rainfall = 3.23(In)
 Flood volume = 19236.7 Cubic Feet
 Total soil loss = 79379.6 Cubic Feet

 Peak flow rate of this hydrograph = 1.773(CFS)

+++++

24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01	Q				
0+10	0.0002	0.02	Q				
0+15	0.0003	0.02	Q				
0+20	0.0005	0.02	Q				
0+25	0.0007	0.03	Q				

0+30	0.0009	0.03	Q
0+35	0.0011	0.03	Q
0+40	0.0013	0.03	Q
0+45	0.0016	0.03	Q
0+50	0.0018	0.04	Q
0+55	0.0021	0.04	Q
1+ 0	0.0024	0.04	Q
1+ 5	0.0027	0.04	Q
1+10	0.0029	0.04	Q
1+15	0.0031	0.03	Q
1+20	0.0034	0.03	Q
1+25	0.0036	0.03	Q
1+30	0.0038	0.03	Q
1+35	0.0040	0.03	Q
1+40	0.0043	0.03	Q
1+45	0.0045	0.03	Q
1+50	0.0047	0.04	Q
1+55	0.0050	0.04	Q
2+ 0	0.0053	0.04	Q
2+ 5	0.0056	0.04	Q
2+10	0.0059	0.04	Q
2+15	0.0062	0.04	Q
2+20	0.0065	0.04	Q
2+25	0.0068	0.04	Q
2+30	0.0071	0.04	Q
2+35	0.0075	0.05	Q
2+40	0.0078	0.05	Q
2+45	0.0082	0.05	Q
2+50	0.0086	0.05	Q
2+55	0.0089	0.05	Q
3+ 0	0.0093	0.05	Q
3+ 5	0.0097	0.05	Q
3+10	0.0101	0.05	Q
3+15	0.0104	0.05	Q
3+20	0.0108	0.05	Q
3+25	0.0112	0.05	QV
3+30	0.0116	0.05	QV
3+35	0.0120	0.05	QV
3+40	0.0123	0.05	QV
3+45	0.0127	0.05	QV
3+50	0.0131	0.06	QV
3+55	0.0135	0.06	QV
4+ 0	0.0140	0.06	QV
4+ 5	0.0144	0.07	QV
4+10	0.0149	0.07	QV
4+15	0.0153	0.07	QV
4+20	0.0158	0.07	QV
4+25	0.0163	0.07	QV
4+30	0.0168	0.08	QV
4+35	0.0174	0.08	QV
4+40	0.0179	0.08	QV
4+45	0.0184	0.08	QV
4+50	0.0190	0.08	QV
4+55	0.0196	0.09	QV
5+ 0	0.0202	0.09	QV
5+ 5	0.0207	0.08	QV
5+10	0.0212	0.07	QV
5+15	0.0217	0.07	QV
5+20	0.0222	0.07	Q V
5+25	0.0227	0.07	Q V
5+30	0.0232	0.08	Q V
5+35	0.0237	0.08	Q V
5+40	0.0243	0.08	Q V
5+45	0.0249	0.09	Q V
5+50	0.0255	0.09	Q V
5+55	0.0261	0.09	Q V
6+ 0	0.0267	0.09	Q V
6+ 5	0.0273	0.09	Q V
6+10	0.0280	0.10	Q V
6+15	0.0287	0.10	Q V
6+20	0.0294	0.10	Q V
6+25	0.0300	0.10	Q V
6+30	0.0307	0.10	Q V
6+35	0.0314	0.10	Q V
6+40	0.0321	0.11	Q V
6+45	0.0329	0.11	Q V
6+50	0.0336	0.11	Q V
6+55	0.0344	0.11	Q V
7+ 0	0.0352	0.11	Q V
7+ 5	0.0359	0.11	Q V
7+10	0.0367	0.11	Q V
7+15	0.0374	0.11	Q V
7+20	0.0382	0.11	Q V
7+25	0.0390	0.12	Q V

7+30	0.0398	0.12	Q	V			
7+35	0.0407	0.12	Q	Q	V		
7+40	0.0416	0.13	Q	Q	V		
7+45	0.0425	0.13	Q	Q	V		
7+50	0.0434	0.13	Q	Q	V		
7+55	0.0443	0.14	Q	Q	V		
8+ 0	0.0453	0.14	Q	Q	V		
8+ 5	0.0463	0.15	Q	Q	V		
8+10	0.0474	0.16	Q	Q	V		
8+15	0.0486	0.16	Q	Q	V		
8+20	0.0497	0.16	Q	Q	V		
8+25	0.0508	0.16	Q	Q	V		
8+30	0.0519	0.16	Q	Q	V		
8+35	0.0531	0.17	Q	Q	V		
8+40	0.0543	0.17	Q	Q	V		
8+45	0.0555	0.17	Q	Q	V		
8+50	0.0567	0.18	Q	Q	V		
8+55	0.0580	0.18	Q	Q	V		
9+ 0	0.0592	0.19	Q	Q	V		
9+ 5	0.0606	0.19	Q	Q	V		
9+10	0.0620	0.20	Q	Q	V		
9+15	0.0634	0.21	Q	Q	V		
9+20	0.0648	0.21	Q	Q	V		
9+25	0.0663	0.22	Q	Q	V		
9+30	0.0678	0.22	Q	Q	V		
9+35	0.0693	0.22	Q	Q	V		
9+40	0.0709	0.23	Q	Q	V		
9+45	0.0725	0.23	Q	Q	V		
9+50	0.0741	0.23	Q	Q	V		
9+55	0.0757	0.24	Q	Q	V		
10+ 0	0.0774	0.24	Q	Q	V		
10+ 5	0.0789	0.22	Q	Q	V		
10+10	0.0801	0.18	Q	Q	V		
10+15	0.0813	0.17	Q	Q	V		
10+20	0.0825	0.17	Q	Q	V		
10+25	0.0836	0.17	Q	Q	V		
10+30	0.0848	0.16	Q	Q	V		
10+35	0.0860	0.18	Q	Q	V		
10+40	0.0874	0.21	Q	Q	V		
10+45	0.0889	0.21	Q	Q	V		
10+50	0.0904	0.22	Q	Q	V		
10+55	0.0919	0.22	Q	Q	V		
11+ 0	0.0934	0.22	Q	Q	V		
11+ 5	0.0949	0.22	Q	Q	V		
11+10	0.0963	0.21	Q	Q	V		
11+15	0.0978	0.21	Q	Q	V		
11+20	0.0992	0.21	Q	Q	V		
11+25	0.1006	0.21	Q	Q	V		
11+30	0.1021	0.21	Q	Q	V		
11+35	0.1035	0.20	Q	Q	V		
11+40	0.1048	0.19	Q	Q	V		
11+45	0.1061	0.19	Q	Q	V		
11+50	0.1074	0.19	Q	Q	V		
11+55	0.1087	0.20	Q	Q	V		
12+ 0	0.1101	0.20	Q	Q	V		
12+ 5	0.1123	0.32	Q	Q	V		
12+10	0.1159	0.53	Q	Q	V		
12+15	0.1200	0.59	Q	Q	V		
12+20	0.1245	0.65	Q	Q	V		
12+25	0.1295	0.73	Q	Q	V		
12+30	0.1348	0.76	Q	Q	V		
12+35	0.1406	0.84	Q	Q	V		
12+40	0.1472	0.96	Q	Q	V		
12+45	0.1541	1.00	Q	Q	V		
12+50	0.1614	1.06	Q	Q	V		
12+55	0.1691	1.12	Q	Q	V		
13+ 0	0.1770	1.15	Q	Q	V		
13+ 5	0.1862	1.33	Q	Q	V		
13+10	0.1973	1.61	Q	Q	V		
13+15	0.2089	1.68	Q	Q	V		
13+20	0.2207	1.72	Q	Q	V		
13+25	0.2328	1.75	Q	Q	V		
13+30	0.2450	1.77	Q	Q	V		
13+35	0.2549	1.43	Q	Q	V		
13+40	0.2608	0.86	Q	Q	V		
13+45	0.2658	0.73	Q	Q	V		
13+50	0.2704	0.67	Q	Q	V		
13+55	0.2749	0.64	Q	Q	V		
14+ 0	0.2792	0.63	Q	Q	V		
14+ 5	0.2844	0.76	Q	Q	V		
14+10	0.2912	0.98	Q	Q	V		
14+15	0.2984	1.05	Q	Q	V		
14+20	0.3056	1.05	Q	Q	V		
14+25	0.3127	1.02	Q	Q	V		

14+30	0.3197	1.02	|	Q	|	V
14+35	0.3268	1.03	|	Q	|	V
14+40	0.3339	1.03	|	Q	|	V
14+45	0.3411	1.04	|	Q	|	V
14+50	0.3481	1.02	|	Q	|	V
14+55	0.3548	0.97	|	Q	|	V
15+ 0	0.3615	0.97	|	Q	|	V
15+ 5	0.3680	0.94	|	Q	|	V
15+10	0.3741	0.89	|	Q	|	V
15+15	0.3803	0.89	|	Q	|	V
15+20	0.3862	0.86	|	Q	|	V
15+25	0.3918	0.81	|	Q	|	V
15+30	0.3973	0.81	|	Q	|	V
15+35	0.4020	0.68	|	Q	|	V
15+40	0.4053	0.48	|	Q	|	V
15+45	0.4082	0.43	|	Q	|	V
15+50	0.4111	0.41	|	Q	|	V
15+55	0.4139	0.41	|	Q	|	V
16+ 0	0.4167	0.41	|	Q	|	V
16+ 5	0.4188	0.31	|	Q	|	V
16+10	0.4197	0.13	|	Q	|	V
16+15	0.4203	0.08	|	Q	|	V
16+20	0.4207	0.06	|	Q	|	V
16+25	0.4211	0.05	|	Q	|	V
16+30	0.4214	0.04	|	Q	|	V
16+35	0.4216	0.04	|	Q	|	V
16+40	0.4219	0.04	|	Q	|	V
16+45	0.4221	0.03	|	Q	|	V
16+50	0.4223	0.03	|	Q	|	V
16+55	0.4226	0.03	|	Q	|	V
17+ 0	0.4228	0.03	|	Q	|	V
17+ 5	0.4231	0.04	|	Q	|	V
17+10	0.4234	0.05	|	Q	|	V
17+15	0.4238	0.05	|	Q	|	V
17+20	0.4241	0.05	|	Q	|	V
17+25	0.4245	0.05	|	Q	|	V
17+30	0.4249	0.05	|	Q	|	V
17+35	0.4253	0.05	|	Q	|	V
17+40	0.4256	0.05	|	Q	|	V
17+45	0.4260	0.05	|	Q	|	V
17+50	0.4264	0.05	|	Q	|	V
17+55	0.4267	0.05	|	Q	|	V
18+ 0	0.4270	0.04	|	Q	|	V
18+ 5	0.4273	0.04	|	Q	|	V
18+10	0.4276	0.04	|	Q	|	V
18+15	0.4279	0.04	|	Q	|	V
18+20	0.4282	0.04	|	Q	|	V
18+25	0.4285	0.04	|	Q	|	V
18+30	0.4288	0.04	|	Q	|	V
18+35	0.4291	0.04	|	Q	|	V
18+40	0.4293	0.04	|	Q	|	V
18+45	0.4296	0.03	|	Q	|	V
18+50	0.4298	0.03	|	Q	|	V
18+55	0.4300	0.02	|	Q	|	V
19+ 0	0.4301	0.02	|	Q	|	V
19+ 5	0.4303	0.03	|	Q	|	V
19+10	0.4305	0.03	|	Q	|	V
19+15	0.4307	0.03	|	Q	|	V
19+20	0.4310	0.04	|	Q	|	V
19+25	0.4313	0.04	|	Q	|	V
19+30	0.4315	0.04	|	Q	|	V
19+35	0.4318	0.04	|	Q	|	V
19+40	0.4321	0.04	|	Q	|	V
19+45	0.4323	0.03	|	Q	|	V
19+50	0.4325	0.03	|	Q	|	V
19+55	0.4327	0.02	|	Q	|	V
20+ 0	0.4328	0.02	|	Q	|	V
20+ 5	0.4330	0.03	|	Q	|	V
20+10	0.4332	0.03	|	Q	|	V
20+15	0.4334	0.03	|	Q	|	V
20+20	0.4337	0.03	|	Q	|	V
20+25	0.4339	0.03	|	Q	|	V
20+30	0.4341	0.03	|	Q	|	V
20+35	0.4343	0.03	|	Q	|	V
20+40	0.4346	0.03	|	Q	|	V
20+45	0.4348	0.03	|	Q	|	V
20+50	0.4350	0.03	|	Q	|	V
20+55	0.4352	0.02	|	Q	|	V
21+ 0	0.4353	0.02	|	Q	|	V
21+ 5	0.4355	0.03	|	Q	|	V
21+10	0.4357	0.03	|	Q	|	V
21+15	0.4359	0.03	|	Q	|	V
21+20	0.4361	0.03	|	Q	|	V
21+25	0.4363	0.02	|	Q	|	V

ONSITEPRE2410.out

21+30	0.4365	0.02	Q			V
21+35	0.4366	0.03	Q			V
21+40	0.4368	0.03	Q			V
21+45	0.4371	0.03	Q			V
21+50	0.4373	0.03	Q			V
21+55	0.4374	0.02	Q			V
22+ 0	0.4376	0.02	Q			V
22+ 5	0.4378	0.03	Q			V
22+10	0.4380	0.03	Q			V
22+15	0.4382	0.03	Q			V
22+20	0.4384	0.03	Q			V
22+25	0.4386	0.02	Q			V
22+30	0.4387	0.02	Q			V
22+35	0.4389	0.02	Q			V
22+40	0.4390	0.02	Q			V
22+45	0.4392	0.02	Q			V
22+50	0.4393	0.02	Q			V
22+55	0.4395	0.02	Q			V
23+ 0	0.4396	0.02	Q			V
23+ 5	0.4398	0.02	Q			V
23+10	0.4399	0.02	Q			V
23+15	0.4401	0.02	Q			V
23+20	0.4402	0.02	Q			V
23+25	0.4404	0.02	Q			V
23+30	0.4405	0.02	Q			V
23+35	0.4407	0.02	Q			V
23+40	0.4408	0.02	Q			V
23+45	0.4410	0.02	Q			V
23+50	0.4411	0.02	Q			V
23+55	0.4413	0.02	Q			V
24+ 0	0.4414	0.02	Q			V
24+ 5	0.4416	0.02	Q			V
24+10	0.4416	0.01	Q			V
24+15	0.4416	0.00	Q			V
24+20	0.4416	0.00	Q			V
24+25	0.4416	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPRE24100.out

 +-----

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 EXISTING CONDITION H-12 TRIBUTARY, 100-YEAR 24-HOUR
 FN: ONSITEPRE24100.OUT- TSW

 Drainage Area = 8.40(Ac.) = 0.013 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 8.40(Ac.) = 0.013 Sq. Mi.
 Length along longest watercourse = 765.00(Ft.)
 Length along longest watercourse measured to centroid = 421.00(Ft.)
 Length along longest watercourse = 0.145 Mi.
 Length along longest watercourse measured to centroid = 0.080 Mi.
 Difference in elevation = 7.60(Ft.)
 Slope along watercourse = 52.4549 Ft./Mi.
 Average Manning's 'N' = 0.030
 Lag time = 0.062 Hr.
 Lag time = 3.74 Min.
 25% of lag time = 0.93 Min.
 40% of lag time = 1.49 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
8.40	2.00	16.80

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
8.40	5.00	42.00

STORM EVENT (YEAR) = 100.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 5.000(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 5.000(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 8.400 78.00 0.000
 Total Area Entered = 8.40(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
78.0	78.0	0.268	0.000	0.268	1.000	0.268
						Sum (F) =
						0.268

Area averaged mean soil loss (F) (In/Hr) = 0.268
 Minimum soil loss rate ((In/Hr)) = 0.134
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.900

ONSITEPRE24100.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	133.792	29.047	2.459
2	0.167	267.583	48.085	4.071
3	0.250	401.375	12.228	1.035
4	0.333	535.166	5.433	0.460
5	0.417	668.958	2.964	0.251
6	0.500	802.750	2.243	0.190
			Sum = 100.000	Sum= 8.466

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1	0.08	0.040	(0.474)	0.036	0.004
2	0.17	0.040	(0.473)	0.036	0.004
3	0.25	0.040	(0.471)	0.036	0.004
4	0.33	0.060	(0.469)	0.054	0.006
5	0.42	0.060	(0.467)	0.054	0.006
6	0.50	0.060	(0.465)	0.054	0.006
7	0.58	0.060	(0.463)	0.054	0.006
8	0.67	0.060	(0.462)	0.054	0.006
9	0.75	0.060	(0.460)	0.054	0.006
10	0.83	0.080	(0.458)	0.072	0.008
11	0.92	0.080	(0.456)	0.072	0.008
12	1.00	0.080	(0.454)	0.072	0.008
13	1.08	0.060	(0.453)	0.054	0.006
14	1.17	0.060	(0.451)	0.054	0.006
15	1.25	0.060	(0.449)	0.054	0.006
16	1.33	0.060	(0.447)	0.054	0.006
17	1.42	0.060	(0.445)	0.054	0.006
18	1.50	0.060	(0.444)	0.054	0.006
19	1.58	0.060	(0.442)	0.054	0.006
20	1.67	0.060	(0.440)	0.054	0.006
21	1.75	0.060	(0.438)	0.054	0.006
22	1.83	0.080	(0.437)	0.072	0.008
23	1.92	0.080	(0.435)	0.072	0.008
24	2.00	0.080	(0.433)	0.072	0.008
25	2.08	0.080	(0.431)	0.072	0.008
26	2.17	0.080	(0.430)	0.072	0.008
27	2.25	0.080	(0.428)	0.072	0.008
28	2.33	0.080	(0.426)	0.072	0.008
29	2.42	0.080	(0.424)	0.072	0.008
30	2.50	0.080	(0.423)	0.072	0.008
31	2.58	0.100	(0.421)	0.090	0.010
32	2.67	0.100	(0.419)	0.090	0.010
33	2.75	0.100	(0.417)	0.090	0.010
34	2.83	0.100	(0.416)	0.090	0.010
35	2.92	0.100	(0.414)	0.090	0.010
36	3.00	0.100	(0.412)	0.090	0.010
37	3.08	0.100	(0.411)	0.090	0.010
38	3.17	0.100	(0.409)	0.090	0.010
39	3.25	0.100	(0.407)	0.090	0.010
40	3.33	0.100	(0.405)	0.090	0.010
41	3.42	0.100	(0.404)	0.090	0.010
42	3.50	0.100	(0.402)	0.090	0.010
43	3.58	0.100	(0.400)	0.090	0.010
44	3.67	0.100	(0.399)	0.090	0.010
45	3.75	0.100	(0.397)	0.090	0.010
46	3.83	0.120	(0.395)	0.108	0.012
47	3.92	0.120	(0.394)	0.108	0.012
48	4.00	0.120	(0.392)	0.108	0.012
49	4.08	0.120	(0.390)	0.108	0.012
50	4.17	0.120	(0.389)	0.108	0.012
51	4.25	0.120	(0.387)	0.108	0.012
52	4.33	0.140	(0.385)	0.126	0.014
53	4.42	0.140	(0.384)	0.126	0.014
54	4.50	0.140	(0.382)	0.126	0.014
55	4.58	0.140	(0.381)	0.126	0.014
56	4.67	0.140	(0.379)	0.126	0.014
57	4.75	0.140	(0.377)	0.126	0.014
58	4.83	0.160	(0.376)	0.144	0.016
59	4.92	0.160	(0.374)	0.144	0.016
60	5.00	0.160	(0.372)	0.144	0.016
61	5.08	0.120	(0.371)	0.108	0.012
62	5.17	0.120	(0.369)	0.108	0.012

ONSITEPRE24100.out

63	5.25	0.20	0.120	(0.368)	0.108	0.012
64	5.33	0.23	0.140	(0.366)	0.126	0.014
65	5.42	0.23	0.140	(0.364)	0.126	0.014
66	5.50	0.23	0.140	(0.363)	0.126	0.014
67	5.58	0.27	0.160	(0.361)	0.144	0.016
68	5.67	0.27	0.160	(0.360)	0.144	0.016
69	5.75	0.27	0.160	(0.358)	0.144	0.016
70	5.83	0.27	0.160	(0.356)	0.144	0.016
71	5.92	0.27	0.160	(0.355)	0.144	0.016
72	6.00	0.27	0.160	(0.353)	0.144	0.016
73	6.08	0.30	0.180	(0.352)	0.162	0.018
74	6.17	0.30	0.180	(0.350)	0.162	0.018
75	6.25	0.30	0.180	(0.349)	0.162	0.018
76	6.33	0.30	0.180	(0.347)	0.162	0.018
77	6.42	0.30	0.180	(0.345)	0.162	0.018
78	6.50	0.30	0.180	(0.344)	0.162	0.018
79	6.58	0.33	0.200	(0.342)	0.180	0.020
80	6.67	0.33	0.200	(0.341)	0.180	0.020
81	6.75	0.33	0.200	(0.339)	0.180	0.020
82	6.83	0.33	0.200	(0.338)	0.180	0.020
83	6.92	0.33	0.200	(0.336)	0.180	0.020
84	7.00	0.33	0.200	(0.335)	0.180	0.020
85	7.08	0.33	0.200	(0.333)	0.180	0.020
86	7.17	0.33	0.200	(0.332)	0.180	0.020
87	7.25	0.33	0.200	(0.330)	0.180	0.020
88	7.33	0.37	0.220	(0.329)	0.198	0.022
89	7.42	0.37	0.220	(0.327)	0.198	0.022
90	7.50	0.37	0.220	(0.326)	0.198	0.022
91	7.58	0.40	0.240	(0.324)	0.216	0.024
92	7.67	0.40	0.240	(0.323)	0.216	0.024
93	7.75	0.40	0.240	(0.321)	0.216	0.024
94	7.83	0.43	0.260	(0.320)	0.234	0.026
95	7.92	0.43	0.260	(0.318)	0.234	0.026
96	8.00	0.43	0.260	(0.317)	0.234	0.026
97	8.08	0.50	0.300	(0.315)	0.270	0.030
98	8.17	0.50	0.300	(0.314)	0.270	0.030
99	8.25	0.50	0.300	(0.312)	0.270	0.030
100	8.33	0.50	0.300	(0.311)	0.270	0.030
101	8.42	0.50	0.300	(0.309)	0.270	0.030
102	8.50	0.50	0.300	(0.308)	0.270	0.030
103	8.58	0.53	0.320	(0.306)	0.288	0.032
104	8.67	0.53	0.320	(0.305)	0.288	0.032
105	8.75	0.53	0.320	(0.304)	0.288	0.032
106	8.83	0.57	0.340	(0.302	(0.306)	0.038
107	8.92	0.57	0.340	0.301	(0.306)	0.039
108	9.00	0.57	0.340	0.299	(0.306)	0.041
109	9.08	0.63	0.380	0.298	(0.342)	0.082
110	9.17	0.63	0.380	0.296	(0.342)	0.084
111	9.25	0.63	0.380	0.295	(0.342)	0.085
112	9.33	0.67	0.400	0.294	(0.360)	0.106
113	9.42	0.67	0.400	0.292	(0.360)	0.108
114	9.50	0.67	0.400	0.291	(0.360)	0.109
115	9.58	0.70	0.420	0.289	(0.378)	0.131
116	9.67	0.70	0.420	0.288	(0.378)	0.132
117	9.75	0.70	0.420	0.287	(0.378)	0.133
118	9.83	0.73	0.440	0.285	(0.396)	0.155
119	9.92	0.73	0.440	0.284	(0.396)	0.156
120	10.00	0.73	0.440	0.283	(0.396)	0.157
121	10.08	0.50	0.300	(0.281)	0.270	0.030
122	10.17	0.50	0.300	(0.280)	0.270	0.030
123	10.25	0.50	0.300	(0.278)	0.270	0.030
124	10.33	0.50	0.300	(0.277)	0.270	0.030
125	10.42	0.50	0.300	(0.276)	0.270	0.030
126	10.50	0.50	0.300	(0.274)	0.270	0.030
127	10.58	0.67	0.400	0.273	(0.360)	0.127
128	10.67	0.67	0.400	0.272	(0.360)	0.128
129	10.75	0.67	0.400	0.270	(0.360)	0.130
130	10.83	0.67	0.400	0.269	(0.360)	0.131
131	10.92	0.67	0.400	0.268	(0.360)	0.132
132	11.00	0.67	0.400	0.266	(0.360)	0.134
133	11.08	0.63	0.380	0.265	(0.342)	0.115
134	11.17	0.63	0.380	0.264	(0.342)	0.116
135	11.25	0.63	0.380	0.263	(0.342)	0.117
136	11.33	0.63	0.380	0.261	(0.342)	0.119
137	11.42	0.63	0.380	0.260	(0.342)	0.120
138	11.50	0.63	0.380	0.259	(0.342)	0.121
139	11.58	0.57	0.340	0.257	(0.306)	0.083
140	11.67	0.57	0.340	0.256	(0.306)	0.084
141	11.75	0.57	0.340	0.255	(0.306)	0.085
142	11.83	0.60	0.360	0.254	(0.324)	0.106
143	11.92	0.60	0.360	0.252	(0.324)	0.108
144	12.00	0.60	0.360	0.251	(0.324)	0.109
145	12.08	0.83	0.500	0.250	(0.450)	0.250
146	12.17	0.83	0.500	0.249	(0.450)	0.251

ONSITEPRE24100.out

147	12.25	0.83	0.500	0.247	(0.450)	0.253
148	12.33	0.87	0.520	0.246	(0.468)	0.274
149	12.42	0.87	0.520	0.245	(0.468)	0.275
150	12.50	0.87	0.520	0.244	(0.468)	0.276
151	12.58	0.93	0.560	0.242	(0.504)	0.318
152	12.67	0.93	0.560	0.241	(0.504)	0.319
153	12.75	0.93	0.560	0.240	(0.504)	0.320
154	12.83	0.97	0.580	0.239	(0.522)	0.341
155	12.92	0.97	0.580	0.238	(0.522)	0.342
156	13.00	0.97	0.580	0.236	(0.522)	0.344
157	13.08	1.13	0.680	0.235	(0.612)	0.445
158	13.17	1.13	0.680	0.234	(0.612)	0.446
159	13.25	1.13	0.680	0.233	(0.612)	0.447
160	13.33	1.13	0.680	0.232	(0.612)	0.448
161	13.42	1.13	0.680	0.230	(0.612)	0.450
162	13.50	1.13	0.680	0.229	(0.612)	0.451
163	13.58	0.77	0.460	0.228	(0.414)	0.232
164	13.67	0.77	0.460	0.227	(0.414)	0.233
165	13.75	0.77	0.460	0.226	(0.414)	0.234
166	13.83	0.77	0.460	0.225	(0.414)	0.235
167	13.92	0.77	0.460	0.223	(0.414)	0.237
168	14.00	0.77	0.460	0.222	(0.414)	0.238
169	14.08	0.90	0.540	0.221	(0.486)	0.319
170	14.17	0.90	0.540	0.220	(0.486)	0.320
171	14.25	0.90	0.540	0.219	(0.486)	0.321
172	14.33	0.87	0.520	0.218	(0.468)	0.302
173	14.42	0.87	0.520	0.217	(0.468)	0.303
174	14.50	0.87	0.520	0.216	(0.468)	0.304
175	14.58	0.87	0.520	0.214	(0.468)	0.306
176	14.67	0.87	0.520	0.213	(0.468)	0.307
177	14.75	0.87	0.520	0.212	(0.468)	0.308
178	14.83	0.83	0.500	0.211	(0.450)	0.289
179	14.92	0.83	0.500	0.210	(0.450)	0.290
180	15.00	0.83	0.500	0.209	(0.450)	0.291
181	15.08	0.80	0.480	0.208	(0.432)	0.272
182	15.17	0.80	0.480	0.207	(0.432)	0.273
183	15.25	0.80	0.480	0.206	(0.432)	0.274
184	15.33	0.77	0.460	0.205	(0.414)	0.255
185	15.42	0.77	0.460	0.204	(0.414)	0.256
186	15.50	0.77	0.460	0.203	(0.414)	0.257
187	15.58	0.63	0.380	0.202	(0.342)	0.178
188	15.67	0.63	0.380	0.201	(0.342)	0.179
189	15.75	0.63	0.380	0.200	(0.342)	0.180
190	15.83	0.63	0.380	0.199	(0.342)	0.181
191	15.92	0.63	0.380	0.198	(0.342)	0.182
192	16.00	0.63	0.380	0.197	(0.342)	0.183
193	16.08	0.13	0.080	(0.196)	0.072	0.008
194	16.17	0.13	0.080	(0.195)	0.072	0.008
195	16.25	0.13	0.080	(0.194)	0.072	0.008
196	16.33	0.13	0.080	(0.193)	0.072	0.008
197	16.42	0.13	0.080	(0.192)	0.072	0.008
198	16.50	0.13	0.080	(0.191)	0.072	0.008
199	16.58	0.10	0.060	(0.190)	0.054	0.006
200	16.67	0.10	0.060	(0.189)	0.054	0.006
201	16.75	0.10	0.060	(0.188)	0.054	0.006
202	16.83	0.10	0.060	(0.187)	0.054	0.006
203	16.92	0.10	0.060	(0.186)	0.054	0.006
204	17.00	0.10	0.060	(0.185)	0.054	0.006
205	17.08	0.17	0.100	(0.184)	0.090	0.010
206	17.17	0.17	0.100	(0.183)	0.090	0.010
207	17.25	0.17	0.100	(0.182)	0.090	0.010
208	17.33	0.17	0.100	(0.181)	0.090	0.010
209	17.42	0.17	0.100	(0.180)	0.090	0.010
210	17.50	0.17	0.100	(0.179)	0.090	0.010
211	17.58	0.17	0.100	(0.178)	0.090	0.010
212	17.67	0.17	0.100	(0.178)	0.090	0.010
213	17.75	0.17	0.100	(0.177)	0.090	0.010
214	17.83	0.13	0.080	(0.176)	0.072	0.008
215	17.92	0.13	0.080	(0.175)	0.072	0.008
216	18.00	0.13	0.080	(0.174)	0.072	0.008
217	18.08	0.13	0.080	(0.173)	0.072	0.008
218	18.17	0.13	0.080	(0.172)	0.072	0.008
219	18.25	0.13	0.080	(0.172)	0.072	0.008
220	18.33	0.13	0.080	(0.171)	0.072	0.008
221	18.42	0.13	0.080	(0.170)	0.072	0.008
222	18.50	0.13	0.080	(0.169)	0.072	0.008
223	18.58	0.10	0.060	(0.168)	0.054	0.006
224	18.67	0.10	0.060	(0.167)	0.054	0.006
225	18.75	0.10	0.060	(0.167)	0.054	0.006
226	18.83	0.07	0.040	(0.166)	0.036	0.004
227	18.92	0.07	0.040	(0.165)	0.036	0.004
228	19.00	0.07	0.040	(0.164)	0.036	0.004
229	19.08	0.10	0.060	(0.163)	0.054	0.006
230	19.17	0.10	0.060	(0.163)	0.054	0.006

ONSITEPRE24100.out

231	19.25	0.10	0.060	(0.162)	0.054	0.006
232	19.33	0.13	0.080	(0.161)	0.072	0.008
233	19.42	0.13	0.080	(0.160)	0.072	0.008
234	19.50	0.13	0.080	(0.160)	0.072	0.008
235	19.58	0.10	0.060	(0.159)	0.054	0.006
236	19.67	0.10	0.060	(0.158)	0.054	0.006
237	19.75	0.10	0.060	(0.157)	0.054	0.006
238	19.83	0.07	0.040	(0.157)	0.036	0.004
239	19.92	0.07	0.040	(0.156)	0.036	0.004
240	20.00	0.07	0.040	(0.155)	0.036	0.004
241	20.08	0.10	0.060	(0.155)	0.054	0.006
242	20.17	0.10	0.060	(0.154)	0.054	0.006
243	20.25	0.10	0.060	(0.153)	0.054	0.006
244	20.33	0.10	0.060	(0.153)	0.054	0.006
245	20.42	0.10	0.060	(0.152)	0.054	0.006
246	20.50	0.10	0.060	(0.151)	0.054	0.006
247	20.58	0.10	0.060	(0.151)	0.054	0.006
248	20.67	0.10	0.060	(0.150)	0.054	0.006
249	20.75	0.10	0.060	(0.150)	0.054	0.006
250	20.83	0.07	0.040	(0.149)	0.036	0.004
251	20.92	0.07	0.040	(0.148)	0.036	0.004
252	21.00	0.07	0.040	(0.148)	0.036	0.004
253	21.08	0.10	0.060	(0.147)	0.054	0.006
254	21.17	0.10	0.060	(0.147)	0.054	0.006
255	21.25	0.10	0.060	(0.146)	0.054	0.006
256	21.33	0.07	0.040	(0.145)	0.036	0.004
257	21.42	0.07	0.040	(0.145)	0.036	0.004
258	21.50	0.07	0.040	(0.144)	0.036	0.004
259	21.58	0.10	0.060	(0.144)	0.054	0.006
260	21.67	0.10	0.060	(0.143)	0.054	0.006
261	21.75	0.10	0.060	(0.143)	0.054	0.006
262	21.83	0.07	0.040	(0.142)	0.036	0.004
263	21.92	0.07	0.040	(0.142)	0.036	0.004
264	22.00	0.07	0.040	(0.141)	0.036	0.004
265	22.08	0.10	0.060	(0.141)	0.054	0.006
266	22.17	0.10	0.060	(0.140)	0.054	0.006
267	22.25	0.10	0.060	(0.140)	0.054	0.006
268	22.33	0.07	0.040	(0.139)	0.036	0.004
269	22.42	0.07	0.040	(0.139)	0.036	0.004
270	22.50	0.07	0.040	(0.139)	0.036	0.004
271	22.58	0.07	0.040	(0.138)	0.036	0.004
272	22.67	0.07	0.040	(0.138)	0.036	0.004
273	22.75	0.07	0.040	(0.137)	0.036	0.004
274	22.83	0.07	0.040	(0.137)	0.036	0.004
275	22.92	0.07	0.040	(0.137)	0.036	0.004
276	23.00	0.07	0.040	(0.136)	0.036	0.004
277	23.08	0.07	0.040	(0.136)	0.036	0.004
278	23.17	0.07	0.040	(0.136)	0.036	0.004
279	23.25	0.07	0.040	(0.136)	0.036	0.004
280	23.33	0.07	0.040	(0.135)	0.036	0.004
281	23.42	0.07	0.040	(0.135)	0.036	0.004
282	23.50	0.07	0.040	(0.135)	0.036	0.004
283	23.58	0.07	0.040	(0.135)	0.036	0.004
284	23.67	0.07	0.040	(0.134)	0.036	0.004
285	23.75	0.07	0.040	(0.134)	0.036	0.004
286	23.83	0.07	0.040	(0.134)	0.036	0.004
287	23.92	0.07	0.040	(0.134)	0.036	0.004
288	24.00	0.07	0.040	(0.134)	0.036	0.004

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.9

Flood volume = Effective rainfall 1.66(In)
 times area 8.4(Ac.)/[(In)/(Ft.)] = 1.2(Ac.Ft)
 Total soil loss = 3.34(In)
 Total soil loss = 2.341(Ac.Ft)
 Total rainfall = 5.00(In)
 Flood volume = 50501.5 Cubic Feet
 Total soil loss = 101956.0 Cubic Feet

 Peak flow rate of this hydrograph = 3.807(CFS)

+++++

24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q				
0+10	0.0002	0.03	Q				
0+15	0.0005	0.03	Q				
0+20	0.0007	0.04	Q				
0+25	0.0010	0.05	Q				

0+30	0.0014	0.05	Q
0+35	0.0017	0.05	Q
0+40	0.0021	0.05	Q
0+45	0.0024	0.05	Q
0+50	0.0028	0.06	Q
0+55	0.0032	0.06	Q
1+ 0	0.0037	0.07	Q
1+ 5	0.0041	0.06	Q
1+10	0.0045	0.05	Q
1+15	0.0048	0.05	Q
1+20	0.0052	0.05	Q
1+25	0.0056	0.05	Q
1+30	0.0059	0.05	Q
1+35	0.0063	0.05	Q
1+40	0.0066	0.05	Q
1+45	0.0070	0.05	Q
1+50	0.0073	0.06	Q
1+55	0.0078	0.06	Q
2+ 0	0.0082	0.07	Q
2+ 5	0.0087	0.07	Q
2+10	0.0092	0.07	Q
2+15	0.0096	0.07	Q
2+20	0.0101	0.07	Q
2+25	0.0106	0.07	Q
2+30	0.0110	0.07	Q
2+35	0.0115	0.07	Q
2+40	0.0121	0.08	Q
2+45	0.0127	0.08	Q
2+50	0.0132	0.08	Q
2+55	0.0138	0.08	Q
3+ 0	0.0144	0.08	Q
3+ 5	0.0150	0.08	Q
3+10	0.0156	0.08	Q
3+15	0.0161	0.08	Q
3+20	0.0167	0.08	Q
3+25	0.0173	0.08	Q
3+30	0.0179	0.08	Q
3+35	0.0185	0.08	Q
3+40	0.0191	0.08	Q
3+45	0.0196	0.08	Q
3+50	0.0203	0.09	Q
3+55	0.0209	0.10	Q
4+ 0	0.0216	0.10	Q
4+ 5	0.0223	0.10	Q
4+10	0.0230	0.10	Q
4+15	0.0237	0.10	Q
4+20	0.0245	0.11	Q
4+25	0.0252	0.11	Q
4+30	0.0260	0.12	Q
4+35	0.0269	0.12	Q
4+40	0.0277	0.12	Q
4+45	0.0285	0.12	Q
4+50	0.0293	0.12	QV
4+55	0.0302	0.13	QV
5+ 0	0.0312	0.13	QV
5+ 5	0.0320	0.12	QV
5+10	0.0328	0.11	QV
5+15	0.0335	0.11	QV
5+20	0.0342	0.11	QV
5+25	0.0350	0.12	QV
5+30	0.0358	0.12	QV
5+35	0.0367	0.12	QV
5+40	0.0376	0.13	QV
5+45	0.0385	0.13	QV
5+50	0.0394	0.13	QV
5+55	0.0404	0.14	QV
6+ 0	0.0413	0.14	QV
6+ 5	0.0423	0.14	QV
6+10	0.0433	0.15	QV
6+15	0.0443	0.15	QV
6+20	0.0454	0.15	QV
6+25	0.0464	0.15	QV
6+30	0.0475	0.15	QV
6+35	0.0486	0.16	QV
6+40	0.0497	0.17	QV
6+45	0.0509	0.17	QV
6+50	0.0520	0.17	QV
6+55	0.0532	0.17	QV
7+ 0	0.0543	0.17	QV
7+ 5	0.0555	0.17	QV
7+10	0.0567	0.17	QV
7+15	0.0578	0.17	QV
7+20	0.0590	0.17	Q V
7+25	0.0603	0.18	Q V

7+30	0.0616	0.18	Q V
7+35	0.0629	0.19	Q Q V
7+40	0.0643	0.20	Q Q V
7+45	0.0656	0.20	Q Q V
7+50	0.0671	0.21	Q Q V
7+55	0.0686	0.22	Q Q V
8+ 0	0.0701	0.22	Q Q V
8+ 5	0.0716	0.23	Q Q V
8+10	0.0733	0.25	Q V
8+15	0.0751	0.25	Q Q V
8+20	0.0768	0.25	Q V
8+25	0.0785	0.25	Q V
8+30	0.0803	0.25	Q V
8+35	0.0821	0.26	Q V
8+40	0.0839	0.27	Q V
8+45	0.0858	0.27	Q V
8+50	0.0877	0.28	Q Q V
8+55	0.0899	0.31	Q Q V
9+ 0	0.0921	0.33	Q Q V
9+ 5	0.0952	0.44	Q Q V
9+10	0.0994	0.62	Q Q V
9+15	0.1040	0.67	Q Q V
9+20	0.1092	0.75	Q Q V
9+25	0.1150	0.85	Q Q V
9+30	0.1212	0.89	Q Q V
9+35	0.1278	0.96	Q Q V
9+40	0.1351	1.06	Q Q V
9+45	0.1427	1.10	Q Q V
9+50	0.1507	1.17	Q Q V
9+55	0.1595	1.27	Q Q V
10+ 0	0.1684	1.30	Q Q V
10+ 5	0.1754	1.01	Q Q V
10+10	0.1788	0.49	Q Q V
10+15	0.1813	0.37	Q Q V
10+20	0.1834	0.31	Q Q V
10+25	0.1854	0.28	Q Q V
10+30	0.1871	0.25	Q Q V
10+35	0.1905	0.49	Q Q V
10+40	0.1966	0.89	Q Q V
10+45	0.2035	1.00	Q Q V
10+50	0.2108	1.05	Q Q V
10+55	0.2183	1.09	Q Q V
11+ 0	0.2260	1.12	Q Q V
11+ 5	0.2334	1.08	Q Q V
11+10	0.2404	1.01	Q Q V
11+15	0.2473	1.00	Q Q V
11+20	0.2542	1.00	Q Q V
11+25	0.2611	1.01	Q Q V
11+30	0.2681	1.02	Q Q V
11+35	0.2745	0.93	Q Q V
11+40	0.2798	0.78	Q Q V
11+45	0.2850	0.75	Q Q V
11+50	0.2904	0.79	Q Q V
11+55	0.2964	0.87	Q Q V
12+ 0	0.3025	0.89	Q Q V
12+ 5	0.3112	1.26	Q Q V
12+10	0.3239	1.84	Q Q V
12+15	0.3376	2.00	Q Q V
12+20	0.3523	2.13	Q Q V
12+25	0.3678	2.25	Q Q V
12+30	0.3837	2.31	Q Q V
12+35	0.4005	2.43	Q Q V
12+40	0.4184	2.61	Q Q V
12+45	0.4368	2.66	Q Q V
12+50	0.4556	2.74	Q Q V
12+55	0.4752	2.84	Q Q V
13+ 0	0.4951	2.88	Q Q V
13+ 5	0.5167	3.15	Q Q V
13+10	0.5413	3.57	Q Q V
13+15	0.5667	3.69	Q Q V
13+20	0.5925	3.74	Q Q V
13+25	0.6185	3.78	Q Q V
13+30	0.6447	3.81	Q Q V
13+35	0.6673	3.28	Q Q V
13+40	0.6837	2.39	Q Q V
13+45	0.6987	2.17	Q Q V
13+50	0.7130	2.08	Q Q V
13+55	0.7270	2.03	Q Q V
14+ 0	0.7408	2.00	Q Q V
14+ 5	0.7560	2.21	Q Q V
14+10	0.7736	2.54	Q Q V
14+15	0.7917	2.64	Q Q V
14+20	0.8099	2.63	Q Q V
14+25	0.8277	2.58	Q Q V

14+30	0.8455	2.59	|	Q	|	V
14+35	0.8633	2.59	|	Q	|	V
14+40	0.8811	2.59	|	Q	|	V
14+45	0.8990	2.60	|	Q	|	V
14+50	0.9166	2.56	|	Q	|	V
14+55	0.9337	2.48	|	Q	|	V
15+ 0	0.9507	2.47	|	Q	|	V
15+ 5	0.9674	2.42	|	Q	|	V
15+10	0.9836	2.35	|	Q	|	V
15+15	0.9996	2.33	|	Q	|	V
15+20	1.0153	2.28	|	Q	|	V
15+25	1.0305	2.20	|	Q	|	V
15+30	1.0456	2.19	|	Q	|	V
15+35	1.0593	1.99	|	Q	|	V
15+40	1.0708	1.67	|	Q	|	V
15+45	1.0817	1.59	|	Q	|	V
15+50	1.0925	1.56	|	Q	|	V
15+55	1.1032	1.55	|	Q	|	V
16+ 0	1.1138	1.54	|	Q	|	V
16+ 5	1.1215	1.12	|	Q	|	V
16+10	1.1243	0.41	|	Q	|	V
16+15	1.1259	0.23	|	Q	|	V
16+20	1.1269	0.14	|	Q	|	V
16+25	1.1276	0.10	|	Q	|	V
16+30	1.1280	0.07	|	Q	|	V
16+35	1.1285	0.06	|	Q	|	V
16+40	1.1288	0.05	|	Q	|	V
16+45	1.1292	0.05	|	Q	|	V
16+50	1.1296	0.05	|	Q	|	V
16+55	1.1299	0.05	|	Q	|	V
17+ 0	1.1303	0.05	|	Q	|	V
17+ 5	1.1307	0.06	|	Q	|	V
17+10	1.1312	0.08	|	Q	|	V
17+15	1.1318	0.08	|	Q	|	V
17+20	1.1323	0.08	|	Q	|	V
17+25	1.1329	0.08	|	Q	|	V
17+30	1.1335	0.08	|	Q	|	V
17+35	1.1341	0.08	|	Q	|	V
17+40	1.1347	0.08	|	Q	|	V
17+45	1.1353	0.08	|	Q	|	V
17+50	1.1358	0.08	|	Q	|	V
17+55	1.1363	0.07	|	Q	|	V
18+ 0	1.1368	0.07	|	Q	|	V
18+ 5	1.1372	0.07	|	Q	|	V
18+10	1.1377	0.07	|	Q	|	V
18+15	1.1382	0.07	|	Q	|	V
18+20	1.1387	0.07	|	Q	|	V
18+25	1.1391	0.07	|	Q	|	V
18+30	1.1396	0.07	|	Q	|	V
18+35	1.1400	0.06	|	Q	|	V
18+40	1.1404	0.05	|	Q	|	V
18+45	1.1408	0.05	|	Q	|	V
18+50	1.1411	0.05	|	Q	|	V
18+55	1.1413	0.04	|	Q	|	V
19+ 0	1.1416	0.04	|	Q	|	V
19+ 5	1.1419	0.04	|	Q	|	V
19+10	1.1422	0.05	|	Q	|	V
19+15	1.1425	0.05	|	Q	|	V
19+20	1.1429	0.05	|	Q	|	V
19+25	1.1433	0.06	|	Q	|	V
19+30	1.1438	0.07	|	Q	|	V
19+35	1.1442	0.06	|	Q	|	V
19+40	1.1446	0.05	|	Q	|	V
19+45	1.1450	0.05	|	Q	|	V
19+50	1.1453	0.05	|	Q	|	V
19+55	1.1455	0.04	|	Q	|	V
20+ 0	1.1458	0.04	|	Q	|	V
20+ 5	1.1461	0.04	|	Q	|	V
20+10	1.1464	0.05	|	Q	|	V
20+15	1.1467	0.05	|	Q	|	V
20+20	1.1471	0.05	|	Q	|	V
20+25	1.1474	0.05	|	Q	|	V
20+30	1.1478	0.05	|	Q	|	V
20+35	1.1481	0.05	|	Q	|	V
20+40	1.1485	0.05	|	Q	|	V
20+45	1.1488	0.05	|	Q	|	V
20+50	1.1491	0.05	|	Q	|	V
20+55	1.1494	0.04	|	Q	|	V
21+ 0	1.1496	0.04	|	Q	|	V
21+ 5	1.1499	0.04	|	Q	|	V
21+10	1.1502	0.05	|	Q	|	V
21+15	1.1506	0.05	|	Q	|	V
21+20	1.1509	0.05	|	Q	|	V
21+25	1.1511	0.04	|	Q	|	V

ONSITEPRE24100.out

21+30	1.1514	0.04	Q			V
21+35	1.1517	0.04	Q			V
21+40	1.1520	0.05	Q			V
21+45	1.1523	0.05	Q			V
21+50	1.1526	0.05	Q			V
21+55	1.1529	0.04	Q			V
22+ 0	1.1531	0.04	Q			V
22+ 5	1.1534	0.04	Q			V
22+10	1.1537	0.05	Q			V
22+15	1.1541	0.05	Q			V
22+20	1.1544	0.05	Q			V
22+25	1.1546	0.04	Q			V
22+30	1.1549	0.04	Q			V
22+35	1.1551	0.03	Q			V
22+40	1.1554	0.03	Q			V
22+45	1.1556	0.03	Q			V
22+50	1.1558	0.03	Q			V
22+55	1.1561	0.03	Q			V
23+ 0	1.1563	0.03	Q			V
23+ 5	1.1565	0.03	Q			V
23+10	1.1568	0.03	Q			V
23+15	1.1570	0.03	Q			V
23+20	1.1572	0.03	Q			V
23+25	1.1575	0.03	Q			V
23+30	1.1577	0.03	Q			V
23+35	1.1579	0.03	Q			V
23+40	1.1582	0.03	Q			V
23+45	1.1584	0.03	Q			V
23+50	1.1586	0.03	Q			V
23+55	1.1589	0.03	Q			V
24+ 0	1.1591	0.03	Q			V
24+ 5	1.1593	0.02	Q			V
24+10	1.1593	0.01	Q			V
24+15	1.1593	0.00	Q			V
24+20	1.1594	0.00	Q			V
24+25	1.1594	0.00	Q			V

UNIT HYDROGRAPH HYDROLOGY – PROPOSED CONDITION

LATERAL H-11.1 TRIBUTARY AREA

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 11/11/20 File: ONSITEPOST242.out

+++++

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

Program License Serial Number 4010

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

English Units used in output format

19-0126 DUKE HARVILL
ONSITE UNIT HYDROGRAPH ANALYSIS
PROPOSED CONDITION H-11.1 TRIBUTARY, 2-YEAR 24-HOUR
FN: ONSITEPOST242.OUT- TSW

Drainage Area = 4.50(Ac.) = 0.007 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 4.50(Ac.) = 0.007 Sq. Mi.
Length along longest watercourse = 1242.00(Ft.)
Length along longest watercourse measured to centroid = 745.00(Ft.)
Length along longest watercourse = 0.235 Mi.
Length along longest watercourse measured to centroid = 0.141 Mi.
Difference in elevation = 6.00(Ft.)
Slope along watercourse = 25.5072 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.20 Min.
25% of lag time = 0.80 Min.
40% of lag time = 1.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
4.50 2.00 9.00

100 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
4.50 5.00 22.50

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
4.500 56.00 0.900
Total Area Entered = 4.50(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-1 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
56.0 36.0 0.706 0.900 0.134 1.000 0.134
Sum (F) = 0.134

Area averaged mean soil loss (F) (In/Hr) = 0.097
Minimum soil loss rate ((In/Hr)) = 0.049
(for 24 hour storm duration)
Note: User entry of the f value
Soil low loss rate (decimal) = 0.180

ONSITEPOST242.out
Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	156.242	34.652	1.572
2	0.167	312.485	46.549	2.111
3	0.250	468.727	10.830	0.491
4	0.333	624.969	4.695	0.213
5	0.417	781.211	2.297	0.104
6	0.500	937.454	0.977	0.044
		Sum = 100.000	Sum=	4.535

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.016	(0.172)	0.003	0.013
2	0.17	0.07	0.016	(0.171)	0.003	0.013
3	0.25	0.07	0.016	(0.171)	0.003	0.013
4	0.33	0.10	0.024	(0.170)	0.004	0.020
5	0.42	0.10	0.024	(0.169)	0.004	0.020
6	0.50	0.10	0.024	(0.169)	0.004	0.020
7	0.58	0.10	0.024	(0.168)	0.004	0.020
8	0.67	0.10	0.024	(0.167)	0.004	0.020
9	0.75	0.10	0.024	(0.167)	0.004	0.020
10	0.83	0.13	0.032	(0.166)	0.006	0.026
11	0.92	0.13	0.032	(0.165)	0.006	0.026
12	1.00	0.13	0.032	(0.165)	0.006	0.026
13	1.08	0.10	0.024	(0.164)	0.004	0.020
14	1.17	0.10	0.024	(0.163)	0.004	0.020
15	1.25	0.10	0.024	(0.163)	0.004	0.020
16	1.33	0.10	0.024	(0.162)	0.004	0.020
17	1.42	0.10	0.024	(0.162)	0.004	0.020
18	1.50	0.10	0.024	(0.161)	0.004	0.020
19	1.58	0.10	0.024	(0.160)	0.004	0.020
20	1.67	0.10	0.024	(0.160)	0.004	0.020
21	1.75	0.10	0.024	(0.159)	0.004	0.020
22	1.83	0.13	0.032	(0.158)	0.006	0.026
23	1.92	0.13	0.032	(0.158)	0.006	0.026
24	2.00	0.13	0.032	(0.157)	0.006	0.026
25	2.08	0.13	0.032	(0.156)	0.006	0.026
26	2.17	0.13	0.032	(0.156)	0.006	0.026
27	2.25	0.13	0.032	(0.155)	0.006	0.026
28	2.33	0.13	0.032	(0.155)	0.006	0.026
29	2.42	0.13	0.032	(0.154)	0.006	0.026
30	2.50	0.13	0.032	(0.153)	0.006	0.026
31	2.58	0.17	0.040	(0.153)	0.007	0.033
32	2.67	0.17	0.040	(0.152)	0.007	0.033
33	2.75	0.17	0.040	(0.151)	0.007	0.033
34	2.83	0.17	0.040	(0.151)	0.007	0.033
35	2.92	0.17	0.040	(0.150)	0.007	0.033
36	3.00	0.17	0.040	(0.150)	0.007	0.033
37	3.08	0.17	0.040	(0.149)	0.007	0.033
38	3.17	0.17	0.040	(0.148)	0.007	0.033
39	3.25	0.17	0.040	(0.148)	0.007	0.033
40	3.33	0.17	0.040	(0.147)	0.007	0.033
41	3.42	0.17	0.040	(0.146)	0.007	0.033
42	3.50	0.17	0.040	(0.146)	0.007	0.033
43	3.58	0.17	0.040	(0.145)	0.007	0.033
44	3.67	0.17	0.040	(0.145)	0.007	0.033
45	3.75	0.17	0.040	(0.144)	0.007	0.033
46	3.83	0.20	0.048	(0.143)	0.009	0.039
47	3.92	0.20	0.048	(0.143)	0.009	0.039
48	4.00	0.20	0.048	(0.142)	0.009	0.039
49	4.08	0.20	0.048	(0.142)	0.009	0.039
50	4.17	0.20	0.048	(0.141)	0.009	0.039
51	4.25	0.20	0.048	(0.140)	0.009	0.039
52	4.33	0.23	0.056	(0.140)	0.010	0.046
53	4.42	0.23	0.056	(0.139)	0.010	0.046
54	4.50	0.23	0.056	(0.139)	0.010	0.046
55	4.58	0.23	0.056	(0.138)	0.010	0.046
56	4.67	0.23	0.056	(0.137)	0.010	0.046
57	4.75	0.23	0.056	(0.137)	0.010	0.046
58	4.83	0.27	0.064	(0.136)	0.012	0.052
59	4.92	0.27	0.064	(0.136)	0.012	0.052
60	5.00	0.27	0.064	(0.135)	0.012	0.052
61	5.08	0.20	0.048	(0.134)	0.009	0.039

ONSITEPOST242.out

62	5.17	0.20	0.048	(0.134)	0.009	0.039
63	5.25	0.20	0.048	(0.133)	0.009	0.039
64	5.33	0.23	0.056	(0.133)	0.010	0.046
65	5.42	0.23	0.056	(0.132)	0.010	0.046
66	5.50	0.23	0.056	(0.132)	0.010	0.046
67	5.58	0.27	0.064	(0.131)	0.012	0.052
68	5.67	0.27	0.064	(0.130)	0.012	0.052
69	5.75	0.27	0.064	(0.130)	0.012	0.052
70	5.83	0.27	0.064	(0.129)	0.012	0.052
71	5.92	0.27	0.064	(0.129)	0.012	0.052
72	6.00	0.27	0.064	(0.128)	0.012	0.052
73	6.08	0.30	0.072	(0.128)	0.013	0.059
74	6.17	0.30	0.072	(0.127)	0.013	0.059
75	6.25	0.30	0.072	(0.126)	0.013	0.059
76	6.33	0.30	0.072	(0.126)	0.013	0.059
77	6.42	0.30	0.072	(0.125)	0.013	0.059
78	6.50	0.30	0.072	(0.125)	0.013	0.059
79	6.58	0.33	0.080	(0.124)	0.014	0.066
80	6.67	0.33	0.080	(0.124)	0.014	0.066
81	6.75	0.33	0.080	(0.123)	0.014	0.066
82	6.83	0.33	0.080	(0.122)	0.014	0.066
83	6.92	0.33	0.080	(0.122)	0.014	0.066
84	7.00	0.33	0.080	(0.121)	0.014	0.066
85	7.08	0.33	0.080	(0.121)	0.014	0.066
86	7.17	0.33	0.080	(0.120)	0.014	0.066
87	7.25	0.33	0.080	(0.120)	0.014	0.066
88	7.33	0.37	0.088	(0.119)	0.016	0.072
89	7.42	0.37	0.088	(0.119)	0.016	0.072
90	7.50	0.37	0.088	(0.118)	0.016	0.072
91	7.58	0.40	0.096	(0.118)	0.017	0.079
92	7.67	0.40	0.096	(0.117)	0.017	0.079
93	7.75	0.40	0.096	(0.116)	0.017	0.079
94	7.83	0.43	0.104	(0.116)	0.019	0.085
95	7.92	0.43	0.104	(0.115)	0.019	0.085
96	8.00	0.43	0.104	(0.115)	0.019	0.085
97	8.08	0.50	0.120	(0.114)	0.022	0.098
98	8.17	0.50	0.120	(0.114)	0.022	0.098
99	8.25	0.50	0.120	(0.113)	0.022	0.098
100	8.33	0.50	0.120	(0.113)	0.022	0.098
101	8.42	0.50	0.120	(0.112)	0.022	0.098
102	8.50	0.50	0.120	(0.112)	0.022	0.098
103	8.58	0.53	0.128	(0.111)	0.023	0.105
104	8.67	0.53	0.128	(0.111)	0.023	0.105
105	8.75	0.53	0.128	(0.110)	0.023	0.105
106	8.83	0.57	0.136	(0.110)	0.024	0.112
107	8.92	0.57	0.136	(0.109)	0.024	0.112
108	9.00	0.57	0.136	(0.109)	0.024	0.112
109	9.08	0.63	0.152	(0.108)	0.027	0.125
110	9.17	0.63	0.152	(0.108)	0.027	0.125
111	9.25	0.63	0.152	(0.107)	0.027	0.125
112	9.33	0.67	0.160	(0.107)	0.029	0.131
113	9.42	0.67	0.160	(0.106)	0.029	0.131
114	9.50	0.67	0.160	(0.105)	0.029	0.131
115	9.58	0.70	0.168	(0.105)	0.030	0.138
116	9.67	0.70	0.168	(0.104)	0.030	0.138
117	9.75	0.70	0.168	(0.104)	0.030	0.138
118	9.83	0.73	0.176	(0.103)	0.032	0.144
119	9.92	0.73	0.176	(0.103)	0.032	0.144
120	10.00	0.73	0.176	(0.102)	0.032	0.144
121	10.08	0.50	0.120	(0.102)	0.022	0.098
122	10.17	0.50	0.120	(0.101)	0.022	0.098
123	10.25	0.50	0.120	(0.101)	0.022	0.098
124	10.33	0.50	0.120	(0.101)	0.022	0.098
125	10.42	0.50	0.120	(0.100)	0.022	0.098
126	10.50	0.50	0.120	(0.100)	0.022	0.098
127	10.58	0.67	0.160	(0.099)	0.029	0.131
128	10.67	0.67	0.160	(0.099)	0.029	0.131
129	10.75	0.67	0.160	(0.098)	0.029	0.131
130	10.83	0.67	0.160	(0.098)	0.029	0.131
131	10.92	0.67	0.160	(0.097)	0.029	0.131
132	11.00	0.67	0.160	(0.097)	0.029	0.131
133	11.08	0.63	0.152	(0.096)	0.027	0.125
134	11.17	0.63	0.152	(0.096)	0.027	0.125
135	11.25	0.63	0.152	(0.095)	0.027	0.125
136	11.33	0.63	0.152	(0.095)	0.027	0.125
137	11.42	0.63	0.152	(0.094)	0.027	0.125
138	11.50	0.63	0.152	(0.094)	0.027	0.125
139	11.58	0.57	0.136	(0.093)	0.024	0.112
140	11.67	0.57	0.136	(0.093)	0.024	0.112
141	11.75	0.57	0.136	(0.092)	0.024	0.112
142	11.83	0.60	0.144	(0.092)	0.026	0.118
143	11.92	0.60	0.144	(0.092)	0.026	0.118
144	12.00	0.60	0.144	(0.091)	0.026	0.118
145	12.08	0.83	0.200	(0.091)	0.036	0.164

ONSITEPOST242.out

146	12.17	0.83	0.200	(0.090)	0.036	0.164
147	12.25	0.83	0.200	(0.090)	0.036	0.164
148	12.33	0.87	0.208	(0.089)	0.037	0.171
149	12.42	0.87	0.208	(0.089)	0.037	0.171
150	12.50	0.87	0.208	(0.088)	0.037	0.171
151	12.58	0.93	0.224	(0.088)	0.040	0.184
152	12.67	0.93	0.224	(0.087)	0.040	0.184
153	12.75	0.93	0.224	(0.087)	0.040	0.184
154	12.83	0.97	0.232	(0.087)	0.042	0.190
155	12.92	0.97	0.232	(0.086)	0.042	0.190
156	13.00	0.97	0.232	(0.086)	0.042	0.190
157	13.08	1.13	0.272	(0.085)	0.049	0.223
158	13.17	1.13	0.272	(0.085)	0.049	0.223
159	13.25	1.13	0.272	(0.084)	0.049	0.223
160	13.33	1.13	0.272	(0.084)	0.049	0.223
161	13.42	1.13	0.272	(0.084)	0.049	0.223
162	13.50	1.13	0.272	(0.083)	0.049	0.223
163	13.58	0.77	0.184	(0.083)	0.033	0.151
164	13.67	0.77	0.184	(0.082)	0.033	0.151
165	13.75	0.77	0.184	(0.082)	0.033	0.151
166	13.83	0.77	0.184	(0.081)	0.033	0.151
167	13.92	0.77	0.184	(0.081)	0.033	0.151
168	14.00	0.77	0.184	(0.081)	0.033	0.151
169	14.08	0.90	0.216	(0.080)	0.039	0.177
170	14.17	0.90	0.216	(0.080)	0.039	0.177
171	14.25	0.90	0.216	(0.079)	0.039	0.177
172	14.33	0.87	0.208	(0.079)	0.037	0.171
173	14.42	0.87	0.208	(0.079)	0.037	0.171
174	14.50	0.87	0.208	(0.078)	0.037	0.171
175	14.58	0.87	0.208	(0.078)	0.037	0.171
176	14.67	0.87	0.208	(0.077)	0.037	0.171
177	14.75	0.87	0.208	(0.077)	0.037	0.171
178	14.83	0.83	0.200	(0.077)	0.036	0.164
179	14.92	0.83	0.200	(0.076)	0.036	0.164
180	15.00	0.83	0.200	(0.076)	0.036	0.164
181	15.08	0.80	0.192	(0.075)	0.035	0.157
182	15.17	0.80	0.192	(0.075)	0.035	0.157
183	15.25	0.80	0.192	(0.075)	0.035	0.157
184	15.33	0.77	0.184	(0.074)	0.033	0.151
185	15.42	0.77	0.184	(0.074)	0.033	0.151
186	15.50	0.77	0.184	(0.073)	0.033	0.151
187	15.58	0.63	0.152	(0.073)	0.027	0.125
188	15.67	0.63	0.152	(0.073)	0.027	0.125
189	15.75	0.63	0.152	(0.072)	0.027	0.125
190	15.83	0.63	0.152	(0.072)	0.027	0.125
191	15.92	0.63	0.152	(0.072)	0.027	0.125
192	16.00	0.63	0.152	(0.071)	0.027	0.125
193	16.08	0.13	0.032	(0.071)	0.006	0.026
194	16.17	0.13	0.032	(0.071)	0.006	0.026
195	16.25	0.13	0.032	(0.070)	0.006	0.026
196	16.33	0.13	0.032	(0.070)	0.006	0.026
197	16.42	0.13	0.032	(0.069)	0.006	0.026
198	16.50	0.13	0.032	(0.069)	0.006	0.026
199	16.58	0.10	0.024	(0.069)	0.004	0.020
200	16.67	0.10	0.024	(0.068)	0.004	0.020
201	16.75	0.10	0.024	(0.068)	0.004	0.020
202	16.83	0.10	0.024	(0.068)	0.004	0.020
203	16.92	0.10	0.024	(0.067)	0.004	0.020
204	17.00	0.10	0.024	(0.067)	0.004	0.020
205	17.08	0.17	0.040	(0.067)	0.007	0.033
206	17.17	0.17	0.040	(0.066)	0.007	0.033
207	17.25	0.17	0.040	(0.066)	0.007	0.033
208	17.33	0.17	0.040	(0.066)	0.007	0.033
209	17.42	0.17	0.040	(0.065)	0.007	0.033
210	17.50	0.17	0.040	(0.065)	0.007	0.033
211	17.58	0.17	0.040	(0.065)	0.007	0.033
212	17.67	0.17	0.040	(0.064)	0.007	0.033
213	17.75	0.17	0.040	(0.064)	0.007	0.033
214	17.83	0.13	0.032	(0.064)	0.006	0.026
215	17.92	0.13	0.032	(0.063)	0.006	0.026
216	18.00	0.13	0.032	(0.063)	0.006	0.026
217	18.08	0.13	0.032	(0.063)	0.006	0.026
218	18.17	0.13	0.032	(0.063)	0.006	0.026
219	18.25	0.13	0.032	(0.062)	0.006	0.026
220	18.33	0.13	0.032	(0.062)	0.006	0.026
221	18.42	0.13	0.032	(0.062)	0.006	0.026
222	18.50	0.13	0.032	(0.061)	0.006	0.026
223	18.58	0.10	0.024	(0.061)	0.004	0.020
224	18.67	0.10	0.024	(0.061)	0.004	0.020
225	18.75	0.10	0.024	(0.060)	0.004	0.020
226	18.83	0.07	0.016	(0.060)	0.003	0.013
227	18.92	0.07	0.016	(0.060)	0.003	0.013
228	19.00	0.07	0.016	(0.060)	0.003	0.013
229	19.08	0.10	0.024	(0.059)	0.004	0.020

0+25	0.0019	0.08	Q
0+30	0.0025	0.09	Q
0+35	0.0031	0.09	Q
0+40	0.0037	0.09	Q
0+45	0.0043	0.09	Q
0+50	0.0050	0.10	Q
0+55	0.0058	0.11	Q
1+ 0	0.0066	0.12	Q
1+ 5	0.0073	0.11	Q
1+10	0.0080	0.09	Q
1+15	0.0086	0.09	Q
1+20	0.0092	0.09	Q
1+25	0.0099	0.09	Q
1+30	0.0105	0.09	Q
1+35	0.0111	0.09	Q
1+40	0.0117	0.09	Q
1+45	0.0123	0.09	Q
1+50	0.0130	0.10	Q
1+55	0.0138	0.11	Q
2+ 0	0.0146	0.12	Q
2+ 5	0.0154	0.12	QV
2+10	0.0162	0.12	QV
2+15	0.0170	0.12	QV
2+20	0.0179	0.12	QV
2+25	0.0187	0.12	QV
2+30	0.0195	0.12	QV
2+35	0.0204	0.13	QV
2+40	0.0214	0.14	QV
2+45	0.0224	0.15	QV
2+50	0.0234	0.15	QV
2+55	0.0244	0.15	QV
3+ 0	0.0255	0.15	QV
3+ 5	0.0265	0.15	QV
3+10	0.0275	0.15	QV
3+15	0.0285	0.15	QV
3+20	0.0296	0.15	QV
3+25	0.0306	0.15	QV
3+30	0.0316	0.15	Q V
3+35	0.0326	0.15	Q V
3+40	0.0337	0.15	Q V
3+45	0.0347	0.15	Q V
3+50	0.0358	0.16	Q V
3+55	0.0370	0.17	Q V
4+ 0	0.0382	0.18	Q V
4+ 5	0.0394	0.18	Q V
4+10	0.0406	0.18	Q V
4+15	0.0419	0.18	Q V
4+20	0.0432	0.19	Q V
4+25	0.0446	0.20	Q V
4+30	0.0460	0.21	Q V
4+35	0.0474	0.21	Q V
4+40	0.0488	0.21	Q V
4+45	0.0503	0.21	Q V
4+50	0.0518	0.22	Q V
4+55	0.0534	0.23	Q V
5+ 0	0.0550	0.24	Q V
5+ 5	0.0565	0.22	Q V
5+10	0.0578	0.19	Q V
5+15	0.0591	0.18	Q V
5+20	0.0604	0.19	Q V
5+25	0.0618	0.20	Q V
5+30	0.0632	0.21	Q V
5+35	0.0647	0.22	Q V
5+40	0.0663	0.23	Q V
5+45	0.0679	0.24	Q V
5+50	0.0696	0.24	Q V
5+55	0.0712	0.24	Q V
6+ 0	0.0728	0.24	Q V
6+ 5	0.0745	0.25	Q V
6+10	0.0764	0.26	Q V
6+15	0.0782	0.27	Q V
6+20	0.0800	0.27	Q V
6+25	0.0819	0.27	Q V
6+30	0.0837	0.27	Q V
6+35	0.0856	0.28	Q V
6+40	0.0876	0.29	Q V
6+45	0.0897	0.30	Q V
6+50	0.0917	0.30	Q V
6+55	0.0938	0.30	Q V
7+ 0	0.0958	0.30	Q V
7+ 5	0.0979	0.30	Q V
7+10	0.0999	0.30	Q V
7+15	0.1020	0.30	Q V
7+20	0.1041	0.31	Q V

14+25	0.4618	0.78	Q	V
14+30	0.4672	0.78	Q	V
14+35	0.4725	0.77	Q	V
14+40	0.4778	0.77	Q	V
14+45	0.4832	0.77	Q	V
14+50	0.4884	0.76	Q	V
14+55	0.4936	0.75	Q	V
15+ 0	0.4987	0.75	Q	V
15+ 5	0.5038	0.73	Q	V
15+10	0.5088	0.72	Q	V
15+15	0.5137	0.72	Q	V
15+20	0.5185	0.71	Q	V
15+25	0.5233	0.69	Q	V
15+30	0.5280	0.69	Q	V
15+35	0.5325	0.64	Q	V
15+40	0.5365	0.59	Q	V
15+45	0.5405	0.58	Q	V
15+50	0.5444	0.57	Q	V
15+55	0.5483	0.57	Q	V
16+ 0	0.5522	0.57	Q	V
16+ 5	0.5550	0.41	Q	V
16+10	0.5564	0.20	Q	V
16+15	0.5575	0.15	Q	V
16+20	0.5584	0.13	Q	V
16+25	0.5593	0.12	Q	V
16+30	0.5601	0.12	Q	V
16+35	0.5608	0.11	Q	V
16+40	0.5615	0.09	Q	V
16+45	0.5621	0.09	Q	V
16+50	0.5627	0.09	Q	V
16+55	0.5634	0.09	Q	V
17+ 0	0.5640	0.09	Q	V
17+ 5	0.5647	0.11	Q	V
17+10	0.5657	0.14	Q	V
17+15	0.5667	0.14	Q	V
17+20	0.5677	0.15	Q	V
17+25	0.5687	0.15	Q	V
17+30	0.5697	0.15	Q	V
17+35	0.5708	0.15	Q	V
17+40	0.5718	0.15	Q	V
17+45	0.5728	0.15	Q	V
17+50	0.5738	0.14	Q	V
17+55	0.5746	0.12	Q	V
18+ 0	0.5755	0.12	Q	V
18+ 5	0.5763	0.12	Q	V
18+10	0.5771	0.12	Q	V
18+15	0.5779	0.12	Q	V
18+20	0.5787	0.12	Q	V
18+25	0.5796	0.12	Q	V
18+30	0.5804	0.12	Q	V
18+35	0.5811	0.11	Q	V
18+40	0.5818	0.09	Q	V
18+45	0.5824	0.09	Q	V
18+50	0.5830	0.08	Q	V
18+55	0.5834	0.07	Q	V
19+ 0	0.5838	0.06	Q	V
19+ 5	0.5843	0.07	Q	V
19+10	0.5849	0.08	Q	V
19+15	0.5855	0.09	Q	V
19+20	0.5862	0.10	Q	V
19+25	0.5870	0.11	Q	V
19+30	0.5878	0.12	Q	V
19+35	0.5885	0.11	Q	V
19+40	0.5892	0.09	Q	V
19+45	0.5898	0.09	Q	V
19+50	0.5903	0.08	Q	V
19+55	0.5908	0.07	Q	V
20+ 0	0.5912	0.06	Q	V
20+ 5	0.5917	0.07	Q	V
20+10	0.5923	0.08	Q	V
20+15	0.5929	0.09	Q	V
20+20	0.5935	0.09	Q	V
20+25	0.5941	0.09	Q	V
20+30	0.5947	0.09	Q	V
20+35	0.5953	0.09	Q	V
20+40	0.5960	0.09	Q	V
20+45	0.5966	0.09	Q	V
20+50	0.5971	0.08	Q	V
20+55	0.5976	0.07	Q	V
21+ 0	0.5980	0.06	Q	V
21+ 5	0.5985	0.07	Q	V
21+10	0.5991	0.08	Q	V
21+15	0.5997	0.09	Q	V
21+20	0.6002	0.08	Q	V

ONSITEPOST242.out

21+25	0.6006	0.06	Q			V
21+30	0.6011	0.06	Q			V
21+35	0.6015	0.07	Q			V
21+40	0.6021	0.08	Q			V
21+45	0.6027	0.09	Q			V
21+50	0.6033	0.08	Q			V
21+55	0.6037	0.06	Q			V
22+ 0	0.6041	0.06	Q			V
22+ 5	0.6046	0.07	Q			V
22+10	0.6052	0.08	Q			V
22+15	0.6058	0.09	Q			V
22+20	0.6063	0.08	Q			V
22+25	0.6068	0.06	Q			V
22+30	0.6072	0.06	Q			V
22+35	0.6076	0.06	Q			V
22+40	0.6080	0.06	Q			V
22+45	0.6084	0.06	Q			V
22+50	0.6089	0.06	Q			V
22+55	0.6093	0.06	Q			V
23+ 0	0.6097	0.06	Q			V
23+ 5	0.6101	0.06	Q			V
23+10	0.6105	0.06	Q			V
23+15	0.6109	0.06	Q			V
23+20	0.6113	0.06	Q			V
23+25	0.6117	0.06	Q			V
23+30	0.6121	0.06	Q			V
23+35	0.6125	0.06	Q			V
23+40	0.6130	0.06	Q			V
23+45	0.6134	0.06	Q			V
23+50	0.6138	0.06	Q			V
23+55	0.6142	0.06	Q			V
24+ 0	0.6146	0.06	Q			V
24+ 5	0.6149	0.04	Q			V
24+10	0.6149	0.01	Q			V
24+15	0.6150	0.00	Q			V
24+20	0.6150	0.00	Q			V
24+25	0.6150	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPOST245.out

 +-----+

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 PROPOSED CONDITION H-11.1 TRIBUTARY, 5-YEAR 24-HOUR
 FN: ONSITEPOST245.OUT- TSW

 Drainage Area = 4.50(Ac.) = 0.007 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 4.50(Ac.) = 0.007 Sq. Mi.
 Length along longest watercourse = 1242.00(Ft.)
 Length along longest watercourse measured to centroid = 745.00(Ft.)
 Length along longest watercourse = 0.235 Mi.
 Length along longest watercourse measured to centroid = 0.141 Mi.
 Difference in elevation = 6.00(Ft.)
 Slope along watercourse = 25.5072 Ft./Mi.
 Average Manning's 'N' = 0.015
 Lag time = 0.053 Hr.
 Lag time = 3.20 Min.
 25% of lag time = 0.80 Min.
 40% of lag time = 1.28 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
4.50	2.00	9.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
4.50	5.00	22.50

STORM EVENT (YEAR) = 5.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.703(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.703(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 4.500 56.00 0.900
 Total Area Entered = 4.50(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
56.0	36.0	0.706	0.900	0.134	1.000	0.134
						Sum (F) =
						0.134

Area averaged mean soil loss (F) (In/Hr) = 0.097
 Minimum soil loss rate ((In/Hr)) = 0.049
 (for 24 hour storm duration)
 Note: User entry of the f value
 Soil low loss rate (decimal) = 0.180

ONSITEPOST245.out
Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	156.242	34.652	1.572
2	0.167	312.485	46.549	2.111
3	0.250	468.727	10.830	0.491
4	0.333	624.969	4.695	0.213
5	0.417	781.211	2.297	0.104
6	0.500	937.454	0.977	0.044
Sum = 100.000			Sum=	4.535

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.022	(0.172)	0.004	0.018
2	0.17	0.07	0.022	(0.171)	0.004	0.018
3	0.25	0.07	0.022	(0.171)	0.004	0.018
4	0.33	0.10	0.032	(0.170)	0.006	0.027
5	0.42	0.10	0.032	(0.169)	0.006	0.027
6	0.50	0.10	0.032	(0.169)	0.006	0.027
7	0.58	0.10	0.032	(0.168)	0.006	0.027
8	0.67	0.10	0.032	(0.167)	0.006	0.027
9	0.75	0.10	0.032	(0.167)	0.006	0.027
10	0.83	0.13	0.043	(0.166)	0.008	0.035
11	0.92	0.13	0.043	(0.165)	0.008	0.035
12	1.00	0.13	0.043	(0.165)	0.008	0.035
13	1.08	0.10	0.032	(0.164)	0.006	0.027
14	1.17	0.10	0.032	(0.163)	0.006	0.027
15	1.25	0.10	0.032	(0.163)	0.006	0.027
16	1.33	0.10	0.032	(0.162)	0.006	0.027
17	1.42	0.10	0.032	(0.162)	0.006	0.027
18	1.50	0.10	0.032	(0.161)	0.006	0.027
19	1.58	0.10	0.032	(0.160)	0.006	0.027
20	1.67	0.10	0.032	(0.160)	0.006	0.027
21	1.75	0.10	0.032	(0.159)	0.006	0.027
22	1.83	0.13	0.043	(0.158)	0.008	0.035
23	1.92	0.13	0.043	(0.158)	0.008	0.035
24	2.00	0.13	0.043	(0.157)	0.008	0.035
25	2.08	0.13	0.043	(0.156)	0.008	0.035
26	2.17	0.13	0.043	(0.156)	0.008	0.035
27	2.25	0.13	0.043	(0.155)	0.008	0.035
28	2.33	0.13	0.043	(0.155)	0.008	0.035
29	2.42	0.13	0.043	(0.154)	0.008	0.035
30	2.50	0.13	0.043	(0.153)	0.008	0.035
31	2.58	0.17	0.054	(0.153)	0.010	0.044
32	2.67	0.17	0.054	(0.152)	0.010	0.044
33	2.75	0.17	0.054	(0.151)	0.010	0.044
34	2.83	0.17	0.054	(0.151)	0.010	0.044
35	2.92	0.17	0.054	(0.150)	0.010	0.044
36	3.00	0.17	0.054	(0.150)	0.010	0.044
37	3.08	0.17	0.054	(0.149)	0.010	0.044
38	3.17	0.17	0.054	(0.148)	0.010	0.044
39	3.25	0.17	0.054	(0.148)	0.010	0.044
40	3.33	0.17	0.054	(0.147)	0.010	0.044
41	3.42	0.17	0.054	(0.146)	0.010	0.044
42	3.50	0.17	0.054	(0.146)	0.010	0.044
43	3.58	0.17	0.054	(0.145)	0.010	0.044
44	3.67	0.17	0.054	(0.145)	0.010	0.044
45	3.75	0.17	0.054	(0.144)	0.010	0.044
46	3.83	0.20	0.065	(0.143)	0.012	0.053
47	3.92	0.20	0.065	(0.143)	0.012	0.053
48	4.00	0.20	0.065	(0.142)	0.012	0.053
49	4.08	0.20	0.065	(0.142)	0.012	0.053
50	4.17	0.20	0.065	(0.141)	0.012	0.053
51	4.25	0.20	0.065	(0.140)	0.012	0.053
52	4.33	0.23	0.076	(0.140)	0.014	0.062
53	4.42	0.23	0.076	(0.139)	0.014	0.062
54	4.50	0.23	0.076	(0.139)	0.014	0.062
55	4.58	0.23	0.076	(0.138)	0.014	0.062
56	4.67	0.23	0.076	(0.137)	0.014	0.062
57	4.75	0.23	0.076	(0.137)	0.014	0.062
58	4.83	0.27	0.086	(0.136)	0.016	0.071
59	4.92	0.27	0.086	(0.136)	0.016	0.071
60	5.00	0.27	0.086	(0.135)	0.016	0.071
61	5.08	0.20	0.065	(0.134)	0.012	0.053

ONSITEPOST245.out

62	5.17	0.20	0.065	(0.134)	0.012	0.053
63	5.25	0.20	0.065	(0.133)	0.012	0.053
64	5.33	0.23	0.076	(0.133)	0.014	0.062
65	5.42	0.23	0.076	(0.132)	0.014	0.062
66	5.50	0.23	0.076	(0.132)	0.014	0.062
67	5.58	0.27	0.086	(0.131)	0.016	0.071
68	5.67	0.27	0.086	(0.130)	0.016	0.071
69	5.75	0.27	0.086	(0.130)	0.016	0.071
70	5.83	0.27	0.086	(0.129)	0.016	0.071
71	5.92	0.27	0.086	(0.129)	0.016	0.071
72	6.00	0.27	0.086	(0.128)	0.016	0.071
73	6.08	0.30	0.097	(0.128)	0.018	0.080
74	6.17	0.30	0.097	(0.127)	0.018	0.080
75	6.25	0.30	0.097	(0.126)	0.018	0.080
76	6.33	0.30	0.097	(0.126)	0.018	0.080
77	6.42	0.30	0.097	(0.125)	0.018	0.080
78	6.50	0.30	0.097	(0.125)	0.018	0.080
79	6.58	0.33	0.108	(0.124)	0.019	0.089
80	6.67	0.33	0.108	(0.124)	0.019	0.089
81	6.75	0.33	0.108	(0.123)	0.019	0.089
82	6.83	0.33	0.108	(0.122)	0.019	0.089
83	6.92	0.33	0.108	(0.122)	0.019	0.089
84	7.00	0.33	0.108	(0.121)	0.019	0.089
85	7.08	0.33	0.108	(0.121)	0.019	0.089
86	7.17	0.33	0.108	(0.120)	0.019	0.089
87	7.25	0.33	0.108	(0.120)	0.019	0.089
88	7.33	0.37	0.119	(0.119)	0.021	0.098
89	7.42	0.37	0.119	(0.119)	0.021	0.098
90	7.50	0.37	0.119	(0.118)	0.021	0.098
91	7.58	0.40	0.130	(0.118)	0.023	0.106
92	7.67	0.40	0.130	(0.117)	0.023	0.106
93	7.75	0.40	0.130	(0.116)	0.023	0.106
94	7.83	0.43	0.141	(0.116)	0.025	0.115
95	7.92	0.43	0.141	(0.115)	0.025	0.115
96	8.00	0.43	0.141	(0.115)	0.025	0.115
97	8.08	0.50	0.162	(0.114)	0.029	0.133
98	8.17	0.50	0.162	(0.114)	0.029	0.133
99	8.25	0.50	0.162	(0.113)	0.029	0.133
100	8.33	0.50	0.162	(0.113)	0.029	0.133
101	8.42	0.50	0.162	(0.112)	0.029	0.133
102	8.50	0.50	0.162	(0.112)	0.029	0.133
103	8.58	0.53	0.173	(0.111)	0.031	0.142
104	8.67	0.53	0.173	(0.111)	0.031	0.142
105	8.75	0.53	0.173	(0.110)	0.031	0.142
106	8.83	0.57	0.184	(0.110)	0.033	0.151
107	8.92	0.57	0.184	(0.109)	0.033	0.151
108	9.00	0.57	0.184	(0.109)	0.033	0.151
109	9.08	0.63	0.205	(0.108)	0.037	0.168
110	9.17	0.63	0.205	(0.108)	0.037	0.168
111	9.25	0.63	0.205	(0.107)	0.037	0.168
112	9.33	0.67	0.216	(0.107)	0.039	0.177
113	9.42	0.67	0.216	(0.106)	0.039	0.177
114	9.50	0.67	0.216	(0.105)	0.039	0.177
115	9.58	0.70	0.227	(0.105)	0.041	0.186
116	9.67	0.70	0.227	(0.104)	0.041	0.186
117	9.75	0.70	0.227	(0.104)	0.041	0.186
118	9.83	0.73	0.238	(0.103)	0.043	0.195
119	9.92	0.73	0.238	(0.103)	0.043	0.195
120	10.00	0.73	0.238	(0.102)	0.043	0.195
121	10.08	0.50	0.162	(0.102)	0.029	0.133
122	10.17	0.50	0.162	(0.101)	0.029	0.133
123	10.25	0.50	0.162	(0.101)	0.029	0.133
124	10.33	0.50	0.162	(0.101)	0.029	0.133
125	10.42	0.50	0.162	(0.100)	0.029	0.133
126	10.50	0.50	0.162	(0.100)	0.029	0.133
127	10.58	0.67	0.216	(0.099)	0.039	0.177
128	10.67	0.67	0.216	(0.099)	0.039	0.177
129	10.75	0.67	0.216	(0.098)	0.039	0.177
130	10.83	0.67	0.216	(0.098)	0.039	0.177
131	10.92	0.67	0.216	(0.097)	0.039	0.177
132	11.00	0.67	0.216	(0.097)	0.039	0.177
133	11.08	0.63	0.205	(0.096)	0.037	0.168
134	11.17	0.63	0.205	(0.096)	0.037	0.168
135	11.25	0.63	0.205	(0.095)	0.037	0.168
136	11.33	0.63	0.205	(0.095)	0.037	0.168
137	11.42	0.63	0.205	(0.094)	0.037	0.168
138	11.50	0.63	0.205	(0.094)	0.037	0.168
139	11.58	0.57	0.184	(0.093)	0.033	0.151
140	11.67	0.57	0.184	(0.093)	0.033	0.151
141	11.75	0.57	0.184	(0.092)	0.033	0.151
142	11.83	0.60	0.195	(0.092)	0.035	0.160
143	11.92	0.60	0.195	(0.092)	0.035	0.160
144	12.00	0.60	0.195	(0.091)	0.035	0.160
145	12.08	0.83	0.270	(0.091)	0.049	0.222

ONSITEPOST245.out						
146	12.17	0.83	0.270	(0.090)	0.049	0.222
147	12.25	0.83	0.270	(0.090)	0.049	0.222
148	12.33	0.87	0.281	(0.089)	0.051	0.230
149	12.42	0.87	0.281	(0.089)	0.051	0.230
150	12.50	0.87	0.281	(0.088)	0.051	0.230
151	12.58	0.93	0.303	(0.088)	0.054	0.248
152	12.67	0.93	0.303	(0.087)	0.054	0.248
153	12.75	0.93	0.303	(0.087)	0.054	0.248
154	12.83	0.97	0.314	(0.087)	0.056	0.257
155	12.92	0.97	0.314	(0.086)	0.056	0.257
156	13.00	0.97	0.314	(0.086)	0.056	0.257
157	13.08	1.13	0.368	(0.085)	0.066	0.301
158	13.17	1.13	0.368	(0.085)	0.066	0.301
159	13.25	1.13	0.368	(0.084)	0.066	0.301
160	13.33	1.13	0.368	(0.084)	0.066	0.301
161	13.42	1.13	0.368	(0.084)	0.066	0.301
162	13.50	1.13	0.368	(0.083)	0.066	0.301
163	13.58	0.77	0.249	(0.083)	0.045	0.204
164	13.67	0.77	0.249	(0.082)	0.045	0.204
165	13.75	0.77	0.249	(0.082)	0.045	0.204
166	13.83	0.77	0.249	(0.081)	0.045	0.204
167	13.92	0.77	0.249	(0.081)	0.045	0.204
168	14.00	0.77	0.249	(0.081)	0.045	0.204
169	14.08	0.90	0.292	(0.080)	0.053	0.239
170	14.17	0.90	0.292	(0.080)	0.053	0.239
171	14.25	0.90	0.292	(0.079)	0.053	0.239
172	14.33	0.87	0.281	(0.079)	0.051	0.230
173	14.42	0.87	0.281	(0.079)	0.051	0.230
174	14.50	0.87	0.281	(0.078)	0.051	0.230
175	14.58	0.87	0.281	(0.078)	0.051	0.230
176	14.67	0.87	0.281	(0.077)	0.051	0.230
177	14.75	0.87	0.281	(0.077)	0.051	0.230
178	14.83	0.83	0.270	(0.077)	0.049	0.222
179	14.92	0.83	0.270	(0.076)	0.049	0.222
180	15.00	0.83	0.270	(0.076)	0.049	0.222
181	15.08	0.80	0.259	(0.075)	0.047	0.213
182	15.17	0.80	0.259	(0.075)	0.047	0.213
183	15.25	0.80	0.259	(0.075)	0.047	0.213
184	15.33	0.77	0.249	(0.074)	0.045	0.204
185	15.42	0.77	0.249	(0.074)	0.045	0.204
186	15.50	0.77	0.249	(0.073)	0.045	0.204
187	15.58	0.63	0.205	(0.073)	0.037	0.168
188	15.67	0.63	0.205	(0.073)	0.037	0.168
189	15.75	0.63	0.205	(0.072)	0.037	0.168
190	15.83	0.63	0.205	(0.072)	0.037	0.168
191	15.92	0.63	0.205	(0.072)	0.037	0.168
192	16.00	0.63	0.205	(0.071)	0.037	0.168
193	16.08	0.13	0.043	(0.071)	0.008	0.035
194	16.17	0.13	0.043	(0.071)	0.008	0.035
195	16.25	0.13	0.043	(0.070)	0.008	0.035
196	16.33	0.13	0.043	(0.070)	0.008	0.035
197	16.42	0.13	0.043	(0.069)	0.008	0.035
198	16.50	0.13	0.043	(0.069)	0.008	0.035
199	16.58	0.10	0.032	(0.069)	0.006	0.027
200	16.67	0.10	0.032	(0.068)	0.006	0.027
201	16.75	0.10	0.032	(0.068)	0.006	0.027
202	16.83	0.10	0.032	(0.068)	0.006	0.027
203	16.92	0.10	0.032	(0.067)	0.006	0.027
204	17.00	0.10	0.032	(0.067)	0.006	0.027
205	17.08	0.17	0.054	(0.067)	0.010	0.044
206	17.17	0.17	0.054	(0.066)	0.010	0.044
207	17.25	0.17	0.054	(0.066)	0.010	0.044
208	17.33	0.17	0.054	(0.066)	0.010	0.044
209	17.42	0.17	0.054	(0.065)	0.010	0.044
210	17.50	0.17	0.054	(0.065)	0.010	0.044
211	17.58	0.17	0.054	(0.065)	0.010	0.044
212	17.67	0.17	0.054	(0.064)	0.010	0.044
213	17.75	0.17	0.054	(0.064)	0.010	0.044
214	17.83	0.13	0.043	(0.064)	0.008	0.035
215	17.92	0.13	0.043	(0.063)	0.008	0.035
216	18.00	0.13	0.043	(0.063)	0.008	0.035
217	18.08	0.13	0.043	(0.063)	0.008	0.035
218	18.17	0.13	0.043	(0.063)	0.008	0.035
219	18.25	0.13	0.043	(0.062)	0.008	0.035
220	18.33	0.13	0.043	(0.062)	0.008	0.035
221	18.42	0.13	0.043	(0.062)	0.008	0.035
222	18.50	0.13	0.043	(0.061)	0.008	0.035
223	18.58	0.10	0.032	(0.061)	0.006	0.027
224	18.67	0.10	0.032	(0.061)	0.006	0.027
225	18.75	0.10	0.032	(0.060)	0.006	0.027
226	18.83	0.07	0.022	(0.060)	0.004	0.018
227	18.92	0.07	0.022	(0.060)	0.004	0.018
228	19.00	0.07	0.022	(0.060)	0.004	0.018
229	19.08	0.10	0.032	(0.059)	0.006	0.027

ONSITEPOST245.out

0+25	0.0026	0.11	Q
0+30	0.0034	0.12	Q
0+35	0.0042	0.12	Q
0+40	0.0050	0.12	Q
0+45	0.0058	0.12	Q
0+50	0.0068	0.13	Q
0+55	0.0078	0.15	Q
1+ 0	0.0089	0.16	Q
1+ 5	0.0099	0.15	Q
1+10	0.0108	0.13	Q
1+15	0.0117	0.12	Q
1+20	0.0125	0.12	Q
1+25	0.0133	0.12	Q
1+30	0.0142	0.12	Q
1+35	0.0150	0.12	Q
1+40	0.0158	0.12	Q
1+45	0.0167	0.12	Q
1+50	0.0176	0.13	Q
1+55	0.0186	0.15	Q
2+ 0	0.0197	0.16	Q
2+ 5	0.0208	0.16	QV
2+10	0.0219	0.16	QV
2+15	0.0230	0.16	QV
2+20	0.0241	0.16	QV
2+25	0.0252	0.16	QV
2+30	0.0264	0.16	QV
2+35	0.0276	0.17	QV
2+40	0.0289	0.19	QV
2+45	0.0303	0.20	QV
2+50	0.0316	0.20	QV
2+55	0.0330	0.20	QV
3+ 0	0.0344	0.20	QV
3+ 5	0.0358	0.20	QV
3+10	0.0372	0.20	QV
3+15	0.0386	0.20	QV
3+20	0.0399	0.20	QV
3+25	0.0413	0.20	QV
3+30	0.0427	0.20	Q V
3+35	0.0441	0.20	Q V
3+40	0.0455	0.20	Q V
3+45	0.0469	0.20	Q V
3+50	0.0483	0.22	Q V
3+55	0.0500	0.23	Q V
4+ 0	0.0516	0.24	Q V
4+ 5	0.0533	0.24	Q V
4+10	0.0549	0.24	Q V
4+15	0.0566	0.24	Q V
4+20	0.0583	0.26	QV
4+25	0.0602	0.27	QV
4+30	0.0621	0.28	QV
4+35	0.0641	0.28	Q V
4+40	0.0660	0.28	Q V
4+45	0.0679	0.28	Q V
4+50	0.0700	0.30	Q V
4+55	0.0721	0.31	Q V
5+ 0	0.0743	0.32	Q V
5+ 5	0.0763	0.29	Q V
5+10	0.0781	0.26	Q V
5+15	0.0798	0.25	Q V
5+20	0.0816	0.26	Q V
5+25	0.0835	0.27	Q V
5+30	0.0854	0.28	Q V
5+35	0.0874	0.29	Q V
5+40	0.0896	0.31	Q V
5+45	0.0918	0.32	Q V
5+50	0.0940	0.32	Q V
5+55	0.0962	0.32	Q V
6+ 0	0.0984	0.32	Q V
6+ 5	0.1007	0.34	Q V
6+10	0.1032	0.35	Q V
6+15	0.1056	0.36	Q V
6+20	0.1081	0.36	Q V
6+25	0.1106	0.36	Q V
6+30	0.1131	0.36	Q V
6+35	0.1157	0.38	Q V
6+40	0.1184	0.39	Q V
6+45	0.1212	0.40	Q V
6+50	0.1239	0.40	Q V
6+55	0.1267	0.40	Q V
7+ 0	0.1295	0.40	Q V
7+ 5	0.1322	0.40	Q V
7+10	0.1350	0.40	Q V
7+15	0.1378	0.40	Q V
7+20	0.1406	0.42	Q V

ONSITEPOST245.out

7+25	0.1436	0.43	Q	V			
7+30	0.1467	0.44	Q	V			
7+35	0.1498	0.46	Q	V			
7+40	0.1531	0.47	Q	V			
7+45	0.1564	0.48	Q	V			
7+50	0.1598	0.50	Q	V			
7+55	0.1633	0.51	Q	V			
8+ 0	0.1669	0.52	Q	V			
8+ 5	0.1707	0.55	Q	V			
8+10	0.1747	0.59	Q	V			
8+15	0.1789	0.60	Q	V			
8+20	0.1830	0.60	Q	V			
8+25	0.1871	0.60	Q	V			
8+30	0.1913	0.60	Q	V			
8+35	0.1955	0.62	Q	V			
8+40	0.1999	0.64	Q	V			
8+45	0.2043	0.64	Q	V			
8+50	0.2089	0.66	Q	V			
8+55	0.2135	0.68	Q	V			
9+ 0	0.2182	0.68	Q	V			
9+ 5	0.2231	0.71	Q	V			
9+10	0.2282	0.75	Q	V			
9+15	0.2335	0.76	Q	V			
9+20	0.2388	0.78	Q	V			
9+25	0.2443	0.80	Q	V			
9+30	0.2498	0.80	Q	V			
9+35	0.2554	0.82	Q	V			
9+40	0.2612	0.84	Q	V			
9+45	0.2670	0.84	Q	V			
9+50	0.2729	0.86	Q	V			
9+55	0.2789	0.88	Q	V			
10+ 0	0.2850	0.88	Q	V			
10+ 5	0.2904	0.79	Q	V			
10+10	0.2949	0.66	Q	V			
10+15	0.2993	0.63	Q	V			
10+20	0.3035	0.61	Q	V			
10+25	0.3076	0.61	Q	V			
10+30	0.3118	0.60	Q	V			
10+35	0.3164	0.67	Q	V			
10+40	0.3217	0.77	Q	V			
10+45	0.3271	0.79	Q	V			
10+50	0.3326	0.80	Q	V			
10+55	0.3382	0.80	Q	V			
11+ 0	0.3437	0.80	Q	V			
11+ 5	0.3492	0.79	Q	V			
11+10	0.3545	0.77	Q	V			
11+15	0.3598	0.77	Q	V			
11+20	0.3650	0.77	Q	V			
11+25	0.3703	0.76	Q	V			
11+30	0.3756	0.76	Q	V			
11+35	0.3806	0.74	Q	V			
11+40	0.3854	0.70	Q	V			
11+45	0.3902	0.69	Q	V			
11+50	0.3950	0.70	Q	V			
11+55	0.4000	0.72	Q	V			
12+ 0	0.4049	0.72	Q	V			
12+ 5	0.4106	0.82	Q	V			
12+10	0.4171	0.95	Q	V			
12+15	0.4239	0.98	Q	V			
12+20	0.4309	1.01	Q	V			
12+25	0.4380	1.04	Q	V			
12+30	0.4452	1.04	Q	V			
12+35	0.4526	1.07	Q	V			
12+40	0.4602	1.11	Q	V			
12+45	0.4679	1.12	Q	V			
12+50	0.4758	1.14	Q	V			
12+55	0.4837	1.16	Q	V			
13+ 0	0.4917	1.16	Q	V			
13+ 5	0.5002	1.23	Q	V			
13+10	0.5094	1.33	Q	V			
13+15	0.5187	1.35	Q	V			
13+20	0.5281	1.36	Q	V			
13+25	0.5375	1.37	Q	V			
13+30	0.5469	1.37	Q	V			
13+35	0.5553	1.21	Q	V			
13+40	0.5622	1.01	Q	V			
13+45	0.5688	0.96	Q	V			
13+50	0.5753	0.94	Q	V			
13+55	0.5817	0.93	Q	V			
14+ 0	0.5881	0.93	Q	V			
14+ 5	0.5948	0.98	Q	V			
14+10	0.6021	1.06	Q	V			
14+15	0.6095	1.07	Q	V			
14+20	0.6168	1.07	Q	V			

14+25	0.6241	1.05	Q	V
14+30	0.6313	1.05	Q	V
14+35	0.6385	1.05	Q	V
14+40	0.6457	1.05	Q	V
14+45	0.6529	1.05	Q	V
14+50	0.6600	1.03	Q	V
14+55	0.6670	1.01	Q	V
15+ 0	0.6740	1.01	Q	V
15+ 5	0.6808	0.99	Q	V
15+10	0.6875	0.97	Q	V
15+15	0.6942	0.97	Q	V
15+20	0.7007	0.95	Q	V
15+25	0.7072	0.93	Q	V
15+30	0.7136	0.93	Q	V
15+35	0.7195	0.87	Q	V
15+40	0.7250	0.79	Q	V
15+45	0.7304	0.78	Q	V
15+50	0.7357	0.77	Q	V
15+55	0.7409	0.77	Q	V
16+ 0	0.7462	0.76	Q	V
16+ 5	0.7500	0.56	Q	V
16+10	0.7519	0.27	Q	V
16+15	0.7534	0.21	Q	V
16+20	0.7546	0.18	Q	V
16+25	0.7558	0.17	Q	V
16+30	0.7569	0.16	Q	V
16+35	0.7579	0.15	Q	V
16+40	0.7588	0.13	Q	V
16+45	0.7596	0.12	Q	V
16+50	0.7605	0.12	Q	V
16+55	0.7613	0.12	Q	V
17+ 0	0.7621	0.12	Q	V
17+ 5	0.7631	0.15	Q	V
17+10	0.7644	0.19	Q	V
17+15	0.7658	0.19	Q	V
17+20	0.7671	0.20	Q	V
17+25	0.7685	0.20	Q	V
17+30	0.7699	0.20	Q	V
17+35	0.7713	0.20	Q	V
17+40	0.7727	0.20	Q	V
17+45	0.7740	0.20	Q	V
17+50	0.7753	0.19	Q	V
17+55	0.7765	0.17	Q	V
18+ 0	0.7776	0.16	Q	V
18+ 5	0.7787	0.16	Q	V
18+10	0.7799	0.16	Q	V
18+15	0.7810	0.16	Q	V
18+20	0.7821	0.16	Q	V
18+25	0.7832	0.16	Q	V
18+30	0.7843	0.16	Q	V
18+35	0.7853	0.15	Q	V
18+40	0.7862	0.13	Q	V
18+45	0.7870	0.12	Q	V
18+50	0.7878	0.11	Q	V
18+55	0.7884	0.09	Q	V
19+ 0	0.7890	0.08	Q	V
19+ 5	0.7896	0.10	Q	V
19+10	0.7904	0.11	Q	V
19+15	0.7912	0.12	Q	V
19+20	0.7921	0.13	Q	V
19+25	0.7932	0.15	Q	V
19+30	0.7943	0.16	Q	V
19+35	0.7953	0.15	Q	V
19+40	0.7962	0.13	Q	V
19+45	0.7970	0.12	Q	V
19+50	0.7978	0.11	Q	V
19+55	0.7984	0.09	Q	V
20+ 0	0.7989	0.08	Q	V
20+ 5	0.7996	0.10	Q	V
20+10	0.8004	0.11	Q	V
20+15	0.8012	0.12	Q	V
20+20	0.8020	0.12	Q	V
20+25	0.8028	0.12	Q	V
20+30	0.8037	0.12	Q	V
20+35	0.8045	0.12	Q	V
20+40	0.8053	0.12	Q	V
20+45	0.8062	0.12	Q	V
20+50	0.8069	0.11	Q	V
20+55	0.8075	0.09	Q	V
21+ 0	0.8081	0.08	Q	V
21+ 5	0.8087	0.10	Q	V
21+10	0.8095	0.11	Q	V
21+15	0.8103	0.12	Q	V
21+20	0.8111	0.11	Q	V

ONSITEPOST245.out

21+25	0.8117	0.09	Q			V
21+30	0.8122	0.08	Q			V
21+35	0.8129	0.10	Q			V
21+40	0.8137	0.11	Q			V
21+45	0.8145	0.12	Q			V
21+50	0.8152	0.11	Q			V
21+55	0.8158	0.09	Q			V
22+ 0	0.8164	0.08	Q			V
22+ 5	0.8170	0.10	Q			V
22+10	0.8178	0.11	Q			V
22+15	0.8186	0.12	Q			V
22+20	0.8194	0.11	Q			V
22+25	0.8200	0.09	Q			V
22+30	0.8205	0.08	Q			V
22+35	0.8211	0.08	Q			V
22+40	0.8217	0.08	Q			V
22+45	0.8222	0.08	Q			V
22+50	0.8228	0.08	Q			V
22+55	0.8233	0.08	Q			V
23+ 0	0.8239	0.08	Q			V
23+ 5	0.8244	0.08	Q			V
23+10	0.8250	0.08	Q			V
23+15	0.8255	0.08	Q			V
23+20	0.8261	0.08	Q			V
23+25	0.8267	0.08	Q			V
23+30	0.8272	0.08	Q			V
23+35	0.8278	0.08	Q			V
23+40	0.8283	0.08	Q			V
23+45	0.8289	0.08	Q			V
23+50	0.8294	0.08	Q			V
23+55	0.8300	0.08	Q			V
24+ 0	0.8305	0.08	Q			V
24+ 5	0.8309	0.05	Q			V
24+10	0.8310	0.02	Q			V
24+15	0.8310	0.01	Q			V
24+20	0.8311	0.00	Q			V
24+25	0.8311	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPOST2410.out

 +-----

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 PROPOSED CONDITION H-11.1 TRIBUTARY, 10-YEAR 24-HOUR
 FN: ONSITEPOST2410.OUT- TSW

 Drainage Area = 4.50(Ac.) = 0.007 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 4.50(Ac.) = 0.007 Sq. Mi.
 Length along longest watercourse = 1242.00(Ft.)
 Length along longest watercourse measured to centroid = 745.00(Ft.)
 Length along longest watercourse = 0.235 Mi.
 Length along longest watercourse measured to centroid = 0.141 Mi.
 Difference in elevation = 6.00(Ft.)
 Slope along watercourse = 25.5072 Ft./Mi.
 Average Manning's 'N' = 0.015
 Lag time = 0.053 Hr.
 Lag time = 3.20 Min.
 25% of lag time = 0.80 Min.
 40% of lag time = 1.28 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
4.50	2.00	9.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
4.50	5.00	22.50

STORM EVENT (YEAR) = 10.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 3.234(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 3.234(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 4.500 56.00 0.900
 Total Area Entered = 4.50(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
56.0	56.0	0.511	0.900	0.097	1.000	0.097
						Sum (F) =
						0.097

Area averaged mean soil loss (F) (In/Hr) = 0.097
 Minimum soil loss rate ((In/Hr)) = 0.049
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.180

ONSITEPOST2410.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	156.242	34.652	1.572
2	0.167	312.485	46.549	2.111
3	0.250	468.727	10.830	0.491
4	0.333	624.969	4.695	0.213
5	0.417	781.211	2.297	0.104
6	0.500	937.454	0.977	0.044
			Sum = 100.000	Sum= 4.535

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1	0.08	0.026	(0.172)	0.005	0.021
2	0.17	0.026	(0.171)	0.005	0.021
3	0.25	0.026	(0.171)	0.005	0.021
4	0.33	0.039	(0.170)	0.007	0.032
5	0.42	0.039	(0.169)	0.007	0.032
6	0.50	0.039	(0.169)	0.007	0.032
7	0.58	0.039	(0.168)	0.007	0.032
8	0.67	0.039	(0.167)	0.007	0.032
9	0.75	0.039	(0.167)	0.007	0.032
10	0.83	0.052	(0.166)	0.009	0.042
11	0.92	0.052	(0.165)	0.009	0.042
12	1.00	0.052	(0.165)	0.009	0.042
13	1.08	0.039	(0.164)	0.007	0.032
14	1.17	0.039	(0.163)	0.007	0.032
15	1.25	0.039	(0.163)	0.007	0.032
16	1.33	0.039	(0.162)	0.007	0.032
17	1.42	0.039	(0.162)	0.007	0.032
18	1.50	0.039	(0.161)	0.007	0.032
19	1.58	0.039	(0.160)	0.007	0.032
20	1.67	0.039	(0.160)	0.007	0.032
21	1.75	0.039	(0.159)	0.007	0.032
22	1.83	0.052	(0.158)	0.009	0.042
23	1.92	0.052	(0.158)	0.009	0.042
24	2.00	0.052	(0.157)	0.009	0.042
25	2.08	0.052	(0.156)	0.009	0.042
26	2.17	0.052	(0.156)	0.009	0.042
27	2.25	0.052	(0.155)	0.009	0.042
28	2.33	0.052	(0.155)	0.009	0.042
29	2.42	0.052	(0.154)	0.009	0.042
30	2.50	0.052	(0.153)	0.009	0.042
31	2.58	0.065	(0.153)	0.012	0.053
32	2.67	0.065	(0.152)	0.012	0.053
33	2.75	0.065	(0.151)	0.012	0.053
34	2.83	0.065	(0.151)	0.012	0.053
35	2.92	0.065	(0.150)	0.012	0.053
36	3.00	0.065	(0.150)	0.012	0.053
37	3.08	0.065	(0.149)	0.012	0.053
38	3.17	0.065	(0.148)	0.012	0.053
39	3.25	0.065	(0.148)	0.012	0.053
40	3.33	0.065	(0.147)	0.012	0.053
41	3.42	0.065	(0.146)	0.012	0.053
42	3.50	0.065	(0.146)	0.012	0.053
43	3.58	0.065	(0.145)	0.012	0.053
44	3.67	0.065	(0.145)	0.012	0.053
45	3.75	0.065	(0.144)	0.012	0.053
46	3.83	0.078	(0.143)	0.014	0.064
47	3.92	0.078	(0.143)	0.014	0.064
48	4.00	0.078	(0.142)	0.014	0.064
49	4.08	0.078	(0.142)	0.014	0.064
50	4.17	0.078	(0.141)	0.014	0.064
51	4.25	0.078	(0.140)	0.014	0.064
52	4.33	0.091	(0.140)	0.016	0.074
53	4.42	0.091	(0.139)	0.016	0.074
54	4.50	0.091	(0.139)	0.016	0.074
55	4.58	0.091	(0.138)	0.016	0.074
56	4.67	0.091	(0.137)	0.016	0.074
57	4.75	0.091	(0.137)	0.016	0.074
58	4.83	0.103	(0.136)	0.019	0.085
59	4.92	0.103	(0.136)	0.019	0.085
60	5.00	0.103	(0.135)	0.019	0.085
61	5.08	0.078	(0.134)	0.014	0.064
62	5.17	0.078	(0.134)	0.014	0.064

ONSITEPOST2410.out

63	5.25	0.20	0.078	(0.133)	0.014	0.064
64	5.33	0.23	0.091	(0.133)	0.016	0.074
65	5.42	0.23	0.091	(0.132)	0.016	0.074
66	5.50	0.23	0.091	(0.132)	0.016	0.074
67	5.58	0.27	0.103	(0.131)	0.019	0.085
68	5.67	0.27	0.103	(0.130)	0.019	0.085
69	5.75	0.27	0.103	(0.130)	0.019	0.085
70	5.83	0.27	0.103	(0.129)	0.019	0.085
71	5.92	0.27	0.103	(0.129)	0.019	0.085
72	6.00	0.27	0.103	(0.128)	0.019	0.085
73	6.08	0.30	0.116	(0.128)	0.021	0.095
74	6.17	0.30	0.116	(0.127)	0.021	0.095
75	6.25	0.30	0.116	(0.126)	0.021	0.095
76	6.33	0.30	0.116	(0.126)	0.021	0.095
77	6.42	0.30	0.116	(0.125)	0.021	0.095
78	6.50	0.30	0.116	(0.125)	0.021	0.095
79	6.58	0.33	0.129	(0.124)	0.023	0.106
80	6.67	0.33	0.129	(0.124)	0.023	0.106
81	6.75	0.33	0.129	(0.123)	0.023	0.106
82	6.83	0.33	0.129	(0.122)	0.023	0.106
83	6.92	0.33	0.129	(0.122)	0.023	0.106
84	7.00	0.33	0.129	(0.121)	0.023	0.106
85	7.08	0.33	0.129	(0.121)	0.023	0.106
86	7.17	0.33	0.129	(0.120)	0.023	0.106
87	7.25	0.33	0.129	(0.120)	0.023	0.106
88	7.33	0.37	0.142	(0.119)	0.026	0.117
89	7.42	0.37	0.142	(0.119)	0.026	0.117
90	7.50	0.37	0.142	(0.118)	0.026	0.117
91	7.58	0.40	0.155	(0.118)	0.028	0.127
92	7.67	0.40	0.155	(0.117)	0.028	0.127
93	7.75	0.40	0.155	(0.116)	0.028	0.127
94	7.83	0.43	0.168	(0.116)	0.030	0.138
95	7.92	0.43	0.168	(0.115)	0.030	0.138
96	8.00	0.43	0.168	(0.115)	0.030	0.138
97	8.08	0.50	0.194	(0.114)	0.035	0.159
98	8.17	0.50	0.194	(0.114)	0.035	0.159
99	8.25	0.50	0.194	(0.113)	0.035	0.159
100	8.33	0.50	0.194	(0.113)	0.035	0.159
101	8.42	0.50	0.194	(0.112)	0.035	0.159
102	8.50	0.50	0.194	(0.112)	0.035	0.159
103	8.58	0.53	0.207	(0.111)	0.037	0.170
104	8.67	0.53	0.207	(0.111)	0.037	0.170
105	8.75	0.53	0.207	(0.110)	0.037	0.170
106	8.83	0.57	0.220	(0.110)	0.040	0.180
107	8.92	0.57	0.220	(0.109)	0.040	0.180
108	9.00	0.57	0.220	(0.109)	0.040	0.180
109	9.08	0.63	0.246	(0.108)	0.044	0.202
110	9.17	0.63	0.246	(0.108)	0.044	0.202
111	9.25	0.63	0.246	(0.107)	0.044	0.202
112	9.33	0.67	0.259	(0.107)	0.047	0.212
113	9.42	0.67	0.259	(0.106)	0.047	0.212
114	9.50	0.67	0.259	(0.105)	0.047	0.212
115	9.58	0.70	0.272	(0.105)	0.049	0.223
116	9.67	0.70	0.272	(0.104)	0.049	0.223
117	9.75	0.70	0.272	(0.104)	0.049	0.223
118	9.83	0.73	0.285	(0.103)	0.051	0.233
119	9.92	0.73	0.285	(0.103)	0.051	0.233
120	10.00	0.73	0.285	(0.102)	0.051	0.233
121	10.08	0.50	0.194	(0.102)	0.035	0.159
122	10.17	0.50	0.194	(0.101)	0.035	0.159
123	10.25	0.50	0.194	(0.101)	0.035	0.159
124	10.33	0.50	0.194	(0.101)	0.035	0.159
125	10.42	0.50	0.194	(0.100)	0.035	0.159
126	10.50	0.50	0.194	(0.100)	0.035	0.159
127	10.58	0.67	0.259	(0.099)	0.047	0.212
128	10.67	0.67	0.259	(0.099)	0.047	0.212
129	10.75	0.67	0.259	(0.098)	0.047	0.212
130	10.83	0.67	0.259	(0.098)	0.047	0.212
131	10.92	0.67	0.259	(0.097)	0.047	0.212
132	11.00	0.67	0.259	(0.097)	0.047	0.212
133	11.08	0.63	0.246	(0.096)	0.044	0.202
134	11.17	0.63	0.246	(0.096)	0.044	0.202
135	11.25	0.63	0.246	(0.095)	0.044	0.202
136	11.33	0.63	0.246	(0.095)	0.044	0.202
137	11.42	0.63	0.246	(0.094)	0.044	0.202
138	11.50	0.63	0.246	(0.094)	0.044	0.202
139	11.58	0.57	0.220	(0.093)	0.040	0.180
140	11.67	0.57	0.220	(0.093)	0.040	0.180
141	11.75	0.57	0.220	(0.092)	0.040	0.180
142	11.83	0.60	0.233	(0.092)	0.042	0.191
143	11.92	0.60	0.233	(0.092)	0.042	0.191
144	12.00	0.60	0.233	(0.091)	0.042	0.191
145	12.08	0.83	0.323	(0.091)	0.058	0.265
146	12.17	0.83	0.323	(0.090)	0.058	0.265

ONSITEPOST2410.out

147	12.25	0.83	0.323	(0.090)	0.058	0.265
148	12.33	0.87	0.336	(0.089)	0.061	0.276
149	12.42	0.87	0.336	(0.089)	0.061	0.276
150	12.50	0.87	0.336	(0.088)	0.061	0.276
151	12.58	0.93	0.362	(0.088)	0.065	0.297
152	12.67	0.93	0.362	(0.087)	0.065	0.297
153	12.75	0.93	0.362	(0.087)	0.065	0.297
154	12.83	0.97	0.375	(0.087)	0.068	0.308
155	12.92	0.97	0.375	(0.086)	0.068	0.308
156	13.00	0.97	0.375	(0.086)	0.068	0.308
157	13.08	1.13	0.440	(0.085)	0.079	0.361
158	13.17	1.13	0.440	(0.085)	0.079	0.361
159	13.25	1.13	0.440	(0.084)	0.079	0.361
160	13.33	1.13	0.440	(0.084)	0.079	0.361
161	13.42	1.13	0.440	(0.084)	0.079	0.361
162	13.50	1.13	0.440	(0.083)	0.079	0.361
163	13.58	0.77	0.298	(0.083)	0.054	0.244
164	13.67	0.77	0.298	(0.082)	0.054	0.244
165	13.75	0.77	0.298	(0.082)	0.054	0.244
166	13.83	0.77	0.298	(0.081)	0.054	0.244
167	13.92	0.77	0.298	(0.081)	0.054	0.244
168	14.00	0.77	0.298	(0.081)	0.054	0.244
169	14.08	0.90	0.349	(0.080)	0.063	0.286
170	14.17	0.90	0.349	(0.080)	0.063	0.286
171	14.25	0.90	0.349	(0.079)	0.063	0.286
172	14.33	0.87	0.336	(0.079)	0.061	0.276
173	14.42	0.87	0.336	(0.079)	0.061	0.276
174	14.50	0.87	0.336	(0.078)	0.061	0.276
175	14.58	0.87	0.336	(0.078)	0.061	0.276
176	14.67	0.87	0.336	(0.077)	0.061	0.276
177	14.75	0.87	0.336	(0.077)	0.061	0.276
178	14.83	0.83	0.323	(0.077)	0.058	0.265
179	14.92	0.83	0.323	(0.076)	0.058	0.265
180	15.00	0.83	0.323	(0.076)	0.058	0.265
181	15.08	0.80	0.310	(0.075)	0.056	0.255
182	15.17	0.80	0.310	(0.075)	0.056	0.255
183	15.25	0.80	0.310	(0.075)	0.056	0.255
184	15.33	0.77	0.298	(0.074)	0.054	0.244
185	15.42	0.77	0.298	(0.074)	0.054	0.244
186	15.50	0.77	0.298	(0.073)	0.054	0.244
187	15.58	0.63	0.246	(0.073)	0.044	0.202
188	15.67	0.63	0.246	(0.073)	0.044	0.202
189	15.75	0.63	0.246	(0.072)	0.044	0.202
190	15.83	0.63	0.246	(0.072)	0.044	0.202
191	15.92	0.63	0.246	(0.072)	0.044	0.202
192	16.00	0.63	0.246	(0.071)	0.044	0.202
193	16.08	0.13	0.052	(0.071)	0.009	0.042
194	16.17	0.13	0.052	(0.071)	0.009	0.042
195	16.25	0.13	0.052	(0.070)	0.009	0.042
196	16.33	0.13	0.052	(0.070)	0.009	0.042
197	16.42	0.13	0.052	(0.069)	0.009	0.042
198	16.50	0.13	0.052	(0.069)	0.009	0.042
199	16.58	0.10	0.039	(0.069)	0.007	0.032
200	16.67	0.10	0.039	(0.068)	0.007	0.032
201	16.75	0.10	0.039	(0.068)	0.007	0.032
202	16.83	0.10	0.039	(0.068)	0.007	0.032
203	16.92	0.10	0.039	(0.067)	0.007	0.032
204	17.00	0.10	0.039	(0.067)	0.007	0.032
205	17.08	0.17	0.065	(0.067)	0.012	0.053
206	17.17	0.17	0.065	(0.066)	0.012	0.053
207	17.25	0.17	0.065	(0.066)	0.012	0.053
208	17.33	0.17	0.065	(0.066)	0.012	0.053
209	17.42	0.17	0.065	(0.065)	0.012	0.053
210	17.50	0.17	0.065	(0.065)	0.012	0.053
211	17.58	0.17	0.065	(0.065)	0.012	0.053
212	17.67	0.17	0.065	(0.064)	0.012	0.053
213	17.75	0.17	0.065	(0.064)	0.012	0.053
214	17.83	0.13	0.052	(0.064)	0.009	0.042
215	17.92	0.13	0.052	(0.063)	0.009	0.042
216	18.00	0.13	0.052	(0.063)	0.009	0.042
217	18.08	0.13	0.052	(0.063)	0.009	0.042
218	18.17	0.13	0.052	(0.063)	0.009	0.042
219	18.25	0.13	0.052	(0.062)	0.009	0.042
220	18.33	0.13	0.052	(0.062)	0.009	0.042
221	18.42	0.13	0.052	(0.062)	0.009	0.042
222	18.50	0.13	0.052	(0.061)	0.009	0.042
223	18.58	0.10	0.039	(0.061)	0.007	0.032
224	18.67	0.10	0.039	(0.061)	0.007	0.032
225	18.75	0.10	0.039	(0.060)	0.007	0.032
226	18.83	0.07	0.026	(0.060)	0.005	0.021
227	18.92	0.07	0.026	(0.060)	0.005	0.021
228	19.00	0.07	0.026	(0.060)	0.005	0.021
229	19.08	0.10	0.039	(0.059)	0.007	0.032
230	19.17	0.10	0.039	(0.059)	0.007	0.032

ONSITEPOST2410.out

231	19.25	0.10	0.039	(0.059)	0.007	0.032
232	19.33	0.13	0.052	(0.058)	0.009	0.042
233	19.42	0.13	0.052	(0.058)	0.009	0.042
234	19.50	0.13	0.052	(0.058)	0.009	0.042
235	19.58	0.10	0.039	(0.058)	0.007	0.032
236	19.67	0.10	0.039	(0.057)	0.007	0.032
237	19.75	0.10	0.039	(0.057)	0.007	0.032
238	19.83	0.07	0.026	(0.057)	0.005	0.021
239	19.92	0.07	0.026	(0.057)	0.005	0.021
240	20.00	0.07	0.026	(0.056)	0.005	0.021
241	20.08	0.10	0.039	(0.056)	0.007	0.032
242	20.17	0.10	0.039	(0.056)	0.007	0.032
243	20.25	0.10	0.039	(0.056)	0.007	0.032
244	20.33	0.10	0.039	(0.055)	0.007	0.032
245	20.42	0.10	0.039	(0.055)	0.007	0.032
246	20.50	0.10	0.039	(0.055)	0.007	0.032
247	20.58	0.10	0.039	(0.055)	0.007	0.032
248	20.67	0.10	0.039	(0.054)	0.007	0.032
249	20.75	0.10	0.039	(0.054)	0.007	0.032
250	20.83	0.07	0.026	(0.054)	0.005	0.021
251	20.92	0.07	0.026	(0.054)	0.005	0.021
252	21.00	0.07	0.026	(0.054)	0.005	0.021
253	21.08	0.10	0.039	(0.053)	0.007	0.032
254	21.17	0.10	0.039	(0.053)	0.007	0.032
255	21.25	0.10	0.039	(0.053)	0.007	0.032
256	21.33	0.07	0.026	(0.053)	0.005	0.021
257	21.42	0.07	0.026	(0.053)	0.005	0.021
258	21.50	0.07	0.026	(0.052)	0.005	0.021
259	21.58	0.10	0.039	(0.052)	0.007	0.032
260	21.67	0.10	0.039	(0.052)	0.007	0.032
261	21.75	0.10	0.039	(0.052)	0.007	0.032
262	21.83	0.07	0.026	(0.052)	0.005	0.021
263	21.92	0.07	0.026	(0.051)	0.005	0.021
264	22.00	0.07	0.026	(0.051)	0.005	0.021
265	22.08	0.10	0.039	(0.051)	0.007	0.032
266	22.17	0.10	0.039	(0.051)	0.007	0.032
267	22.25	0.10	0.039	(0.051)	0.007	0.032
268	22.33	0.07	0.026	(0.051)	0.005	0.021
269	22.42	0.07	0.026	(0.050)	0.005	0.021
270	22.50	0.07	0.026	(0.050)	0.005	0.021
271	22.58	0.07	0.026	(0.050)	0.005	0.021
272	22.67	0.07	0.026	(0.050)	0.005	0.021
273	22.75	0.07	0.026	(0.050)	0.005	0.021
274	22.83	0.07	0.026	(0.050)	0.005	0.021
275	22.92	0.07	0.026	(0.050)	0.005	0.021
276	23.00	0.07	0.026	(0.049)	0.005	0.021
277	23.08	0.07	0.026	(0.049)	0.005	0.021
278	23.17	0.07	0.026	(0.049)	0.005	0.021
279	23.25	0.07	0.026	(0.049)	0.005	0.021
280	23.33	0.07	0.026	(0.049)	0.005	0.021
281	23.42	0.07	0.026	(0.049)	0.005	0.021
282	23.50	0.07	0.026	(0.049)	0.005	0.021
283	23.58	0.07	0.026	(0.049)	0.005	0.021
284	23.67	0.07	0.026	(0.049)	0.005	0.021
285	23.75	0.07	0.026	(0.049)	0.005	0.021
286	23.83	0.07	0.026	(0.049)	0.005	0.021
287	23.92	0.07	0.026	(0.049)	0.005	0.021
288	24.00	0.07	0.026	(0.049)	0.005	0.021

(Loss Rate Not Used)

Sum = 100.0 Sum = 31.8

Flood volume = Effective rainfall 2.65(In)
 times area 4.5(Ac.)/[(In)/(Ft.)] = 1.0(Ac.Ft)
 Total soil loss = 0.58(In)
 Total soil loss = 0.218(Ac.Ft)
 Total rainfall = 3.23(In)
 Flood volume = 43321.1 Cubic Feet
 Total soil loss = 9509.5 Cubic Feet

 Peak flow rate of this hydrograph = 1.637(CFS)

+++++

24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.03	Q				
0+10	0.0008	0.08	Q				
0+15	0.0014	0.09	Q				
0+20	0.0021	0.11	Q				
0+25	0.0031	0.13	Q				

0+30	0.0040	0.14	Q
0+35	0.0050	0.14	Q
0+40	0.0060	0.14	Q
0+45	0.0070	0.14	Q
0+50	0.0081	0.16	Q
0+55	0.0094	0.18	Q
1+ 0	0.0107	0.19	Q
1+ 5	0.0119	0.17	Q
1+10	0.0129	0.15	Q
1+15	0.0139	0.15	Q
1+20	0.0150	0.15	Q
1+25	0.0159	0.14	Q
1+30	0.0169	0.14	Q
1+35	0.0179	0.14	Q
1+40	0.0189	0.14	Q
1+45	0.0199	0.14	Q
1+50	0.0210	0.16	Q
1+55	0.0223	0.18	Q
2+ 0	0.0236	0.19	Q
2+ 5	0.0249	0.19	QV
2+10	0.0262	0.19	QV
2+15	0.0276	0.19	QV
2+20	0.0289	0.19	QV
2+25	0.0302	0.19	QV
2+30	0.0315	0.19	QV
2+35	0.0330	0.21	QV
2+40	0.0346	0.23	QV
2+45	0.0362	0.24	QV
2+50	0.0379	0.24	QV
2+55	0.0395	0.24	QV
3+ 0	0.0412	0.24	QV
3+ 5	0.0428	0.24	QV
3+10	0.0445	0.24	QV
3+15	0.0461	0.24	QV
3+20	0.0478	0.24	QV
3+25	0.0495	0.24	QV
3+30	0.0511	0.24	Q V
3+35	0.0528	0.24	Q V
3+40	0.0544	0.24	Q V
3+45	0.0561	0.24	Q V
3+50	0.0579	0.26	QV
3+55	0.0598	0.28	QV
4+ 0	0.0617	0.28	QV
4+ 5	0.0637	0.29	QV
4+10	0.0657	0.29	QV
4+15	0.0677	0.29	QV
4+20	0.0698	0.31	QV
4+25	0.0721	0.33	QV
4+30	0.0744	0.33	QV
4+35	0.0767	0.34	Q V
4+40	0.0790	0.34	Q V
4+45	0.0813	0.34	Q V
4+50	0.0837	0.35	Q V
4+55	0.0863	0.38	Q V
5+ 0	0.0890	0.38	Q V
5+ 5	0.0914	0.35	Q V
5+10	0.0935	0.31	Q V
5+15	0.0955	0.30	Q V
5+20	0.0976	0.31	Q V
5+25	0.0999	0.33	Q V
5+30	0.1022	0.33	Q V
5+35	0.1046	0.35	Q V
5+40	0.1072	0.38	Q V
5+45	0.1098	0.38	Q V
5+50	0.1125	0.38	Q V
5+55	0.1151	0.38	Q V
6+ 0	0.1178	0.39	Q V
6+ 5	0.1205	0.40	Q V
6+10	0.1235	0.42	Q V
6+15	0.1264	0.43	Q V
6+20	0.1294	0.43	Q V
6+25	0.1324	0.43	Q V
6+30	0.1354	0.43	Q V
6+35	0.1385	0.45	Q V
6+40	0.1417	0.47	Q V
6+45	0.1450	0.48	Q V
6+50	0.1483	0.48	Q V
6+55	0.1516	0.48	Q V
7+ 0	0.1549	0.48	Q V
7+ 5	0.1582	0.48	Q V
7+10	0.1616	0.48	Q V
7+15	0.1649	0.48	Q V
7+20	0.1683	0.50	Q V
7+25	0.1719	0.52	Q V

7+30	0.1755	0.53	Q	V		
7+35	0.1793	0.54	Q	V		
7+40	0.1832	0.57	Q	V		
7+45	0.1871	0.57	Q	V		
7+50	0.1912	0.59	Q	V		
7+55	0.1955	0.62	Q	V		
8+ 0	0.1997	0.62	Q	V		
8+ 5	0.2043	0.66	Q	V		
8+10	0.2091	0.70	Q	V		
8+15	0.2140	0.71	Q	V		
8+20	0.2190	0.72	Q	V		
8+25	0.2239	0.72	Q	V		
8+30	0.2289	0.72	Q	V		
8+35	0.2340	0.74	Q	V		
8+40	0.2392	0.76	Q	V		
8+45	0.2445	0.77	Q	V		
8+50	0.2499	0.79	Q	V		
8+55	0.2555	0.81	Q	V		
9+ 0	0.2611	0.81	Q	V		
9+ 5	0.2670	0.85	Q	V		
9+10	0.2731	0.90	Q	V		
9+15	0.2794	0.91	Q	V		
9+20	0.2858	0.93	Q	V		
9+25	0.2923	0.95	Q	V		
9+30	0.2989	0.96	Q	V		
9+35	0.3057	0.98	Q	V		
9+40	0.3126	1.00	Q	V		
9+45	0.3195	1.01	Q	V		
9+50	0.3266	1.03	Q	V		
9+55	0.3338	1.05	Q	V		
10+ 0	0.3411	1.06	Q	V		
10+ 5	0.3475	0.94	Q	V		
10+10	0.3529	0.78	Q	V		
10+15	0.3581	0.75	Q	V		
10+20	0.3632	0.73	Q	V		
10+25	0.3682	0.73	Q	V		
10+30	0.3731	0.72	Q	V		
10+35	0.3787	0.81	Q	V		
10+40	0.3850	0.92	Q	V		
10+45	0.3915	0.94	Q	V		
10+50	0.3981	0.95	Q	V		
10+55	0.4047	0.96	Q	V		
11+ 0	0.4113	0.96	Q	V		
11+ 5	0.4178	0.95	Q	V		
11+10	0.4242	0.92	Q	V		
11+15	0.4305	0.92	Q	V		
11+20	0.4368	0.92	Q	V		
11+25	0.4431	0.92	Q	V		
11+30	0.4494	0.91	Q	V		
11+35	0.4555	0.88	Q	V		
11+40	0.4612	0.84	Q	V		
11+45	0.4669	0.83	Q	V		
11+50	0.4727	0.84	Q	V		
11+55	0.4786	0.86	Q	V		
12+ 0	0.4846	0.86	Q	V		
12+ 5	0.4913	0.98	Q	V		
12+10	0.4992	1.14	Q	V		
12+15	0.5073	1.18	Q	V		
12+20	0.5156	1.21	Q	V		
12+25	0.5241	1.24	Q	V		
12+30	0.5327	1.25	Q	V		
12+35	0.5416	1.28	Q	V		
12+40	0.5507	1.33	Q	V		
12+45	0.5599	1.34	Q	V		
12+50	0.5693	1.36	Q	V		
12+55	0.5789	1.39	Q	V		
13+ 0	0.5885	1.39	Q	V		
13+ 5	0.5986	1.48	Q	V		
13+10	0.6096	1.59	Q	V		
13+15	0.6207	1.62	Q	V		
13+20	0.6319	1.63	Q	V		
13+25	0.6432	1.63	Q	V		
13+30	0.6545	1.64	Q	V		
13+35	0.6645	1.45	Q	V		
13+40	0.6728	1.21	Q	V		
13+45	0.6807	1.15	Q	V		
13+50	0.6884	1.12	Q	V		
13+55	0.6961	1.11	Q	V		
14+ 0	0.7037	1.11	Q	V		
14+ 5	0.7118	1.17	Q	V		
14+10	0.7205	1.26	Q	V		
14+15	0.7294	1.28	Q	V		
14+20	0.7382	1.28	Q	V		
14+25	0.7468	1.26	Q	V		

14+30	0.7555	1.26			V
14+35	0.7641	1.25			V
14+40	0.7727	1.25			V
14+45	0.7813	1.25			V
14+50	0.7898	1.23			V
14+55	0.7982	1.21			V
15+ 0	0.8065	1.21			V
15+ 5	0.8147	1.19			V
15+10	0.8227	1.16			V
15+15	0.8307	1.16			V
15+20	0.8385	1.14			V
15+25	0.8462	1.12			V
15+30	0.8539	1.11			V
15+35	0.8611	1.04			V
15+40	0.8676	0.95			V
15+45	0.8740	0.93			V
15+50	0.8804	0.92			V
15+55	0.8867	0.92			V
16+ 0	0.8930	0.91			V
16+ 5	0.8975	0.66			V
16+10	0.8998	0.33			V
16+15	0.9015	0.25			V
16+20	0.9030	0.22			V
16+25	0.9044	0.20			V
16+30	0.9057	0.19			V
16+35	0.9069	0.18			V
16+40	0.9080	0.15			V
16+45	0.9090	0.15			V
16+50	0.9100	0.15			V
16+55	0.9110	0.14			V
17+ 0	0.9120	0.14			V
17+ 5	0.9132	0.18			V
17+10	0.9148	0.22			V
17+15	0.9164	0.23			V
17+20	0.9180	0.24			V
17+25	0.9197	0.24			V
17+30	0.9213	0.24			V
17+35	0.9230	0.24			V
17+40	0.9246	0.24			V
17+45	0.9263	0.24			V
17+50	0.9278	0.22			V
17+55	0.9292	0.20			V
18+ 0	0.9306	0.20			V
18+ 5	0.9319	0.19			V
18+10	0.9332	0.19			V
18+15	0.9346	0.19			V
18+20	0.9359	0.19			V
18+25	0.9372	0.19			V
18+30	0.9385	0.19			V
18+35	0.9398	0.18			V
18+40	0.9408	0.15			V
18+45	0.9418	0.15			V
18+50	0.9427	0.13			V
18+55	0.9434	0.11			V
19+ 0	0.9441	0.10			V
19+ 5	0.9449	0.11			V
19+10	0.9459	0.14			V
19+15	0.9468	0.14			V
19+20	0.9479	0.16			V
19+25	0.9492	0.18			V
19+30	0.9505	0.19			V
19+35	0.9517	0.17			V
19+40	0.9527	0.15			V
19+45	0.9538	0.15			V
19+50	0.9547	0.13			V
19+55	0.9554	0.11			V
20+ 0	0.9561	0.10			V
20+ 5	0.9569	0.11			V
20+10	0.9578	0.14			V
20+15	0.9588	0.14			V
20+20	0.9597	0.14			V
20+25	0.9607	0.14			V
20+30	0.9617	0.14			V
20+35	0.9627	0.14			V
20+40	0.9637	0.14			V
20+45	0.9647	0.14			V
20+50	0.9656	0.13			V
20+55	0.9663	0.11			V
21+ 0	0.9670	0.10			V
21+ 5	0.9678	0.11			V
21+10	0.9687	0.14			V
21+15	0.9697	0.14			V
21+20	0.9706	0.13			V
21+25	0.9713	0.10			V

ONSITEPOST2410.out

21+30	0.9720	0.10	Q				V
21+35	0.9728	0.11	Q				V
21+40	0.9737	0.14	Q				V
21+45	0.9747	0.14	Q				V
21+50	0.9755	0.13	Q				V
21+55	0.9763	0.10	Q				V
22+ 0	0.9770	0.10	Q				V
22+ 5	0.9777	0.11	Q				V
22+10	0.9787	0.14	Q				V
22+15	0.9796	0.14	Q				V
22+20	0.9805	0.13	Q				V
22+25	0.9812	0.10	Q				V
22+30	0.9819	0.10	Q				V
22+35	0.9826	0.10	Q				V
22+40	0.9833	0.10	Q				V
22+45	0.9839	0.10	Q				V
22+50	0.9846	0.10	Q				V
22+55	0.9853	0.10	Q				V
23+ 0	0.9859	0.10	Q				V
23+ 5	0.9866	0.10	Q				V
23+10	0.9872	0.10	Q				V
23+15	0.9879	0.10	Q				V
23+20	0.9886	0.10	Q				V
23+25	0.9892	0.10	Q				V
23+30	0.9899	0.10	Q				V
23+35	0.9906	0.10	Q				V
23+40	0.9912	0.10	Q				V
23+45	0.9919	0.10	Q				V
23+50	0.9926	0.10	Q				V
23+55	0.9932	0.10	Q				V
24+ 0	0.9939	0.10	Q				V
24+ 5	0.9943	0.06	Q				V
24+10	0.9944	0.02	Q				V
24+15	0.9945	0.01	Q				V
24+20	0.9945	0.00	Q				V
24+25	0.9945	0.00	Q				V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 11/11/20 File: ONSITEPOST24100.out

+++++

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

Program License Serial Number 4010

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

English Units used in output format

19-0126 DUKE HARVILL
ONSITE UNIT HYDROGRAPH ANALYSIS
PROPOSED CONDITION H-11.1 TRIBUTARY, 100-YEAR 24-HOUR
FN: ONSITEPOST24100.OUT- TSW

Drainage Area = 4.50(Ac.) = 0.007 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 4.50(Ac.) = 0.007 Sq. Mi.
Length along longest watercourse = 1242.00(Ft.)
Length along longest watercourse measured to centroid = 745.00(Ft.)
Length along longest watercourse = 0.235 Mi.
Length along longest watercourse measured to centroid = 0.141 Mi.
Difference in elevation = 6.00(Ft.)
Slope along watercourse = 25.5072 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.20 Min.
25% of lag time = 0.80 Min.
40% of lag time = 1.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
4.50 2.00 9.00

100 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
4.50 5.00 22.50

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 5.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.000(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
4.500 56.00 0.900
Total Area Entered = 4.50(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-2 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
56.0 56.0 0.511 0.900 0.097 1.000 0.097
Sum (F) = 0.097

Area averaged mean soil loss (F) (In/Hr) = 0.097
Minimum soil loss rate ((In/Hr)) = 0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

ONSITEPOST24100.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	156.242	34.652	1.572
2	0.167	312.485	46.549	2.111
3	0.250	468.727	10.830	0.491
4	0.333	624.969	4.695	0.213
5	0.417	781.211	2.297	0.104
6	0.500	937.454	0.977	0.044
			Sum = 100.000	Sum= 4.535

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1	0.08	0.040	(0.172)	0.007	0.033
2	0.17	0.040	(0.171)	0.007	0.033
3	0.25	0.040	(0.171)	0.007	0.033
4	0.33	0.060	(0.170)	0.011	0.049
5	0.42	0.060	(0.169)	0.011	0.049
6	0.50	0.060	(0.169)	0.011	0.049
7	0.58	0.060	(0.168)	0.011	0.049
8	0.67	0.060	(0.167)	0.011	0.049
9	0.75	0.060	(0.167)	0.011	0.049
10	0.83	0.080	(0.166)	0.014	0.066
11	0.92	0.080	(0.165)	0.014	0.066
12	1.00	0.080	(0.165)	0.014	0.066
13	1.08	0.060	(0.164)	0.011	0.049
14	1.17	0.060	(0.163)	0.011	0.049
15	1.25	0.060	(0.163)	0.011	0.049
16	1.33	0.060	(0.162)	0.011	0.049
17	1.42	0.060	(0.162)	0.011	0.049
18	1.50	0.060	(0.161)	0.011	0.049
19	1.58	0.060	(0.160)	0.011	0.049
20	1.67	0.060	(0.160)	0.011	0.049
21	1.75	0.060	(0.159)	0.011	0.049
22	1.83	0.080	(0.158)	0.014	0.066
23	1.92	0.080	(0.158)	0.014	0.066
24	2.00	0.080	(0.157)	0.014	0.066
25	2.08	0.080	(0.156)	0.014	0.066
26	2.17	0.080	(0.156)	0.014	0.066
27	2.25	0.080	(0.155)	0.014	0.066
28	2.33	0.080	(0.155)	0.014	0.066
29	2.42	0.080	(0.154)	0.014	0.066
30	2.50	0.080	(0.153)	0.014	0.066
31	2.58	0.100	(0.153)	0.018	0.082
32	2.67	0.100	(0.152)	0.018	0.082
33	2.75	0.100	(0.151)	0.018	0.082
34	2.83	0.100	(0.151)	0.018	0.082
35	2.92	0.100	(0.150)	0.018	0.082
36	3.00	0.100	(0.150)	0.018	0.082
37	3.08	0.100	(0.149)	0.018	0.082
38	3.17	0.100	(0.148)	0.018	0.082
39	3.25	0.100	(0.148)	0.018	0.082
40	3.33	0.100	(0.147)	0.018	0.082
41	3.42	0.100	(0.146)	0.018	0.082
42	3.50	0.100	(0.146)	0.018	0.082
43	3.58	0.100	(0.145)	0.018	0.082
44	3.67	0.100	(0.145)	0.018	0.082
45	3.75	0.100	(0.144)	0.018	0.082
46	3.83	0.120	(0.143)	0.022	0.098
47	3.92	0.120	(0.143)	0.022	0.098
48	4.00	0.120	(0.142)	0.022	0.098
49	4.08	0.120	(0.142)	0.022	0.098
50	4.17	0.120	(0.141)	0.022	0.098
51	4.25	0.120	(0.140)	0.022	0.098
52	4.33	0.140	(0.140)	0.025	0.115
53	4.42	0.140	(0.139)	0.025	0.115
54	4.50	0.140	(0.139)	0.025	0.115
55	4.58	0.140	(0.138)	0.025	0.115
56	4.67	0.140	(0.137)	0.025	0.115
57	4.75	0.140	(0.137)	0.025	0.115
58	4.83	0.160	(0.136)	0.029	0.131
59	4.92	0.160	(0.136)	0.029	0.131
60	5.00	0.160	(0.135)	0.029	0.131
61	5.08	0.120	(0.134)	0.022	0.098
62	5.17	0.120	(0.134)	0.022	0.098

ONSITEPOST24100.out

63	5.25	0.20	0.120	(0.133)	0.022	0.098
64	5.33	0.23	0.140	(0.133)	0.025	0.115
65	5.42	0.23	0.140	(0.132)	0.025	0.115
66	5.50	0.23	0.140	(0.132)	0.025	0.115
67	5.58	0.27	0.160	(0.131)	0.029	0.131
68	5.67	0.27	0.160	(0.130)	0.029	0.131
69	5.75	0.27	0.160	(0.130)	0.029	0.131
70	5.83	0.27	0.160	(0.129)	0.029	0.131
71	5.92	0.27	0.160	(0.129)	0.029	0.131
72	6.00	0.27	0.160	(0.128)	0.029	0.131
73	6.08	0.30	0.180	(0.128)	0.032	0.148
74	6.17	0.30	0.180	(0.127)	0.032	0.148
75	6.25	0.30	0.180	(0.126)	0.032	0.148
76	6.33	0.30	0.180	(0.126)	0.032	0.148
77	6.42	0.30	0.180	(0.125)	0.032	0.148
78	6.50	0.30	0.180	(0.125)	0.032	0.148
79	6.58	0.33	0.200	(0.124)	0.036	0.164
80	6.67	0.33	0.200	(0.124)	0.036	0.164
81	6.75	0.33	0.200	(0.123)	0.036	0.164
82	6.83	0.33	0.200	(0.122)	0.036	0.164
83	6.92	0.33	0.200	(0.122)	0.036	0.164
84	7.00	0.33	0.200	(0.121)	0.036	0.164
85	7.08	0.33	0.200	(0.121)	0.036	0.164
86	7.17	0.33	0.200	(0.120)	0.036	0.164
87	7.25	0.33	0.200	(0.120)	0.036	0.164
88	7.33	0.37	0.220	(0.119)	0.040	0.180
89	7.42	0.37	0.220	(0.119)	0.040	0.180
90	7.50	0.37	0.220	(0.118)	0.040	0.180
91	7.58	0.40	0.240	(0.118)	0.043	0.197
92	7.67	0.40	0.240	(0.117)	0.043	0.197
93	7.75	0.40	0.240	(0.116)	0.043	0.197
94	7.83	0.43	0.260	(0.116)	0.047	0.213
95	7.92	0.43	0.260	(0.115)	0.047	0.213
96	8.00	0.43	0.260	(0.115)	0.047	0.213
97	8.08	0.50	0.300	(0.114)	0.054	0.246
98	8.17	0.50	0.300	(0.114)	0.054	0.246
99	8.25	0.50	0.300	(0.113)	0.054	0.246
100	8.33	0.50	0.300	(0.113)	0.054	0.246
101	8.42	0.50	0.300	(0.112)	0.054	0.246
102	8.50	0.50	0.300	(0.112)	0.054	0.246
103	8.58	0.53	0.320	(0.111)	0.058	0.262
104	8.67	0.53	0.320	(0.111)	0.058	0.262
105	8.75	0.53	0.320	(0.110)	0.058	0.262
106	8.83	0.57	0.340	(0.110)	0.061	0.279
107	8.92	0.57	0.340	(0.109)	0.061	0.279
108	9.00	0.57	0.340	(0.109)	0.061	0.279
109	9.08	0.63	0.380	(0.108)	0.068	0.312
110	9.17	0.63	0.380	(0.108)	0.068	0.312
111	9.25	0.63	0.380	(0.107)	0.068	0.312
112	9.33	0.67	0.400	(0.107)	0.072	0.328
113	9.42	0.67	0.400	(0.106)	0.072	0.328
114	9.50	0.67	0.400	(0.105)	0.072	0.328
115	9.58	0.70	0.420	(0.105)	0.076	0.344
116	9.67	0.70	0.420	(0.104)	0.076	0.344
117	9.75	0.70	0.420	(0.104)	0.076	0.344
118	9.83	0.73	0.440	(0.103)	0.079	0.361
119	9.92	0.73	0.440	(0.103)	0.079	0.361
120	10.00	0.73	0.440	(0.102)	0.079	0.361
121	10.08	0.50	0.300	(0.102)	0.054	0.246
122	10.17	0.50	0.300	(0.101)	0.054	0.246
123	10.25	0.50	0.300	(0.101)	0.054	0.246
124	10.33	0.50	0.300	(0.101)	0.054	0.246
125	10.42	0.50	0.300	(0.100)	0.054	0.246
126	10.50	0.50	0.300	(0.100)	0.054	0.246
127	10.58	0.67	0.400	(0.099)	0.072	0.328
128	10.67	0.67	0.400	(0.099)	0.072	0.328
129	10.75	0.67	0.400	(0.098)	0.072	0.328
130	10.83	0.67	0.400	(0.098)	0.072	0.328
131	10.92	0.67	0.400	(0.097)	0.072	0.328
132	11.00	0.67	0.400	(0.097)	0.072	0.328
133	11.08	0.63	0.380	(0.096)	0.068	0.312
134	11.17	0.63	0.380	(0.096)	0.068	0.312
135	11.25	0.63	0.380	(0.095)	0.068	0.312
136	11.33	0.63	0.380	(0.095)	0.068	0.312
137	11.42	0.63	0.380	(0.094)	0.068	0.312
138	11.50	0.63	0.380	(0.094)	0.068	0.312
139	11.58	0.57	0.340	(0.093)	0.061	0.279
140	11.67	0.57	0.340	(0.093)	0.061	0.279
141	11.75	0.57	0.340	(0.092)	0.061	0.279
142	11.83	0.60	0.360	(0.092)	0.065	0.295
143	11.92	0.60	0.360	(0.092)	0.065	0.295
144	12.00	0.60	0.360	(0.091)	0.065	0.295
145	12.08	0.83	0.500	(0.091)	0.090	0.410
146	12.17	0.83	0.500	(0.090)	0.090	0.410

ONSITEPOST24100.out

147	12.25	0.83	0.500	0.090	(0.090)	0.410
148	12.33	0.87	0.520	0.089	(0.094)	0.431
149	12.42	0.87	0.520	0.089	(0.094)	0.431
150	12.50	0.87	0.520	0.088	(0.094)	0.432
151	12.58	0.93	0.560	0.088	(0.101)	0.472
152	12.67	0.93	0.560	0.087	(0.101)	0.473
153	12.75	0.93	0.560	0.087	(0.101)	0.473
154	12.83	0.97	0.580	0.087	(0.104)	0.493
155	12.92	0.97	0.580	0.086	(0.104)	0.494
156	13.00	0.97	0.580	0.086	(0.104)	0.494
157	13.08	1.13	0.680	0.085	(0.122)	0.595
158	13.17	1.13	0.680	0.085	(0.122)	0.595
159	13.25	1.13	0.680	0.084	(0.122)	0.596
160	13.33	1.13	0.680	0.084	(0.122)	0.596
161	13.42	1.13	0.680	0.084	(0.122)	0.596
162	13.50	1.13	0.680	0.083	(0.122)	0.597
163	13.58	0.77	0.460	0.083	(0.083)	0.377
164	13.67	0.77	0.460	0.082	(0.083)	0.378
165	13.75	0.77	0.460	0.082	(0.083)	0.378
166	13.83	0.77	0.460	0.081	(0.083)	0.379
167	13.92	0.77	0.460	0.081	(0.083)	0.379
168	14.00	0.77	0.460	0.081	(0.083)	0.379
169	14.08	0.90	0.540	0.080	(0.097)	0.460
170	14.17	0.90	0.540	0.080	(0.097)	0.460
171	14.25	0.90	0.540	0.079	(0.097)	0.461
172	14.33	0.87	0.520	0.079	(0.094)	0.441
173	14.42	0.87	0.520	0.079	(0.094)	0.441
174	14.50	0.87	0.520	0.078	(0.094)	0.442
175	14.58	0.87	0.520	0.078	(0.094)	0.442
176	14.67	0.87	0.520	0.077	(0.094)	0.443
177	14.75	0.87	0.520	0.077	(0.094)	0.443
178	14.83	0.83	0.500	0.077	(0.090)	0.423
179	14.92	0.83	0.500	0.076	(0.090)	0.424
180	15.00	0.83	0.500	0.076	(0.090)	0.424
181	15.08	0.80	0.480	0.075	(0.086)	0.405
182	15.17	0.80	0.480	0.075	(0.086)	0.405
183	15.25	0.80	0.480	0.075	(0.086)	0.405
184	15.33	0.77	0.460	0.074	(0.083)	0.386
185	15.42	0.77	0.460	0.074	(0.083)	0.386
186	15.50	0.77	0.460	0.073	(0.083)	0.386
187	15.58	0.63	0.380	(0.073)	0.068	0.312
188	15.67	0.63	0.380	(0.073)	0.068	0.312
189	15.75	0.63	0.380	(0.072)	0.068	0.312
190	15.83	0.63	0.380	(0.072)	0.068	0.312
191	15.92	0.63	0.380	(0.072)	0.068	0.312
192	16.00	0.63	0.380	(0.071)	0.068	0.312
193	16.08	0.13	0.080	(0.071)	0.014	0.066
194	16.17	0.13	0.080	(0.071)	0.014	0.066
195	16.25	0.13	0.080	(0.070)	0.014	0.066
196	16.33	0.13	0.080	(0.070)	0.014	0.066
197	16.42	0.13	0.080	(0.069)	0.014	0.066
198	16.50	0.13	0.080	(0.069)	0.014	0.066
199	16.58	0.10	0.060	(0.069)	0.011	0.049
200	16.67	0.10	0.060	(0.068)	0.011	0.049
201	16.75	0.10	0.060	(0.068)	0.011	0.049
202	16.83	0.10	0.060	(0.068)	0.011	0.049
203	16.92	0.10	0.060	(0.067)	0.011	0.049
204	17.00	0.10	0.060	(0.067)	0.011	0.049
205	17.08	0.17	0.100	(0.067)	0.018	0.082
206	17.17	0.17	0.100	(0.066)	0.018	0.082
207	17.25	0.17	0.100	(0.066)	0.018	0.082
208	17.33	0.17	0.100	(0.066)	0.018	0.082
209	17.42	0.17	0.100	(0.065)	0.018	0.082
210	17.50	0.17	0.100	(0.065)	0.018	0.082
211	17.58	0.17	0.100	(0.065)	0.018	0.082
212	17.67	0.17	0.100	(0.064)	0.018	0.082
213	17.75	0.17	0.100	(0.064)	0.018	0.082
214	17.83	0.13	0.080	(0.064)	0.014	0.066
215	17.92	0.13	0.080	(0.063)	0.014	0.066
216	18.00	0.13	0.080	(0.063)	0.014	0.066
217	18.08	0.13	0.080	(0.063)	0.014	0.066
218	18.17	0.13	0.080	(0.063)	0.014	0.066
219	18.25	0.13	0.080	(0.062)	0.014	0.066
220	18.33	0.13	0.080	(0.062)	0.014	0.066
221	18.42	0.13	0.080	(0.062)	0.014	0.066
222	18.50	0.13	0.080	(0.061)	0.014	0.066
223	18.58	0.10	0.060	(0.061)	0.011	0.049
224	18.67	0.10	0.060	(0.061)	0.011	0.049
225	18.75	0.10	0.060	(0.060)	0.011	0.049
226	18.83	0.07	0.040	(0.060)	0.007	0.033
227	18.92	0.07	0.040	(0.060)	0.007	0.033
228	19.00	0.07	0.040	(0.060)	0.007	0.033
229	19.08	0.10	0.060	(0.059)	0.011	0.049
230	19.17	0.10	0.060	(0.059)	0.011	0.049

ONSITEPOST24100.out

231	19.25	0.10	0.060	(0.059)	0.011	0.049
232	19.33	0.13	0.080	(0.058)	0.014	0.066
233	19.42	0.13	0.080	(0.058)	0.014	0.066
234	19.50	0.13	0.080	(0.058)	0.014	0.066
235	19.58	0.10	0.060	(0.058)	0.011	0.049
236	19.67	0.10	0.060	(0.057)	0.011	0.049
237	19.75	0.10	0.060	(0.057)	0.011	0.049
238	19.83	0.07	0.040	(0.057)	0.007	0.033
239	19.92	0.07	0.040	(0.057)	0.007	0.033
240	20.00	0.07	0.040	(0.056)	0.007	0.033
241	20.08	0.10	0.060	(0.056)	0.011	0.049
242	20.17	0.10	0.060	(0.056)	0.011	0.049
243	20.25	0.10	0.060	(0.056)	0.011	0.049
244	20.33	0.10	0.060	(0.055)	0.011	0.049
245	20.42	0.10	0.060	(0.055)	0.011	0.049
246	20.50	0.10	0.060	(0.055)	0.011	0.049
247	20.58	0.10	0.060	(0.055)	0.011	0.049
248	20.67	0.10	0.060	(0.054)	0.011	0.049
249	20.75	0.10	0.060	(0.054)	0.011	0.049
250	20.83	0.07	0.040	(0.054)	0.007	0.033
251	20.92	0.07	0.040	(0.054)	0.007	0.033
252	21.00	0.07	0.040	(0.054)	0.007	0.033
253	21.08	0.10	0.060	(0.053)	0.011	0.049
254	21.17	0.10	0.060	(0.053)	0.011	0.049
255	21.25	0.10	0.060	(0.053)	0.011	0.049
256	21.33	0.07	0.040	(0.053)	0.007	0.033
257	21.42	0.07	0.040	(0.053)	0.007	0.033
258	21.50	0.07	0.040	(0.052)	0.007	0.033
259	21.58	0.10	0.060	(0.052)	0.011	0.049
260	21.67	0.10	0.060	(0.052)	0.011	0.049
261	21.75	0.10	0.060	(0.052)	0.011	0.049
262	21.83	0.07	0.040	(0.052)	0.007	0.033
263	21.92	0.07	0.040	(0.051)	0.007	0.033
264	22.00	0.07	0.040	(0.051)	0.007	0.033
265	22.08	0.10	0.060	(0.051)	0.011	0.049
266	22.17	0.10	0.060	(0.051)	0.011	0.049
267	22.25	0.10	0.060	(0.051)	0.011	0.049
268	22.33	0.07	0.040	(0.051)	0.007	0.033
269	22.42	0.07	0.040	(0.050)	0.007	0.033
270	22.50	0.07	0.040	(0.050)	0.007	0.033
271	22.58	0.07	0.040	(0.050)	0.007	0.033
272	22.67	0.07	0.040	(0.050)	0.007	0.033
273	22.75	0.07	0.040	(0.050)	0.007	0.033
274	22.83	0.07	0.040	(0.050)	0.007	0.033
275	22.92	0.07	0.040	(0.050)	0.007	0.033
276	23.00	0.07	0.040	(0.049)	0.007	0.033
277	23.08	0.07	0.040	(0.049)	0.007	0.033
278	23.17	0.07	0.040	(0.049)	0.007	0.033
279	23.25	0.07	0.040	(0.049)	0.007	0.033
280	23.33	0.07	0.040	(0.049)	0.007	0.033
281	23.42	0.07	0.040	(0.049)	0.007	0.033
282	23.50	0.07	0.040	(0.049)	0.007	0.033
283	23.58	0.07	0.040	(0.049)	0.007	0.033
284	23.67	0.07	0.040	(0.049)	0.007	0.033
285	23.75	0.07	0.040	(0.049)	0.007	0.033
286	23.83	0.07	0.040	(0.049)	0.007	0.033
287	23.92	0.07	0.040	(0.049)	0.007	0.033
288	24.00	0.07	0.040	(0.049)	0.007	0.033

(Loss Rate Not Used)

Sum = 100.0 Sum = 49.8

Flood volume = Effective rainfall 4.15(In)
 times area 4.5(Ac.)/[(In)/(Ft.)] = 1.6(Ac.Ft)
 Total soil loss = 0.85(In)
 Total soil loss = 0.319(Ac.Ft)
 Total rainfall = 5.00(In)
 Flood volume = 67781.3 Cubic Feet
 Total soil loss = 13893.0 Cubic Feet

 Peak flow rate of this hydrograph = 2.706(CFS)

+++++

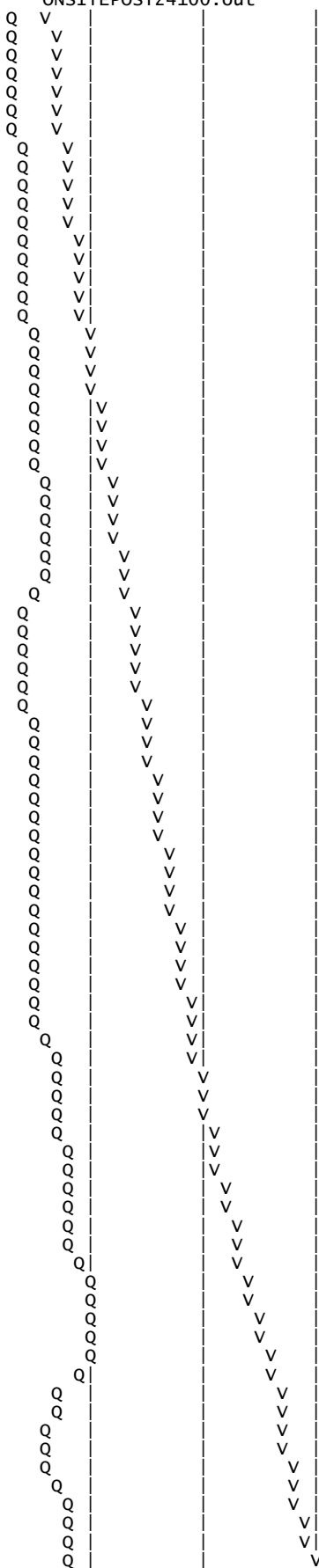
24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.05	Q				
0+10	0.0012	0.12	Q				
0+15	0.0021	0.14	Q				
0+20	0.0033	0.17	Q				
0+25	0.0047	0.21	Q				

0+30	0.0062	0.22	Q
0+35	0.0077	0.22	Q
0+40	0.0093	0.22	Q
0+45	0.0108	0.22	Q
0+50	0.0125	0.25	Q
0+55	0.0145	0.28	VQ
1+ 0	0.0165	0.29	VQ
1+ 5	0.0184	0.27	VQ
1+10	0.0200	0.24	Q
1+15	0.0216	0.23	Q
1+20	0.0231	0.23	Q
1+25	0.0247	0.22	Q
1+30	0.0262	0.22	Q
1+35	0.0277	0.22	Q
1+40	0.0293	0.22	Q
1+45	0.0308	0.22	Q
1+50	0.0325	0.25	Q
1+55	0.0345	0.28	VQ
2+ 0	0.0365	0.29	VQ
2+ 5	0.0385	0.30	VQ
2+10	0.0406	0.30	Q
2+15	0.0426	0.30	Q
2+20	0.0447	0.30	Q
2+25	0.0467	0.30	Q
2+30	0.0488	0.30	Q
2+35	0.0510	0.32	Q
2+40	0.0535	0.36	Q
2+45	0.0560	0.37	Q
2+50	0.0585	0.37	Q
2+55	0.0611	0.37	Q
3+ 0	0.0636	0.37	Q
3+ 5	0.0662	0.37	Q
3+10	0.0688	0.37	Q
3+15	0.0713	0.37	Q
3+20	0.0739	0.37	Q
3+25	0.0765	0.37	Q
3+30	0.0790	0.37	QV
3+35	0.0816	0.37	QV
3+40	0.0841	0.37	QV
3+45	0.0867	0.37	QV
3+50	0.0894	0.40	QV
3+55	0.0924	0.43	QV
4+ 0	0.0955	0.44	QV
4+ 5	0.0985	0.44	QV
4+10	0.1016	0.45	QV
4+15	0.1047	0.45	QV
4+20	0.1079	0.47	QV
4+25	0.1114	0.51	Q
4+30	0.1150	0.51	Q
4+35	0.1185	0.52	QV
4+40	0.1221	0.52	QV
4+45	0.1257	0.52	QV
4+50	0.1295	0.55	QV
4+55	0.1335	0.58	QV
5+ 0	0.1375	0.59	QV
5+ 5	0.1412	0.54	QV
5+10	0.1445	0.47	Q
5+15	0.1477	0.46	Q
5+20	0.1510	0.48	Q
5+25	0.1545	0.51	Q
5+30	0.1580	0.51	Q
5+35	0.1617	0.54	Q
5+40	0.1657	0.58	Q
5+45	0.1698	0.59	Q
5+50	0.1739	0.59	Q
5+55	0.1780	0.59	Q
6+ 0	0.1821	0.60	Q
6+ 5	0.1864	0.62	Q
6+10	0.1909	0.66	Q
6+15	0.1955	0.66	Q
6+20	0.2000	0.67	Q
6+25	0.2047	0.67	Q
6+30	0.2093	0.67	Q
6+35	0.2141	0.70	Q
6+40	0.2191	0.73	Q
6+45	0.2242	0.74	Q
6+50	0.2293	0.74	Q
6+55	0.2344	0.74	Q
7+ 0	0.2395	0.74	Q
7+ 5	0.2446	0.74	Q
7+10	0.2498	0.74	Q
7+15	0.2549	0.74	Q
7+20	0.2602	0.77	Q
7+25	0.2657	0.80	Q

7+30	0.2713	0.81
7+35	0.2771	0.84
7+40	0.2832	0.88
7+45	0.2893	0.89
7+50	0.2956	0.92
7+55	0.3022	0.95
8+ 0	0.3088	0.96
8+ 5	0.3158	1.02
8+10	0.3233	1.09
8+15	0.3309	1.10
8+20	0.3385	1.11
8+25	0.3462	1.11
8+30	0.3539	1.12
8+35	0.3618	1.14
8+40	0.3699	1.18
8+45	0.3780	1.18
8+50	0.3864	1.21
8+55	0.3950	1.25
9+ 0	0.4037	1.26
9+ 5	0.4127	1.31
9+10	0.4223	1.39
9+15	0.4319	1.40
9+20	0.4418	1.43
9+25	0.4519	1.47
9+30	0.4622	1.48
9+35	0.4726	1.51
9+40	0.4832	1.55
9+45	0.4939	1.56
9+50	0.5049	1.59
9+55	0.5160	1.62
10+ 0	0.5273	1.63
10+ 5	0.5373	1.45
10+10	0.5456	1.21
10+15	0.5536	1.16
10+20	0.5614	1.13
10+25	0.5691	1.12
10+30	0.5768	1.12
10+35	0.5854	1.25
10+40	0.5952	1.42
10+45	0.6052	1.46
10+50	0.6154	1.48
10+55	0.6256	1.48
11+ 0	0.6359	1.49
11+ 5	0.6459	1.46
11+10	0.6558	1.43
11+15	0.6656	1.42
11+20	0.6753	1.42
11+25	0.6850	1.41
11+30	0.6948	1.41
11+35	0.7042	1.36
11+40	0.7131	1.29
11+45	0.7219	1.28
11+50	0.7308	1.30
11+55	0.7399	1.33
12+ 0	0.7491	1.33
12+ 5	0.7596	1.52
12+10	0.7717	1.76
12+15	0.7842	1.82
12+20	0.7972	1.88
12+25	0.8105	1.93
12+30	0.8239	1.95
12+35	0.8378	2.02
12+40	0.8523	2.11
12+45	0.8670	2.13
12+50	0.8819	2.17
12+55	0.8972	2.22
13+ 0	0.9126	2.23
13+ 5	0.9291	2.40
13+10	0.9471	2.61
13+15	0.9655	2.66
13+20	0.9840	2.69
13+25	1.0026	2.70
13+30	1.0212	2.71
13+35	1.0375	2.36
13+40	1.0505	1.90
13+45	1.0629	1.79
13+50	1.0749	1.75
13+55	1.0868	1.73
14+ 0	1.0987	1.72
14+ 5	1.1114	1.85
14+10	1.1253	2.02
14+15	1.1395	2.06
14+20	1.1536	2.05
14+25	1.1675	2.01



14+30	1.1813	2.01			V
14+35	1.1951	2.01			V
14+40	1.2090	2.01			V
14+45	1.2228	2.01			V
14+50	1.2364	1.98			V
14+55	1.2498	1.94			V
15+ 0	1.2631	1.93			V
15+ 5	1.2761	1.90			V
15+10	1.2889	1.85			V
15+15	1.3016	1.84			V
15+20	1.3141	1.81			V
15+25	1.3262	1.77			V
15+30	1.3384	1.76			V
15+35	1.3496	1.64			V
15+40	1.3598	1.48			V
15+45	1.3698	1.44			V
15+50	1.3796	1.42			V
15+55	1.3893	1.42			V
16+ 0	1.3991	1.41			V
16+ 5	1.4061	1.03			V
16+10	1.4096	0.51			V
16+15	1.4123	0.39			V
16+20	1.4146	0.33			V
16+25	1.4167	0.31			V
16+30	1.4188	0.30			V
16+35	1.4206	0.27			V
16+40	1.4223	0.24			V
16+45	1.4239	0.23			V
16+50	1.4254	0.23			V
16+55	1.4270	0.22			V
17+ 0	1.4285	0.22			V
17+ 5	1.4304	0.27			V
17+10	1.4328	0.34			V
17+15	1.4352	0.36			V
17+20	1.4378	0.37			V
17+25	1.4403	0.37			V
17+30	1.4429	0.37			V
17+35	1.4454	0.37			V
17+40	1.4480	0.37			V
17+45	1.4506	0.37			V
17+50	1.4529	0.35			V
17+55	1.4551	0.31			V
18+ 0	1.4572	0.30			V
18+ 5	1.4593	0.30			V
18+10	1.4613	0.30			V
18+15	1.4634	0.30			V
18+20	1.4654	0.30			V
18+25	1.4675	0.30			V
18+30	1.4695	0.30			V
18+35	1.4714	0.27			V
18+40	1.4730	0.24			V
18+45	1.4746	0.23			V
18+50	1.4760	0.20			V
18+55	1.4771	0.16			V
19+ 0	1.4782	0.15			V
19+ 5	1.4794	0.18			V
19+10	1.4808	0.21			V
19+15	1.4823	0.22			V
19+20	1.4840	0.25			V
19+25	1.4860	0.28			V
19+30	1.4880	0.29			V
19+35	1.4898	0.27			V
19+40	1.4915	0.24			V
19+45	1.4930	0.23			V
19+50	1.4944	0.20			V
19+55	1.4955	0.16			V
20+ 0	1.4966	0.15			V
20+ 5	1.4978	0.18			V
20+10	1.4993	0.21			V
20+15	1.5008	0.22			V
20+20	1.5023	0.22			V
20+25	1.5038	0.22			V
20+30	1.5054	0.22			V
20+35	1.5069	0.22			V
20+40	1.5084	0.22			V
20+45	1.5100	0.22			V
20+50	1.5113	0.20			V
20+55	1.5125	0.16			V
21+ 0	1.5135	0.15			V
21+ 5	1.5147	0.18			V
21+10	1.5162	0.21			V
21+15	1.5177	0.22			V
21+20	1.5190	0.20			V
21+25	1.5201	0.16			V

ONSITEPOST24100.out

21+30	1.5212	0.15	Q			V
21+35	1.5224	0.18	Q			V
21+40	1.5239	0.21	Q			V
21+45	1.5254	0.22	Q			V
21+50	1.5267	0.20	Q			V
21+55	1.5278	0.16	Q			V
22+ 0	1.5289	0.15	Q			V
22+ 5	1.5301	0.18	Q			V
22+10	1.5316	0.21	Q			V
22+15	1.5331	0.22	Q			V
22+20	1.5344	0.20	Q			V
22+25	1.5355	0.16	Q			V
22+30	1.5366	0.15	Q			V
22+35	1.5376	0.15	Q			V
22+40	1.5387	0.15	Q			V
22+45	1.5397	0.15	Q			V
22+50	1.5407	0.15	Q			V
22+55	1.5417	0.15	Q			V
23+ 0	1.5428	0.15	Q			V
23+ 5	1.5438	0.15	Q			V
23+10	1.5448	0.15	Q			V
23+15	1.5458	0.15	Q			V
23+20	1.5469	0.15	Q			V
23+25	1.5479	0.15	Q			V
23+30	1.5489	0.15	Q			V
23+35	1.5499	0.15	Q			V
23+40	1.5510	0.15	Q			V
23+45	1.5520	0.15	Q			V
23+50	1.5530	0.15	Q			V
23+55	1.5540	0.15	Q			V
24+ 0	1.5551	0.15	Q			V
24+ 5	1.5557	0.10	Q			V
24+10	1.5559	0.03	Q			V
24+15	1.5560	0.01	Q			V
24+20	1.5560	0.00	Q			V
24+25	1.5560	0.00	Q			V

LATERAL H-12 TRIBUTARY AREA

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPOST242.out

 +-----+

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 PROPOSED CONDITION H-12 TRIBUTARY, 2-YEAR 24-HOUR
 FN: ONSITEPOST242.OUT- TSW

 Drainage Area = 9.50(Ac.) = 0.015 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 9.50(Ac.) = 0.015 Sq. Mi.
 Length along longest watercourse = 1690.00(Ft.)
 Length along longest watercourse measured to centroid = 714.00(Ft.)
 Length along longest watercourse = 0.320 Mi.
 Length along longest watercourse measured to centroid = 0.135 Mi.
 Difference in elevation = 13.80(Ft.)
 Slope along watercourse = 43.1148 Ft./Mi.
 Average Manning's 'N' = 0.015
 Lag time = 0.053 Hr.
 Lag time = 3.20 Min.
 25% of lag time = 0.80 Min.
 40% of lag time = 1.28 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
9.50	2.00	19.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
9.50	5.00	47.50

STORM EVENT (YEAR) = 2.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.000(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.000(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 9.500 56.00 0.900
 Total Area Entered = 9.50(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
56.0	56.0	0.511	0.900	0.097	1.000	0.097
						Sum (F) =
						0.097

Area averaged mean soil loss (F) (In/Hr) = 0.097
 Minimum soil loss rate ((In/Hr)) = 0.049
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.180

ONSITEPOST242.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	156.061	34.610	3.314
2	0.167	312.122	46.562	4.458
3	0.250	468.183	10.840	1.038
4	0.333	624.245	4.700	0.450
5	0.417	780.306	2.302	0.220
6	0.500	936.367	0.986	0.094
			Sum = 100.000	Sum= 9.574

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1	0.08	0.016	(0.172)	0.003	0.013
2	0.17	0.016	(0.171)	0.003	0.013
3	0.25	0.016	(0.171)	0.003	0.013
4	0.33	0.024	(0.170)	0.004	0.020
5	0.42	0.024	(0.169)	0.004	0.020
6	0.50	0.024	(0.169)	0.004	0.020
7	0.58	0.024	(0.168)	0.004	0.020
8	0.67	0.024	(0.167)	0.004	0.020
9	0.75	0.024	(0.167)	0.004	0.020
10	0.83	0.032	(0.166)	0.006	0.026
11	0.92	0.032	(0.165)	0.006	0.026
12	1.00	0.032	(0.165)	0.006	0.026
13	1.08	0.024	(0.164)	0.004	0.020
14	1.17	0.024	(0.163)	0.004	0.020
15	1.25	0.024	(0.163)	0.004	0.020
16	1.33	0.024	(0.162)	0.004	0.020
17	1.42	0.024	(0.162)	0.004	0.020
18	1.50	0.024	(0.161)	0.004	0.020
19	1.58	0.024	(0.160)	0.004	0.020
20	1.67	0.024	(0.160)	0.004	0.020
21	1.75	0.024	(0.159)	0.004	0.020
22	1.83	0.032	(0.158)	0.006	0.026
23	1.92	0.032	(0.158)	0.006	0.026
24	2.00	0.032	(0.157)	0.006	0.026
25	2.08	0.032	(0.156)	0.006	0.026
26	2.17	0.032	(0.156)	0.006	0.026
27	2.25	0.032	(0.155)	0.006	0.026
28	2.33	0.032	(0.155)	0.006	0.026
29	2.42	0.032	(0.154)	0.006	0.026
30	2.50	0.032	(0.153)	0.006	0.026
31	2.58	0.040	(0.153)	0.007	0.033
32	2.67	0.040	(0.152)	0.007	0.033
33	2.75	0.040	(0.151)	0.007	0.033
34	2.83	0.040	(0.151)	0.007	0.033
35	2.92	0.040	(0.150)	0.007	0.033
36	3.00	0.040	(0.150)	0.007	0.033
37	3.08	0.040	(0.149)	0.007	0.033
38	3.17	0.040	(0.148)	0.007	0.033
39	3.25	0.040	(0.148)	0.007	0.033
40	3.33	0.040	(0.147)	0.007	0.033
41	3.42	0.040	(0.146)	0.007	0.033
42	3.50	0.040	(0.146)	0.007	0.033
43	3.58	0.040	(0.145)	0.007	0.033
44	3.67	0.040	(0.145)	0.007	0.033
45	3.75	0.040	(0.144)	0.007	0.033
46	3.83	0.048	(0.143)	0.009	0.039
47	3.92	0.048	(0.143)	0.009	0.039
48	4.00	0.048	(0.142)	0.009	0.039
49	4.08	0.048	(0.142)	0.009	0.039
50	4.17	0.048	(0.141)	0.009	0.039
51	4.25	0.048	(0.140)	0.009	0.039
52	4.33	0.056	(0.140)	0.010	0.046
53	4.42	0.056	(0.139)	0.010	0.046
54	4.50	0.056	(0.139)	0.010	0.046
55	4.58	0.056	(0.138)	0.010	0.046
56	4.67	0.056	(0.137)	0.010	0.046
57	4.75	0.056	(0.137)	0.010	0.046
58	4.83	0.064	(0.136)	0.012	0.052
59	4.92	0.064	(0.136)	0.012	0.052
60	5.00	0.064	(0.135)	0.012	0.052
61	5.08	0.048	(0.134)	0.009	0.039
62	5.17	0.048	(0.134)	0.009	0.039

ONSITEPOST242.out

63	5.25	0.20	0.048	(0.133)	0.009	0.039
64	5.33	0.23	0.056	(0.133)	0.010	0.046
65	5.42	0.23	0.056	(0.132)	0.010	0.046
66	5.50	0.23	0.056	(0.132)	0.010	0.046
67	5.58	0.27	0.064	(0.131)	0.012	0.052
68	5.67	0.27	0.064	(0.130)	0.012	0.052
69	5.75	0.27	0.064	(0.130)	0.012	0.052
70	5.83	0.27	0.064	(0.129)	0.012	0.052
71	5.92	0.27	0.064	(0.129)	0.012	0.052
72	6.00	0.27	0.064	(0.128)	0.012	0.052
73	6.08	0.30	0.072	(0.128)	0.013	0.059
74	6.17	0.30	0.072	(0.127)	0.013	0.059
75	6.25	0.30	0.072	(0.126)	0.013	0.059
76	6.33	0.30	0.072	(0.126)	0.013	0.059
77	6.42	0.30	0.072	(0.125)	0.013	0.059
78	6.50	0.30	0.072	(0.125)	0.013	0.059
79	6.58	0.33	0.080	(0.124)	0.014	0.066
80	6.67	0.33	0.080	(0.124)	0.014	0.066
81	6.75	0.33	0.080	(0.123)	0.014	0.066
82	6.83	0.33	0.080	(0.122)	0.014	0.066
83	6.92	0.33	0.080	(0.122)	0.014	0.066
84	7.00	0.33	0.080	(0.121)	0.014	0.066
85	7.08	0.33	0.080	(0.121)	0.014	0.066
86	7.17	0.33	0.080	(0.120)	0.014	0.066
87	7.25	0.33	0.080	(0.120)	0.014	0.066
88	7.33	0.37	0.088	(0.119)	0.016	0.072
89	7.42	0.37	0.088	(0.119)	0.016	0.072
90	7.50	0.37	0.088	(0.118)	0.016	0.072
91	7.58	0.40	0.096	(0.118)	0.017	0.079
92	7.67	0.40	0.096	(0.117)	0.017	0.079
93	7.75	0.40	0.096	(0.116)	0.017	0.079
94	7.83	0.43	0.104	(0.116)	0.019	0.085
95	7.92	0.43	0.104	(0.115)	0.019	0.085
96	8.00	0.43	0.104	(0.115)	0.019	0.085
97	8.08	0.50	0.120	(0.114)	0.022	0.098
98	8.17	0.50	0.120	(0.114)	0.022	0.098
99	8.25	0.50	0.120	(0.113)	0.022	0.098
100	8.33	0.50	0.120	(0.113)	0.022	0.098
101	8.42	0.50	0.120	(0.112)	0.022	0.098
102	8.50	0.50	0.120	(0.112)	0.022	0.098
103	8.58	0.53	0.128	(0.111)	0.023	0.105
104	8.67	0.53	0.128	(0.111)	0.023	0.105
105	8.75	0.53	0.128	(0.110)	0.023	0.105
106	8.83	0.57	0.136	(0.110)	0.024	0.112
107	8.92	0.57	0.136	(0.109)	0.024	0.112
108	9.00	0.57	0.136	(0.109)	0.024	0.112
109	9.08	0.63	0.152	(0.108)	0.027	0.125
110	9.17	0.63	0.152	(0.108)	0.027	0.125
111	9.25	0.63	0.152	(0.107)	0.027	0.125
112	9.33	0.67	0.160	(0.107)	0.029	0.131
113	9.42	0.67	0.160	(0.106)	0.029	0.131
114	9.50	0.67	0.160	(0.105)	0.029	0.131
115	9.58	0.70	0.168	(0.105)	0.030	0.138
116	9.67	0.70	0.168	(0.104)	0.030	0.138
117	9.75	0.70	0.168	(0.104)	0.030	0.138
118	9.83	0.73	0.176	(0.103)	0.032	0.144
119	9.92	0.73	0.176	(0.103)	0.032	0.144
120	10.00	0.73	0.176	(0.102)	0.032	0.144
121	10.08	0.50	0.120	(0.102)	0.022	0.098
122	10.17	0.50	0.120	(0.101)	0.022	0.098
123	10.25	0.50	0.120	(0.101)	0.022	0.098
124	10.33	0.50	0.120	(0.101)	0.022	0.098
125	10.42	0.50	0.120	(0.100)	0.022	0.098
126	10.50	0.50	0.120	(0.100)	0.022	0.098
127	10.58	0.67	0.160	(0.099)	0.029	0.131
128	10.67	0.67	0.160	(0.099)	0.029	0.131
129	10.75	0.67	0.160	(0.098)	0.029	0.131
130	10.83	0.67	0.160	(0.098)	0.029	0.131
131	10.92	0.67	0.160	(0.097)	0.029	0.131
132	11.00	0.67	0.160	(0.097)	0.029	0.131
133	11.08	0.63	0.152	(0.096)	0.027	0.125
134	11.17	0.63	0.152	(0.096)	0.027	0.125
135	11.25	0.63	0.152	(0.095)	0.027	0.125
136	11.33	0.63	0.152	(0.095)	0.027	0.125
137	11.42	0.63	0.152	(0.094)	0.027	0.125
138	11.50	0.63	0.152	(0.094)	0.027	0.125
139	11.58	0.57	0.136	(0.093)	0.024	0.112
140	11.67	0.57	0.136	(0.093)	0.024	0.112
141	11.75	0.57	0.136	(0.092)	0.024	0.112
142	11.83	0.60	0.144	(0.092)	0.026	0.118
143	11.92	0.60	0.144	(0.092)	0.026	0.118
144	12.00	0.60	0.144	(0.091)	0.026	0.118
145	12.08	0.83	0.200	(0.091)	0.036	0.164
146	12.17	0.83	0.200	(0.090)	0.036	0.164

ONSITEPOST242.out

147	12.25	0.83	0.200	(0.090)	0.036	0.164
148	12.33	0.87	0.208	(0.089)	0.037	0.171
149	12.42	0.87	0.208	(0.089)	0.037	0.171
150	12.50	0.87	0.208	(0.088)	0.037	0.171
151	12.58	0.93	0.224	(0.088)	0.040	0.184
152	12.67	0.93	0.224	(0.087)	0.040	0.184
153	12.75	0.93	0.224	(0.087)	0.040	0.184
154	12.83	0.97	0.232	(0.087)	0.042	0.190
155	12.92	0.97	0.232	(0.086)	0.042	0.190
156	13.00	0.97	0.232	(0.086)	0.042	0.190
157	13.08	1.13	0.272	(0.085)	0.049	0.223
158	13.17	1.13	0.272	(0.085)	0.049	0.223
159	13.25	1.13	0.272	(0.084)	0.049	0.223
160	13.33	1.13	0.272	(0.084)	0.049	0.223
161	13.42	1.13	0.272	(0.084)	0.049	0.223
162	13.50	1.13	0.272	(0.083)	0.049	0.223
163	13.58	0.77	0.184	(0.083)	0.033	0.151
164	13.67	0.77	0.184	(0.082)	0.033	0.151
165	13.75	0.77	0.184	(0.082)	0.033	0.151
166	13.83	0.77	0.184	(0.081)	0.033	0.151
167	13.92	0.77	0.184	(0.081)	0.033	0.151
168	14.00	0.77	0.184	(0.081)	0.033	0.151
169	14.08	0.90	0.216	(0.080)	0.039	0.177
170	14.17	0.90	0.216	(0.080)	0.039	0.177
171	14.25	0.90	0.216	(0.079)	0.039	0.177
172	14.33	0.87	0.208	(0.079)	0.037	0.171
173	14.42	0.87	0.208	(0.079)	0.037	0.171
174	14.50	0.87	0.208	(0.078)	0.037	0.171
175	14.58	0.87	0.208	(0.078)	0.037	0.171
176	14.67	0.87	0.208	(0.077)	0.037	0.171
177	14.75	0.87	0.208	(0.077)	0.037	0.171
178	14.83	0.83	0.200	(0.077)	0.036	0.164
179	14.92	0.83	0.200	(0.076)	0.036	0.164
180	15.00	0.83	0.200	(0.076)	0.036	0.164
181	15.08	0.80	0.192	(0.075)	0.035	0.157
182	15.17	0.80	0.192	(0.075)	0.035	0.157
183	15.25	0.80	0.192	(0.075)	0.035	0.157
184	15.33	0.77	0.184	(0.074)	0.033	0.151
185	15.42	0.77	0.184	(0.074)	0.033	0.151
186	15.50	0.77	0.184	(0.073)	0.033	0.151
187	15.58	0.63	0.152	(0.073)	0.027	0.125
188	15.67	0.63	0.152	(0.073)	0.027	0.125
189	15.75	0.63	0.152	(0.072)	0.027	0.125
190	15.83	0.63	0.152	(0.072)	0.027	0.125
191	15.92	0.63	0.152	(0.072)	0.027	0.125
192	16.00	0.63	0.152	(0.071)	0.027	0.125
193	16.08	0.13	0.032	(0.071)	0.006	0.026
194	16.17	0.13	0.032	(0.071)	0.006	0.026
195	16.25	0.13	0.032	(0.070)	0.006	0.026
196	16.33	0.13	0.032	(0.070)	0.006	0.026
197	16.42	0.13	0.032	(0.069)	0.006	0.026
198	16.50	0.13	0.032	(0.069)	0.006	0.026
199	16.58	0.10	0.024	(0.069)	0.004	0.020
200	16.67	0.10	0.024	(0.068)	0.004	0.020
201	16.75	0.10	0.024	(0.068)	0.004	0.020
202	16.83	0.10	0.024	(0.068)	0.004	0.020
203	16.92	0.10	0.024	(0.067)	0.004	0.020
204	17.00	0.10	0.024	(0.067)	0.004	0.020
205	17.08	0.17	0.040	(0.067)	0.007	0.033
206	17.17	0.17	0.040	(0.066)	0.007	0.033
207	17.25	0.17	0.040	(0.066)	0.007	0.033
208	17.33	0.17	0.040	(0.066)	0.007	0.033
209	17.42	0.17	0.040	(0.065)	0.007	0.033
210	17.50	0.17	0.040	(0.065)	0.007	0.033
211	17.58	0.17	0.040	(0.065)	0.007	0.033
212	17.67	0.17	0.040	(0.064)	0.007	0.033
213	17.75	0.17	0.040	(0.064)	0.007	0.033
214	17.83	0.13	0.032	(0.064)	0.006	0.026
215	17.92	0.13	0.032	(0.063)	0.006	0.026
216	18.00	0.13	0.032	(0.063)	0.006	0.026
217	18.08	0.13	0.032	(0.063)	0.006	0.026
218	18.17	0.13	0.032	(0.063)	0.006	0.026
219	18.25	0.13	0.032	(0.062)	0.006	0.026
220	18.33	0.13	0.032	(0.062)	0.006	0.026
221	18.42	0.13	0.032	(0.062)	0.006	0.026
222	18.50	0.13	0.032	(0.061)	0.006	0.026
223	18.58	0.10	0.024	(0.061)	0.004	0.020
224	18.67	0.10	0.024	(0.061)	0.004	0.020
225	18.75	0.10	0.024	(0.060)	0.004	0.020
226	18.83	0.07	0.016	(0.060)	0.003	0.013
227	18.92	0.07	0.016	(0.060)	0.003	0.013
228	19.00	0.07	0.016	(0.060)	0.003	0.013
229	19.08	0.10	0.024	(0.059)	0.004	0.020
230	19.17	0.10	0.024	(0.059)	0.004	0.020

ONSITEPOST242.out

231	19.25	0.10	0.024	(0.059)	0.004	0.020
232	19.33	0.13	0.032	(0.058)	0.006	0.026
233	19.42	0.13	0.032	(0.058)	0.006	0.026
234	19.50	0.13	0.032	(0.058)	0.006	0.026
235	19.58	0.10	0.024	(0.058)	0.004	0.020
236	19.67	0.10	0.024	(0.057)	0.004	0.020
237	19.75	0.10	0.024	(0.057)	0.004	0.020
238	19.83	0.07	0.016	(0.057)	0.003	0.013
239	19.92	0.07	0.016	(0.057)	0.003	0.013
240	20.00	0.07	0.016	(0.056)	0.003	0.013
241	20.08	0.10	0.024	(0.056)	0.004	0.020
242	20.17	0.10	0.024	(0.056)	0.004	0.020
243	20.25	0.10	0.024	(0.056)	0.004	0.020
244	20.33	0.10	0.024	(0.055)	0.004	0.020
245	20.42	0.10	0.024	(0.055)	0.004	0.020
246	20.50	0.10	0.024	(0.055)	0.004	0.020
247	20.58	0.10	0.024	(0.055)	0.004	0.020
248	20.67	0.10	0.024	(0.054)	0.004	0.020
249	20.75	0.10	0.024	(0.054)	0.004	0.020
250	20.83	0.07	0.016	(0.054)	0.003	0.013
251	20.92	0.07	0.016	(0.054)	0.003	0.013
252	21.00	0.07	0.016	(0.054)	0.003	0.013
253	21.08	0.10	0.024	(0.053)	0.004	0.020
254	21.17	0.10	0.024	(0.053)	0.004	0.020
255	21.25	0.10	0.024	(0.053)	0.004	0.020
256	21.33	0.07	0.016	(0.053)	0.003	0.013
257	21.42	0.07	0.016	(0.053)	0.003	0.013
258	21.50	0.07	0.016	(0.052)	0.003	0.013
259	21.58	0.10	0.024	(0.052)	0.004	0.020
260	21.67	0.10	0.024	(0.052)	0.004	0.020
261	21.75	0.10	0.024	(0.052)	0.004	0.020
262	21.83	0.07	0.016	(0.052)	0.003	0.013
263	21.92	0.07	0.016	(0.051)	0.003	0.013
264	22.00	0.07	0.016	(0.051)	0.003	0.013
265	22.08	0.10	0.024	(0.051)	0.004	0.020
266	22.17	0.10	0.024	(0.051)	0.004	0.020
267	22.25	0.10	0.024	(0.051)	0.004	0.020
268	22.33	0.07	0.016	(0.051)	0.003	0.013
269	22.42	0.07	0.016	(0.050)	0.003	0.013
270	22.50	0.07	0.016	(0.050)	0.003	0.013
271	22.58	0.07	0.016	(0.050)	0.003	0.013
272	22.67	0.07	0.016	(0.050)	0.003	0.013
273	22.75	0.07	0.016	(0.050)	0.003	0.013
274	22.83	0.07	0.016	(0.050)	0.003	0.013
275	22.92	0.07	0.016	(0.050)	0.003	0.013
276	23.00	0.07	0.016	(0.049)	0.003	0.013
277	23.08	0.07	0.016	(0.049)	0.003	0.013
278	23.17	0.07	0.016	(0.049)	0.003	0.013
279	23.25	0.07	0.016	(0.049)	0.003	0.013
280	23.33	0.07	0.016	(0.049)	0.003	0.013
281	23.42	0.07	0.016	(0.049)	0.003	0.013
282	23.50	0.07	0.016	(0.049)	0.003	0.013
283	23.58	0.07	0.016	(0.049)	0.003	0.013
284	23.67	0.07	0.016	(0.049)	0.003	0.013
285	23.75	0.07	0.016	(0.049)	0.003	0.013
286	23.83	0.07	0.016	(0.049)	0.003	0.013
287	23.92	0.07	0.016	(0.049)	0.003	0.013
288	24.00	0.07	0.016	(0.049)	0.003	0.013

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.7

Flood volume = Effective rainfall 1.64(In)
 times area 9.5(Ac.)/[(In)/(Ft.)] = 1.3(Ac.Ft)
 Total soil loss = 0.36(In)
 Total soil loss = 0.285(Ac.Ft)
 Total rainfall = 2.00(In)
 Flood volume = 56554.4 Cubic Feet
 Total soil loss = 12414.4 Cubic Feet

 Peak flow rate of this hydrograph = 2.136(CFS)

+++++

24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0003	0.04	Q				
0+10	0.0010	0.10	Q				
0+15	0.0018	0.12	Q				
0+20	0.0028	0.14	Q				
0+25	0.0040	0.18	Q				

0+30	0.0053	0.18	Q
0+35	0.0065	0.19	Q
0+40	0.0078	0.19	Q
0+45	0.0091	0.19	Q
0+50	0.0106	0.21	Q
0+55	0.0122	0.24	Q
1+ 0	0.0139	0.25	Q
1+ 5	0.0155	0.23	Q
1+10	0.0169	0.20	Q
1+15	0.0182	0.19	Q
1+20	0.0195	0.19	Q
1+25	0.0208	0.19	Q
1+30	0.0221	0.19	Q
1+35	0.0234	0.19	Q
1+40	0.0247	0.19	Q
1+45	0.0260	0.19	Q
1+50	0.0275	0.21	Q
1+55	0.0291	0.24	Q
2+ 0	0.0308	0.25	Q
2+ 5	0.0325	0.25	QV
2+10	0.0342	0.25	Q
2+15	0.0360	0.25	Q
2+20	0.0377	0.25	Q
2+25	0.0394	0.25	Q
2+30	0.0412	0.25	Q
2+35	0.0431	0.27	Q
2+40	0.0451	0.30	Q
2+45	0.0473	0.31	Q
2+50	0.0494	0.31	Q
2+55	0.0516	0.31	Q
3+ 0	0.0537	0.31	Q
3+ 5	0.0559	0.31	Q
3+10	0.0581	0.31	Q
3+15	0.0602	0.31	Q
3+20	0.0624	0.31	Q
3+25	0.0646	0.31	Q
3+30	0.0667	0.31	QV
3+35	0.0689	0.31	QV
3+40	0.0711	0.31	QV
3+45	0.0732	0.31	QV
3+50	0.0755	0.34	QV
3+55	0.0780	0.37	QV
4+ 0	0.0806	0.37	QV
4+ 5	0.0832	0.37	QV
4+10	0.0858	0.38	QV
4+15	0.0884	0.38	QV
4+20	0.0911	0.40	QV
4+25	0.0941	0.43	QV
4+30	0.0971	0.43	QV
4+35	0.1001	0.44	Q V
4+40	0.1031	0.44	Q V
4+45	0.1061	0.44	Q V
4+50	0.1093	0.46	Q V
4+55	0.1127	0.49	Q V
5+ 0	0.1161	0.50	Q V
5+ 5	0.1193	0.46	Q V
5+10	0.1220	0.40	Q V
5+15	0.1247	0.39	Q V
5+20	0.1275	0.40	Q V
5+25	0.1304	0.43	Q V
5+30	0.1334	0.43	Q V
5+35	0.1366	0.46	Q V
5+40	0.1400	0.49	Q V
5+45	0.1434	0.50	Q V
5+50	0.1468	0.50	Q V
5+55	0.1503	0.50	Q V
6+ 0	0.1538	0.50	Q V
6+ 5	0.1574	0.52	Q V
6+10	0.1612	0.55	Q V
6+15	0.1650	0.56	Q V
6+20	0.1689	0.56	Q V
6+25	0.1728	0.56	Q V
6+30	0.1767	0.57	Q V
6+35	0.1808	0.59	Q V
6+40	0.1850	0.62	Q V
6+45	0.1893	0.62	Q V
6+50	0.1936	0.63	Q V
6+55	0.1979	0.63	Q V
7+ 0	0.2023	0.63	Q V
7+ 5	0.2066	0.63	Q V
7+10	0.2109	0.63	Q V
7+15	0.2152	0.63	Q V
7+20	0.2197	0.65	Q V
7+25	0.2244	0.68	Q V

7+30	0.2291	0.69	Q	V
7+35	0.2340	0.71	Q	V
7+40	0.2391	0.74	Q	V
7+45	0.2443	0.75	Q	V
7+50	0.2496	0.77	Q	V
7+55	0.2552	0.80	Q	V
8+ 0	0.2607	0.81	Q	V
8+ 5	0.2667	0.86	Q	V
8+10	0.2730	0.92	Q	V
8+15	0.2794	0.93	Q	V
8+20	0.2859	0.94	Q	V
8+25	0.2923	0.94	Q	V
8+30	0.2988	0.94	Q	V
8+35	0.3055	0.96	Q	V
8+40	0.3123	0.99	Q	V
8+45	0.3192	1.00	Q	V
8+50	0.3263	1.03	Q	V
8+55	0.3335	1.06	Q	V
9+ 0	0.3409	1.06	Q	V
9+ 5	0.3485	1.11	Q	V
9+10	0.3566	1.17	Q	V
9+15	0.3647	1.18	Q	V
9+20	0.3731	1.21	Q	V
9+25	0.3816	1.24	Q	V
9+30	0.3902	1.25	Q	V
9+35	0.3990	1.28	Q	V
9+40	0.4080	1.31	Q	V
9+45	0.4171	1.31	Q	V
9+50	0.4263	1.34	Q	V
9+55	0.4358	1.37	Q	V
10+ 0	0.4452	1.38	Q	V
10+ 5	0.4537	1.23	Q	V
10+10	0.4608	1.02	Q	V
10+15	0.4675	0.98	Q	V
10+20	0.4741	0.96	Q	V
10+25	0.4806	0.95	Q	V
10+30	0.4871	0.94	Q	V
10+35	0.4943	1.05	Q	V
10+40	0.5026	1.20	Q	V
10+45	0.5111	1.23	Q	V
10+50	0.5196	1.25	Q	V
10+55	0.5283	1.25	Q	V
11+ 0	0.5369	1.26	Q	V
11+ 5	0.5454	1.24	Q	V
11+10	0.5537	1.21	Q	V
11+15	0.5620	1.20	Q	V
11+20	0.5702	1.20	Q	V
11+25	0.5785	1.19	Q	V
11+30	0.5867	1.19	Q	V
11+35	0.5946	1.15	Q	V
11+40	0.6021	1.09	Q	V
11+45	0.6096	1.08	Q	V
11+50	0.6171	1.09	Q	V
11+55	0.6248	1.12	Q	V
12+ 0	0.6326	1.13	Q	V
12+ 5	0.6414	1.28	Q	V
12+10	0.6516	1.49	Q	V
12+15	0.6622	1.54	Q	V
12+20	0.6731	1.58	Q	V
12+25	0.6842	1.62	Q	V
12+30	0.6954	1.63	Q	V
12+35	0.7070	1.68	Q	V
12+40	0.7189	1.74	Q	V
12+45	0.7310	1.75	Q	V
12+50	0.7432	1.78	Q	V
12+55	0.7557	1.81	Q	V
13+ 0	0.7682	1.82	Q	V
13+ 5	0.7815	1.93	Q	V
13+10	0.7958	2.08	Q	V
13+15	0.8103	2.11	Q	V
13+20	0.8250	2.13	Q	V
13+25	0.8397	2.13	Q	V
13+30	0.8544	2.14	Q	V
13+35	0.8674	1.90	Q	V
13+40	0.8783	1.58	Q	V
13+45	0.8886	1.50	Q	V
13+50	0.8987	1.47	Q	V
13+55	0.9087	1.45	Q	V
14+ 0	0.9187	1.45	Q	V
14+ 5	0.9292	1.53	Q	V
14+10	0.9406	1.65	Q	V
14+15	0.9521	1.68	Q	V
14+20	0.9636	1.67	Q	V
14+25	0.9749	1.64	Q	V

14+30	0.9862	1.64	Q	V
14+35	0.9975	1.64	Q	V
14+40	1.0087	1.63	Q	V
14+45	1.0200	1.63	Q	V
14+50	1.0311	1.61	Q	V
14+55	1.0420	1.58	Q	V
15+ 0	1.0529	1.58	Q	V
15+ 5	1.0635	1.55	Q	V
15+10	1.0740	1.52	Q	V
15+15	1.0844	1.51	Q	V
15+20	1.0947	1.49	Q	V
15+25	1.1047	1.46	Q	V
15+30	1.1147	1.45	Q	V
15+35	1.1241	1.36	Q	V
15+40	1.1326	1.24	Q	V
15+45	1.1410	1.21	Q	V
15+50	1.1493	1.20	Q	V
15+55	1.1575	1.20	Q	V
16+ 0	1.1657	1.19	Q	V
16+ 5	1.1717	0.87	Q	V
16+10	1.1747	0.43	Q	V
16+15	1.1769	0.33	Q	V
16+20	1.1789	0.28	Q	V
16+25	1.1807	0.26	Q	V
16+30	1.1824	0.25	Q	V
16+35	1.1840	0.23	Q	V
16+40	1.1853	0.20	Q	V
16+45	1.1867	0.19	Q	V
16+50	1.1880	0.19	Q	V
16+55	1.1893	0.19	Q	V
17+ 0	1.1906	0.19	Q	V
17+ 5	1.1922	0.23	Q	V
17+10	1.1942	0.29	Q	V
17+15	1.1963	0.30	Q	V
17+20	1.1984	0.31	Q	V
17+25	1.2006	0.31	Q	V
17+30	1.2027	0.31	Q	V
17+35	1.2049	0.31	Q	V
17+40	1.2071	0.31	Q	V
17+45	1.2092	0.31	Q	V
17+50	1.2112	0.29	Q	V
17+55	1.2131	0.26	Q	V
18+ 0	1.2148	0.26	Q	V
18+ 5	1.2166	0.25	Q	V
18+10	1.2183	0.25	Q	V
18+15	1.2200	0.25	Q	V
18+20	1.2218	0.25	Q	V
18+25	1.2235	0.25	Q	V
18+30	1.2252	0.25	Q	V
18+35	1.2268	0.23	Q	V
18+40	1.2282	0.20	Q	V
18+45	1.2295	0.19	Q	V
18+50	1.2307	0.17	Q	V
18+55	1.2316	0.14	Q	V
19+ 0	1.2325	0.13	Q	V
19+ 5	1.2336	0.15	Q	V
19+10	1.2348	0.18	Q	V
19+15	1.2361	0.18	Q	V
19+20	1.2375	0.21	Q	V
19+25	1.2391	0.24	Q	V
19+30	1.2408	0.25	Q	V
19+35	1.2424	0.23	Q	V
19+40	1.2438	0.20	Q	V
19+45	1.2451	0.19	Q	V
19+50	1.2463	0.17	Q	V
19+55	1.2472	0.14	Q	V
20+ 0	1.2481	0.13	Q	V
20+ 5	1.2491	0.15	Q	V
20+10	1.2504	0.18	Q	V
20+15	1.2516	0.18	Q	V
20+20	1.2529	0.19	Q	V
20+25	1.2542	0.19	Q	V
20+30	1.2555	0.19	Q	V
20+35	1.2568	0.19	Q	V
20+40	1.2581	0.19	Q	V
20+45	1.2594	0.19	Q	V
20+50	1.2606	0.17	Q	V
20+55	1.2615	0.14	Q	V
21+ 0	1.2624	0.13	Q	V
21+ 5	1.2634	0.15	Q	V
21+10	1.2647	0.18	Q	V
21+15	1.2659	0.18	Q	V
21+20	1.2671	0.16	Q	V
21+25	1.2680	0.14	Q	V

ONSITEPOST242.out

21+30	1.2689	0.13	Q			V
21+35	1.2699	0.15	Q			V
21+40	1.2711	0.18	Q			V
21+45	1.2724	0.18	Q			V
21+50	1.2735	0.16	Q			V
21+55	1.2745	0.14	Q			V
22+ 0	1.2754	0.13	Q			V
22+ 5	1.2764	0.15	Q			V
22+10	1.2776	0.18	Q			V
22+15	1.2789	0.18	Q			V
22+20	1.2800	0.16	Q			V
22+25	1.2810	0.14	Q			V
22+30	1.2819	0.13	Q			V
22+35	1.2828	0.13	Q			V
22+40	1.2836	0.13	Q			V
22+45	1.2845	0.13	Q			V
22+50	1.2854	0.13	Q			V
22+55	1.2862	0.13	Q			V
23+ 0	1.2871	0.13	Q			V
23+ 5	1.2880	0.13	Q			V
23+10	1.2888	0.13	Q			V
23+15	1.2897	0.13	Q			V
23+20	1.2905	0.13	Q			V
23+25	1.2914	0.13	Q			V
23+30	1.2923	0.13	Q			V
23+35	1.2931	0.13	Q			V
23+40	1.2940	0.13	Q			V
23+45	1.2949	0.13	Q			V
23+50	1.2957	0.13	Q			V
23+55	1.2966	0.13	Q			V
24+ 0	1.2975	0.13	Q			V
24+ 5	1.2980	0.08	Q			V
24+10	1.2982	0.02	Q			V
24+15	1.2983	0.01	Q			V
24+20	1.2983	0.00	Q			V
24+25	1.2983	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPOST245.out

 +-----+

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 PROPOSED CONDITION H-12 TRIBUTARY, 5-YEAR 24-HOUR
 FN: ONSITEPOST245.OUT- TSW

 Drainage Area = 9.50(Ac.) = 0.015 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 9.50(Ac.) = 0.015 Sq. Mi.
 Length along longest watercourse = 1690.00(Ft.)
 Length along longest watercourse measured to centroid = 714.00(Ft.)
 Length along longest watercourse = 0.320 Mi.
 Length along longest watercourse measured to centroid = 0.135 Mi.
 Difference in elevation = 13.80(Ft.)
 Slope along watercourse = 43.1148 Ft./Mi.
 Average Manning's 'N' = 0.015
 Lag time = 0.053 Hr.
 Lag time = 3.20 Min.
 25% of lag time = 0.80 Min.
 40% of lag time = 1.28 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
9.50	2.00	19.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
9.50	5.00	47.50

STORM EVENT (YEAR) = 5.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 2.703(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 2.703(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 9.500 56.00 0.900
 Total Area Entered = 9.50(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
56.0	36.0	0.706	0.900	0.134	1.000	0.134
						Sum (F) =
						0.134

Area averaged mean soil loss (F) (In/Hr) = 0.134
 Minimum soil loss rate ((In/Hr)) = 0.067
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.180

ONSITEPOST245.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	156.061	34.610	3.314
2	0.167	312.122	46.562	4.458
3	0.250	468.183	10.840	1.038
4	0.333	624.245	4.700	0.450
5	0.417	780.306	2.302	0.220
6	0.500	936.367	0.986	0.094
			Sum = 100.000	Sum= 9.574

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1	0.08	0.022	(0.238)	0.004	0.018
2	0.17	0.022	(0.237)	0.004	0.018
3	0.25	0.022	(0.236)	0.004	0.018
4	0.33	0.10	(0.235)	0.006	0.027
5	0.42	0.10	(0.234)	0.006	0.027
6	0.50	0.10	(0.233)	0.006	0.027
7	0.58	0.10	(0.232)	0.006	0.027
8	0.67	0.10	(0.231)	0.006	0.027
9	0.75	0.10	(0.230)	0.006	0.027
10	0.83	0.13	(0.230)	0.008	0.035
11	0.92	0.13	(0.229)	0.008	0.035
12	1.00	0.13	(0.228)	0.008	0.035
13	1.08	0.10	(0.227)	0.006	0.027
14	1.17	0.10	(0.226)	0.006	0.027
15	1.25	0.10	(0.225)	0.006	0.027
16	1.33	0.10	(0.224)	0.006	0.027
17	1.42	0.10	(0.223)	0.006	0.027
18	1.50	0.10	(0.222)	0.006	0.027
19	1.58	0.10	(0.222)	0.006	0.027
20	1.67	0.10	(0.221)	0.006	0.027
21	1.75	0.10	(0.220)	0.006	0.027
22	1.83	0.13	(0.219)	0.008	0.035
23	1.92	0.13	(0.218)	0.008	0.035
24	2.00	0.13	(0.217)	0.008	0.035
25	2.08	0.13	(0.216)	0.008	0.035
26	2.17	0.13	(0.215)	0.008	0.035
27	2.25	0.13	(0.214)	0.008	0.035
28	2.33	0.13	(0.214)	0.008	0.035
29	2.42	0.13	(0.213)	0.008	0.035
30	2.50	0.13	(0.212)	0.008	0.035
31	2.58	0.17	(0.211)	0.010	0.044
32	2.67	0.17	(0.210)	0.010	0.044
33	2.75	0.17	(0.209)	0.010	0.044
34	2.83	0.17	(0.208)	0.010	0.044
35	2.92	0.17	(0.208)	0.010	0.044
36	3.00	0.17	(0.207)	0.010	0.044
37	3.08	0.17	(0.206)	0.010	0.044
38	3.17	0.17	(0.205)	0.010	0.044
39	3.25	0.17	(0.204)	0.010	0.044
40	3.33	0.17	(0.203)	0.010	0.044
41	3.42	0.17	(0.202)	0.010	0.044
42	3.50	0.17	(0.202)	0.010	0.044
43	3.58	0.17	(0.201)	0.010	0.044
44	3.67	0.17	(0.200)	0.010	0.044
45	3.75	0.17	(0.199)	0.010	0.044
46	3.83	0.20	(0.198)	0.012	0.053
47	3.92	0.20	(0.197)	0.012	0.053
48	4.00	0.20	(0.197)	0.012	0.053
49	4.08	0.20	(0.196)	0.012	0.053
50	4.17	0.20	(0.195)	0.012	0.053
51	4.25	0.20	(0.194)	0.012	0.053
52	4.33	0.23	(0.193)	0.014	0.062
53	4.42	0.23	(0.192)	0.014	0.062
54	4.50	0.23	(0.192)	0.014	0.062
55	4.58	0.23	(0.191)	0.014	0.062
56	4.67	0.23	(0.190)	0.014	0.062
57	4.75	0.23	(0.189)	0.014	0.062
58	4.83	0.27	(0.188)	0.016	0.071
59	4.92	0.27	(0.187)	0.016	0.071
60	5.00	0.27	(0.187)	0.016	0.071
61	5.08	0.20	(0.186)	0.012	0.053
62	5.17	0.20	(0.185)	0.012	0.053

ONSITEPOST245.out

63	5.25	0.20	0.065	(0.184)	0.012	0.053
64	5.33	0.23	0.076	(0.183)	0.014	0.062
65	5.42	0.23	0.076	(0.183)	0.014	0.062
66	5.50	0.23	0.076	(0.182)	0.014	0.062
67	5.58	0.27	0.086	(0.181)	0.016	0.071
68	5.67	0.27	0.086	(0.180)	0.016	0.071
69	5.75	0.27	0.086	(0.179)	0.016	0.071
70	5.83	0.27	0.086	(0.179)	0.016	0.071
71	5.92	0.27	0.086	(0.178)	0.016	0.071
72	6.00	0.27	0.086	(0.177)	0.016	0.071
73	6.08	0.30	0.097	(0.176)	0.018	0.080
74	6.17	0.30	0.097	(0.175)	0.018	0.080
75	6.25	0.30	0.097	(0.175)	0.018	0.080
76	6.33	0.30	0.097	(0.174)	0.018	0.080
77	6.42	0.30	0.097	(0.173)	0.018	0.080
78	6.50	0.30	0.097	(0.172)	0.018	0.080
79	6.58	0.33	0.108	(0.172)	0.019	0.089
80	6.67	0.33	0.108	(0.171)	0.019	0.089
81	6.75	0.33	0.108	(0.170)	0.019	0.089
82	6.83	0.33	0.108	(0.169)	0.019	0.089
83	6.92	0.33	0.108	(0.169)	0.019	0.089
84	7.00	0.33	0.108	(0.168)	0.019	0.089
85	7.08	0.33	0.108	(0.167)	0.019	0.089
86	7.17	0.33	0.108	(0.166)	0.019	0.089
87	7.25	0.33	0.108	(0.165)	0.019	0.089
88	7.33	0.37	0.119	(0.165)	0.021	0.098
89	7.42	0.37	0.119	(0.164)	0.021	0.098
90	7.50	0.37	0.119	(0.163)	0.021	0.098
91	7.58	0.40	0.130	(0.162)	0.023	0.106
92	7.67	0.40	0.130	(0.162)	0.023	0.106
93	7.75	0.40	0.130	(0.161)	0.023	0.106
94	7.83	0.43	0.141	(0.160)	0.025	0.115
95	7.92	0.43	0.141	(0.159)	0.025	0.115
96	8.00	0.43	0.141	(0.159)	0.025	0.115
97	8.08	0.50	0.162	(0.158)	0.029	0.133
98	8.17	0.50	0.162	(0.157)	0.029	0.133
99	8.25	0.50	0.162	(0.157)	0.029	0.133
100	8.33	0.50	0.162	(0.156)	0.029	0.133
101	8.42	0.50	0.162	(0.155)	0.029	0.133
102	8.50	0.50	0.162	(0.154)	0.029	0.133
103	8.58	0.53	0.173	(0.154)	0.031	0.142
104	8.67	0.53	0.173	(0.153)	0.031	0.142
105	8.75	0.53	0.173	(0.152)	0.031	0.142
106	8.83	0.57	0.184	(0.151)	0.033	0.151
107	8.92	0.57	0.184	(0.151)	0.033	0.151
108	9.00	0.57	0.184	(0.150)	0.033	0.151
109	9.08	0.63	0.205	(0.149)	0.037	0.168
110	9.17	0.63	0.205	(0.149)	0.037	0.168
111	9.25	0.63	0.205	(0.148)	0.037	0.168
112	9.33	0.67	0.216	(0.147)	0.039	0.177
113	9.42	0.67	0.216	(0.147)	0.039	0.177
114	9.50	0.67	0.216	(0.146)	0.039	0.177
115	9.58	0.70	0.227	(0.145)	0.041	0.186
116	9.67	0.70	0.227	(0.144)	0.041	0.186
117	9.75	0.70	0.227	(0.144)	0.041	0.186
118	9.83	0.73	0.238	(0.143)	0.043	0.195
119	9.92	0.73	0.238	(0.142)	0.043	0.195
120	10.00	0.73	0.238	(0.142)	0.043	0.195
121	10.08	0.50	0.162	(0.141)	0.029	0.133
122	10.17	0.50	0.162	(0.140)	0.029	0.133
123	10.25	0.50	0.162	(0.140)	0.029	0.133
124	10.33	0.50	0.162	(0.139)	0.029	0.133
125	10.42	0.50	0.162	(0.138)	0.029	0.133
126	10.50	0.50	0.162	(0.138)	0.029	0.133
127	10.58	0.67	0.216	(0.137)	0.039	0.177
128	10.67	0.67	0.216	(0.136)	0.039	0.177
129	10.75	0.67	0.216	(0.136)	0.039	0.177
130	10.83	0.67	0.216	(0.135)	0.039	0.177
131	10.92	0.67	0.216	(0.134)	0.039	0.177
132	11.00	0.67	0.216	(0.134)	0.039	0.177
133	11.08	0.63	0.205	(0.133)	0.037	0.168
134	11.17	0.63	0.205	(0.132)	0.037	0.168
135	11.25	0.63	0.205	(0.132)	0.037	0.168
136	11.33	0.63	0.205	(0.131)	0.037	0.168
137	11.42	0.63	0.205	(0.130)	0.037	0.168
138	11.50	0.63	0.205	(0.130)	0.037	0.168
139	11.58	0.57	0.184	(0.129)	0.033	0.151
140	11.67	0.57	0.184	(0.128)	0.033	0.151
141	11.75	0.57	0.184	(0.128)	0.033	0.151
142	11.83	0.60	0.195	(0.127)	0.035	0.160
143	11.92	0.60	0.195	(0.126)	0.035	0.160
144	12.00	0.60	0.195	(0.126)	0.035	0.160
145	12.08	0.83	0.270	(0.125)	0.049	0.222
146	12.17	0.83	0.270	(0.125)	0.049	0.222

ONSITEPOST245.out

147	12.25	0.83	0.270	(0.124)	0.049	0.222
148	12.33	0.87	0.281	(0.123)	0.051	0.230
149	12.42	0.87	0.281	(0.123)	0.051	0.230
150	12.50	0.87	0.281	(0.122)	0.051	0.230
151	12.58	0.93	0.303	(0.121)	0.054	0.248
152	12.67	0.93	0.303	(0.121)	0.054	0.248
153	12.75	0.93	0.303	(0.120)	0.054	0.248
154	12.83	0.97	0.314	(0.120)	0.056	0.257
155	12.92	0.97	0.314	(0.119)	0.056	0.257
156	13.00	0.97	0.314	(0.118)	0.056	0.257
157	13.08	1.13	0.368	(0.118)	0.066	0.301
158	13.17	1.13	0.368	(0.117)	0.066	0.301
159	13.25	1.13	0.368	(0.117)	0.066	0.301
160	13.33	1.13	0.368	(0.116)	0.066	0.301
161	13.42	1.13	0.368	(0.115)	0.066	0.301
162	13.50	1.13	0.368	(0.115)	0.066	0.301
163	13.58	0.77	0.249	(0.114)	0.045	0.204
164	13.67	0.77	0.249	(0.114)	0.045	0.204
165	13.75	0.77	0.249	(0.113)	0.045	0.204
166	13.83	0.77	0.249	(0.113)	0.045	0.204
167	13.92	0.77	0.249	(0.112)	0.045	0.204
168	14.00	0.77	0.249	(0.111)	0.045	0.204
169	14.08	0.90	0.292	(0.111)	0.053	0.239
170	14.17	0.90	0.292	(0.110)	0.053	0.239
171	14.25	0.90	0.292	(0.110)	0.053	0.239
172	14.33	0.87	0.281	(0.109)	0.051	0.230
173	14.42	0.87	0.281	(0.109)	0.051	0.230
174	14.50	0.87	0.281	(0.108)	0.051	0.230
175	14.58	0.87	0.281	(0.107)	0.051	0.230
176	14.67	0.87	0.281	(0.107)	0.051	0.230
177	14.75	0.87	0.281	(0.106)	0.051	0.230
178	14.83	0.83	0.270	(0.106)	0.049	0.222
179	14.92	0.83	0.270	(0.105)	0.049	0.222
180	15.00	0.83	0.270	(0.105)	0.049	0.222
181	15.08	0.80	0.259	(0.104)	0.047	0.213
182	15.17	0.80	0.259	(0.104)	0.047	0.213
183	15.25	0.80	0.259	(0.103)	0.047	0.213
184	15.33	0.77	0.249	(0.103)	0.045	0.204
185	15.42	0.77	0.249	(0.102)	0.045	0.204
186	15.50	0.77	0.249	(0.102)	0.045	0.204
187	15.58	0.63	0.205	(0.101)	0.037	0.168
188	15.67	0.63	0.205	(0.101)	0.037	0.168
189	15.75	0.63	0.205	(0.100)	0.037	0.168
190	15.83	0.63	0.205	(0.100)	0.037	0.168
191	15.92	0.63	0.205	(0.099)	0.037	0.168
192	16.00	0.63	0.205	(0.099)	0.037	0.168
193	16.08	0.13	0.043	(0.098)	0.008	0.035
194	16.17	0.13	0.043	(0.098)	0.008	0.035
195	16.25	0.13	0.043	(0.097)	0.008	0.035
196	16.33	0.13	0.043	(0.097)	0.008	0.035
197	16.42	0.13	0.043	(0.096)	0.008	0.035
198	16.50	0.13	0.043	(0.096)	0.008	0.035
199	16.58	0.10	0.032	(0.095)	0.006	0.027
200	16.67	0.10	0.032	(0.095)	0.006	0.027
201	16.75	0.10	0.032	(0.094)	0.006	0.027
202	16.83	0.10	0.032	(0.094)	0.006	0.027
203	16.92	0.10	0.032	(0.093)	0.006	0.027
204	17.00	0.10	0.032	(0.093)	0.006	0.027
205	17.08	0.17	0.054	(0.092)	0.010	0.044
206	17.17	0.17	0.054	(0.092)	0.010	0.044
207	17.25	0.17	0.054	(0.091)	0.010	0.044
208	17.33	0.17	0.054	(0.091)	0.010	0.044
209	17.42	0.17	0.054	(0.090)	0.010	0.044
210	17.50	0.17	0.054	(0.090)	0.010	0.044
211	17.58	0.17	0.054	(0.089)	0.010	0.044
212	17.67	0.17	0.054	(0.089)	0.010	0.044
213	17.75	0.17	0.054	(0.089)	0.010	0.044
214	17.83	0.13	0.043	(0.088)	0.008	0.035
215	17.92	0.13	0.043	(0.088)	0.008	0.035
216	18.00	0.13	0.043	(0.087)	0.008	0.035
217	18.08	0.13	0.043	(0.087)	0.008	0.035
218	18.17	0.13	0.043	(0.086)	0.008	0.035
219	18.25	0.13	0.043	(0.086)	0.008	0.035
220	18.33	0.13	0.043	(0.086)	0.008	0.035
221	18.42	0.13	0.043	(0.085)	0.008	0.035
222	18.50	0.13	0.043	(0.085)	0.008	0.035
223	18.58	0.10	0.032	(0.084)	0.006	0.027
224	18.67	0.10	0.032	(0.084)	0.006	0.027
225	18.75	0.10	0.032	(0.084)	0.006	0.027
226	18.83	0.07	0.022	(0.083)	0.004	0.018
227	18.92	0.07	0.022	(0.083)	0.004	0.018
228	19.00	0.07	0.022	(0.082)	0.004	0.018
229	19.08	0.10	0.032	(0.082)	0.006	0.027
230	19.17	0.10	0.032	(0.082)	0.006	0.027

ONSITEPOST245.out

231	19.25	0.10	0.032	(0.081)	0.006	0.027
232	19.33	0.13	0.043	(0.081)	0.008	0.035
233	19.42	0.13	0.043	(0.080)	0.008	0.035
234	19.50	0.13	0.043	(0.080)	0.008	0.035
235	19.58	0.10	0.032	(0.080)	0.006	0.027
236	19.67	0.10	0.032	(0.079)	0.006	0.027
237	19.75	0.10	0.032	(0.079)	0.006	0.027
238	19.83	0.07	0.022	(0.079)	0.004	0.018
239	19.92	0.07	0.022	(0.078)	0.004	0.018
240	20.00	0.07	0.022	(0.078)	0.004	0.018
241	20.08	0.10	0.032	(0.078)	0.006	0.027
242	20.17	0.10	0.032	(0.077)	0.006	0.027
243	20.25	0.10	0.032	(0.077)	0.006	0.027
244	20.33	0.10	0.032	(0.077)	0.006	0.027
245	20.42	0.10	0.032	(0.076)	0.006	0.027
246	20.50	0.10	0.032	(0.076)	0.006	0.027
247	20.58	0.10	0.032	(0.076)	0.006	0.027
248	20.67	0.10	0.032	(0.075)	0.006	0.027
249	20.75	0.10	0.032	(0.075)	0.006	0.027
250	20.83	0.07	0.022	(0.075)	0.004	0.018
251	20.92	0.07	0.022	(0.074)	0.004	0.018
252	21.00	0.07	0.022	(0.074)	0.004	0.018
253	21.08	0.10	0.032	(0.074)	0.006	0.027
254	21.17	0.10	0.032	(0.073)	0.006	0.027
255	21.25	0.10	0.032	(0.073)	0.006	0.027
256	21.33	0.07	0.022	(0.073)	0.004	0.018
257	21.42	0.07	0.022	(0.073)	0.004	0.018
258	21.50	0.07	0.022	(0.072)	0.004	0.018
259	21.58	0.10	0.032	(0.072)	0.006	0.027
260	21.67	0.10	0.032	(0.072)	0.006	0.027
261	21.75	0.10	0.032	(0.072)	0.006	0.027
262	21.83	0.07	0.022	(0.071)	0.004	0.018
263	21.92	0.07	0.022	(0.071)	0.004	0.018
264	22.00	0.07	0.022	(0.071)	0.004	0.018
265	22.08	0.10	0.032	(0.071)	0.006	0.027
266	22.17	0.10	0.032	(0.070)	0.006	0.027
267	22.25	0.10	0.032	(0.070)	0.006	0.027
268	22.33	0.07	0.022	(0.070)	0.004	0.018
269	22.42	0.07	0.022	(0.070)	0.004	0.018
270	22.50	0.07	0.022	(0.069)	0.004	0.018
271	22.58	0.07	0.022	(0.069)	0.004	0.018
272	22.67	0.07	0.022	(0.069)	0.004	0.018
273	22.75	0.07	0.022	(0.069)	0.004	0.018
274	22.83	0.07	0.022	(0.069)	0.004	0.018
275	22.92	0.07	0.022	(0.069)	0.004	0.018
276	23.00	0.07	0.022	(0.068)	0.004	0.018
277	23.08	0.07	0.022	(0.068)	0.004	0.018
278	23.17	0.07	0.022	(0.068)	0.004	0.018
279	23.25	0.07	0.022	(0.068)	0.004	0.018
280	23.33	0.07	0.022	(0.068)	0.004	0.018
281	23.42	0.07	0.022	(0.068)	0.004	0.018
282	23.50	0.07	0.022	(0.068)	0.004	0.018
283	23.58	0.07	0.022	(0.067)	0.004	0.018
284	23.67	0.07	0.022	(0.067)	0.004	0.018
285	23.75	0.07	0.022	(0.067)	0.004	0.018
286	23.83	0.07	0.022	(0.067)	0.004	0.018
287	23.92	0.07	0.022	(0.067)	0.004	0.018
288	24.00	0.07	0.022	(0.067)	0.004	0.018

(Loss Rate Not Used)

Sum = 100.0 Sum = 26.6

Flood volume = Effective rainfall 2.22(In)
 times area 9.5(Ac.)/[(In)/(Ft.)] = 1.8(Ac.Ft)
 Total soil loss = 0.49(In)
 Total soil loss = 0.385(Ac.Ft)
 Total rainfall = 2.70(In)
 Flood volume = 76424.0 Cubic Feet
 Total soil loss = 16776.0 Cubic Feet

 Peak flow rate of this hydrograph = 2.887(CFS)

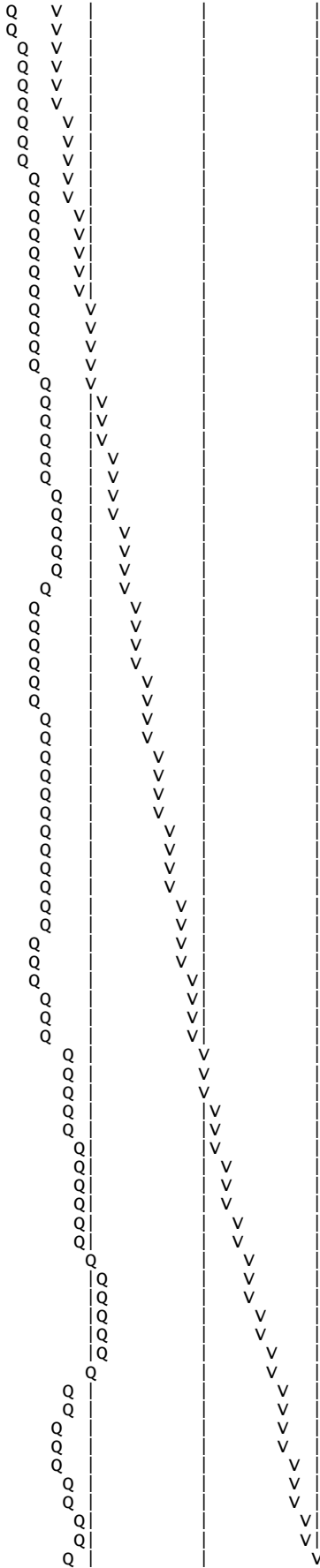
+++++
 24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.06	Q				
0+10	0.0014	0.14	Q				
0+15	0.0024	0.16	Q				
0+20	0.0038	0.19	Q				
0+25	0.0054	0.24	Q				

0+30	0.0071	0.25	Q
0+35	0.0088	0.25	VQ
0+40	0.0106	0.25	VQ
0+45	0.0123	0.25	VQ
0+50	0.0143	0.28	VQ
0+55	0.0165	0.32	VQ
1+ 0	0.0188	0.33	VQ
1+ 5	0.0209	0.31	VQ
1+10	0.0228	0.27	VQ
1+15	0.0246	0.26	VQ
1+20	0.0264	0.26	VQ
1+25	0.0281	0.26	VQ
1+30	0.0299	0.25	VQ
1+35	0.0316	0.25	VQ
1+40	0.0334	0.25	VQ
1+45	0.0352	0.25	VQ
1+50	0.0371	0.28	VQ
1+55	0.0393	0.32	VQ
2+ 0	0.0416	0.33	VQ
2+ 5	0.0439	0.34	Q
2+10	0.0463	0.34	Q
2+15	0.0486	0.34	Q
2+20	0.0510	0.34	Q
2+25	0.0533	0.34	Q
2+30	0.0556	0.34	Q
2+35	0.0582	0.37	Q
2+40	0.0610	0.41	Q
2+45	0.0639	0.42	Q
2+50	0.0668	0.42	Q
2+55	0.0697	0.42	Q
3+ 0	0.0726	0.42	Q
3+ 5	0.0755	0.42	Q
3+10	0.0785	0.42	Q
3+15	0.0814	0.42	Q
3+20	0.0843	0.42	Q
3+25	0.0872	0.42	Q
3+30	0.0902	0.42	QV
3+35	0.0931	0.42	QV
3+40	0.0960	0.42	QV
3+45	0.0989	0.42	QV
3+50	0.1021	0.45	QV
3+55	0.1055	0.49	QV
4+ 0	0.1089	0.50	Q
4+ 5	0.1124	0.51	Q
4+10	0.1159	0.51	Q
4+15	0.1194	0.51	Q
4+20	0.1231	0.54	Q
4+25	0.1271	0.58	Q
4+30	0.1312	0.59	Q
4+35	0.1352	0.59	QV
4+40	0.1393	0.59	QV
4+45	0.1434	0.59	QV
4+50	0.1477	0.62	QV
4+55	0.1523	0.66	QV
5+ 0	0.1569	0.67	QV
5+ 5	0.1612	0.62	QV
5+10	0.1649	0.54	QV
5+15	0.1685	0.52	QV
5+20	0.1723	0.54	QV
5+25	0.1762	0.58	Q Q V
5+30	0.1803	0.59	Q Q V
5+35	0.1846	0.62	Q Q V
5+40	0.1891	0.66	Q Q V
5+45	0.1938	0.67	Q Q V
5+50	0.1984	0.68	Q Q V
5+55	0.2031	0.68	Q Q V
6+ 0	0.2078	0.68	Q Q V
6+ 5	0.2127	0.71	Q Q V
6+10	0.2178	0.75	Q Q V
6+15	0.2230	0.76	Q Q V
6+20	0.2283	0.76	Q Q V
6+25	0.2335	0.76	Q Q V
6+30	0.2388	0.76	Q Q V
6+35	0.2443	0.79	Q Q V
6+40	0.2500	0.83	Q Q V
6+45	0.2558	0.84	Q Q V
6+50	0.2616	0.85	Q Q V
6+55	0.2675	0.85	Q Q V
7+ 0	0.2733	0.85	Q Q V
7+ 5	0.2792	0.85	Q Q V
7+10	0.2850	0.85	Q Q V
7+15	0.2909	0.85	Q Q V
7+20	0.2969	0.88	Q Q V
7+25	0.3032	0.92	Q Q V

7+30	0.3096	0.93
7+35	0.3162	0.96
7+40	0.3231	1.00
7+45	0.3301	1.01
7+50	0.3373	1.05
7+55	0.3448	1.09
8+ 0	0.3524	1.10
8+ 5	0.3603	1.16
8+10	0.3689	1.24
8+15	0.3776	1.26
8+20	0.3863	1.27
8+25	0.3951	1.27
8+30	0.4038	1.27
8+35	0.4128	1.30
8+40	0.4221	1.34
8+45	0.4314	1.35
8+50	0.4409	1.39
8+55	0.4507	1.43
9+ 0	0.4606	1.44
9+ 5	0.4710	1.50
9+10	0.4818	1.58
9+15	0.4929	1.60
9+20	0.5041	1.64
9+25	0.5157	1.68
9+30	0.5274	1.69
9+35	0.5392	1.72
9+40	0.5514	1.77
9+45	0.5636	1.78
9+50	0.5761	1.81
9+55	0.5889	1.85
10+ 0	0.6017	1.86
10+ 5	0.6131	1.66
10+10	0.6226	1.38
10+15	0.6317	1.32
10+20	0.6406	1.29
10+25	0.6495	1.28
10+30	0.6582	1.27
10+35	0.6680	1.42
10+40	0.6792	1.62
10+45	0.6906	1.66
10+50	0.7022	1.68
10+55	0.7139	1.69
11+ 0	0.7256	1.70
11+ 5	0.7371	1.67
11+10	0.7483	1.63
11+15	0.7595	1.62
11+20	0.7706	1.62
11+25	0.7817	1.61
11+30	0.7928	1.61
11+35	0.8035	1.55
11+40	0.8137	1.48
11+45	0.8237	1.46
11+50	0.8339	1.48
11+55	0.8443	1.51
12+ 0	0.8548	1.52
12+ 5	0.8667	1.73
12+10	0.8806	2.01
12+15	0.8949	2.08
12+20	0.9096	2.13
12+25	0.9246	2.19
12+30	0.9398	2.20
12+35	0.9554	2.26
12+40	0.9715	2.34
12+45	0.9878	2.36
12+50	1.0043	2.40
12+55	1.0212	2.44
13+ 0	1.0381	2.46
13+ 5	1.0560	2.61
13+10	1.0754	2.81
13+15	1.0950	2.85
13+20	1.1148	2.87
13+25	1.1347	2.88
13+30	1.1545	2.89
13+35	1.1722	2.56
13+40	1.1869	2.13
13+45	1.2008	2.03
13+50	1.2145	1.98
13+55	1.2280	1.96
14+ 0	1.2415	1.95
14+ 5	1.2557	2.07
14+10	1.2711	2.23
14+15	1.2867	2.27
14+20	1.3022	2.25
14+25	1.3175	2.22



14+30	1.3327	2.21	Q	V
14+35	1.3479	2.21	Q	V
14+40	1.3632	2.21	Q	V
14+45	1.3784	2.21	Q	V
14+50	1.3934	2.18	Q	V
14+55	1.4081	2.14	Q	V
15+ 0	1.4228	2.13	Q	V
15+ 5	1.4372	2.10	Q	V
15+10	1.4514	2.05	Q	V
15+15	1.4654	2.04	Q	V
15+20	1.4793	2.01	Q	V
15+25	1.4929	1.97	Q	V
15+30	1.5064	1.96	Q	V
15+35	1.5190	1.84	Q	V
15+40	1.5306	1.68	Q	V
15+45	1.5419	1.64	Q	V
15+50	1.5531	1.62	Q	V
15+55	1.5642	1.62	Q	V
16+ 0	1.5753	1.61	Q	V
16+ 5	1.5834	1.17	Q	V
16+10	1.5874	0.58	Q	V
16+15	1.5904	0.44	Q	V
16+20	1.5930	0.38	Q	V
16+25	1.5955	0.35	Q	V
16+30	1.5978	0.34	Q	V
16+35	1.5999	0.31	Q	V
16+40	1.6018	0.27	Q	V
16+45	1.6036	0.26	Q	V
16+50	1.6054	0.26	Q	V
16+55	1.6071	0.26	Q	V
17+ 0	1.6089	0.25	Q	V
17+ 5	1.6111	0.31	Q	V
17+10	1.6138	0.39	Q	V
17+15	1.6166	0.41	Q	V
17+20	1.6195	0.42	Q	V
17+25	1.6224	0.42	Q	V
17+30	1.6253	0.42	Q	V
17+35	1.6282	0.42	Q	V
17+40	1.6312	0.42	Q	V
17+45	1.6341	0.42	Q	V
17+50	1.6368	0.40	Q	V
17+55	1.6393	0.36	Q	V
18+ 0	1.6416	0.35	Q	V
18+ 5	1.6440	0.34	Q	V
18+10	1.6463	0.34	Q	V
18+15	1.6487	0.34	Q	V
18+20	1.6510	0.34	Q	V
18+25	1.6534	0.34	Q	V
18+30	1.6557	0.34	Q	V
18+35	1.6578	0.31	Q	V
18+40	1.6597	0.27	Q	V
18+45	1.6615	0.26	Q	V
18+50	1.6631	0.23	Q	V
18+55	1.6644	0.19	Q	V
19+ 0	1.6656	0.18	Q	V
19+ 5	1.6670	0.20	Q	V
19+10	1.6686	0.24	Q	V
19+15	1.6703	0.25	Q	V
19+20	1.6723	0.28	Q	V
19+25	1.6745	0.32	Q	V
19+30	1.6768	0.33	Q	V
19+35	1.6789	0.31	Q	V
19+40	1.6808	0.27	Q	V
19+45	1.6826	0.26	Q	V
19+50	1.6841	0.23	Q	V
19+55	1.6854	0.19	Q	V
20+ 0	1.6866	0.18	Q	V
20+ 5	1.6880	0.20	Q	V
20+10	1.6897	0.24	Q	V
20+15	1.6914	0.25	Q	V
20+20	1.6931	0.25	Q	V
20+25	1.6949	0.25	Q	V
20+30	1.6966	0.25	Q	V
20+35	1.6984	0.25	Q	V
20+40	1.7001	0.25	Q	V
20+45	1.7019	0.25	Q	V
20+50	1.7034	0.23	Q	V
20+55	1.7047	0.19	Q	V
21+ 0	1.7059	0.18	Q	V
21+ 5	1.7073	0.20	Q	V
21+10	1.7090	0.24	Q	V
21+15	1.7107	0.25	Q	V
21+20	1.7122	0.22	Q	V
21+25	1.7135	0.18	Q	V

ONSITEPOST245.out

21+30	1.7147	0.18	Q			V
21+35	1.7161	0.20	Q			V
21+40	1.7177	0.24	Q			V
21+45	1.7195	0.25	Q			V
21+50	1.7210	0.22	Q			V
21+55	1.7223	0.18	Q			V
22+ 0	1.7235	0.18	Q			V
22+ 5	1.7249	0.20	Q			V
22+10	1.7265	0.24	Q			V
22+15	1.7282	0.25	Q			V
22+20	1.7298	0.22	Q			V
22+25	1.7310	0.18	Q			V
22+30	1.7322	0.18	Q			V
22+35	1.7334	0.17	Q			V
22+40	1.7346	0.17	Q			V
22+45	1.7358	0.17	Q			V
22+50	1.7369	0.17	Q			V
22+55	1.7381	0.17	Q			V
23+ 0	1.7393	0.17	Q			V
23+ 5	1.7405	0.17	Q			V
23+10	1.7416	0.17	Q			V
23+15	1.7428	0.17	Q			V
23+20	1.7440	0.17	Q			V
23+25	1.7451	0.17	Q			V
23+30	1.7463	0.17	Q			V
23+35	1.7475	0.17	Q			V
23+40	1.7486	0.17	Q			V
23+45	1.7498	0.17	Q			V
23+50	1.7510	0.17	Q			V
23+55	1.7522	0.17	Q			V
24+ 0	1.7533	0.17	Q			V
24+ 5	1.7541	0.11	Q			V
24+10	1.7543	0.03	Q			V
24+15	1.7544	0.01	Q			V
24+20	1.7544	0.01	Q			V
24+25	1.7545	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
 Study date 11/11/20 File: ONSITEPOST2410.out

 +-----+

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

Program License Serial Number 4010

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

English Units used in output format

 19-0126 DUKE HARVILL
 ONSITE UNIT HYDROGRAPH ANALYSIS
 PROPOSED CONDITION H-12 TRIBUTARY, 10-YEAR 24-HOUR
 FN: ONSITEPOST2410.OUT- TSW

 Drainage Area = 9.50(Ac.) = 0.015 Sq. Mi.
 Drainage Area for Depth-Area Areal Adjustment = 9.50(Ac.) = 0.015 Sq. Mi.
 Length along longest watercourse = 1690.00(Ft.)
 Length along longest watercourse measured to centroid = 714.00(Ft.)
 Length along longest watercourse = 0.320 Mi.
 Length along longest watercourse measured to centroid = 0.135 Mi.
 Difference in elevation = 13.80(Ft.)
 Slope along watercourse = 43.1148 Ft./Mi.
 Average Manning's 'N' = 0.015
 Lag time = 0.053 Hr.
 Lag time = 3.20 Min.
 25% of lag time = 0.80 Min.
 40% of lag time = 1.28 Min.
 Unit time = 5.00 Min.
 Duration of storm = 24 Hour(s)
 User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
9.50	2.00	19.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	weighting[1*2]
9.50	5.00	47.50

STORM EVENT (YEAR) = 10.00
 Area Averaged 2-Year Rainfall = 2.000(In)
 Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 3.234(In)
 Areal adjustment factor = 100.00 %
 Adjusted average point rain = 3.234(In)

Sub-Area Data:
 Area(Ac.) Runoff Index Impervious %
 9.500 56.00 0.900
 Total Area Entered = 9.50(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
56.0	56.0	0.511	0.900	0.097	1.000	0.097
						Sum (F) =
						0.097

Area averaged mean soil loss (F) (In/Hr) = 0.097
 Minimum soil loss rate ((In/Hr)) = 0.049
 (for 24 hour storm duration)
 Soil low loss rate (decimal) = 0.180

ONSITEPOST2410.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	156.061	34.610	3.314
2	0.167	312.122	46.562	4.458
3	0.250	468.183	10.840	1.038
4	0.333	624.245	4.700	0.450
5	0.417	780.306	2.302	0.220
6	0.500	936.367	0.986	0.094
			Sum = 100.000	Sum= 9.574

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1	0.08	0.026	(0.172)	0.005	0.021
2	0.17	0.026	(0.171)	0.005	0.021
3	0.25	0.026	(0.171)	0.005	0.021
4	0.33	0.039	(0.170)	0.007	0.032
5	0.42	0.039	(0.169)	0.007	0.032
6	0.50	0.039	(0.169)	0.007	0.032
7	0.58	0.039	(0.168)	0.007	0.032
8	0.67	0.039	(0.167)	0.007	0.032
9	0.75	0.039	(0.167)	0.007	0.032
10	0.83	0.052	(0.166)	0.009	0.042
11	0.92	0.052	(0.165)	0.009	0.042
12	1.00	0.052	(0.165)	0.009	0.042
13	1.08	0.039	(0.164)	0.007	0.032
14	1.17	0.039	(0.163)	0.007	0.032
15	1.25	0.039	(0.163)	0.007	0.032
16	1.33	0.039	(0.162)	0.007	0.032
17	1.42	0.039	(0.162)	0.007	0.032
18	1.50	0.039	(0.161)	0.007	0.032
19	1.58	0.039	(0.160)	0.007	0.032
20	1.67	0.039	(0.160)	0.007	0.032
21	1.75	0.039	(0.159)	0.007	0.032
22	1.83	0.052	(0.158)	0.009	0.042
23	1.92	0.052	(0.158)	0.009	0.042
24	2.00	0.052	(0.157)	0.009	0.042
25	2.08	0.052	(0.156)	0.009	0.042
26	2.17	0.052	(0.156)	0.009	0.042
27	2.25	0.052	(0.155)	0.009	0.042
28	2.33	0.052	(0.155)	0.009	0.042
29	2.42	0.052	(0.154)	0.009	0.042
30	2.50	0.052	(0.153)	0.009	0.042
31	2.58	0.065	(0.153)	0.012	0.053
32	2.67	0.065	(0.152)	0.012	0.053
33	2.75	0.065	(0.151)	0.012	0.053
34	2.83	0.065	(0.151)	0.012	0.053
35	2.92	0.065	(0.150)	0.012	0.053
36	3.00	0.065	(0.150)	0.012	0.053
37	3.08	0.065	(0.149)	0.012	0.053
38	3.17	0.065	(0.148)	0.012	0.053
39	3.25	0.065	(0.148)	0.012	0.053
40	3.33	0.065	(0.147)	0.012	0.053
41	3.42	0.065	(0.146)	0.012	0.053
42	3.50	0.065	(0.146)	0.012	0.053
43	3.58	0.065	(0.145)	0.012	0.053
44	3.67	0.065	(0.145)	0.012	0.053
45	3.75	0.065	(0.144)	0.012	0.053
46	3.83	0.078	(0.143)	0.014	0.064
47	3.92	0.078	(0.143)	0.014	0.064
48	4.00	0.078	(0.142)	0.014	0.064
49	4.08	0.078	(0.142)	0.014	0.064
50	4.17	0.078	(0.141)	0.014	0.064
51	4.25	0.078	(0.140)	0.014	0.064
52	4.33	0.091	(0.140)	0.016	0.074
53	4.42	0.091	(0.139)	0.016	0.074
54	4.50	0.091	(0.139)	0.016	0.074
55	4.58	0.091	(0.138)	0.016	0.074
56	4.67	0.091	(0.137)	0.016	0.074
57	4.75	0.091	(0.137)	0.016	0.074
58	4.83	0.103	(0.136)	0.019	0.085
59	4.92	0.103	(0.136)	0.019	0.085
60	5.00	0.103	(0.135)	0.019	0.085
61	5.08	0.078	(0.134)	0.014	0.064
62	5.17	0.078	(0.134)	0.014	0.064

ONSITEPOST2410.out

63	5.25	0.20	0.078	(0.133)	0.014	0.064
64	5.33	0.23	0.091	(0.133)	0.016	0.074
65	5.42	0.23	0.091	(0.132)	0.016	0.074
66	5.50	0.23	0.091	(0.132)	0.016	0.074
67	5.58	0.27	0.103	(0.131)	0.019	0.085
68	5.67	0.27	0.103	(0.130)	0.019	0.085
69	5.75	0.27	0.103	(0.130)	0.019	0.085
70	5.83	0.27	0.103	(0.129)	0.019	0.085
71	5.92	0.27	0.103	(0.129)	0.019	0.085
72	6.00	0.27	0.103	(0.128)	0.019	0.085
73	6.08	0.30	0.116	(0.128)	0.021	0.095
74	6.17	0.30	0.116	(0.127)	0.021	0.095
75	6.25	0.30	0.116	(0.126)	0.021	0.095
76	6.33	0.30	0.116	(0.126)	0.021	0.095
77	6.42	0.30	0.116	(0.125)	0.021	0.095
78	6.50	0.30	0.116	(0.125)	0.021	0.095
79	6.58	0.33	0.129	(0.124)	0.023	0.106
80	6.67	0.33	0.129	(0.124)	0.023	0.106
81	6.75	0.33	0.129	(0.123)	0.023	0.106
82	6.83	0.33	0.129	(0.122)	0.023	0.106
83	6.92	0.33	0.129	(0.122)	0.023	0.106
84	7.00	0.33	0.129	(0.121)	0.023	0.106
85	7.08	0.33	0.129	(0.121)	0.023	0.106
86	7.17	0.33	0.129	(0.120)	0.023	0.106
87	7.25	0.33	0.129	(0.120)	0.023	0.106
88	7.33	0.37	0.142	(0.119)	0.026	0.117
89	7.42	0.37	0.142	(0.119)	0.026	0.117
90	7.50	0.37	0.142	(0.118)	0.026	0.117
91	7.58	0.40	0.155	(0.118)	0.028	0.127
92	7.67	0.40	0.155	(0.117)	0.028	0.127
93	7.75	0.40	0.155	(0.116)	0.028	0.127
94	7.83	0.43	0.168	(0.116)	0.030	0.138
95	7.92	0.43	0.168	(0.115)	0.030	0.138
96	8.00	0.43	0.168	(0.115)	0.030	0.138
97	8.08	0.50	0.194	(0.114)	0.035	0.159
98	8.17	0.50	0.194	(0.114)	0.035	0.159
99	8.25	0.50	0.194	(0.113)	0.035	0.159
100	8.33	0.50	0.194	(0.113)	0.035	0.159
101	8.42	0.50	0.194	(0.112)	0.035	0.159
102	8.50	0.50	0.194	(0.112)	0.035	0.159
103	8.58	0.53	0.207	(0.111)	0.037	0.170
104	8.67	0.53	0.207	(0.111)	0.037	0.170
105	8.75	0.53	0.207	(0.110)	0.037	0.170
106	8.83	0.57	0.220	(0.110)	0.040	0.180
107	8.92	0.57	0.220	(0.109)	0.040	0.180
108	9.00	0.57	0.220	(0.109)	0.040	0.180
109	9.08	0.63	0.246	(0.108)	0.044	0.202
110	9.17	0.63	0.246	(0.108)	0.044	0.202
111	9.25	0.63	0.246	(0.107)	0.044	0.202
112	9.33	0.67	0.259	(0.107)	0.047	0.212
113	9.42	0.67	0.259	(0.106)	0.047	0.212
114	9.50	0.67	0.259	(0.105)	0.047	0.212
115	9.58	0.70	0.272	(0.105)	0.049	0.223
116	9.67	0.70	0.272	(0.104)	0.049	0.223
117	9.75	0.70	0.272	(0.104)	0.049	0.223
118	9.83	0.73	0.285	(0.103)	0.051	0.233
119	9.92	0.73	0.285	(0.103)	0.051	0.233
120	10.00	0.73	0.285	(0.102)	0.051	0.233
121	10.08	0.50	0.194	(0.102)	0.035	0.159
122	10.17	0.50	0.194	(0.101)	0.035	0.159
123	10.25	0.50	0.194	(0.101)	0.035	0.159
124	10.33	0.50	0.194	(0.101)	0.035	0.159
125	10.42	0.50	0.194	(0.100)	0.035	0.159
126	10.50	0.50	0.194	(0.100)	0.035	0.159
127	10.58	0.67	0.259	(0.099)	0.047	0.212
128	10.67	0.67	0.259	(0.099)	0.047	0.212
129	10.75	0.67	0.259	(0.098)	0.047	0.212
130	10.83	0.67	0.259	(0.098)	0.047	0.212
131	10.92	0.67	0.259	(0.097)	0.047	0.212
132	11.00	0.67	0.259	(0.097)	0.047	0.212
133	11.08	0.63	0.246	(0.096)	0.044	0.202
134	11.17	0.63	0.246	(0.096)	0.044	0.202
135	11.25	0.63	0.246	(0.095)	0.044	0.202
136	11.33	0.63	0.246	(0.095)	0.044	0.202
137	11.42	0.63	0.246	(0.094)	0.044	0.202
138	11.50	0.63	0.246	(0.094)	0.044	0.202
139	11.58	0.57	0.220	(0.093)	0.040	0.180
140	11.67	0.57	0.220	(0.093)	0.040	0.180
141	11.75	0.57	0.220	(0.092)	0.040	0.180
142	11.83	0.60	0.233	(0.092)	0.042	0.191
143	11.92	0.60	0.233	(0.092)	0.042	0.191
144	12.00	0.60	0.233	(0.091)	0.042	0.191
145	12.08	0.83	0.323	(0.091)	0.058	0.265
146	12.17	0.83	0.323	(0.090)	0.058	0.265

ONSITEPOST2410.out

147	12.25	0.83	0.323	(0.090)	0.058	0.265
148	12.33	0.87	0.336	(0.089)	0.061	0.276
149	12.42	0.87	0.336	(0.089)	0.061	0.276
150	12.50	0.87	0.336	(0.088)	0.061	0.276
151	12.58	0.93	0.362	(0.088)	0.065	0.297
152	12.67	0.93	0.362	(0.087)	0.065	0.297
153	12.75	0.93	0.362	(0.087)	0.065	0.297
154	12.83	0.97	0.375	(0.087)	0.068	0.308
155	12.92	0.97	0.375	(0.086)	0.068	0.308
156	13.00	0.97	0.375	(0.086)	0.068	0.308
157	13.08	1.13	0.440	(0.085)	0.079	0.361
158	13.17	1.13	0.440	(0.085)	0.079	0.361
159	13.25	1.13	0.440	(0.084)	0.079	0.361
160	13.33	1.13	0.440	(0.084)	0.079	0.361
161	13.42	1.13	0.440	(0.084)	0.079	0.361
162	13.50	1.13	0.440	(0.083)	0.079	0.361
163	13.58	0.77	0.298	(0.083)	0.054	0.244
164	13.67	0.77	0.298	(0.082)	0.054	0.244
165	13.75	0.77	0.298	(0.082)	0.054	0.244
166	13.83	0.77	0.298	(0.081)	0.054	0.244
167	13.92	0.77	0.298	(0.081)	0.054	0.244
168	14.00	0.77	0.298	(0.081)	0.054	0.244
169	14.08	0.90	0.349	(0.080)	0.063	0.286
170	14.17	0.90	0.349	(0.080)	0.063	0.286
171	14.25	0.90	0.349	(0.079)	0.063	0.286
172	14.33	0.87	0.336	(0.079)	0.061	0.276
173	14.42	0.87	0.336	(0.079)	0.061	0.276
174	14.50	0.87	0.336	(0.078)	0.061	0.276
175	14.58	0.87	0.336	(0.078)	0.061	0.276
176	14.67	0.87	0.336	(0.077)	0.061	0.276
177	14.75	0.87	0.336	(0.077)	0.061	0.276
178	14.83	0.83	0.323	(0.077)	0.058	0.265
179	14.92	0.83	0.323	(0.076)	0.058	0.265
180	15.00	0.83	0.323	(0.076)	0.058	0.265
181	15.08	0.80	0.310	(0.075)	0.056	0.255
182	15.17	0.80	0.310	(0.075)	0.056	0.255
183	15.25	0.80	0.310	(0.075)	0.056	0.255
184	15.33	0.77	0.298	(0.074)	0.054	0.244
185	15.42	0.77	0.298	(0.074)	0.054	0.244
186	15.50	0.77	0.298	(0.073)	0.054	0.244
187	15.58	0.63	0.246	(0.073)	0.044	0.202
188	15.67	0.63	0.246	(0.073)	0.044	0.202
189	15.75	0.63	0.246	(0.072)	0.044	0.202
190	15.83	0.63	0.246	(0.072)	0.044	0.202
191	15.92	0.63	0.246	(0.072)	0.044	0.202
192	16.00	0.63	0.246	(0.071)	0.044	0.202
193	16.08	0.13	0.052	(0.071)	0.009	0.042
194	16.17	0.13	0.052	(0.071)	0.009	0.042
195	16.25	0.13	0.052	(0.070)	0.009	0.042
196	16.33	0.13	0.052	(0.070)	0.009	0.042
197	16.42	0.13	0.052	(0.069)	0.009	0.042
198	16.50	0.13	0.052	(0.069)	0.009	0.042
199	16.58	0.10	0.039	(0.069)	0.007	0.032
200	16.67	0.10	0.039	(0.068)	0.007	0.032
201	16.75	0.10	0.039	(0.068)	0.007	0.032
202	16.83	0.10	0.039	(0.068)	0.007	0.032
203	16.92	0.10	0.039	(0.067)	0.007	0.032
204	17.00	0.10	0.039	(0.067)	0.007	0.032
205	17.08	0.17	0.065	(0.067)	0.012	0.053
206	17.17	0.17	0.065	(0.066)	0.012	0.053
207	17.25	0.17	0.065	(0.066)	0.012	0.053
208	17.33	0.17	0.065	(0.066)	0.012	0.053
209	17.42	0.17	0.065	(0.065)	0.012	0.053
210	17.50	0.17	0.065	(0.065)	0.012	0.053
211	17.58	0.17	0.065	(0.065)	0.012	0.053
212	17.67	0.17	0.065	(0.064)	0.012	0.053
213	17.75	0.17	0.065	(0.064)	0.012	0.053
214	17.83	0.13	0.052	(0.064)	0.009	0.042
215	17.92	0.13	0.052	(0.063)	0.009	0.042
216	18.00	0.13	0.052	(0.063)	0.009	0.042
217	18.08	0.13	0.052	(0.063)	0.009	0.042
218	18.17	0.13	0.052	(0.063)	0.009	0.042
219	18.25	0.13	0.052	(0.062)	0.009	0.042
220	18.33	0.13	0.052	(0.062)	0.009	0.042
221	18.42	0.13	0.052	(0.062)	0.009	0.042
222	18.50	0.13	0.052	(0.061)	0.009	0.042
223	18.58	0.10	0.039	(0.061)	0.007	0.032
224	18.67	0.10	0.039	(0.061)	0.007	0.032
225	18.75	0.10	0.039	(0.060)	0.007	0.032
226	18.83	0.07	0.026	(0.060)	0.005	0.021
227	18.92	0.07	0.026	(0.060)	0.005	0.021
228	19.00	0.07	0.026	(0.060)	0.005	0.021
229	19.08	0.10	0.039	(0.059)	0.007	0.032
230	19.17	0.10	0.039	(0.059)	0.007	0.032

ONSITEPOST2410.out

231	19.25	0.10	0.039	(0.059)	0.007	0.032
232	19.33	0.13	0.052	(0.058)	0.009	0.042
233	19.42	0.13	0.052	(0.058)	0.009	0.042
234	19.50	0.13	0.052	(0.058)	0.009	0.042
235	19.58	0.10	0.039	(0.058)	0.007	0.032
236	19.67	0.10	0.039	(0.057)	0.007	0.032
237	19.75	0.10	0.039	(0.057)	0.007	0.032
238	19.83	0.07	0.026	(0.057)	0.005	0.021
239	19.92	0.07	0.026	(0.057)	0.005	0.021
240	20.00	0.07	0.026	(0.056)	0.005	0.021
241	20.08	0.10	0.039	(0.056)	0.007	0.032
242	20.17	0.10	0.039	(0.056)	0.007	0.032
243	20.25	0.10	0.039	(0.056)	0.007	0.032
244	20.33	0.10	0.039	(0.055)	0.007	0.032
245	20.42	0.10	0.039	(0.055)	0.007	0.032
246	20.50	0.10	0.039	(0.055)	0.007	0.032
247	20.58	0.10	0.039	(0.055)	0.007	0.032
248	20.67	0.10	0.039	(0.054)	0.007	0.032
249	20.75	0.10	0.039	(0.054)	0.007	0.032
250	20.83	0.07	0.026	(0.054)	0.005	0.021
251	20.92	0.07	0.026	(0.054)	0.005	0.021
252	21.00	0.07	0.026	(0.054)	0.005	0.021
253	21.08	0.10	0.039	(0.053)	0.007	0.032
254	21.17	0.10	0.039	(0.053)	0.007	0.032
255	21.25	0.10	0.039	(0.053)	0.007	0.032
256	21.33	0.07	0.026	(0.053)	0.005	0.021
257	21.42	0.07	0.026	(0.053)	0.005	0.021
258	21.50	0.07	0.026	(0.052)	0.005	0.021
259	21.58	0.10	0.039	(0.052)	0.007	0.032
260	21.67	0.10	0.039	(0.052)	0.007	0.032
261	21.75	0.10	0.039	(0.052)	0.007	0.032
262	21.83	0.07	0.026	(0.052)	0.005	0.021
263	21.92	0.07	0.026	(0.051)	0.005	0.021
264	22.00	0.07	0.026	(0.051)	0.005	0.021
265	22.08	0.10	0.039	(0.051)	0.007	0.032
266	22.17	0.10	0.039	(0.051)	0.007	0.032
267	22.25	0.10	0.039	(0.051)	0.007	0.032
268	22.33	0.07	0.026	(0.051)	0.005	0.021
269	22.42	0.07	0.026	(0.050)	0.005	0.021
270	22.50	0.07	0.026	(0.050)	0.005	0.021
271	22.58	0.07	0.026	(0.050)	0.005	0.021
272	22.67	0.07	0.026	(0.050)	0.005	0.021
273	22.75	0.07	0.026	(0.050)	0.005	0.021
274	22.83	0.07	0.026	(0.050)	0.005	0.021
275	22.92	0.07	0.026	(0.050)	0.005	0.021
276	23.00	0.07	0.026	(0.049)	0.005	0.021
277	23.08	0.07	0.026	(0.049)	0.005	0.021
278	23.17	0.07	0.026	(0.049)	0.005	0.021
279	23.25	0.07	0.026	(0.049)	0.005	0.021
280	23.33	0.07	0.026	(0.049)	0.005	0.021
281	23.42	0.07	0.026	(0.049)	0.005	0.021
282	23.50	0.07	0.026	(0.049)	0.005	0.021
283	23.58	0.07	0.026	(0.049)	0.005	0.021
284	23.67	0.07	0.026	(0.049)	0.005	0.021
285	23.75	0.07	0.026	(0.049)	0.005	0.021
286	23.83	0.07	0.026	(0.049)	0.005	0.021
287	23.92	0.07	0.026	(0.049)	0.005	0.021
288	24.00	0.07	0.026	(0.049)	0.005	0.021

(Loss Rate Not Used)

Sum = 100.0 Sum = 31.8

Flood volume = Effective rainfall 2.65(In)
 times area 9.5(Ac.)/[(In)/(Ft.)] = 2.1(Ac.Ft)
 Total soil loss = 0.58(In)
 Total soil loss = 0.461(Ac.Ft)
 Total rainfall = 3.23(In)
 Flood volume = 91454.7 Cubic Feet
 Total soil loss = 20075.4 Cubic Feet

 Peak flow rate of this hydrograph = 3.455(CFS)

+++++

24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0005	0.07	Q				
0+10	0.0016	0.16	Q				
0+15	0.0029	0.19	Q				
0+20	0.0045	0.23	Q				
0+25	0.0065	0.28	VQ				

0+30	0.0085	0.30	VQ
0+35	0.0106	0.30	VQ
0+40	0.0127	0.30	VQ
0+45	0.0148	0.30	VQ
0+50	0.0171	0.34	VQ
0+55	0.0198	0.39	VQ
1+ 0	0.0225	0.40	VQ
1+ 5	0.0251	0.37	VQ
1+10	0.0273	0.32	VQ
1+15	0.0294	0.31	VQ
1+20	0.0316	0.31	VQ
1+25	0.0337	0.31	VQ
1+30	0.0358	0.30	VQ
1+35	0.0379	0.30	VQ
1+40	0.0400	0.30	VQ
1+45	0.0421	0.30	VQ
1+50	0.0444	0.34	VQ
1+55	0.0471	0.39	VQ
2+ 0	0.0498	0.40	VQ
2+ 5	0.0526	0.40	Q
2+10	0.0554	0.41	Q
2+15	0.0582	0.41	Q
2+20	0.0610	0.41	Q
2+25	0.0638	0.41	Q
2+30	0.0666	0.41	Q
2+35	0.0696	0.44	Q
2+40	0.0730	0.49	Q
2+45	0.0764	0.50	Q
2+50	0.0799	0.50	VQ
2+55	0.0834	0.51	VQ
3+ 0	0.0869	0.51	VQ
3+ 5	0.0904	0.51	VQ
3+10	0.0939	0.51	VQ
3+15	0.0974	0.51	VQ
3+20	0.1009	0.51	VQ
3+25	0.1044	0.51	VQ
3+30	0.1079	0.51	Q
3+35	0.1114	0.51	Q
3+40	0.1149	0.51	Q
3+45	0.1184	0.51	Q
3+50	0.1221	0.54	Q
3+55	0.1262	0.59	Q
4+ 0	0.1303	0.60	Q
4+ 5	0.1345	0.61	Q
4+10	0.1387	0.61	Q
4+15	0.1429	0.61	Q
4+20	0.1474	0.64	Q
4+25	0.1521	0.69	Q
4+30	0.1570	0.70	Q
4+35	0.1618	0.71	QV
4+40	0.1667	0.71	QV
4+45	0.1716	0.71	QV
4+50	0.1768	0.75	QV
4+55	0.1822	0.79	Q
5+ 0	0.1878	0.80	Q
5+ 5	0.1929	0.74	QV
5+10	0.1973	0.65	QV
5+15	0.2016	0.63	QV
5+20	0.2061	0.65	QV
5+25	0.2109	0.69	Q Q V
5+30	0.2158	0.70	Q Q V
5+35	0.2209	0.74	Q V V
5+40	0.2263	0.79	QV
5+45	0.2319	0.80	QV
5+50	0.2374	0.81	QV
5+55	0.2430	0.81	QV
6+ 0	0.2486	0.81	QV
6+ 5	0.2545	0.85	QV
6+10	0.2606	0.90	QV
6+15	0.2669	0.91	Q Q V
6+20	0.2732	0.91	Q Q V
6+25	0.2795	0.91	Q Q V
6+30	0.2858	0.91	Q Q V
6+35	0.2923	0.95	Q Q V
6+40	0.2992	1.00	Q V
6+45	0.3061	1.01	QV
6+50	0.3131	1.01	QV
6+55	0.3201	1.02	Q V
7+ 0	0.3271	1.02	Q V
7+ 5	0.3341	1.02	Q V
7+10	0.3411	1.02	Q V
7+15	0.3481	1.02	Q V
7+20	0.3553	1.05	Q V
7+25	0.3629	1.10	Q V

14+30	1.5948	2.65	Q	V
14+35	1.6131	2.65	Q	V
14+40	1.6313	2.64	Q	V
14+45	1.6495	2.64	Q	V
14+50	1.6674	2.61	Q	V
14+55	1.6850	2.56	Q	V
15+ 0	1.7026	2.55	Q	V
15+ 5	1.7199	2.51	Q	V
15+10	1.7368	2.46	Q	V
15+15	1.7537	2.45	Q	V
15+20	1.7702	2.41	Q	V
15+25	1.7865	2.36	Q	V
15+30	1.8026	2.35	Q	V
15+35	1.8178	2.20	Q	V
15+40	1.8316	2.01	Q	V
15+45	1.8451	1.96	Q	V
15+50	1.8585	1.94	Q	V
15+55	1.8718	1.93	Q	V
16+ 0	1.8851	1.93	Q	V
16+ 5	1.8948	1.40	Q	V
16+10	1.8996	0.69	Q	V
16+15	1.9032	0.53	Q	V
16+20	1.9064	0.46	Q	V
16+25	1.9093	0.42	Q	V
16+30	1.9121	0.41	Q	V
16+35	1.9146	0.37	Q	V
16+40	1.9168	0.32	Q	V
16+45	1.9190	0.31	Q	V
16+50	1.9211	0.31	Q	V
16+55	1.9232	0.31	Q	V
17+ 0	1.9253	0.30	Q	V
17+ 5	1.9279	0.38	Q	V
17+10	1.9311	0.47	Q	V
17+15	1.9345	0.49	Q	V
17+20	1.9380	0.50	Q	V
17+25	1.9415	0.51	Q	V
17+30	1.9450	0.51	Q	V
17+35	1.9485	0.51	Q	V
17+40	1.9520	0.51	Q	V
17+45	1.9555	0.51	Q	V
17+50	1.9587	0.47	Q	V
17+55	1.9617	0.43	Q	V
18+ 0	1.9645	0.41	Q	V
18+ 5	1.9673	0.41	Q	V
18+10	1.9701	0.41	Q	V
18+15	1.9729	0.41	Q	V
18+20	1.9757	0.41	Q	V
18+25	1.9785	0.41	Q	V
18+30	1.9813	0.41	Q	V
18+35	1.9839	0.37	Q	V
18+40	1.9861	0.32	Q	V
18+45	1.9883	0.31	Q	V
18+50	1.9902	0.27	Q	V
18+55	1.9917	0.22	Q	V
19+ 0	1.9932	0.21	Q	V
19+ 5	1.9948	0.24	Q	V
19+10	1.9968	0.29	Q	V
19+15	1.9988	0.30	Q	V
19+20	2.0012	0.34	Q	V
19+25	2.0038	0.39	Q	V
19+30	2.0066	0.40	Q	V
19+35	2.0091	0.37	Q	V
19+40	2.0113	0.32	Q	V
19+45	2.0135	0.31	Q	V
19+50	2.0154	0.27	Q	V
19+55	2.0169	0.22	Q	V
20+ 0	2.0183	0.21	Q	V
20+ 5	2.0200	0.24	Q	V
20+10	2.0220	0.29	Q	V
20+15	2.0240	0.30	Q	V
20+20	2.0261	0.30	Q	V
20+25	2.0282	0.30	Q	V
20+30	2.0303	0.30	Q	V
20+35	2.0324	0.30	Q	V
20+40	2.0345	0.30	Q	V
20+45	2.0366	0.30	Q	V
20+50	2.0385	0.27	Q	V
20+55	2.0400	0.22	Q	V
21+ 0	2.0414	0.21	Q	V
21+ 5	2.0431	0.24	Q	V
21+10	2.0451	0.29	Q	V
21+15	2.0471	0.30	Q	V
21+20	2.0490	0.27	Q	V
21+25	2.0505	0.22	Q	V

ONSITEPOST2410.out

21+30	2.0519	0.21	Q			V
21+35	2.0536	0.24	Q			V
21+40	2.0556	0.29	Q			V
21+45	2.0576	0.30	Q			V
21+50	2.0595	0.27	Q			V
21+55	2.0610	0.22	Q			V
22+ 0	2.0624	0.21	Q			V
22+ 5	2.0641	0.24	Q			V
22+10	2.0661	0.29	Q			V
22+15	2.0681	0.30	Q			V
22+20	2.0700	0.27	Q			V
22+25	2.0715	0.22	Q			V
22+30	2.0729	0.21	Q			V
22+35	2.0744	0.21	Q			V
22+40	2.0758	0.20	Q			V
22+45	2.0772	0.20	Q			V
22+50	2.0786	0.20	Q			V
22+55	2.0800	0.20	Q			V
23+ 0	2.0814	0.20	Q			V
23+ 5	2.0828	0.20	Q			V
23+10	2.0842	0.20	Q			V
23+15	2.0856	0.20	Q			V
23+20	2.0870	0.20	Q			V
23+25	2.0884	0.20	Q			V
23+30	2.0898	0.20	Q			V
23+35	2.0912	0.20	Q			V
23+40	2.0926	0.20	Q			V
23+45	2.0940	0.20	Q			V
23+50	2.0954	0.20	Q			V
23+55	2.0968	0.20	Q			V
24+ 0	2.0982	0.20	Q			V
24+ 5	2.0991	0.13	Q			V
24+10	2.0993	0.04	Q			V
24+15	2.0995	0.02	Q			V
24+20	2.0995	0.01	Q			V
24+25	2.0995	0.00	Q			V

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 11/11/20 File: ONSITEPOST24100.out

+++++

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

Program License Serial Number 4010

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

English Units used in output format

19-0126 DUKE HARVILL
ONSITE UNIT HYDROGRAPH ANALYSIS
PROPOSED CONDITION H-12 TRIBUTARY, 100-YEAR 24-HOUR
FN: ONSITEPOST24100.OUT- TSW

Drainage Area = 9.50(Ac.) = 0.015 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.50(Ac.) = 0.015 Sq. Mi.
Length along longest watercourse = 1690.00(Ft.)
Length along longest watercourse measured to centroid = 714.00(Ft.)
Length along longest watercourse = 0.320 Mi.
Length along longest watercourse measured to centroid = 0.135 Mi.
Difference in elevation = 13.80(Ft.)
Slope along watercourse = 43.1148 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.20 Min.
25% of lag time = 0.80 Min.
40% of lag time = 1.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
9.50 2.00 19.00

100 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
9.50 5.00 47.50

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 5.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.000(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.500 56.00 0.900
Total Area Entered = 9.50(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-2 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
56.0 56.0 0.511 0.900 0.097 1.000 0.097
Sum (F) = 0.097

Area averaged mean soil loss (F) (In/Hr) = 0.097
Minimum soil loss rate ((In/Hr)) = 0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.180

ONSITEPOST24100.out
VALLEY S-Curve

Unit Hydrograph Data				
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	156.061	34.610	3.314
2	0.167	312.122	46.562	4.458
3	0.250	468.183	10.840	1.038
4	0.333	624.245	4.700	0.450
5	0.417	780.306	2.302	0.220
6	0.500	936.367	0.986	0.094
			Sum = 100.000	Sum= 9.574

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
			Max	Low	
1	0.08	0.040	(0.172)	0.007	0.033
2	0.17	0.040	(0.171)	0.007	0.033
3	0.25	0.040	(0.171)	0.007	0.033
4	0.33	0.060	(0.170)	0.011	0.049
5	0.42	0.060	(0.169)	0.011	0.049
6	0.50	0.060	(0.169)	0.011	0.049
7	0.58	0.060	(0.168)	0.011	0.049
8	0.67	0.060	(0.167)	0.011	0.049
9	0.75	0.060	(0.167)	0.011	0.049
10	0.83	0.080	(0.166)	0.014	0.066
11	0.92	0.080	(0.165)	0.014	0.066
12	1.00	0.080	(0.165)	0.014	0.066
13	1.08	0.060	(0.164)	0.011	0.049
14	1.17	0.060	(0.163)	0.011	0.049
15	1.25	0.060	(0.163)	0.011	0.049
16	1.33	0.060	(0.162)	0.011	0.049
17	1.42	0.060	(0.162)	0.011	0.049
18	1.50	0.060	(0.161)	0.011	0.049
19	1.58	0.060	(0.160)	0.011	0.049
20	1.67	0.060	(0.160)	0.011	0.049
21	1.75	0.060	(0.159)	0.011	0.049
22	1.83	0.080	(0.158)	0.014	0.066
23	1.92	0.080	(0.158)	0.014	0.066
24	2.00	0.080	(0.157)	0.014	0.066
25	2.08	0.080	(0.156)	0.014	0.066
26	2.17	0.080	(0.156)	0.014	0.066
27	2.25	0.080	(0.155)	0.014	0.066
28	2.33	0.080	(0.155)	0.014	0.066
29	2.42	0.080	(0.154)	0.014	0.066
30	2.50	0.080	(0.153)	0.014	0.066
31	2.58	0.100	(0.153)	0.018	0.082
32	2.67	0.100	(0.152)	0.018	0.082
33	2.75	0.100	(0.151)	0.018	0.082
34	2.83	0.100	(0.151)	0.018	0.082
35	2.92	0.100	(0.150)	0.018	0.082
36	3.00	0.100	(0.150)	0.018	0.082
37	3.08	0.100	(0.149)	0.018	0.082
38	3.17	0.100	(0.148)	0.018	0.082
39	3.25	0.100	(0.148)	0.018	0.082
40	3.33	0.100	(0.147)	0.018	0.082
41	3.42	0.100	(0.146)	0.018	0.082
42	3.50	0.100	(0.146)	0.018	0.082
43	3.58	0.100	(0.145)	0.018	0.082
44	3.67	0.100	(0.145)	0.018	0.082
45	3.75	0.100	(0.144)	0.018	0.082
46	3.83	0.120	(0.143)	0.022	0.098
47	3.92	0.120	(0.143)	0.022	0.098
48	4.00	0.120	(0.142)	0.022	0.098
49	4.08	0.120	(0.142)	0.022	0.098
50	4.17	0.120	(0.141)	0.022	0.098
51	4.25	0.120	(0.140)	0.022	0.098
52	4.33	0.140	(0.140)	0.025	0.115
53	4.42	0.140	(0.139)	0.025	0.115
54	4.50	0.140	(0.139)	0.025	0.115
55	4.58	0.140	(0.138)	0.025	0.115
56	4.67	0.140	(0.137)	0.025	0.115
57	4.75	0.140	(0.137)	0.025	0.115
58	4.83	0.160	(0.136)	0.029	0.131
59	4.92	0.160	(0.136)	0.029	0.131
60	5.00	0.160	(0.135)	0.029	0.131
61	5.08	0.120	(0.134)	0.022	0.098
62	5.17	0.120	(0.134)	0.022	0.098

ONSITEPOST24100.out

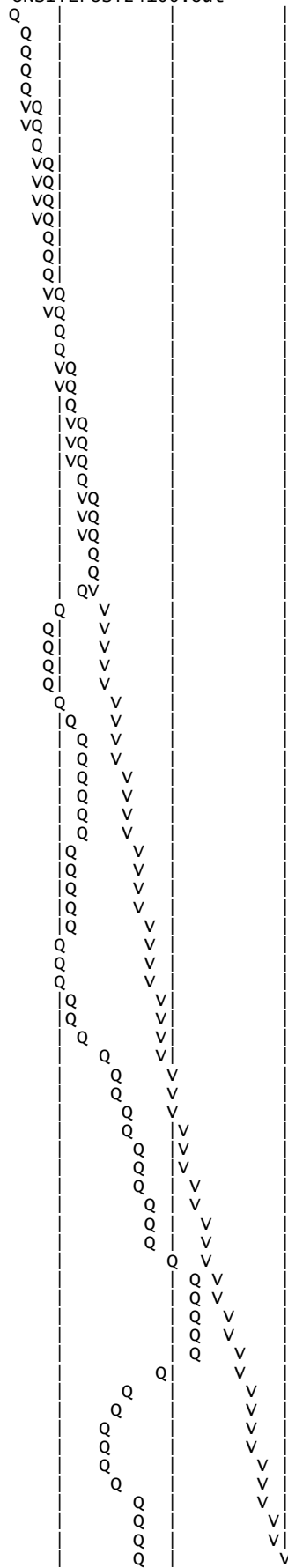
63	5.25	0.20	0.120	(0.133)	0.022	0.098
64	5.33	0.23	0.140	(0.133)	0.025	0.115
65	5.42	0.23	0.140	(0.132)	0.025	0.115
66	5.50	0.23	0.140	(0.132)	0.025	0.115
67	5.58	0.27	0.160	(0.131)	0.029	0.131
68	5.67	0.27	0.160	(0.130)	0.029	0.131
69	5.75	0.27	0.160	(0.130)	0.029	0.131
70	5.83	0.27	0.160	(0.129)	0.029	0.131
71	5.92	0.27	0.160	(0.129)	0.029	0.131
72	6.00	0.27	0.160	(0.128)	0.029	0.131
73	6.08	0.30	0.180	(0.128)	0.032	0.148
74	6.17	0.30	0.180	(0.127)	0.032	0.148
75	6.25	0.30	0.180	(0.126)	0.032	0.148
76	6.33	0.30	0.180	(0.126)	0.032	0.148
77	6.42	0.30	0.180	(0.125)	0.032	0.148
78	6.50	0.30	0.180	(0.125)	0.032	0.148
79	6.58	0.33	0.200	(0.124)	0.036	0.164
80	6.67	0.33	0.200	(0.124)	0.036	0.164
81	6.75	0.33	0.200	(0.123)	0.036	0.164
82	6.83	0.33	0.200	(0.122)	0.036	0.164
83	6.92	0.33	0.200	(0.122)	0.036	0.164
84	7.00	0.33	0.200	(0.121)	0.036	0.164
85	7.08	0.33	0.200	(0.121)	0.036	0.164
86	7.17	0.33	0.200	(0.120)	0.036	0.164
87	7.25	0.33	0.200	(0.120)	0.036	0.164
88	7.33	0.37	0.220	(0.119)	0.040	0.180
89	7.42	0.37	0.220	(0.119)	0.040	0.180
90	7.50	0.37	0.220	(0.118)	0.040	0.180
91	7.58	0.40	0.240	(0.118)	0.043	0.197
92	7.67	0.40	0.240	(0.117)	0.043	0.197
93	7.75	0.40	0.240	(0.116)	0.043	0.197
94	7.83	0.43	0.260	(0.116)	0.047	0.213
95	7.92	0.43	0.260	(0.115)	0.047	0.213
96	8.00	0.43	0.260	(0.115)	0.047	0.213
97	8.08	0.50	0.300	(0.114)	0.054	0.246
98	8.17	0.50	0.300	(0.114)	0.054	0.246
99	8.25	0.50	0.300	(0.113)	0.054	0.246
100	8.33	0.50	0.300	(0.113)	0.054	0.246
101	8.42	0.50	0.300	(0.112)	0.054	0.246
102	8.50	0.50	0.300	(0.112)	0.054	0.246
103	8.58	0.53	0.320	(0.111)	0.058	0.262
104	8.67	0.53	0.320	(0.111)	0.058	0.262
105	8.75	0.53	0.320	(0.110)	0.058	0.262
106	8.83	0.57	0.340	(0.110)	0.061	0.279
107	8.92	0.57	0.340	(0.109)	0.061	0.279
108	9.00	0.57	0.340	(0.109)	0.061	0.279
109	9.08	0.63	0.380	(0.108)	0.068	0.312
110	9.17	0.63	0.380	(0.108)	0.068	0.312
111	9.25	0.63	0.380	(0.107)	0.068	0.312
112	9.33	0.67	0.400	(0.107)	0.072	0.328
113	9.42	0.67	0.400	(0.106)	0.072	0.328
114	9.50	0.67	0.400	(0.105)	0.072	0.328
115	9.58	0.70	0.420	(0.105)	0.076	0.344
116	9.67	0.70	0.420	(0.104)	0.076	0.344
117	9.75	0.70	0.420	(0.104)	0.076	0.344
118	9.83	0.73	0.440	(0.103)	0.079	0.361
119	9.92	0.73	0.440	(0.103)	0.079	0.361
120	10.00	0.73	0.440	(0.102)	0.079	0.361
121	10.08	0.50	0.300	(0.102)	0.054	0.246
122	10.17	0.50	0.300	(0.101)	0.054	0.246
123	10.25	0.50	0.300	(0.101)	0.054	0.246
124	10.33	0.50	0.300	(0.101)	0.054	0.246
125	10.42	0.50	0.300	(0.100)	0.054	0.246
126	10.50	0.50	0.300	(0.100)	0.054	0.246
127	10.58	0.67	0.400	(0.099)	0.072	0.328
128	10.67	0.67	0.400	(0.099)	0.072	0.328
129	10.75	0.67	0.400	(0.098)	0.072	0.328
130	10.83	0.67	0.400	(0.098)	0.072	0.328
131	10.92	0.67	0.400	(0.097)	0.072	0.328
132	11.00	0.67	0.400	(0.097)	0.072	0.328
133	11.08	0.63	0.380	(0.096)	0.068	0.312
134	11.17	0.63	0.380	(0.096)	0.068	0.312
135	11.25	0.63	0.380	(0.095)	0.068	0.312
136	11.33	0.63	0.380	(0.095)	0.068	0.312
137	11.42	0.63	0.380	(0.094)	0.068	0.312
138	11.50	0.63	0.380	(0.094)	0.068	0.312
139	11.58	0.57	0.340	(0.093)	0.061	0.279
140	11.67	0.57	0.340	(0.093)	0.061	0.279
141	11.75	0.57	0.340	(0.092)	0.061	0.279
142	11.83	0.60	0.360	(0.092)	0.065	0.295
143	11.92	0.60	0.360	(0.092)	0.065	0.295
144	12.00	0.60	0.360	(0.091)	0.065	0.295
145	12.08	0.83	0.500	(0.091)	0.090	0.410
146	12.17	0.83	0.500	(0.090)	0.090	0.410

ONSITEPOST24100.out

147	12.25	0.83	0.500	0.090	(0.090)	0.410
148	12.33	0.87	0.520	0.089	(0.094)	0.431
149	12.42	0.87	0.520	0.089	(0.094)	0.431
150	12.50	0.87	0.520	0.088	(0.094)	0.432
151	12.58	0.93	0.560	0.088	(0.101)	0.472
152	12.67	0.93	0.560	0.087	(0.101)	0.473
153	12.75	0.93	0.560	0.087	(0.101)	0.473
154	12.83	0.97	0.580	0.087	(0.104)	0.493
155	12.92	0.97	0.580	0.086	(0.104)	0.494
156	13.00	0.97	0.580	0.086	(0.104)	0.494
157	13.08	1.13	0.680	0.085	(0.122)	0.595
158	13.17	1.13	0.680	0.085	(0.122)	0.595
159	13.25	1.13	0.680	0.084	(0.122)	0.596
160	13.33	1.13	0.680	0.084	(0.122)	0.596
161	13.42	1.13	0.680	0.084	(0.122)	0.596
162	13.50	1.13	0.680	0.083	(0.122)	0.597
163	13.58	0.77	0.460	0.083	(0.083)	0.377
164	13.67	0.77	0.460	0.082	(0.083)	0.378
165	13.75	0.77	0.460	0.082	(0.083)	0.378
166	13.83	0.77	0.460	0.081	(0.083)	0.379
167	13.92	0.77	0.460	0.081	(0.083)	0.379
168	14.00	0.77	0.460	0.081	(0.083)	0.379
169	14.08	0.90	0.540	0.080	(0.097)	0.460
170	14.17	0.90	0.540	0.080	(0.097)	0.460
171	14.25	0.90	0.540	0.079	(0.097)	0.461
172	14.33	0.87	0.520	0.079	(0.094)	0.441
173	14.42	0.87	0.520	0.079	(0.094)	0.441
174	14.50	0.87	0.520	0.078	(0.094)	0.442
175	14.58	0.87	0.520	0.078	(0.094)	0.442
176	14.67	0.87	0.520	0.077	(0.094)	0.443
177	14.75	0.87	0.520	0.077	(0.094)	0.443
178	14.83	0.83	0.500	0.077	(0.090)	0.423
179	14.92	0.83	0.500	0.076	(0.090)	0.424
180	15.00	0.83	0.500	0.076	(0.090)	0.424
181	15.08	0.80	0.480	0.075	(0.086)	0.405
182	15.17	0.80	0.480	0.075	(0.086)	0.405
183	15.25	0.80	0.480	0.075	(0.086)	0.405
184	15.33	0.77	0.460	0.074	(0.083)	0.386
185	15.42	0.77	0.460	0.074	(0.083)	0.386
186	15.50	0.77	0.460	0.073	(0.083)	0.386
187	15.58	0.63	0.380	(0.073)	0.068	0.312
188	15.67	0.63	0.380	(0.073)	0.068	0.312
189	15.75	0.63	0.380	(0.072)	0.068	0.312
190	15.83	0.63	0.380	(0.072)	0.068	0.312
191	15.92	0.63	0.380	(0.072)	0.068	0.312
192	16.00	0.63	0.380	(0.071)	0.068	0.312
193	16.08	0.13	0.080	(0.071)	0.014	0.066
194	16.17	0.13	0.080	(0.071)	0.014	0.066
195	16.25	0.13	0.080	(0.070)	0.014	0.066
196	16.33	0.13	0.080	(0.070)	0.014	0.066
197	16.42	0.13	0.080	(0.069)	0.014	0.066
198	16.50	0.13	0.080	(0.069)	0.014	0.066
199	16.58	0.10	0.060	(0.069)	0.011	0.049
200	16.67	0.10	0.060	(0.068)	0.011	0.049
201	16.75	0.10	0.060	(0.068)	0.011	0.049
202	16.83	0.10	0.060	(0.068)	0.011	0.049
203	16.92	0.10	0.060	(0.067)	0.011	0.049
204	17.00	0.10	0.060	(0.067)	0.011	0.049
205	17.08	0.17	0.100	(0.067)	0.018	0.082
206	17.17	0.17	0.100	(0.066)	0.018	0.082
207	17.25	0.17	0.100	(0.066)	0.018	0.082
208	17.33	0.17	0.100	(0.066)	0.018	0.082
209	17.42	0.17	0.100	(0.065)	0.018	0.082
210	17.50	0.17	0.100	(0.065)	0.018	0.082
211	17.58	0.17	0.100	(0.065)	0.018	0.082
212	17.67	0.17	0.100	(0.064)	0.018	0.082
213	17.75	0.17	0.100	(0.064)	0.018	0.082
214	17.83	0.13	0.080	(0.064)	0.014	0.066
215	17.92	0.13	0.080	(0.063)	0.014	0.066
216	18.00	0.13	0.080	(0.063)	0.014	0.066
217	18.08	0.13	0.080	(0.063)	0.014	0.066
218	18.17	0.13	0.080	(0.063)	0.014	0.066
219	18.25	0.13	0.080	(0.062)	0.014	0.066
220	18.33	0.13	0.080	(0.062)	0.014	0.066
221	18.42	0.13	0.080	(0.062)	0.014	0.066
222	18.50	0.13	0.080	(0.061)	0.014	0.066
223	18.58	0.10	0.060	(0.061)	0.011	0.049
224	18.67	0.10	0.060	(0.061)	0.011	0.049
225	18.75	0.10	0.060	(0.060)	0.011	0.049
226	18.83	0.07	0.040	(0.060)	0.007	0.033
227	18.92	0.07	0.040	(0.060)	0.007	0.033
228	19.00	0.07	0.040	(0.060)	0.007	0.033
229	19.08	0.10	0.060	(0.059)	0.011	0.049
230	19.17	0.10	0.060	(0.059)	0.011	0.049

0+30	0.0131	0.46	VQ
0+35	0.0164	0.47	VQ
0+40	0.0196	0.47	VQ
0+45	0.0228	0.47	VQ
0+50	0.0265	0.53	V Q
0+55	0.0306	0.60	V Q
1+ 0	0.0348	0.62	V Q
1+ 5	0.0387	0.57	V Q
1+10	0.0422	0.50	VQ
1+15	0.0455	0.48	VQ
1+20	0.0488	0.48	VQ
1+25	0.0520	0.47	VQ
1+30	0.0553	0.47	VQ
1+35	0.0585	0.47	VQ
1+40	0.0618	0.47	VQ
1+45	0.0650	0.47	VQ
1+50	0.0686	0.53	V Q
1+55	0.0728	0.60	V Q
2+ 0	0.0770	0.62	V Q
2+ 5	0.0813	0.62	V Q
2+10	0.0856	0.63	VQ
2+15	0.0900	0.63	VQ
2+20	0.0943	0.63	VQ
2+25	0.0986	0.63	VQ
2+30	0.1029	0.63	VQ
2+35	0.1076	0.68	VQ
2+40	0.1128	0.76	V Q
2+45	0.1182	0.77	V Q
2+50	0.1235	0.78	V Q
2+55	0.1289	0.78	V Q
3+ 0	0.1343	0.79	V Q
3+ 5	0.1398	0.79	V Q
3+10	0.1452	0.79	V Q
3+15	0.1506	0.79	V Q
3+20	0.1560	0.79	V Q
3+25	0.1614	0.79	V Q
3+30	0.1668	0.79	VQ
3+35	0.1722	0.79	VQ
3+40	0.1776	0.79	VQ
3+45	0.1830	0.79	VQ
3+50	0.1888	0.84	VQ
3+55	0.1951	0.91	VQ
4+ 0	0.2015	0.93	VQ
4+ 5	0.2080	0.94	VQ
4+10	0.2144	0.94	VQ
4+15	0.2209	0.94	VQ
4+20	0.2278	1.00	VQ
4+25	0.2352	1.07	V Q
4+30	0.2427	1.09	V Q
4+35	0.2502	1.09	VQ
4+40	0.2578	1.10	VQ
4+45	0.2653	1.10	VQ
4+50	0.2733	1.15	VQ
4+55	0.2817	1.23	VQ
5+ 0	0.2903	1.24	VQ
5+ 5	0.2982	1.14	VQ
5+10	0.3051	1.00	VQ
5+15	0.3117	0.97	Q
5+20	0.3187	1.01	VQ
5+25	0.3261	1.07	VQ
5+30	0.3335	1.09	Q
5+35	0.3415	1.15	Q
5+40	0.3499	1.23	Q
5+45	0.3585	1.24	Q
5+50	0.3671	1.25	VQ
5+55	0.3757	1.26	VQ
6+ 0	0.3844	1.26	VQ
6+ 5	0.3934	1.31	VQ
6+10	0.4030	1.38	VQ
6+15	0.4126	1.40	Q
6+20	0.4223	1.41	Q
6+25	0.4320	1.41	Q
6+30	0.4418	1.41	Q
6+35	0.4519	1.47	Q
6+40	0.4625	1.54	VQ
6+45	0.4732	1.56	VQ
6+50	0.4840	1.57	VQ
6+55	0.4948	1.57	Q
7+ 0	0.5056	1.57	Q
7+ 5	0.5165	1.57	Q
7+10	0.5273	1.57	Q
7+15	0.5381	1.57	Q
7+20	0.5493	1.63	Q
7+25	0.5610	1.70	Q

7+30	0.5728	1.72
7+35	0.5850	1.78
7+40	0.5978	1.85
7+45	0.6107	1.87
7+50	0.6240	1.93
7+55	0.6379	2.01
8+ 0	0.6519	2.03
8+ 5	0.6666	2.15
8+10	0.6824	2.30
8+15	0.6985	2.33
8+20	0.7147	2.35
8+25	0.7309	2.35
8+30	0.7471	2.36
8+35	0.7637	2.41
8+40	0.7808	2.48
8+45	0.7980	2.50
8+50	0.8157	2.56
8+55	0.8339	2.64
9+ 0	0.8522	2.66
9+ 5	0.8713	2.77
9+10	0.8914	2.92
9+15	0.9118	2.96
9+20	0.9327	3.03
9+25	0.9541	3.11
9+30	0.9756	3.13
9+35	0.9976	3.19
9+40	1.0201	3.27
9+45	1.0427	3.29
9+50	1.0658	3.35
9+55	1.0894	3.42
10+ 0	1.1131	3.44
10+ 5	1.1342	3.07
10+10	1.1519	2.56
10+15	1.1687	2.44
10+20	1.1852	2.39
10+25	1.2015	2.37
10+30	1.2177	2.36
10+35	1.2358	2.63
10+40	1.2565	2.99
10+45	1.2777	3.08
10+50	1.2991	3.12
10+55	1.3207	3.13
11+ 0	1.3423	3.14
11+ 5	1.3636	3.09
11+10	1.3844	3.01
11+15	1.4050	3.00
11+20	1.4256	2.99
11+25	1.4462	2.99
11+30	1.4667	2.98
11+35	1.4865	2.88
11+40	1.5053	2.73
11+45	1.5239	2.70
11+50	1.5427	2.74
11+55	1.5620	2.80
12+ 0	1.5814	2.82
12+ 5	1.6035	3.20
12+10	1.6291	3.72
12+15	1.6555	3.84
12+20	1.6828	3.96
12+25	1.7109	4.08
12+30	1.7393	4.12
12+35	1.7686	4.26
12+40	1.7993	4.45
12+45	1.8302	4.50
12+50	1.8618	4.58
12+55	1.8941	4.69
13+ 0	1.9265	4.72
13+ 5	1.9614	5.06
13+10	1.9994	5.51
13+15	2.0381	5.62
13+20	2.0772	5.67
13+25	2.1164	5.70
13+30	2.1558	5.71
13+35	2.1901	4.99
13+40	2.2178	4.01
13+45	2.2438	3.79
13+50	2.2693	3.69
13+55	2.2944	3.65
14+ 0	2.3194	3.63
14+ 5	2.3462	3.90
14+10	2.3756	4.26
14+15	2.4055	4.35
14+20	2.4353	4.32
14+25	2.4646	4.25



14+30	2.4938	4.24				V
14+35	2.5230	4.24				V
14+40	2.5522	4.24				V
14+45	2.5814	4.24				V
14+50	2.6102	4.18				V
14+55	2.6383	4.09				V
15+ 0	2.6664	4.08				V
15+ 5	2.6940	4.00				V
15+10	2.7209	3.91				V
15+15	2.7478	3.89				V
15+20	2.7741	3.82				V
15+25	2.7998	3.73				V
15+30	2.8254	3.71				V
15+35	2.8492	3.46				V
15+40	2.8707	3.12				V
15+45	2.8916	3.04				V
15+50	2.9124	3.01				V
15+55	2.9330	2.99				V
16+ 0	2.9535	2.98				V
16+ 5	2.9685	2.17				V
16+10	2.9758	1.07				V
16+15	2.9815	0.82				V
16+20	2.9863	0.71				V
16+25	2.9908	0.65				V
16+30	2.9951	0.63				V
16+35	2.9991	0.57				V
16+40	3.0025	0.50				V
16+45	3.0059	0.48				V
16+50	3.0092	0.48				V
16+55	3.0124	0.47				V
17+ 0	3.0157	0.47				V
17+ 5	3.0197	0.58				V
17+10	3.0247	0.73				V
17+15	3.0299	0.76				V
17+20	3.0352	0.78				V
17+25	3.0406	0.78				V
17+30	3.0460	0.79				V
17+35	3.0514	0.79				V
17+40	3.0569	0.79				V
17+45	3.0623	0.79				V
17+50	3.0673	0.73				V
17+55	3.0718	0.66				V
18+ 0	3.0762	0.64				V
18+ 5	3.0806	0.63				V
18+10	3.0849	0.63				V
18+15	3.0893	0.63				V
18+20	3.0936	0.63				V
18+25	3.0979	0.63				V
18+30	3.1023	0.63				V
18+35	3.1062	0.57				V
18+40	3.1097	0.50				V
18+45	3.1130	0.48				V
18+50	3.1159	0.42				V
18+55	3.1183	0.35				V
19+ 0	3.1205	0.33				V
19+ 5	3.1231	0.37				V
19+10	3.1262	0.44				V
19+15	3.1293	0.46				V
19+20	3.1329	0.52				V
19+25	3.1370	0.60				V
19+30	3.1413	0.62				V
19+35	3.1452	0.57				V
19+40	3.1486	0.50				V
19+45	3.1519	0.48				V
19+50	3.1548	0.42				V
19+55	3.1572	0.35				V
20+ 0	3.1595	0.33				V
20+ 5	3.1620	0.37				V
20+10	3.1651	0.44				V
20+15	3.1683	0.46				V
20+20	3.1715	0.47				V
20+25	3.1747	0.47				V
20+30	3.1780	0.47				V
20+35	3.1812	0.47				V
20+40	3.1844	0.47				V
20+45	3.1877	0.47				V
20+50	3.1906	0.42				V
20+55	3.1929	0.34				V
21+ 0	3.1952	0.33				V
21+ 5	3.1978	0.37				V
21+10	3.2008	0.44				V
21+15	3.2040	0.46				V
21+20	3.2068	0.41				V
21+25	3.2092	0.34				V

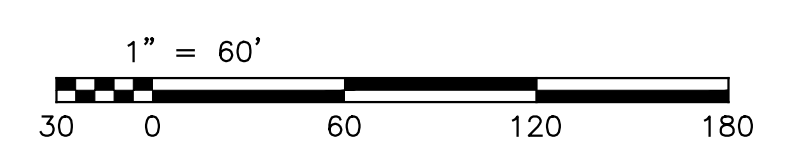
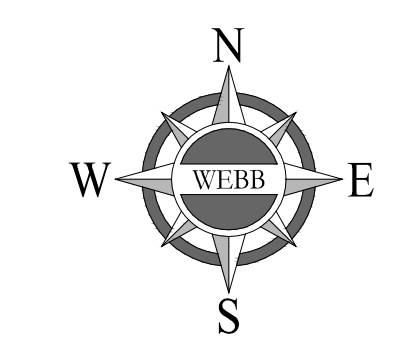
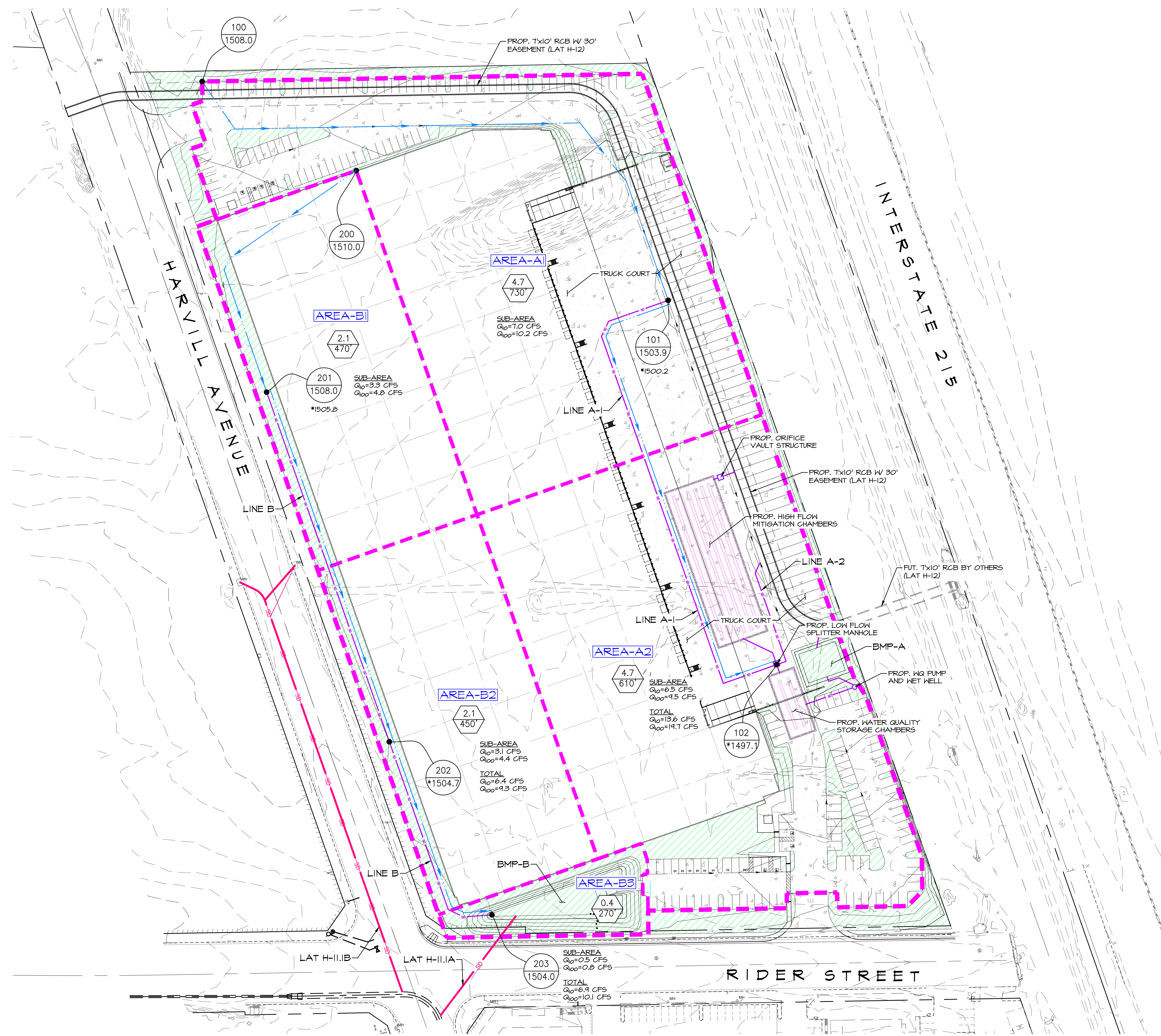
ONSITEPOST24100.out

21+30	3.2114	0.33	Q			V
21+35	3.2140	0.37	Q			V
21+40	3.2170	0.44	Q			V
21+45	3.2202	0.46	Q			V
21+50	3.2230	0.41	Q			V
21+55	3.2254	0.34	Q			V
22+ 0	3.2276	0.33	Q			V
22+ 5	3.2302	0.37	Q			V
22+10	3.2333	0.44	Q			V
22+15	3.2364	0.46	Q			V
22+20	3.2393	0.41	Q			V
22+25	3.2416	0.34	Q			V
22+30	3.2439	0.33	Q			V
22+35	3.2461	0.32	Q			V
22+40	3.2482	0.32	Q			V
22+45	3.2504	0.31	Q			V
22+50	3.2526	0.31	Q			V
22+55	3.2547	0.31	Q			V
23+ 0	3.2569	0.31	Q			V
23+ 5	3.2591	0.31	Q			V
23+10	3.2612	0.31	Q			V
23+15	3.2634	0.31	Q			V
23+20	3.2655	0.31	Q			V
23+25	3.2677	0.31	Q			V
23+30	3.2699	0.31	Q			V
23+35	3.2720	0.31	Q			V
23+40	3.2742	0.31	Q			V
23+45	3.2764	0.31	Q			V
23+50	3.2785	0.31	Q			V
23+55	3.2807	0.31	Q			V
24+ 0	3.2829	0.31	Q			V
24+ 5	3.2843	0.21	Q			V
24+10	3.2847	0.06	Q			V
24+15	3.2849	0.03	Q			V
24+20	3.2849	0.01	Q			V
24+25	3.2849	0.00	Q			V

ONSITE HYDROLOGY MAPS

LEGEND

- DRAINAGE BOUNDARY
- FLOW DIRECTION
- STORM DRAIN PIPE
- LANDSCAPING
- NODE DESIGNATION
NODE ELEVATION
- *INVERT ELEVATION
- WATERSHED AREA (ACRES)
LONGEST WATER PATH (FT)

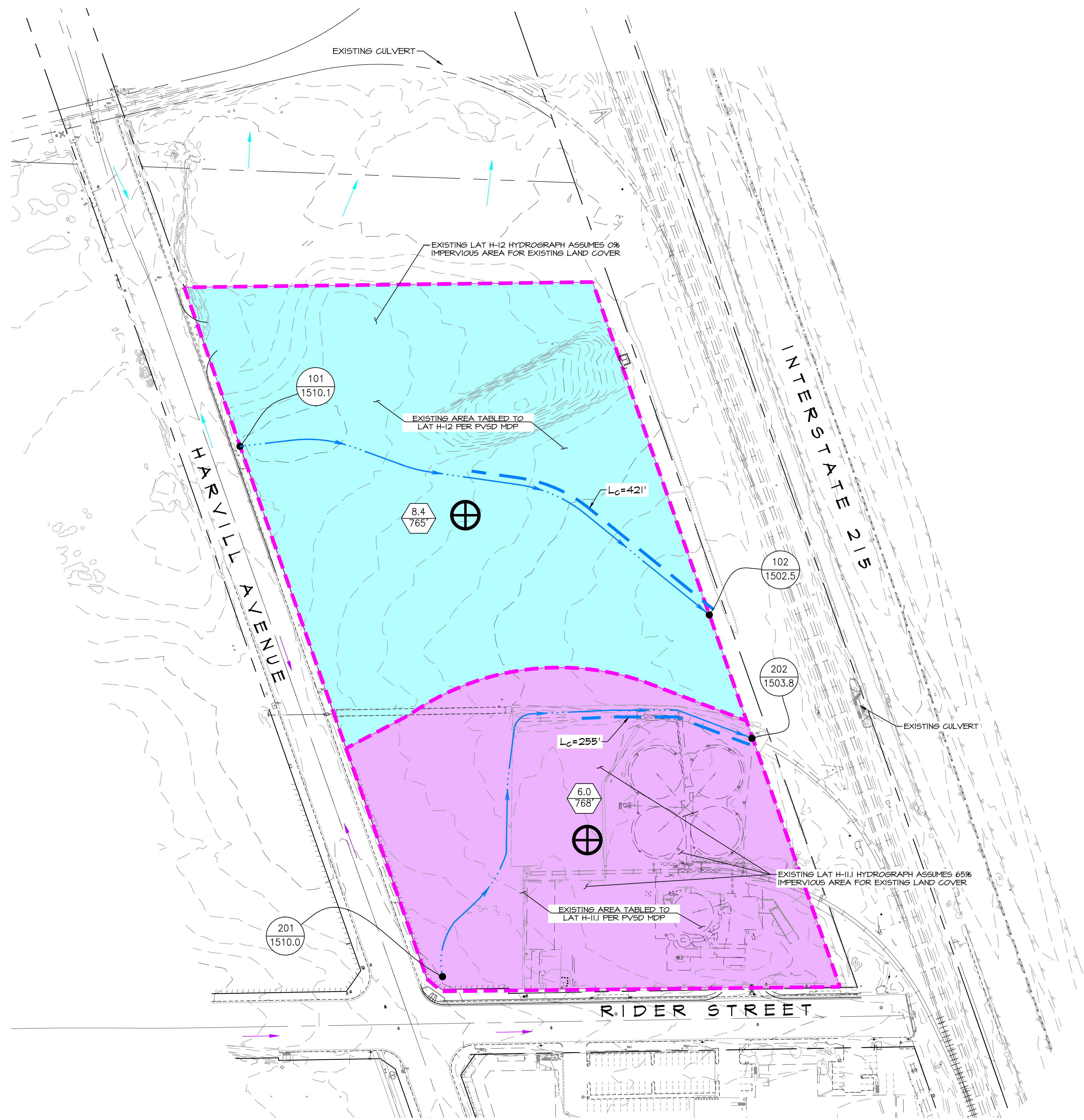


COUNTY OF RIVERSIDE

RATIONAL METHOD HYDROLOGY MAP
PPT190039 DUKE HARVILL & RIDER

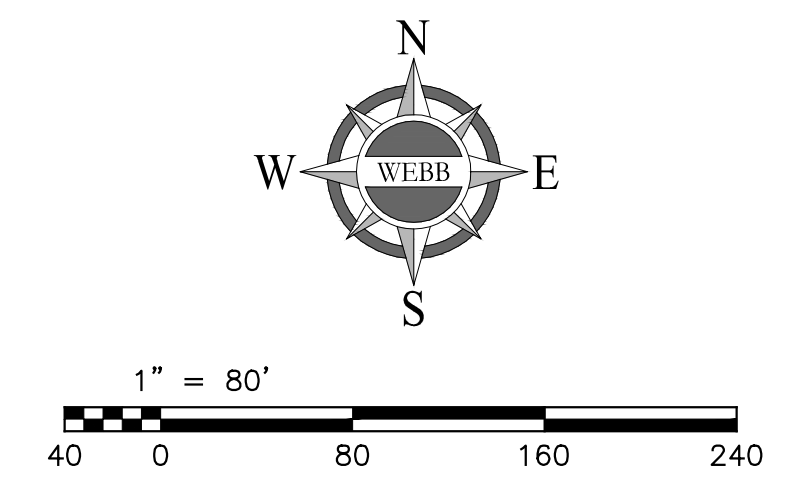
SCALE: AS SHOWN	ALBERTA A.	ENGINEERING CONSULTANTS	W.O. 19-0126
DATE: 11/08/2020	3788 McCRAY STREET RIVERSIDE CA 92506		SHEET 1
DESIGNED:	WEBB ASSOCIATES		OF 1 SHEETS
CHECKED:	PH. (951) 686-1070 FAX (951) 788-1256		DWG. NO.
PLN CK REF:			
F.B.			

H:\2019\19-0126\DRAINAGE\HYDROLOGY\DWG FOLDER\19-0126-PRHD-RATIONAL.DWG 11/12/2020 12:27:52 AM



LEGEND

	DRAINAGE BOUNDARY
	FLOW DIRECTION
	AREA TRIBUTARY TO H-11
	AREA TRIBUTARY TO H-12
LC=1000'	CENTROIDAL LENGTH
	NODE DESIGNATION NODE ELEVATION
	*INVERT ELEVATION
	WATERSHED AREA (ACRES) LONGEST WATER PATH (FT)
	CENTROID



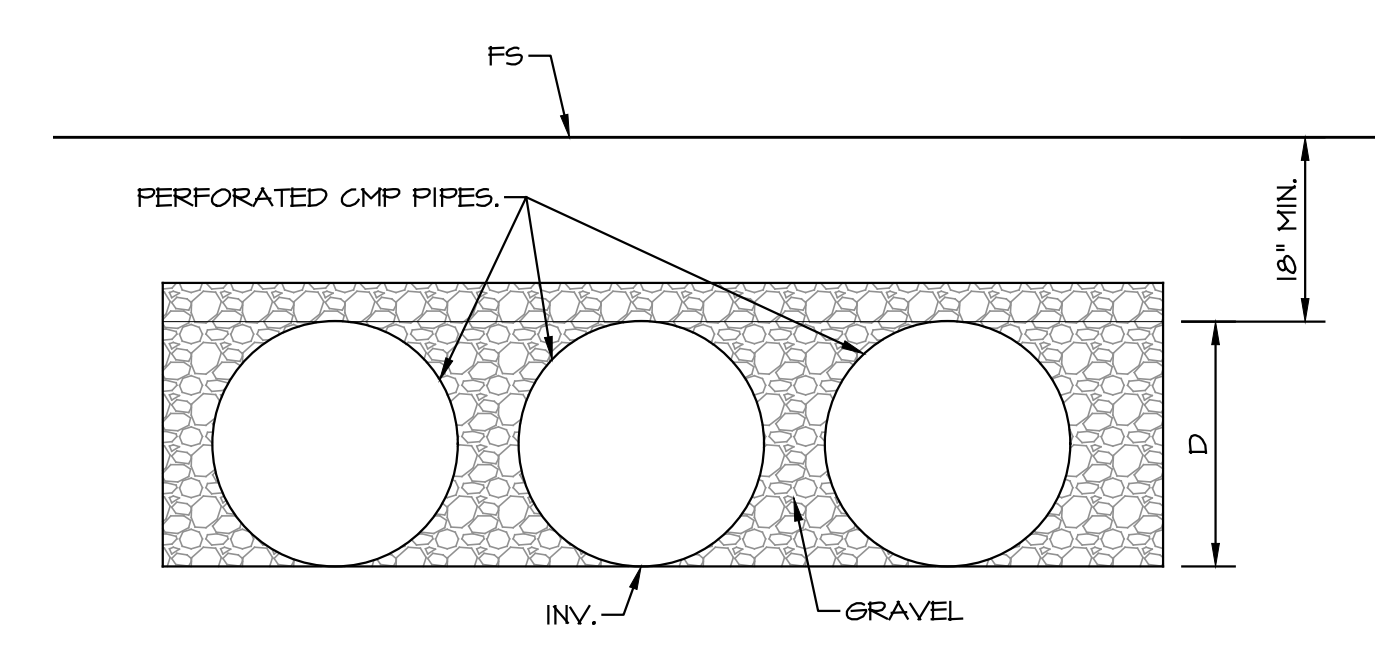
- NOTE:
1. THE PROJECT SITE CURRENTLY DRAINS INTO THE EXISTING CULVERTS SHOWN, BUT PER THE PVSD MDP, A PORTION OF THIS PROJECT SITE IS TABULATED TO DRAIN INTO LATERAL H-11.
 2. THE PROPOSED SITE WILL MITIGATE FOR INCREASED RUNOFF BASED ON THE EXISTING CONDITION OF THE MDP TRIBUTARY AREAS, PROPOSED AREAS DRAINING TO LAT H-12 WILL BE ROUTED TO THE HYDROGRAPH OF THE BLUE AREA; PROPOSED AREAS DRAINING TO LAT H-11 WILL BE ROUTED TO THE HYDROGRAPH OF THE PURPLE AREA.

COUNTY OF RIVERSIDE			
UNIT HYDROGRAPH HYDROLOGY EXISTING UNIT HYDROGRAPH DUKE HARVILL AND RIDER			
SCALE: AS SHOWN	ALBERT A. ENGINEERING CONSULTANTS	W.O.	19-0126
DATE: 11/06/2020	3788 MCCRAY STREET	RIVERSIDE CA 92506	SHEET 1
DESIGNED: TSN	WEBB ASSOCIATES		OF 2 SHEETS
CHECKED: D.J.A.			PH. (951) 686-1070
PLN CK REF:	FAX (951) 788-1256		
F.B.			DWG. NO.

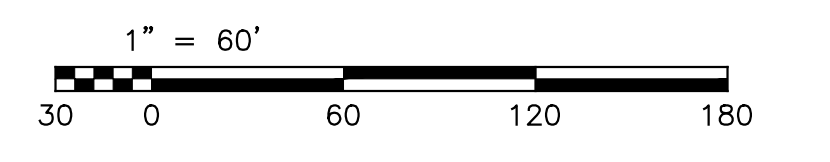
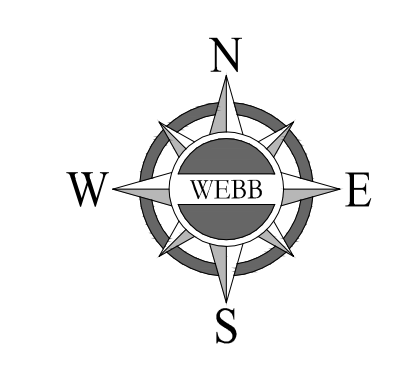
H:\2019\19-0126\DRAINAGE\HYDROLOGY\DWG FOLDER\19-0126-PHYD-UH.DWG 11/12/2020 1:25:53 AM



- LEGEND**
- DRAINAGE MANAGEMENT BOUNDARY
 - FLOW DIRECTION
 - AREA TRIBUTARY TO H-11
 - AREA TRIBUTARY TO H-12
 - LCA=1000'
 - NODE DESIGNATION
NODE ELEVATION
 - *14xx
 - *INVERT ELEVATION
 - WATERSHED AREA (ACRES)
LONGEST WATER PATH (FT)
 - CENTROID



UNDERGROUND CHAMBERS TYPICAL SECTION



COUNTY OF RIVERSIDE

UNIT HYDROGRAPH HYDROLOGY
PROPOSED UNIT HYDROGRAPH
DUKE HARVILL

SCALE: 1"=60'	ALBERTA A. ENGINEERING CONSULTANTS 3788 McCRAV STREET RIVERSIDE CA 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 19-0126
DATE: 11/06/2020		SHEET 2
DESIGNED:	WEBB ASSOCIATES	OF 2 SHEETS
CHECKED:		DWG. NO.
PLN CK REF:		
F.B.		

H:\2019\19-0126\DRAINAGE\HYDROLOGY\DWG FOLDER\19-0126-PRD-UH.DWG 11/12/2020 1:28:41 AM

APPENDIX B – OFFSITE HYDROLOGY

UNIT HYDROGRAPH HYDROLOGY – EXISTING CONDITION

100-YEAR, 1-HOUR STORM EVENT

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 06/18/19 File: OFFSITEPRE1100.out

+++++

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

Program License Serial Number 4010

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

English Units used in output format

19-126 - DUKE HARVILL & RIDER
IMPACTING OFFSITE UNIT HYDROGRAPH ANALYSIS
EXISTING CONDITION, 100-YEAR 1-HOUR
FN: OFFSITEPRE1100.OUT- MJS

Drainage Area = 2063.00(Ac.) = 3.223 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 2063.00(Ac.) = 3.223 Sq. Mi.
Length along longest watercourse = 21743.00(Ft.)
Length along longest watercourse measured to centroid = 11797.00(Ft.)
Length along longest watercourse = 4.118 Mi.
Length along longest watercourse measured to centroid = 2.234 Mi.
Difference in elevation = 812.00(Ft.)
Slope along watercourse = 197.1835 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.511 Hr.
Lag time = 30.66 Min.
25% of lag time = 7.66 Min.
40% of lag time = 12.26 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
2063.00 0.55 1134.65

100 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
2063.00 1.40 2888.20

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.400(In)

Point rain (area averaged) = 1.400(In)
Areal adjustment factor = 98.13 %
Adjusted average point rain = 1.374(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
2063.000 66.00 0.380
Total Area Entered = 2063.00(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-2 (In/Hr) (Dec.%) (In/Hr) (Dec.%) (In/Hr)
66.0 66.0 0.405 0.380 0.267 1.000 0.267
Sum (F) = 0.267

Area averaged mean soil loss (F) (In/Hr) = 0.267
Minimum soil loss rate ((In/Hr)) = 0.133

(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.596

Slope of intensity-duration curve for a 1 hour storm =0.5000

Unit Hydrograph
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	16.309	1.036
2	0.167	32.619	2.715
3	0.250	48.928	3.915
4	0.333	65.238	5.378
5	0.417	81.547	8.115
6	0.500	97.857	14.200
7	0.583	114.166	18.575
8	0.667	130.476	8.529
9	0.750	146.785	5.982
10	0.833	163.095	4.603
11	0.917	179.404	3.835
12	1.000	195.714	3.227
13	1.083	212.023	2.824
14	1.167	228.333	2.363
15	1.250	244.642	2.081
16	1.333	260.952	1.869
17	1.417	277.261	1.584
18	1.500	293.571	1.402
19	1.583	309.880	1.257
20	1.667	326.190	1.063
21	1.750	342.499	0.895
22	1.833	358.809	0.764
23	1.917	375.118	0.666
24	2.000	391.427	0.553
25	2.083	407.737	0.427
26	2.167	424.046	0.232
27	2.250	440.356	0.196
28	2.333	456.665	0.193
29	2.417	472.975	0.169
30	2.500	489.284	0.163
31	2.583	505.594	0.159
32	2.667	521.903	0.112
33	2.750	538.213	0.098
34	2.833	554.522	0.099
35	2.917	570.832	0.122
36	3.000	587.141	0.130
37	3.083	603.451	0.129
38	3.167	619.760	0.086
39	3.250	636.070	0.065
40	3.333	652.379	0.065
41	3.417	668.689	0.045
42	3.500	684.998	0.033
43	3.583	701.308	0.046
		Sum = 100.000	Sum= 2079.117

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max | Low	Effective (In/Hr)
1	0.08	4.20	0.267 | ( 0.413)	0.426
2	0.17	4.30	0.267 | ( 0.423)	0.442
3	0.25	5.00	0.267 | ( 0.491)	0.558
4	0.33	5.00	0.267 | ( 0.491)	0.558
5	0.42	5.80	0.267 | ( 0.570)	0.690
6	0.50	6.50	0.267 | ( 0.639)	0.805
7	0.58	7.40	0.267 | ( 0.727)	0.953
8	0.67	8.60	0.267 | ( 0.845)	1.151
9	0.75	12.30	0.267 | ( 1.209)	1.761
10	0.83	29.10	0.267 | ( 2.859)	4.531
11	0.92	6.80	0.267 | ( 0.668)	0.854
12	1.00	5.00	0.267 | ( 0.491)	0.558

(Loss Rate Not Used)

Sum = 100.0 Sum = 13.3
 Flood volume = Effective rainfall 1.11(In)
 times area 2063.0(Ac.)/[In]/(Ft.) = 190.3(Ac.Ft)
 Total soil loss = 0.27(In)
 Total soil loss = 45.837(Ac.Ft)
 Total rainfall = 1.37(In)
 Flood volume = 8291508.2 Cubic Feet
 Total soil loss = 1996646.5 Cubic Feet

 Peak flow rate of this hydrograph = 2850.543(CFS)

+++++
 1 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	volume	Ac.Ft	Q(CFS)	0	725.0	1450.0	2175.0	2900.0
0+ 5	0.0632		9.18	Q				
0+10	0.2945		33.58	Q				
0+15	0.7882		71.68	Q				
0+20	1.6640		127.17	VQ				
0+25	3.1319		213.14	V Q				
0+30	5.6425		364.54	V V Q				
0+35	9.5947		573.86	V V Q				
0+40	14.5993		726.66	V V Q				
0+45	20.7889		898.74	V V Q				
0+50	28.6908		1147.35	V V Q				
0+55	38.7207		1456.35	V V Q				
1+ 0	50.5820		1722.26	V V Q				
1+ 5	64.3205		1994.83	V V Q				
1+10	80.4021		2335.05	V V Q				
1+15	99.6223		2790.76	V V Q				
1+20	119.2541		2850.54	V V Q				
1+25	132.2121		1881.51	V V Q				
1+30	141.9182		1409.32	V V Q				
1+35	149.1249		1046.41	V V Q				
1+40	155.0660		862.65	V V Q				
1+45	160.0906		729.57	V V Q				
1+50	164.4293		629.98	V V Q				
1+55	168.1475		539.88	V V Q				
2+ 0	171.3958		471.66	V V Q				
2+ 5	174.2414		413.18	V V Q				
2+10	176.6883		355.28	V V Q				
2+15	178.8148		308.78	V V Q				
2+20	180.6573		267.53	V V Q				
2+25	182.2189		226.73	V V Q				
2+30	183.5324		190.72	V V Q				
2+35	184.6354		160.15	V V Q				
2+40	185.5595		134.19	V V Q				
2+45	186.3116		109.21	V V Q				
2+50	186.8965		84.93	V V Q				
2+55	187.3127		60.43	V V Q				
3+ 0	187.6619		50.70	V V Q				
3+ 5	187.9773		45.79	V V Q				
3+10	188.2635		41.55	V V Q				
3+15	188.5310		38.85	V V Q				
3+20	188.7779		35.85	V V Q				
3+25	188.9875		30.43	V V Q				
3+30	189.1789		27.79	V V Q				
3+35	189.3640		26.88	V V Q				
3+40	189.5520		27.30	V V Q				
3+45	189.7333		26.32	V V Q				
3+50	189.8960		23.63	V V Q				
3+55	190.0193		17.90	V V Q				
4+ 0	190.1160		14.03	V V Q				
4+ 5	190.1958		11.60	V V Q				
4+10	190.2538		8.41	V V Q				
4+15	190.2972		6.32	V V Q				
4+20	190.3349		5.46	V V Q				
4+25	190.3431		1.20	V V Q				
4+30	190.3468		0.54	V V Q				

100-YEAR, 3-HOUR STORM EVENT

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 06/18/19 File: OFFSITEPRE3100.out

+++++

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

Program License Serial Number 4010

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

English Units used in output format

19-126 - DUKE HARVILL & RIDER
IMPACTING OFFSITE UNIT HYDROGRAPH ANALYSIS
EXISTING CONDITION, 100-YEAR 3-HOUR
FN: OFFSITEPRE3100.OUT- MJS

Drainage Area = 2063.00(Ac.) = 3.223 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 2063.00(Ac.) = 3.223 Sq. Mi.
Length along longest watercourse = 21743.00(Ft.)
Length along longest watercourse measured to centroid = 11797.00(Ft.)
Length along longest watercourse = 4.118 Mi.
Length along longest watercourse measured to centroid = 2.234 Mi.
Difference in elevation = 812.00(Ft.)
Slope along watercourse = 197.1835 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.511 Hr.
Lag time = 30.66 Min.
25% of lag time = 7.66 Min.
40% of lag time = 12.26 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
2063.00 1.00 2063.00

100 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
2063.00 2.40 4951.20

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.000(In)
Area Averaged 100-Year Rainfall = 2.400(In)

Point rain (area averaged) = 2.400(In)
Areal adjustment factor = 99.10 %
Adjusted average point rain = 2.378(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
2063.000 66.00 0.380
Total Area Entered = 2063.00(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-2 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
66.0 66.0 0.405 0.380 0.267 1.000 0.267
Sum (F) = 0.267

Area averaged mean soil loss (F) (In/Hr) = 0.267
Minimum soil loss rate ((In/Hr)) = 0.133

(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.596

Unit Hydrograph
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	16.309	21.545
2	0.167	32.619	56.455
3	0.250	48.928	81.400
4	0.333	65.238	111.806
5	0.417	81.547	168.728
6	0.500	97.857	295.232
7	0.583	114.166	386.187
8	0.667	130.476	177.337
9	0.750	146.785	124.368
10	0.833	163.095	95.711
11	0.917	179.404	79.739
12	1.000	195.714	67.091
13	1.083	212.023	58.708
14	1.167	228.333	49.128
15	1.250	244.642	43.267
16	1.333	260.952	38.856
17	1.417	277.261	32.940
18	1.500	293.571	29.140
19	1.583	309.880	26.132
20	1.667	326.190	22.109
21	1.750	342.499	18.608
22	1.833	358.809	15.881
23	1.917	375.118	13.851
24	2.000	391.427	11.500
25	2.083	407.737	8.884
26	2.167	424.046	4.819
27	2.250	440.356	4.069
28	2.333	456.665	4.012
29	2.417	472.975	3.509
30	2.500	489.284	3.391
31	2.583	505.594	3.311
32	2.667	521.903	2.327
33	2.750	538.213	2.035
34	2.833	554.522	2.061
35	2.917	570.832	2.536
36	3.000	587.141	2.713
37	3.083	603.451	2.682
38	3.167	619.760	1.778
39	3.250	636.070	1.356
40	3.333	652.379	1.349
41	3.417	668.689	0.926
42	3.500	684.998	0.678
43	3.583	701.308	0.963
		Sum = 100.000	Sum= 2079.117

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max | Low	Effective (In/Hr)
1	0.08	1.30	(0.267)	0.221
2	0.17	1.30	(0.267)	0.221
3	0.25	1.10	(0.267)	0.187
4	0.33	1.50	(0.267)	0.255
5	0.42	1.50	(0.267)	0.255
6	0.50	1.80	0.267 (0.306)	0.247
7	0.58	1.50	(0.267)	0.255
8	0.67	1.80	0.267 (0.306)	0.247
9	0.75	1.80	0.267 (0.306)	0.247
10	0.83	1.50	(0.267)	0.255
11	0.92	1.60	0.267 (0.272)	0.190
12	1.00	1.80	0.267 (0.306)	0.247
13	1.08	2.20	0.267 (0.374)	0.361
14	1.17	2.20	0.267 (0.374)	0.361
15	1.25	2.20	0.267 (0.374)	0.361

OFFSITEPRE3100.out

16	1.33	2.00	0.571	0.267	(0.340)	0.304
17	1.42	2.60	0.742	0.267	(0.442)	0.475
18	1.50	2.70	0.771	0.267	(0.459)	0.504
19	1.58	2.40	0.685	0.267	(0.408)	0.418
20	1.67	2.70	0.771	0.267	(0.459)	0.504
21	1.75	3.30	0.942	0.267	(0.561)	0.675
22	1.83	3.10	0.885	0.267	(0.527)	0.618
23	1.92	2.90	0.828	0.267	(0.493)	0.561
24	2.00	3.00	0.856	0.267	(0.510)	0.590
25	2.08	3.10	0.885	0.267	(0.527)	0.618
26	2.17	4.20	1.199	0.267	(0.714)	0.932
27	2.25	5.00	1.427	0.267	(0.850)	1.160
28	2.33	3.50	0.999	0.267	(0.595)	0.732
29	2.42	6.80	1.941	0.267	(1.157)	1.674
30	2.50	7.30	2.083	0.267	(1.242)	1.817
31	2.58	8.20	2.340	0.267	(1.395)	2.074
32	2.67	5.90	1.684	0.267	(1.004)	1.417
33	2.75	2.00	0.571	0.267	(0.340)	0.304
34	2.83	1.80	0.514	0.267	(0.306)	0.247
35	2.92	1.80	0.514	0.267	(0.306)	0.247
36	3.00	0.60	0.171	(0.267)	0.102	0.069

Sum = 100.0 (Loss Rate Not Used) Sum = 19.3

Flood volume = Effective rainfall 1.61(In)
 times area 2063.0(Ac.)/[(In)/(Ft.)] = 276.8(Ac.Ft)
 Total soil loss = 0.77(In)
 Total soil loss = 132.052(Ac.Ft)
 Total rainfall = 2.38(In)
 Flood volume = 12058438.3 Cubic Feet
 Total soil loss = 5752201.4 Cubic Feet

Peak flow rate of this hydrograph = 2435.657(CFS)

3 - H O U R S T O R M
 R u n o f f H y d r o g r a p h
 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	625.0	1250.0	1875.0	2500.0
0+ 5	0.0223	3.23	Q				
0+10	0.1028	11.70	Q				
0+15	0.2640	23.41	Q				
0+20	0.5386	39.87	Q				
0+25	0.9924	65.90	VQ				
0+30	1.7703	112.95	VQ				
0+35	2.9736	174.72	V Q				
0+40	4.3906	205.74	V Q				
0+45	6.0128	235.55	V Q				
0+50	7.8881	272.29	V Q				
0+55	9.9778	303.42	V Q				
1+ 0	12.2673	332.44	V				
1+ 5	14.6710	349.01	V				
1+10	17.3136	383.72	V				
1+15	20.0660	399.64	V				
1+20	22.9079	412.65	V				
1+25	26.0419	455.06	V				
1+30	29.6303	521.04	V				
1+35	33.6720	586.85	V				
1+40	37.9892	626.86	V				
1+45	42.5798	666.56	V				
1+50	47.5651	723.87	V				
1+55	53.1334	808.52	V				
2+ 0	59.0354	856.97	V				
2+ 5	65.2417	901.16	V				
2+10	72.0515	988.79	V				
2+15	79.5010	1081.66	V				
2+20	87.2852	1130.26	V				
2+25	95.5420	1198.89	V				
2+30	104.7116	1331.43	V				
2+35	115.2775	1534.16	V				
2+40	127.5967	1788.76	V				
2+45	141.0797	1957.73	V				
2+50	155.5373	2099.23	V				
2+55	171.9052	2376.63	V				
3+ 0	188.6797	2435.66	V				
3+ 5	204.4157	2284.87	V				

OFFSITEPRE3100.out

3+10	217.0536	1835.02				
3+15	226.5140	1373.65				
3+20	234.3600	1139.23				
3+25	240.9353	954.74				
3+30	246.2791	775.91				
3+35	250.7248	645.52				
3+40	254.5283	552.26				
3+45	257.8014	475.26				
3+50	260.6331	411.16				
3+55	263.0839	355.86				
4+ 0	265.1988	307.08				
4+ 5	267.0222	264.76				
4+10	268.5788	226.01				
4+15	269.8907	190.50				
4+20	270.9915	159.84				
4+25	271.9174	134.43				
4+30	272.6727	109.68				
4+35	273.2766	87.68				
4+40	273.7583	69.94				
4+45	274.1546	57.54	Q			
4+50	274.4998	50.13	Q			
4+55	274.8073	44.65	Q			
5+ 0	275.0790	39.45	Q			
5+ 5	275.3226	35.37	Q			
5+10	275.5398	31.53	Q			
5+15	275.7360	28.49	Q			
5+20	275.9190	26.57	Q			
5+25	276.0946	25.50	Q			
5+30	276.2560	23.42	Q			
5+35	276.3947	20.15	Q			
5+40	276.5096	16.68	Q			
5+45	276.6006	13.21	Q			
5+50	276.6715	10.30	Q			
5+55	276.7293	8.38	Q			
6+ 0	276.7695	5.84	Q			
6+ 5	276.7973	4.03	Q			
6+10	276.8126	2.23	Q			
6+15	276.8180	0.78	Q			
6+20	276.8212	0.47	Q			
6+25	276.8232	0.28	Q			
6+30	276.8237	0.07	Q			

100-YEAR, 6-HOUR STORM EVENT

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 06/18/19 File: OFFSITEPRE6100.out

+++++

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

Program License Serial Number 4010

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

English Units used in output format

19-126 - DUKE HARVILL & RIDER
IMPACTING OFFSITE UNIT HYDROGRAPH ANALYSIS
EXISTING CONDITION, 100-YEAR 6-HOUR
FN: OFFSITEPRE6100.OUT- MJS

Drainage Area = 2063.00(Ac.) = 3.223 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 2063.00(Ac.) = 3.223 Sq. Mi.
Length along longest watercourse = 21743.00(Ft.)
Length along longest watercourse measured to centroid = 11797.00(Ft.)
Length along longest watercourse = 4.118 Mi.
Length along longest watercourse measured to centroid = 2.234 Mi.
Difference in elevation = 812.00(Ft.)
Slope along watercourse = 197.1835 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.511 Hr.
Lag time = 30.66 Min.
25% of lag time = 7.66 Min.
40% of lag time = 12.26 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
2063.00 1.40 2888.20

100 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
2063.00 3.40 7014.20

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.400(In)

Point rain (area averaged) = 3.400(In)
Areal adjustment factor = 99.29 %
Adjusted average point rain = 3.376(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
2063.000 66.00 0.380
Total Area Entered = 2063.00(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-2 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
66.0 66.0 0.405 0.380 0.267 1.000 0.267
Sum (F) = 0.267

Area averaged mean soil loss (F) (In/Hr) = 0.267
Minimum soil loss rate ((In/Hr)) = 0.133

(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.596

Unit Hydrograph
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	16.309	1.036
2	0.167	32.619	2.715
3	0.250	48.928	3.915
4	0.333	65.238	5.378
5	0.417	81.547	8.115
6	0.500	97.857	14.200
7	0.583	114.166	18.575
8	0.667	130.476	8.529
9	0.750	146.785	5.982
10	0.833	163.095	4.603
11	0.917	179.404	3.835
12	1.000	195.714	3.227
13	1.083	212.023	2.824
14	1.167	228.333	2.363
15	1.250	244.642	2.081
16	1.333	260.952	1.869
17	1.417	277.261	1.584
18	1.500	293.571	1.402
19	1.583	309.880	1.257
20	1.667	326.190	1.063
21	1.750	342.499	0.895
22	1.833	358.809	0.764
23	1.917	375.118	0.666
24	2.000	391.427	0.553
25	2.083	407.737	0.427
26	2.167	424.046	0.232
27	2.250	440.356	0.196
28	2.333	456.665	0.193
29	2.417	472.975	0.169
30	2.500	489.284	0.163
31	2.583	505.594	0.159
32	2.667	521.903	0.112
33	2.750	538.213	0.098
34	2.833	554.522	0.099
35	2.917	570.832	0.122
36	3.000	587.141	0.130
37	3.083	603.451	0.129
38	3.167	619.760	0.086
39	3.250	636.070	0.065
40	3.333	652.379	0.065
41	3.417	668.689	0.045
42	3.500	684.998	0.033
43	3.583	701.308	0.046
		Sum = 100.000	Sum= 2079.117

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.50	0.203	(0.267)	0.121	0.082
2	0.60	0.243	(0.267)	0.145	0.098
3	0.60	0.243	(0.267)	0.145	0.098
4	0.60	0.243	(0.267)	0.145	0.098
5	0.60	0.243	(0.267)	0.145	0.098
6	0.70	0.284	(0.267)	0.169	0.115
7	0.70	0.284	(0.267)	0.169	0.115
8	0.70	0.284	(0.267)	0.169	0.115
9	0.70	0.284	(0.267)	0.169	0.115
10	0.70	0.284	(0.267)	0.169	0.115
11	0.70	0.284	(0.267)	0.169	0.115
12	0.80	0.324	(0.267)	0.193	0.131
13	0.80	0.324	(0.267)	0.193	0.131
14	0.80	0.324	(0.267)	0.193	0.131
15	0.80	0.324	(0.267)	0.193	0.131

OFFSITEPRE6100.out

16	1.33	0.80	0.324	(0.267)	0.193	0.131
17	1.42	0.80	0.324	(0.267)	0.193	0.131
18	1.50	0.80	0.324	(0.267)	0.193	0.131
19	1.58	0.80	0.324	(0.267)	0.193	0.131
20	1.67	0.80	0.324	(0.267)	0.193	0.131
21	1.75	0.80	0.324	(0.267)	0.193	0.131
22	1.83	0.80	0.324	(0.267)	0.193	0.131
23	1.92	0.80	0.324	(0.267)	0.193	0.131
24	2.00	0.90	0.365	(0.267)	0.217	0.147
25	2.08	0.80	0.324	(0.267)	0.193	0.131
26	2.17	0.90	0.365	(0.267)	0.217	0.147
27	2.25	0.90	0.365	(0.267)	0.217	0.147
28	2.33	0.90	0.365	(0.267)	0.217	0.147
29	2.42	0.90	0.365	(0.267)	0.217	0.147
30	2.50	0.90	0.365	(0.267)	0.217	0.147
31	2.58	0.90	0.365	(0.267)	0.217	0.147
32	2.67	0.90	0.365	(0.267)	0.217	0.147
33	2.75	1.00	0.405	(0.267)	0.241	0.164
34	2.83	1.00	0.405	(0.267)	0.241	0.164
35	2.92	1.00	0.405	(0.267)	0.241	0.164
36	3.00	1.00	0.405	(0.267)	0.241	0.164
37	3.08	1.00	0.405	(0.267)	0.241	0.164
38	3.17	1.10	0.446	(0.267)	0.266	0.180
39	3.25	1.10	0.446	(0.267)	0.266	0.180
40	3.33	1.10	0.446	(0.267)	0.266	0.180
41	3.42	1.20	0.486	0.267 (0.290)		0.220
42	3.50	1.30	0.527	0.267 (0.314)		0.260
43	3.58	1.40	0.567	0.267 (0.338)		0.301
44	3.67	1.40	0.567	0.267 (0.338)		0.301
45	3.75	1.50	0.608	0.267 (0.362)		0.341
46	3.83	1.50	0.608	0.267 (0.362)		0.341
47	3.92	1.60	0.648	0.267 (0.386)		0.382
48	4.00	1.60	0.648	0.267 (0.386)		0.382
49	4.08	1.70	0.689	0.267 (0.410)		0.422
50	4.17	1.80	0.729	0.267 (0.435)		0.463
51	4.25	1.90	0.770	0.267 (0.459)		0.503
52	4.33	2.00	0.810	0.267 (0.483)		0.544
53	4.42	2.10	0.851	0.267 (0.507)		0.584
54	4.50	2.10	0.851	0.267 (0.507)		0.584
55	4.58	2.20	0.891	0.267 (0.531)		0.625
56	4.67	2.30	0.932	0.267 (0.555)		0.665
57	4.75	2.40	0.972	0.267 (0.579)		0.706
58	4.83	2.40	0.972	0.267 (0.579)		0.706
59	4.92	2.50	1.013	0.267 (0.604)		0.746
60	5.00	2.60	1.053	0.267 (0.628)		0.787
61	5.08	3.10	1.256	0.267 (0.748)		0.989
62	5.17	3.60	1.458	0.267 (0.869)		1.192
63	5.25	3.90	1.580	0.267 (0.942)		1.313
64	5.33	4.20	1.701	0.267 (1.014)		1.435
65	5.42	4.70	1.904	0.267 (1.135)		1.637
66	5.50	5.60	2.269	0.267 (1.352)		2.002
67	5.58	1.90	0.770	0.267 (0.459)		0.503
68	5.67	0.90	0.365	(0.267)	0.217	0.147
69	5.75	0.60	0.243	(0.267)	0.145	0.098
70	5.83	0.50	0.203	(0.267)	0.121	0.082
71	5.92	0.30	0.122	(0.267)	0.072	0.049
72	6.00	0.20	0.081	(0.267)	0.048	0.033

(Loss Rate Not Used)
 Sum = 100.0 (Loss Rate Not Used) Sum = 24.7
 Flood volume = Effective rainfall 2.06(In)
 times area 2063.0(Ac.)/[(In)/(Ft.)] = 354.4(Ac.Ft)
 Total soil loss = 1.31(In)
 Total soil loss = 225.928(Ac.Ft)
 Total rainfall = 3.38(In)
 Flood volume = 15439578.6 Cubic Feet
 Total soil loss = 9841405.2 Cubic Feet

 Peak flow rate of this hydrograph = 2269.157(CFS)

+++++

6 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	575.0	1150.0	1725.0	2300.0
0+ 5	0.0121	1.76	Q	|	|	|	|

OFFSITEPRE6100.out

0+10	0.0586	6.74	Q
0+15	0.1572	14.33	Q
0+20	0.3281	24.81	Q
0+25	0.6068	40.46	Q
0+30	1.0734	67.75	VQ
0+35	1.7974	105.12	VQ
0+40	2.6741	127.30	V Q
0+45	3.6536	142.22	V Q
0+50	4.7200	154.85	V Q
0+55	5.8756	167.78	V Q
1+ 0	7.1239	181.26	V Q
1+ 5	8.4393	190.99	V Q
1+10	9.8122	199.35	V Q
1+15	11.2384	207.09	V Q
1+20	12.7195	215.05	V Q
1+25	14.2644	224.31	V Q
1+30	15.8795	234.53	V Q
1+35	17.5383	240.85	V Q
1+40	19.2314	245.83	V Q
1+45	20.9526	249.92	V Q
1+50	22.6976	253.37	V Q
1+55	24.4630	256.34	V Q
2+ 0	26.2485	259.25	V Q
2+ 5	28.0523	261.91	VQ
2+10	29.8720	264.22	VQ
2+15	31.7105	266.95	VQ
2+20	33.5726	270.38	VQ
2+25	35.4686	275.30	Q
2+30	37.4001	280.46	Q
2+35	39.3467	282.64	Q
2+40	41.3350	288.71	VQ
2+45	43.3463	292.03	VQ
2+50	45.3795	295.22	Q
2+55	47.4345	298.40	Q
3+ 0	49.5134	301.86	Q
3+ 5	51.6205	305.94	Q
3+10	53.7712	312.29	QV
3+15	55.9785	320.51	QV
3+20	58.2209	325.59	QV
3+25	60.5010	331.08	QV
3+30	62.8369	339.17	Q V
3+35	65.2629	352.25	QV
3+40	67.8119	370.12	QV
3+45	70.4960	389.73	QV
3+50	73.3762	418.22	QV
3+55	76.5374	459.00	QV
4+ 0	79.9990	502.63	QV
4+ 5	83.7400	543.18	QV
4+10	87.7375	580.44	VQ
4+15	92.0267	622.80	Q
4+20	96.5987	663.85	VQ
4+25	101.5000	711.66	VQ
4+30	106.7311	759.56	VQ
4+35	112.3635	817.82	V Q
4+40	118.4220	879.70	V Q
4+45	124.9209	943.64	V Q
4+50	131.8540	1006.68	V Q
4+55	139.1905	1065.26	V Q
5+ 0	146.9097	1120.83	V Q
5+ 5	155.0953	1188.55	V Q
5+10	163.8175	1266.47	V Q
5+15	173.1346	1352.85	V Q
5+20	183.1255	1450.68	V Q
5+25	194.0124	1580.77	V Q
5+30	206.1389	1760.77	V Q
5+35	219.6881	1967.34	V Q
5+40	234.3009	2121.78	V Q
5+45	249.5726	2217.46	V Q
5+50	265.2004	2269.16	V Q
5+55	280.6520	2243.56	V Q
6+ 0	294.2720	1977.62	VQ
6+ 5	304.0961	1426.46	VQ
6+10	311.7594	1112.71	VQ
6+15	318.1113	922.30	VQ
6+20	323.5005	782.51	VQ
6+25	328.0789	664.78	VQ
6+30	331.9775	566.09	VQ
6+35	335.2825	479.89	VQ
6+40	338.1351	414.20	VQ

			OFFSITEPRE6100.out		
6+45	340.6026	358.28			V
6+50	342.7222	307.76			V
6+55	344.5467	264.93			V
7+ 0	346.1109	227.12			V
7+ 5	347.4342	192.14			V
7+10	348.5446	161.24			V
7+15	349.4716	134.59			V
7+20	350.2396	111.52			V
7+25	350.8658	90.92			V
7+30	351.3680	72.92			V
7+35	351.7696	58.30			V
7+40	352.1172	50.47			V
7+45	352.4278	45.10			V
7+50	352.7038	40.08			V
7+55	352.9514	35.95			V
8+ 0	353.1732	32.21			V
8+ 5	353.3691	28.44			V
8+10	353.5487	26.07			V
8+15	353.7163	24.35			V
8+20	353.8726	22.70			V
8+25	354.0117	20.18			V
8+30	354.1278	16.87			V
8+35	354.2177	13.04			V
8+40	354.2881	10.23			V
8+45	354.3437	8.08			V
8+50	354.3839	5.84			V
8+55	354.4122	4.10			V
9+ 0	354.4316	2.83			V
9+ 5	354.4379	0.91			V
9+10	354.4406	0.40			V
9+15	354.4423	0.24			V
9+20	354.4433	0.14			V
9+25	354.4437	0.07			V
9+30	354.4440	0.03			V

100-YEAR, 24-HOUR STORM EVENT

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 06/18/19 File: OFFSITEPRE24100.out

+++++

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

Program License Serial Number 4010

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

English Units used in output format

19-126 - DUKE HARVILL & RIDER
IMPACTING OFFSITE UNIT HYDROGRAPH ANALYSIS
EXISTING CONDITION, 100-YEAR 24-HOUR
FN: OFFSITEPRE24100.OUT- MJS

Drainage Area = 2063.00(Ac.) = 3.223 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 2063.00(Ac.) = 3.223 Sq. Mi.
Length along longest watercourse = 21743.00(Ft.)
Length along longest watercourse measured to centroid = 11797.00(Ft.)
Length along longest watercourse = 4.118 Mi.
Length along longest watercourse measured to centroid = 2.234 Mi.
Difference in elevation = 812.00(Ft.)
Slope along watercourse = 197.1835 Ft./Mi.
Average Manning's 'N' = 0.025
Lag time = 0.511 Hr.
Lag time = 30.66 Min.
25% of lag time = 7.66 Min.
40% of lag time = 12.26 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
2063.00 2.50 5157.50

100 YEAR Area rainfall data:

Area(Ac.)[1] Rainfall(In)[2] weighting[1*2]
2063.00 7.00 14441.00

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 7.000(In)

Point rain (area averaged) = 7.000(In)
Areal adjustment factor = 99.60 %
Adjusted average point rain = 6.972(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
2063.000 66.00 0.380
Total Area Entered = 2063.00(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-2 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
66.0 66.0 0.405 0.380 0.267 1.000 0.267
Sum (F) = 0.267

Area averaged mean soil loss (F) (In/Hr) = 0.267
Minimum soil loss rate ((In/Hr)) = 0.133

(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.596

Unit Hydrograph
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	16.309	1.036
2	0.167	32.619	2.715
3	0.250	48.928	3.915
4	0.333	65.238	5.378
5	0.417	81.547	8.115
6	0.500	97.857	14.200
7	0.583	114.166	18.575
8	0.667	130.476	8.529
9	0.750	146.785	5.982
10	0.833	163.095	4.603
11	0.917	179.404	3.835
12	1.000	195.714	3.227
13	1.083	212.023	2.824
14	1.167	228.333	2.363
15	1.250	244.642	2.081
16	1.333	260.952	1.869
17	1.417	277.261	1.584
18	1.500	293.571	1.402
19	1.583	309.880	1.257
20	1.667	326.190	1.063
21	1.750	342.499	0.895
22	1.833	358.809	0.764
23	1.917	375.118	0.666
24	2.000	391.427	0.553
25	2.083	407.737	0.427
26	2.167	424.046	0.232
27	2.250	440.356	0.196
28	2.333	456.665	0.193
29	2.417	472.975	0.169
30	2.500	489.284	0.163
31	2.583	505.594	0.159
32	2.667	521.903	0.112
33	2.750	538.213	0.098
34	2.833	554.522	0.099
35	2.917	570.832	0.122
36	3.000	587.141	0.130
37	3.083	603.451	0.129
38	3.167	619.760	0.086
39	3.250	636.070	0.065
40	3.333	652.379	0.065
41	3.417	668.689	0.045
42	3.500	684.998	0.033
43	3.583	701.308	0.046
		Sum = 100.000	Sum= 2079.117

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

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)	
1	0.08	0.07	0.056	(0.473)	0.033	0.023
2	0.17	0.07	0.056	(0.471)	0.033	0.023
3	0.25	0.07	0.056	(0.469)	0.033	0.023
4	0.33	0.10	0.084	(0.467)	0.050	0.034
5	0.42	0.10	0.084	(0.465)	0.050	0.034
6	0.50	0.10	0.084	(0.464)	0.050	0.034
7	0.58	0.10	0.084	(0.462)	0.050	0.034
8	0.67	0.10	0.084	(0.460)	0.050	0.034
9	0.75	0.10	0.084	(0.458)	0.050	0.034
10	0.83	0.13	0.112	(0.456)	0.066	0.045
11	0.92	0.13	0.112	(0.455)	0.066	0.045
12	1.00	0.13	0.112	(0.453)	0.066	0.045
13	1.08	0.10	0.084	(0.451)	0.050	0.034
14	1.17	0.10	0.084	(0.449)	0.050	0.034
15	1.25	0.10	0.084	(0.447)	0.050	0.034

OFFSITEPRE24100.out

16	1.33	0.10	0.084	(	0.446)	0.050	0.034
17	1.42	0.10	0.084	(	0.444)	0.050	0.034
18	1.50	0.10	0.084	(	0.442)	0.050	0.034
19	1.58	0.10	0.084	(	0.440)	0.050	0.034
20	1.67	0.10	0.084	(	0.439)	0.050	0.034
21	1.75	0.10	0.084	(	0.437)	0.050	0.034
22	1.83	0.13	0.112	(	0.435)	0.066	0.045
23	1.92	0.13	0.112	(	0.433)	0.066	0.045
24	2.00	0.13	0.112	(	0.432)	0.066	0.045
25	2.08	0.13	0.112	(	0.430)	0.066	0.045
26	2.17	0.13	0.112	(	0.428)	0.066	0.045
27	2.25	0.13	0.112	(	0.426)	0.066	0.045
28	2.33	0.13	0.112	(	0.425)	0.066	0.045
29	2.42	0.13	0.112	(	0.423)	0.066	0.045
30	2.50	0.13	0.112	(	0.421)	0.066	0.045
31	2.58	0.17	0.139	(	0.419)	0.083	0.056
32	2.67	0.17	0.139	(	0.418)	0.083	0.056
33	2.75	0.17	0.139	(	0.416)	0.083	0.056
34	2.83	0.17	0.139	(	0.414)	0.083	0.056
35	2.92	0.17	0.139	(	0.413)	0.083	0.056
36	3.00	0.17	0.139	(	0.411)	0.083	0.056
37	3.08	0.17	0.139	(	0.409)	0.083	0.056
38	3.17	0.17	0.139	(	0.407)	0.083	0.056
39	3.25	0.17	0.139	(	0.406)	0.083	0.056
40	3.33	0.17	0.139	(	0.404)	0.083	0.056
41	3.42	0.17	0.139	(	0.402)	0.083	0.056
42	3.50	0.17	0.139	(	0.401)	0.083	0.056
43	3.58	0.17	0.139	(	0.399)	0.083	0.056
44	3.67	0.17	0.139	(	0.397)	0.083	0.056
45	3.75	0.17	0.139	(	0.396)	0.083	0.056
46	3.83	0.20	0.167	(	0.394)	0.100	0.068
47	3.92	0.20	0.167	(	0.392)	0.100	0.068
48	4.00	0.20	0.167	(	0.391)	0.100	0.068
49	4.08	0.20	0.167	(	0.389)	0.100	0.068
50	4.17	0.20	0.167	(	0.387)	0.100	0.068
51	4.25	0.20	0.167	(	0.386)	0.100	0.068
52	4.33	0.23	0.195	(	0.384)	0.116	0.079
53	4.42	0.23	0.195	(	0.382)	0.116	0.079
54	4.50	0.23	0.195	(	0.381)	0.116	0.079
55	4.58	0.23	0.195	(	0.379)	0.116	0.079
56	4.67	0.23	0.195	(	0.377)	0.116	0.079
57	4.75	0.23	0.195	(	0.376)	0.116	0.079
58	4.83	0.27	0.223	(	0.374)	0.133	0.090
59	4.92	0.27	0.223	(	0.373)	0.133	0.090
60	5.00	0.27	0.223	(	0.371)	0.133	0.090
61	5.08	0.20	0.167	(	0.369)	0.100	0.068
62	5.17	0.20	0.167	(	0.368)	0.100	0.068
63	5.25	0.20	0.167	(	0.366)	0.100	0.068
64	5.33	0.23	0.195	(	0.365)	0.116	0.079
65	5.42	0.23	0.195	(	0.363)	0.116	0.079
66	5.50	0.23	0.195	(	0.361)	0.116	0.079
67	5.58	0.27	0.223	(	0.360)	0.133	0.090
68	5.67	0.27	0.223	(	0.358)	0.133	0.090
69	5.75	0.27	0.223	(	0.357)	0.133	0.090
70	5.83	0.27	0.223	(	0.355)	0.133	0.090
71	5.92	0.27	0.223	(	0.354)	0.133	0.090
72	6.00	0.27	0.223	(	0.352)	0.133	0.090
73	6.08	0.30	0.251	(	0.350)	0.150	0.101
74	6.17	0.30	0.251	(	0.349)	0.150	0.101
75	6.25	0.30	0.251	(	0.347)	0.150	0.101
76	6.33	0.30	0.251	(	0.346)	0.150	0.101
77	6.42	0.30	0.251	(	0.344)	0.150	0.101
78	6.50	0.30	0.251	(	0.343)	0.150	0.101
79	6.58	0.33	0.279	(	0.341)	0.166	0.113
80	6.67	0.33	0.279	(	0.340)	0.166	0.113
81	6.75	0.33	0.279	(	0.338)	0.166	0.113
82	6.83	0.33	0.279	(	0.336)	0.166	0.113
83	6.92	0.33	0.279	(	0.335)	0.166	0.113
84	7.00	0.33	0.279	(	0.333)	0.166	0.113
85	7.08	0.33	0.279	(	0.332)	0.166	0.113
86	7.17	0.33	0.279	(	0.330)	0.166	0.113
87	7.25	0.33	0.279	(	0.329)	0.166	0.113
88	7.33	0.37	0.307	(	0.327)	0.183	0.124
89	7.42	0.37	0.307	(	0.326)	0.183	0.124
90	7.50	0.37	0.307	(	0.324)	0.183	0.124
91	7.58	0.40	0.335	(	0.323)	0.199	0.135
92	7.67	0.40	0.335	(	0.321)	0.199	0.135
93	7.75	0.40	0.335	(	0.320)	0.199	0.135
94	7.83	0.43	0.363	(	0.318)	0.216	0.146

OFFSITEPRE24100.out

95	7.92	0.43	0.363	(0.317)	0.216	0.146
96	8.00	0.43	0.363	(0.316)	0.216	0.146
97	8.08	0.50	0.418	(0.314)	0.249	0.169
98	8.17	0.50	0.418	(0.313)	0.249	0.169
99	8.25	0.50	0.418	(0.311)	0.249	0.169
100	8.33	0.50	0.418	(0.310)	0.249	0.169
101	8.42	0.50	0.418	(0.308)	0.249	0.169
102	8.50	0.50	0.418	(0.307)	0.249	0.169
103	8.58	0.53	0.446	(0.305)	0.266	0.180
104	8.67	0.53	0.446	(0.304)	0.266	0.180
105	8.75	0.53	0.446	(0.303)	0.266	0.180
106	8.83	0.57	0.474	(0.301)	0.283	0.192
107	8.92	0.57	0.474	(0.300)	0.283	0.192
108	9.00	0.57	0.474	(0.298)	0.283	0.192
109	9.08	0.63	0.530	0.297 (0.316)		0.233
110	9.17	0.63	0.530	0.295 (0.316)		0.234
111	9.25	0.63	0.530	0.294 (0.316)		0.236
112	9.33	0.67	0.558	0.293 (0.332)		0.265
113	9.42	0.67	0.558	0.291 (0.332)		0.267
114	9.50	0.67	0.558	0.290 (0.332)		0.268
115	9.58	0.70	0.586	0.288 (0.349)		0.297
116	9.67	0.70	0.586	0.287 (0.349)		0.299
117	9.75	0.70	0.586	0.286 (0.349)		0.300
118	9.83	0.73	0.614	0.284 (0.366)		0.329
119	9.92	0.73	0.614	0.283 (0.366)		0.331
120	10.00	0.73	0.614	0.282 (0.366)		0.332
121	10.08	0.50	0.418	(0.280)	0.249	0.169
122	10.17	0.50	0.418	(0.279)	0.249	0.169
123	10.25	0.50	0.418	(0.277)	0.249	0.169
124	10.33	0.50	0.418	(0.276)	0.249	0.169
125	10.42	0.50	0.418	(0.275)	0.249	0.169
126	10.50	0.50	0.418	(0.273)	0.249	0.169
127	10.58	0.67	0.558	0.272 (0.332)		0.286
128	10.67	0.67	0.558	0.271 (0.332)		0.287
129	10.75	0.67	0.558	0.269 (0.332)		0.288
130	10.83	0.67	0.558	0.268 (0.332)		0.290
131	10.92	0.67	0.558	0.267 (0.332)		0.291
132	11.00	0.67	0.558	0.266 (0.332)		0.292
133	11.08	0.63	0.530	0.264 (0.316)		0.266
134	11.17	0.63	0.530	0.263 (0.316)		0.267
135	11.25	0.63	0.530	0.262 (0.316)		0.268
136	11.33	0.63	0.530	0.260 (0.316)		0.270
137	11.42	0.63	0.530	0.259 (0.316)		0.271
138	11.50	0.63	0.530	0.258 (0.316)		0.272
139	11.58	0.57	0.474	0.256 (0.283)		0.218
140	11.67	0.57	0.474	0.255 (0.283)		0.219
141	11.75	0.57	0.474	0.254 (0.283)		0.220
142	11.83	0.60	0.502	0.253 (0.299)		0.249
143	11.92	0.60	0.502	0.251 (0.299)		0.251
144	12.00	0.60	0.502	0.250 (0.299)		0.252
145	12.08	0.83	0.697	0.249 (0.416)		0.448
146	12.17	0.83	0.697	0.248 (0.416)		0.450
147	12.25	0.83	0.697	0.246 (0.416)		0.451
148	12.33	0.87	0.725	0.245 (0.432)		0.480
149	12.42	0.87	0.725	0.244 (0.432)		0.481
150	12.50	0.87	0.725	0.243 (0.432)		0.482
151	12.58	0.93	0.781	0.241 (0.465)		0.539
152	12.67	0.93	0.781	0.240 (0.465)		0.541
153	12.75	0.93	0.781	0.239 (0.465)		0.542
154	12.83	0.97	0.809	0.238 (0.482)		0.571
155	12.92	0.97	0.809	0.237 (0.482)		0.572
156	13.00	0.97	0.809	0.235 (0.482)		0.573
157	13.08	1.13	0.948	0.234 (0.565)		0.714
158	13.17	1.13	0.948	0.233 (0.565)		0.715
159	13.25	1.13	0.948	0.232 (0.565)		0.716
160	13.33	1.13	0.948	0.231 (0.565)		0.717
161	13.42	1.13	0.948	0.230 (0.565)		0.719
162	13.50	1.13	0.948	0.228 (0.565)		0.720
163	13.58	0.77	0.641	0.227 (0.382)		0.414
164	13.67	0.77	0.641	0.226 (0.382)		0.415
165	13.75	0.77	0.641	0.225 (0.382)		0.417
166	13.83	0.77	0.641	0.224 (0.382)		0.418
167	13.92	0.77	0.641	0.223 (0.382)		0.419
168	14.00	0.77	0.641	0.221 (0.382)		0.420
169	14.08	0.90	0.753	0.220 (0.449)		0.533
170	14.17	0.90	0.753	0.219 (0.449)		0.534
171	14.25	0.90	0.753	0.218 (0.449)		0.535
172	14.33	0.87	0.725	0.217 (0.432)		0.508
173	14.42	0.87	0.725	0.216 (0.432)		0.509

OFFSITEPRE24100.out

174	14.50	0.87	0.725	0.215	(0.432)	0.510
175	14.58	0.87	0.725	0.214	(0.432)	0.511
176	14.67	0.87	0.725	0.213	(0.432)	0.513
177	14.75	0.87	0.725	0.211	(0.432)	0.514
178	14.83	0.83	0.697	0.210	(0.416)	0.487
179	14.92	0.83	0.697	0.209	(0.416)	0.488
180	15.00	0.83	0.697	0.208	(0.416)	0.489
181	15.08	0.80	0.669	0.207	(0.399)	0.462
182	15.17	0.80	0.669	0.206	(0.399)	0.463
183	15.25	0.80	0.669	0.205	(0.399)	0.464
184	15.33	0.77	0.641	0.204	(0.382)	0.437
185	15.42	0.77	0.641	0.203	(0.382)	0.438
186	15.50	0.77	0.641	0.202	(0.382)	0.439
187	15.58	0.63	0.530	0.201	(0.316)	0.329
188	15.67	0.63	0.530	0.200	(0.316)	0.330
189	15.75	0.63	0.530	0.199	(0.316)	0.331
190	15.83	0.63	0.530	0.198	(0.316)	0.332
191	15.92	0.63	0.530	0.197	(0.316)	0.333
192	16.00	0.63	0.530	0.196	(0.316)	0.334
193	16.08	0.13	0.112	(0.195)	0.066	0.045
194	16.17	0.13	0.112	(0.194)	0.066	0.045
195	16.25	0.13	0.112	(0.193)	0.066	0.045
196	16.33	0.13	0.112	(0.192)	0.066	0.045
197	16.42	0.13	0.112	(0.191)	0.066	0.045
198	16.50	0.13	0.112	(0.190)	0.066	0.045
199	16.58	0.10	0.084	(0.189)	0.050	0.034
200	16.67	0.10	0.084	(0.188)	0.050	0.034
201	16.75	0.10	0.084	(0.187)	0.050	0.034
202	16.83	0.10	0.084	(0.186)	0.050	0.034
203	16.92	0.10	0.084	(0.185)	0.050	0.034
204	17.00	0.10	0.084	(0.184)	0.050	0.034
205	17.08	0.17	0.139	(0.183)	0.083	0.056
206	17.17	0.17	0.139	(0.182)	0.083	0.056
207	17.25	0.17	0.139	(0.181)	0.083	0.056
208	17.33	0.17	0.139	(0.180)	0.083	0.056
209	17.42	0.17	0.139	(0.180)	0.083	0.056
210	17.50	0.17	0.139	(0.179)	0.083	0.056
211	17.58	0.17	0.139	(0.178)	0.083	0.056
212	17.67	0.17	0.139	(0.177)	0.083	0.056
213	17.75	0.17	0.139	(0.176)	0.083	0.056
214	17.83	0.13	0.112	(0.175)	0.066	0.045
215	17.92	0.13	0.112	(0.174)	0.066	0.045
216	18.00	0.13	0.112	(0.173)	0.066	0.045
217	18.08	0.13	0.112	(0.173)	0.066	0.045
218	18.17	0.13	0.112	(0.172)	0.066	0.045
219	18.25	0.13	0.112	(0.171)	0.066	0.045
220	18.33	0.13	0.112	(0.170)	0.066	0.045
221	18.42	0.13	0.112	(0.169)	0.066	0.045
222	18.50	0.13	0.112	(0.168)	0.066	0.045
223	18.58	0.10	0.084	(0.168)	0.050	0.034
224	18.67	0.10	0.084	(0.167)	0.050	0.034
225	18.75	0.10	0.084	(0.166)	0.050	0.034
226	18.83	0.07	0.056	(0.165)	0.033	0.023
227	18.92	0.07	0.056	(0.164)	0.033	0.023
228	19.00	0.07	0.056	(0.164)	0.033	0.023
229	19.08	0.10	0.084	(0.163)	0.050	0.034
230	19.17	0.10	0.084	(0.162)	0.050	0.034
231	19.25	0.10	0.084	(0.161)	0.050	0.034
232	19.33	0.13	0.112	(0.161)	0.066	0.045
233	19.42	0.13	0.112	(0.160)	0.066	0.045
234	19.50	0.13	0.112	(0.159)	0.066	0.045
235	19.58	0.10	0.084	(0.158)	0.050	0.034
236	19.67	0.10	0.084	(0.158)	0.050	0.034
237	19.75	0.10	0.084	(0.157)	0.050	0.034
238	19.83	0.07	0.056	(0.156)	0.033	0.023
239	19.92	0.07	0.056	(0.156)	0.033	0.023
240	20.00	0.07	0.056	(0.155)	0.033	0.023
241	20.08	0.10	0.084	(0.154)	0.050	0.034
242	20.17	0.10	0.084	(0.153)	0.050	0.034
243	20.25	0.10	0.084	(0.153)	0.050	0.034
244	20.33	0.10	0.084	(0.152)	0.050	0.034
245	20.42	0.10	0.084	(0.151)	0.050	0.034
246	20.50	0.10	0.084	(0.151)	0.050	0.034
247	20.58	0.10	0.084	(0.150)	0.050	0.034
248	20.67	0.10	0.084	(0.150)	0.050	0.034
249	20.75	0.10	0.084	(0.149)	0.050	0.034
250	20.83	0.07	0.056	(0.148)	0.033	0.023
251	20.92	0.07	0.056	(0.148)	0.033	0.023
252	21.00	0.07	0.056	(0.147)	0.033	0.023

OFFSITEPRE24100.out

253	21.08	0.10	0.084	(0.147)	0.050	0.034
254	21.17	0.10	0.084	(0.146)	0.050	0.034
255	21.25	0.10	0.084	(0.145)	0.050	0.034
256	21.33	0.07	0.056	(0.145)	0.033	0.023
257	21.42	0.07	0.056	(0.144)	0.033	0.023
258	21.50	0.07	0.056	(0.144)	0.033	0.023
259	21.58	0.10	0.084	(0.143)	0.050	0.034
260	21.67	0.10	0.084	(0.143)	0.050	0.034
261	21.75	0.10	0.084	(0.142)	0.050	0.034
262	21.83	0.07	0.056	(0.142)	0.033	0.023
263	21.92	0.07	0.056	(0.141)	0.033	0.023
264	22.00	0.07	0.056	(0.141)	0.033	0.023
265	22.08	0.10	0.084	(0.140)	0.050	0.034
266	22.17	0.10	0.084	(0.140)	0.050	0.034
267	22.25	0.10	0.084	(0.139)	0.050	0.034
268	22.33	0.07	0.056	(0.139)	0.033	0.023
269	22.42	0.07	0.056	(0.139)	0.033	0.023
270	22.50	0.07	0.056	(0.138)	0.033	0.023
271	22.58	0.07	0.056	(0.138)	0.033	0.023
272	22.67	0.07	0.056	(0.137)	0.033	0.023
273	22.75	0.07	0.056	(0.137)	0.033	0.023
274	22.83	0.07	0.056	(0.137)	0.033	0.023
275	22.92	0.07	0.056	(0.136)	0.033	0.023
276	23.00	0.07	0.056	(0.136)	0.033	0.023
277	23.08	0.07	0.056	(0.136)	0.033	0.023
278	23.17	0.07	0.056	(0.135)	0.033	0.023
279	23.25	0.07	0.056	(0.135)	0.033	0.023
280	23.33	0.07	0.056	(0.135)	0.033	0.023
281	23.42	0.07	0.056	(0.135)	0.033	0.023
282	23.50	0.07	0.056	(0.134)	0.033	0.023
283	23.58	0.07	0.056	(0.134)	0.033	0.023
284	23.67	0.07	0.056	(0.134)	0.033	0.023
285	23.75	0.07	0.056	(0.134)	0.033	0.023
286	23.83	0.07	0.056	(0.134)	0.033	0.023
287	23.92	0.07	0.056	(0.133)	0.033	0.023
288	24.00	0.07	0.056	(0.133)	0.033	0.023

(Loss Rate Not Used)

Sum = 100.0 (Loss Rate Not Used) Sum = 45.2

Flood volume = Effective rainfall 3.77(In)
 times area 2063.0(Ac.)/[(In)/(Ft.)] = 647.8(Ac.Ft)
 Total soil loss = 3.20(In)
 Total soil loss = 550.723(Ac.Ft)
 Total rainfall = 6.97(In)
 Flood volume = 28220103.0 Cubic Feet
 Total soil loss = 23989507.9 Cubic Feet

 Peak flow rate of this hydrograph = 1295.397(CFS)

+++++

24 - H O U R S T O R M
 R u n o f f H y d r o g r a p h

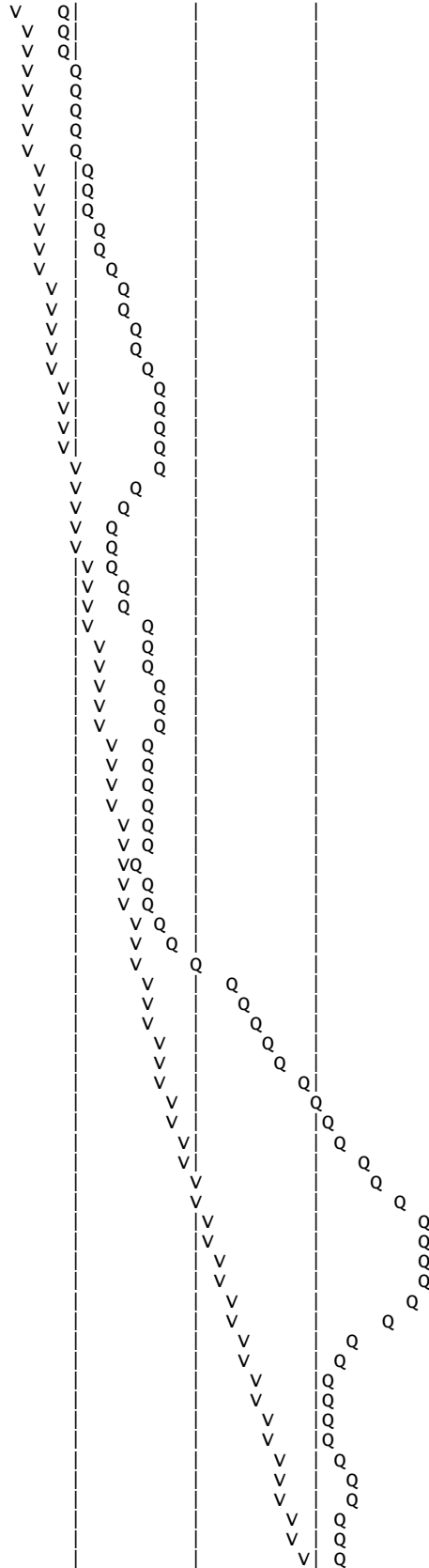
 Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	325.0	650.0	975.0	1300.0
0+ 5	0.0033	0.49	Q				
0+10	0.0155	1.76	Q				
0+15	0.0402	3.59	Q				
0+20	0.0840	6.36	Q				
0+25	0.1583	10.80	Q				
0+30	0.2849	18.37	Q				
0+35	0.4800	28.34	Q				
0+40	0.7158	34.24	VQ				
0+45	0.9938	40.37	VQ				
0+50	1.3184	47.12	VQ				
0+55	1.6735	51.56	VQ				
1+ 0	2.0549	55.39	VQ				
1+ 5	2.4599	58.81	VQ				
1+10	2.8875	62.08	VQ				
1+15	3.3435	66.22	V Q				
1+20	3.8315	70.85	V Q				
1+25	4.3291	72.25	V Q				
1+30	4.8213	71.46	V Q				
1+35	5.2980	69.22	V Q				
1+40	5.7731	68.99	V Q				
1+45	6.2489	69.09	V Q				
1+50	6.7280	69.57	V Q				

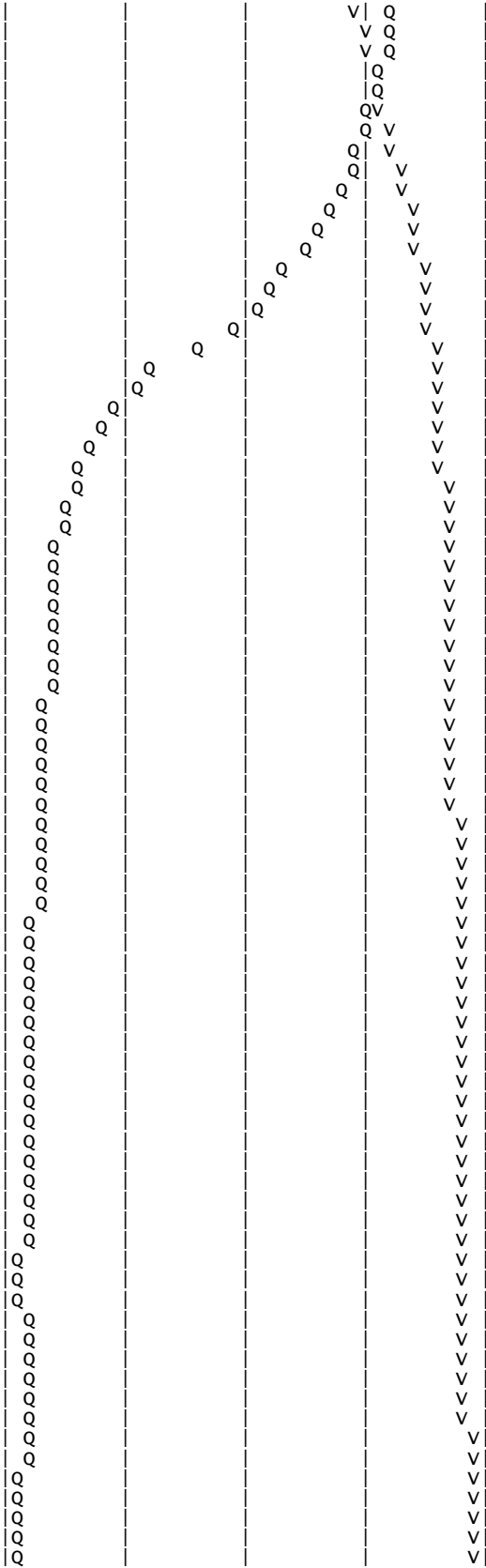
1+55	7.2130	70.42	V Q
2+ 0	7.7057	71.54	V Q
2+ 5	8.2081	72.95	V Q
2+10	8.7242	74.94	V Q
2+15	9.2637	78.33	V Q
2+20	9.8334	82.73	V Q
2+25	10.4170	84.74	V Q
2+30	11.0103	86.14	V Q
2+35	11.6127	87.47	V Q
2+40	12.2257	89.00	V Q
2+45	12.8503	90.68	V Q
2+50	13.4881	92.61	V Q
2+55	14.1427	95.05	V Q
3+ 0	14.8235	98.86	V Q
3+ 5	15.5376	103.68	V Q
3+10	16.2684	106.11	V Q
3+15	17.0114	107.89	V Q
3+20	17.7643	109.32	V Q
3+25	18.5253	110.49	V Q
3+30	19.2930	111.47	V Q
3+35	20.0667	112.34	V Q
3+40	20.8453	113.06	V Q
3+45	21.6283	113.69	V Q
3+50	22.4169	114.49	V Q
3+55	23.2126	115.55	V Q
4+ 0	24.0172	116.82	V Q
4+ 5	24.8327	118.41	V Q
4+10	25.6632	120.59	V Q
4+15	26.5182	124.16	V Q
4+20	27.4064	128.96	V Q
4+25	28.3139	131.77	V Q
4+30	29.2384	134.24	V Q
4+35	30.1798	136.69	V Q
4+40	31.1410	139.57	V Q
4+45	32.1309	143.73	V Q
4+50	33.1576	149.07	V Q
4+55	34.2066	152.31	V Q
5+ 0	35.2753	155.17	V Q
5+ 5	36.3601	157.52	V Q
5+10	37.4583	159.45	V Q
5+15	38.5744	162.06	V Q
5+20	39.7117	165.13	V Q
5+25	40.8466	164.79	V Q
5+30	41.9567	161.18	V Q
5+35	43.0290	155.71	V Q
5+40	44.1013	155.69	V Q
5+45	45.1920	158.36	V Q
5+50	46.3138	162.89	V Q
5+55	47.4561	165.86	V Q
6+ 0	48.6258	169.83	V Q
6+ 5	49.8300	174.86	V Q
6+10	51.0549	177.85	V Q
6+15	52.2976	180.45	V Q
6+20	53.5579	183.00	V Q
6+25	54.8386	185.94	V Q
6+30	56.1480	190.14	V Q
6+35	57.4944	195.49	V Q
6+40	58.8634	198.78	V Q
6+45	60.2525	201.69	V Q
6+50	61.6614	204.57	V Q
6+55	63.0924	207.78	V Q
7+ 0	64.5541	212.23	V Q
7+ 5	66.0527	217.60	V Q
7+10	67.5715	220.53	V Q
7+15	69.1056	222.75	V Q
7+20	70.6536	224.77	V Q
7+25	72.2160	226.86	V Q
7+30	73.7931	229.00	V Q
7+35	75.3879	231.56	V Q
7+40	77.0062	234.99	V Q
7+45	78.6592	240.01	V Q
7+50	80.3572	246.56	V Q
7+55	82.0903	251.65	V Q
8+ 0	83.8656	257.77	V Q
8+ 5	85.6932	265.36	V Q
8+10	87.5648	271.76	V Q
8+15	89.4888	279.37	V Q
8+20	91.4739	288.24	V Q
8+25	93.5106	295.72	V Q

8+30	95.6126	305.22
8+35	97.7924	316.51
8+40	100.0175	323.08
8+45	102.2796	328.46
8+50	104.5772	333.61
8+55	106.9133	339.20
9+ 0	109.2967	346.06
9+ 5	111.7408	354.88
9+10	114.2414	363.09
9+15	116.8102	372.99
9+20	119.4643	385.38
9+25	122.2087	398.48
9+30	125.0797	416.87
9+35	128.1125	440.36
9+40	131.2654	457.80
9+45	134.5518	477.19
9+50	137.9906	499.30
9+55	141.5534	517.33
10+ 0	145.2553	537.51
10+ 5	149.0868	556.33
10+10	152.9721	564.15
10+15	156.8923	569.21
10+20	160.8211	570.47
10+25	164.6460	555.38
10+30	168.2071	517.07
10+35	171.4070	464.62
10+40	174.4990	448.96
10+45	177.5567	443.98
10+50	180.6327	446.63
10+55	183.7863	457.90
11+ 0	187.1311	485.66
11+ 5	190.7449	524.74
11+10	194.4635	539.93
11+15	198.2449	549.06
11+20	202.0644	554.60
11+25	205.9032	557.40
11+30	209.7302	555.68
11+35	213.5156	549.64
11+40	217.2814	546.80
11+45	221.0271	543.87
11+50	224.7498	540.53
11+55	228.4340	534.95
12+ 0	232.0379	523.29
12+ 5	235.5637	511.94
12+10	239.1522	521.05
12+15	242.8807	541.39
12+20	246.8217	572.23
12+25	251.0240	610.18
12+30	255.6562	672.59
12+35	260.8510	754.29
12+40	266.3506	798.55
12+45	272.1179	837.41
12+50	278.1481	875.58
12+55	284.4076	908.87
13+ 0	290.9228	946.01
13+ 5	297.7392	989.75
13+10	304.8063	1026.14
13+15	312.1425	1065.22
13+20	319.7764	1108.45
13+25	327.7075	1151.58
13+30	336.0365	1209.37
13+35	344.7917	1271.27
13+40	353.6872	1291.63
13+45	362.6087	1295.40
13+50	371.4562	1284.66
13+55	380.0855	1252.96
14+ 0	388.2100	1179.69
14+ 5	395.6403	1078.88
14+10	402.8265	1043.43
14+15	409.8906	1025.71
14+20	416.9059	1018.63
14+25	423.9342	1020.51
14+30	431.0890	1038.87
14+35	438.4474	1068.44
14+40	445.8515	1075.07
14+45	453.2442	1073.43
14+50	460.5881	1066.33
14+55	467.9142	1063.75
15+ 0	475.2239	1061.37

OFFSITEPRE24100.out



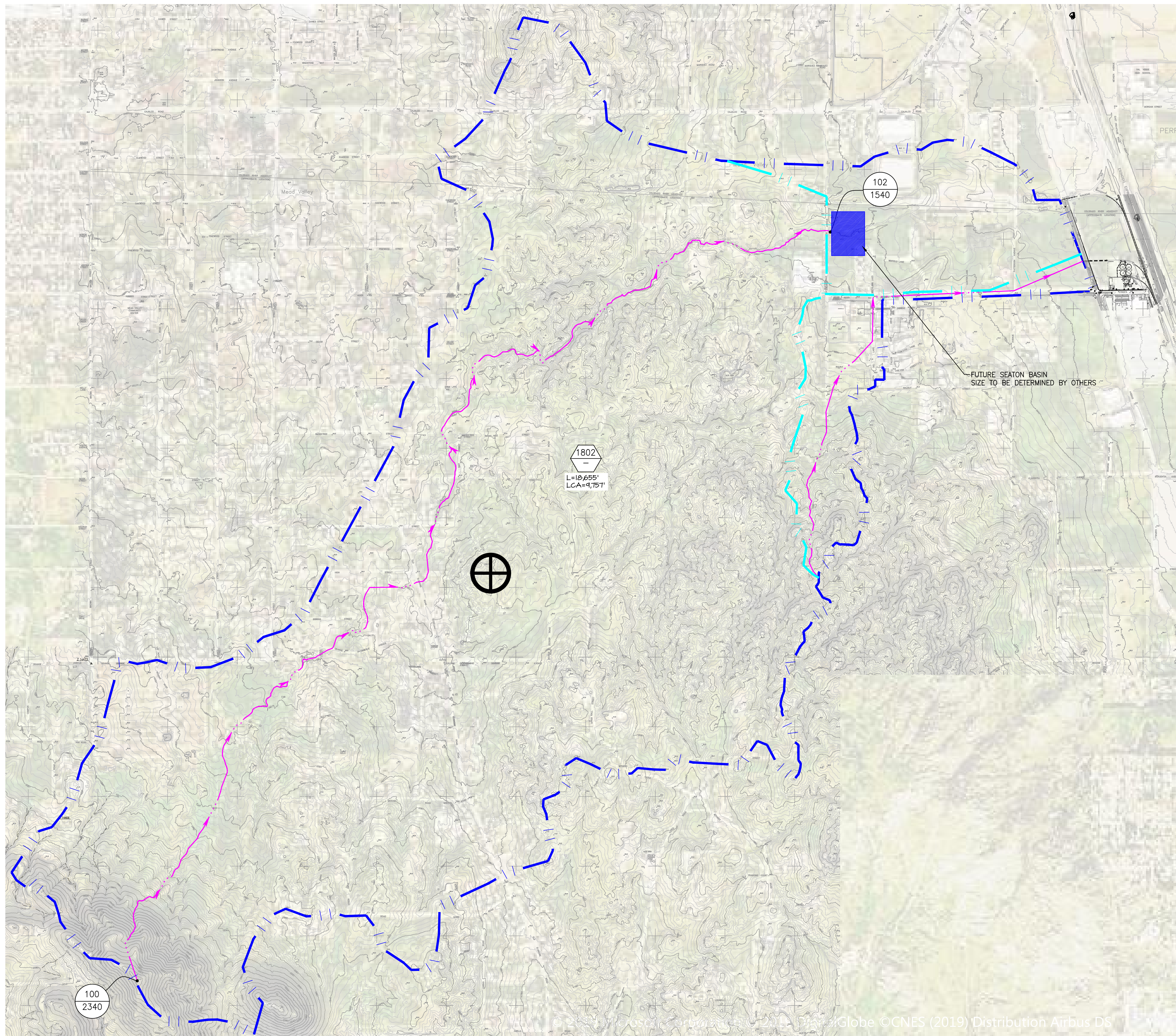
15+ 5	482.5099	1057.92
15+10	489.7534	1051.76
15+15	496.9291	1041.92
15+20	504.0135	1028.66
15+25	511.0292	1018.67
15+30	517.9598	1006.32
15+35	524.7752	989.59
15+40	531.4848	974.24
15+45	538.0568	954.26
15+50	544.4562	929.19
15+55	550.6843	904.32
16+ 0	556.6567	867.19
16+ 5	562.2670	814.62
16+10	567.6098	775.78
16+15	572.6800	736.19
16+20	577.4415	691.38
16+25	581.7947	632.09
16+30	585.4973	537.61
16+35	588.3723	417.45
16+40	590.8417	358.56
16+45	593.0153	315.60
16+50	594.9520	281.21
16+55	596.6867	251.88
17+ 0	598.2391	225.41
17+ 5	599.6246	201.16
17+10	600.8890	183.59
17+15	602.0546	169.26
17+20	603.1396	157.54
17+25	604.1681	149.33
17+30	605.1699	145.46
17+35	606.1679	144.91
17+40	607.1410	141.28
17+45	608.0887	137.62
17+50	609.0108	133.88
17+55	609.9072	130.16
18+ 0	610.7791	126.61
18+ 5	611.6284	123.31
18+10	612.4584	120.51
18+15	613.2603	116.45
18+20	614.0269	111.30
18+25	614.7744	108.54
18+30	615.5068	106.35
18+35	616.2246	104.22
18+40	616.9288	102.25
18+45	617.6190	100.21
18+50	618.2911	97.60
18+55	618.9382	93.96
19+ 0	619.5484	88.59
19+ 5	620.1136	82.07
19+10	620.6509	78.01
19+15	621.1574	73.55
19+20	621.6327	69.01
19+25	622.1022	68.18
19+30	622.5837	69.91
19+35	623.0873	73.13
19+40	623.6026	74.82
19+45	624.1349	77.29
19+50	624.6861	80.05
19+55	625.2335	79.47
20+ 0	625.7609	76.58
20+ 5	626.2582	72.22
20+10	626.7388	69.79
20+15	627.1980	66.67
20+20	627.6327	63.12
20+25	628.0641	62.64
20+30	628.5068	64.28
20+35	628.9706	67.34
20+40	629.4408	68.27
20+45	629.9143	68.76
20+50	630.3881	68.79
20+55	630.8593	68.42
21+ 0	631.3255	67.68
21+ 5	631.7854	66.78
21+10	632.2370	65.58
21+15	632.6725	63.23
21+20	633.0852	59.93
21+25	633.4929	59.20
21+30	633.9077	60.23
21+35	634.3383	62.53



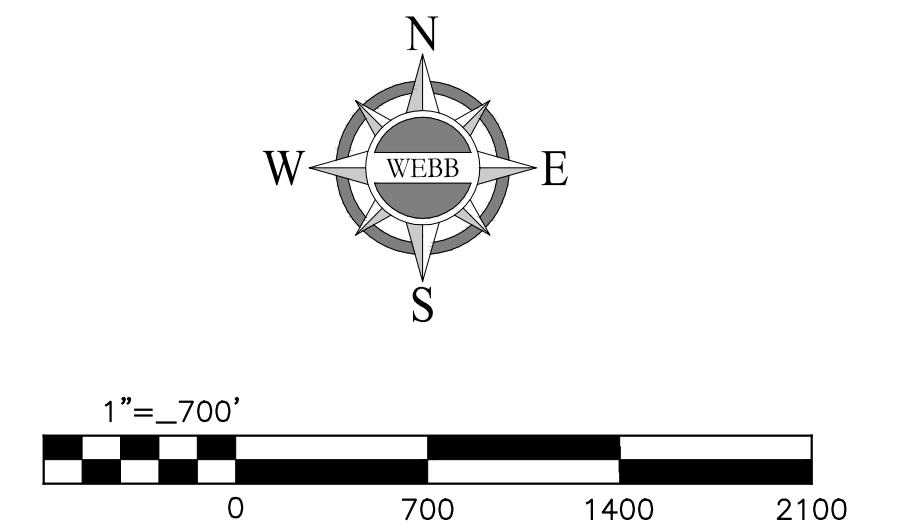
OFFSITEPRE24100.out

21+40	634.7682	62.42	Q		V
21+45	635.1863	60.70	Q		V
21+50	635.5846	57.83	Q		V
21+55	635.9809	57.53	Q		V
22+ 0	636.3864	58.89	Q		V
22+ 5	636.8094	61.41	Q		V
22+10	637.2326	61.46	Q		V
22+15	637.6449	59.87	Q		V
22+20	638.0383	57.12	Q		V
22+25	638.4300	56.87	Q		V
22+30	638.8313	58.27	Q		V
22+35	639.2488	60.63	Q		V
22+40	639.6627	60.09	Q		V
22+45	640.0597	57.64	Q		V
22+50	640.4310	53.91	Q		V
22+55	640.7924	52.48	Q		V
23+ 0	641.1474	51.56	Q		V
23+ 5	641.4978	50.88	Q		V
23+10	641.8441	50.28	Q		V
23+15	642.1869	49.78	Q		V
23+20	642.5268	49.35	Q		V
23+25	642.8645	49.04	Q		V
23+30	643.2005	48.78	Q		V
23+35	643.5347	48.54	Q		V
23+40	643.8672	48.27	Q		V
23+45	644.1979	48.02	Q		V
23+50	644.5272	47.81	Q		V
23+55	644.8556	47.68	Q		V
24+ 0	645.1833	47.59	Q		V
24+ 5	645.5070	47.01	Q		V
24+10	645.8211	45.60	Q		V
24+15	646.1216	43.64	Q		V
24+20	646.4042	41.03	Q		V
24+25	646.6604	37.20	Q		V
24+30	646.8707	30.54	Q		V
24+35	647.0210	21.83	Q		V
24+40	647.1436	17.80	Q		V
24+45	647.2466	14.95	Q		V
24+50	647.3344	12.76	Q		V
24+55	647.4098	10.95	Q		V
25+ 0	647.4748	9.44	Q		V
25+ 5	647.5307	8.12	Q		V
25+10	647.5789	6.99	Q		V
25+15	647.6202	5.99	Q		V
25+20	647.6552	5.09	Q		V
25+25	647.6851	4.34	Q		V
25+30	647.7104	3.67	Q		V
25+35	647.7316	3.08	Q		V
25+40	647.7493	2.57	Q		V
25+45	647.7641	2.14	Q		V
25+50	647.7763	1.78	Q		V
25+55	647.7864	1.46	Q		V
26+ 0	647.7947	1.20	Q		V
26+ 5	647.8016	1.00	Q		V
26+10	647.8078	0.89	Q		V
26+15	647.8133	0.80	Q		V
26+20	647.8182	0.71	Q		V
26+25	647.8226	0.63	Q		V
26+30	647.8264	0.56	Q		V
26+35	647.8297	0.48	Q		V
26+40	647.8327	0.43	Q		V
26+45	647.8353	0.38	Q		V
26+50	647.8377	0.34	Q		V
26+55	647.8396	0.28	Q		V
27+ 0	647.8411	0.22	Q		V
27+ 5	647.8422	0.16	Q		V
27+10	647.8430	0.12	Q		V
27+15	647.8436	0.09	Q		V
27+20	647.8440	0.06	Q		V
27+25	647.8443	0.04	Q		V
27+30	647.8444	0.02	Q		V

OFFSITE UNIT HYDROGRAPH MAP



- LEGEND**
- DRAINAGE BOUNDARY
 - FLOW DIRECTION
 - LONGEST FLOW PATH
 - CENTROIDAL LENGTH
 - NODE DESIGNATION
NODE ELEVATION
*INVERT ELEVATION
 - WATERSHED AREA (ACRES)
 - CENTROID



COUNTY OF RIVERSIDE			
OFFSITE UNIT HYDROGRAPH ANALYSIS DUKE - HARVILL & RIDER			
SCALE: AS SHOWN	WEBB ASSOCIATES	ENGINEERING CONSULTANTS	W.O. 19-0126
DATE: 8/26/19		3788 MACRAY STREET	SHEET 1
DESIGNED: MJS		RIVERSIDE CA 92506	OF 1 SHEETS
CHECKED: JCC		PH. (951) 686-1070	DWG. NO.
PLN CK REF:		FAX (951) 788-1256	
F.B.			

HE:\2019\19-0126\DRAINAGE\HYDROLOGY\DWG FOLDER\19-0126-PHYD-UH-OFFSITE.DWG 8/26/2019 3:16:14 PM

APPENDIX C – ONSITE HYDRAULICS

LINE A-1

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Tuesday, October 15, 2019

Project Units: U.S. Customary Units

Notes:

Channel Analysis: Line A-1

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 2.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0120

Flow: 10.2000 cfs

Result Parameters

Depth: 1.1033 ft

Area of Flow: 1.7771 ft²

Wetted Perimeter: 3.3487 ft

Hydraulic Radius: 0.5307 ft

Average Velocity: 5.7396 ft/s

Top Width: 1.9893 ft

Froude Number: 1.0701

Critical Depth: 1.1436 ft

Critical Velocity: 5.4930 ft/s

Critical Slope: 0.0045 ft/ft

Critical Top Width: 1.98 ft

Calculated Max Shear Stress: 0.3442 lb/ft²

Calculated Avg Shear Stress: 0.1656 lb/ft²

LINE A-2

Channel Analysis: Line A-2

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 2.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0120

Flow: 9.5000 cfs

Result Parameters

Depth: 0.8644 ft

Area of Flow: 1.3004 ft²

Wetted Perimeter: 2.8695 ft

Hydraulic Radius: 0.4532 ft

Average Velocity: 7.3056 ft/s

Top Width: 1.9815 ft

Froude Number: 1.5893

Critical Depth: 1.1016 ft

Critical Velocity: 5.3564 ft/s

Critical Slope: 0.0044 ft/ft

Critical Top Width: 1.99 ft

Calculated Max Shear Stress: 0.5394 lb/ft²

Calculated Avg Shear Stress: 0.2828 lb/ft²

LINE B

Channel Analysis: Line B

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 2.0000 ft

Longitudinal Slope: 0.0025 ft/ft

Manning's n: 0.0120

Flow: 10.6000 cfs

Result Parameters

Depth: 1.4361 ft

Area of Flow: 2.4145 ft²

Wetted Perimeter: 4.0442 ft

Hydraulic Radius: 0.5970 ft

Average Velocity: 4.3901 ft/s

Top Width: 1.7998 ft

Froude Number: 0.6679

Critical Depth: 1.1660 ft

Critical Velocity: 5.5751 ft/s

Critical Slope: 0.0045 ft/ft

Critical Top Width: 1.97 ft

Calculated Max Shear Stress: 0.2240 lb/ft²

Calculated Avg Shear Stress: 0.0931 lb/ft²

LATERAL H-12

Channel Analysis: Lateral H-12

Notes:

Input Parameters

Channel Type: Rectangular

Channel Width: 10.0000 ft

Longitudinal Slope: 0.0030 ft/ft

Manning's n: 0.0140

Flow: 720.0000 cfs

Result Parameters

Depth: 6.2635 ft

Area of Flow: 62.6350 ft²

Wetted Perimeter: 22.5270 ft

Hydraulic Radius: 2.7804 ft

Average Velocity: 11.4952 ft/s

Top Width: 10.0000 ft

Froude Number: 0.8094

Critical Depth: 5.4401 ft

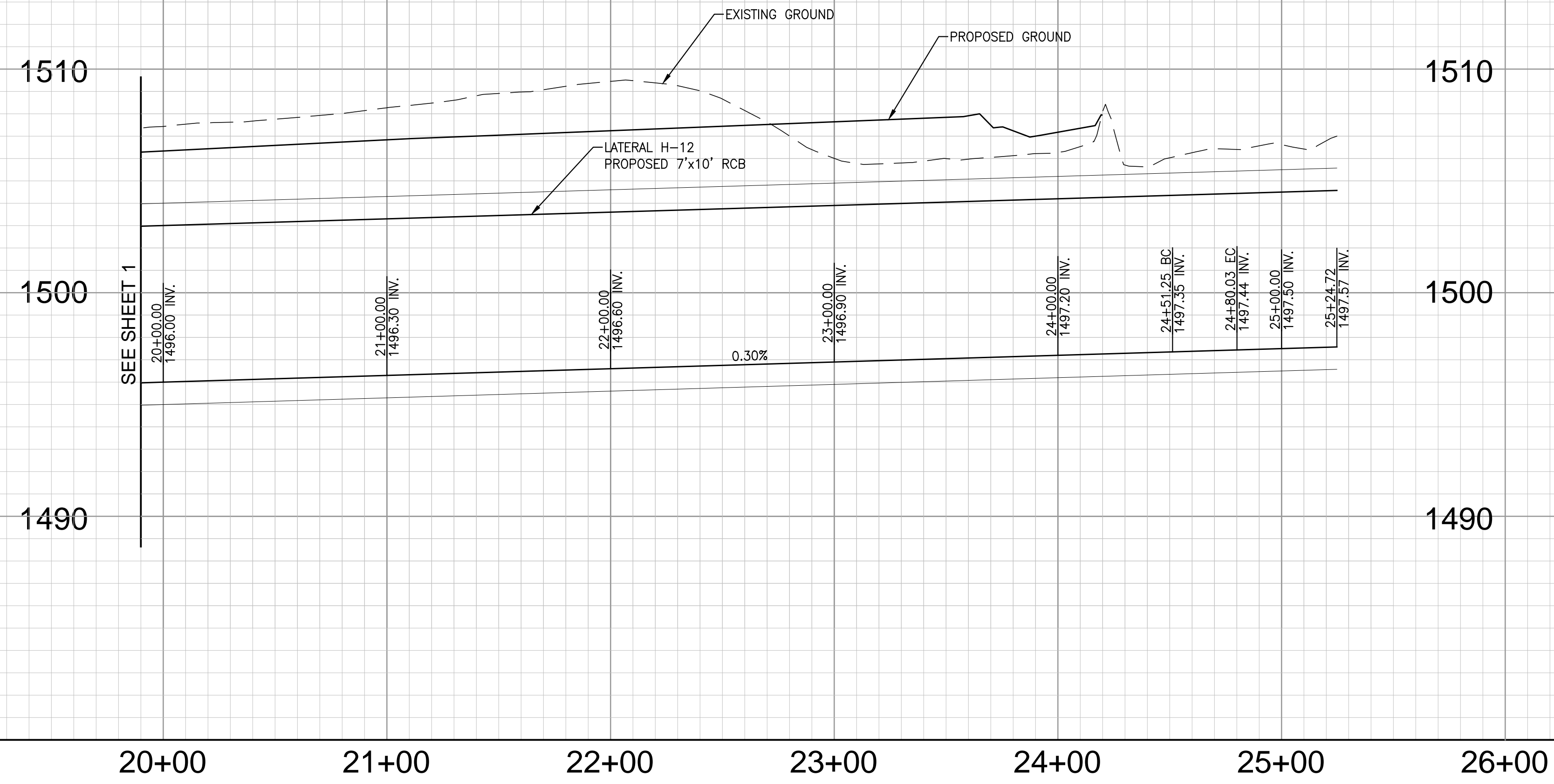
Critical Velocity: 13.2352 ft/s

Critical Slope: 0.0043 ft/ft

Critical Top Width: 10.00 ft

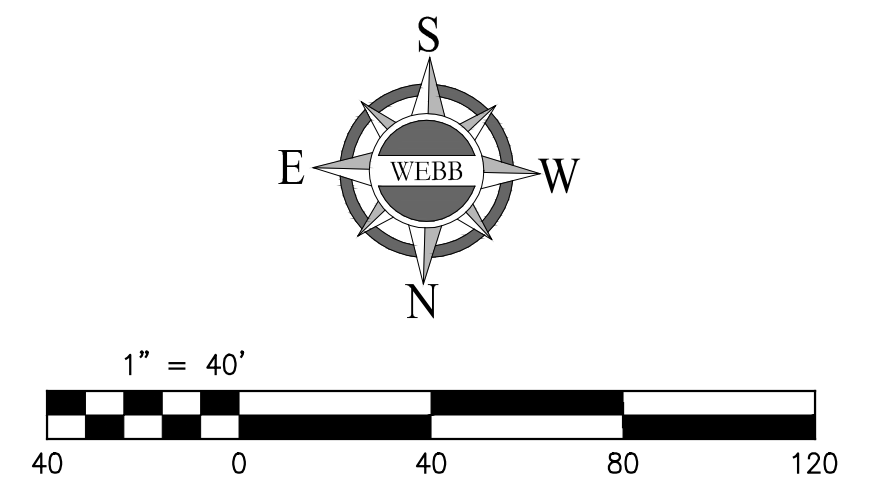
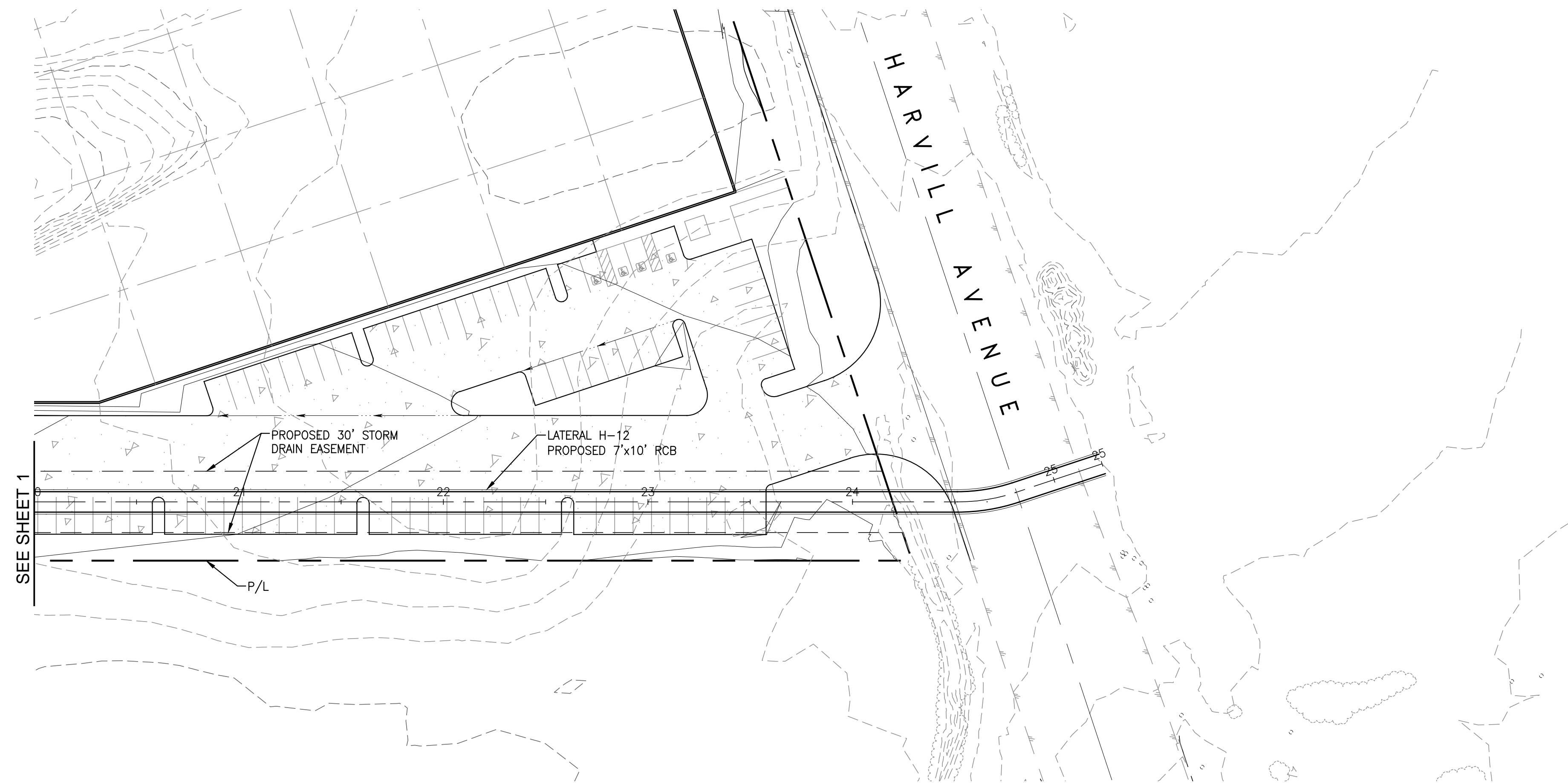
Calculated Max Shear Stress: 1.1725 lb/ft²

Calculated Avg Shear Stress: 0.5205 lb/ft²



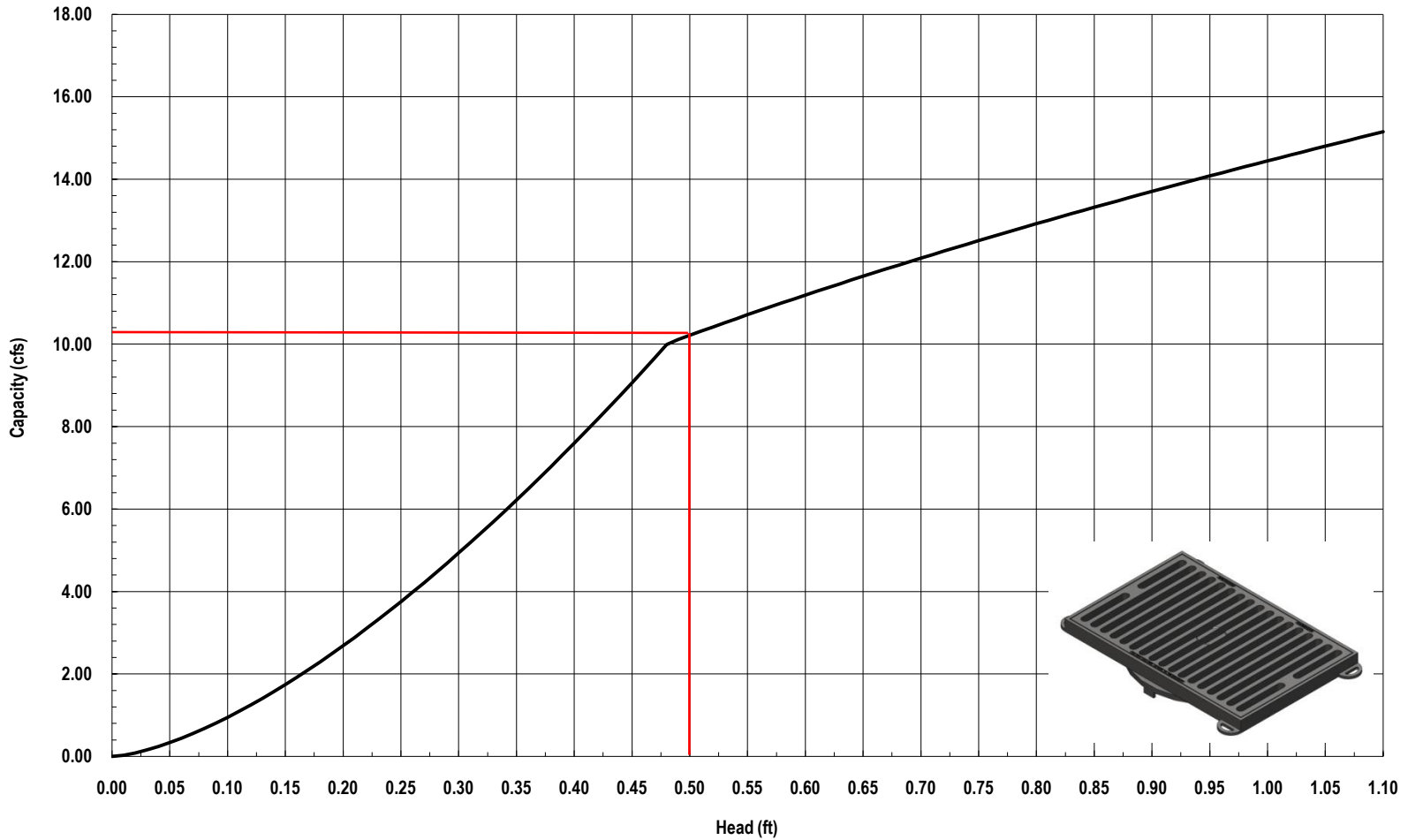
PROFILE SCALES
 HORIZ. 1"=40'
 VERT. 1"=4'

20+00 21+00 22+00 23+00 24+00 25+00 26+00



INLET CALCULATIONS

Nyloplast 2' x 3' Road & Highway Grate Inlet Capacity Chart



3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490
© Nyloplast Inlet Capacity Charts June 2012

OUTLET STRUCTURE B

Weir Inlet Ponding Depth Calculation



Designer: TSW

Date: 11/11/2020

Project: Duke Harvill & Rider

Location: Outlet Structure

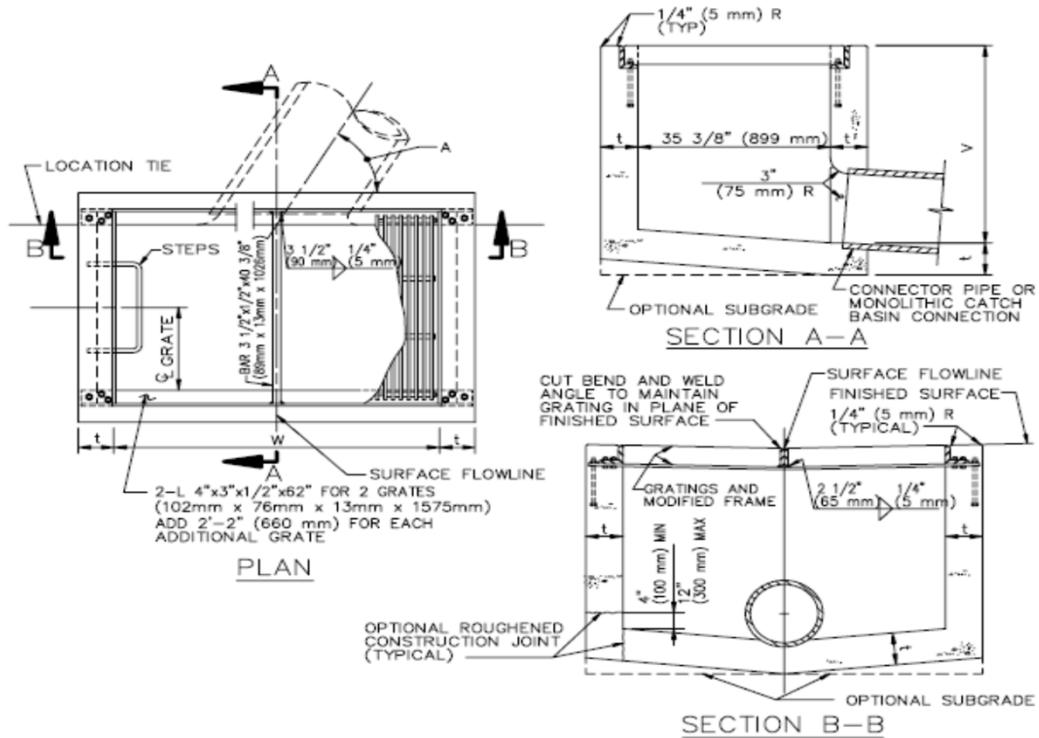
OUTLET STRUCTURE PONDING DEPTH SPPWC 305-3

DISCHARGE (cfs) 10.1
 NUMBER OF GRATES 2
 LENGTH (ft) 14.479

$$Q = CL(h)^{3/2}$$

WEIR COEFFICIENT	C	3	
WEIR LENGTH	L	14.479	ft ²
HEAD	h	0.38	ft
Flow	Q	10.10	cfs

Top of Weir Elevation: 1507
 Water Surface Elevation: 1507.38



APPENDIX D – BASIN ROUTING

STAGE STORAGE DISCHARGE TABLE

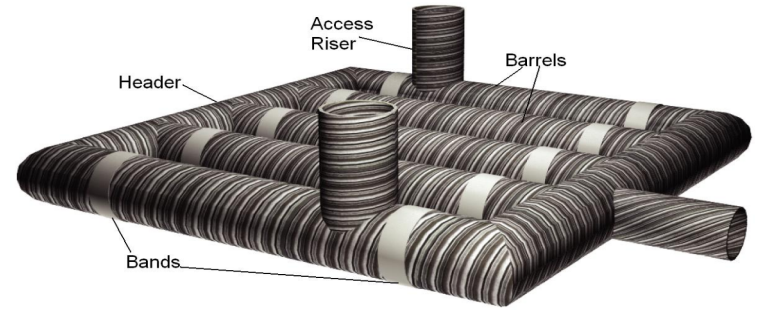
Duke Harvill & Rider
19-0126: Duke Realty - Harvill and Rider
Stage - Storage - Discharge Table

Basin Information: High Flow Mitigation Underground Chambers						2-Year 24 Hour Orifice		5-Year 24 Hour Orifice		10-Year 24 Hour Orifice		100-Year 24 Hour Orifice		
Invert Elevation:		1496.5	FT		EX. Q 2-YR 24-HR	0.4	EX. Q 5-YR 24-HR	1.20	EX. Q 10-YR 24-HR	1.80	EX. Q 100-YR 24-HR	3.80		
Length:		200	FT		Opening (IN)	2	Opening (IN)	3.5	Width(IN)	3.0	Width(IN)	6.0		
Width:		64	FT		Opening (FT)	0.167	Opening (FT)	0.292	Height (IN)	3.0	Height (IN)	4.0		
Footprint:		12,800	SF		AREA (SF)	0.022	AREA (SF)	0.067	AREA (SF)	0.063	AREA (SF)	0.167		
Invert Slope:		0.2	%		# of Orifices	2	# of Orifices	2	# of Orifices	1	# of Orifices	1		
					Total Area (SF)	0.044	Total Area (SF)	0.134	Total Area (SF)	0.063	Total Area (SF)	0.167		
					G (FT/s^2)	32.2	G (FT/s^2)	32.2	G (FT/s^2)	32.2	G (FT/s^2)	32.2		
					Cd	0.66	Cd	0.66	Cd	0.66	Cd	0.66		
					Invert H (FT)	1496.5	Invert H (FT)	1500.6	Invert H (FT)	1501.7	Invert H (FT)	1502.4		
Point #	Elevation (FT)	Depth (FT)	CMP Chambers Storage (AC-FT)	Truck Court Storage (AC-FT)	Total Storage (AC-FT)	h (FT)	Q** (CFS)	h (FT)	Q** (CFS)	h (FT)	Q** (CFS)	h (FT)	Q** (CFS)	Qttotal (CFS)
1.00	1,496.50	0.00	0.000		0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000	0.000
2.00	1,496.70	0.20	0.029		0.029	0.12	0.079	0.00	0.000	0.00	0.000	0.00	0.000	0.079
3.00	1,497.00	0.50	0.081		0.081	0.42	0.149	0.00	0.000	0.00	0.000	0.00	0.000	0.149
4.00	1,497.50	1.00	0.178		0.178	0.92	0.221	0.00	0.000	0.00	0.000	0.00	0.000	0.221
5.00	1,498.50	2.00	0.395		0.395	1.92	0.320	0.00	0.000	0.00	0.000	0.00	0.000	0.320
6.00	1,499.50	3.00	0.627		0.627	2.92	0.395	0.00	0.000	0.00	0.000	0.00	0.000	0.395
7.00	1,500.50	4.00	0.859		0.859	3.92	0.457	0.00	0.000	0.00	0.000	0.00	0.000	0.457
8.00	1,500.90	4.40	0.948		0.948	4.32	0.480	0.15	0.278	0.00	0.000	0.00	0.000	0.758
9.00	1,501.00	4.50	0.970		0.970	4.42	0.486	0.25	0.357	0.00	0.000	0.00	0.000	0.842
10.00	1,501.50	5.00	1.076		1.076	4.92	0.512	0.75	0.615	0.00	0.000	0.00	0.000	1.127
11.00	1,501.90	5.40	1.155		1.155	5.32	0.533	1.15	0.760	0.00	0.000	0.00	0.000	1.293
12.00	1,502.00	5.50	1.173		1.173	5.42	0.538	1.25	0.793	0.17	0.138	0.00	0.000	1.469
13.00	1,502.50	6.00	1.254		1.254	5.92	0.562	1.75	0.937	0.67	0.272	0.00	0.000	1.771
14.00	1,502.70	6.20	1.277		1.277	6.12	0.572	1.95	0.989	0.88	0.310	0.00	0.000	1.871
15.00	1,502.80	6.30	1.289		1.289	6.22	0.576	2.05	1.014	0.97	0.327	0.23	0.426	2.344
16.00	1,503.20	6.70	1.336		1.336	6.62	0.594	2.45	1.109	1.38	0.388	0.63	0.703	2.794
17.00	1,503.90	7.40	1.336	0.000	1.336	7.32	0.625	3.15	1.257	2.08	0.477	1.33	1.019	3.378
18.00	1,504.00	7.50	1.336	0.002	1.338	7.42	0.629	3.25	1.277	2.17	0.488	1.43	1.057	3.451
19.00	1,504.50	8.00	1.336	0.236	1.572	7.92	0.650	3.75	1.371	2.67	0.541	1.93	1.227	3.790
20.00	1,505.00	8.50	1.336	1.178	2.514	8.42	0.670	4.25	1.460	3.17	0.590	2.43	1.377	4.097

**Q determined using orifice equation, Q=CA(2gh)^0.5

HIGH FLOW MITIGATION CHAMBERS

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



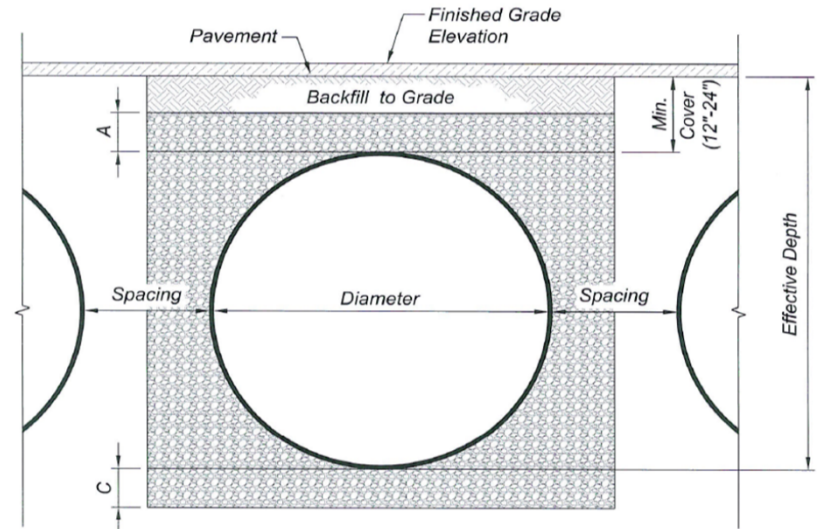
Project Summary

Date:	11/10/2020
Project Name:	Duke Harvill & Rider
City / County:	Riverside County
State:	CA
Designed By:	TSW
Company:	Albert A. Webb Associates
Telephone:	(951) 686-1070

Enter Information in
Blue Cells

Corrugated Metal Pipe Calculator

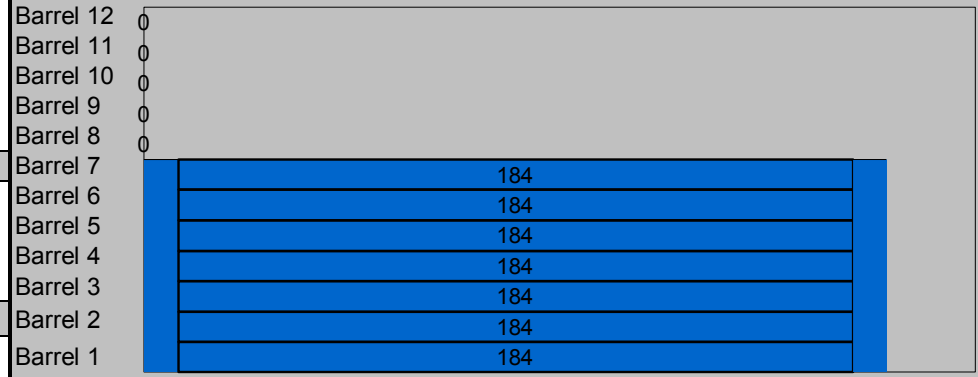
Storage Volume Required (cf):	58,000	28.27 ft ² Pipe Area
Limiting Width (ft):	70.00	
Invert Depth Below Asphalt (ft):	5.60	
Solid or Perforated Pipe:	Perforated	
Shape Or Diameter (in):	72	
Number Of Headers:	2	
Spacing between Barrels (ft):	3.00	
Stone Width Around Perimeter of System (ft):	2	
Depth A: Porous Stone Above Pipe (in):	9	
Depth C: Porous Stone Below Pipe (in):	0	
Stone Porosity (0 to 40%):	40	



System Sizing

Pipe Storage:	39,810 cf	
Porous Stone Storage:	18,636 cf	
Total Storage Provided:	58,446 cf	100.8% Of Required Storage
Number of Barrels:	7 barrels	
Length per Barrel:	184.0 ft	
Length Per Header:	60.0 ft	
Rectangular Footprint (W x L):	64. ft x 200. ft	

System Layout



Barrel Footage (w/o headers)

CONTECH Materials

Total CMP Footage:	1,408 ft
Approximate Total Pieces:	62 pcs
Approximate Coupling Bands:	67 bands
Approximate Truckloads:	31 trucks

Construction Quantities**

Total Excavation:	2655 cy
Porous Stone Backfill For Storage:	1726 cy stone
Backfill to Grade Excluding Stone:	-545 cy fill

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

BASIN ROUTING: H-12 ONSITE TRIBUTARY AREA

2-YEAR 24-HOUR ROUTING

 19-0126 - DUKE HARVILL
 BASIN ROUTING CALCULATIONS, PROPOSED H-12 TRIBUTARY
 2-YEAR, 24-HOUR STORM EVENT
 FN: ROUTE242.OUT TSW

Program License Serial Number 4010

***** HYDROGRAPH INFORMATION *****

From study/file name: ONSITEPOST242.rte
 *****HYDROGRAPH DATA*****
 Number of intervals = 293
 Time interval = 5.0 (Min.)
 Maximum/Peak flow rate = 2.136 (CFS)
 Total volume = 1.298 (Ac.Ft)
 Status of hydrographs being held in storage
 Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
 Peak (CFS) 0.000 0.000 0.000 0.000 0.000
 Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
 Process from Point/Station 100.000 to Point/Station 101.000
 **** RETARDING BASIN ROUTING ****

 User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
 Hydrograph time unit = 5.000 (Min.)
 Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
 Initial basin storage = 0.00 (Ac.Ft)
 Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.200	0.029	0.079	0.029	0.029
0.500	0.081	0.149	0.080	0.082
1.000	0.178	0.221	0.177	0.179
2.000	0.395	0.320	0.394	0.396
3.000	0.627	0.395	0.626	0.628
4.000	0.859	0.457	0.857	0.861
4.400	0.948	0.758	0.945	0.951
4.500	0.970	0.842	0.967	0.973
5.000	1.076	1.127	1.072	1.080
5.400	1.155	1.293	1.151	1.159
5.500	1.173	1.469	1.168	1.178
6.000	1.254	1.771	1.248	1.260
6.200	1.277	1.871	1.271	1.283
6.300	1.289	2.344	1.281	1.297
6.700	1.336	2.794	1.326	1.346
7.400	1.336	3.378	1.324	1.348
7.500	1.133	3.451	1.121	1.145
8.000	1.572	3.790	1.559	1.585
8.500	2.514	4.097	2.500	2.528

 Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	0	0.5	1.07	1.60	2.14	Depth (Ft.)

ROUTE242.out

0.083	0.04	0.00	0.000	O		0.00
0.167	0.10	0.00	0.001	OI		0.00
0.250	0.12	0.00	0.001	OI		0.01
0.333	0.14	0.01	0.002	O I		0.02
0.417	0.18	0.01	0.003	O I		0.02
0.500	0.18	0.01	0.004	O I		0.03
0.583	0.19	0.02	0.006	O I		0.04
0.667	0.19	0.02	0.007	O I		0.05
0.750	0.19	0.02	0.008	O I		0.05
0.833	0.21	0.02	0.009	O I		0.06
0.917	0.24	0.03	0.011	O I		0.07
1.000	0.25	0.03	0.012	O I		0.08
1.083	0.23	0.04	0.013	O I		0.09
1.167	0.20	0.04	0.015	O I		0.10
1.250	0.19	0.04	0.016	O I		0.11
1.333	0.19	0.05	0.017	O I		0.12
1.417	0.19	0.05	0.018	O I		0.12
1.500	0.19	0.05	0.019	O I		0.13
1.583	0.19	0.05	0.020	O I		0.13
1.667	0.19	0.06	0.020	O I		0.14
1.750	0.19	0.06	0.021	O I		0.15
1.833	0.21	0.06	0.022	O I		0.15
1.917	0.24	0.06	0.023	O I		0.16
2.000	0.25	0.07	0.025	O I		0.17
2.083	0.25	0.07	0.026	O I		0.18
2.167	0.25	0.07	0.027	O I		0.19
2.250	0.25	0.08	0.028	O I		0.20
2.333	0.25	0.08	0.030	O I		0.20
2.417	0.25	0.08	0.031	O I		0.21
2.500	0.25	0.08	0.032	O I		0.22
2.583	0.27	0.08	0.033	O I		0.22
2.667	0.30	0.09	0.035	O I		0.23
2.750	0.31	0.09	0.036	O I		0.24
2.833	0.31	0.09	0.038	O I		0.25
2.917	0.31	0.09	0.039	O I		0.26
3.000	0.31	0.09	0.041	O I		0.27
3.083	0.31	0.10	0.042	O I		0.28
3.167	0.31	0.10	0.044	O I		0.28
3.250	0.31	0.10	0.045	O I		0.29
3.333	0.31	0.10	0.047	O I		0.30
3.417	0.31	0.10	0.048	O I		0.31
3.500	0.31	0.11	0.049	O I		0.32
3.583	0.31	0.11	0.051	O I		0.33
3.667	0.31	0.11	0.052	O I		0.33
3.750	0.31	0.11	0.054	O I		0.34
3.833	0.34	0.11	0.055	O I		0.35
3.917	0.37	0.12	0.057	O I		0.36
4.000	0.37	0.12	0.058	O I		0.37
4.083	0.37	0.12	0.060	O I		0.38
4.167	0.38	0.12	0.062	O I		0.39
4.250	0.38	0.13	0.064	O I		0.40
4.333	0.40	0.13	0.065	O I		0.41
4.417	0.43	0.13	0.067	O I		0.42
4.500	0.43	0.13	0.069	O I		0.43
4.583	0.44	0.14	0.072	O I		0.45
4.667	0.44	0.14	0.074	O I		0.46
4.750	0.44	0.14	0.076	O I		0.47
4.833	0.46	0.14	0.078	O I		0.48
4.917	0.49	0.15	0.080	O I		0.49
5.000	0.50	0.15	0.082	O I		0.51
5.083	0.46	0.15	0.085	O I		0.52
5.167	0.40	0.15	0.087	O I		0.53
5.250	0.39	0.15	0.088	O I		0.54
5.333	0.40	0.16	0.090	O I		0.55
5.417	0.43	0.16	0.092	O I		0.56
5.500	0.43	0.16	0.094	O I		0.56
5.583	0.46	0.16	0.096	O I		0.58
5.667	0.49	0.16	0.098	O I		0.59
5.750	0.50	0.16	0.100	O I		0.60
5.833	0.50	0.16	0.102	O I		0.61
5.917	0.50	0.17	0.105	O I		0.62
6.000	0.50	0.17	0.107	O I		0.63
6.083	0.52	0.17	0.109	O I		0.65
6.167	0.55	0.17	0.112	O I		0.66
6.250	0.56	0.17	0.115	O I		0.67
6.333	0.56	0.18	0.117	O I		0.69
6.417	0.56	0.18	0.120	O I		0.70
6.500	0.57	0.18	0.123	O I		0.71
6.583	0.59	0.18	0.125	O I		0.73
6.667	0.62	0.18	0.128	O I		0.74
6.750	0.62	0.19	0.131	O I		0.76
6.833	0.63	0.19	0.134	O I		0.77
6.917	0.63	0.19	0.137	O I		0.79
7.000	0.63	0.19	0.140	O I		0.80

ROUTE242.out

7.083	0.63	0.20	0.143	0	I				0.82
7.167	0.63	0.20	0.146	0	I				0.84
7.250	0.63	0.20	0.149	0	I				0.85
7.333	0.65	0.20	0.152	0	I				0.87
7.417	0.68	0.20	0.155	0	I				0.88
7.500	0.69	0.21	0.159	0	I				0.90
7.583	0.71	0.21	0.162	0	I				0.92
7.667	0.74	0.21	0.166	0	I				0.94
7.750	0.75	0.21	0.169	0	I				0.95
7.833	0.77	0.22	0.173	0	I				0.97
7.917	0.80	0.22	0.177	0	I				0.99
8.000	0.81	0.22	0.181	0	I				1.01
8.083	0.86	0.22	0.185	0	I				1.03
8.167	0.92	0.23	0.190	0	I				1.05
8.250	0.93	0.23	0.194	0	I				1.08
8.333	0.94	0.23	0.199	0	I				1.10
8.417	0.94	0.23	0.204	0	I				1.12
8.500	0.94	0.24	0.209	0	I				1.14
8.583	0.96	0.24	0.214	0	I				1.17
8.667	0.99	0.24	0.219	0	I				1.19
8.750	1.00	0.24	0.224	0	I				1.21
8.833	1.03	0.24	0.230	0	I				1.24
8.917	1.06	0.25	0.235	0	I				1.26
9.000	1.06	0.25	0.241	0	I				1.29
9.083	1.11	0.25	0.246	0	I				1.32
9.167	1.17	0.26	0.253	0	I				1.34
9.250	1.18	0.26	0.259	0	I				1.37
9.333	1.21	0.26	0.265	0	I				1.40
9.417	1.24	0.26	0.272	0	I				1.43
9.500	1.25	0.27	0.279	0	I				1.46
9.583	1.28	0.27	0.286	0	I				1.50
9.667	1.31	0.27	0.293	0	I				1.53
9.750	1.31	0.28	0.300	0	I				1.56
9.833	1.34	0.28	0.307	0	I				1.59
9.917	1.37	0.28	0.314	0	I				1.63
10.000	1.38	0.29	0.322	0	I				1.66
10.083	1.23	0.29	0.329	0	I				1.70
10.167	1.02	0.29	0.335	0	I				1.72
10.250	0.98	0.29	0.340	0	I				1.74
10.333	0.96	0.30	0.344	0	I				1.77
10.417	0.95	0.30	0.349	0	I				1.79
10.500	0.94	0.30	0.353	0	I				1.81
10.583	1.05	0.30	0.358	0	I				1.83
10.667	1.20	0.31	0.364	0	I				1.85
10.750	1.23	0.31	0.370	0	I				1.88
10.833	1.25	0.31	0.376	0	I				1.91
10.917	1.25	0.31	0.383	0	I				1.94
11.000	1.26	0.32	0.389	0	I				1.97
11.083	1.24	0.32	0.395	0	I				2.00
11.167	1.21	0.32	0.402	0	I				2.03
11.250	1.20	0.32	0.408	0	I				2.05
11.333	1.20	0.33	0.414	0	I				2.08
11.417	1.19	0.33	0.420	0	I				2.11
11.500	1.19	0.33	0.426	0	I				2.13
11.583	1.15	0.33	0.431	0	I				2.16
11.667	1.09	0.33	0.437	0	I				2.18
11.750	1.08	0.34	0.442	0	I				2.20
11.833	1.09	0.34	0.447	0	I				2.23
11.917	1.12	0.34	0.453	0	I				2.25
12.000	1.13	0.34	0.458	0	I				2.27
12.083	1.28	0.34	0.464	0	I				2.30
12.167	1.49	0.34	0.471	0	I				2.33
12.250	1.54	0.35	0.479	0	I				2.36
12.333	1.58	0.35	0.487	0	I				2.40
12.417	1.62	0.35	0.496	0	I				2.44
12.500	1.63	0.36	0.505	0	I				2.47
12.583	1.68	0.36	0.514	0	I				2.51
12.667	1.74	0.36	0.523	0	I				2.55
12.750	1.75	0.36	0.532	0	I				2.59
12.833	1.78	0.37	0.542	0	I				2.63
12.917	1.81	0.37	0.552	0	I				2.68
13.000	1.82	0.37	0.562	0	I				2.72
13.083	1.93	0.38	0.572	0	I				2.76
13.167	2.08	0.38	0.583	0	I				2.81
13.250	2.11	0.38	0.595	0	I				2.86
13.333	2.13	0.39	0.607	0	I				2.91
13.417	2.13	0.39	0.619	0	I				2.97
13.500	2.14	0.40	0.631	0	I				3.02
13.583	1.90	0.40	0.642	0	I				3.07
13.667	1.58	0.40	0.651	0	I				3.10
13.750	1.50	0.40	0.659	0	I				3.14
13.833	1.47	0.41	0.667	0	I				3.17
13.917	1.45	0.41	0.674	0	I				3.20
14.000	1.45	0.41	0.681	0	I				3.23

ROUTE242.out

14.083	1.53	0.41	0.688	O			I		3.26
14.167	1.65	0.41	0.697	O			I		3.30
14.250	1.68	0.42	0.705	O			I	I	3.34
14.333	1.67	0.42	0.714	O			I		3.37
14.417	1.64	0.42	0.722	O			I		3.41
14.500	1.64	0.42	0.731	O			I		3.45
14.583	1.64	0.42	0.739	O			I		3.48
14.667	1.63	0.43	0.747	O			I		3.52
14.750	1.63	0.43	0.756	O			I		3.55
14.833	1.61	0.43	0.764	O			I		3.59
14.917	1.58	0.43	0.772	O			I		3.62
15.000	1.58	0.44	0.780	O			I		3.66
15.083	1.55	0.44	0.788	O			I		3.69
15.167	1.52	0.44	0.795	O			I		3.72
15.250	1.51	0.44	0.802	O			I		3.76
15.333	1.49	0.44	0.810	O			I		3.79
15.417	1.46	0.45	0.817	O			I		3.82
15.500	1.45	0.45	0.824	O			I		3.85
15.583	1.36	0.45	0.830	O			I		3.88
15.667	1.24	0.45	0.836	O			I		3.90
15.750	1.21	0.45	0.842	O			I		3.92
15.833	1.20	0.45	0.847	O			I		3.95
15.917	1.20	0.46	0.852	O			I		3.97
16.000	1.19	0.46	0.857	O			I		3.99
16.083	0.87	0.46	0.861	O		I			4.01
16.167	0.43	0.47	0.862	O		I			4.01
16.250	0.33	0.47	0.862	I	O				4.01
16.333	0.28	0.46	0.860	I	O				4.01
16.417	0.26	0.46	0.859	I	O				4.00
16.500	0.25	0.46	0.858	I	O				3.99
16.583	0.23	0.46	0.856	I	O				3.99
16.667	0.20	0.46	0.855	I	O				3.98
16.750	0.19	0.46	0.853	I	O				3.97
16.833	0.19	0.45	0.851	I	O				3.97
16.917	0.19	0.45	0.849	I	O				3.96
17.000	0.19	0.45	0.847	I	O				3.95
17.083	0.23	0.45	0.846	I	O				3.94
17.167	0.29	0.45	0.844	I	O				3.94
17.250	0.30	0.45	0.843	I	O				3.93
17.333	0.31	0.45	0.842	I	O				3.93
17.417	0.31	0.45	0.841	I	O				3.92
17.500	0.31	0.45	0.840	I	O				3.92
17.583	0.31	0.45	0.839	I	O				3.92
17.667	0.31	0.45	0.839	I	O				3.91
17.750	0.31	0.45	0.838	I	O				3.91
17.833	0.29	0.45	0.837	I	O				3.90
17.917	0.26	0.45	0.835	I	O				3.90
18.000	0.26	0.45	0.834	I	O				3.89
18.083	0.25	0.45	0.833	I	O				3.89
18.167	0.25	0.45	0.831	I	O				3.88
18.250	0.25	0.45	0.830	I	O				3.87
18.333	0.25	0.45	0.829	I	O				3.87
18.417	0.25	0.45	0.827	I	O				3.86
18.500	0.25	0.45	0.826	I	O				3.86
18.583	0.23	0.45	0.824	I	O				3.85
18.667	0.20	0.45	0.823	I	O				3.84
18.750	0.19	0.45	0.821	I	O				3.84
18.833	0.17	0.45	0.819	I	O				3.83
18.917	0.14	0.45	0.817	I	O				3.82
19.000	0.13	0.45	0.815	I	O				3.81
19.083	0.15	0.44	0.813	I	O				3.80
19.167	0.18	0.44	0.811	I	O				3.79
19.250	0.18	0.44	0.809	I	O				3.79
19.333	0.21	0.44	0.808	I	O				3.78
19.417	0.24	0.44	0.806	I	O				3.77
19.500	0.25	0.44	0.805	I	O				3.77
19.583	0.23	0.44	0.803	I	O				3.76
19.667	0.20	0.44	0.802	I	O				3.75
19.750	0.19	0.44	0.800	I	O				3.75
19.833	0.17	0.44	0.798	I	O				3.74
19.917	0.14	0.44	0.796	I	O				3.73
20.000	0.13	0.44	0.794	I	O				3.72
20.083	0.15	0.44	0.792	I	O				3.71
20.167	0.18	0.44	0.790	I	O				3.70
20.250	0.18	0.44	0.788	I	O				3.70
20.333	0.19	0.44	0.787	I	O				3.69
20.417	0.19	0.44	0.785	I	O				3.68
20.500	0.19	0.44	0.783	I	O				3.67
20.583	0.19	0.44	0.782	I	O				3.67
20.667	0.19	0.44	0.780	I	O				3.66
20.750	0.19	0.44	0.778	I	O				3.65
20.833	0.17	0.43	0.776	I	O				3.64
20.917	0.14	0.43	0.774	I	O				3.64
21.000	0.13	0.43	0.772	I	O				3.63

ROUTE242.out

21.083	0.15	0.43	0.770	I	0	3.62
21.167	0.18	0.43	0.768	I	0	3.61
21.250	0.18	0.43	0.767	I	0	3.60
21.333	0.16	0.43	0.765	I	0	3.59
21.417	0.14	0.43	0.763	I	0	3.59
21.500	0.13	0.43	0.761	I	0	3.58
21.583	0.15	0.43	0.759	I	0	3.57
21.667	0.18	0.43	0.757	I	0	3.56
21.750	0.18	0.43	0.755	I	0	3.55
21.833	0.16	0.43	0.754	I	0	3.55
21.917	0.14	0.43	0.752	I	0	3.54
22.000	0.13	0.43	0.750	I	0	3.53
22.083	0.15	0.43	0.748	I	0	3.52
22.167	0.18	0.43	0.746	I	0	3.51
22.250	0.18	0.43	0.744	I	0	3.51
22.333	0.16	0.43	0.743	I	0	3.50
22.417	0.14	0.43	0.741	I	0	3.49
22.500	0.13	0.42	0.739	I	0	3.48
22.583	0.13	0.42	0.737	I	0	3.47
22.667	0.13	0.42	0.735	I	0	3.46
22.750	0.13	0.42	0.732	I	0	3.45
22.833	0.13	0.42	0.730	I	0	3.45
22.917	0.13	0.42	0.728	I	0	3.44
23.000	0.13	0.42	0.726	I	0	3.43
23.083	0.13	0.42	0.724	I	0	3.42
23.167	0.13	0.42	0.722	I	0	3.41
23.250	0.13	0.42	0.720	I	0	3.40
23.333	0.13	0.42	0.718	I	0	3.39
23.417	0.13	0.42	0.716	I	0	3.38
23.500	0.13	0.42	0.714	I	0	3.38
23.583	0.13	0.42	0.712	I	0	3.37
23.667	0.13	0.42	0.710	I	0	3.36
23.750	0.13	0.42	0.708	I	0	3.35
23.833	0.13	0.42	0.706	I	0	3.34
23.917	0.13	0.42	0.704	I	0	3.33
24.000	0.13	0.42	0.702	I	0	3.32
24.083	0.08	0.41	0.700	I	0	3.31
24.167	0.02	0.41	0.698	I	0	3.30
24.250	0.01	0.41	0.695	I	0	3.29
24.333	0.00	0.41	0.692	I	0	3.28
24.417	0.00	0.41	0.689	I	0	3.27
24.500	0.00	0.41	0.686	I	0	3.26
24.583	0.00	0.41	0.684	I	0	3.24
24.667	0.00	0.41	0.681	I	0	3.23
24.750	0.00	0.41	0.678	I	0	3.22
24.833	0.00	0.41	0.675	I	0	3.21
24.917	0.00	0.41	0.672	I	0	3.20
25.000	0.00	0.41	0.669	I	0	3.18
25.083	0.00	0.41	0.667	I	0	3.17
25.167	0.00	0.40	0.664	I	0	3.16
25.250	0.00	0.40	0.661	I	0	3.15
25.333	0.00	0.40	0.658	I	0	3.14
25.417	0.00	0.40	0.656	I	0	3.12
25.500	0.00	0.40	0.653	I	0	3.11
25.583	0.00	0.40	0.650	I	0	3.10
25.667	0.00	0.40	0.647	I	0	3.09
25.750	0.00	0.40	0.645	I	0	3.08
25.833	0.00	0.40	0.642	I	0	3.06
25.917	0.00	0.40	0.639	I	0	3.05
26.000	0.00	0.40	0.636	I	0	3.04
26.083	0.00	0.40	0.634	I	0	3.03
26.167	0.00	0.40	0.631	I	0	3.02
26.250	0.00	0.40	0.628	I	0	3.00
26.333	0.00	0.39	0.625	I	0	2.99
26.417	0.00	0.39	0.623	I	0	2.98
26.500	0.00	0.39	0.620	I	0	2.97
26.583	0.00	0.39	0.617	I	0	2.96
26.667	0.00	0.39	0.615	I	0	2.95
26.750	0.00	0.39	0.612	I	0	2.93
26.833	0.00	0.39	0.609	I	0	2.92
26.917	0.00	0.39	0.606	I	0	2.91
27.000	0.00	0.39	0.604	I	0	2.90
27.083	0.00	0.39	0.601	I	0	2.89
27.167	0.00	0.39	0.598	I	0	2.88
27.250	0.00	0.38	0.596	I	0	2.87
27.333	0.00	0.38	0.593	I	0	2.85
27.417	0.00	0.38	0.591	I	0	2.84
27.500	0.00	0.38	0.588	I	0	2.83
27.583	0.00	0.38	0.585	I	0	2.82
27.667	0.00	0.38	0.583	I	0	2.81
27.750	0.00	0.38	0.580	I	0	2.80
27.833	0.00	0.38	0.577	I	0	2.79
27.917	0.00	0.38	0.575	I	0	2.78
28.000	0.00	0.38	0.572	I	0	2.76

ROUTE242.out

28.083	0.00	0.38	0.570	I	0	2.75
28.167	0.00	0.38	0.567	I	0	2.74
28.250	0.00	0.37	0.564	I	0	2.73
28.333	0.00	0.37	0.562	I	0	2.72
28.417	0.00	0.37	0.559	I	0	2.71
28.500	0.00	0.37	0.557	I	0	2.70
28.583	0.00	0.37	0.554	I	0	2.69
28.667	0.00	0.37	0.552	I	0	2.68
28.750	0.00	0.37	0.549	I	0	2.66
28.833	0.00	0.37	0.547	I	0	2.65
28.917	0.00	0.37	0.544	I	0	2.64
29.000	0.00	0.37	0.541	I	0	2.63
29.083	0.00	0.37	0.539	I	0	2.62
29.167	0.00	0.37	0.536	I	0	2.61
29.250	0.00	0.36	0.534	I	0	2.60
29.333	0.00	0.36	0.531	I	0	2.59
29.417	0.00	0.36	0.529	I	0	2.58
29.500	0.00	0.36	0.526	I	0	2.57
29.583	0.00	0.36	0.524	I	0	2.56
29.667	0.00	0.36	0.521	I	0	2.54
29.750	0.00	0.36	0.519	I	0	2.53
29.833	0.00	0.36	0.516	I	0	2.52
29.917	0.00	0.36	0.514	I	0	2.51
30.000	0.00	0.36	0.511	I	0	2.50
30.083	0.00	0.36	0.509	I	0	2.49
30.167	0.00	0.36	0.507	I	0	2.48
30.250	0.00	0.36	0.504	I	0	2.47
30.333	0.00	0.35	0.502	I	0	2.46
30.417	0.00	0.35	0.499	I	0	2.45
30.500	0.00	0.35	0.497	I	0	2.44
30.583	0.00	0.35	0.494	I	0	2.43
30.667	0.00	0.35	0.492	I	0	2.42
30.750	0.00	0.35	0.490	I	0	2.41
30.833	0.00	0.35	0.487	I	0	2.40
30.917	0.00	0.35	0.485	I	0	2.39
31.000	0.00	0.35	0.482	I	0	2.38
31.083	0.00	0.35	0.480	I	0	2.37
31.167	0.00	0.35	0.478	I	0	2.36
31.250	0.00	0.35	0.475	I	0	2.35
31.333	0.00	0.35	0.473	I	0	2.34
31.417	0.00	0.34	0.470	I	0	2.33
31.500	0.00	0.34	0.468	I	0	2.31
31.583	0.00	0.34	0.466	I	0	2.30
31.667	0.00	0.34	0.463	I	0	2.29
31.750	0.00	0.34	0.461	I	0	2.28
31.833	0.00	0.34	0.459	I	0	2.27
31.917	0.00	0.34	0.456	I	0	2.26
32.000	0.00	0.34	0.454	I	0	2.25
32.083	0.00	0.34	0.452	I	0	2.24
32.167	0.00	0.34	0.449	I	0	2.23
32.250	0.00	0.34	0.447	I	0	2.22
32.333	0.00	0.34	0.445	I	0	2.21
32.417	0.00	0.34	0.442	I	0	2.20
32.500	0.00	0.33	0.440	I	0	2.19
32.583	0.00	0.33	0.438	I	0	2.18
32.667	0.00	0.33	0.435	I	0	2.17
32.750	0.00	0.33	0.433	I	0	2.16
32.833	0.00	0.33	0.431	I	0	2.15
32.917	0.00	0.33	0.429	I	0	2.14
33.000	0.00	0.33	0.426	I	0	2.13
33.083	0.00	0.33	0.424	I	0	2.13
33.167	0.00	0.33	0.422	I	0	2.12
33.250	0.00	0.33	0.419	I	0	2.11
33.333	0.00	0.33	0.417	I	0	2.10
33.417	0.00	0.33	0.415	I	0	2.09
33.500	0.00	0.33	0.413	I	0	2.08
33.583	0.00	0.33	0.410	I	0	2.07
33.667	0.00	0.32	0.408	I	0	2.06
33.750	0.00	0.32	0.406	I	0	2.05
33.833	0.00	0.32	0.404	I	0	2.04
33.917	0.00	0.32	0.402	I	0	2.03
34.000	0.00	0.32	0.399	I	0	2.02
34.083	0.00	0.32	0.397	I	0	2.01
34.167	0.00	0.32	0.395	I	0	2.00
34.250	0.00	0.32	0.393	I	0	1.99
34.333	0.00	0.32	0.391	I	0	1.98
34.417	0.00	0.32	0.388	I	0	1.97
34.500	0.00	0.32	0.386	I	0	1.96
34.583	0.00	0.31	0.384	I	0	1.95
34.667	0.00	0.31	0.382	I	0	1.94
34.750	0.00	0.31	0.380	I	0	1.93
34.833	0.00	0.31	0.378	I	0	1.92
34.917	0.00	0.31	0.375	I	0	1.91
35.000	0.00	0.31	0.373	I	0	1.90

ROUTE242.out

35.083	0.00	0.31	0.371	I	0	1.89
35.167	0.00	0.31	0.369	I	0	1.88
35.250	0.00	0.31	0.367	I	0	1.87
35.333	0.00	0.31	0.365	I	0	1.86
35.417	0.00	0.31	0.363	I	0	1.85
35.500	0.00	0.30	0.361	I	0	1.84
35.583	0.00	0.30	0.358	I	0	1.83
35.667	0.00	0.30	0.356	I	0	1.82
35.750	0.00	0.30	0.354	I	0	1.81
35.833	0.00	0.30	0.352	I	0	1.80
35.917	0.00	0.30	0.350	I	0	1.79
36.000	0.00	0.30	0.348	I	0	1.78
36.083	0.00	0.30	0.346	I	0	1.77
36.167	0.00	0.30	0.344	I	0	1.76
36.250	0.00	0.30	0.342	I	0	1.76
36.333	0.00	0.29	0.340	I	0	1.75
36.417	0.00	0.29	0.338	I	0	1.74
36.500	0.00	0.29	0.336	I	0	1.73
36.583	0.00	0.29	0.334	I	0	1.72
36.667	0.00	0.29	0.332	I	0	1.71
36.750	0.00	0.29	0.330	I	0	1.70
36.833	0.00	0.29	0.328	I	0	1.69
36.917	0.00	0.29	0.326	I	0	1.68
37.000	0.00	0.29	0.324	I	0	1.67
37.083	0.00	0.29	0.322	I	0	1.66
37.167	0.00	0.29	0.320	I	0	1.65
37.250	0.00	0.28	0.318	I	0	1.65
37.333	0.00	0.28	0.316	I	0	1.64
37.417	0.00	0.28	0.314	I	0	1.63
37.500	0.00	0.28	0.312	I	0	1.62
37.583	0.00	0.28	0.310	I	0	1.61
37.667	0.00	0.28	0.308	I	0	1.60
37.750	0.00	0.28	0.306	I	0	1.59
37.833	0.00	0.28	0.304	I	0	1.58
37.917	0.00	0.28	0.302	I	0	1.57
38.000	0.00	0.28	0.301	I	0	1.56
38.083	0.00	0.28	0.299	I	0	1.56
38.167	0.00	0.28	0.297	I	0	1.55
38.250	0.00	0.27	0.295	I	0	1.54
38.333	0.00	0.27	0.293	I	0	1.53
38.417	0.00	0.27	0.291	I	0	1.52
38.500	0.00	0.27	0.289	I	0	1.51
38.583	0.00	0.27	0.287	I	0	1.50
38.667	0.00	0.27	0.285	I	0	1.50
38.750	0.00	0.27	0.284	I	0	1.49
38.833	0.00	0.27	0.282	I	0	1.48
38.917	0.00	0.27	0.280	I	0	1.47
39.000	0.00	0.27	0.278	I	0	1.46
39.083	0.00	0.27	0.276	I	0	1.45
39.167	0.00	0.26	0.274	I	0	1.44
39.250	0.00	0.26	0.273	I	0	1.44
39.333	0.00	0.26	0.271	I	0	1.43
39.417	0.00	0.26	0.269	I	0	1.42
39.500	0.00	0.26	0.267	I	0	1.41
39.583	0.00	0.26	0.265	I	0	1.40
39.667	0.00	0.26	0.264	I	0	1.39
39.750	0.00	0.26	0.262	I	0	1.39
39.833	0.00	0.26	0.260	I	0	1.38
39.917	0.00	0.26	0.258	I	0	1.37
40.000	0.00	0.26	0.256	I	0	1.36
40.083	0.00	0.26	0.255	I	0	1.35
40.167	0.00	0.26	0.253	I	0	1.35
40.250	0.00	0.25	0.251	I	0	1.34
40.333	0.00	0.25	0.249	I	0	1.33
40.417	0.00	0.25	0.248	I	0	1.32
40.500	0.00	0.25	0.246	I	0	1.31
40.583	0.00	0.25	0.244	I	0	1.31
40.667	0.00	0.25	0.242	I	0	1.30
40.750	0.00	0.25	0.241	I	0	1.29
40.833	0.00	0.25	0.239	I	0	1.28
40.917	0.00	0.25	0.237	I	0	1.27
41.000	0.00	0.25	0.236	I	0	1.27
41.083	0.00	0.25	0.234	I	0	1.26
41.167	0.00	0.25	0.232	I	0	1.25
41.250	0.00	0.24	0.231	I	0	1.24
41.333	0.00	0.24	0.229	I	0	1.23
41.417	0.00	0.24	0.227	I	0	1.23
41.500	0.00	0.24	0.226	I	0	1.22
41.583	0.00	0.24	0.224	I	0	1.21
41.667	0.00	0.24	0.222	I	0	1.20
41.750	0.00	0.24	0.221	I	0	1.20
41.833	0.00	0.24	0.219	I	0	1.19
41.917	0.00	0.24	0.217	I	0	1.18
42.000	0.00	0.24	0.216	I	0	1.17

ROUTE242.out

42.083	0.00	0.24	0.214	I	0	1.17
42.167	0.00	0.24	0.212	I	0	1.16
42.250	0.00	0.24	0.211	I	0	1.15
42.333	0.00	0.24	0.209	I	0	1.14
42.417	0.00	0.23	0.207	I	0	1.14
42.500	0.00	0.23	0.206	I	0	1.13
42.583	0.00	0.23	0.204	I	0	1.12
42.667	0.00	0.23	0.203	I	0	1.11
42.750	0.00	0.23	0.201	I	0	1.11
42.833	0.00	0.23	0.199	I	0	1.10
42.917	0.00	0.23	0.198	I	0	1.09
43.000	0.00	0.23	0.196	I	0	1.08
43.083	0.00	0.23	0.195	I	0	1.08
43.167	0.00	0.23	0.193	I	0	1.07
43.250	0.00	0.23	0.192	I	0	1.06
43.333	0.00	0.23	0.190	I	0	1.06
43.417	0.00	0.23	0.188	I	0	1.05
43.500	0.00	0.23	0.187	I	0	1.04
43.583	0.00	0.22	0.185	I	0	1.03
43.667	0.00	0.22	0.184	I	0	1.03
43.750	0.00	0.22	0.182	I	0	1.02
43.833	0.00	0.22	0.181	I	0	1.01
43.917	0.00	0.22	0.179	I	0	1.01
44.000	0.00	0.22	0.178	I	0	1.00
44.083	0.00	0.22	0.176	I	0	0.99
44.167	0.00	0.22	0.175	I	0	0.98
44.250	0.00	0.22	0.173	I	0	0.97
44.333	0.00	0.22	0.172	I	0	0.97
44.417	0.00	0.22	0.170	I	0	0.96
44.500	0.00	0.21	0.169	I	0	0.95
44.583	0.00	0.21	0.167	I	0	0.94
44.667	0.00	0.21	0.166	I	0	0.94
44.750	0.00	0.21	0.164	I	0	0.93
44.833	0.00	0.21	0.163	I	0	0.92
44.917	0.00	0.21	0.161	I	0	0.91
45.000	0.00	0.21	0.160	I	0	0.91
45.083	0.00	0.21	0.159	I	0	0.90
45.167	0.00	0.21	0.157	I	0	0.89
45.250	0.00	0.20	0.156	I	0	0.89
45.333	0.00	0.20	0.154	I	0	0.88
45.417	0.00	0.20	0.153	I	0	0.87
45.500	0.00	0.20	0.152	I	0	0.86
45.583	0.00	0.20	0.150	I	0	0.86
45.667	0.00	0.20	0.149	I	0	0.85
45.750	0.00	0.20	0.147	I	0	0.84
45.833	0.00	0.20	0.146	I	0	0.84
45.917	0.00	0.20	0.145	I	0	0.83
46.000	0.00	0.20	0.143	I	0	0.82
46.083	0.00	0.19	0.142	I	0	0.81
46.167	0.00	0.19	0.141	I	0	0.81
46.250	0.00	0.19	0.139	I	0	0.80
46.333	0.00	0.19	0.138	I	0	0.79
46.417	0.00	0.19	0.137	I	0	0.79
46.500	0.00	0.19	0.135	I	0	0.78
46.583	0.00	0.19	0.134	I	0	0.77
46.667	0.00	0.19	0.133	I	0	0.77
46.750	0.00	0.19	0.132	I	0	0.76
46.833	0.00	0.19	0.130	I	0	0.75
46.917	0.00	0.18	0.129	I	0	0.75
47.000	0.00	0.18	0.128	I	0	0.74
47.083	0.00	0.18	0.126	I	0	0.73
47.167	0.00	0.18	0.125	I	0	0.73
47.250	0.00	0.18	0.124	I	0	0.72
47.333	0.00	0.18	0.123	I	0	0.71
47.417	0.00	0.18	0.121	I	0	0.71
47.500	0.00	0.18	0.120	I	0	0.70
47.583	0.00	0.18	0.119	I	0	0.70
47.667	0.00	0.18	0.118	I	0	0.69
47.750	0.00	0.18	0.117	I	0	0.68
47.833	0.00	0.17	0.115	I	0	0.68
47.917	0.00	0.17	0.114	I	0	0.67
48.000	0.00	0.17	0.113	I	0	0.66
48.083	0.00	0.17	0.112	I	0	0.66
48.167	0.00	0.17	0.111	I	0	0.65
48.250	0.00	0.17	0.109	I	0	0.65
48.333	0.00	0.17	0.108	I	0	0.64
48.417	0.00	0.17	0.107	I	0	0.63
48.500	0.00	0.17	0.106	I	0	0.63
48.583	0.00	0.17	0.105	I	0	0.62
48.667	0.00	0.17	0.104	I	0	0.62
48.750	0.00	0.16	0.102	I	0	0.61
48.833	0.00	0.16	0.101	I	0	0.60
48.917	0.00	0.16	0.100	I	0	0.60
49.000	0.00	0.16	0.099	I	0	0.59

49.083	0.00	0.16	0.098	I O		0.59
49.167	0.00	0.16	0.097	I O		0.58
49.250	0.00	0.16	0.096	I O		0.58
49.333	0.00	0.16	0.095	I O		0.57
49.417	0.00	0.16	0.094	I O		0.56
49.500	0.00	0.16	0.093	I O		0.56
49.583	0.00	0.16	0.091	I O		0.55
49.667	0.00	0.16	0.090	I O		0.55
49.750	0.00	0.16	0.089	I O		0.54
49.833	0.00	0.15	0.088	I O		0.54
49.917	0.00	0.15	0.087	I O		0.53
50.000	0.00	0.15	0.086	I O		0.53
50.083	0.00	0.15	0.085	I O		0.52
50.167	0.00	0.15	0.084	I O		0.52
50.250	0.00	0.15	0.083	I O		0.51
50.333	0.00	0.15	0.082	I O		0.50
50.417	0.00	0.15	0.081	I O		0.50
50.500	0.00	0.15	0.080	I O		0.49
50.583	0.00	0.15	0.079	I O		0.49
50.667	0.00	0.14	0.078	I O		0.48
50.750	0.00	0.14	0.077	I O		0.48
50.833	0.00	0.14	0.076	I O		0.47
50.917	0.00	0.14	0.075	I O		0.46
51.000	0.00	0.14	0.074	I O		0.46
51.083	0.00	0.14	0.073	I O		0.45
51.167	0.00	0.14	0.072	I O		0.45
51.250	0.00	0.14	0.071	I O		0.44
51.333	0.00	0.13	0.070	I O		0.44
51.417	0.00	0.13	0.069	IO		0.43
51.500	0.00	0.13	0.068	IO		0.43
51.583	0.00	0.13	0.067	IO		0.42
51.667	0.00	0.13	0.067	IO		0.42
51.750	0.00	0.13	0.066	IO		0.41
51.833	0.00	0.13	0.065	IO		0.41
51.917	0.00	0.13	0.064	IO		0.40
52.000	0.00	0.12	0.063	IO		0.40
52.083	0.00	0.12	0.062	IO		0.39
52.167	0.00	0.12	0.061	IO		0.39
52.250	0.00	0.12	0.060	IO		0.38
52.333	0.00	0.12	0.060	IO		0.38
52.417	0.00	0.12	0.059	IO		0.37
52.500	0.00	0.12	0.058	IO		0.37
52.583	0.00	0.12	0.057	IO		0.36
52.667	0.00	0.12	0.056	IO		0.36
52.750	0.00	0.11	0.056	IO		0.35
52.833	0.00	0.11	0.055	IO		0.35
52.917	0.00	0.11	0.054	IO		0.34
53.000	0.00	0.11	0.053	IO		0.34
53.083	0.00	0.11	0.053	IO		0.34
53.167	0.00	0.11	0.052	IO		0.33
53.250	0.00	0.11	0.051	IO		0.33
53.333	0.00	0.11	0.050	IO		0.32
53.417	0.00	0.11	0.050	IO		0.32
53.500	0.00	0.11	0.049	IO		0.31
53.583	0.00	0.10	0.048	IO		0.31
53.667	0.00	0.10	0.047	IO		0.31
53.750	0.00	0.10	0.047	IO		0.30
53.833	0.00	0.10	0.046	IO		0.30
53.917	0.00	0.10	0.045	IO		0.29
54.000	0.00	0.10	0.045	IO		0.29
54.083	0.00	0.10	0.044	IO		0.29
54.167	0.00	0.10	0.043	IO		0.28
54.250	0.00	0.10	0.043	IO		0.28
54.333	0.00	0.10	0.042	IO		0.27
54.417	0.00	0.10	0.041	IO		0.27
54.500	0.00	0.09	0.041	IO		0.27
54.583	0.00	0.09	0.040	IO		0.26
54.667	0.00	0.09	0.039	IO		0.26
54.750	0.00	0.09	0.039	IO		0.26
54.833	0.00	0.09	0.038	IO		0.25
54.917	0.00	0.09	0.037	IO		0.25
55.000	0.00	0.09	0.037	IO		0.24
55.083	0.00	0.09	0.036	IO		0.24
55.167	0.00	0.09	0.036	IO		0.24
55.250	0.00	0.09	0.035	IO		0.23
55.333	0.00	0.09	0.034	IO		0.23
55.417	0.00	0.09	0.034	IO		0.23
55.500	0.00	0.08	0.033	IO		0.22
55.583	0.00	0.08	0.033	IO		0.22
55.667	0.00	0.08	0.032	IO		0.22
55.750	0.00	0.08	0.031	IO		0.21
55.833	0.00	0.08	0.031	IO		0.21
55.917	0.00	0.08	0.030	IO		0.21
56.000	0.00	0.08	0.030	IO		0.20

ROUTE242.out

56.083	0.00	0.08	0.029	IO		0.20
56.167	0.00	0.08	0.029	IO		0.20
56.250	0.00	0.08	0.028	IO		0.19
56.333	0.00	0.08	0.028	IO		0.19
56.417	0.00	0.07	0.027	IO		0.19
56.500	0.00	0.07	0.027	IO		0.18
56.583	0.00	0.07	0.026	IO		0.18
56.667	0.00	0.07	0.026	IO		0.18
56.750	0.00	0.07	0.025	IO		0.17
56.833	0.00	0.07	0.025	IO		0.17
56.917	0.00	0.07	0.024	O		0.17
57.000	0.00	0.06	0.024	O		0.16
57.083	0.00	0.06	0.023	O		0.16
57.167	0.00	0.06	0.023	O		0.16
57.250	0.00	0.06	0.022	O		0.15
57.333	0.00	0.06	0.022	O		0.15
57.417	0.00	0.06	0.022	O		0.15
57.500	0.00	0.06	0.021	O		0.15
57.583	0.00	0.06	0.021	O		0.14
57.667	0.00	0.06	0.020	O		0.14
57.750	0.00	0.05	0.020	O		0.14
57.833	0.00	0.05	0.020	O		0.14
57.917	0.00	0.05	0.019	O		0.13
58.000	0.00	0.05	0.019	O		0.13
58.083	0.00	0.05	0.019	O		0.13
58.167	0.00	0.05	0.018	O		0.13
58.250	0.00	0.05	0.018	O		0.12
58.333	0.00	0.05	0.018	O		0.12
58.417	0.00	0.05	0.017	O		0.12
58.500	0.00	0.05	0.017	O		0.12
58.583	0.00	0.05	0.017	O		0.11
58.667	0.00	0.04	0.016	O		0.11
58.750	0.00	0.04	0.016	O		0.11
58.833	0.00	0.04	0.016	O		0.11
58.917	0.00	0.04	0.015	O		0.11
59.000	0.00	0.04	0.015	O		0.10
59.083	0.00	0.04	0.015	O		0.10
59.167	0.00	0.04	0.015	O		0.10
59.250	0.00	0.04	0.014	O		0.10
59.333	0.00	0.04	0.014	O		0.10
59.417	0.00	0.04	0.014	O		0.10
59.500	0.00	0.04	0.014	O		0.09
59.583	0.00	0.04	0.013	O		0.09
59.667	0.00	0.04	0.013	O		0.09
59.750	0.00	0.03	0.013	O		0.09
59.833	0.00	0.03	0.013	O		0.09
59.917	0.00	0.03	0.012	O		0.08
60.000	0.00	0.03	0.012	O		0.08
60.083	0.00	0.03	0.012	O		0.08
60.167	0.00	0.03	0.012	O		0.08
60.250	0.00	0.03	0.011	O		0.08
60.333	0.00	0.03	0.011	O		0.08
60.417	0.00	0.03	0.011	O		0.08
60.500	0.00	0.03	0.011	O		0.07
60.583	0.00	0.03	0.011	O		0.07
60.667	0.00	0.03	0.010	O		0.07
60.750	0.00	0.03	0.010	O		0.07
60.833	0.00	0.03	0.010	O		0.07
60.917	0.00	0.03	0.010	O		0.07
61.000	0.00	0.03	0.010	O		0.07
61.083	0.00	0.03	0.009	O		0.07
61.167	0.00	0.03	0.009	O		0.06
61.250	0.00	0.02	0.009	O		0.06
61.333	0.00	0.02	0.009	O		0.06
61.417	0.00	0.02	0.009	O		0.06
61.500	0.00	0.02	0.009	O		0.06
61.583	0.00	0.02	0.008	O		0.06
61.667	0.00	0.02	0.008	O		0.06
61.750	0.00	0.02	0.008	O		0.06
61.833	0.00	0.02	0.008	O		0.06
61.917	0.00	0.02	0.008	O		0.05
62.000	0.00	0.02	0.008	O		0.05
62.083	0.00	0.02	0.008	O		0.05
62.167	0.00	0.02	0.007	O		0.05
62.250	0.00	0.02	0.007	O		0.05
62.333	0.00	0.02	0.007	O		0.05
62.417	0.00	0.02	0.007	O		0.05
62.500	0.00	0.02	0.007	O		0.05
62.583	0.00	0.02	0.007	O		0.05
62.667	0.00	0.02	0.007	O		0.05
62.750	0.00	0.02	0.007	O		0.04
62.833	0.00	0.02	0.006	O		0.04
62.917	0.00	0.02	0.006	O		0.04
63.000	0.00	0.02	0.006	O		0.04

ROUTE242.out

63.083	0.00	0.02	0.006	0	0.04
63.167	0.00	0.02	0.006	0	0.04
63.250	0.00	0.02	0.006	0	0.04
63.333	0.00	0.02	0.006	0	0.04
63.417	0.00	0.02	0.006	0	0.04
63.500	0.00	0.01	0.005	0	0.04
63.583	0.00	0.01	0.005	0	0.04
63.667	0.00	0.01	0.005	0	0.04
63.750	0.00	0.01	0.005	0	0.04
63.833	0.00	0.01	0.005	0	0.04
63.917	0.00	0.01	0.005	0	0.03
64.000	0.00	0.01	0.005	0	0.03
64.083	0.00	0.01	0.005	0	0.03
64.167	0.00	0.01	0.005	0	0.03
64.250	0.00	0.01	0.005	0	0.03
64.333	0.00	0.01	0.005	0	0.03
64.417	0.00	0.01	0.004	0	0.03
64.500	0.00	0.01	0.004	0	0.03
64.583	0.00	0.01	0.004	0	0.03
64.667	0.00	0.01	0.004	0	0.03
64.750	0.00	0.01	0.004	0	0.03
64.833	0.00	0.01	0.004	0	0.03
64.917	0.00	0.01	0.004	0	0.03
65.000	0.00	0.01	0.004	0	0.03
65.083	0.00	0.01	0.004	0	0.03
65.167	0.00	0.01	0.004	0	0.03
65.250	0.00	0.01	0.004	0	0.03
65.333	0.00	0.01	0.004	0	0.03
65.417	0.00	0.01	0.004	0	0.02
65.500	0.00	0.01	0.004	0	0.02
65.583	0.00	0.01	0.003	0	0.02
65.667	0.00	0.01	0.003	0	0.02
65.750	0.00	0.01	0.003	0	0.02
65.833	0.00	0.01	0.003	0	0.02
65.917	0.00	0.01	0.003	0	0.02
66.000	0.00	0.01	0.003	0	0.02
66.083	0.00	0.01	0.003	0	0.02
66.167	0.00	0.01	0.003	0	0.02
66.250	0.00	0.01	0.003	0	0.02
66.333	0.00	0.01	0.003	0	0.02
66.417	0.00	0.01	0.003	0	0.02
66.500	0.00	0.01	0.003	0	0.02
66.583	0.00	0.01	0.003	0	0.02
66.667	0.00	0.01	0.003	0	0.02
66.750	0.00	0.01	0.003	0	0.02
66.833	0.00	0.01	0.003	0	0.02
66.917	0.00	0.01	0.003	0	0.02
67.000	0.00	0.01	0.002	0	0.02
67.083	0.00	0.01	0.002	0	0.02
67.167	0.00	0.01	0.002	0	0.02
67.250	0.00	0.01	0.002	0	0.02
67.333	0.00	0.01	0.002	0	0.02
67.417	0.00	0.01	0.002	0	0.02
67.500	0.00	0.01	0.002	0	0.02
67.583	0.00	0.01	0.002	0	0.02
67.667	0.00	0.01	0.002	0	0.01
67.750	0.00	0.01	0.002	0	0.01
67.833	0.00	0.01	0.002	0	0.01
67.917	0.00	0.01	0.002	0	0.01
68.000	0.00	0.01	0.002	0	0.01
68.083	0.00	0.01	0.002	0	0.01
68.167	0.00	0.01	0.002	0	0.01
68.250	0.00	0.01	0.002	0	0.01
68.333	0.00	0.01	0.002	0	0.01
68.417	0.00	0.00	0.002	0	0.01
68.500	0.00	0.00	0.002	0	0.01
68.583	0.00	0.00	0.002	0	0.01
68.667	0.00	0.00	0.002	0	0.01
68.750	0.00	0.00	0.002	0	0.01
68.833	0.00	0.00	0.002	0	0.01
68.917	0.00	0.00	0.002	0	0.01
69.000	0.00	0.00	0.002	0	0.01
69.083	0.00	0.00	0.002	0	0.01
69.167	0.00	0.00	0.002	0	0.01
69.250	0.00	0.00	0.002	0	0.01
69.333	0.00	0.00	0.001	0	0.01
69.417	0.00	0.00	0.001	0	0.01
69.500	0.00	0.00	0.001	0	0.01
69.583	0.00	0.00	0.001	0	0.01
69.667	0.00	0.00	0.001	0	0.01
69.750	0.00	0.00	0.001	0	0.01
69.833	0.00	0.00	0.001	0	0.01
69.917	0.00	0.00	0.001	0	0.01
70.000	0.00	0.00	0.001	0	0.01

ROUTE242.out

70.083	0.00	0.00	0.001	0					0.01
70.167	0.00	0.00	0.001	0					0.01
70.250	0.00	0.00	0.001	0					0.01
70.333	0.00	0.00	0.001	0					0.01
70.417	0.00	0.00	0.001	0					0.01
70.500	0.00	0.00	0.001	0					0.01
70.583	0.00	0.00	0.001	0					0.01
70.667	0.00	0.00	0.001	0					0.01
70.750	0.00	0.00	0.001	0					0.01
70.833	0.00	0.00	0.001	0					0.01
70.917	0.00	0.00	0.001	0					0.01
71.000	0.00	0.00	0.001	0					0.01
71.083	0.00	0.00	0.001	0					0.01
71.167	0.00	0.00	0.001	0					0.01
71.250	0.00	0.00	0.001	0					0.01
71.333	0.00	0.00	0.001	0					0.01
71.417	0.00	0.00	0.001	0					0.01
71.500	0.00	0.00	0.001	0					0.01
71.583	0.00	0.00	0.001	0					0.01
71.667	0.00	0.00	0.001	0					0.01
71.750	0.00	0.00	0.001	0					0.01
71.833	0.00	0.00	0.001	0					0.01
71.917	0.00	0.00	0.001	0					0.01
72.000	0.00	0.00	0.001	0					0.01
72.083	0.00	0.00	0.001	0					0.01
72.167	0.00	0.00	0.001	0					0.01
72.250	0.00	0.00	0.001	0					0.01
72.333	0.00	0.00	0.001	0					0.01
72.417	0.00	0.00	0.001	0					0.01
72.500	0.00	0.00	0.001	0					0.00
72.583	0.00	0.00	0.001	0					0.00
72.667	0.00	0.00	0.001	0					0.00
72.750	0.00	0.00	0.001	0					0.00
72.833	0.00	0.00	0.001	0					0.00
72.917	0.00	0.00	0.001	0					0.00
73.000	0.00	0.00	0.001	0					0.00
73.083	0.00	0.00	0.001	0					0.00
73.167	0.00	0.00	0.001	0					0.00
73.250	0.00	0.00	0.001	0					0.00
73.333	0.00	0.00	0.001	0					0.00
73.417	0.00	0.00	0.001	0					0.00
73.500	0.00	0.00	0.001	0					0.00
73.583	0.00	0.00	0.001	0					0.00
73.667	0.00	0.00	0.001	0					0.00
73.750	0.00	0.00	0.001	0					0.00
73.833	0.00	0.00	0.001	0					0.00
73.917	0.00	0.00	0.001	0					0.00
74.000	0.00	0.00	0.001	0					0.00
74.083	0.00	0.00	0.001	0					0.00
74.167	0.00	0.00	0.000	0					0.00
74.250	0.00	0.00	0.000	0					0.00
74.333	0.00	0.00	0.000	0					0.00
74.417	0.00	0.00	0.000	0					0.00
74.500	0.00	0.00	0.000	0					0.00
74.583	0.00	0.00	0.000	0					0.00
74.667	0.00	0.00	0.000	0					0.00
74.750	0.00	0.00	0.000	0					0.00
74.833	0.00	0.00	0.000	0					0.00
74.917	0.00	0.00	0.000	0					0.00
75.000	0.00	0.00	0.000	0					0.00
75.083	0.00	0.00	0.000	0					0.00
75.167	0.00	0.00	0.000	0					0.00
75.250	0.00	0.00	0.000	0					0.00
75.333	0.00	0.00	0.000	0					0.00
75.417	0.00	0.00	0.000	0					0.00
75.500	0.00	0.00	0.000	0					0.00
75.583	0.00	0.00	0.000	0					0.00

*****HYDROGRAPH DATA*****
 Number of intervals = 907
 Time interval = 5.0 (Min.)
 Maximum/Peak flow rate = 0.468 (CFS)
 Total volume = 1.298 (Ac.Ft)
 Status of hydrographs being held in storage
 Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
 Peak (CFS) 0.000 0.000 0.000 0.000 0.000
 Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

5-YEAR 24-HOUR ROUTING

 19-0126 - DUKE HARVILL
 BASIN ROUTING CALCULATIONS, PROPOSED H-12 TRIBUTARY
 5-YEAR, 24-HOUR STORM EVENT
 FN: ROUTE245.OUT TSW

Program License Serial Number 4010

 ***** HYDROGRAPH INFORMATION *****

From study/file name: ONSITEPOST245.rte
 *****HYDROGRAPH DATA*****
 Number of intervals = 293
 Time interval = 5.0 (Min.)
 Maximum/Peak flow rate = 2.887 (CFS)
 Total volume = 1.754 (Ac.Ft)
 Status of hydrographs being held in storage
 Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
 Peak (CFS) 0.000 0.000 0.000 0.000 0.000
 Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
 Process from Point/Station 100.000 to Point/Station 101.000
 **** RETARDING BASIN ROUTING ****

 User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
 Hydrograph time unit = 5.000 (Min.)
 Initial depth in storage basin = 0.00(Ft.)

 Initial basin depth = 0.00 (Ft.)
 Initial basin storage = 0.00 (Ac.Ft)
 Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.200	0.029	0.079	0.029	0.029
0.500	0.081	0.149	0.080	0.082
1.000	0.178	0.221	0.177	0.179
2.000	0.395	0.320	0.394	0.396
3.000	0.627	0.395	0.626	0.628
4.000	0.859	0.457	0.857	0.861
4.400	0.948	0.758	0.945	0.951
4.500	0.970	0.842	0.967	0.973
5.000	1.076	1.127	1.072	1.080
5.400	1.155	1.293	1.151	1.159
5.500	1.173	1.469	1.168	1.178
6.000	1.254	1.771	1.248	1.260
6.200	1.277	1.871	1.271	1.283
6.300	1.289	2.344	1.281	1.297
6.700	1.336	2.794	1.326	1.346
7.400	1.336	3.378	1.324	1.348
7.500	1.133	3.451	1.121	1.145
8.000	1.572	3.790	1.559	1.585
8.500	2.514	4.097	2.500	2.528

 Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	Depth (Ft.)
.0				
0.7				
1.44				
2.17				
2.89				

ROUTE245.out

0.083	0.06	0.00	0.000	O		0.00
0.167	0.14	0.00	0.001	OI		0.01
0.250	0.16	0.01	0.002	OI		0.01
0.333	0.19	0.01	0.003	O I		0.02
0.417	0.24	0.01	0.004	O I		0.03
0.500	0.25	0.02	0.006	O I		0.04
0.583	0.25	0.02	0.008	O I		0.05
0.667	0.25	0.03	0.009	O I		0.06
0.750	0.25	0.03	0.011	O I		0.07
0.833	0.28	0.03	0.012	O I		0.09
0.917	0.32	0.04	0.014	O I		0.10
1.000	0.33	0.04	0.016	O I		0.11
1.083	0.31	0.05	0.018	O I		0.12
1.167	0.27	0.05	0.020	O I		0.14
1.250	0.26	0.06	0.021	O I		0.15
1.333	0.26	0.06	0.023	O I		0.16
1.417	0.26	0.07	0.024	O I		0.16
1.500	0.25	0.07	0.025	O I		0.17
1.583	0.25	0.07	0.026	O I		0.18
1.667	0.25	0.08	0.028	O I		0.19
1.750	0.25	0.08	0.029	O I		0.20
1.833	0.28	0.08	0.030	O I		0.21
1.917	0.32	0.08	0.032	O I		0.22
2.000	0.33	0.08	0.033	O I		0.23
2.083	0.34	0.09	0.035	O I		0.24
2.167	0.34	0.09	0.037	O I		0.25
2.250	0.34	0.09	0.039	O I		0.26
2.333	0.34	0.09	0.040	O I		0.27
2.417	0.34	0.10	0.042	O I		0.27
2.500	0.34	0.10	0.044	O I		0.28
2.583	0.37	0.10	0.045	O I		0.29
2.667	0.41	0.10	0.047	O I		0.31
2.750	0.42	0.11	0.049	O I		0.32
2.833	0.42	0.11	0.052	O I		0.33
2.917	0.42	0.11	0.054	O I		0.34
3.000	0.42	0.12	0.056	O I		0.36
3.083	0.42	0.12	0.058	O I		0.37
3.167	0.42	0.12	0.060	O I		0.38
3.250	0.42	0.12	0.062	O I		0.39
3.333	0.42	0.13	0.064	O I		0.40
3.417	0.42	0.13	0.066	O I		0.42
3.500	0.42	0.13	0.068	O I		0.43
3.583	0.42	0.13	0.070	O I		0.44
3.667	0.42	0.14	0.072	O I		0.45
3.750	0.42	0.14	0.074	O I		0.46
3.833	0.45	0.14	0.076	O I		0.47
3.917	0.49	0.15	0.079	O I		0.49
4.000	0.50	0.15	0.081	O I		0.50
4.083	0.51	0.15	0.083	O I		0.51
4.167	0.51	0.15	0.086	O I		0.53
4.250	0.51	0.15	0.088	O I		0.54
4.333	0.54	0.16	0.091	O I		0.55
4.417	0.58	0.16	0.094	O I		0.57
4.500	0.59	0.16	0.097	O I		0.58
4.583	0.59	0.16	0.100	O I		0.60
4.667	0.59	0.16	0.102	O I		0.61
4.750	0.59	0.17	0.105	O I		0.63
4.833	0.62	0.17	0.108	O I		0.64
4.917	0.66	0.17	0.112	O I		0.66
5.000	0.67	0.17	0.115	O I		0.68
5.083	0.62	0.18	0.118	O I		0.69
5.167	0.54	0.18	0.121	O I		0.71
5.250	0.52	0.18	0.124	O I		0.72
5.333	0.54	0.18	0.126	O I		0.73
5.417	0.58	0.18	0.129	O I		0.75
5.500	0.59	0.19	0.131	O I		0.76
5.583	0.62	0.19	0.134	O I		0.77
5.667	0.66	0.19	0.137	O I		0.79
5.750	0.67	0.19	0.141	O I		0.81
5.833	0.68	0.20	0.144	O I		0.82
5.917	0.68	0.20	0.147	O I		0.84
6.000	0.68	0.20	0.151	O I		0.86
6.083	0.71	0.20	0.154	O I		0.88
6.167	0.75	0.21	0.158	O I		0.89
6.250	0.76	0.21	0.161	O I		0.91
6.333	0.76	0.21	0.165	O I		0.93
6.417	0.76	0.21	0.169	O I		0.95
6.500	0.76	0.22	0.173	O I		0.97
6.583	0.79	0.22	0.176	O I		0.99
6.667	0.83	0.22	0.181	O I		1.01
6.750	0.84	0.22	0.185	O I		1.03
6.833	0.85	0.23	0.189	O I		1.05
6.917	0.85	0.23	0.193	O I		1.07
7.000	0.85	0.23	0.198	O I		1.09

ROUTE245.out

7.083	0.85	0.23	0.202	0	I					1.11
7.167	0.85	0.23	0.206	0	I					1.13
7.250	0.85	0.24	0.210	0	I					1.15
7.333	0.88	0.24	0.215	0	I					1.17
7.417	0.92	0.24	0.219	0	I					1.19
7.500	0.93	0.24	0.224	0	I					1.21
7.583	0.96	0.24	0.229	0	I					1.23
7.667	1.00	0.25	0.234	0	I					1.26
7.750	1.01	0.25	0.239	0	I					1.28
7.833	1.05	0.25	0.244	0	I					1.31
7.917	1.09	0.25	0.250	0	I					1.33
8.000	1.10	0.26	0.256	0	I					1.36
8.083	1.16	0.26	0.262	0	I					1.39
8.167	1.24	0.26	0.268	0	I					1.42
8.250	1.26	0.27	0.275	0	I					1.45
8.333	1.27	0.27	0.282	0	I					1.48
8.417	1.27	0.27	0.289	0	I					1.51
8.500	1.27	0.27	0.296	0	I					1.54
8.583	1.30	0.28	0.303	0	I					1.57
8.667	1.34	0.28	0.310	0	I					1.61
8.750	1.35	0.28	0.317	0	I					1.64
8.833	1.39	0.29	0.325	0	I					1.68
8.917	1.43	0.29	0.332	0	I					1.71
9.000	1.44	0.29	0.340	0	I					1.75
9.083	1.50	0.30	0.348	0	I					1.78
9.167	1.58	0.30	0.357	0	I					1.82
9.250	1.60	0.31	0.366	0	I					1.86
9.333	1.64	0.31	0.375	0	I					1.91
9.417	1.68	0.31	0.384	0	I					1.95
9.500	1.69	0.32	0.393	0	I					1.99
9.583	1.72	0.32	0.403	0	I					2.03
9.667	1.77	0.33	0.413	0	I					2.08
9.750	1.78	0.33	0.423	0	I					2.12
9.833	1.81	0.33	0.433	0	I					2.16
9.917	1.85	0.34	0.443	0	I					2.21
10.000	1.86	0.34	0.453	0	I					2.25
10.083	1.66	0.34	0.463	0	I					2.29
10.167	1.38	0.34	0.471	0	I					2.33
10.250	1.32	0.35	0.478	0	I					2.36
10.333	1.29	0.35	0.485	0	I					2.39
10.417	1.28	0.35	0.491	0	I					2.42
10.500	1.27	0.35	0.498	0	I					2.44
10.583	1.42	0.36	0.505	0	I					2.47
10.667	1.62	0.36	0.513	0	I					2.51
10.750	1.66	0.36	0.521	0	I					2.54
10.833	1.68	0.36	0.530	0	I					2.58
10.917	1.69	0.37	0.540	0	I					2.62
11.000	1.70	0.37	0.549	0	I					2.66
11.083	1.67	0.37	0.558	0	I					2.70
11.167	1.63	0.38	0.567	0	I					2.74
11.250	1.62	0.38	0.575	0	I					2.78
11.333	1.62	0.38	0.584	0	I					2.81
11.417	1.61	0.38	0.592	0	I					2.85
11.500	1.61	0.39	0.601	0	I					2.89
11.583	1.55	0.39	0.609	0	I					2.92
11.667	1.48	0.39	0.617	0	I					2.96
11.750	1.46	0.39	0.624	0	I					2.99
11.833	1.48	0.40	0.631	0	I					3.02
11.917	1.51	0.40	0.639	0	I					3.05
12.000	1.52	0.40	0.647	0	I					3.08
12.083	1.73	0.40	0.655	0	I					3.12
12.167	2.01	0.41	0.665	0	I					3.16
12.250	2.08	0.41	0.676	0	I					3.21
12.333	2.13	0.41	0.688	0	I					3.26
12.417	2.19	0.41	0.700	0	I					3.32
12.500	2.20	0.42	0.712	0	I					3.37
12.583	2.26	0.42	0.725	0	I					3.42
12.667	2.34	0.42	0.738	0	I					3.48
12.750	2.36	0.43	0.751	0	I					3.53
12.833	2.40	0.43	0.765	0	I					3.59
12.917	2.44	0.44	0.778	0	I					3.65
13.000	2.46	0.44	0.792	0	I					3.71
13.083	2.61	0.44	0.807	0	I					3.77
13.167	2.81	0.45	0.822	0	I					3.84
13.250	2.85	0.45	0.838	0	I					3.91
13.333	2.87	0.46	0.855	0	I					3.98
13.417	2.88	0.50	0.872	0	I					4.06
13.500	2.89	0.55	0.888	0	I					4.13
13.583	2.56	0.60	0.903	0	I					4.20
13.667	2.13	0.64	0.914	0	I					4.25
13.750	2.03	0.68	0.924	0	I					4.29
13.833	1.98	0.71	0.933	0	I					4.33
13.917	1.96	0.74	0.942	0	I					4.37
14.000	1.95	0.77	0.950	0	I					4.41

ROUTE245.out

14.083	2.07	0.80	0.959		0		I		4.45
14.167	2.23	0.83	0.968		0			I	4.49
14.250	2.27	0.86	0.977		0			I	4.54
14.333	2.25	0.89	0.987		0			I	4.58
14.417	2.22	0.91	0.996		0			I	4.62
14.500	2.21	0.94	1.005		0			I	4.67
14.583	2.21	0.96	1.014		0			I	4.71
14.667	2.21	0.98	1.022		0			I	4.75
14.750	2.21	1.01	1.031		0			I	4.79
14.833	2.18	1.03	1.039		0			I	4.82
14.917	2.14	1.05	1.047		0			I	4.86
15.000	2.13	1.07	1.054		0			I	4.90
15.083	2.10	1.09	1.061		0			I	4.93
15.167	2.05	1.11	1.068		0			I	4.96
15.250	2.04	1.12	1.074		0			I	4.99
15.333	2.01	1.14	1.080		0			I	5.02
15.417	1.97	1.15	1.086		0			I	5.05
15.500	1.96	1.16	1.092		0			I	5.08
15.583	1.84	1.17	1.097		0			I	5.11
15.667	1.68	1.18	1.101		0			I	5.13
15.750	1.64	1.19	1.104		0			I	5.14
15.833	1.62	1.19	1.107		0			I	5.16
15.917	1.62	1.20	1.110		0			I	5.17
16.000	1.61	1.20	1.113		0			I	5.19
16.083	1.17	1.21	1.114		10				5.19
16.167	0.58	1.20	1.112		0				5.18
16.250	0.44	1.19	1.107	I	0				5.16
16.333	0.38	1.18	1.102	I	0				5.13
16.417	0.35	1.17	1.096	I	0				5.10
16.500	0.34	1.16	1.091	I	0				5.07
16.583	0.31	1.15	1.085	I	0				5.05
16.667	0.27	1.13	1.079	I	0				5.02
16.750	0.26	1.12	1.073	I	0				4.99
16.833	0.26	1.10	1.067	I	0				4.96
16.917	0.26	1.09	1.062	I	0				4.93
17.000	0.25	1.07	1.056	I	0				4.91
17.083	0.31	1.06	1.051	I	0				4.88
17.167	0.39	1.05	1.046	I	0				4.86
17.250	0.41	1.03	1.041	I	0				4.84
17.333	0.42	1.02	1.037	I	0				4.82
17.417	0.42	1.01	1.033	I	0				4.80
17.500	0.42	1.00	1.029	I	0				4.78
17.583	0.42	0.99	1.025	I	0				4.76
17.667	0.42	0.98	1.021	I	0				4.74
17.750	0.42	0.97	1.017	I	0				4.72
17.833	0.40	0.96	1.014	I	0				4.71
17.917	0.36	0.95	1.010	I	0				4.69
18.000	0.35	0.94	1.006	I	0				4.67
18.083	0.34	0.93	1.002	I	0				4.65
18.167	0.34	0.92	0.998	I	0				4.63
18.250	0.34	0.91	0.994	I	0				4.61
18.333	0.34	0.90	0.990	I	0				4.59
18.417	0.34	0.88	0.986	I	0				4.58
18.500	0.34	0.87	0.982	I	0				4.56
18.583	0.31	0.86	0.978	I	0				4.54
18.667	0.27	0.85	0.975	I	0				4.52
18.750	0.26	0.84	0.971	I	0				4.50
18.833	0.23	0.83	0.966	I	0				4.48
18.917	0.19	0.81	0.962	I	0				4.46
19.000	0.18	0.80	0.958	I	0				4.45
19.083	0.20	0.78	0.954	I	0				4.43
19.167	0.24	0.77	0.950	I	0				4.41
19.250	0.25	0.75	0.946	I	0				4.39
19.333	0.28	0.74	0.943	I	0				4.38
19.417	0.32	0.73	0.940	I	0				4.36
19.500	0.33	0.72	0.937	I	0				4.35
19.583	0.31	0.71	0.935	I	0				4.34
19.667	0.27	0.70	0.932	I	0				4.33
19.750	0.26	0.69	0.929	I	0				4.31
19.833	0.23	0.68	0.926	I	0				4.30
19.917	0.19	0.67	0.923	I	0				4.29
20.000	0.18	0.66	0.919	I	0				4.27
20.083	0.20	0.65	0.916	I	0				4.26
20.167	0.24	0.64	0.913	I	0				4.24
20.250	0.25	0.63	0.910	I	0				4.23
20.333	0.25	0.62	0.908	I	0				4.22
20.417	0.25	0.61	0.905	I	0				4.21
20.500	0.25	0.61	0.903	I	0				4.20
20.583	0.25	0.60	0.900	I	0				4.19
20.667	0.25	0.59	0.898	I	0				4.18
20.750	0.25	0.58	0.896	I	0				4.17
20.833	0.23	0.57	0.894	I	0				4.16
20.917	0.19	0.57	0.891	I	0				4.14
21.000	0.18	0.56	0.888	I	0				4.13

ROUTE245.out

21.083	0.20	0.55	0.886	I	O	4.12
21.167	0.24	0.54	0.884	I	O	4.11
21.250	0.25	0.53	0.882	I	O	4.10
21.333	0.22	0.53	0.880	I	O	4.09
21.417	0.18	0.52	0.877	I	O	4.08
21.500	0.18	0.51	0.875	I	O	4.07
21.583	0.20	0.50	0.873	I	O	4.06
21.667	0.24	0.50	0.871	I	O	4.05
21.750	0.25	0.49	0.869	I	O	4.05
21.833	0.22	0.49	0.868	I	O	4.04
21.917	0.18	0.48	0.866	I	O	4.03
22.000	0.18	0.47	0.864	I	O	4.02
22.083	0.20	0.47	0.862	I	O	4.01
22.167	0.24	0.46	0.860	I	O	4.00
22.250	0.25	0.46	0.858	I	O	4.00
22.333	0.22	0.46	0.857	I	O	3.99
22.417	0.18	0.46	0.855	I	O	3.98
22.500	0.18	0.46	0.853	I	O	3.98
22.583	0.17	0.45	0.851	I	O	3.97
22.667	0.17	0.45	0.849	I	O	3.96
22.750	0.17	0.45	0.847	I	O	3.95
22.833	0.17	0.45	0.846	I	O	3.94
22.917	0.17	0.45	0.844	I	O	3.93
23.000	0.17	0.45	0.842	I	O	3.93
23.083	0.17	0.45	0.840	I	O	3.92
23.167	0.17	0.45	0.838	I	O	3.91
23.250	0.17	0.45	0.836	I	O	3.90
23.333	0.17	0.45	0.834	I	O	3.89
23.417	0.17	0.45	0.832	I	O	3.88
23.500	0.17	0.45	0.830	I	O	3.88
23.583	0.17	0.45	0.828	I	O	3.87
23.667	0.17	0.45	0.826	I	O	3.86
23.750	0.17	0.45	0.824	I	O	3.85
23.833	0.17	0.45	0.822	I	O	3.84
23.917	0.17	0.45	0.820	I	O	3.83
24.000	0.17	0.45	0.819	I	O	3.83
24.083	0.11	0.45	0.816	I	O	3.82
24.167	0.03	0.44	0.814	I	O	3.81
24.250	0.01	0.44	0.811	I	O	3.79
24.333	0.01	0.44	0.808	I	O	3.78
24.417	0.00	0.44	0.805	I	O	3.77
24.500	0.00	0.44	0.802	I	O	3.75
24.583	0.00	0.44	0.799	I	O	3.74
24.667	0.00	0.44	0.796	I	O	3.73
24.750	0.00	0.44	0.793	I	O	3.71
24.833	0.00	0.44	0.790	I	O	3.70
24.917	0.00	0.44	0.787	I	O	3.69
25.000	0.00	0.44	0.784	I	O	3.68
25.083	0.00	0.44	0.781	I	O	3.66
25.167	0.00	0.44	0.778	I	O	3.65
25.250	0.00	0.43	0.775	I	O	3.64
25.333	0.00	0.43	0.772	I	O	3.62
25.417	0.00	0.43	0.769	I	O	3.61
25.500	0.00	0.43	0.766	I	O	3.60
25.583	0.00	0.43	0.763	I	O	3.59
25.667	0.00	0.43	0.760	I	O	3.57
25.750	0.00	0.43	0.757	I	O	3.56
25.833	0.00	0.43	0.754	I	O	3.55
25.917	0.00	0.43	0.751	I	O	3.53
26.000	0.00	0.43	0.748	I	O	3.52
26.083	0.00	0.43	0.745	I	O	3.51
26.167	0.00	0.43	0.742	I	O	3.50
26.250	0.00	0.42	0.739	I	O	3.48
26.333	0.00	0.42	0.736	I	O	3.47
26.417	0.00	0.42	0.733	I	O	3.46
26.500	0.00	0.42	0.730	I	O	3.45
26.583	0.00	0.42	0.728	I	O	3.43
26.667	0.00	0.42	0.725	I	O	3.42
26.750	0.00	0.42	0.722	I	O	3.41
26.833	0.00	0.42	0.719	I	O	3.40
26.917	0.00	0.42	0.716	I	O	3.38
27.000	0.00	0.42	0.713	I	O	3.37
27.083	0.00	0.42	0.710	I	O	3.36
27.167	0.00	0.42	0.707	I	O	3.35
27.250	0.00	0.42	0.704	I	O	3.33
27.333	0.00	0.41	0.702	I	O	3.32
27.417	0.00	0.41	0.699	I	O	3.31
27.500	0.00	0.41	0.696	I	O	3.30
27.583	0.00	0.41	0.693	I	O	3.28
27.667	0.00	0.41	0.690	I	O	3.27
27.750	0.00	0.41	0.687	I	O	3.26
27.833	0.00	0.41	0.685	I	O	3.25
27.917	0.00	0.41	0.682	I	O	3.24
28.000	0.00	0.41	0.679	I	O	3.22

ROUTE245.out

28.083	0.00	0.41	0.676	I	0	3.21
28.167	0.00	0.41	0.673	I	0	3.20
28.250	0.00	0.41	0.671	I	0	3.19
28.333	0.00	0.41	0.668	I	0	3.18
28.417	0.00	0.41	0.665	I	0	3.16
28.500	0.00	0.40	0.662	I	0	3.15
28.583	0.00	0.40	0.659	I	0	3.14
28.667	0.00	0.40	0.657	I	0	3.13
28.750	0.00	0.40	0.654	I	0	3.12
28.833	0.00	0.40	0.651	I	0	3.10
28.917	0.00	0.40	0.648	I	0	3.09
29.000	0.00	0.40	0.646	I	0	3.08
29.083	0.00	0.40	0.643	I	0	3.07
29.167	0.00	0.40	0.640	I	0	3.06
29.250	0.00	0.40	0.637	I	0	3.04
29.333	0.00	0.40	0.635	I	0	3.03
29.417	0.00	0.40	0.632	I	0	3.02
29.500	0.00	0.40	0.629	I	0	3.01
29.583	0.00	0.39	0.626	I	0	3.00
29.667	0.00	0.39	0.624	I	0	2.99
29.750	0.00	0.39	0.621	I	0	2.97
29.833	0.00	0.39	0.618	I	0	2.96
29.917	0.00	0.39	0.616	I	0	2.95
30.000	0.00	0.39	0.613	I	0	2.94
30.083	0.00	0.39	0.610	I	0	2.93
30.167	0.00	0.39	0.607	I	0	2.92
30.250	0.00	0.39	0.605	I	0	2.90
30.333	0.00	0.39	0.602	I	0	2.89
30.417	0.00	0.39	0.599	I	0	2.88
30.500	0.00	0.39	0.597	I	0	2.87
30.583	0.00	0.38	0.594	I	0	2.86
30.667	0.00	0.38	0.592	I	0	2.85
30.750	0.00	0.38	0.589	I	0	2.84
30.833	0.00	0.38	0.586	I	0	2.82
30.917	0.00	0.38	0.584	I	0	2.81
31.000	0.00	0.38	0.581	I	0	2.80
31.083	0.00	0.38	0.578	I	0	2.79
31.167	0.00	0.38	0.576	I	0	2.78
31.250	0.00	0.38	0.573	I	0	2.77
31.333	0.00	0.38	0.571	I	0	2.76
31.417	0.00	0.38	0.568	I	0	2.75
31.500	0.00	0.38	0.565	I	0	2.73
31.583	0.00	0.37	0.563	I	0	2.72
31.667	0.00	0.37	0.560	I	0	2.71
31.750	0.00	0.37	0.558	I	0	2.70
31.833	0.00	0.37	0.555	I	0	2.69
31.917	0.00	0.37	0.553	I	0	2.68
32.000	0.00	0.37	0.550	I	0	2.67
32.083	0.00	0.37	0.547	I	0	2.66
32.167	0.00	0.37	0.545	I	0	2.65
32.250	0.00	0.37	0.542	I	0	2.64
32.333	0.00	0.37	0.540	I	0	2.62
32.417	0.00	0.37	0.537	I	0	2.61
32.500	0.00	0.37	0.535	I	0	2.60
32.583	0.00	0.36	0.532	I	0	2.59
32.667	0.00	0.36	0.530	I	0	2.58
32.750	0.00	0.36	0.527	I	0	2.57
32.833	0.00	0.36	0.525	I	0	2.56
32.917	0.00	0.36	0.522	I	0	2.55
33.000	0.00	0.36	0.520	I	0	2.54
33.083	0.00	0.36	0.517	I	0	2.53
33.167	0.00	0.36	0.515	I	0	2.52
33.250	0.00	0.36	0.512	I	0	2.51
33.333	0.00	0.36	0.510	I	0	2.50
33.417	0.00	0.36	0.507	I	0	2.48
33.500	0.00	0.36	0.505	I	0	2.47
33.583	0.00	0.35	0.503	I	0	2.46
33.667	0.00	0.35	0.500	I	0	2.45
33.750	0.00	0.35	0.498	I	0	2.44
33.833	0.00	0.35	0.495	I	0	2.43
33.917	0.00	0.35	0.493	I	0	2.42
34.000	0.00	0.35	0.490	I	0	2.41
34.083	0.00	0.35	0.488	I	0	2.40
34.167	0.00	0.35	0.486	I	0	2.39
34.250	0.00	0.35	0.483	I	0	2.38
34.333	0.00	0.35	0.481	I	0	2.37
34.417	0.00	0.35	0.478	I	0	2.36
34.500	0.00	0.35	0.476	I	0	2.35
34.583	0.00	0.35	0.474	I	0	2.34
34.667	0.00	0.34	0.471	I	0	2.33
34.750	0.00	0.34	0.469	I	0	2.32
34.833	0.00	0.34	0.467	I	0	2.31
34.917	0.00	0.34	0.464	I	0	2.30
35.000	0.00	0.34	0.462	I	0	2.29

ROUTE245.out

35.083	0.00	0.34	0.459	I	0	2.28
35.167	0.00	0.34	0.457	I	0	2.27
35.250	0.00	0.34	0.455	I	0	2.26
35.333	0.00	0.34	0.452	I	0	2.25
35.417	0.00	0.34	0.450	I	0	2.24
35.500	0.00	0.34	0.448	I	0	2.23
35.583	0.00	0.34	0.445	I	0	2.22
35.667	0.00	0.34	0.443	I	0	2.21
35.750	0.00	0.33	0.441	I	0	2.20
35.833	0.00	0.33	0.439	I	0	2.19
35.917	0.00	0.33	0.436	I	0	2.18
36.000	0.00	0.33	0.434	I	0	2.17
36.083	0.00	0.33	0.432	I	0	2.16
36.167	0.00	0.33	0.429	I	0	2.15
36.250	0.00	0.33	0.427	I	0	2.14
36.333	0.00	0.33	0.425	I	0	2.13
36.417	0.00	0.33	0.423	I	0	2.12
36.500	0.00	0.33	0.420	I	0	2.11
36.583	0.00	0.33	0.418	I	0	2.10
36.667	0.00	0.33	0.416	I	0	2.09
36.750	0.00	0.33	0.414	I	0	2.08
36.833	0.00	0.33	0.411	I	0	2.07
36.917	0.00	0.32	0.409	I	0	2.06
37.000	0.00	0.32	0.407	I	0	2.05
37.083	0.00	0.32	0.405	I	0	2.04
37.167	0.00	0.32	0.402	I	0	2.03
37.250	0.00	0.32	0.400	I	0	2.02
37.333	0.00	0.32	0.398	I	0	2.01
37.417	0.00	0.32	0.396	I	0	2.00
37.500	0.00	0.32	0.394	I	0	1.99
37.583	0.00	0.32	0.391	I	0	1.98
37.667	0.00	0.32	0.389	I	0	1.97
37.750	0.00	0.32	0.387	I	0	1.96
37.833	0.00	0.32	0.385	I	0	1.95
37.917	0.00	0.31	0.383	I	0	1.94
38.000	0.00	0.31	0.380	I	0	1.93
38.083	0.00	0.31	0.378	I	0	1.92
38.167	0.00	0.31	0.376	I	0	1.91
38.250	0.00	0.31	0.374	I	0	1.90
38.333	0.00	0.31	0.372	I	0	1.89
38.417	0.00	0.31	0.370	I	0	1.88
38.500	0.00	0.31	0.368	I	0	1.87
38.583	0.00	0.31	0.366	I	0	1.86
38.667	0.00	0.31	0.363	I	0	1.85
38.750	0.00	0.30	0.361	I	0	1.84
38.833	0.00	0.30	0.359	I	0	1.84
38.917	0.00	0.30	0.357	I	0	1.83
39.000	0.00	0.30	0.355	I	0	1.82
39.083	0.00	0.30	0.353	I	0	1.81
39.167	0.00	0.30	0.351	I	0	1.80
39.250	0.00	0.30	0.349	I	0	1.79
39.333	0.00	0.30	0.347	I	0	1.78
39.417	0.00	0.30	0.345	I	0	1.77
39.500	0.00	0.30	0.343	I	0	1.76
39.583	0.00	0.30	0.341	I	0	1.75
39.667	0.00	0.29	0.339	I	0	1.74
39.750	0.00	0.29	0.337	I	0	1.73
39.833	0.00	0.29	0.335	I	0	1.72
39.917	0.00	0.29	0.333	I	0	1.71
40.000	0.00	0.29	0.331	I	0	1.70
40.083	0.00	0.29	0.329	I	0	1.69
40.167	0.00	0.29	0.327	I	0	1.68
40.250	0.00	0.29	0.325	I	0	1.68
40.333	0.00	0.29	0.323	I	0	1.67
40.417	0.00	0.29	0.321	I	0	1.66
40.500	0.00	0.29	0.319	I	0	1.65
40.583	0.00	0.28	0.317	I	0	1.64
40.667	0.00	0.28	0.315	I	0	1.63
40.750	0.00	0.28	0.313	I	0	1.62
40.833	0.00	0.28	0.311	I	0	1.61
40.917	0.00	0.28	0.309	I	0	1.60
41.000	0.00	0.28	0.307	I	0	1.59
41.083	0.00	0.28	0.305	I	0	1.59
41.167	0.00	0.28	0.303	I	0	1.58
41.250	0.00	0.28	0.301	I	0	1.57
41.333	0.00	0.28	0.299	I	0	1.56
41.417	0.00	0.28	0.297	I	0	1.55
41.500	0.00	0.27	0.296	I	0	1.54
41.583	0.00	0.27	0.294	I	0	1.53
41.667	0.00	0.27	0.292	I	0	1.52
41.750	0.00	0.27	0.290	I	0	1.52
41.833	0.00	0.27	0.288	I	0	1.51
41.917	0.00	0.27	0.286	I	0	1.50
42.000	0.00	0.27	0.284	I	0	1.49

ROUTE245.out

42.083	0.00	0.27	0.282	I O	1.48
42.167	0.00	0.27	0.281	I O	1.47
42.250	0.00	0.27	0.279	I O	1.46
42.333	0.00	0.27	0.277	I O	1.46
42.417	0.00	0.27	0.275	I O	1.45
42.500	0.00	0.26	0.273	I O	1.44
42.583	0.00	0.26	0.271	I O	1.43
42.667	0.00	0.26	0.270	I O	1.42
42.750	0.00	0.26	0.268	I O	1.41
42.833	0.00	0.26	0.266	I O	1.41
42.917	0.00	0.26	0.264	I O	1.40
43.000	0.00	0.26	0.262	I O	1.39
43.083	0.00	0.26	0.261	I O	1.38
43.167	0.00	0.26	0.259	I O	1.37
43.250	0.00	0.26	0.257	I O	1.36
43.333	0.00	0.26	0.255	I O	1.36
43.417	0.00	0.26	0.254	I O	1.35
43.500	0.00	0.25	0.252	I O	1.34
43.583	0.00	0.25	0.250	I O	1.33
43.667	0.00	0.25	0.248	I O	1.32
43.750	0.00	0.25	0.247	I O	1.32
43.833	0.00	0.25	0.245	I O	1.31
43.917	0.00	0.25	0.243	I O	1.30
44.000	0.00	0.25	0.241	I O	1.29
44.083	0.00	0.25	0.240	I O	1.28
44.167	0.00	0.25	0.238	I O	1.28
44.250	0.00	0.25	0.236	I O	1.27
44.333	0.00	0.25	0.235	I O	1.26
44.417	0.00	0.25	0.233	I O	1.25
44.500	0.00	0.25	0.231	I O	1.25
44.583	0.00	0.24	0.229	I O	1.24
44.667	0.00	0.24	0.228	I O	1.23
44.750	0.00	0.24	0.226	I O	1.22
44.833	0.00	0.24	0.224	I O	1.21
44.917	0.00	0.24	0.223	I O	1.21
45.000	0.00	0.24	0.221	I O	1.20
45.083	0.00	0.24	0.219	I O	1.19
45.167	0.00	0.24	0.218	I O	1.18
45.250	0.00	0.24	0.216	I O	1.18
45.333	0.00	0.24	0.215	I O	1.17
45.417	0.00	0.24	0.213	I O	1.16
45.500	0.00	0.24	0.211	I O	1.15
45.583	0.00	0.24	0.210	I O	1.15
45.667	0.00	0.23	0.208	I O	1.14
45.750	0.00	0.23	0.206	I O	1.13
45.833	0.00	0.23	0.205	I O	1.12
45.917	0.00	0.23	0.203	I O	1.12
46.000	0.00	0.23	0.202	I O	1.11
46.083	0.00	0.23	0.200	I O	1.10
46.167	0.00	0.23	0.198	I O	1.09
46.250	0.00	0.23	0.197	I O	1.09
46.333	0.00	0.23	0.195	I O	1.08
46.417	0.00	0.23	0.194	I O	1.07
46.500	0.00	0.23	0.192	I O	1.07
46.583	0.00	0.23	0.191	I O	1.06
46.667	0.00	0.23	0.189	I O	1.05
46.750	0.00	0.23	0.187	I O	1.04
46.833	0.00	0.22	0.186	I O	1.04
46.917	0.00	0.22	0.184	I O	1.03
47.000	0.00	0.22	0.183	I O	1.02
47.083	0.00	0.22	0.181	I O	1.02
47.167	0.00	0.22	0.180	I O	1.01
47.250	0.00	0.22	0.178	I O	1.00
47.333	0.00	0.22	0.177	I O	0.99
47.417	0.00	0.22	0.175	I O	0.99
47.500	0.00	0.22	0.174	I O	0.98
47.583	0.00	0.22	0.172	I O	0.97
47.667	0.00	0.22	0.171	I O	0.96
47.750	0.00	0.21	0.169	I O	0.95
47.833	0.00	0.21	0.168	I O	0.95
47.917	0.00	0.21	0.166	I O	0.94
48.000	0.00	0.21	0.165	I O	0.93
48.083	0.00	0.21	0.163	I O	0.92
48.167	0.00	0.21	0.162	I O	0.92
48.250	0.00	0.21	0.161	I O	0.91
48.333	0.00	0.21	0.159	I O	0.90
48.417	0.00	0.21	0.158	I O	0.90
48.500	0.00	0.20	0.156	I O	0.89
48.583	0.00	0.20	0.155	I O	0.88
48.667	0.00	0.20	0.153	I O	0.87
48.750	0.00	0.20	0.152	I O	0.87
48.833	0.00	0.20	0.151	I O	0.86
48.917	0.00	0.20	0.149	I O	0.85
49.000	0.00	0.20	0.148	I O	0.84

ROUTE245.out

49.083	0.00	0.20	0.147	I O	0.84
49.167	0.00	0.20	0.145	I O	0.83
49.250	0.00	0.20	0.144	I O	0.82
49.333	0.00	0.19	0.142	I O	0.82
49.417	0.00	0.19	0.141	I O	0.81
49.500	0.00	0.19	0.140	I O	0.80
49.583	0.00	0.19	0.138	I O	0.80
49.667	0.00	0.19	0.137	I O	0.79
49.750	0.00	0.19	0.136	I O	0.78
49.833	0.00	0.19	0.135	I O	0.78
49.917	0.00	0.19	0.133	I O	0.77
50.000	0.00	0.19	0.132	I O	0.76
50.083	0.00	0.19	0.131	I O	0.76
50.167	0.00	0.18	0.129	I O	0.75
50.250	0.00	0.18	0.128	I O	0.74
50.333	0.00	0.18	0.127	I O	0.74
50.417	0.00	0.18	0.126	I O	0.73
50.500	0.00	0.18	0.124	I O	0.72
50.583	0.00	0.18	0.123	IO	0.72
50.667	0.00	0.18	0.122	IO	0.71
50.750	0.00	0.18	0.121	IO	0.70
50.833	0.00	0.18	0.119	IO	0.70
50.917	0.00	0.18	0.118	IO	0.69
51.000	0.00	0.18	0.117	IO	0.69
51.083	0.00	0.17	0.116	IO	0.68
51.167	0.00	0.17	0.115	IO	0.67
51.250	0.00	0.17	0.113	IO	0.67
51.333	0.00	0.17	0.112	IO	0.66
51.417	0.00	0.17	0.111	IO	0.65
51.500	0.00	0.17	0.110	IO	0.65
51.583	0.00	0.17	0.109	IO	0.64
51.667	0.00	0.17	0.108	IO	0.64
51.750	0.00	0.17	0.106	IO	0.63
51.833	0.00	0.17	0.105	IO	0.62
51.917	0.00	0.17	0.104	IO	0.62
52.000	0.00	0.17	0.103	IO	0.61
52.083	0.00	0.16	0.102	IO	0.61
52.167	0.00	0.16	0.101	IO	0.60
52.250	0.00	0.16	0.100	IO	0.60
52.333	0.00	0.16	0.098	IO	0.59
52.417	0.00	0.16	0.097	IO	0.58
52.500	0.00	0.16	0.096	IO	0.58
52.583	0.00	0.16	0.095	IO	0.57
52.667	0.00	0.16	0.094	IO	0.57
52.750	0.00	0.16	0.093	IO	0.56
52.833	0.00	0.16	0.092	IO	0.56
52.917	0.00	0.16	0.091	IO	0.55
53.000	0.00	0.16	0.090	IO	0.54
53.083	0.00	0.15	0.089	IO	0.54
53.167	0.00	0.15	0.088	IO	0.53
53.250	0.00	0.15	0.086	IO	0.53
53.333	0.00	0.15	0.085	IO	0.52
53.417	0.00	0.15	0.084	IO	0.52
53.500	0.00	0.15	0.083	IO	0.51
53.583	0.00	0.15	0.082	IO	0.51
53.667	0.00	0.15	0.081	IO	0.50
53.750	0.00	0.15	0.080	IO	0.50
53.833	0.00	0.15	0.079	IO	0.49
53.917	0.00	0.15	0.078	IO	0.48
54.000	0.00	0.14	0.077	IO	0.48
54.083	0.00	0.14	0.076	IO	0.47
54.167	0.00	0.14	0.075	IO	0.47
54.250	0.00	0.14	0.074	IO	0.46
54.333	0.00	0.14	0.073	IO	0.46
54.417	0.00	0.14	0.072	IO	0.45
54.500	0.00	0.14	0.071	IO	0.44
54.583	0.00	0.13	0.071	IO	0.44
54.667	0.00	0.13	0.070	IO	0.43
54.750	0.00	0.13	0.069	IO	0.43
54.833	0.00	0.13	0.068	IO	0.42
54.917	0.00	0.13	0.067	IO	0.42
55.000	0.00	0.13	0.066	IO	0.41
55.083	0.00	0.13	0.065	IO	0.41
55.167	0.00	0.13	0.064	IO	0.40
55.250	0.00	0.13	0.063	IO	0.40
55.333	0.00	0.12	0.062	IO	0.39
55.417	0.00	0.12	0.062	IO	0.39
55.500	0.00	0.12	0.061	IO	0.38
55.583	0.00	0.12	0.060	IO	0.38
55.667	0.00	0.12	0.059	IO	0.37
55.750	0.00	0.12	0.058	IO	0.37
55.833	0.00	0.12	0.058	IO	0.36
55.917	0.00	0.12	0.057	IO	0.36
56.000	0.00	0.12	0.056	IO	0.36

ROUTE245.out

56.083	0.00	0.11	0.055	IO		0.35
56.167	0.00	0.11	0.054	IO		0.35
56.250	0.00	0.11	0.054	IO		0.34
56.333	0.00	0.11	0.053	IO		0.34
56.417	0.00	0.11	0.052	IO		0.33
56.500	0.00	0.11	0.051	IO		0.33
56.583	0.00	0.11	0.051	IO		0.32
56.667	0.00	0.11	0.050	IO		0.32
56.750	0.00	0.11	0.049	IO		0.32
56.833	0.00	0.11	0.048	IO		0.31
56.917	0.00	0.10	0.048	IO		0.31
57.000	0.00	0.10	0.047	IO		0.30
57.083	0.00	0.10	0.046	IO		0.30
57.167	0.00	0.10	0.045	IO		0.30
57.250	0.00	0.10	0.045	IO		0.29
57.333	0.00	0.10	0.044	IO		0.29
57.417	0.00	0.10	0.043	IO		0.28
57.500	0.00	0.10	0.043	IO		0.28
57.583	0.00	0.10	0.042	IO		0.28
57.667	0.00	0.10	0.041	IO		0.27
57.750	0.00	0.09	0.041	IO		0.27
57.833	0.00	0.09	0.040	IO		0.26
57.917	0.00	0.09	0.039	IO		0.26
58.000	0.00	0.09	0.039	IO		0.26
58.083	0.00	0.09	0.038	IO		0.25
58.167	0.00	0.09	0.038	IO		0.25
58.250	0.00	0.09	0.037	O		0.25
58.333	0.00	0.09	0.036	O		0.24
58.417	0.00	0.09	0.036	O		0.24
58.500	0.00	0.09	0.035	O		0.24
58.583	0.00	0.09	0.035	O		0.23
58.667	0.00	0.09	0.034	O		0.23
58.750	0.00	0.08	0.033	O		0.23
58.833	0.00	0.08	0.033	O		0.22
58.917	0.00	0.08	0.032	O		0.22
59.000	0.00	0.08	0.032	O		0.22
59.083	0.00	0.08	0.031	O		0.21
59.167	0.00	0.08	0.030	O		0.21
59.250	0.00	0.08	0.030	O		0.21
59.333	0.00	0.08	0.029	O		0.20
59.417	0.00	0.08	0.029	O		0.20
59.500	0.00	0.08	0.028	O		0.20
59.583	0.00	0.08	0.028	O		0.19
59.667	0.00	0.07	0.027	O		0.19
59.750	0.00	0.07	0.027	O		0.18
59.833	0.00	0.07	0.026	O		0.18
59.917	0.00	0.07	0.026	O		0.18
60.000	0.00	0.07	0.025	O		0.17
60.083	0.00	0.07	0.025	O		0.17
60.167	0.00	0.07	0.024	O		0.17
60.250	0.00	0.07	0.024	O		0.16
60.333	0.00	0.06	0.023	O		0.16
60.417	0.00	0.06	0.023	O		0.16
60.500	0.00	0.06	0.023	O		0.16
60.583	0.00	0.06	0.022	O		0.15
60.667	0.00	0.06	0.022	O		0.15
60.750	0.00	0.06	0.021	O		0.15
60.833	0.00	0.06	0.021	O		0.14
60.917	0.00	0.06	0.021	O		0.14
61.000	0.00	0.06	0.020	O		0.14
61.083	0.00	0.05	0.020	O		0.14
61.167	0.00	0.05	0.019	O		0.13
61.250	0.00	0.05	0.019	O		0.13
61.333	0.00	0.05	0.019	O		0.13
61.417	0.00	0.05	0.018	O		0.13
61.500	0.00	0.05	0.018	O		0.12
61.583	0.00	0.05	0.018	O		0.12
61.667	0.00	0.05	0.017	O		0.12
61.750	0.00	0.05	0.017	O		0.12
61.833	0.00	0.05	0.017	O		0.12
61.917	0.00	0.04	0.016	O		0.11
62.000	0.00	0.04	0.016	O		0.11
62.083	0.00	0.04	0.016	O		0.11
62.167	0.00	0.04	0.016	O		0.11
62.250	0.00	0.04	0.015	O		0.11
62.333	0.00	0.04	0.015	O		0.10
62.417	0.00	0.04	0.015	O		0.10
62.500	0.00	0.04	0.014	O		0.10
62.583	0.00	0.04	0.014	O		0.10
62.667	0.00	0.04	0.014	O		0.10
62.750	0.00	0.04	0.014	O		0.09
62.833	0.00	0.04	0.013	O		0.09
62.917	0.00	0.04	0.013	O		0.09
63.000	0.00	0.04	0.013	O		0.09

ROUTE245.out

63.083	0.00	0.03	0.013	0	0.09
63.167	0.00	0.03	0.012	0	0.09
63.250	0.00	0.03	0.012	0	0.08
63.333	0.00	0.03	0.012	0	0.08
63.417	0.00	0.03	0.012	0	0.08
63.500	0.00	0.03	0.012	0	0.08
63.583	0.00	0.03	0.011	0	0.08
63.667	0.00	0.03	0.011	0	0.08
63.750	0.00	0.03	0.011	0	0.07
63.833	0.00	0.03	0.011	0	0.07
63.917	0.00	0.03	0.010	0	0.07
64.000	0.00	0.03	0.010	0	0.07
64.083	0.00	0.03	0.010	0	0.07
64.167	0.00	0.03	0.010	0	0.07
64.250	0.00	0.03	0.010	0	0.07
64.333	0.00	0.03	0.010	0	0.07
64.417	0.00	0.03	0.009	0	0.06
64.500	0.00	0.03	0.009	0	0.06
64.583	0.00	0.02	0.009	0	0.06
64.667	0.00	0.02	0.009	0	0.06
64.750	0.00	0.02	0.009	0	0.06
64.833	0.00	0.02	0.009	0	0.06
64.917	0.00	0.02	0.008	0	0.06
65.000	0.00	0.02	0.008	0	0.06
65.083	0.00	0.02	0.008	0	0.06
65.167	0.00	0.02	0.008	0	0.05
65.250	0.00	0.02	0.008	0	0.05
65.333	0.00	0.02	0.008	0	0.05
65.417	0.00	0.02	0.007	0	0.05
65.500	0.00	0.02	0.007	0	0.05
65.583	0.00	0.02	0.007	0	0.05
65.667	0.00	0.02	0.007	0	0.05
65.750	0.00	0.02	0.007	0	0.05
65.833	0.00	0.02	0.007	0	0.05
65.917	0.00	0.02	0.007	0	0.05
66.000	0.00	0.02	0.007	0	0.05
66.083	0.00	0.02	0.006	0	0.04
66.167	0.00	0.02	0.006	0	0.04
66.250	0.00	0.02	0.006	0	0.04
66.333	0.00	0.02	0.006	0	0.04
66.417	0.00	0.02	0.006	0	0.04
66.500	0.00	0.02	0.006	0	0.04
66.583	0.00	0.02	0.006	0	0.04
66.667	0.00	0.02	0.006	0	0.04
66.750	0.00	0.02	0.006	0	0.04
66.833	0.00	0.01	0.005	0	0.04
66.917	0.00	0.01	0.005	0	0.04
67.000	0.00	0.01	0.005	0	0.04
67.083	0.00	0.01	0.005	0	0.04
67.167	0.00	0.01	0.005	0	0.03
67.250	0.00	0.01	0.005	0	0.03
67.333	0.00	0.01	0.005	0	0.03
67.417	0.00	0.01	0.005	0	0.03
67.500	0.00	0.01	0.005	0	0.03
67.583	0.00	0.01	0.005	0	0.03
67.667	0.00	0.01	0.005	0	0.03
67.750	0.00	0.01	0.004	0	0.03
67.833	0.00	0.01	0.004	0	0.03
67.917	0.00	0.01	0.004	0	0.03
68.000	0.00	0.01	0.004	0	0.03
68.083	0.00	0.01	0.004	0	0.03
68.167	0.00	0.01	0.004	0	0.03
68.250	0.00	0.01	0.004	0	0.03
68.333	0.00	0.01	0.004	0	0.03
68.417	0.00	0.01	0.004	0	0.03
68.500	0.00	0.01	0.004	0	0.03
68.583	0.00	0.01	0.004	0	0.03
68.667	0.00	0.01	0.004	0	0.02
68.750	0.00	0.01	0.004	0	0.02
68.833	0.00	0.01	0.003	0	0.02
68.917	0.00	0.01	0.003	0	0.02
69.000	0.00	0.01	0.003	0	0.02
69.083	0.00	0.01	0.003	0	0.02
69.167	0.00	0.01	0.003	0	0.02
69.250	0.00	0.01	0.003	0	0.02
69.333	0.00	0.01	0.003	0	0.02
69.417	0.00	0.01	0.003	0	0.02
69.500	0.00	0.01	0.003	0	0.02
69.583	0.00	0.01	0.003	0	0.02
69.667	0.00	0.01	0.003	0	0.02
69.750	0.00	0.01	0.003	0	0.02
69.833	0.00	0.01	0.003	0	0.02
69.917	0.00	0.01	0.003	0	0.02
70.000	0.00	0.01	0.003	0	0.02

ROUTE245.out

70.083	0.00	0.01	0.003	0			0.02
70.167	0.00	0.01	0.003	0			0.02
70.250	0.00	0.01	0.003	0			0.02
70.333	0.00	0.01	0.002	0			0.02
70.417	0.00	0.01	0.002	0			0.02
70.500	0.00	0.01	0.002	0			0.02
70.583	0.00	0.01	0.002	0			0.02
70.667	0.00	0.01	0.002	0			0.02
70.750	0.00	0.01	0.002	0			0.02
70.833	0.00	0.01	0.002	0			0.02
70.917	0.00	0.01	0.002	0			0.01
71.000	0.00	0.01	0.002	0			0.01
71.083	0.00	0.01	0.002	0			0.01
71.167	0.00	0.01	0.002	0			0.01
71.250	0.00	0.01	0.002	0			0.01
71.333	0.00	0.01	0.002	0			0.01
71.417	0.00	0.01	0.002	0			0.01
71.500	0.00	0.01	0.002	0			0.01
71.583	0.00	0.01	0.002	0			0.01
71.667	0.00	0.00	0.002	0			0.01
71.750	0.00	0.00	0.002	0			0.01
71.833	0.00	0.00	0.002	0			0.01
71.917	0.00	0.00	0.002	0			0.01
72.000	0.00	0.00	0.002	0			0.01
72.083	0.00	0.00	0.002	0			0.01
72.167	0.00	0.00	0.002	0			0.01
72.250	0.00	0.00	0.002	0			0.01
72.333	0.00	0.00	0.002	0			0.01
72.417	0.00	0.00	0.002	0			0.01
72.500	0.00	0.00	0.002	0			0.01
72.583	0.00	0.00	0.001	0			0.01
72.667	0.00	0.00	0.001	0			0.01
72.750	0.00	0.00	0.001	0			0.01
72.833	0.00	0.00	0.001	0			0.01
72.917	0.00	0.00	0.001	0			0.01
73.000	0.00	0.00	0.001	0			0.01
73.083	0.00	0.00	0.001	0			0.01
73.167	0.00	0.00	0.001	0			0.01
73.250	0.00	0.00	0.001	0			0.01
73.333	0.00	0.00	0.001	0			0.01
73.417	0.00	0.00	0.001	0			0.01
73.500	0.00	0.00	0.001	0			0.01
73.583	0.00	0.00	0.001	0			0.01
73.667	0.00	0.00	0.001	0			0.01
73.750	0.00	0.00	0.001	0			0.01
73.833	0.00	0.00	0.001	0			0.01
73.917	0.00	0.00	0.001	0			0.01
74.000	0.00	0.00	0.001	0			0.01
74.083	0.00	0.00	0.001	0			0.01
74.167	0.00	0.00	0.001	0			0.01
74.250	0.00	0.00	0.001	0			0.01
74.333	0.00	0.00	0.001	0			0.01
74.417	0.00	0.00	0.001	0			0.01
74.500	0.00	0.00	0.001	0			0.01
74.583	0.00	0.00	0.001	0			0.01
74.667	0.00	0.00	0.001	0			0.01
74.750	0.00	0.00	0.001	0			0.01
74.833	0.00	0.00	0.001	0			0.01
74.917	0.00	0.00	0.001	0			0.01
75.000	0.00	0.00	0.001	0			0.01
75.083	0.00	0.00	0.001	0			0.01
75.167	0.00	0.00	0.001	0			0.01
75.250	0.00	0.00	0.001	0			0.01
75.333	0.00	0.00	0.001	0			0.01
75.417	0.00	0.00	0.001	0			0.01
75.500	0.00	0.00	0.001	0			0.01
75.583	0.00	0.00	0.001	0			0.01
75.667	0.00	0.00	0.001	0			0.01
75.750	0.00	0.00	0.001	0			0.01
75.833	0.00	0.00	0.001	0			0.00
75.917	0.00	0.00	0.001	0			0.00
76.000	0.00	0.00	0.001	0			0.00
76.083	0.00	0.00	0.001	0			0.00
76.167	0.00	0.00	0.001	0			0.00
76.250	0.00	0.00	0.001	0			0.00
76.333	0.00	0.00	0.001	0			0.00
76.417	0.00	0.00	0.001	0			0.00
76.500	0.00	0.00	0.001	0			0.00
76.583	0.00	0.00	0.001	0			0.00
76.667	0.00	0.00	0.001	0			0.00
76.750	0.00	0.00	0.001	0			0.00
76.833	0.00	0.00	0.001	0			0.00
76.917	0.00	0.00	0.001	0			0.00
77.000	0.00	0.00	0.001	0			0.00

					ROUTE245.out					
77.083	0.00	0.00	0.001	0						0.00
77.167	0.00	0.00	0.001	0						0.00
77.250	0.00	0.00	0.001	0						0.00
77.333	0.00	0.00	0.001	0						0.00
77.417	0.00	0.00	0.001	0						0.00
77.500	0.00	0.00	0.000	0						0.00
77.583	0.00	0.00	0.000	0						0.00
77.667	0.00	0.00	0.000	0						0.00
77.750	0.00	0.00	0.000	0						0.00
77.833	0.00	0.00	0.000	0						0.00
77.917	0.00	0.00	0.000	0						0.00
78.000	0.00	0.00	0.000	0						0.00
78.083	0.00	0.00	0.000	0						0.00
78.167	0.00	0.00	0.000	0						0.00
78.250	0.00	0.00	0.000	0						0.00
78.333	0.00	0.00	0.000	0						0.00
78.417	0.00	0.00	0.000	0						0.00
78.500	0.00	0.00	0.000	0						0.00
78.583	0.00	0.00	0.000	0						0.00
78.667	0.00	0.00	0.000	0						0.00
78.750	0.00	0.00	0.000	0						0.00
78.833	0.00	0.00	0.000	0						0.00

```

*****HYDROGRAPH DATA*****
      Number of intervals = 946
      Time interval = 5.0 (Min.)
      Maximum/Peak flow rate = 1.208 (CFS)
      Total volume = 1.754 (Ac.Ft)
      Status of hydrographs being held in storage
      Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
      Peak (CFS) 0.000 0.000 0.000 0.000 0.000
      Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000
*****

```

10-YEAR 24-HOUR ROUTING

 19-0126 - DUKE HARVILL
 BASIN ROUTING CALCULATIONS, PROPOSED H-12 TRIBUTARY
 10-YEAR, 24-HOUR STORM EVENT
 FN: ROUTE2410.OUT TSW

Program License Serial Number 4010

 ***** HYDROGRAPH INFORMATION *****

From study/file name: ONSITEPOST2410.rte
 *****HYDROGRAPH DATA*****
 Number of intervals = 293
 Time interval = 5.0 (Min.)
 Maximum/Peak flow rate = 3.455 (CFS)
 Total volume = 2.100 (Ac.Ft)
 Status of hydrographs being held in storage
 Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
 Peak (CFS) 0.000 0.000 0.000 0.000 0.000
 Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
 Process from Point/Station 100.000 to Point/Station 101.000
 **** RETARDING BASIN ROUTING ****

 User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
 Hydrograph time unit = 5.000 (Min.)
 Initial depth in storage basin = 0.00(Ft.)

 Initial basin depth = 0.00 (Ft.)
 Initial basin storage = 0.00 (Ac.Ft)
 Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.200	0.029	0.079	0.029	0.029
0.500	0.081	0.149	0.080	0.082
1.000	0.178	0.221	0.177	0.179
2.000	0.395	0.320	0.394	0.396
3.000	0.627	0.395	0.626	0.628
4.000	0.859	0.457	0.857	0.861
4.400	0.948	0.758	0.945	0.951
4.500	0.970	0.842	0.967	0.973
5.000	1.076	1.127	1.072	1.080
5.400	1.155	1.293	1.151	1.159
5.500	1.173	1.469	1.168	1.178
6.000	1.254	1.771	1.248	1.260
6.200	1.277	1.871	1.271	1.283
6.300	1.289	2.344	1.281	1.297
6.700	1.336	2.794	1.326	1.346
7.400	1.336	3.378	1.324	1.348
7.500	1.133	3.451	1.121	1.145
8.000	1.572	3.790	1.559	1.585
8.500	2.514	4.097	2.500	2.528

 Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	Depth (Ft.)
.0				
0.9				
1.73				
2.59				
3.45				

ROUTE2410.out

0.083	0.07	0.00	0.000	O		0.00
0.167	0.16	0.00	0.001	OI		0.01
0.250	0.19	0.01	0.002	OI		0.02
0.333	0.23	0.01	0.004	O I		0.02
0.417	0.28	0.01	0.005	O I		0.04
0.500	0.30	0.02	0.007	O I		0.05
0.583	0.30	0.02	0.009	O I		0.06
0.667	0.30	0.03	0.011	O I		0.08
0.750	0.30	0.04	0.013	O I		0.09
0.833	0.34	0.04	0.015	O I		0.10
0.917	0.39	0.05	0.017	O I		0.12
1.000	0.40	0.05	0.019	O I		0.13
1.083	0.37	0.06	0.022	O I		0.15
1.167	0.32	0.06	0.024	O I		0.16
1.250	0.31	0.07	0.025	O I		0.17
1.333	0.31	0.07	0.027	O I		0.19
1.417	0.31	0.08	0.029	O I		0.20
1.500	0.30	0.08	0.030	O I		0.21
1.583	0.30	0.08	0.032	O I		0.22
1.667	0.30	0.08	0.033	O I		0.22
1.750	0.30	0.09	0.035	O I		0.23
1.833	0.34	0.09	0.036	O I		0.24
1.917	0.39	0.09	0.038	O I		0.25
2.000	0.40	0.09	0.040	O I		0.26
2.083	0.40	0.10	0.042	O I		0.28
2.167	0.41	0.10	0.044	O I		0.29
2.250	0.41	0.10	0.047	O I		0.30
2.333	0.41	0.11	0.049	O I		0.31
2.417	0.41	0.11	0.051	O I		0.33
2.500	0.41	0.11	0.053	O I		0.34
2.583	0.44	0.11	0.055	O I		0.35
2.667	0.49	0.12	0.057	O I		0.36
2.750	0.50	0.12	0.060	O I		0.38
2.833	0.50	0.12	0.063	O I		0.39
2.917	0.51	0.13	0.065	O I		0.41
3.000	0.51	0.13	0.068	O I		0.42
3.083	0.51	0.13	0.070	O I		0.44
3.167	0.51	0.14	0.073	O I		0.45
3.250	0.51	0.14	0.075	O I		0.47
3.333	0.51	0.14	0.078	O I		0.48
3.417	0.51	0.15	0.080	O I		0.50
3.500	0.51	0.15	0.083	O I		0.51
3.583	0.51	0.15	0.085	O I		0.52
3.667	0.51	0.15	0.088	O I		0.54
3.750	0.51	0.16	0.090	O I		0.55
3.833	0.54	0.16	0.093	O I		0.56
3.917	0.59	0.16	0.096	O I		0.58
4.000	0.60	0.16	0.099	O I		0.59
4.083	0.61	0.16	0.102	O I		0.61
4.167	0.61	0.17	0.105	O I		0.62
4.250	0.61	0.17	0.108	O I		0.64
4.333	0.64	0.17	0.111	O I		0.65
4.417	0.69	0.17	0.114	O I		0.67
4.500	0.70	0.18	0.118	O I		0.69
4.583	0.71	0.18	0.122	O I		0.71
4.667	0.71	0.18	0.125	O I		0.73
4.750	0.71	0.18	0.129	O I		0.75
4.833	0.75	0.19	0.133	O I		0.77
4.917	0.79	0.19	0.137	O I		0.79
5.000	0.80	0.19	0.141	O I		0.81
5.083	0.74	0.20	0.145	O I		0.83
5.167	0.65	0.20	0.148	O I		0.85
5.250	0.63	0.20	0.151	O I		0.86
5.333	0.65	0.20	0.154	O I		0.88
5.417	0.69	0.21	0.157	O I		0.89
5.500	0.70	0.21	0.161	O I		0.91
5.583	0.74	0.21	0.164	O I		0.93
5.667	0.79	0.21	0.168	O I		0.95
5.750	0.80	0.22	0.172	O I		0.97
5.833	0.81	0.22	0.176	O I		0.99
5.917	0.81	0.22	0.180	O I		1.01
6.000	0.81	0.22	0.184	O I		1.03
6.083	0.85	0.23	0.188	O I		1.05
6.167	0.90	0.23	0.193	O I		1.07
6.250	0.91	0.23	0.198	O I		1.09
6.333	0.91	0.23	0.202	O I		1.11
6.417	0.91	0.23	0.207	O I		1.13
6.500	0.91	0.24	0.212	O I		1.15
6.583	0.95	0.24	0.216	O I		1.18
6.667	1.00	0.24	0.221	O I		1.20
6.750	1.01	0.24	0.227	O I		1.22
6.833	1.01	0.25	0.232	O I		1.25
6.917	1.02	0.25	0.237	O I		1.27
7.000	1.02	0.25	0.242	O I		1.30

ROUTE2410.out

7.083	1.02	0.25	0.248	0	I					1.32
7.167	1.02	0.26	0.253	0	I					1.35
7.250	1.02	0.26	0.258	0	I					1.37
7.333	1.05	0.26	0.264	0	I					1.39
7.417	1.10	0.26	0.269	0	I					1.42
7.500	1.11	0.27	0.275	0	I					1.45
7.583	1.15	0.27	0.281	0	I					1.47
7.667	1.20	0.27	0.287	0	I					1.50
7.750	1.21	0.27	0.294	0	I					1.53
7.833	1.25	0.28	0.300	0	I					1.56
7.917	1.30	0.28	0.307	0	I					1.59
8.000	1.31	0.28	0.314	0	I					1.63
8.083	1.39	0.29	0.321	0	I					1.66
8.167	1.48	0.29	0.329	0	I					1.70
8.250	1.51	0.29	0.338	0	I					1.74
8.333	1.52	0.30	0.346	0	I					1.77
8.417	1.52	0.30	0.354	0	I					1.81
8.500	1.52	0.31	0.363	0	I					1.85
8.583	1.56	0.31	0.371	0	I					1.89
8.667	1.61	0.31	0.380	0	I					1.93
8.750	1.62	0.32	0.389	0	I					1.97
8.833	1.66	0.32	0.398	0	I					2.01
8.917	1.71	0.32	0.407	0	I					2.05
9.000	1.72	0.33	0.417	0	I					2.09
9.083	1.79	0.33	0.427	0	I					2.14
9.167	1.89	0.33	0.437	0	I					2.18
9.250	1.91	0.34	0.448	0	I					2.23
9.333	1.96	0.34	0.459	0	I					2.28
9.417	2.01	0.34	0.470	0	I					2.32
9.500	2.02	0.35	0.482	0	I					2.37
9.583	2.06	0.35	0.494	0	I					2.42
9.667	2.11	0.36	0.505	0	I					2.48
9.750	2.13	0.36	0.518	0	I					2.53
9.833	2.17	0.36	0.530	0	I					2.58
9.917	2.22	0.37	0.542	0	I					2.64
10.000	2.23	0.37	0.555	0	I					2.69
10.083	1.99	0.38	0.567	0	I					2.74
10.167	1.66	0.38	0.577	0	I					2.78
10.250	1.58	0.38	0.586	0	I					2.82
10.333	1.55	0.38	0.594	0	I					2.86
10.417	1.53	0.39	0.602	0	I					2.89
10.500	1.52	0.39	0.610	0	I					2.92
10.583	1.70	0.39	0.618	0	I					2.96
10.667	1.94	0.40	0.628	0	I					3.00
10.750	1.99	0.40	0.639	0	I					3.05
10.833	2.02	0.40	0.650	0	I					3.10
10.917	2.03	0.40	0.661	0	I					3.15
11.000	2.03	0.41	0.672	0	I					3.19
11.083	2.00	0.41	0.683	0	I					3.24
11.167	1.95	0.41	0.694	0	I					3.29
11.250	1.94	0.42	0.704	0	I					3.33
11.333	1.93	0.42	0.715	0	I					3.38
11.417	1.93	0.42	0.725	0	I					3.42
11.500	1.93	0.42	0.736	0	I					3.47
11.583	1.86	0.43	0.746	0	I					3.51
11.667	1.77	0.43	0.755	0	I					3.55
11.750	1.74	0.43	0.764	0	I					3.59
11.833	1.77	0.43	0.774	0	I					3.63
11.917	1.81	0.44	0.783	0	I					3.67
12.000	1.82	0.44	0.792	0	I					3.71
12.083	2.07	0.44	0.803	0	I					3.76
12.167	2.41	0.45	0.815	0	I					3.81
12.250	2.48	0.45	0.829	0	I					3.87
12.333	2.55	0.45	0.843	0	I					3.93
12.417	2.62	0.46	0.858	0	I					3.99
12.500	2.63	0.50	0.872	0	I					4.06
12.583	2.71	0.55	0.887	0	I					4.13
12.667	2.81	0.60	0.902	0	I					4.19
12.750	2.83	0.65	0.917	0	I					4.26
12.833	2.87	0.70	0.932	0	I					4.33
12.917	2.93	0.76	0.947	0	I					4.40
13.000	2.94	0.81	0.962	0	I					4.46
13.083	3.12	0.86	0.977	0	I					4.53
13.167	3.36	0.90	0.993	0	I					4.61
13.250	3.41	0.95	1.010	0	I					4.69
13.333	3.44	1.00	1.027	0	I					4.77
13.417	3.45	1.04	1.044	0	I					4.85
13.500	3.45	1.08	1.060	0	I					4.93
13.583	3.07	1.12	1.075	0	I					5.00
13.667	2.55	1.15	1.087	0	I					5.05
13.750	2.43	1.17	1.096	0	I					5.10
13.833	2.37	1.19	1.104	0	I					5.14
13.917	2.35	1.20	1.112	0	I					5.18
14.000	2.34	1.22	1.120	0	I					5.22

ROUTE2410.out

14.083	2.48	1.24	1.128			O		I		5.26
14.167	2.67	1.26	1.137			O		I		5.31
14.250	2.71	1.28	1.147			O		I		5.36
14.333	2.70	1.31	1.157			O		I		5.41
14.417	2.66	1.40	1.166			O		I		5.46
14.500	2.65	1.47	1.174			O		I		5.51
14.583	2.65	1.50	1.182			O		I		5.56
14.667	2.64	1.53	1.190			O		I		5.61
14.750	2.64	1.56	1.198			O		I		5.65
14.833	2.61	1.59	1.205			O		I		5.70
14.917	2.56	1.61	1.212			O		I		5.74
15.000	2.55	1.64	1.218			O		I		5.78
15.083	2.51	1.66	1.224			O		I		5.82
15.167	2.46	1.68	1.230			O		I		5.85
15.250	2.45	1.70	1.235			O		I		5.88
15.333	2.41	1.72	1.240			O		I		5.91
15.417	2.36	1.74	1.244			O		I		5.94
15.500	2.35	1.75	1.249			O		I		5.97
15.583	2.20	1.76	1.252			O		I		5.99
15.667	2.01	1.77	1.254			O	I			6.00
15.750	1.96	1.78	1.256			O	I			6.02
15.833	1.94	1.78	1.257			O	I			6.03
15.917	1.93	1.79	1.258			O	I			6.04
16.000	1.93	1.79	1.259			O	I			6.04
16.083	1.40	1.79	1.258			I	O			6.04
16.167	0.69	1.77	1.253			I	O			6.00
16.250	0.53	1.74	1.245		I		O			5.95
16.333	0.46	1.71	1.237		I		O			5.89
16.417	0.42	1.67	1.228		I		O			5.84
16.500	0.41	1.64	1.220		I		O			5.79
16.583	0.37	1.61	1.211		I		O			5.74
16.667	0.32	1.58	1.203		I		O			5.68
16.750	0.31	1.55	1.194		I		O			5.63
16.833	0.31	1.52	1.186		I		O			5.58
16.917	0.31	1.49	1.177		I		O			5.53
17.000	0.30	1.43	1.169		I		O			5.48
17.083	0.38	1.36	1.162		I		O			5.44
17.167	0.47	1.30	1.156		I		O			5.40
17.250	0.49	1.28	1.150		I		O			5.38
17.333	0.50	1.27	1.145		I		O			5.35
17.417	0.51	1.26	1.140		I		O			5.32
17.500	0.51	1.25	1.134		I		O			5.30
17.583	0.51	1.24	1.129		I		O			5.27
17.667	0.51	1.23	1.124		I		O			5.25
17.750	0.51	1.22	1.119		I		O			5.22
17.833	0.47	1.21	1.115		I		O			5.19
17.917	0.43	1.20	1.109		I		O			5.17
18.000	0.41	1.19	1.104		I		O			5.14
18.083	0.41	1.17	1.099		I		O			5.12
18.167	0.41	1.16	1.093		I		O			5.09
18.250	0.41	1.15	1.088		I		O			5.06
18.333	0.41	1.14	1.083		I		O			5.04
18.417	0.41	1.13	1.078		I		O			5.01
18.500	0.41	1.12	1.073		I		O			4.99
18.583	0.37	1.11	1.068		I		O			4.96
18.667	0.32	1.09	1.063		I		O			4.94
18.750	0.31	1.08	1.058		I		O			4.91
18.833	0.27	1.06	1.052		I		O			4.89
18.917	0.22	1.05	1.047		I		O			4.86
19.000	0.21	1.03	1.041		I		O			4.84
19.083	0.24	1.02	1.036		I		O			4.81
19.167	0.29	1.00	1.031		I		O			4.79
19.250	0.30	0.99	1.026		I		O			4.76
19.333	0.34	0.98	1.021		I		O			4.74
19.417	0.39	0.97	1.017		I		O			4.72
19.500	0.40	0.96	1.013		I		O			4.70
19.583	0.37	0.95	1.009		I		O			4.68
19.667	0.32	0.94	1.005		I		O			4.66
19.750	0.31	0.92	1.001		I		O			4.64
19.833	0.27	0.91	0.996		I		O			4.62
19.917	0.22	0.90	0.992		I		O			4.60
20.000	0.21	0.89	0.987		I		O			4.58
20.083	0.24	0.88	0.983		I		O			4.56
20.167	0.29	0.86	0.978		I		O			4.54
20.250	0.30	0.85	0.975		I		O			4.52
20.333	0.30	0.84	0.971		I		O			4.50
20.417	0.30	0.83	0.967		I		O			4.49
20.500	0.30	0.82	0.964		I		O			4.47
20.583	0.30	0.80	0.960		I		O			4.45
20.667	0.30	0.79	0.957		I		O			4.44
20.750	0.30	0.78	0.953		I		O			4.42
20.833	0.27	0.77	0.950		I		O			4.41
20.917	0.22	0.75	0.946		I		O			4.39
21.000	0.21	0.74	0.943		I		O			4.38

ROUTE2410.out

21.083	0.24	0.73	0.939	I	0	4.36
21.167	0.29	0.72	0.936	I	0	4.35
21.250	0.30	0.71	0.933	I	0	4.33
21.333	0.27	0.70	0.930	I	0	4.32
21.417	0.22	0.69	0.927	I	0	4.31
21.500	0.21	0.68	0.924	I	0	4.29
21.583	0.24	0.67	0.921	I	0	4.28
21.667	0.29	0.66	0.918	I	0	4.27
21.750	0.30	0.65	0.916	I	0	4.26
21.833	0.27	0.64	0.913	I	0	4.24
21.917	0.22	0.63	0.911	I	0	4.23
22.000	0.21	0.62	0.908	I	0	4.22
22.083	0.24	0.61	0.905	I	0	4.21
22.167	0.29	0.60	0.903	I	0	4.20
22.250	0.30	0.60	0.901	I	0	4.19
22.333	0.27	0.59	0.898	I	0	4.18
22.417	0.22	0.58	0.896	I	0	4.17
22.500	0.21	0.57	0.894	I	0	4.16
22.583	0.21	0.57	0.891	I	0	4.14
22.667	0.20	0.56	0.889	I	0	4.13
22.750	0.20	0.55	0.886	I	0	4.12
22.833	0.20	0.54	0.884	I	0	4.11
22.917	0.20	0.53	0.882	I	0	4.10
23.000	0.20	0.53	0.879	I	0	4.09
23.083	0.20	0.52	0.877	I	0	4.08
23.167	0.20	0.51	0.875	I	0	4.07
23.250	0.20	0.50	0.873	I	0	4.06
23.333	0.20	0.50	0.871	I	0	4.05
23.417	0.20	0.49	0.869	I	0	4.04
23.500	0.20	0.48	0.867	I	0	4.04
23.583	0.20	0.48	0.865	I	0	4.03
23.667	0.20	0.47	0.863	I	0	4.02
23.750	0.20	0.46	0.861	I	0	4.01
23.833	0.20	0.46	0.859	I	0	4.00
23.917	0.20	0.46	0.858	I	0	3.99
24.000	0.20	0.46	0.856	I	0	3.99
24.083	0.13	0.46	0.854	I	0	3.98
24.167	0.04	0.45	0.851	I	0	3.97
24.250	0.02	0.45	0.849	I	0	3.95
24.333	0.01	0.45	0.845	I	0	3.94
24.417	0.00	0.45	0.842	I	0	3.93
24.500	0.00	0.45	0.839	I	0	3.91
24.583	0.00	0.45	0.836	I	0	3.90
24.667	0.00	0.45	0.833	I	0	3.89
24.750	0.00	0.45	0.830	I	0	3.87
24.833	0.00	0.45	0.827	I	0	3.86
24.917	0.00	0.45	0.824	I	0	3.85
25.000	0.00	0.45	0.821	I	0	3.83
25.083	0.00	0.45	0.818	I	0	3.82
25.167	0.00	0.45	0.815	I	0	3.81
25.250	0.00	0.44	0.812	I	0	3.80
25.333	0.00	0.44	0.808	I	0	3.78
25.417	0.00	0.44	0.805	I	0	3.77
25.500	0.00	0.44	0.802	I	0	3.76
25.583	0.00	0.44	0.799	I	0	3.74
25.667	0.00	0.44	0.796	I	0	3.73
25.750	0.00	0.44	0.793	I	0	3.72
25.833	0.00	0.44	0.790	I	0	3.70
25.917	0.00	0.44	0.787	I	0	3.69
26.000	0.00	0.44	0.784	I	0	3.68
26.083	0.00	0.44	0.781	I	0	3.66
26.167	0.00	0.44	0.778	I	0	3.65
26.250	0.00	0.43	0.775	I	0	3.64
26.333	0.00	0.43	0.772	I	0	3.63
26.417	0.00	0.43	0.769	I	0	3.61
26.500	0.00	0.43	0.766	I	0	3.60
26.583	0.00	0.43	0.763	I	0	3.59
26.667	0.00	0.43	0.760	I	0	3.57
26.750	0.00	0.43	0.757	I	0	3.56
26.833	0.00	0.43	0.754	I	0	3.55
26.917	0.00	0.43	0.751	I	0	3.54
27.000	0.00	0.43	0.748	I	0	3.52
27.083	0.00	0.43	0.746	I	0	3.51
27.167	0.00	0.43	0.743	I	0	3.50
27.250	0.00	0.43	0.740	I	0	3.49
27.333	0.00	0.42	0.737	I	0	3.47
27.417	0.00	0.42	0.734	I	0	3.46
27.500	0.00	0.42	0.731	I	0	3.45
27.583	0.00	0.42	0.728	I	0	3.44
27.667	0.00	0.42	0.725	I	0	3.42
27.750	0.00	0.42	0.722	I	0	3.41
27.833	0.00	0.42	0.719	I	0	3.40
27.917	0.00	0.42	0.716	I	0	3.39
28.000	0.00	0.42	0.714	I	0	3.37

ROUTE2410.out

28.083	0.00	0.42	0.711	I	0	3.36
28.167	0.00	0.42	0.708	I	0	3.35
28.250	0.00	0.42	0.705	I	0	3.34
28.333	0.00	0.42	0.702	I	0	3.32
28.417	0.00	0.41	0.699	I	0	3.31
28.500	0.00	0.41	0.696	I	0	3.30
28.583	0.00	0.41	0.694	I	0	3.29
28.667	0.00	0.41	0.691	I	0	3.27
28.750	0.00	0.41	0.688	I	0	3.26
28.833	0.00	0.41	0.685	I	0	3.25
28.917	0.00	0.41	0.682	I	0	3.24
29.000	0.00	0.41	0.679	I	0	3.23
29.083	0.00	0.41	0.677	I	0	3.21
29.167	0.00	0.41	0.674	I	0	3.20
29.250	0.00	0.41	0.671	I	0	3.19
29.333	0.00	0.41	0.668	I	0	3.18
29.417	0.00	0.41	0.665	I	0	3.17
29.500	0.00	0.40	0.663	I	0	3.15
29.583	0.00	0.40	0.660	I	0	3.14
29.667	0.00	0.40	0.657	I	0	3.13
29.750	0.00	0.40	0.654	I	0	3.12
29.833	0.00	0.40	0.651	I	0	3.11
29.917	0.00	0.40	0.649	I	0	3.09
30.000	0.00	0.40	0.646	I	0	3.08
30.083	0.00	0.40	0.643	I	0	3.07
30.167	0.00	0.40	0.640	I	0	3.06
30.250	0.00	0.40	0.638	I	0	3.05
30.333	0.00	0.40	0.635	I	0	3.03
30.417	0.00	0.40	0.632	I	0	3.02
30.500	0.00	0.40	0.629	I	0	3.01
30.583	0.00	0.39	0.627	I	0	3.00
30.667	0.00	0.39	0.624	I	0	2.99
30.750	0.00	0.39	0.621	I	0	2.98
30.833	0.00	0.39	0.619	I	0	2.96
30.917	0.00	0.39	0.616	I	0	2.95
31.000	0.00	0.39	0.613	I	0	2.94
31.083	0.00	0.39	0.611	I	0	2.93
31.167	0.00	0.39	0.608	I	0	2.92
31.250	0.00	0.39	0.605	I	0	2.91
31.333	0.00	0.39	0.603	I	0	2.89
31.417	0.00	0.39	0.600	I	0	2.88
31.500	0.00	0.39	0.597	I	0	2.87
31.583	0.00	0.38	0.595	I	0	2.86
31.667	0.00	0.38	0.592	I	0	2.85
31.750	0.00	0.38	0.589	I	0	2.84
31.833	0.00	0.38	0.587	I	0	2.83
31.917	0.00	0.38	0.584	I	0	2.81
32.000	0.00	0.38	0.581	I	0	2.80
32.083	0.00	0.38	0.579	I	0	2.79
32.167	0.00	0.38	0.576	I	0	2.78
32.250	0.00	0.38	0.574	I	0	2.77
32.333	0.00	0.38	0.571	I	0	2.76
32.417	0.00	0.38	0.568	I	0	2.75
32.500	0.00	0.38	0.566	I	0	2.74
32.583	0.00	0.37	0.563	I	0	2.72
32.667	0.00	0.37	0.561	I	0	2.71
32.750	0.00	0.37	0.558	I	0	2.70
32.833	0.00	0.37	0.555	I	0	2.69
32.917	0.00	0.37	0.553	I	0	2.68
33.000	0.00	0.37	0.550	I	0	2.67
33.083	0.00	0.37	0.548	I	0	2.66
33.167	0.00	0.37	0.545	I	0	2.65
33.250	0.00	0.37	0.543	I	0	2.64
33.333	0.00	0.37	0.540	I	0	2.63
33.417	0.00	0.37	0.538	I	0	2.62
33.500	0.00	0.37	0.535	I	0	2.60
33.583	0.00	0.36	0.533	I	0	2.59
33.667	0.00	0.36	0.530	I	0	2.58
33.750	0.00	0.36	0.528	I	0	2.57
33.833	0.00	0.36	0.525	I	0	2.56
33.917	0.00	0.36	0.523	I	0	2.55
34.000	0.00	0.36	0.520	I	0	2.54
34.083	0.00	0.36	0.518	I	0	2.53
34.167	0.00	0.36	0.515	I	0	2.52
34.250	0.00	0.36	0.513	I	0	2.51
34.333	0.00	0.36	0.510	I	0	2.50
34.417	0.00	0.36	0.508	I	0	2.49
34.500	0.00	0.36	0.505	I	0	2.48
34.583	0.00	0.35	0.503	I	0	2.47
34.667	0.00	0.35	0.501	I	0	2.45
34.750	0.00	0.35	0.498	I	0	2.44
34.833	0.00	0.35	0.496	I	0	2.43
34.917	0.00	0.35	0.493	I	0	2.42
35.000	0.00	0.35	0.491	I	0	2.41

ROUTE2410.out

35.083	0.00	0.35	0.488	I	O	2.40
35.167	0.00	0.35	0.486	I	O	2.39
35.250	0.00	0.35	0.484	I	O	2.38
35.333	0.00	0.35	0.481	I	O	2.37
35.417	0.00	0.35	0.479	I	O	2.36
35.500	0.00	0.35	0.476	I	O	2.35
35.583	0.00	0.35	0.474	I	O	2.34
35.667	0.00	0.34	0.472	I	O	2.33
35.750	0.00	0.34	0.469	I	O	2.32
35.833	0.00	0.34	0.467	I	O	2.31
35.917	0.00	0.34	0.465	I	O	2.30
36.000	0.00	0.34	0.462	I	O	2.29
36.083	0.00	0.34	0.460	I	O	2.28
36.167	0.00	0.34	0.457	I	O	2.27
36.250	0.00	0.34	0.455	I	O	2.26
36.333	0.00	0.34	0.453	I	O	2.25
36.417	0.00	0.34	0.450	I	O	2.24
36.500	0.00	0.34	0.448	I	O	2.23
36.583	0.00	0.34	0.446	I	O	2.22
36.667	0.00	0.34	0.444	I	O	2.21
36.750	0.00	0.33	0.441	I	O	2.20
36.833	0.00	0.33	0.439	I	O	2.19
36.917	0.00	0.33	0.437	I	O	2.18
37.000	0.00	0.33	0.434	I	O	2.17
37.083	0.00	0.33	0.432	I	O	2.16
37.167	0.00	0.33	0.430	I	O	2.15
37.250	0.00	0.33	0.427	I	O	2.14
37.333	0.00	0.33	0.425	I	O	2.13
37.417	0.00	0.33	0.423	I	O	2.12
37.500	0.00	0.33	0.421	I	O	2.11
37.583	0.00	0.33	0.418	I	O	2.10
37.667	0.00	0.33	0.416	I	O	2.09
37.750	0.00	0.33	0.414	I	O	2.08
37.833	0.00	0.33	0.412	I	O	2.07
37.917	0.00	0.32	0.409	I	O	2.06
38.000	0.00	0.32	0.407	I	O	2.05
38.083	0.00	0.32	0.405	I	O	2.04
38.167	0.00	0.32	0.403	I	O	2.03
38.250	0.00	0.32	0.400	I	O	2.02
38.333	0.00	0.32	0.398	I	O	2.01
38.417	0.00	0.32	0.396	I	O	2.00
38.500	0.00	0.32	0.394	I	O	1.99
38.583	0.00	0.32	0.392	I	O	1.98
38.667	0.00	0.32	0.389	I	O	1.97
38.750	0.00	0.32	0.387	I	O	1.96
38.833	0.00	0.32	0.385	I	O	1.95
38.917	0.00	0.31	0.383	I	O	1.94
39.000	0.00	0.31	0.381	I	O	1.93
39.083	0.00	0.31	0.379	I	O	1.92
39.167	0.00	0.31	0.376	I	O	1.91
39.250	0.00	0.31	0.374	I	O	1.90
39.333	0.00	0.31	0.372	I	O	1.89
39.417	0.00	0.31	0.370	I	O	1.89
39.500	0.00	0.31	0.368	I	O	1.88
39.583	0.00	0.31	0.366	I	O	1.87
39.667	0.00	0.31	0.364	I	O	1.86
39.750	0.00	0.30	0.362	I	O	1.85
39.833	0.00	0.30	0.360	I	O	1.84
39.917	0.00	0.30	0.357	I	O	1.83
40.000	0.00	0.30	0.355	I	O	1.82
40.083	0.00	0.30	0.353	I	O	1.81
40.167	0.00	0.30	0.351	I	O	1.80
40.250	0.00	0.30	0.349	I	O	1.79
40.333	0.00	0.30	0.347	I	O	1.78
40.417	0.00	0.30	0.345	I	O	1.77
40.500	0.00	0.30	0.343	I	O	1.76
40.583	0.00	0.30	0.341	I	O	1.75
40.667	0.00	0.29	0.339	I	O	1.74
40.750	0.00	0.29	0.337	I	O	1.73
40.833	0.00	0.29	0.335	I	O	1.72
40.917	0.00	0.29	0.333	I	O	1.71
41.000	0.00	0.29	0.331	I	O	1.70
41.083	0.00	0.29	0.329	I	O	1.70
41.167	0.00	0.29	0.327	I	O	1.69
41.250	0.00	0.29	0.325	I	O	1.68
41.333	0.00	0.29	0.323	I	O	1.67
41.417	0.00	0.29	0.321	I	O	1.66
41.500	0.00	0.29	0.319	I	O	1.65
41.583	0.00	0.28	0.317	I	O	1.64
41.667	0.00	0.28	0.315	I	O	1.63
41.750	0.00	0.28	0.313	I	O	1.62
41.833	0.00	0.28	0.311	I	O	1.61
41.917	0.00	0.28	0.309	I	O	1.60
42.000	0.00	0.28	0.307	I	O	1.60

ROUTE2410.out

42.083	0.00	0.28	0.305	I O	1.59
42.167	0.00	0.28	0.303	I O	1.58
42.250	0.00	0.28	0.302	I O	1.57
42.333	0.00	0.28	0.300	I O	1.56
42.417	0.00	0.28	0.298	I O	1.55
42.500	0.00	0.27	0.296	I O	1.54
42.583	0.00	0.27	0.294	I O	1.53
42.667	0.00	0.27	0.292	I O	1.53
42.750	0.00	0.27	0.290	I O	1.52
42.833	0.00	0.27	0.288	I O	1.51
42.917	0.00	0.27	0.286	I O	1.50
43.000	0.00	0.27	0.285	I O	1.49
43.083	0.00	0.27	0.283	I O	1.48
43.167	0.00	0.27	0.281	I O	1.47
43.250	0.00	0.27	0.279	I O	1.47
43.333	0.00	0.27	0.277	I O	1.46
43.417	0.00	0.27	0.275	I O	1.45
43.500	0.00	0.26	0.274	I O	1.44
43.583	0.00	0.26	0.272	I O	1.43
43.667	0.00	0.26	0.270	I O	1.42
43.750	0.00	0.26	0.268	I O	1.42
43.833	0.00	0.26	0.266	I O	1.41
43.917	0.00	0.26	0.265	I O	1.40
44.000	0.00	0.26	0.263	I O	1.39
44.083	0.00	0.26	0.261	I O	1.38
44.167	0.00	0.26	0.259	I O	1.37
44.250	0.00	0.26	0.257	I O	1.37
44.333	0.00	0.26	0.256	I O	1.36
44.417	0.00	0.26	0.254	I O	1.35
44.500	0.00	0.25	0.252	I O	1.34
44.583	0.00	0.25	0.250	I O	1.33
44.667	0.00	0.25	0.249	I O	1.33
44.750	0.00	0.25	0.247	I O	1.32
44.833	0.00	0.25	0.245	I O	1.31
44.917	0.00	0.25	0.243	I O	1.30
45.000	0.00	0.25	0.242	I O	1.29
45.083	0.00	0.25	0.240	I O	1.29
45.167	0.00	0.25	0.238	I O	1.28
45.250	0.00	0.25	0.237	I O	1.27
45.333	0.00	0.25	0.235	I O	1.26
45.417	0.00	0.25	0.233	I O	1.25
45.500	0.00	0.25	0.231	I O	1.25
45.583	0.00	0.24	0.230	I O	1.24
45.667	0.00	0.24	0.228	I O	1.23
45.750	0.00	0.24	0.226	I O	1.22
45.833	0.00	0.24	0.225	I O	1.22
45.917	0.00	0.24	0.223	I O	1.21
46.000	0.00	0.24	0.221	I O	1.20
46.083	0.00	0.24	0.220	I O	1.19
46.167	0.00	0.24	0.218	I O	1.18
46.250	0.00	0.24	0.216	I O	1.18
46.333	0.00	0.24	0.215	I O	1.17
46.417	0.00	0.24	0.213	I O	1.16
46.500	0.00	0.24	0.212	I O	1.15
46.583	0.00	0.24	0.210	I O	1.15
46.667	0.00	0.23	0.208	I O	1.14
46.750	0.00	0.23	0.207	I O	1.13
46.833	0.00	0.23	0.205	I O	1.12
46.917	0.00	0.23	0.203	I O	1.12
47.000	0.00	0.23	0.202	I O	1.11
47.083	0.00	0.23	0.200	I O	1.10
47.167	0.00	0.23	0.199	I O	1.10
47.250	0.00	0.23	0.197	I O	1.09
47.333	0.00	0.23	0.196	I O	1.08
47.417	0.00	0.23	0.194	I O	1.07
47.500	0.00	0.23	0.192	I O	1.07
47.583	0.00	0.23	0.191	I O	1.06
47.667	0.00	0.23	0.189	I O	1.05
47.750	0.00	0.23	0.188	I O	1.04
47.833	0.00	0.22	0.186	I O	1.04
47.917	0.00	0.22	0.185	I O	1.03
48.000	0.00	0.22	0.183	I O	1.02
48.083	0.00	0.22	0.182	I O	1.02
48.167	0.00	0.22	0.180	I O	1.01
48.250	0.00	0.22	0.178	I O	1.00
48.333	0.00	0.22	0.177	I O	0.99
48.417	0.00	0.22	0.175	I O	0.99
48.500	0.00	0.22	0.174	I O	0.98
48.583	0.00	0.22	0.172	I O	0.97
48.667	0.00	0.22	0.171	IO	0.96
48.750	0.00	0.21	0.169	IO	0.96
48.833	0.00	0.21	0.168	IO	0.95
48.917	0.00	0.21	0.167	IO	0.94
49.000	0.00	0.21	0.165	IO	0.93

ROUTE2410.out

49.083	0.00	0.21	0.164	IO	0.93
49.167	0.00	0.21	0.162	IO	0.92
49.250	0.00	0.21	0.161	IO	0.91
49.333	0.00	0.21	0.159	IO	0.90
49.417	0.00	0.21	0.158	IO	0.90
49.500	0.00	0.20	0.156	IO	0.89
49.583	0.00	0.20	0.155	IO	0.88
49.667	0.00	0.20	0.154	IO	0.87
49.750	0.00	0.20	0.152	IO	0.87
49.833	0.00	0.20	0.151	IO	0.86
49.917	0.00	0.20	0.149	IO	0.85
50.000	0.00	0.20	0.148	IO	0.85
50.083	0.00	0.20	0.147	IO	0.84
50.167	0.00	0.20	0.145	IO	0.83
50.250	0.00	0.20	0.144	IO	0.82
50.333	0.00	0.19	0.143	IO	0.82
50.417	0.00	0.19	0.141	IO	0.81
50.500	0.00	0.19	0.140	IO	0.80
50.583	0.00	0.19	0.139	IO	0.80
50.667	0.00	0.19	0.137	IO	0.79
50.750	0.00	0.19	0.136	IO	0.78
50.833	0.00	0.19	0.135	IO	0.78
50.917	0.00	0.19	0.133	IO	0.77
51.000	0.00	0.19	0.132	IO	0.76
51.083	0.00	0.19	0.131	IO	0.76
51.167	0.00	0.19	0.130	IO	0.75
51.250	0.00	0.18	0.128	IO	0.74
51.333	0.00	0.18	0.127	IO	0.74
51.417	0.00	0.18	0.126	IO	0.73
51.500	0.00	0.18	0.125	IO	0.72
51.583	0.00	0.18	0.123	IO	0.72
51.667	0.00	0.18	0.122	IO	0.71
51.750	0.00	0.18	0.121	IO	0.71
51.833	0.00	0.18	0.120	IO	0.70
51.917	0.00	0.18	0.118	IO	0.69
52.000	0.00	0.18	0.117	IO	0.69
52.083	0.00	0.17	0.116	IO	0.68
52.167	0.00	0.17	0.115	IO	0.67
52.250	0.00	0.17	0.114	IO	0.67
52.333	0.00	0.17	0.112	IO	0.66
52.417	0.00	0.17	0.111	IO	0.66
52.500	0.00	0.17	0.110	IO	0.65
52.583	0.00	0.17	0.109	IO	0.64
52.667	0.00	0.17	0.108	IO	0.64
52.750	0.00	0.17	0.107	IO	0.63
52.833	0.00	0.17	0.105	IO	0.63
52.917	0.00	0.17	0.104	IO	0.62
53.000	0.00	0.17	0.103	IO	0.61
53.083	0.00	0.16	0.102	IO	0.61
53.167	0.00	0.16	0.101	IO	0.60
53.250	0.00	0.16	0.100	IO	0.60
53.333	0.00	0.16	0.099	IO	0.59
53.417	0.00	0.16	0.097	IO	0.58
53.500	0.00	0.16	0.096	IO	0.58
53.583	0.00	0.16	0.095	IO	0.57
53.667	0.00	0.16	0.094	IO	0.57
53.750	0.00	0.16	0.093	IO	0.56
53.833	0.00	0.16	0.092	IO	0.56
53.917	0.00	0.16	0.091	IO	0.55
54.000	0.00	0.16	0.090	IO	0.55
54.083	0.00	0.15	0.089	IO	0.54
54.167	0.00	0.15	0.088	IO	0.53
54.250	0.00	0.15	0.087	IO	0.53
54.333	0.00	0.15	0.086	IO	0.52
54.417	0.00	0.15	0.085	IO	0.52
54.500	0.00	0.15	0.083	IO	0.51
54.583	0.00	0.15	0.082	IO	0.51
54.667	0.00	0.15	0.081	IO	0.50
54.750	0.00	0.15	0.080	IO	0.50
54.833	0.00	0.15	0.079	IO	0.49
54.917	0.00	0.15	0.078	IO	0.48
55.000	0.00	0.14	0.077	IO	0.48
55.083	0.00	0.14	0.076	IO	0.47
55.167	0.00	0.14	0.075	IO	0.47
55.250	0.00	0.14	0.074	IO	0.46
55.333	0.00	0.14	0.073	IO	0.46
55.417	0.00	0.14	0.073	IO	0.45
55.500	0.00	0.14	0.072	IO	0.45
55.583	0.00	0.14	0.071	IO	0.44
55.667	0.00	0.13	0.070	IO	0.43
55.750	0.00	0.13	0.069	IO	0.43
55.833	0.00	0.13	0.068	IO	0.42
55.917	0.00	0.13	0.067	IO	0.42
56.000	0.00	0.13	0.066	IO	0.41

ROUTE2410.out

56.083	0.00	0.13	0.065	IO	0.41
56.167	0.00	0.13	0.064	IO	0.40
56.250	0.00	0.13	0.063	IO	0.40
56.333	0.00	0.12	0.063	IO	0.39
56.417	0.00	0.12	0.062	IO	0.39
56.500	0.00	0.12	0.061	IO	0.38
56.583	0.00	0.12	0.060	IO	0.38
56.667	0.00	0.12	0.059	IO	0.37
56.750	0.00	0.12	0.058	IO	0.37
56.833	0.00	0.12	0.058	IO	0.37
56.917	0.00	0.12	0.057	IO	0.36
57.000	0.00	0.12	0.056	IO	0.36
57.083	0.00	0.11	0.055	IO	0.35
57.167	0.00	0.11	0.054	IO	0.35
57.250	0.00	0.11	0.054	IO	0.34
57.333	0.00	0.11	0.053	IO	0.34
57.417	0.00	0.11	0.052	IO	0.33
57.500	0.00	0.11	0.051	IO	0.33
57.583	0.00	0.11	0.051	IO	0.32
57.667	0.00	0.11	0.050	O	0.32
57.750	0.00	0.11	0.049	O	0.32
57.833	0.00	0.11	0.048	O	0.31
57.917	0.00	0.10	0.048	O	0.31
58.000	0.00	0.10	0.047	O	0.30
58.083	0.00	0.10	0.046	O	0.30
58.167	0.00	0.10	0.046	O	0.30
58.250	0.00	0.10	0.045	O	0.29
58.333	0.00	0.10	0.044	O	0.29
58.417	0.00	0.10	0.044	O	0.28
58.500	0.00	0.10	0.043	O	0.28
58.583	0.00	0.10	0.042	O	0.28
58.667	0.00	0.10	0.042	O	0.27
58.750	0.00	0.09	0.041	O	0.27
58.833	0.00	0.09	0.040	O	0.26
58.917	0.00	0.09	0.040	O	0.26
59.000	0.00	0.09	0.039	O	0.26
59.083	0.00	0.09	0.038	O	0.25
59.167	0.00	0.09	0.038	O	0.25
59.250	0.00	0.09	0.037	O	0.25
59.333	0.00	0.09	0.036	O	0.24
59.417	0.00	0.09	0.036	O	0.24
59.500	0.00	0.09	0.035	O	0.24
59.583	0.00	0.09	0.035	O	0.23
59.667	0.00	0.09	0.034	O	0.23
59.750	0.00	0.08	0.033	O	0.23
59.833	0.00	0.08	0.033	O	0.22
59.917	0.00	0.08	0.032	O	0.22
60.000	0.00	0.08	0.032	O	0.22
60.083	0.00	0.08	0.031	O	0.21
60.167	0.00	0.08	0.031	O	0.21
60.250	0.00	0.08	0.030	O	0.21
60.333	0.00	0.08	0.029	O	0.20
60.417	0.00	0.08	0.029	O	0.20
60.500	0.00	0.08	0.028	O	0.20
60.583	0.00	0.08	0.028	O	0.19
60.667	0.00	0.07	0.027	O	0.19
60.750	0.00	0.07	0.027	O	0.19
60.833	0.00	0.07	0.026	O	0.18
60.917	0.00	0.07	0.026	O	0.18
61.000	0.00	0.07	0.025	O	0.17
61.083	0.00	0.07	0.025	O	0.17
61.167	0.00	0.07	0.024	O	0.17
61.250	0.00	0.07	0.024	O	0.17
61.333	0.00	0.06	0.024	O	0.16
61.417	0.00	0.06	0.023	O	0.16
61.500	0.00	0.06	0.023	O	0.16
61.583	0.00	0.06	0.022	O	0.15
61.667	0.00	0.06	0.022	O	0.15
61.750	0.00	0.06	0.021	O	0.15
61.833	0.00	0.06	0.021	O	0.14
61.917	0.00	0.06	0.021	O	0.14
62.000	0.00	0.06	0.020	O	0.14
62.083	0.00	0.05	0.020	O	0.14
62.167	0.00	0.05	0.020	O	0.13
62.250	0.00	0.05	0.019	O	0.13
62.333	0.00	0.05	0.019	O	0.13
62.417	0.00	0.05	0.018	O	0.13
62.500	0.00	0.05	0.018	O	0.12
62.583	0.00	0.05	0.018	O	0.12
62.667	0.00	0.05	0.017	O	0.12
62.750	0.00	0.05	0.017	O	0.12
62.833	0.00	0.05	0.017	O	0.12
62.917	0.00	0.04	0.016	O	0.11
63.000	0.00	0.04	0.016	O	0.11

ROUTE2410.out

63.083	0.00	0.04	0.016	0	0.11
63.167	0.00	0.04	0.016	0	0.11
63.250	0.00	0.04	0.015	0	0.11
63.333	0.00	0.04	0.015	0	0.10
63.417	0.00	0.04	0.015	0	0.10
63.500	0.00	0.04	0.014	0	0.10
63.583	0.00	0.04	0.014	0	0.10
63.667	0.00	0.04	0.014	0	0.10
63.750	0.00	0.04	0.014	0	0.09
63.833	0.00	0.04	0.013	0	0.09
63.917	0.00	0.04	0.013	0	0.09
64.000	0.00	0.04	0.013	0	0.09
64.083	0.00	0.03	0.013	0	0.09
64.167	0.00	0.03	0.012	0	0.09
64.250	0.00	0.03	0.012	0	0.08
64.333	0.00	0.03	0.012	0	0.08
64.417	0.00	0.03	0.012	0	0.08
64.500	0.00	0.03	0.012	0	0.08
64.583	0.00	0.03	0.011	0	0.08
64.667	0.00	0.03	0.011	0	0.08
64.750	0.00	0.03	0.011	0	0.08
64.833	0.00	0.03	0.011	0	0.07
64.917	0.00	0.03	0.010	0	0.07
65.000	0.00	0.03	0.010	0	0.07
65.083	0.00	0.03	0.010	0	0.07
65.167	0.00	0.03	0.010	0	0.07
65.250	0.00	0.03	0.010	0	0.07
65.333	0.00	0.03	0.010	0	0.07
65.417	0.00	0.03	0.009	0	0.06
65.500	0.00	0.03	0.009	0	0.06
65.583	0.00	0.02	0.009	0	0.06
65.667	0.00	0.02	0.009	0	0.06
65.750	0.00	0.02	0.009	0	0.06
65.833	0.00	0.02	0.009	0	0.06
65.917	0.00	0.02	0.008	0	0.06
66.000	0.00	0.02	0.008	0	0.06
66.083	0.00	0.02	0.008	0	0.06
66.167	0.00	0.02	0.008	0	0.05
66.250	0.00	0.02	0.008	0	0.05
66.333	0.00	0.02	0.008	0	0.05
66.417	0.00	0.02	0.007	0	0.05
66.500	0.00	0.02	0.007	0	0.05
66.583	0.00	0.02	0.007	0	0.05
66.667	0.00	0.02	0.007	0	0.05
66.750	0.00	0.02	0.007	0	0.05
66.833	0.00	0.02	0.007	0	0.05
66.917	0.00	0.02	0.007	0	0.05
67.000	0.00	0.02	0.007	0	0.05
67.083	0.00	0.02	0.006	0	0.04
67.167	0.00	0.02	0.006	0	0.04
67.250	0.00	0.02	0.006	0	0.04
67.333	0.00	0.02	0.006	0	0.04
67.417	0.00	0.02	0.006	0	0.04
67.500	0.00	0.02	0.006	0	0.04
67.583	0.00	0.02	0.006	0	0.04
67.667	0.00	0.02	0.006	0	0.04
67.750	0.00	0.02	0.006	0	0.04
67.833	0.00	0.01	0.005	0	0.04
67.917	0.00	0.01	0.005	0	0.04
68.000	0.00	0.01	0.005	0	0.04
68.083	0.00	0.01	0.005	0	0.04
68.167	0.00	0.01	0.005	0	0.03
68.250	0.00	0.01	0.005	0	0.03
68.333	0.00	0.01	0.005	0	0.03
68.417	0.00	0.01	0.005	0	0.03
68.500	0.00	0.01	0.005	0	0.03
68.583	0.00	0.01	0.005	0	0.03
68.667	0.00	0.01	0.005	0	0.03
68.750	0.00	0.01	0.004	0	0.03
68.833	0.00	0.01	0.004	0	0.03
68.917	0.00	0.01	0.004	0	0.03
69.000	0.00	0.01	0.004	0	0.03
69.083	0.00	0.01	0.004	0	0.03
69.167	0.00	0.01	0.004	0	0.03
69.250	0.00	0.01	0.004	0	0.03
69.333	0.00	0.01	0.004	0	0.03
69.417	0.00	0.01	0.004	0	0.03
69.500	0.00	0.01	0.004	0	0.03
69.583	0.00	0.01	0.004	0	0.03
69.667	0.00	0.01	0.004	0	0.02
69.750	0.00	0.01	0.004	0	0.02
69.833	0.00	0.01	0.003	0	0.02
69.917	0.00	0.01	0.003	0	0.02
70.000	0.00	0.01	0.003	0	0.02

ROUTE2410.out

70.083	0.00	0.01	0.003	0			0.02
70.167	0.00	0.01	0.003	0			0.02
70.250	0.00	0.01	0.003	0			0.02
70.333	0.00	0.01	0.003	0			0.02
70.417	0.00	0.01	0.003	0			0.02
70.500	0.00	0.01	0.003	0			0.02
70.583	0.00	0.01	0.003	0			0.02
70.667	0.00	0.01	0.003	0			0.02
70.750	0.00	0.01	0.003	0			0.02
70.833	0.00	0.01	0.003	0			0.02
70.917	0.00	0.01	0.003	0			0.02
71.000	0.00	0.01	0.003	0			0.02
71.083	0.00	0.01	0.003	0			0.02
71.167	0.00	0.01	0.003	0			0.02
71.250	0.00	0.01	0.003	0			0.02
71.333	0.00	0.01	0.002	0			0.02
71.417	0.00	0.01	0.002	0			0.02
71.500	0.00	0.01	0.002	0			0.02
71.583	0.00	0.01	0.002	0			0.02
71.667	0.00	0.01	0.002	0			0.02
71.750	0.00	0.01	0.002	0			0.02
71.833	0.00	0.01	0.002	0			0.02
71.917	0.00	0.01	0.002	0			0.01
72.000	0.00	0.01	0.002	0			0.01
72.083	0.00	0.01	0.002	0			0.01
72.167	0.00	0.01	0.002	0			0.01
72.250	0.00	0.01	0.002	0			0.01
72.333	0.00	0.01	0.002	0			0.01
72.417	0.00	0.01	0.002	0			0.01
72.500	0.00	0.01	0.002	0			0.01
72.583	0.00	0.01	0.002	0			0.01
72.667	0.00	0.00	0.002	0			0.01
72.750	0.00	0.00	0.002	0			0.01
72.833	0.00	0.00	0.002	0			0.01
72.917	0.00	0.00	0.002	0			0.01
73.000	0.00	0.00	0.002	0			0.01
73.083	0.00	0.00	0.002	0			0.01
73.167	0.00	0.00	0.002	0			0.01
73.250	0.00	0.00	0.002	0			0.01
73.333	0.00	0.00	0.002	0			0.01
73.417	0.00	0.00	0.002	0			0.01
73.500	0.00	0.00	0.002	0			0.01
73.583	0.00	0.00	0.001	0			0.01
73.667	0.00	0.00	0.001	0			0.01
73.750	0.00	0.00	0.001	0			0.01
73.833	0.00	0.00	0.001	0			0.01
73.917	0.00	0.00	0.001	0			0.01
74.000	0.00	0.00	0.001	0			0.01
74.083	0.00	0.00	0.001	0			0.01
74.167	0.00	0.00	0.001	0			0.01
74.250	0.00	0.00	0.001	0			0.01
74.333	0.00	0.00	0.001	0			0.01
74.417	0.00	0.00	0.001	0			0.01
74.500	0.00	0.00	0.001	0			0.01
74.583	0.00	0.00	0.001	0			0.01
74.667	0.00	0.00	0.001	0			0.01
74.750	0.00	0.00	0.001	0			0.01
74.833	0.00	0.00	0.001	0			0.01
74.917	0.00	0.00	0.001	0			0.01
75.000	0.00	0.00	0.001	0			0.01
75.083	0.00	0.00	0.001	0			0.01
75.167	0.00	0.00	0.001	0			0.01
75.250	0.00	0.00	0.001	0			0.01
75.333	0.00	0.00	0.001	0			0.01
75.417	0.00	0.00	0.001	0			0.01
75.500	0.00	0.00	0.001	0			0.01
75.583	0.00	0.00	0.001	0			0.01
75.667	0.00	0.00	0.001	0			0.01
75.750	0.00	0.00	0.001	0			0.01
75.833	0.00	0.00	0.001	0			0.01
75.917	0.00	0.00	0.001	0			0.01
76.000	0.00	0.00	0.001	0			0.01
76.083	0.00	0.00	0.001	0			0.01
76.167	0.00	0.00	0.001	0			0.01
76.250	0.00	0.00	0.001	0			0.01
76.333	0.00	0.00	0.001	0			0.01
76.417	0.00	0.00	0.001	0			0.01
76.500	0.00	0.00	0.001	0			0.01
76.583	0.00	0.00	0.001	0			0.01
76.667	0.00	0.00	0.001	0			0.01
76.750	0.00	0.00	0.001	0			0.01
76.833	0.00	0.00	0.001	0			0.00
76.917	0.00	0.00	0.001	0			0.00
77.000	0.00	0.00	0.001	0			0.00

ROUTE2410.out

77.083	0.00	0.00	0.001	0					0.00
77.167	0.00	0.00	0.001	0					0.00
77.250	0.00	0.00	0.001	0					0.00
77.333	0.00	0.00	0.001	0					0.00
77.417	0.00	0.00	0.001	0					0.00
77.500	0.00	0.00	0.001	0					0.00
77.583	0.00	0.00	0.001	0					0.00
77.667	0.00	0.00	0.001	0					0.00
77.750	0.00	0.00	0.001	0					0.00
77.833	0.00	0.00	0.001	0					0.00
77.917	0.00	0.00	0.001	0					0.00
78.000	0.00	0.00	0.001	0					0.00
78.083	0.00	0.00	0.001	0					0.00
78.167	0.00	0.00	0.001	0					0.00
78.250	0.00	0.00	0.001	0					0.00
78.333	0.00	0.00	0.001	0					0.00
78.417	0.00	0.00	0.001	0					0.00
78.500	0.00	0.00	0.000	0					0.00
78.583	0.00	0.00	0.000	0					0.00
78.667	0.00	0.00	0.000	0					0.00
78.750	0.00	0.00	0.000	0					0.00
78.833	0.00	0.00	0.000	0					0.00
78.917	0.00	0.00	0.000	0					0.00
79.000	0.00	0.00	0.000	0					0.00
79.083	0.00	0.00	0.000	0					0.00
79.167	0.00	0.00	0.000	0					0.00
79.250	0.00	0.00	0.000	0					0.00
79.333	0.00	0.00	0.000	0					0.00
79.417	0.00	0.00	0.000	0					0.00
79.500	0.00	0.00	0.000	0					0.00
79.583	0.00	0.00	0.000	0					0.00
79.667	0.00	0.00	0.000	0					0.00
79.750	0.00	0.00	0.000	0					0.00
79.833	0.00	0.00	0.000	0					0.00

*****HYDROGRAPH DATA*****
 Number of intervals = 958
 Time interval = 5.0 (Min.)
 Maximum/Peak flow rate = 1.793 (CFS)
 Total volume = 2.099 (Ac.Ft)
 Status of hydrographs being held in storage
 Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
 Peak (CFS) 0.000 0.000 0.000 0.000 0.000
 Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

100-YEAR 24-HOUR ROUTING

 19-0126 - DUKE HARVILL
 BASIN ROUTING CALCULATIONS, PROPOSED H-12 TRIBUTARY
 100-YEAR, 24-HOUR STORM EVENT
 FN: ROUTE24100.OUT TSW

Program License Serial Number 4010

 ***** HYDROGRAPH INFORMATION *****

From study/file name: ONSITEPOST24100.rte
 *****HYDROGRAPH DATA*****
 Number of intervals = 293
 Time interval = 5.0 (Min.)
 Maximum/Peak flow rate = 5.713 (CFS)
 Total volume = 3.285 (Ac.Ft)
 Status of hydrographs being held in storage
 Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
 Peak (CFS) 0.000 0.000 0.000 0.000 0.000
 Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
 Process from Point/Station 100.000 to Point/Station 101.000
 **** RETARDING BASIN ROUTING ****

 User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
 Hydrograph time unit = 5.000 (Min.)
 Initial depth in storage basin = 0.00(Ft.)

 Initial basin depth = 0.00 (Ft.)
 Initial basin storage = 0.00 (Ac.Ft)
 Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.200	0.029	0.079	0.029	0.029
0.500	0.081	0.149	0.080	0.082
1.000	0.178	0.221	0.177	0.179
2.000	0.395	0.320	0.394	0.396
3.000	0.627	0.395	0.626	0.628
4.000	0.859	0.457	0.857	0.861
4.400	0.948	0.758	0.945	0.951
4.500	0.970	0.842	0.967	0.973
5.000	1.076	1.127	1.072	1.080
5.400	1.155	1.293	1.151	1.159
5.500	1.173	1.469	1.168	1.178
6.000	1.254	1.771	1.248	1.260
6.200	1.277	1.871	1.271	1.283
6.300	1.289	2.344	1.281	1.297
6.700	1.336	2.794	1.326	1.346
7.400	1.336	3.378	1.324	1.348
7.500	1.133	3.451	1.121	1.145
8.000	1.572	3.790	1.559	1.585
8.500	2.514	4.097	2.500	2.528

 Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	Depth (Ft.)
.0				
1.4				
2.86				
4.29				
5.71				

ROUTE24100.out

0.083	0.11	0.00	0.000	O			0.00
0.167	0.26	0.00	0.002	OI			0.01
0.250	0.29	0.01	0.003	OI			0.02
0.333	0.36	0.02	0.006	O I			0.04
0.417	0.44	0.02	0.008	O I			0.06
0.500	0.46	0.03	0.011	O I			0.08
0.583	0.47	0.04	0.014	O I			0.10
0.667	0.47	0.05	0.017	O I			0.12
0.750	0.47	0.05	0.020	O I			0.14
0.833	0.53	0.06	0.023	O I			0.16
0.917	0.60	0.07	0.026	O I			0.18
1.000	0.62	0.08	0.030	O I			0.21
1.083	0.57	0.09	0.033	O I			0.23
1.167	0.50	0.09	0.037	O I			0.24
1.250	0.48	0.09	0.039	O I			0.26
1.333	0.48	0.10	0.042	O I			0.27
1.417	0.47	0.10	0.045	O I			0.29
1.500	0.47	0.10	0.047	O I			0.30
1.583	0.47	0.11	0.050	O I			0.32
1.667	0.47	0.11	0.052	O I			0.33
1.750	0.47	0.11	0.055	O I			0.35
1.833	0.53	0.12	0.057	O I			0.36
1.917	0.60	0.12	0.060	O I			0.38
2.000	0.62	0.13	0.064	O I			0.40
2.083	0.62	0.13	0.067	O I			0.42
2.167	0.63	0.13	0.070	O I			0.44
2.250	0.63	0.14	0.074	O I			0.46
2.333	0.63	0.14	0.077	O I			0.48
2.417	0.63	0.15	0.080	O I			0.50
2.500	0.63	0.15	0.084	O I			0.51
2.583	0.68	0.15	0.087	O I			0.53
2.667	0.76	0.16	0.091	O I			0.55
2.750	0.77	0.16	0.095	O I			0.57
2.833	0.78	0.16	0.100	O I			0.60
2.917	0.78	0.17	0.104	O I			0.62
3.000	0.79	0.17	0.108	O I			0.64
3.083	0.79	0.17	0.112	O I			0.66
3.167	0.79	0.18	0.116	O I			0.68
3.250	0.79	0.18	0.121	O I			0.70
3.333	0.79	0.18	0.125	O I			0.73
3.417	0.79	0.18	0.129	O I			0.75
3.500	0.79	0.19	0.133	O I			0.77
3.583	0.79	0.19	0.137	O I			0.79
3.667	0.79	0.19	0.141	O I			0.81
3.750	0.79	0.20	0.145	O I			0.83
3.833	0.84	0.20	0.150	O I			0.85
3.917	0.91	0.20	0.154	O I			0.88
4.000	0.93	0.21	0.159	O I			0.90
4.083	0.94	0.21	0.164	O I			0.93
4.167	0.94	0.21	0.169	O I			0.95
4.250	0.94	0.22	0.174	O I			0.98
4.333	1.00	0.22	0.179	O I			1.01
4.417	1.07	0.22	0.185	O I			1.03
4.500	1.09	0.23	0.191	O I			1.06
4.583	1.09	0.23	0.197	O I			1.09
4.667	1.10	0.23	0.203	O I			1.11
4.750	1.10	0.23	0.209	O I			1.14
4.833	1.15	0.24	0.215	O I			1.17
4.917	1.23	0.24	0.221	O I			1.20
5.000	1.24	0.24	0.228	O I			1.23
5.083	1.14	0.25	0.235	O I			1.26
5.167	1.00	0.25	0.240	O I			1.29
5.250	0.97	0.25	0.245	O I			1.31
5.333	1.01	0.25	0.251	O I			1.33
5.417	1.07	0.26	0.256	O I			1.36
5.500	1.09	0.26	0.262	O I			1.39
5.583	1.15	0.26	0.267	O I			1.41
5.667	1.23	0.26	0.274	O I			1.44
5.750	1.24	0.27	0.281	O I			1.47
5.833	1.25	0.27	0.287	O I			1.50
5.917	1.26	0.27	0.294	O I			1.53
6.000	1.26	0.28	0.301	O I			1.57
6.083	1.31	0.28	0.308	O I			1.60
6.167	1.38	0.28	0.315	O I			1.63
6.250	1.40	0.29	0.323	O I			1.67
6.333	1.41	0.29	0.330	O I			1.70
6.417	1.41	0.29	0.338	O I			1.74
6.500	1.41	0.30	0.346	O I			1.77
6.583	1.47	0.30	0.354	O I			1.81
6.667	1.54	0.30	0.362	O I			1.85
6.750	1.56	0.31	0.370	O I			1.89
6.833	1.57	0.31	0.379	O I			1.93
6.917	1.57	0.32	0.388	O I			1.97
7.000	1.57	0.32	0.396	O I			2.01

ROUTE24100.out

7.083	1.57	0.32	0.405	O	I					2.04
7.167	1.57	0.33	0.413	O	I					2.08
7.250	1.57	0.33	0.422	O	I					2.12
7.333	1.63	0.33	0.431	O	I					2.15
7.417	1.70	0.33	0.440	O	I					2.19
7.500	1.72	0.34	0.449	O	I					2.23
7.583	1.78	0.34	0.459	O	I					2.28
7.667	1.85	0.34	0.469	O	I					2.32
7.750	1.87	0.35	0.480	O	I					2.36
7.833	1.93	0.35	0.490	O	I					2.41
7.917	2.01	0.35	0.502	O	I					2.46
8.000	2.03	0.36	0.513	O	I					2.51
8.083	2.15	0.36	0.525	O	I					2.56
8.167	2.30	0.37	0.538	O	I					2.62
8.250	2.33	0.37	0.551	O	I					2.67
8.333	2.35	0.37	0.565	O	I					2.73
8.417	2.35	0.38	0.578	O	I					2.79
8.500	2.36	0.38	0.592	O	I					2.85
8.583	2.41	0.39	0.606	O	I					2.91
8.667	2.48	0.39	0.620	O	I					2.97
8.750	2.50	0.40	0.634	O	I					3.03
8.833	2.56	0.40	0.649	O	I					3.09
8.917	2.64	0.40	0.664	O	I					3.16
9.000	2.66	0.41	0.679	O	I					3.23
9.083	2.77	0.41	0.695	O	I					3.29
9.167	2.92	0.42	0.712	O	I					3.37
9.250	2.96	0.42	0.729	O	I					3.44
9.333	3.03	0.43	0.747	O	I					3.52
9.417	3.11	0.43	0.765	O	I					3.60
9.500	3.13	0.44	0.784	O	I					3.68
9.583	3.19	0.44	0.803	O	I					3.76
9.667	3.27	0.45	0.822	O	I					3.84
9.750	3.29	0.45	0.841	O	I					3.92
9.833	3.35	0.46	0.861	O	I					4.01
9.917	3.42	0.53	0.881	O	I					4.10
10.000	3.44	0.60	0.901	O	I					4.19
10.083	3.07	0.66	0.919	O	I					4.27
10.167	2.56	0.71	0.933	O	I					4.33
10.250	2.44	0.75	0.946	O	I					4.39
10.333	2.39	0.79	0.957	O	I					4.44
10.417	2.37	0.83	0.968	O	I					4.49
10.500	2.36	0.86	0.978	O	I					4.54
10.583	2.63	0.89	0.989	O	I					4.59
10.667	2.99	0.93	1.002	O	I					4.65
10.750	3.08	0.97	1.017	O	I					4.72
10.833	3.12	1.01	1.031	O	I					4.79
10.917	3.13	1.05	1.046	O	I					4.86
11.000	3.14	1.08	1.060	O	I					4.92
11.083	3.09	1.12	1.074	O	I					4.99
11.167	3.01	1.15	1.087	O	I					5.06
11.250	3.00	1.18	1.100	O	I					5.12
11.333	2.99	1.20	1.112	O	I					5.18
11.417	2.99	1.23	1.124	O	I					5.24
11.500	2.98	1.25	1.136	O	I					5.31
11.583	2.88	1.28	1.148	O	I					5.36
11.667	2.73	1.32	1.158	O	I					5.42
11.750	2.70	1.41	1.167	O	I					5.47
11.833	2.74	1.48	1.176	O	I					5.52
11.917	2.80	1.51	1.185	O	I					5.57
12.000	2.82	1.55	1.194	O	I					5.63
12.083	3.20	1.58	1.204	O	I					5.69
12.167	3.72	1.63	1.216	O	I					5.77
12.250	3.84	1.69	1.231	O	I					5.86
12.333	3.96	1.74	1.246	O	I					5.95
12.417	4.08	1.80	1.262	O	I					6.07
12.500	4.12	1.88	1.277	O	I					6.20
12.583	4.26	2.37	1.291	O	I					6.32
12.667	4.45	2.49	1.305	O	I					6.43
12.750	4.50	2.62	1.318	O	I					6.55
12.833	4.58	2.74	1.331	O	I					6.65
12.917	4.69	3.61	1.341	O	I					7.74
13.000	4.72	3.62	1.348	O	I					7.75
13.083	5.06	3.62	1.357	O	I					7.75
13.167	5.51	3.63	1.368	O	I					7.77
13.250	5.62	3.64	1.382	O	I					7.78
13.333	5.67	3.65	1.395	O	I					7.80
13.417	5.70	3.66	1.409	O	I					7.81
13.500	5.71	3.68	1.423	O	I					7.83
13.583	4.99	3.68	1.435	O	I					7.84
13.667	4.01	3.69	1.440	O	I					7.85
13.750	3.79	3.69	1.442	O	I					7.85
13.833	3.69	3.69	1.442	O	I					7.85
13.917	3.65	3.69	1.442	O	I					7.85
14.000	3.63	3.69	1.442	O	I					7.85

ROUTE24100.out

14.083	3.90	3.69	1.442			OI	7.85
14.167	4.26	3.69	1.445			O I	7.86
14.250	4.35	3.70	1.449			O I	7.86
14.333	4.32	3.70	1.454			O I	7.87
14.417	4.25	3.70	1.458			O I	7.87
14.500	4.24	3.70	1.461			O I	7.87
14.583	4.24	3.71	1.465			O I	7.88
14.667	4.24	3.71	1.469			O I	7.88
14.750	4.24	3.71	1.472			O I	7.89
14.833	4.18	3.72	1.476			O I	7.89
14.917	4.09	3.72	1.479			O I	7.89
15.000	4.08	3.72	1.481			O I	7.90
15.083	4.00	3.72	1.483			O I	7.90
15.167	3.91	3.72	1.485			OI	7.90
15.250	3.89	3.72	1.486			OI	7.90
15.333	3.82	3.72	1.487			OI	7.90
15.417	3.73	3.72	1.487			O	7.90
15.500	3.71	3.72	1.487			O	7.90
15.583	3.46	3.72	1.487			IO	7.90
15.667	3.12	3.72	1.484			I O	7.90
15.750	3.04	3.72	1.479			I O	7.89
15.833	3.01	3.71	1.474			I O	7.89
15.917	2.99	3.71	1.469			I O	7.88
16.000	2.98	3.71	1.465			I O	7.88
16.083	2.17	3.70	1.457		I	O	7.87
16.167	1.07	3.69	1.442		I	O	7.85
16.250	0.82	3.68	1.424		I	O	7.83
16.333	0.71	3.66	1.404		I	O	7.81
16.417	0.65	3.64	1.383		I	O	7.78
16.500	0.63	3.63	1.362		I	O	7.76
16.583	0.57	3.61	1.342		I	O	7.74
16.667	0.50	2.68	1.324		I	O O	6.60
16.750	0.48	2.54	1.309		I	O O	6.47
16.833	0.48	2.41	1.295		I	O O	6.36
16.917	0.47	2.11	1.283		I	O O	6.25
17.000	0.47	1.85	1.273		I	O O	6.16
17.083	0.58	1.81	1.264		I	O O	6.08
17.167	0.73	1.78	1.256		I	O O	6.02
17.250	0.76	1.75	1.249		I	O O	5.97
17.333	0.78	1.73	1.242		I	O O	5.93
17.417	0.78	1.70	1.236		I	O O	5.89
17.500	0.79	1.68	1.229		I	O O	5.85
17.583	0.79	1.66	1.223		I	O O	5.81
17.667	0.79	1.63	1.217		I	O O	5.77
17.750	0.79	1.61	1.212		I	O O	5.74
17.833	0.73	1.59	1.206		I	O O	5.70
17.917	0.66	1.57	1.200		I	O O	5.67
18.000	0.64	1.55	1.194		I	O O	5.63
18.083	0.63	1.52	1.187		I	O O	5.59
18.167	0.63	1.50	1.181		I	O O	5.55
18.250	0.63	1.48	1.175		I	O O	5.51
18.333	0.63	1.44	1.170		I	O O	5.48
18.417	0.63	1.38	1.164		I	O O	5.45
18.500	0.63	1.33	1.159		I	O O	5.42
18.583	0.57	1.29	1.154		I	O O	5.40
18.667	0.50	1.28	1.149		I	O O	5.37
18.750	0.48	1.27	1.144		I	O O	5.34
18.833	0.42	1.26	1.138		I	O O	5.31
18.917	0.35	1.25	1.132		I	O O	5.28
19.000	0.33	1.23	1.126		I	O O	5.25
19.083	0.37	1.22	1.120		I	O O	5.22
19.167	0.44	1.21	1.114		I	O O	5.19
19.250	0.46	1.20	1.109		I	O O	5.17
19.333	0.52	1.19	1.104		I	O O	5.14
19.417	0.60	1.18	1.100		I	O O	5.12
19.500	0.62	1.17	1.096		I	O O	5.10
19.583	0.57	1.16	1.092		I	O O	5.08
19.667	0.50	1.15	1.088		I	O O	5.06
19.750	0.48	1.14	1.083		I	O O	5.04
19.833	0.42	1.13	1.079		I	O O	5.01
19.917	0.35	1.12	1.074		I	O O	4.99
20.000	0.33	1.11	1.068		I	O O	4.96
20.083	0.37	1.09	1.063		I	O O	4.94
20.167	0.44	1.08	1.058		I	O O	4.92
20.250	0.46	1.07	1.054		I	O O	4.90
20.333	0.47	1.06	1.050		I	O O	4.88
20.417	0.47	1.05	1.046		I	O O	4.86
20.500	0.47	1.04	1.042		I	O O	4.84
20.583	0.47	1.03	1.038		I	O O	4.82
20.667	0.47	1.02	1.034		I	O O	4.80
20.750	0.47	1.01	1.031		I	O O	4.79
20.833	0.42	1.00	1.027		I	O O	4.77
20.917	0.34	0.98	1.023		I	O O	4.75
21.000	0.33	0.97	1.018		I	O O	4.73

ROUTE24100.out

21.083	0.37	0.96	1.014	I	O	4.71
21.167	0.44	0.95	1.010	I	O	4.69
21.250	0.46	0.94	1.007	I	O	4.67
21.333	0.41	0.93	1.003	I	O	4.66
21.417	0.34	0.92	1.000	I	O	4.64
21.500	0.33	0.91	0.996	I	O	4.62
21.583	0.37	0.90	0.992	I	O	4.60
21.667	0.44	0.89	0.988	I	O	4.59
21.750	0.46	0.88	0.985	I	O	4.57
21.833	0.41	0.88	0.982	I	O	4.56
21.917	0.34	0.87	0.979	I	O	4.54
22.000	0.33	0.86	0.975	I	O	4.53
22.083	0.37	0.85	0.972	I	O	4.51
22.167	0.44	0.84	0.969	I	O	4.50
22.250	0.46	0.83	0.966	I	O	4.48
22.333	0.41	0.82	0.964	I	O	4.47
22.417	0.34	0.81	0.961	I	O	4.46
22.500	0.33	0.79	0.957	I	O	4.44
22.583	0.32	0.78	0.954	I	O	4.43
22.667	0.32	0.77	0.951	I	O	4.41
22.750	0.31	0.76	0.948	I	O	4.40
22.833	0.31	0.75	0.945	I	O	4.39
22.917	0.31	0.74	0.942	I	O	4.37
23.000	0.31	0.73	0.939	I	O	4.36
23.083	0.31	0.72	0.936	I	O	4.35
23.167	0.31	0.71	0.934	I	O	4.34
23.250	0.31	0.70	0.931	I	O	4.32
23.333	0.31	0.69	0.928	I	O	4.31
23.417	0.31	0.68	0.926	I	O	4.30
23.500	0.31	0.67	0.923	I	O	4.29
23.583	0.31	0.67	0.921	I	O	4.28
23.667	0.31	0.66	0.918	I	O	4.27
23.750	0.31	0.65	0.916	I	O	4.26
23.833	0.31	0.64	0.914	I	O	4.25
23.917	0.31	0.63	0.911	I	O	4.24
24.000	0.31	0.63	0.909	I	O	4.23
24.083	0.21	0.62	0.907	I	O	4.21
24.167	0.06	0.61	0.903	I	O	4.20
24.250	0.03	0.59	0.900	I	O	4.18
24.333	0.01	0.58	0.896	I	O	4.16
24.417	0.00	0.57	0.892	I	O	4.15
24.500	0.00	0.55	0.888	I	O	4.13
24.583	0.00	0.54	0.884	I	O	4.11
24.667	0.00	0.53	0.880	I	O	4.10
24.750	0.00	0.52	0.877	I	O	4.08
24.833	0.00	0.51	0.873	I	O	4.06
24.917	0.00	0.49	0.870	I	O	4.05
25.000	0.00	0.48	0.867	I	O	4.03
25.083	0.00	0.47	0.863	I	O	4.02
25.167	0.00	0.46	0.860	I	O	4.00
25.250	0.00	0.46	0.857	I	O	3.99
25.333	0.00	0.46	0.854	I	O	3.98
25.417	0.00	0.45	0.851	I	O	3.96
25.500	0.00	0.45	0.847	I	O	3.95
25.583	0.00	0.45	0.844	I	O	3.94
25.667	0.00	0.45	0.841	I	O	3.92
25.750	0.00	0.45	0.838	I	O	3.91
25.833	0.00	0.45	0.835	I	O	3.90
25.917	0.00	0.45	0.832	I	O	3.88
26.000	0.00	0.45	0.829	I	O	3.87
26.083	0.00	0.45	0.826	I	O	3.86
26.167	0.00	0.45	0.823	I	O	3.84
26.250	0.00	0.45	0.820	I	O	3.83
26.333	0.00	0.45	0.816	I	O	3.82
26.417	0.00	0.44	0.813	I	O	3.80
26.500	0.00	0.44	0.810	I	O	3.79
26.583	0.00	0.44	0.807	I	O	3.78
26.667	0.00	0.44	0.804	I	O	3.76
26.750	0.00	0.44	0.801	I	O	3.75
26.833	0.00	0.44	0.798	I	O	3.74
26.917	0.00	0.44	0.795	I	O	3.72
27.000	0.00	0.44	0.792	I	O	3.71
27.083	0.00	0.44	0.789	I	O	3.70
27.167	0.00	0.44	0.786	I	O	3.69
27.250	0.00	0.44	0.783	I	O	3.67
27.333	0.00	0.44	0.780	I	O	3.66
27.417	0.00	0.44	0.777	I	O	3.65
27.500	0.00	0.43	0.774	I	O	3.63
27.583	0.00	0.43	0.771	I	O	3.62
27.667	0.00	0.43	0.768	I	O	3.61
27.750	0.00	0.43	0.765	I	O	3.60
27.833	0.00	0.43	0.762	I	O	3.58
27.917	0.00	0.43	0.759	I	O	3.57
28.000	0.00	0.43	0.756	I	O	3.56

28.083	0.00	0.43	0.753	I O	3.54
28.167	0.00	0.43	0.750	I O	3.53
28.250	0.00	0.43	0.747	I O	3.52
28.333	0.00	0.43	0.744	I O	3.51
28.417	0.00	0.43	0.742	I O	3.49
28.500	0.00	0.42	0.739	I O	3.48
28.583	0.00	0.42	0.736	I O	3.47
28.667	0.00	0.42	0.733	I O	3.46
28.750	0.00	0.42	0.730	I O	3.44
28.833	0.00	0.42	0.727	I O	3.43
28.917	0.00	0.42	0.724	I O	3.42
29.000	0.00	0.42	0.721	I O	3.41
29.083	0.00	0.42	0.718	I O	3.39
29.167	0.00	0.42	0.715	I O	3.38
29.250	0.00	0.42	0.712	I O	3.37
29.333	0.00	0.42	0.710	I O	3.36
29.417	0.00	0.42	0.707	I O	3.34
29.500	0.00	0.42	0.704	I O	3.33
29.583	0.00	0.41	0.701	I O	3.32
29.667	0.00	0.41	0.698	I O	3.31
29.750	0.00	0.41	0.695	I O	3.29
29.833	0.00	0.41	0.692	I O	3.28
29.917	0.00	0.41	0.690	I O	3.27
30.000	0.00	0.41	0.687	I O	3.26
30.083	0.00	0.41	0.684	I O	3.25
30.167	0.00	0.41	0.681	I O	3.23
30.250	0.00	0.41	0.678	I O	3.22
30.333	0.00	0.41	0.675	I O	3.21
30.417	0.00	0.41	0.673	I O	3.20
30.500	0.00	0.41	0.670	I O	3.18
30.583	0.00	0.41	0.667	I O	3.17
30.667	0.00	0.40	0.664	I O	3.16
30.750	0.00	0.40	0.662	I O	3.15
30.833	0.00	0.40	0.659	I O	3.14
30.917	0.00	0.40	0.656	I O	3.12
31.000	0.00	0.40	0.653	I O	3.11
31.083	0.00	0.40	0.650	I O	3.10
31.167	0.00	0.40	0.648	I O	3.09
31.250	0.00	0.40	0.645	I O	3.08
31.333	0.00	0.40	0.642	I O	3.07
31.417	0.00	0.40	0.639	I O	3.05
31.500	0.00	0.40	0.637	I O	3.04
31.583	0.00	0.40	0.634	I O	3.03
31.667	0.00	0.40	0.631	I O	3.02
31.750	0.00	0.40	0.628	I O	3.01
31.833	0.00	0.39	0.626	I O	2.99
31.917	0.00	0.39	0.623	I O	2.98
32.000	0.00	0.39	0.620	I O	2.97
32.083	0.00	0.39	0.618	I O	2.96
32.167	0.00	0.39	0.615	I O	2.95
32.250	0.00	0.39	0.612	I O	2.94
32.333	0.00	0.39	0.610	I O	2.92
32.417	0.00	0.39	0.607	I O	2.91
32.500	0.00	0.39	0.604	I O	2.90
32.583	0.00	0.39	0.602	I O	2.89
32.667	0.00	0.39	0.599	I O	2.88
32.750	0.00	0.39	0.596	I O	2.87
32.833	0.00	0.38	0.594	I O	2.86
32.917	0.00	0.38	0.591	I O	2.84
33.000	0.00	0.38	0.588	I O	2.83
33.083	0.00	0.38	0.586	I O	2.82
33.167	0.00	0.38	0.583	I O	2.81
33.250	0.00	0.38	0.580	I O	2.80
33.333	0.00	0.38	0.578	I O	2.79
33.417	0.00	0.38	0.575	I O	2.78
33.500	0.00	0.38	0.573	I O	2.77
33.583	0.00	0.38	0.570	I O	2.75
33.667	0.00	0.38	0.567	I O	2.74
33.750	0.00	0.37	0.565	I O	2.73
33.833	0.00	0.37	0.562	I O	2.72
33.917	0.00	0.37	0.560	I O	2.71
34.000	0.00	0.37	0.557	I O	2.70
34.083	0.00	0.37	0.555	I O	2.69
34.167	0.00	0.37	0.552	I O	2.68
34.250	0.00	0.37	0.549	I O	2.67
34.333	0.00	0.37	0.547	I O	2.65
34.417	0.00	0.37	0.544	I O	2.64
34.500	0.00	0.37	0.542	I O	2.63
34.583	0.00	0.37	0.539	I O	2.62
34.667	0.00	0.37	0.537	I O	2.61
34.750	0.00	0.37	0.534	I O	2.60
34.833	0.00	0.36	0.532	I O	2.59
34.917	0.00	0.36	0.529	I O	2.58
35.000	0.00	0.36	0.527	I O	2.57

ROUTE24100.out

35.083	0.00	0.36	0.524	I O	2.56
35.167	0.00	0.36	0.522	I O	2.55
35.250	0.00	0.36	0.519	I O	2.54
35.333	0.00	0.36	0.517	I O	2.52
35.417	0.00	0.36	0.514	I O	2.51
35.500	0.00	0.36	0.512	I O	2.50
35.583	0.00	0.36	0.509	IO	2.49
35.667	0.00	0.36	0.507	IO	2.48
35.750	0.00	0.36	0.504	IO	2.47
35.833	0.00	0.35	0.502	IO	2.46
35.917	0.00	0.35	0.500	IO	2.45
36.000	0.00	0.35	0.497	IO	2.44
36.083	0.00	0.35	0.495	IO	2.43
36.167	0.00	0.35	0.492	IO	2.42
36.250	0.00	0.35	0.490	IO	2.41
36.333	0.00	0.35	0.487	IO	2.40
36.417	0.00	0.35	0.485	IO	2.39
36.500	0.00	0.35	0.483	IO	2.38
36.583	0.00	0.35	0.480	IO	2.37
36.667	0.00	0.35	0.478	IO	2.36
36.750	0.00	0.35	0.475	IO	2.35
36.833	0.00	0.35	0.473	IO	2.34
36.917	0.00	0.34	0.471	IO	2.33
37.000	0.00	0.34	0.468	IO	2.32
37.083	0.00	0.34	0.466	IO	2.31
37.167	0.00	0.34	0.464	IO	2.30
37.250	0.00	0.34	0.461	IO	2.29
37.333	0.00	0.34	0.459	IO	2.28
37.417	0.00	0.34	0.457	IO	2.27
37.500	0.00	0.34	0.454	IO	2.26
37.583	0.00	0.34	0.452	IO	2.25
37.667	0.00	0.34	0.450	IO	2.24
37.750	0.00	0.34	0.447	IO	2.23
37.833	0.00	0.34	0.445	IO	2.22
37.917	0.00	0.34	0.443	IO	2.21
38.000	0.00	0.33	0.440	IO	2.20
38.083	0.00	0.33	0.438	IO	2.19
38.167	0.00	0.33	0.436	IO	2.18
38.250	0.00	0.33	0.433	IO	2.17
38.333	0.00	0.33	0.431	IO	2.16
38.417	0.00	0.33	0.429	IO	2.15
38.500	0.00	0.33	0.427	IO	2.14
38.583	0.00	0.33	0.424	IO	2.13
38.667	0.00	0.33	0.422	IO	2.12
38.750	0.00	0.33	0.420	IO	2.11
38.833	0.00	0.33	0.418	IO	2.10
38.917	0.00	0.33	0.415	IO	2.09
39.000	0.00	0.33	0.413	IO	2.08
39.083	0.00	0.33	0.411	IO	2.07
39.167	0.00	0.32	0.409	IO	2.06
39.250	0.00	0.32	0.406	IO	2.05
39.333	0.00	0.32	0.404	IO	2.04
39.417	0.00	0.32	0.402	IO	2.03
39.500	0.00	0.32	0.400	IO	2.02
39.583	0.00	0.32	0.397	IO	2.01
39.667	0.00	0.32	0.395	IO	2.00
39.750	0.00	0.32	0.393	IO	1.99
39.833	0.00	0.32	0.391	IO	1.98
39.917	0.00	0.32	0.389	IO	1.97
40.000	0.00	0.32	0.386	IO	1.96
40.083	0.00	0.32	0.384	IO	1.95
40.167	0.00	0.31	0.382	IO	1.94
40.250	0.00	0.31	0.380	IO	1.93
40.333	0.00	0.31	0.378	IO	1.92
40.417	0.00	0.31	0.376	IO	1.91
40.500	0.00	0.31	0.374	IO	1.90
40.583	0.00	0.31	0.371	IO	1.89
40.667	0.00	0.31	0.369	IO	1.88
40.750	0.00	0.31	0.367	IO	1.87
40.833	0.00	0.31	0.365	IO	1.86
40.917	0.00	0.31	0.363	IO	1.85
41.000	0.00	0.30	0.361	IO	1.84
41.083	0.00	0.30	0.359	IO	1.83
41.167	0.00	0.30	0.357	IO	1.82
41.250	0.00	0.30	0.355	IO	1.81
41.333	0.00	0.30	0.353	IO	1.80
41.417	0.00	0.30	0.350	IO	1.79
41.500	0.00	0.30	0.348	IO	1.79
41.583	0.00	0.30	0.346	IO	1.78
41.667	0.00	0.30	0.344	IO	1.77
41.750	0.00	0.30	0.342	IO	1.76
41.833	0.00	0.30	0.340	IO	1.75
41.917	0.00	0.29	0.338	IO	1.74
42.000	0.00	0.29	0.336	IO	1.73

ROUTE24100.out

42.083	0.00	0.29	0.334	IO	1.72
42.167	0.00	0.29	0.332	IO	1.71
42.250	0.00	0.29	0.330	IO	1.70
42.333	0.00	0.29	0.328	IO	1.69
42.417	0.00	0.29	0.326	IO	1.68
42.500	0.00	0.29	0.324	IO	1.67
42.583	0.00	0.29	0.322	IO	1.66
42.667	0.00	0.29	0.320	IO	1.66
42.750	0.00	0.28	0.318	IO	1.65
42.833	0.00	0.28	0.316	IO	1.64
42.917	0.00	0.28	0.314	IO	1.63
43.000	0.00	0.28	0.312	IO	1.62
43.083	0.00	0.28	0.310	IO	1.61
43.167	0.00	0.28	0.309	IO	1.60
43.250	0.00	0.28	0.307	IO	1.59
43.333	0.00	0.28	0.305	IO	1.58
43.417	0.00	0.28	0.303	IO	1.57
43.500	0.00	0.28	0.301	IO	1.57
43.583	0.00	0.28	0.299	IO	1.56
43.667	0.00	0.28	0.297	IO	1.55
43.750	0.00	0.27	0.295	IO	1.54
43.833	0.00	0.27	0.293	IO	1.53
43.917	0.00	0.27	0.291	IO	1.52
44.000	0.00	0.27	0.289	IO	1.51
44.083	0.00	0.27	0.288	IO	1.51
44.167	0.00	0.27	0.286	IO	1.50
44.250	0.00	0.27	0.284	IO	1.49
44.333	0.00	0.27	0.282	IO	1.48
44.417	0.00	0.27	0.280	IO	1.47
44.500	0.00	0.27	0.278	IO	1.46
44.583	0.00	0.27	0.277	IO	1.45
44.667	0.00	0.27	0.275	IO	1.45
44.750	0.00	0.26	0.273	IO	1.44
44.833	0.00	0.26	0.271	IO	1.43
44.917	0.00	0.26	0.269	IO	1.42
45.000	0.00	0.26	0.267	IO	1.41
45.083	0.00	0.26	0.266	IO	1.40
45.167	0.00	0.26	0.264	IO	1.40
45.250	0.00	0.26	0.262	IO	1.39
45.333	0.00	0.26	0.260	IO	1.38
45.417	0.00	0.26	0.258	IO	1.37
45.500	0.00	0.26	0.257	IO	1.36
45.583	0.00	0.26	0.255	IO	1.35
45.667	0.00	0.26	0.253	IO	1.35
45.750	0.00	0.25	0.251	IO	1.34
45.833	0.00	0.25	0.250	IO	1.33
45.917	0.00	0.25	0.248	IO	1.32
46.000	0.00	0.25	0.246	IO	1.31
46.083	0.00	0.25	0.244	IO	1.31
46.167	0.00	0.25	0.243	IO	1.30
46.250	0.00	0.25	0.241	IO	1.29
46.333	0.00	0.25	0.239	IO	1.28
46.417	0.00	0.25	0.238	IO	1.27
46.500	0.00	0.25	0.236	IO	1.27
46.583	0.00	0.25	0.234	IO	1.26
46.667	0.00	0.25	0.232	IO	1.25
46.750	0.00	0.25	0.231	IO	1.24
46.833	0.00	0.24	0.229	IO	1.24
46.917	0.00	0.24	0.227	IO	1.23
47.000	0.00	0.24	0.226	IO	1.22
47.083	0.00	0.24	0.224	IO	1.21
47.167	0.00	0.24	0.222	IO	1.20
47.250	0.00	0.24	0.221	IO	1.20
47.333	0.00	0.24	0.219	IO	1.19
47.417	0.00	0.24	0.217	IO	1.18
47.500	0.00	0.24	0.216	IO	1.17
47.583	0.00	0.24	0.214	IO	1.17
47.667	0.00	0.24	0.213	IO	1.16
47.750	0.00	0.24	0.211	IO	1.15
47.833	0.00	0.24	0.209	IO	1.14
47.917	0.00	0.23	0.208	IO	1.14
48.000	0.00	0.23	0.206	IO	1.13
48.083	0.00	0.23	0.204	IO	1.12
48.167	0.00	0.23	0.203	IO	1.11
48.250	0.00	0.23	0.201	IO	1.11
48.333	0.00	0.23	0.200	IO	1.10
48.417	0.00	0.23	0.198	IO	1.09
48.500	0.00	0.23	0.196	IO	1.09
48.583	0.00	0.23	0.195	IO	1.08
48.667	0.00	0.23	0.193	IO	1.07
48.750	0.00	0.23	0.192	IO	1.06
48.833	0.00	0.23	0.190	IO	1.06
48.917	0.00	0.23	0.189	IO	1.05
49.000	0.00	0.23	0.187	IO	1.04

ROUTE24100.out

49.083	0.00	0.22	0.186	IO	1.03
49.167	0.00	0.22	0.184	IO	1.03
49.250	0.00	0.22	0.182	IO	1.02
49.333	0.00	0.22	0.181	IO	1.01
49.417	0.00	0.22	0.179	IO	1.01
49.500	0.00	0.22	0.178	IO	1.00
49.583	0.00	0.22	0.176	IO	0.99
49.667	0.00	0.22	0.175	IO	0.98
49.750	0.00	0.22	0.173	IO	0.98
49.833	0.00	0.22	0.172	IO	0.97
49.917	0.00	0.22	0.170	IO	0.96
50.000	0.00	0.21	0.169	IO	0.95
50.083	0.00	0.21	0.167	IO	0.95
50.167	0.00	0.21	0.166	IO	0.94
50.250	0.00	0.21	0.165	IO	0.93
50.333	0.00	0.21	0.163	IO	0.92
50.417	0.00	0.21	0.162	IO	0.92
50.500	0.00	0.21	0.160	IO	0.91
50.583	0.00	0.21	0.159	IO	0.90
50.667	0.00	0.21	0.157	IO	0.89
50.750	0.00	0.20	0.156	IO	0.89
50.833	0.00	0.20	0.155	IO	0.88
50.917	0.00	0.20	0.153	IO	0.87
51.000	0.00	0.20	0.152	IO	0.86
51.083	0.00	0.20	0.150	IO	0.86
51.167	0.00	0.20	0.149	IO	0.85
51.250	0.00	0.20	0.148	IO	0.84
51.333	0.00	0.20	0.146	IO	0.84
51.417	0.00	0.20	0.145	IO	0.83
51.500	0.00	0.20	0.144	IO	0.82
51.583	0.00	0.19	0.142	IO	0.82
51.667	0.00	0.19	0.141	IO	0.81
51.750	0.00	0.19	0.140	IO	0.80
51.833	0.00	0.19	0.138	IO	0.79
51.917	0.00	0.19	0.137	IO	0.79
52.000	0.00	0.19	0.136	IO	0.78
52.083	0.00	0.19	0.134	IO	0.77
52.167	0.00	0.19	0.133	IO	0.77
52.250	0.00	0.19	0.132	IO	0.76
52.333	0.00	0.19	0.130	IO	0.75
52.417	0.00	0.18	0.129	IO	0.75
52.500	0.00	0.18	0.128	IO	0.74
52.583	0.00	0.18	0.127	IO	0.74
52.667	0.00	0.18	0.125	IO	0.73
52.750	0.00	0.18	0.124	IO	0.72
52.833	0.00	0.18	0.123	IO	0.72
52.917	0.00	0.18	0.122	IO	0.71
53.000	0.00	0.18	0.120	O	0.70
53.083	0.00	0.18	0.119	O	0.70
53.167	0.00	0.18	0.118	O	0.69
53.250	0.00	0.18	0.117	O	0.68
53.333	0.00	0.17	0.116	O	0.68
53.417	0.00	0.17	0.114	O	0.67
53.500	0.00	0.17	0.113	O	0.67
53.583	0.00	0.17	0.112	O	0.66
53.667	0.00	0.17	0.111	O	0.65
53.750	0.00	0.17	0.110	O	0.65
53.833	0.00	0.17	0.108	O	0.64
53.917	0.00	0.17	0.107	O	0.64
54.000	0.00	0.17	0.106	O	0.63
54.083	0.00	0.17	0.105	O	0.62
54.167	0.00	0.17	0.104	O	0.62
54.250	0.00	0.17	0.103	O	0.61
54.333	0.00	0.16	0.102	O	0.61
54.417	0.00	0.16	0.100	O	0.60
54.500	0.00	0.16	0.099	O	0.59
54.583	0.00	0.16	0.098	O	0.59
54.667	0.00	0.16	0.097	O	0.58
54.750	0.00	0.16	0.096	O	0.58
54.833	0.00	0.16	0.095	O	0.57
54.917	0.00	0.16	0.094	O	0.57
55.000	0.00	0.16	0.093	O	0.56
55.083	0.00	0.16	0.092	O	0.55
55.167	0.00	0.16	0.090	O	0.55
55.250	0.00	0.16	0.089	O	0.54
55.333	0.00	0.15	0.088	O	0.54
55.417	0.00	0.15	0.087	O	0.53
55.500	0.00	0.15	0.086	O	0.53
55.583	0.00	0.15	0.085	O	0.52
55.667	0.00	0.15	0.084	O	0.52
55.750	0.00	0.15	0.083	O	0.51
55.833	0.00	0.15	0.082	O	0.51
55.917	0.00	0.15	0.081	O	0.50
56.000	0.00	0.15	0.080	O	0.49

ROUTE24100.out

56.083	0.00	0.15	0.079	0	0.49
56.167	0.00	0.14	0.078	0	0.48
56.250	0.00	0.14	0.077	0	0.48
56.333	0.00	0.14	0.076	0	0.47
56.417	0.00	0.14	0.075	0	0.47
56.500	0.00	0.14	0.074	0	0.46
56.583	0.00	0.14	0.073	0	0.45
56.667	0.00	0.14	0.072	0	0.45
56.750	0.00	0.14	0.071	0	0.44
56.833	0.00	0.13	0.070	0	0.44
56.917	0.00	0.13	0.069	0	0.43
57.000	0.00	0.13	0.068	0	0.43
57.083	0.00	0.13	0.068	0	0.42
57.167	0.00	0.13	0.067	0	0.42
57.250	0.00	0.13	0.066	0	0.41
57.333	0.00	0.13	0.065	0	0.41
57.417	0.00	0.13	0.064	0	0.40
57.500	0.00	0.12	0.063	0	0.40
57.583	0.00	0.12	0.062	0	0.39
57.667	0.00	0.12	0.061	0	0.39
57.750	0.00	0.12	0.061	0	0.38
57.833	0.00	0.12	0.060	0	0.38
57.917	0.00	0.12	0.059	0	0.37
58.000	0.00	0.12	0.058	0	0.37
58.083	0.00	0.12	0.057	0	0.36
58.167	0.00	0.12	0.057	0	0.36
58.250	0.00	0.11	0.056	0	0.35
58.333	0.00	0.11	0.055	0	0.35
58.417	0.00	0.11	0.054	0	0.35
58.500	0.00	0.11	0.053	0	0.34
58.583	0.00	0.11	0.053	0	0.34
58.667	0.00	0.11	0.052	0	0.33
58.750	0.00	0.11	0.051	0	0.33
58.833	0.00	0.11	0.050	0	0.32
58.917	0.00	0.11	0.050	0	0.32
59.000	0.00	0.11	0.049	0	0.31
59.083	0.00	0.10	0.048	0	0.31
59.167	0.00	0.10	0.047	0	0.31
59.250	0.00	0.10	0.047	0	0.30
59.333	0.00	0.10	0.046	0	0.30
59.417	0.00	0.10	0.045	0	0.29
59.500	0.00	0.10	0.045	0	0.29
59.583	0.00	0.10	0.044	0	0.29
59.667	0.00	0.10	0.043	0	0.28
59.750	0.00	0.10	0.043	0	0.28
59.833	0.00	0.10	0.042	0	0.27
59.917	0.00	0.10	0.041	0	0.27
60.000	0.00	0.09	0.041	0	0.27
60.083	0.00	0.09	0.040	0	0.26
60.167	0.00	0.09	0.039	0	0.26
60.250	0.00	0.09	0.039	0	0.26
60.333	0.00	0.09	0.038	0	0.25
60.417	0.00	0.09	0.037	0	0.25
60.500	0.00	0.09	0.037	0	0.25
60.583	0.00	0.09	0.036	0	0.24
60.667	0.00	0.09	0.036	0	0.24
60.750	0.00	0.09	0.035	0	0.23
60.833	0.00	0.09	0.034	0	0.23
60.917	0.00	0.09	0.034	0	0.23
61.000	0.00	0.08	0.033	0	0.22
61.083	0.00	0.08	0.033	0	0.22
61.167	0.00	0.08	0.032	0	0.22
61.250	0.00	0.08	0.031	0	0.21
61.333	0.00	0.08	0.031	0	0.21
61.417	0.00	0.08	0.030	0	0.21
61.500	0.00	0.08	0.030	0	0.20
61.583	0.00	0.08	0.029	0	0.20
61.667	0.00	0.08	0.029	0	0.20
61.750	0.00	0.08	0.028	0	0.19
61.833	0.00	0.08	0.028	0	0.19
61.917	0.00	0.07	0.027	0	0.19
62.000	0.00	0.07	0.027	0	0.18
62.083	0.00	0.07	0.026	0	0.18
62.167	0.00	0.07	0.026	0	0.18
62.250	0.00	0.07	0.025	0	0.17
62.333	0.00	0.07	0.025	0	0.17
62.417	0.00	0.07	0.024	0	0.17
62.500	0.00	0.06	0.024	0	0.16
62.583	0.00	0.06	0.023	0	0.16
62.667	0.00	0.06	0.023	0	0.16
62.750	0.00	0.06	0.023	0	0.16
62.833	0.00	0.06	0.022	0	0.15
62.917	0.00	0.06	0.022	0	0.15
63.000	0.00	0.06	0.021	0	0.15

ROUTE24100.out

63.083	0.00	0.06	0.021	0	0.14
63.167	0.00	0.06	0.020	0	0.14
63.250	0.00	0.05	0.020	0	0.14
63.333	0.00	0.05	0.020	0	0.14
63.417	0.00	0.05	0.019	0	0.13
63.500	0.00	0.05	0.019	0	0.13
63.583	0.00	0.05	0.019	0	0.13
63.667	0.00	0.05	0.018	0	0.13
63.750	0.00	0.05	0.018	0	0.12
63.833	0.00	0.05	0.018	0	0.12
63.917	0.00	0.05	0.017	0	0.12
64.000	0.00	0.05	0.017	0	0.12
64.083	0.00	0.05	0.017	0	0.11
64.167	0.00	0.04	0.016	0	0.11
64.250	0.00	0.04	0.016	0	0.11
64.333	0.00	0.04	0.016	0	0.11
64.417	0.00	0.04	0.015	0	0.11
64.500	0.00	0.04	0.015	0	0.10
64.583	0.00	0.04	0.015	0	0.10
64.667	0.00	0.04	0.015	0	0.10
64.750	0.00	0.04	0.014	0	0.10
64.833	0.00	0.04	0.014	0	0.10
64.917	0.00	0.04	0.014	0	0.10
65.000	0.00	0.04	0.014	0	0.09
65.083	0.00	0.04	0.013	0	0.09
65.167	0.00	0.04	0.013	0	0.09
65.250	0.00	0.03	0.013	0	0.09
65.333	0.00	0.03	0.013	0	0.09
65.417	0.00	0.03	0.012	0	0.09
65.500	0.00	0.03	0.012	0	0.08
65.583	0.00	0.03	0.012	0	0.08
65.667	0.00	0.03	0.012	0	0.08
65.750	0.00	0.03	0.011	0	0.08
65.833	0.00	0.03	0.011	0	0.08
65.917	0.00	0.03	0.011	0	0.08
66.000	0.00	0.03	0.011	0	0.07
66.083	0.00	0.03	0.011	0	0.07
66.167	0.00	0.03	0.010	0	0.07
66.250	0.00	0.03	0.010	0	0.07
66.333	0.00	0.03	0.010	0	0.07
66.417	0.00	0.03	0.010	0	0.07
66.500	0.00	0.03	0.010	0	0.07
66.583	0.00	0.03	0.009	0	0.07
66.667	0.00	0.03	0.009	0	0.06
66.750	0.00	0.02	0.009	0	0.06
66.833	0.00	0.02	0.009	0	0.06
66.917	0.00	0.02	0.009	0	0.06
67.000	0.00	0.02	0.009	0	0.06
67.083	0.00	0.02	0.008	0	0.06
67.167	0.00	0.02	0.008	0	0.06
67.250	0.00	0.02	0.008	0	0.06
67.333	0.00	0.02	0.008	0	0.06
67.417	0.00	0.02	0.008	0	0.05
67.500	0.00	0.02	0.008	0	0.05
67.583	0.00	0.02	0.008	0	0.05
67.667	0.00	0.02	0.007	0	0.05
67.750	0.00	0.02	0.007	0	0.05
67.833	0.00	0.02	0.007	0	0.05
67.917	0.00	0.02	0.007	0	0.05
68.000	0.00	0.02	0.007	0	0.05
68.083	0.00	0.02	0.007	0	0.05
68.167	0.00	0.02	0.007	0	0.05
68.250	0.00	0.02	0.007	0	0.04
68.333	0.00	0.02	0.006	0	0.04
68.417	0.00	0.02	0.006	0	0.04
68.500	0.00	0.02	0.006	0	0.04
68.583	0.00	0.02	0.006	0	0.04
68.667	0.00	0.02	0.006	0	0.04
68.750	0.00	0.02	0.006	0	0.04
68.833	0.00	0.02	0.006	0	0.04
68.917	0.00	0.02	0.006	0	0.04
69.000	0.00	0.02	0.006	0	0.04
69.083	0.00	0.01	0.005	0	0.04
69.167	0.00	0.01	0.005	0	0.04
69.250	0.00	0.01	0.005	0	0.04
69.333	0.00	0.01	0.005	0	0.04
69.417	0.00	0.01	0.005	0	0.03
69.500	0.00	0.01	0.005	0	0.03
69.583	0.00	0.01	0.005	0	0.03
69.667	0.00	0.01	0.005	0	0.03
69.750	0.00	0.01	0.005	0	0.03
69.833	0.00	0.01	0.005	0	0.03
69.917	0.00	0.01	0.004	0	0.03
70.000	0.00	0.01	0.004	0	0.03

70.083	0.00	0.01	0.004	0	0.03
70.167	0.00	0.01	0.004	0	0.03
70.250	0.00	0.01	0.004	0	0.03
70.333	0.00	0.01	0.004	0	0.03
70.417	0.00	0.01	0.004	0	0.03
70.500	0.00	0.01	0.004	0	0.03
70.583	0.00	0.01	0.004	0	0.03
70.667	0.00	0.01	0.004	0	0.03
70.750	0.00	0.01	0.004	0	0.03
70.833	0.00	0.01	0.004	0	0.03
70.917	0.00	0.01	0.004	0	0.02
71.000	0.00	0.01	0.004	0	0.02
71.083	0.00	0.01	0.003	0	0.02
71.167	0.00	0.01	0.003	0	0.02
71.250	0.00	0.01	0.003	0	0.02
71.333	0.00	0.01	0.003	0	0.02
71.417	0.00	0.01	0.003	0	0.02
71.500	0.00	0.01	0.003	0	0.02
71.583	0.00	0.01	0.003	0	0.02
71.667	0.00	0.01	0.003	0	0.02
71.750	0.00	0.01	0.003	0	0.02
71.833	0.00	0.01	0.003	0	0.02
71.917	0.00	0.01	0.003	0	0.02
72.000	0.00	0.01	0.003	0	0.02
72.083	0.00	0.01	0.003	0	0.02
72.167	0.00	0.01	0.003	0	0.02
72.250	0.00	0.01	0.003	0	0.02
72.333	0.00	0.01	0.003	0	0.02
72.417	0.00	0.01	0.003	0	0.02
72.500	0.00	0.01	0.003	0	0.02
72.583	0.00	0.01	0.002	0	0.02
72.667	0.00	0.01	0.002	0	0.02
72.750	0.00	0.01	0.002	0	0.02
72.833	0.00	0.01	0.002	0	0.02
72.917	0.00	0.01	0.002	0	0.02
73.000	0.00	0.01	0.002	0	0.02
73.083	0.00	0.01	0.002	0	0.02
73.167	0.00	0.01	0.002	0	0.01
73.250	0.00	0.01	0.002	0	0.01
73.333	0.00	0.01	0.002	0	0.01
73.417	0.00	0.01	0.002	0	0.01
73.500	0.00	0.01	0.002	0	0.01
73.583	0.00	0.01	0.002	0	0.01
73.667	0.00	0.01	0.002	0	0.01
73.750	0.00	0.01	0.002	0	0.01
73.833	0.00	0.01	0.002	0	0.01
73.917	0.00	0.00	0.002	0	0.01
74.000	0.00	0.00	0.002	0	0.01
74.083	0.00	0.00	0.002	0	0.01
74.167	0.00	0.00	0.002	0	0.01
74.250	0.00	0.00	0.002	0	0.01
74.333	0.00	0.00	0.002	0	0.01
74.417	0.00	0.00	0.002	0	0.01
74.500	0.00	0.00	0.002	0	0.01
74.583	0.00	0.00	0.002	0	0.01
74.667	0.00	0.00	0.002	0	0.01
74.750	0.00	0.00	0.002	0	0.01
74.833	0.00	0.00	0.001	0	0.01
74.917	0.00	0.00	0.001	0	0.01
75.000	0.00	0.00	0.001	0	0.01
75.083	0.00	0.00	0.001	0	0.01
75.167	0.00	0.00	0.001	0	0.01
75.250	0.00	0.00	0.001	0	0.01
75.333	0.00	0.00	0.001	0	0.01
75.417	0.00	0.00	0.001	0	0.01
75.500	0.00	0.00	0.001	0	0.01
75.583	0.00	0.00	0.001	0	0.01
75.667	0.00	0.00	0.001	0	0.01
75.750	0.00	0.00	0.001	0	0.01
75.833	0.00	0.00	0.001	0	0.01
75.917	0.00	0.00	0.001	0	0.01
76.000	0.00	0.00	0.001	0	0.01
76.083	0.00	0.00	0.001	0	0.01
76.167	0.00	0.00	0.001	0	0.01
76.250	0.00	0.00	0.001	0	0.01
76.333	0.00	0.00	0.001	0	0.01
76.417	0.00	0.00	0.001	0	0.01
76.500	0.00	0.00	0.001	0	0.01
76.583	0.00	0.00	0.001	0	0.01
76.667	0.00	0.00	0.001	0	0.01
76.750	0.00	0.00	0.001	0	0.01
76.833	0.00	0.00	0.001	0	0.01
76.917	0.00	0.00	0.001	0	0.01
77.000	0.00	0.00	0.001	0	0.01

ROUTE24100.out

77.083	0.00	0.00	0.001	0					0.01
77.167	0.00	0.00	0.001	0					0.01
77.250	0.00	0.00	0.001	0					0.01
77.333	0.00	0.00	0.001	0					0.01
77.417	0.00	0.00	0.001	0					0.01
77.500	0.00	0.00	0.001	0					0.01
77.583	0.00	0.00	0.001	0					0.01
77.667	0.00	0.00	0.001	0					0.01
77.750	0.00	0.00	0.001	0					0.01
77.833	0.00	0.00	0.001	0					0.01
77.917	0.00	0.00	0.001	0					0.01
78.000	0.00	0.00	0.001	0					0.01
78.083	0.00	0.00	0.001	0					0.00
78.167	0.00	0.00	0.001	0					0.00
78.250	0.00	0.00	0.001	0					0.00
78.333	0.00	0.00	0.001	0					0.00
78.417	0.00	0.00	0.001	0					0.00
78.500	0.00	0.00	0.001	0					0.00
78.583	0.00	0.00	0.001	0					0.00
78.667	0.00	0.00	0.001	0					0.00
78.750	0.00	0.00	0.001	0					0.00
78.833	0.00	0.00	0.001	0					0.00
78.917	0.00	0.00	0.001	0					0.00
79.000	0.00	0.00	0.001	0					0.00
79.083	0.00	0.00	0.001	0					0.00
79.167	0.00	0.00	0.001	0					0.00
79.250	0.00	0.00	0.001	0					0.00
79.333	0.00	0.00	0.001	0					0.00
79.417	0.00	0.00	0.001	0					0.00
79.500	0.00	0.00	0.001	0					0.00
79.583	0.00	0.00	0.001	0					0.00
79.667	0.00	0.00	0.000	0					0.00
79.750	0.00	0.00	0.000	0					0.00
79.833	0.00	0.00	0.000	0					0.00
79.917	0.00	0.00	0.000	0					0.00
80.000	0.00	0.00	0.000	0					0.00
80.083	0.00	0.00	0.000	0					0.00
80.167	0.00	0.00	0.000	0					0.00
80.250	0.00	0.00	0.000	0					0.00
80.333	0.00	0.00	0.000	0					0.00
80.417	0.00	0.00	0.000	0					0.00
80.500	0.00	0.00	0.000	0					0.00
80.583	0.00	0.00	0.000	0					0.00
80.667	0.00	0.00	0.000	0					0.00
80.750	0.00	0.00	0.000	0					0.00
80.833	0.00	0.00	0.000	0					0.00
80.917	0.00	0.00	0.000	0					0.00
81.000	0.00	0.00	0.000	0					0.00
81.083	0.00	0.00	0.000	0					0.00

*****HYDROGRAPH DATA*****
 Number of intervals = 973
 Time interval = 5.0 (Min.)
 Maximum/Peak flow rate = 3.725 (CFS)
 Total volume = 3.285 (Ac.Ft)
 Status of hydrographs being held in storage
 Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
 Peak (CFS) 0.000 0.000 0.000 0.000 0.000
 Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

APPENDIX E – OFFSITE HYDRAULICS

LATERAL H-11.1A

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Tuesday, October 15, 2019

Project Units: U.S. Customary Units

Notes:

Channel Analysis: Lat H-11.1A

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 2.0000 ft

Longitudinal Slope: 0.0030 ft/ft

Manning's n: 0.0130

Flow: 10.1000 cfs

Result Parameters

Depth: 1.3720 ft

Area of Flow: 2.2973 ft²

Wetted Perimeter: 3.9039 ft

Hydraulic Radius: 0.5885 ft

Average Velocity: 4.3965 ft/s

Top Width: 1.8565 ft

Froude Number: 0.6965

Critical Depth: 1.1377 ft

Critical Velocity: 5.4733 ft/s

Critical Slope: 0.0052 ft/ft

Critical Top Width: 1.98 ft

Calculated Max Shear Stress: 0.2568 lb/ft²

Calculated Avg Shear Stress: 0.1102 lb/ft²

LATERAL H-11.1B

Channel Analysis: Lat H-11.1B

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 1.5000 ft

Longitudinal Slope: 0.0030 ft/ft

Manning's n: 0.0130

Flow: 3.0000 cfs

Result Parameters

Depth: 0.7689 ft

Area of Flow: 0.9119 ft²

Wetted Perimeter: 2.3939 ft

Hydraulic Radius: 0.3809 ft

Average Velocity: 3.2900 ft/s

Top Width: 1.4995 ft

Froude Number: 0.7435

Critical Depth: 0.6584 ft

Critical Velocity: 4.0183 ft/s

Critical Slope: 0.0051 ft/ft

Critical Top Width: 1.49 ft

Calculated Max Shear Stress: 0.1439 lb/ft²

Calculated Avg Shear Stress: 0.0713 lb/ft²



HEC-RAS EXHIBITS

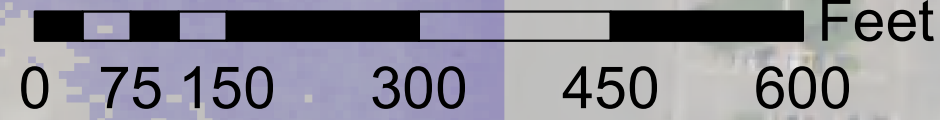


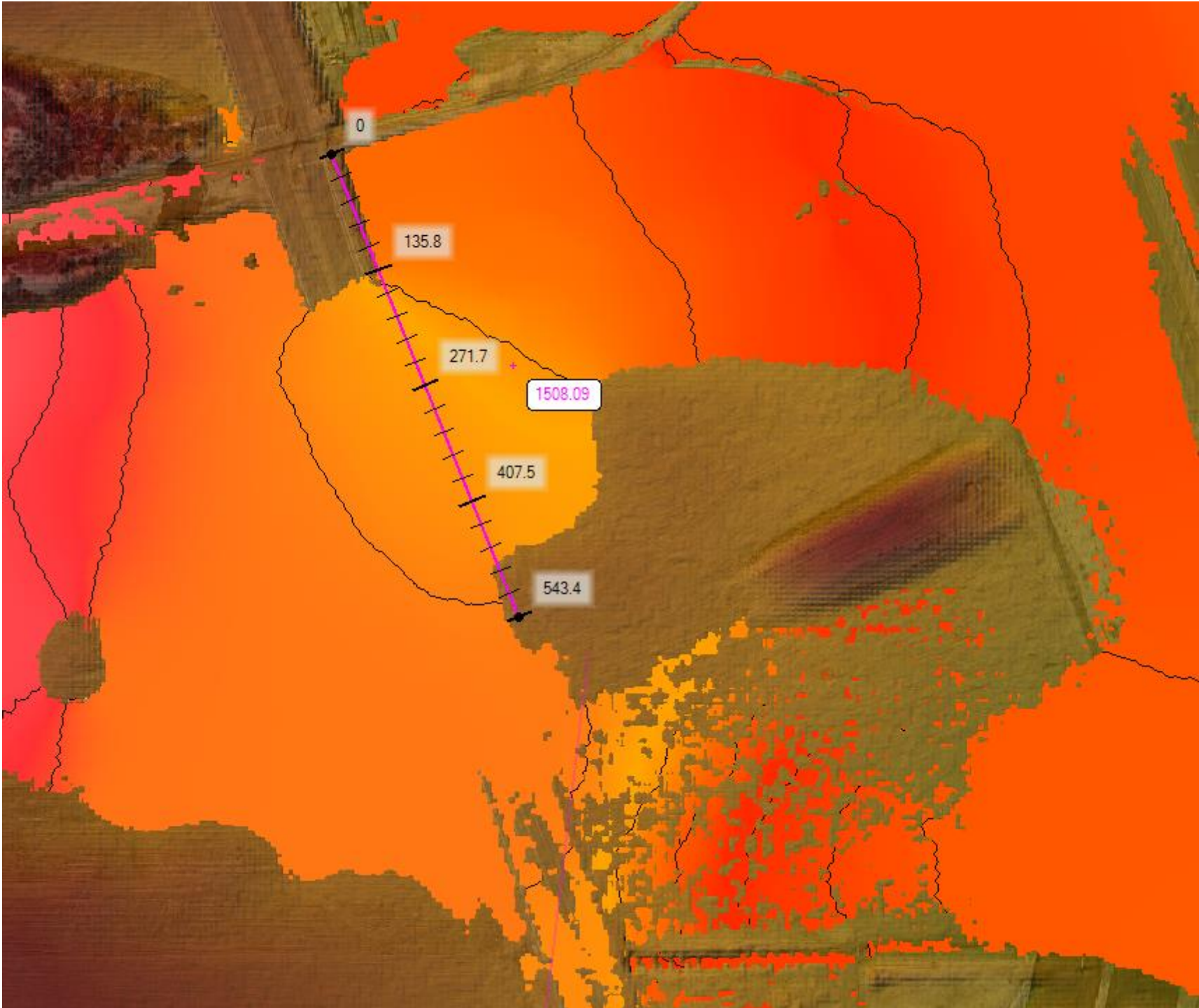
EXISTING OFFSITE RUN-ON FOR
100-YEAR STORM.
WILL BE COLLECTED BY MDP FACILITY
LATERAL H-12.

Legend

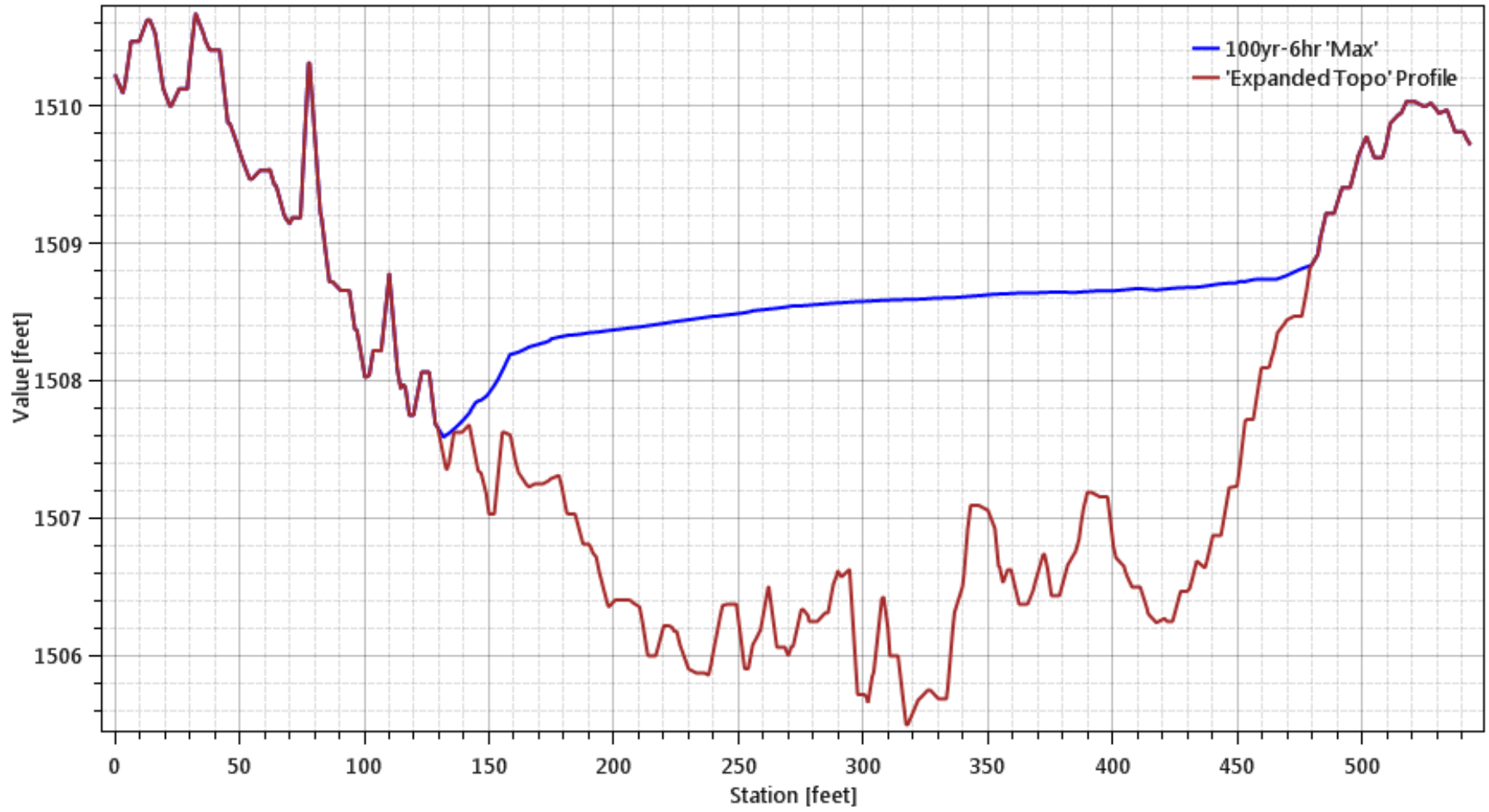
Depth
Value

	High : 8
	Low : 0 .01





Water Surface Elevation on '7'



STRUCTURAL CALCULATIONS FOR JUNCTION STRUCTURE EDGE BEAM

***TO BE INCLUDED IN FINAL REPORT**

APPENDIX F – REFERENCES

PERRIS VALLEY MDP LINE H-11 PLANS

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SHEET INDEX

TITLE SHEET	SHEET NO.
PLAN & PROFILE	1
DETAILS	2-7
	8-10

R.C.F.C. & W.C.D. STANDARD DRAWINGS

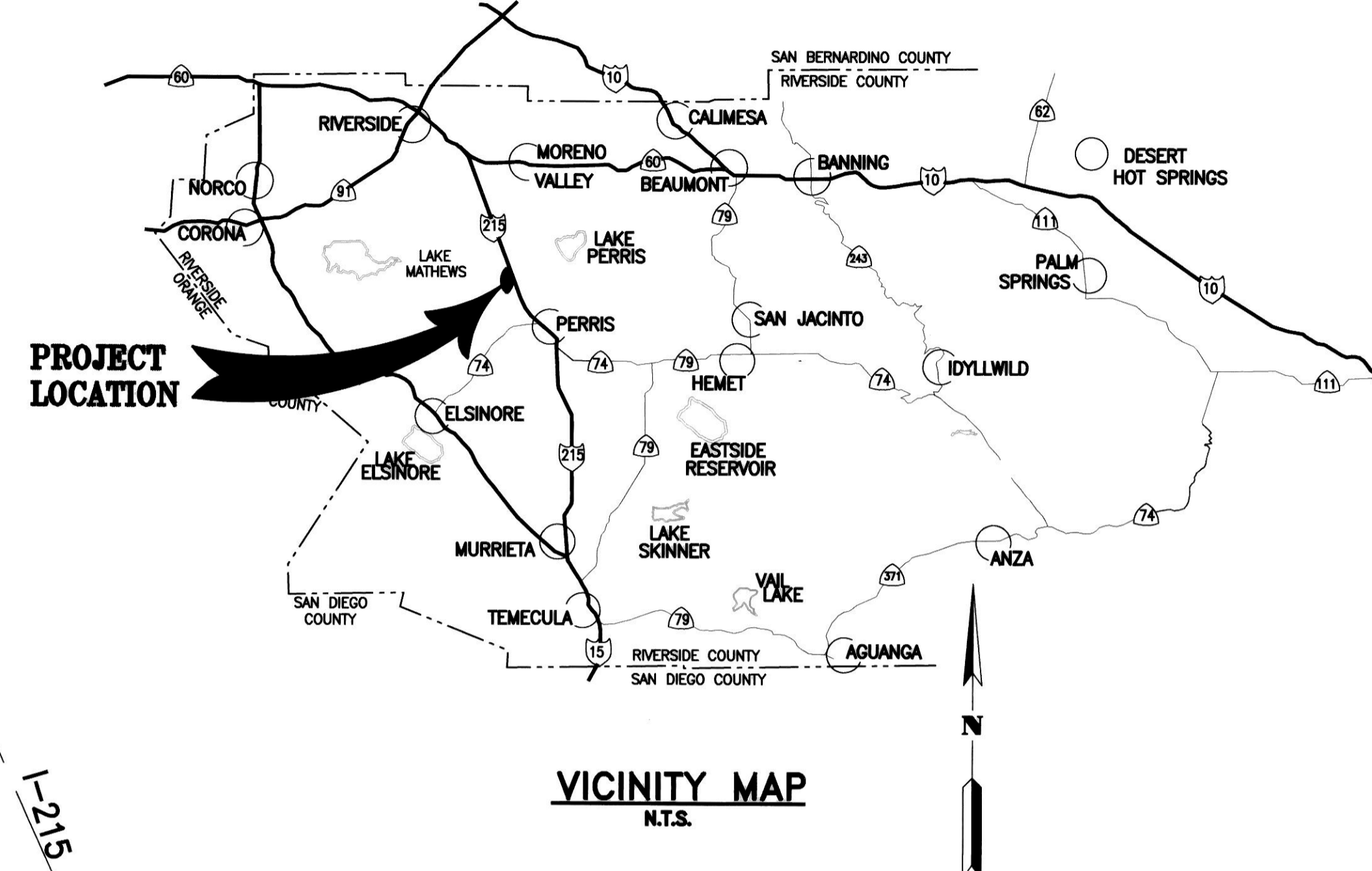
JS 226	JUNCTION STRUCTURE NO. 1
JS 228	JUNCTION STRUCTURE NO. 3
JS 231	JUNCTION STRUCTURE NO. 6
MH 252	MANHOLE NO. 2
MH 253	MANHOLE NO. 3
TS 301	TRANSITION STRUCTURE NO. 1
TS 303	TRANSITION STRUCTURE NO. 3
CH 326	TRAPEZOIDAL CHANNEL STRUCTURAL DETAILS
CH 329	TRANSITION STRUCTURAL DETAILS
CH 332	SUBDRAINS LAYOUT, SECTIONS & DETAILS
CH 333	DRAINAGE APRON FOR ACCESS ROAD
M 801	CHAIN LINK FENCE DETAILS
M 816	CONCRETE BULKHEAD
M 818	WIRE FENCE
M 827	VEHICULAR TURN AROUND AREA

CALTRANS STANDARD PLANS

D80	CAST-IN-PLACE REINFORCED CONCRETE SINGLE BOX CULVERT
D81	CAST-IN-PLACE REINFORCED CONCRETE DOUBLE BOX CULVERT
D82	CAST-IN-PLACE REINFORCED CONCRETE BOX CULVERT MISC. DETAILS
D89	PIPE CULVERT HEADWALLS STRAIGHT AND "L"

RIVERSIDE COUNTY TRANSPORTATION DEPARTMENT

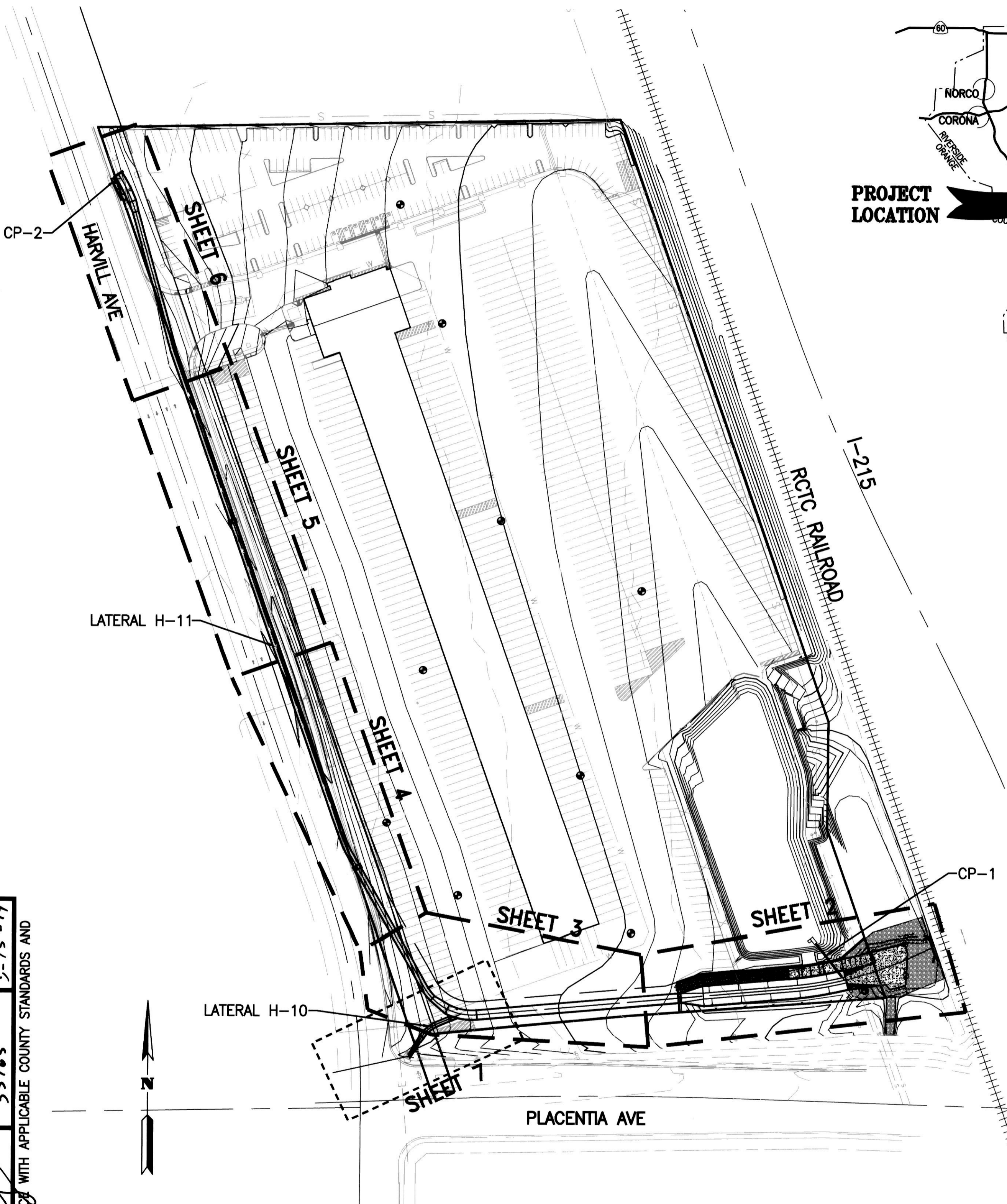
300	CURB INLET CATCH BASIN
311	GUTTER DEPRESSION FOR CURB OPENING CATCH BASIN



GENERAL NOTES

1. THE CONTRACTOR SHALL CONSTRUCT THE FLOOD CONTROL IMPROVEMENTS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT'S M.O.U. STANDARD SPECIFICATIONS DATED JUNE 24, 2008, AND RCFC&WCD STANDARD MANUAL. FOR THE LATEST DRAWINGS OF THE STANDARD MANUAL, PLEASE REFER TO THE "PUBLICATIONS AND RECORDS" PAGE FOUND ON THE DISTRICT'S WEBSITE.
2. CONTACT THE ENCROACHMENT PERMIT ENGINEER AT 951.955.1266 IF AN ENCROACHMENT PERMIT IS REQUIRED FROM RIVERSIDE COUNTY FLOOD CONTROL. AFTER THE PERMIT IS ISSUED THE DISTRICT MUST BE NOTIFIED ONE WEEK PRIOR TO CONSTRUCTION.
3. CONTACT CONSTRUCTION MANAGEMENT AT 951.955.1288 IF CONSTRUCTION INSPECTION WILL BE PERFORMED BY RIVERSIDE COUNTY FLOOD CONTROL. THE DISTRICT MUST BE NOTIFIED TWENTY DAYS (20) PRIOR TO CONSTRUCTION.
4. ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
5. STATIONING FOR LATERALS AND CONNECTOR PIPE REFER TO THE CENTERLINE INTERSECTION STATIONS.
6. FORTY-EIGHT HOURS BEFORE EXCAVATION, CALL UNDERGROUND SERVICE ALERT 1.800.227.2600.
7. ALL ELEVATIONS SHOWN ARE IN FEET AND DECIMALS THEREOF BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).
8. ALL COORDINATES ARE SHOWN IN FEET AND DECIMALS THEREOF BASED ON THE NORTH AMERICAN DATUM (NAD 83), CALIFORNIA COORDINATE SYSTEM (CCS), ZONE 6 AND EPOCH 2010.00.
9. ALL CROSS SECTIONS ARE TAKEN LOOKING DOWNSTREAM.
10. ELEVATIONS OF UTILITIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
11. UNLESS OTHERWISE SPECIFIED, MINIMUM STREET RECONSTRUCTION SHALL BE 4" TYPE "B" HOT MIX ASPHALT OVER 6" CLASS 2 AGGREGATE BASE OR AS SPECIFIED BY THE ENGINEER
12. OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6" OF CLASS "B" CONCRETE.
13. PIPE CONNECTED TO THE MAINLINE PIPE SHALL CONFORM TO JUNCTION STRUCTURE NO. 4 (JS 229) UNLESS OTHERWISE NOTED.

14. PIPE BEDDING SHALL CONFORM TO RCFC&WCD STD. DWG. NO. M815 EXCEPT FOR COVER <2 FEET. FOR COVER <2 FEET, CONCRETE SLURRY (2000 PSI) SHALL BE USED. THE ENTIRE TRENCH SHALL BE SLURRY EXTENDING 4 INCHES MINIMUM AND 12 INCHES MAXIMUM ABOVE THE TOP OF THE PIPE.
15. INDICATES SOIL BORING LOCATIONS BASED ON THE SOILS REPORT BY TERRACON DATED 4/19/2017. LOCATIONS SHOWN ARE APPROXIMATE.
16. "H" IS THE DEPTH OF CATCH BASINS MEASURED FROM THE TOP OF CURB TO INVERT OF CONNECTOR PIPE.
17. CATCH BASINS SHALL BE LOCATED SO THAT LOCAL DEPRESSION SHALL BEGIN AT EXISTING CURB RETURN JOINT, UNLESS OTHERWISE SPECIFIED.
18. ALL CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED IN KIND AND AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED.
19. STANDARD DRAWINGS CALLED FOR ON THE PLAN AND PROFILE SHALL CONFORM TO DISTRICT STANDARD DRAWINGS UNLESS NOTED OTHERWISE.
20. THE CONTRACTOR IS REQUIRED TO CALL ALL UTILITY AGENCIES REGARDING TEMPORARY SHORING AND SUPPORT REQUIREMENTS FOR THE VARIOUS UTILITY LINES SHOWN ON THESE PLANS.
21. DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL SHOULD BE PROVIDED TO PREVENT PONDING WATER AND DAMAGE TO ADJACENT PROPERTIES.
22. APPROVAL OF THESE PLANS BY THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT DOES NOT RELIEVE THE DEVELOPER'S ENGINEER OF RESPONSIBILITY FOR THE ENGINEERING DESIGN. IF FIELD CHANGES ARE REQUIRED, IT WILL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO MAKE THE NECESSARY CORRECTIONS.
23. THE CONTRACTOR OR DEVELOPER SHALL SECURE ALL REQUIRED ENCROACHMENT AND/OR STATE AND FEDERAL REGULATORY PERMITS PRIOR TO THE COMMENCEMENT OF ANY WORK.
24. THE CONCRETE COATING ON THE INSIDE OF ALL REINFORCED CONCRETE PIPES MUST BE INCREASED TO PROVIDE A MINIMUM OF 1-1/2 INCHES OVER THE REINFORCING AND INCREASED TO A MINIMUM OF 3-1/2 INCHES OVER REINFORCING FOR BOX CULVERT, WHEN THESE VELOCITIES EXCEED 20 FEET PER SECOND. THE CONCRETE DESIGN STRENGTH IN THESE REACHES SHALL BE F'C=5,000 PSI FOR VELOCITIES EXCEEDING 20 FEET PER SECOND AND F'C=6,000 PSI FOR VELOCITIES EXCEEDING 30 FEET PER SECOND.
25. CONSTRUCTION JOINTS FOR CALTRANS STANDARD REINFORCED CONCRETE BOX SHALL BE PLACED ACCORDING TO RCFC&WCD STANDARD DRAWING NO. BOX 401.



INDEX MAP
1" = 100'

RECORD	PLAN CHECK OVERSIGHT ENGINEER	REGISTRATION NUMBER	DATE SIGNED
	<i>William M. ...</i>	35765	3-15-19

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

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

Albert A. Webb
 ENGINEER, RCE C67239
 DATE: 13 MAR 2019



DESIGNED BY:	JCC
DRAWN BY:	CS
DATE DRAWN:	JAN 2019
CHECKED BY:	JCC

Don't Dig...Until You Call:
 U.S.A. Toll Free:
 1-800-422-4133
 for the location of buried utility lines.
 Don't disrupt vital services.
 TWO WORKING DAYS BEFORE YOU DIG.

BENCHMARK:
 NATIONAL GEODETIC SURVEY, 435 PID: DX5442
 NAVD 88, ELEV. = (1515.12) FT DESCRIBED BY
 METRO WATER DIST. SD, CALIFORNIA 1992
 PERRIS, 1300' WEST OF AT&SF RAILROAD
 RIDER ST., ON TOP OF NORTH CURB FACE OF
 RIDER ST., 28' NORTH OF RIDER ST., 6' SOUTH
 OF A GIE TELEPHONE BOX, A STANDARD
 3-1/4" ALUMINUM DISK SET FLUSH IN THE
 TOP OF CURB. MWDSC B.M. 435 REFERENCE
 MWO FB 4205-06-001

REVISIONS	DESCRIPTION	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
PLANNING ENGINEER	CHIEF ENGINEER
DATE:	DATE:

PROJECT NO. 4-0-00499 and 4-0-00502
 DRAWING NO. 4-1124
 SHEET NO. 1 of 10

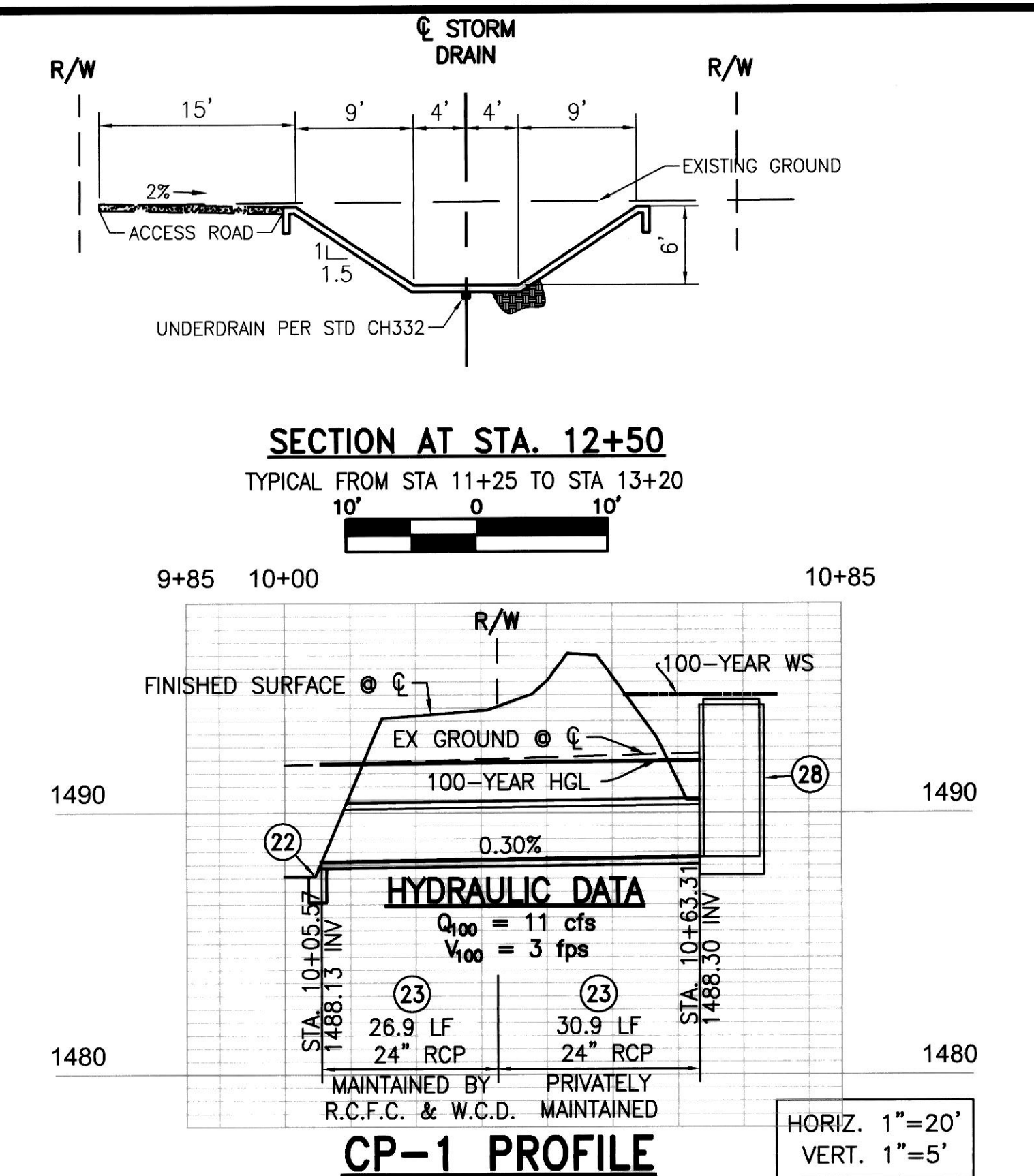
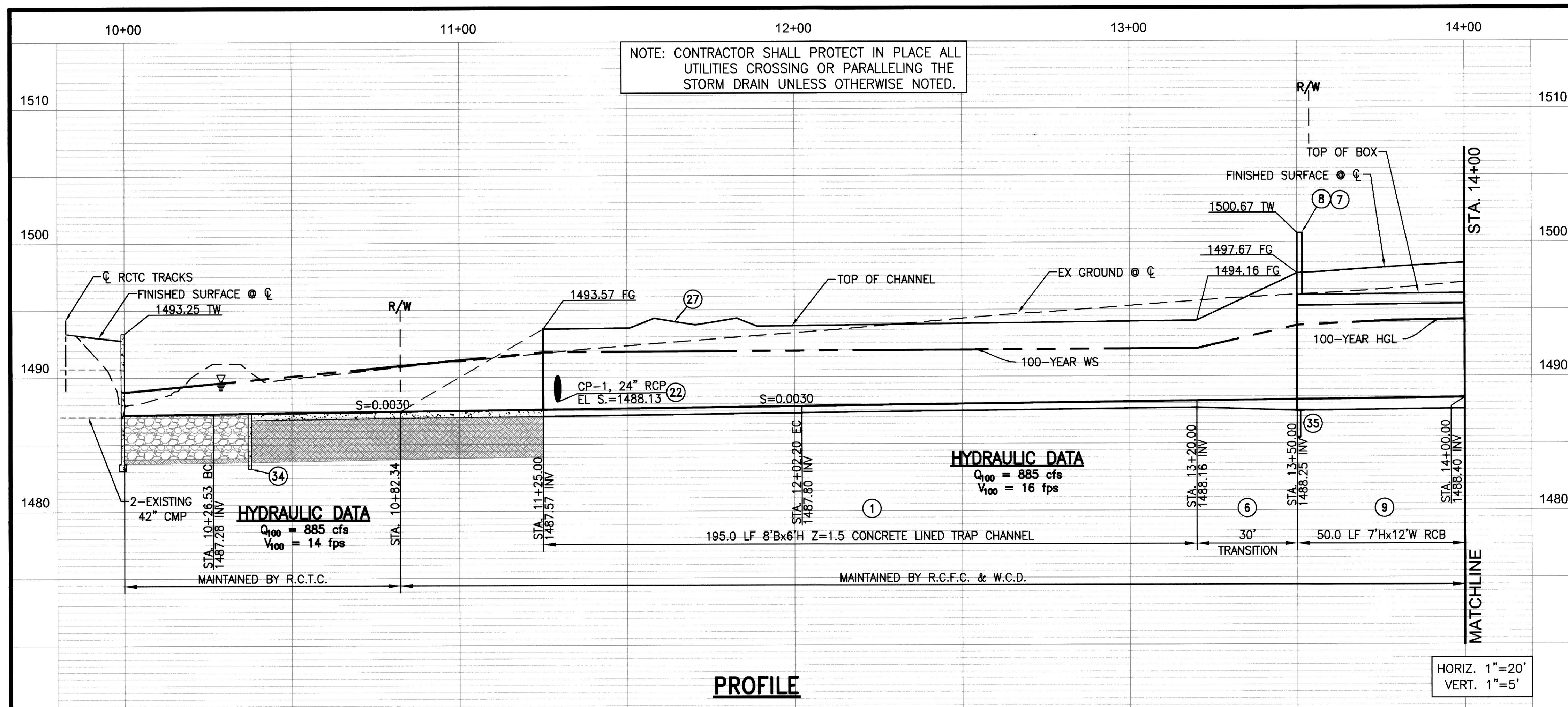
**PERRIS VALLEY MDP
 LATERAL H-11 & LATERAL H-10**

TITLE SHEET

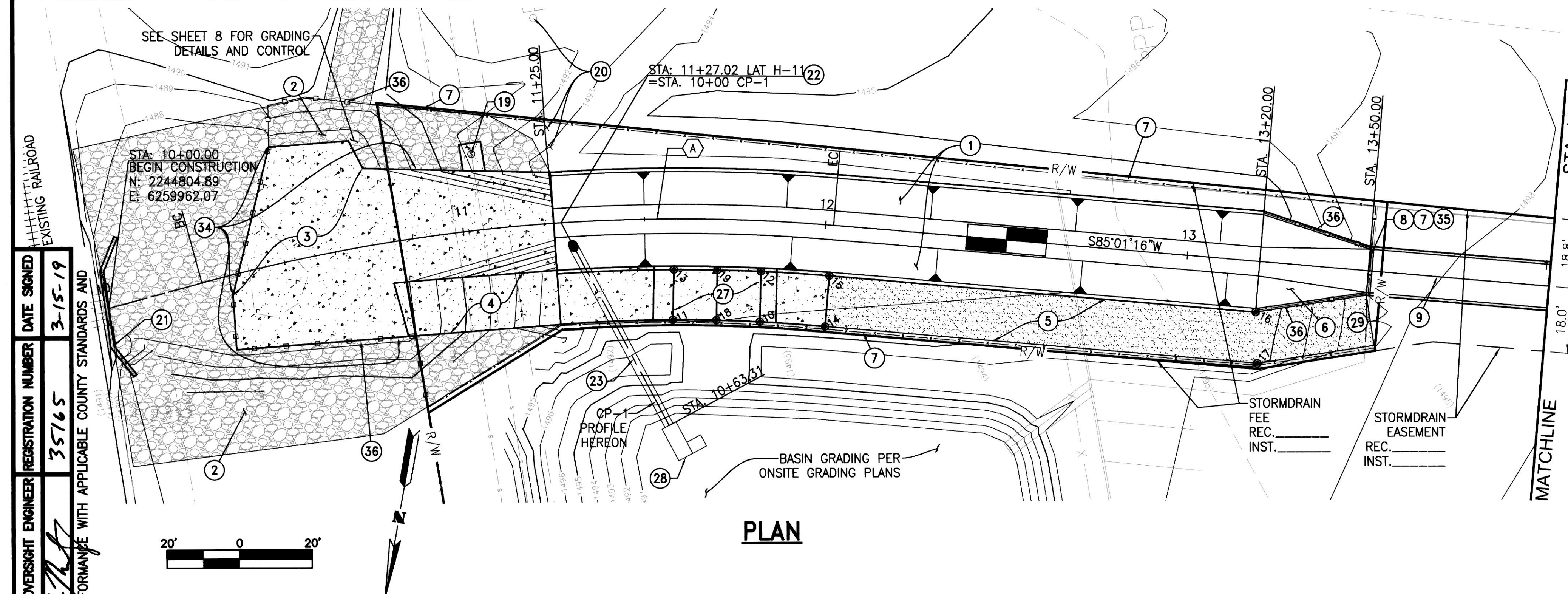
PROJECT NO.	4-0-00499 and 4-0-00502
DRAWING NO.	4-1124
SHEET NO.	1 of 10

966-0

G:\2018\18-0169\DRAWINGS\PLAN SHEETS\18-0169 SD SHEETS.DWG 3/13/2019 1:37:51 PM



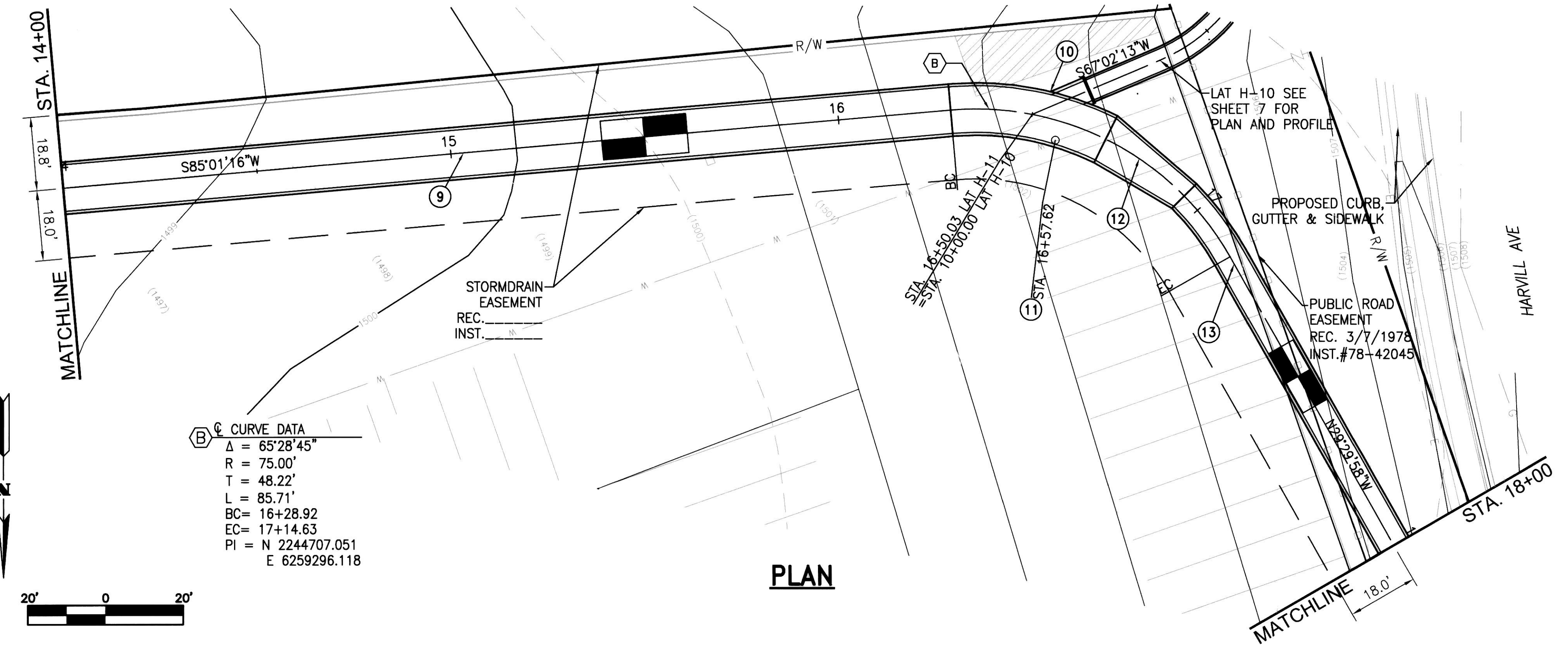
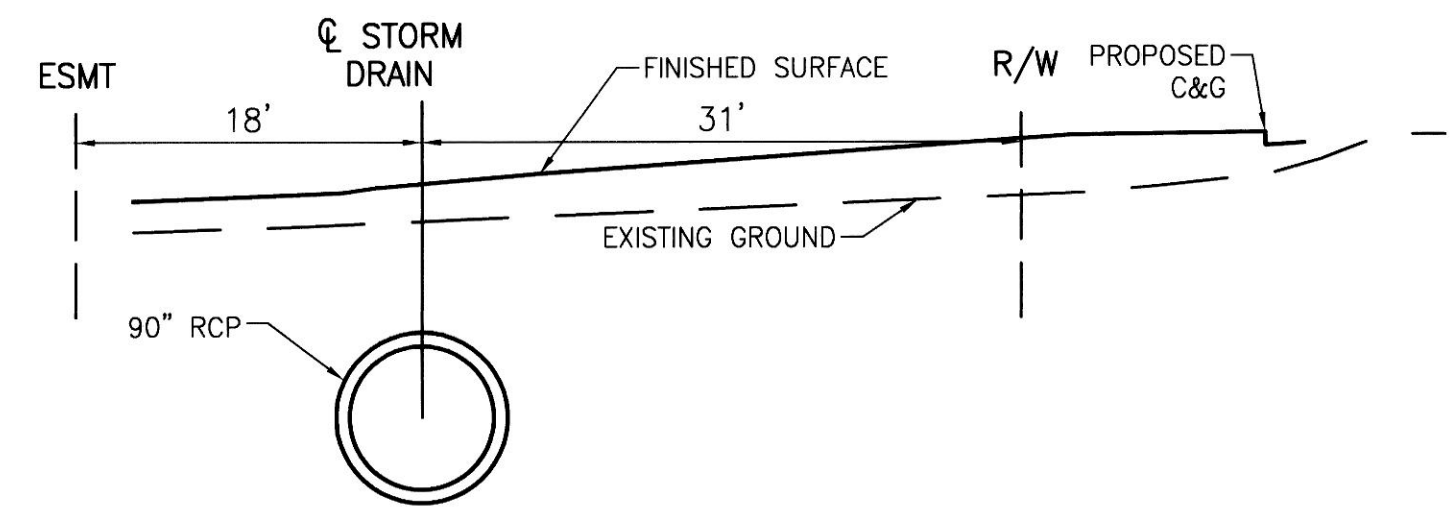
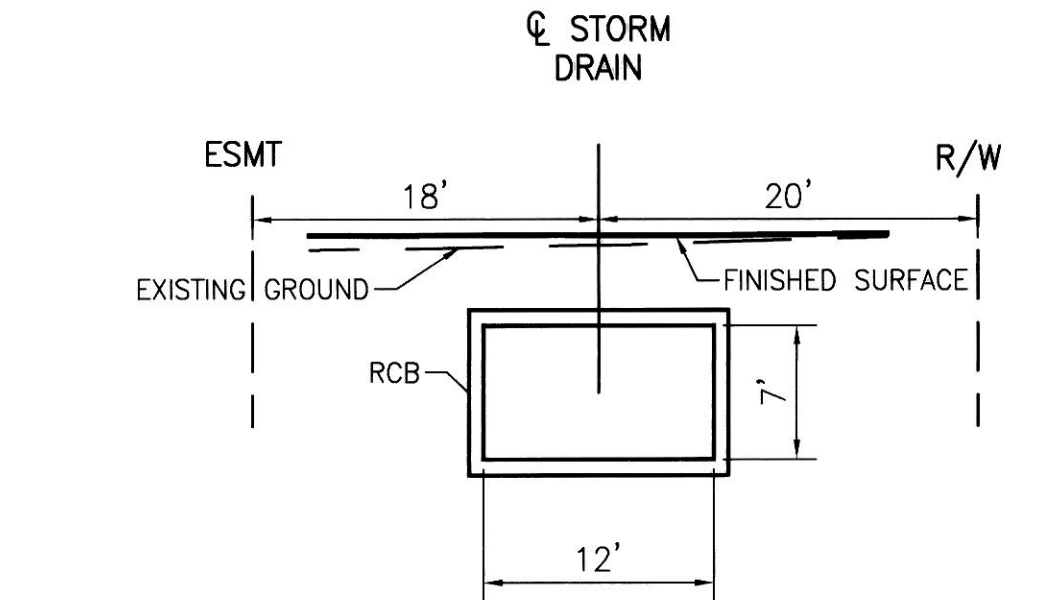
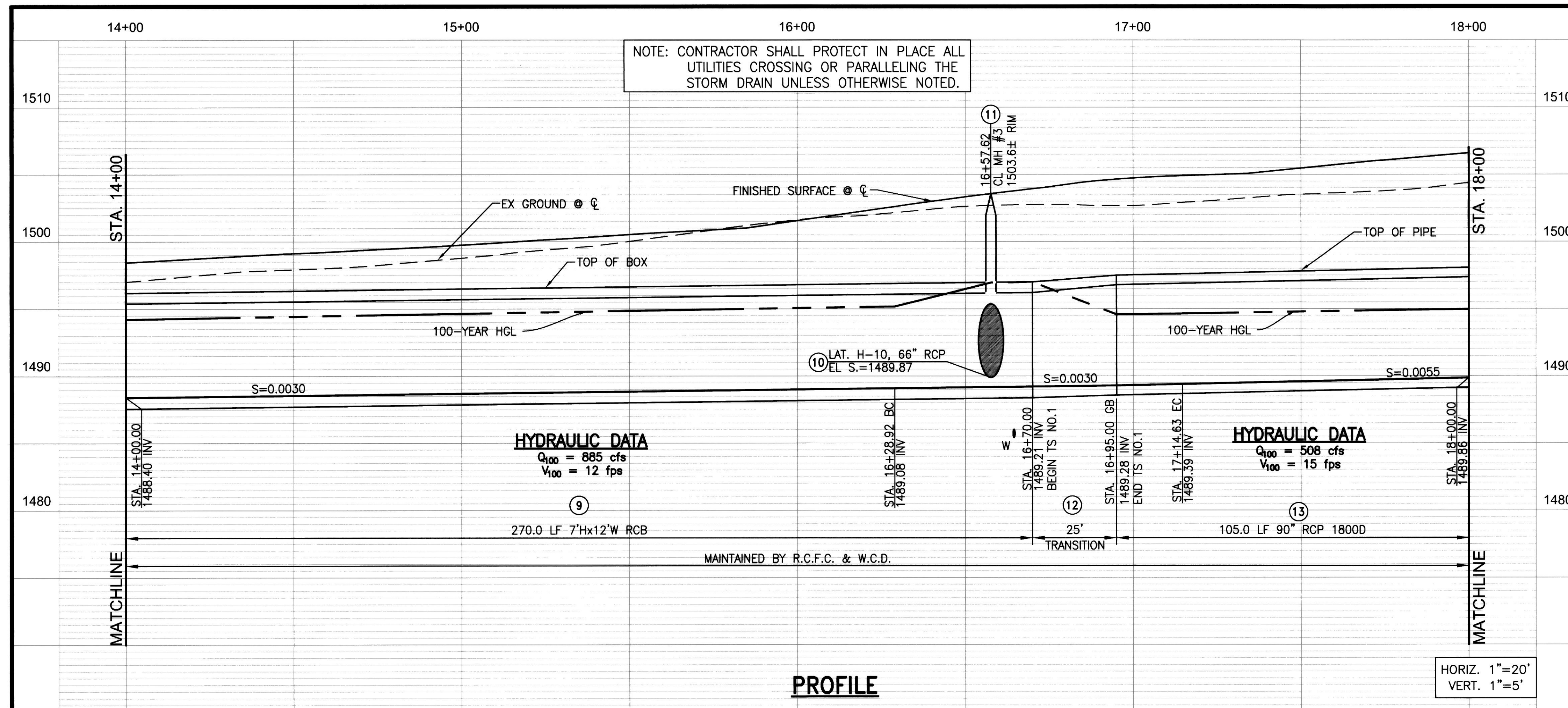
- CONSTRUCTION NOTES**
- CONSTRUCT TRAPEZOIDAL CONCRETE CHANNEL PER RCFCWCD STD DWG. NO. CH326 (B=8' H=6')
 - INSTALL GROUTED 1/4-TON RIPRAP, 3.3' THICK OVER 4" THICK CLASS II BASE AND MIRAFI 1100N PER CALTRANS SPECIFICATION 72 AND DETAIL PER SHEET 8
 - CONSTRUCT 6" THICK CONCRETE TURN AROUND WITH #4 BARS @ 18" O.C. E.W. PER RCFCWCD STD DWG. NO. M827
 - CONSTRUCT 6" THICK CONCRETE MAINTENANCE ROAD PER SECTION A-A ON SHEET 8
 - CONSTRUCT 3" THICK CRUSHED ROCK (1") ACCESS ROAD PER GREENBOOK SECTION 200-1.2
 - CONSTRUCT TRANSITION STRUCTURE PER RCFCWCD STD DWG. NO. CH329 AND DETAILS ON SHEET 10
 - CONSTRUCT 6' CHAIN LINK FENCE PER RCFCWCD STD DWG. NO. M801
 - CONSTRUCT PARAPET PER DETAIL ON SHEET 10
 - CONSTRUCT 7'H X 12'W RCB PER CALTRANS STD D80
 - PROTECT EXISTING SEWER MANHOLE IN PLACE, CONSTRUCT 6'X8'X0.5' THICK CONCRETE PAD REINFORCED W/ #4 @ 18" O.C., E.W. AROUND RIM PER SECTION E-E ON SHEET 8
 - PROTECT EXISTING POWER POLE AND GUY WIRES IN PLACE
 - CONSTRUCT HEADWALL PER CALTRANS STD D90 AND DIMENSIONS ON SHEET 8
 - CONSTRUCT JUNCTION STRUCTURE NO. 6 PER RCFCWCD STD DWG. NO. JS231
 - CONSTRUCT 24" CLASS IV RCP
 - INSTALL CONCRETE DRAINAGE APRON PER RCFCWCD STD DWG. NO. CH333
 - CONSTRUCT BASIN OUTLET STRUCTURE PER DETAILS ON SHEET 8
 - INSTALL 14' DOUBLE DRIVE GATE PER RCFC
 - CONSTRUCT 12" CUTOFF WALL W/ #4 @ 18" O.C., E.W. 3.5' DEEP ALONG DOWNSTREAM END OF CHANNEL
 - CONSTRUCT 12"-THICK 2'-DEEP CUTOFF WALL BELOW RCB AT CHANNEL TRANSITION
 - CONSTRUCT WIRE FENCE PER RCFCWCD STD DWG. NO. M818



Point #	Elevation	Northing	Easting
10	1494.65	2244777.95	6259784.76
11	1494.65	2244781.51	6259808.49
12	1494.37	2244764.23	6259786.82
13	1494.37	2244767.82	6259810.54
14	1494.09	2244776.16	6259766.84
15	1493.82	2244762.22	6259768.06
16	1494.18	2244751.99	6259650.70
17	1494.82	2244765.80	6259647.82
18	1494.15	2244779.56	6259796.65
19	1493.87	2244765.88	6259798.70

RECD PLAN CHECK OVERSIGHT ENGINEER REGISTRATION NUMBER 35765 DATE SIGNED 3-15-19 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.	ALBERT A. WEBB ASSOCIATES ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA 92506 PH. (951) 686-1070 FAX (951) 788-1256	DESIGNED BY: JCC DRAWN BY: CS DATE DRAWN: JAN 2019 CHECKED BY: JCC	Don't Dig...Until You Call: U.S.A. Toll Free: 1-800-422-4133 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG	BENCHMARK: SEE SHEET 1	REVISIONS	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RECOMMENDED FOR APPROVAL BY: _____ APPROVED BY: _____ DATE: _____	PERRIS VALLEY MDP LATERAL H-11 PLAN & PROFILE STA. 10+00 TO STA. 14+00	PROJECT NO. 4-0-00502 DRAWING NO. 4-1124 SHEET NO. 2 OF 10
	ENGINEER, RCE C67239 13 MAR 2019	CIVIL ENGINEER NO. 067239 STATE OF CALIFORNIA	REF. DESCRIPTION APPR. DATE	DATE: _____	DATE: _____	DATE: _____	DATE: _____	DATE: _____

966-0



- CONSTRUCTION NOTES**
- ⑨ CONSTRUCT 7' H X 12' W RCB PER CALTRANS STD D80
 - ⑩ CONSTRUCT JUNCTION STRUCTURE NO. 1 PER RCFWCWD STD DWG. NO. JS226
 - ⑪ CONSTRUCT MANHOLE NO. 3 PER RCFWCWD STD DWG. NO. MH253
 - ⑫ CONSTRUCT TRANSITION STRUCTURE NO.1 PER RCFWCWD STD DWG. NO. TS301
 - ⑬ INSTALL 90" RCP D-LOAD PER PLAN

JS NO. 1 STA. 16+50.03
 A = 34.1'
 B = 66"
 C = 16.05'
 ELEV. S = 1489.87'
 ELEV. R = 1489.90'

RECID	PLAN CHECK	OVERSIGHT ENGINEER	REGISTRATION NUMBER	DATE SIGNED
		<i>[Signature]</i>	35165	3-15-19

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

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

[Signature]
 ENGINEER, RCE C67239
 DATE: 13 Mar 2019



DESIGNED BY: JCC
 DRAWN BY: CS
 DATE DRAWN: JAN 2019
 CHECKED BY: JCC

Don't Dig...Until You Call:
 U.S.A. Toll Free: 1-800-422-4133
 for the location of buried utility lines.
 Don't disrupt vital services.
 TWO WORKING DAYS BEFORE YOU DIG

BENCHMARK: SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY: _____
 APPROVED BY: _____

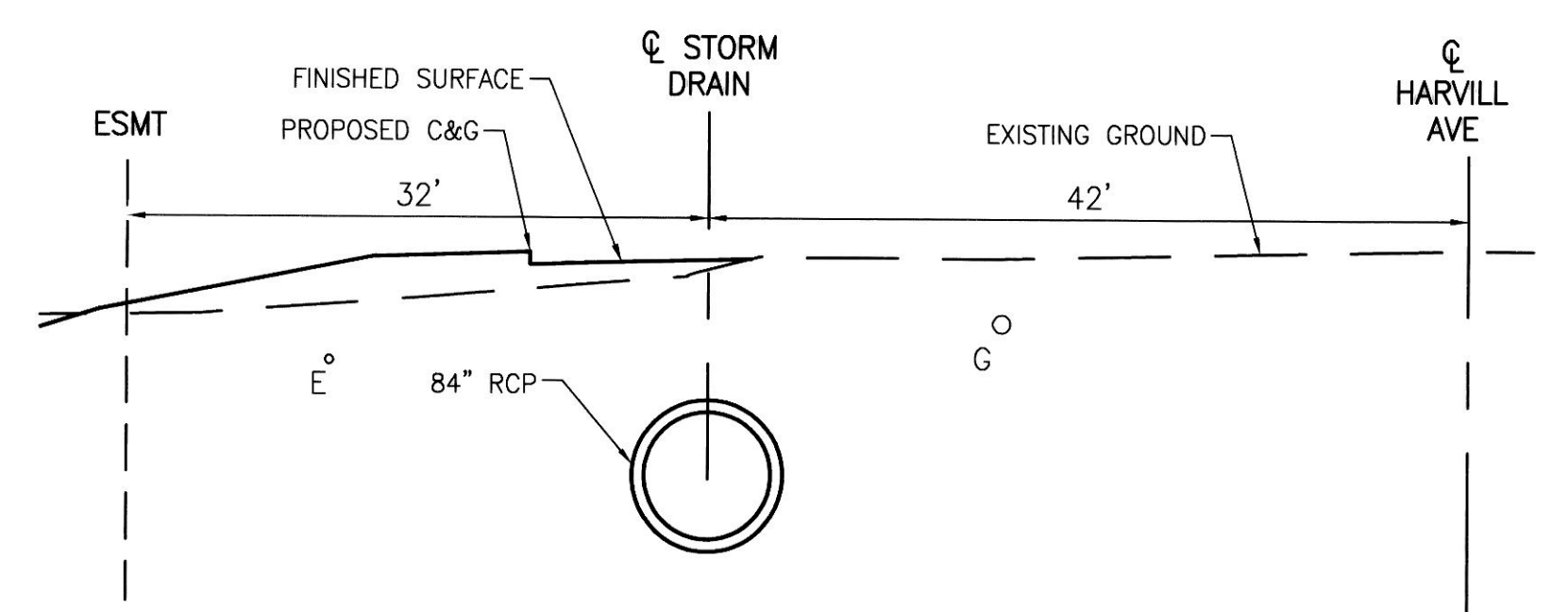
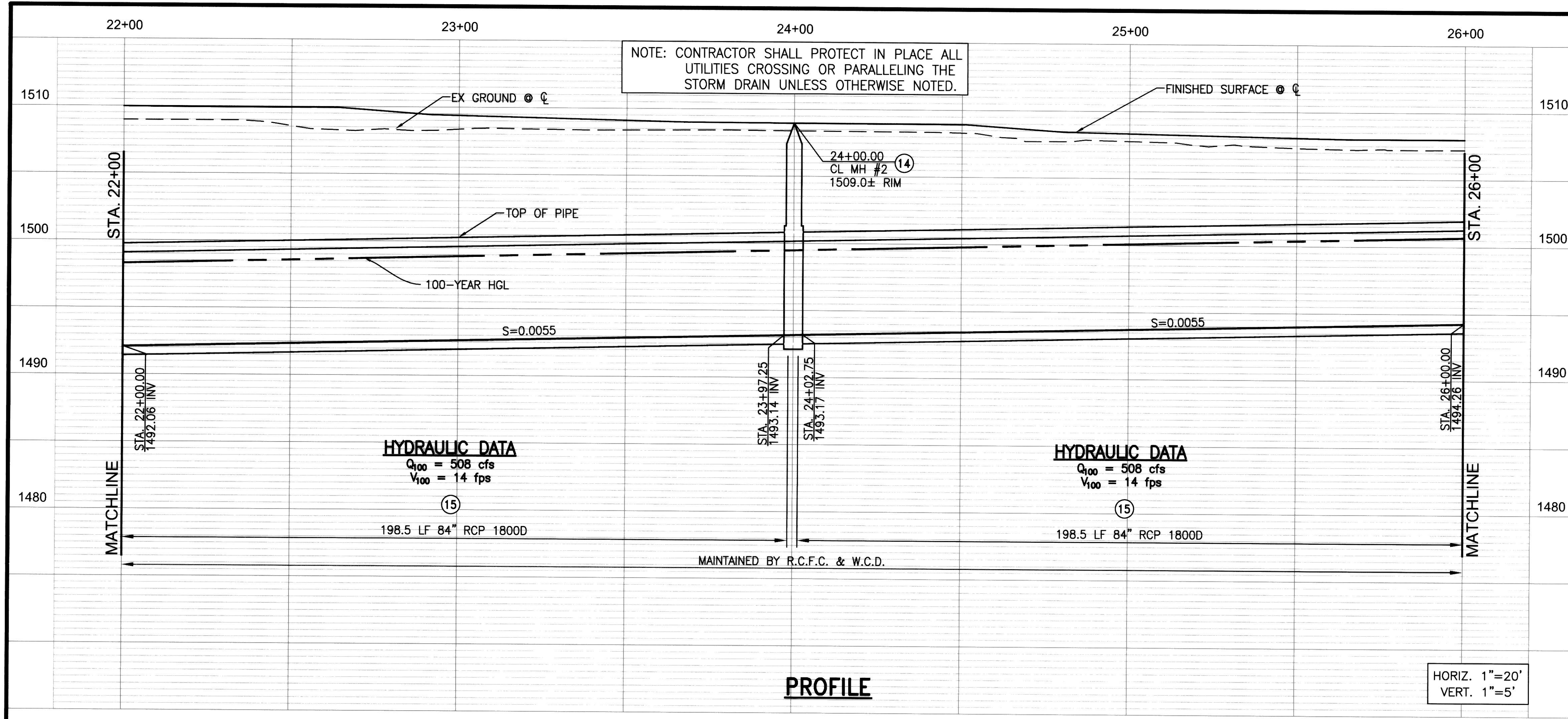
DATE: _____ DATE: _____

PERRIS VALLEY MDP LATERAL H-11

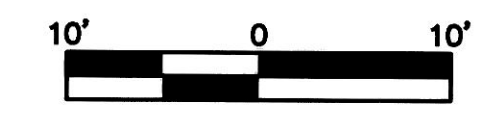
PLAN & PROFILE
 STA. 14+00 TO STA. 18+00

PROJECT NO. 4-0-00502
 DRAWING NO. 4-1124
 SHEET NO. 3 OF 10

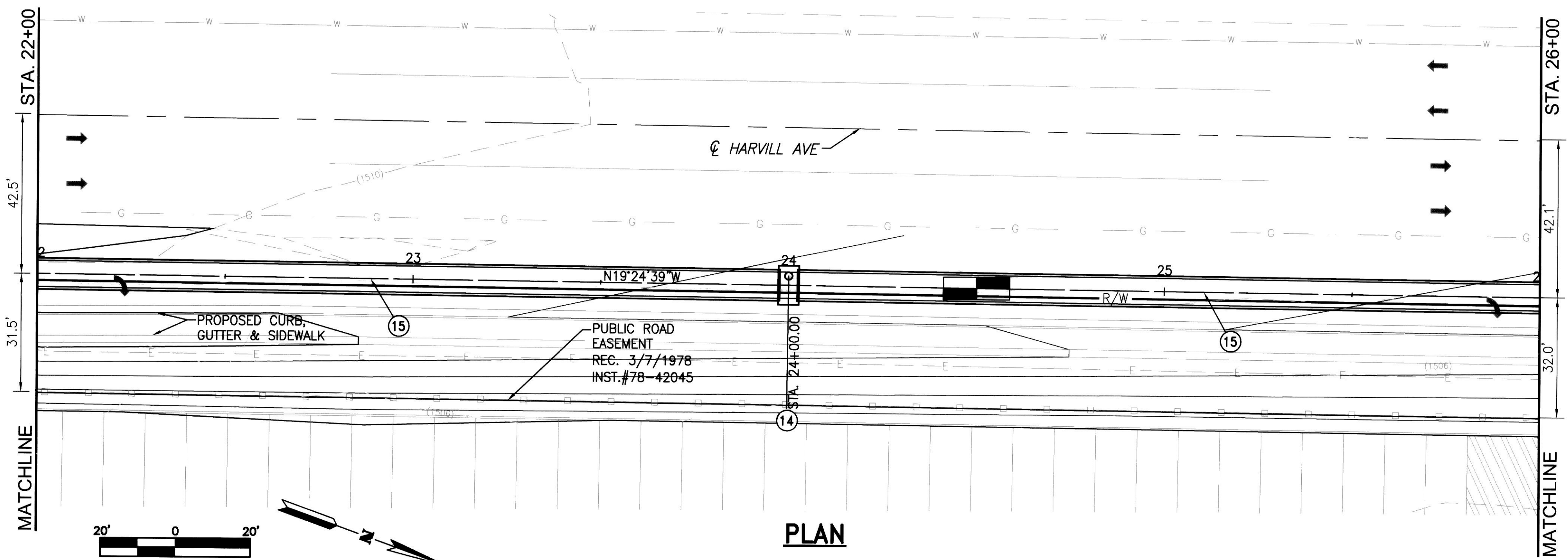
966-0



SECTION AT STA. 24+50
 TYPICAL FROM STA 19+02 TO STA 28+40



HORIZ. 1"=20'
 VERT. 1"=5'

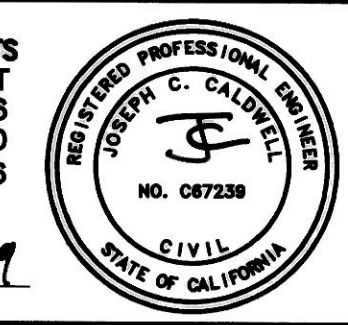


CONSTRUCTION NOTES

- (14) INSTALL MANHOLE NO. 2 PER RCFCWCD STD DWG. NO. MH252
- (15) INSTALL 84" RCP D-LOAD PER PLAN

RECORD PLAN CHECK OVERSIGHT ENGINEER REGISTRATION NUMBER DATE SIGNED
 3-15-19
 35765
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

ALBERT A. WEBB ASSOCIATES
 ENGINEERING CONSULTANTS
 3788 McCRAY STREET
 RIVERSIDE CA. 92506
 PH. (951) 886-1070
 FAX (951) 788-1256



DESIGNED BY: JCC
 DRAWN BY: CS
 DATE DRAWN: JAN 2019
 CHECKED BY: JCC

Don't Dig...Until You Call!
 U.S.A. Toll Free: 1-800-422-4133
 for the location of buried utility lines.
 Don't disrupt vital services.
 TWO WORKING DAYS BEFORE YOU DIG

BENCHMARK: SEE SHEET 1

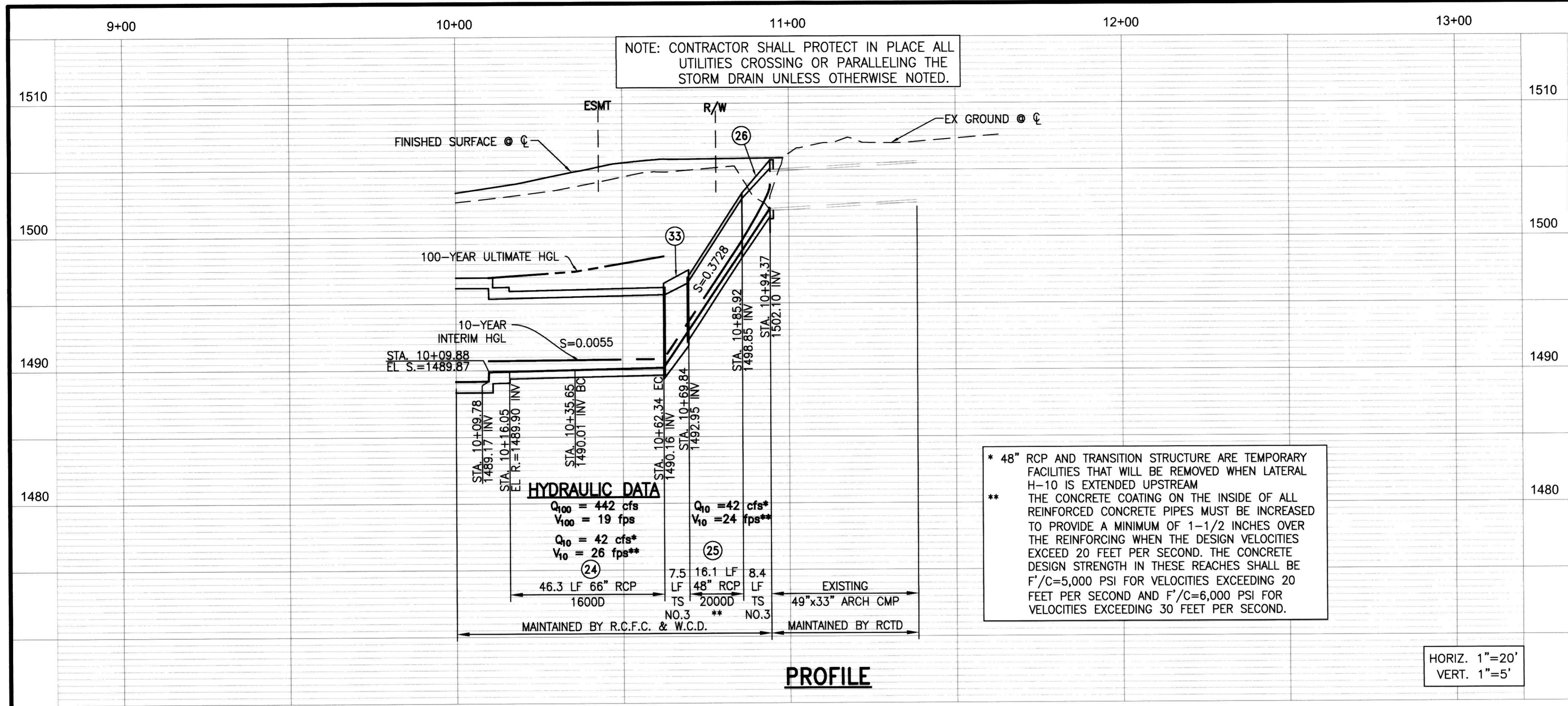
REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
 RECOMMENDED FOR APPROVAL BY: _____
 APPROVED BY: _____
 DATE: _____

1P180002 PP 26220
 PERRIS VALLEY MDP LATERAL H-11
 PLAN & PROFILE
 STA. 22+00 TO STA. 26+00

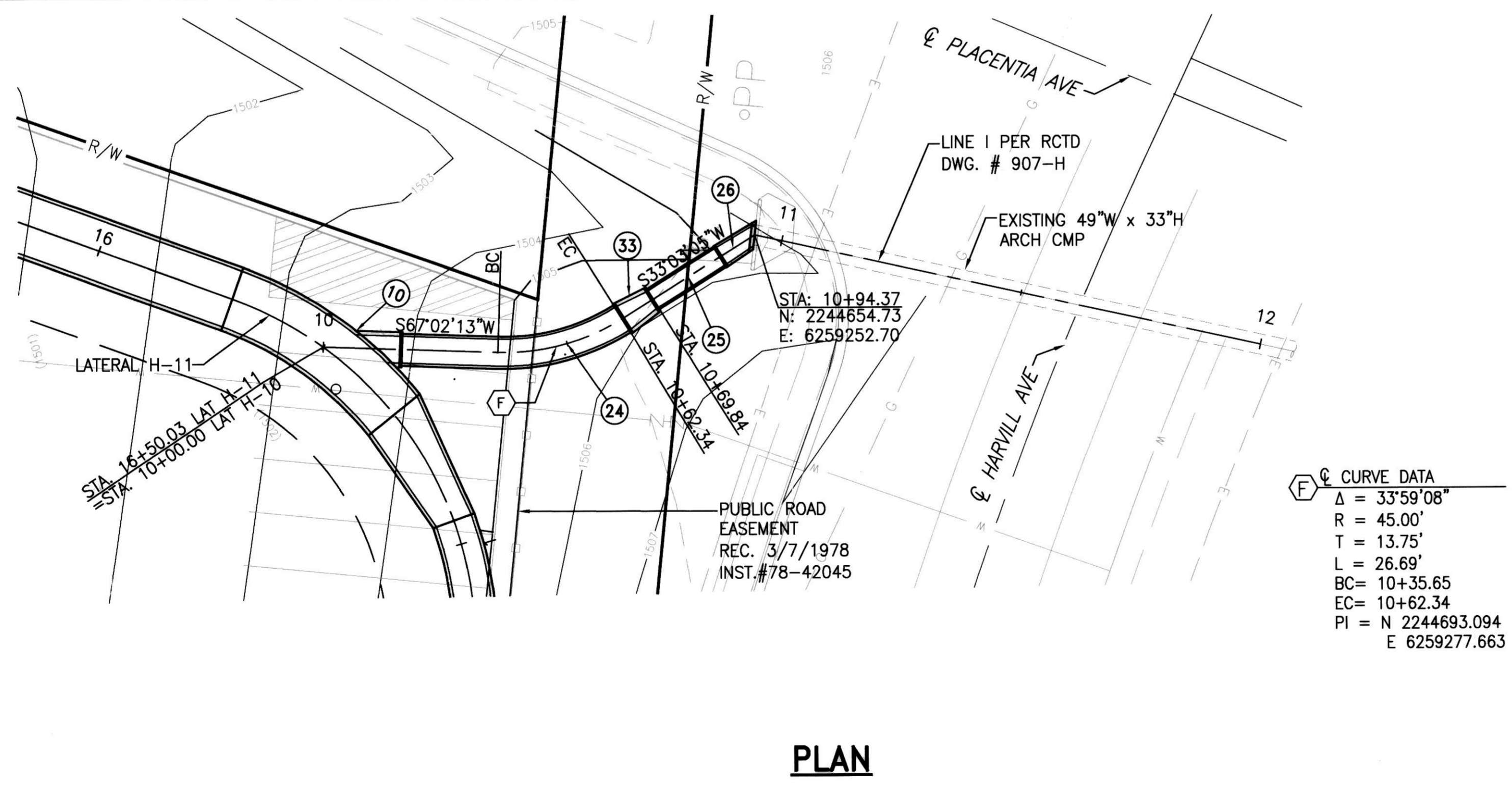
PROJECT NO. 4-0-00502
 DRAWING NO. 4-1124
 SHEET NO. 5 OF 10

966-0



* 48" RCP AND TRANSITION STRUCTURE ARE TEMPORARY FACILITIES THAT WILL BE REMOVED WHEN LATERAL H-10 IS EXTENDED UPSTREAM

** THE CONCRETE COATING ON THE INSIDE OF ALL REINFORCED CONCRETE PIPES MUST BE INCREASED TO PROVIDE A MINIMUM OF 1-1/2 INCHES OVER THE REINFORCING WHEN THE DESIGN VELOCITIES EXCEED 20 FEET PER SECOND. THE CONCRETE DESIGN STRENGTH IN THESE REACHES SHALL BE $F'/C=5,000$ PSI FOR VELOCITIES EXCEEDING 20 FEET PER SECOND AND $F'/C=6,000$ PSI FOR VELOCITIES EXCEEDING 30 FEET PER SECOND.

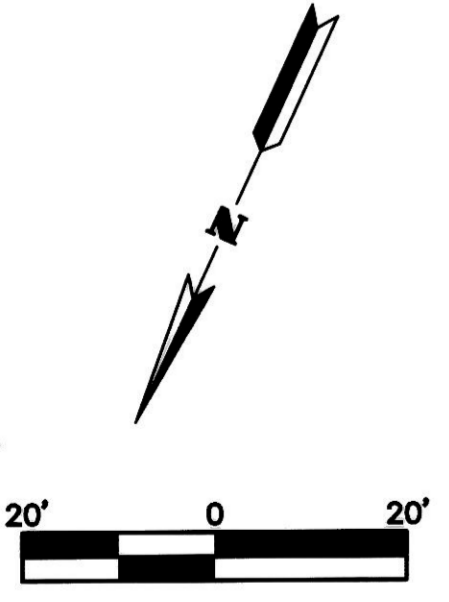


CONSTRUCTION NOTES

- (10) CONSTRUCT JUNCTION STRUCTURE NO. 1 PER RCFCWCD STD DWG. NO. JS226
- (24) INSTALL 66" RCP D-LOAD PER PLAN
- (25) INSTALL 48" RCP D-LOAD PER PLAN
- (26) DEMOLISH EXISTING HEADWALL. CONSTRUCT TRANSITION STRUCTURE NO. 3 PER RCFCWCD STD DWG. NO. TS303 48" RCP TO 49" ARCH CMP.
- (33) CONSTRUCT TRANSITION STRUCTURE NO.3 PER RCFCWCD STD DWG. NO. TS303

RECID	PLAN CHECK	OVERSIGHT ENGINEER	REGISTRATION NUMBER	DATE SIGNED
			35165	3-15-19

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.



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

REGISTERED PROFESSIONAL ENGINEER
 JOSEPH C. CALDWELL
 NO. C67239
 CIVIL
 STATE OF CALIFORNIA

DATE: 13 MAR 2019
 ENGINEER, RCE C67239

DESIGNED BY: JCC	Don't Dig...Until You Call: U.S.A. Toll Free: 1-800-422-4133	BENCHMARK: SEE SHEET 1
DRAWN BY: CS	for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG	
DATE DRAWN: JAN 2019		
CHECKED BY: JCC		

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DATE:	DATE:

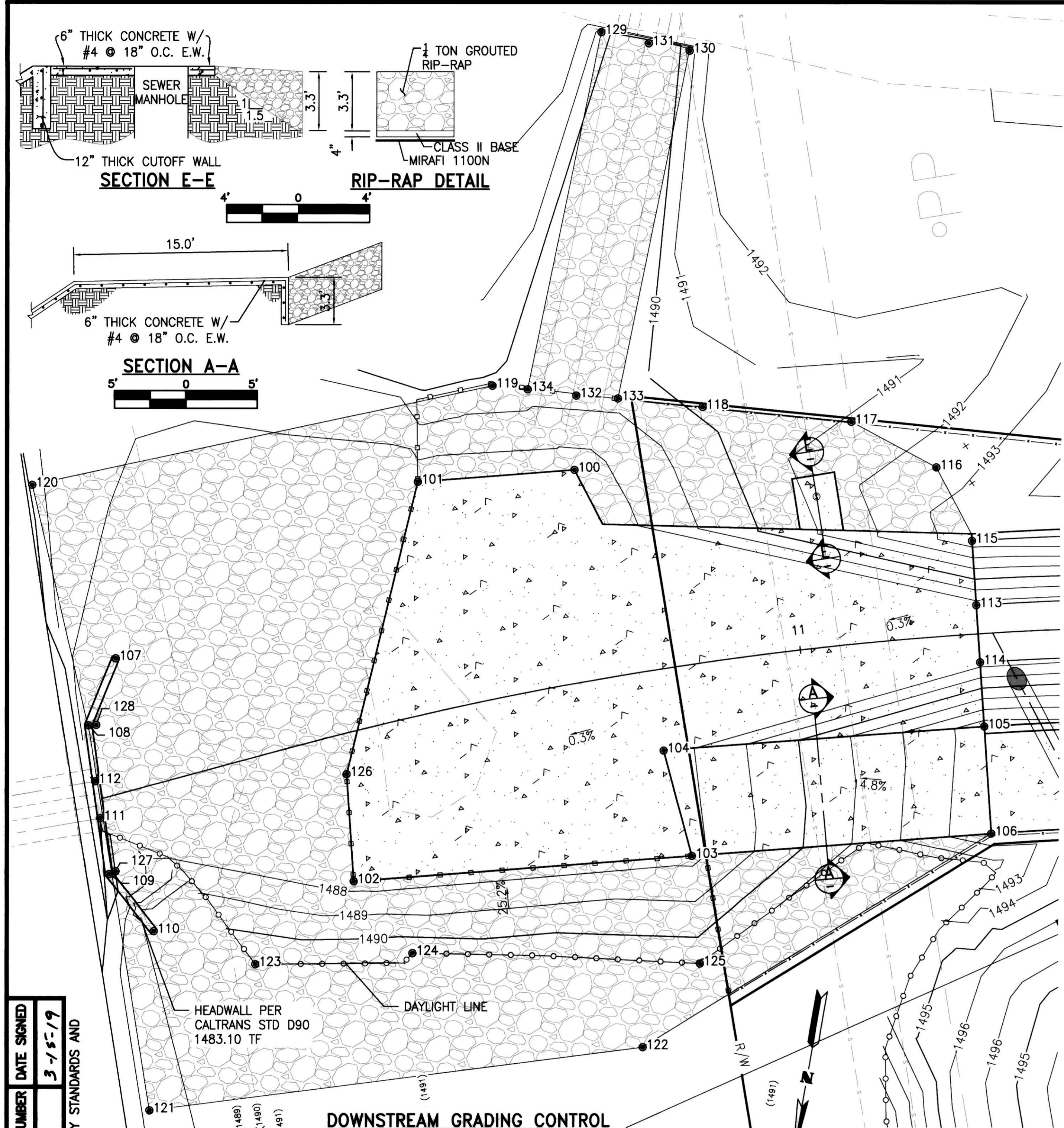
1P180002 PP 26220

PERRIS VALLEY MDP
 LATERAL H-10 CONNECTION

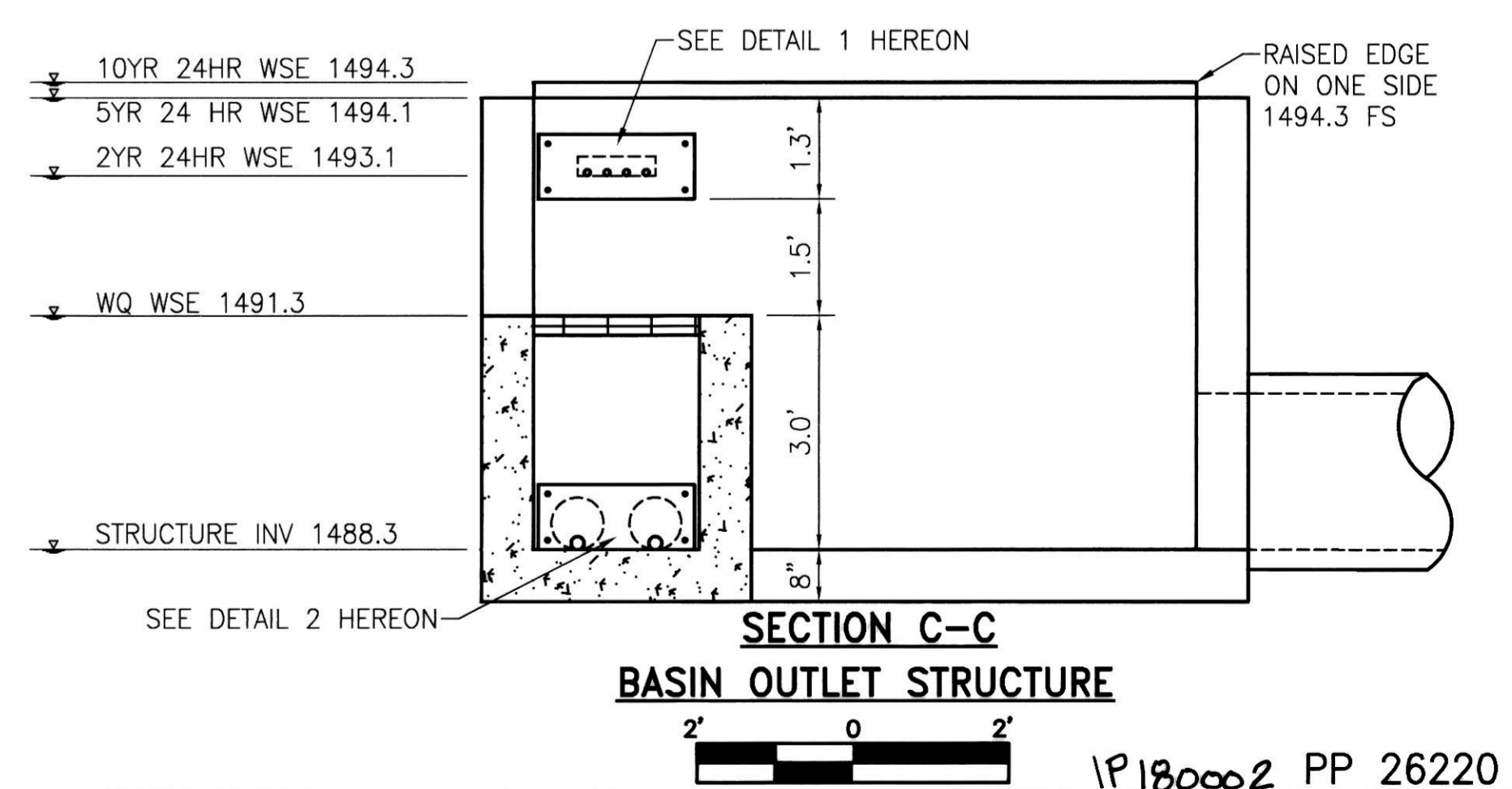
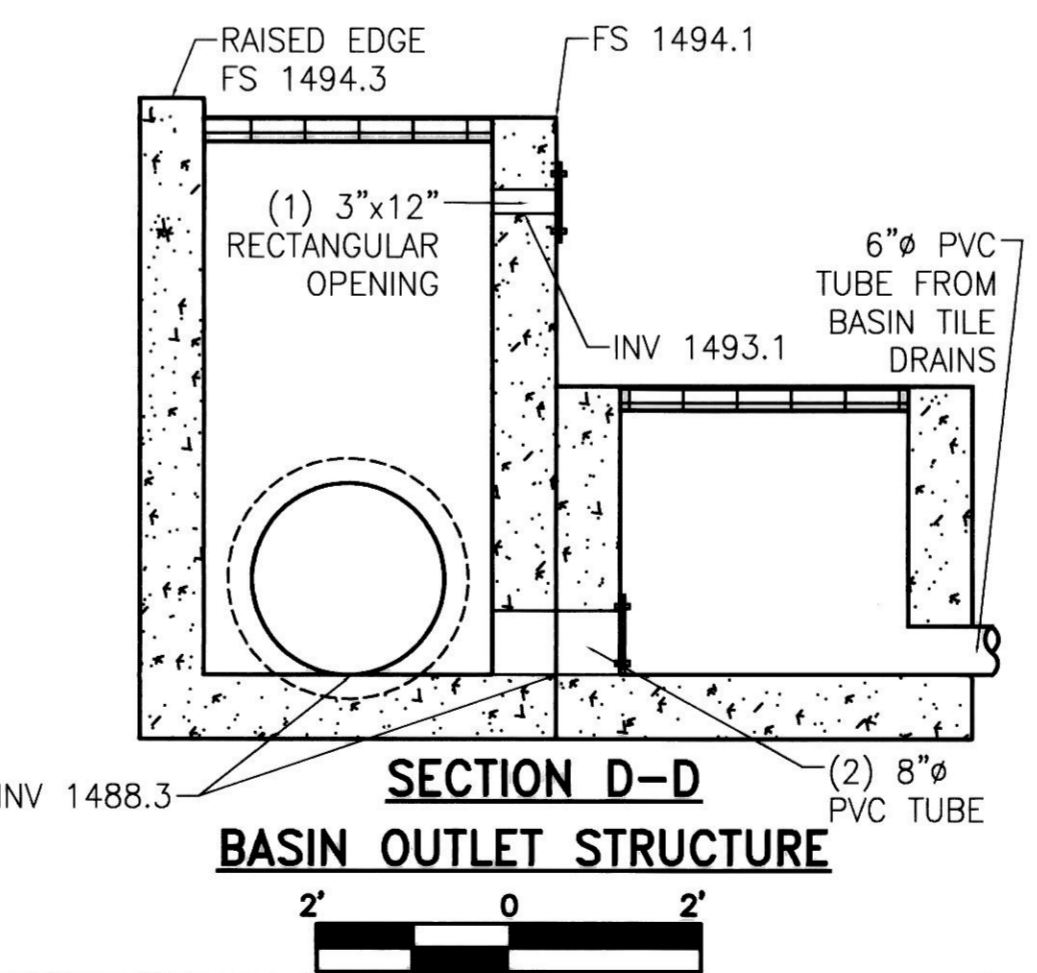
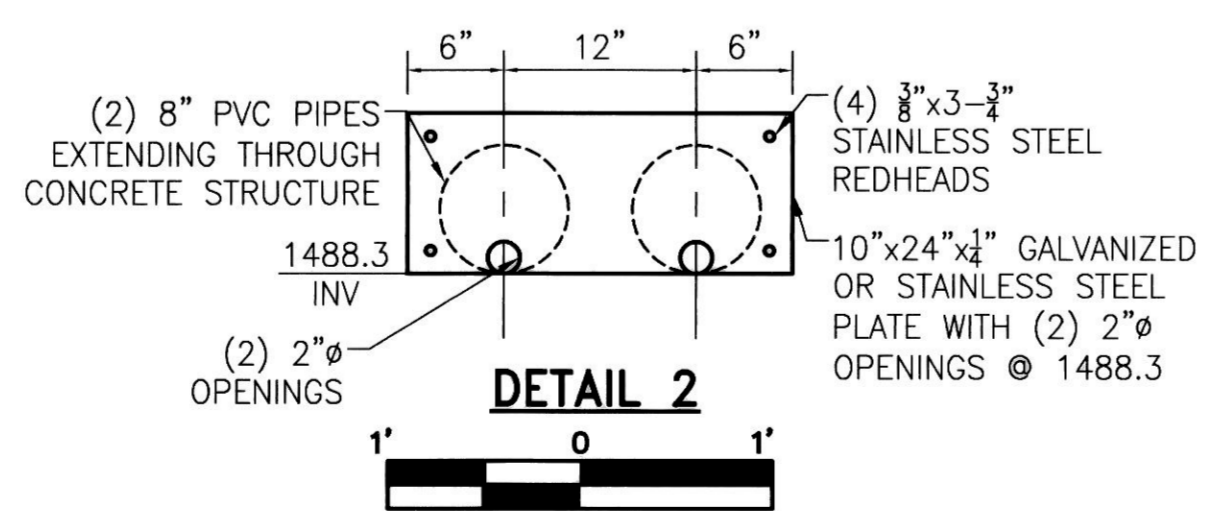
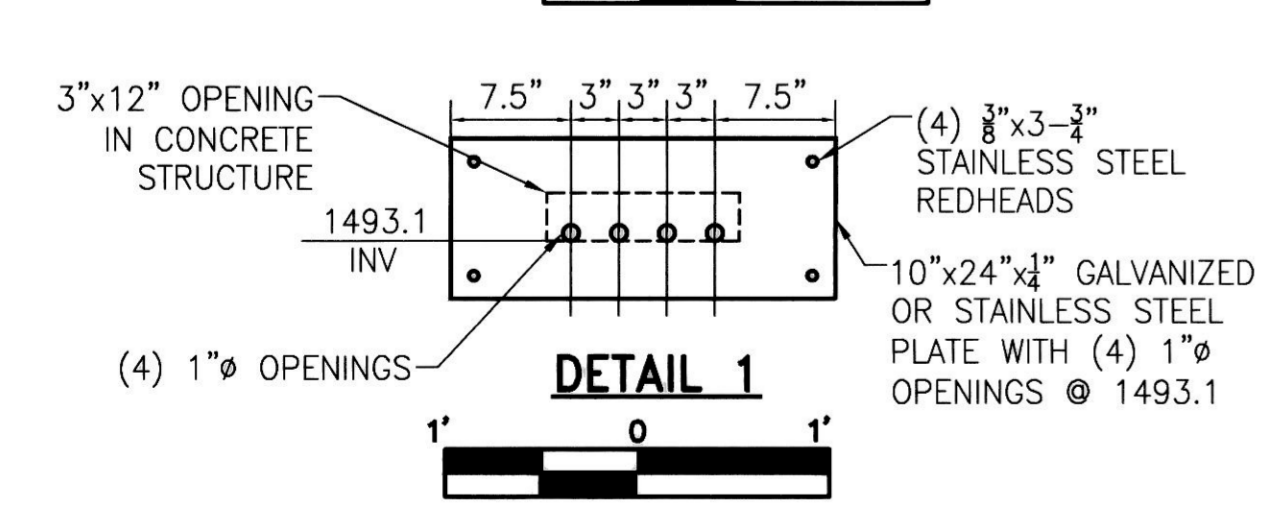
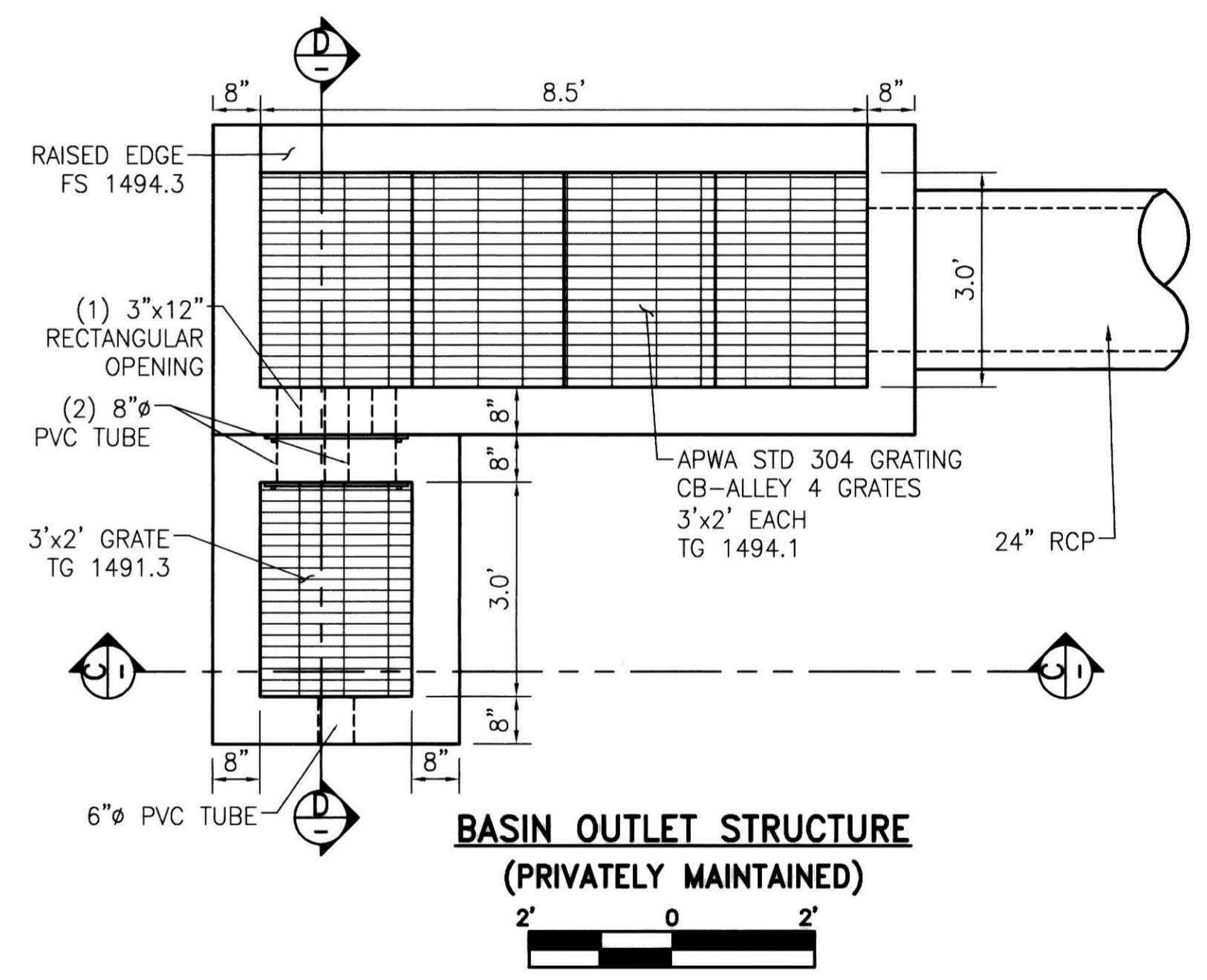
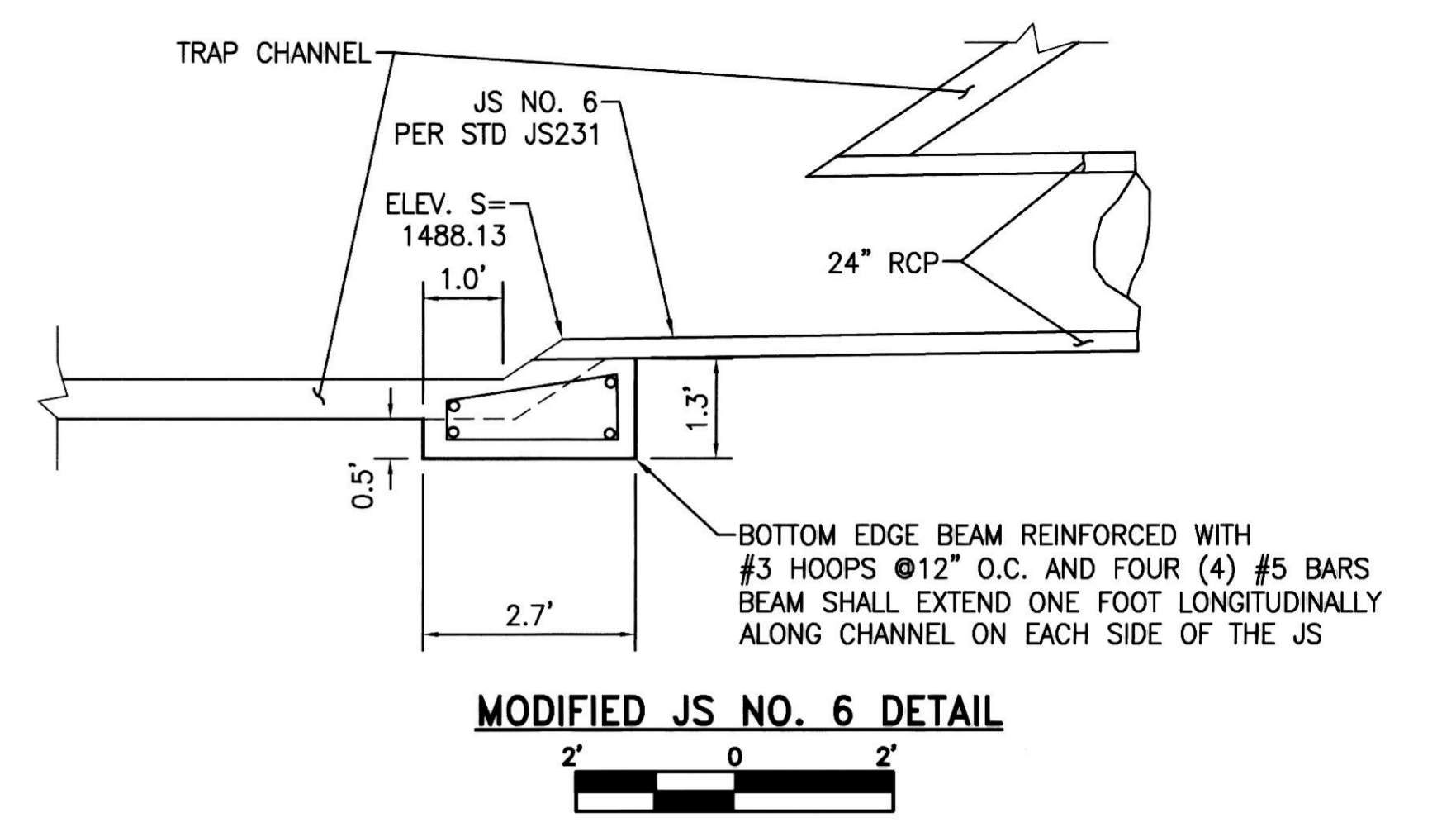
PLAN & PROFILE
 STA. 10+00 TO STA. 10+94.37

PROJECT NO. 4-0-00499
DRAWING NO. 4-1124
SHEET NO. 7 OF 10

966-0

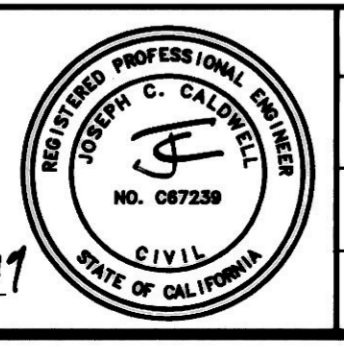


COORDINATE TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	2244748.18	6259904.97	1487.44	SW CORNER TURN-AROUND
101	2244753.63	6259926.29	1487.37	SE CORNER TURN AROUND
102	2244810.17	6259925.39	1487.57	NE CORNER TURN-AROUND
103	2244798.45	6259879.38	1487.71	NW CORNER TURN-AROUND
104	2244784.64	6259885.85	1487.41	BOT OF RAMP
105	2244773.49	6259842.25	1493.57	TOP OF RAMP
106	2244788.06	6259838.67	1493.87	TOP OF RAMP
107	2244785.26	6259963.65	1489.00	SOUTHERLY TOW
108	2244795.15	6259965.76	1493.25	TOP OF WALL
109	2244815.13	6259959.27	1493.25	TOP OF WALL
110	2244821.91	6259951.73	1489.00	NORTHERLY TOW
111	2244807.68	6259961.86	1486.86	INV EXIST 42" CMP CULVERT
112	2244802.69	6259963.47	1487.10	INV EXIST 42" CMP CULVERT
113	2244756.98	6259846.31	1487.57	CHANNEL INV
114	2244764.75	6259844.40	1487.57	CHANNEL INV
115	2244748.25	6259848.46	1493.57	SOUTHERLY TOP OF CHANNEL
116	2244738.99	6259855.16	1492.49	EDGE OF RIP-RAP
117	2244734.80	6259867.99	1491.11	EDGE OF RIP-RAP
118	2244736.36	6259888.84	1490.21	EDGE OF RIP-RAP
119	2244738.56	6259918.32	1489.68	EDGE OF RIP-RAP
120	2244763.46	6259979.35	1489.81	EDGE OF RIP-RAP
121	2244846.69	6259947.96	1488.53	EDGE OF RIP-RAP
122	2244825.98	6259881.51	1490.93	EDGE OF RIP-RAP
123	2244824.00	6259936.90	1491.00	DAYLIGHT
124	2244818.64	6259915.52	1490.71	DAYLIGHT
125	2244813.07	6259875.65	1490.73	DAYLIGHT
126	2244795.61	6259928.97	1487.28	EDGE TURN-AROUND
127	2244814.60	6259958.46	1487.30	FS BOT OF WALL
128	2244794.91	6259964.67	1487.33	FS BOT OF WALL
129	2244687.22	6259911.96	1490.67	EDGE OF RIP-RAP
130	2244687.62	6259899.32	1490.64	EDGE OF RIP-RAP
131	2244687.60	6259905.15	1490.00	FLOW LINE RIP-RAP
132	2244737.86	6259906.54	1489.37	FLOW LINE RIP-RAP
133	2244737.25	6259900.73	1489.38	EDGE OF RIP-RAP
134	2244738.19	6259913.38	1489.43	EDGE OF RIP-RAP



RECID PLAN CHECK OVERSIGHT ENGINEER REGISTRATION NUMBER DATE SIGNED
 3-15-19
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

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



DESIGNED BY: JCC
 DRAWN BY: CS
 DATE DRAWN: OCT 2018
 CHECKED BY: JCC

Don't Dig...Until You Call:
 U.S.A. Toll Free:
 1-800-422-4133
 for the location of buried utility lines.
 Don't disrupt vital services.
 TWO WORKING DAYS BEFORE YOU DIG

BENCHMARK:
 SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

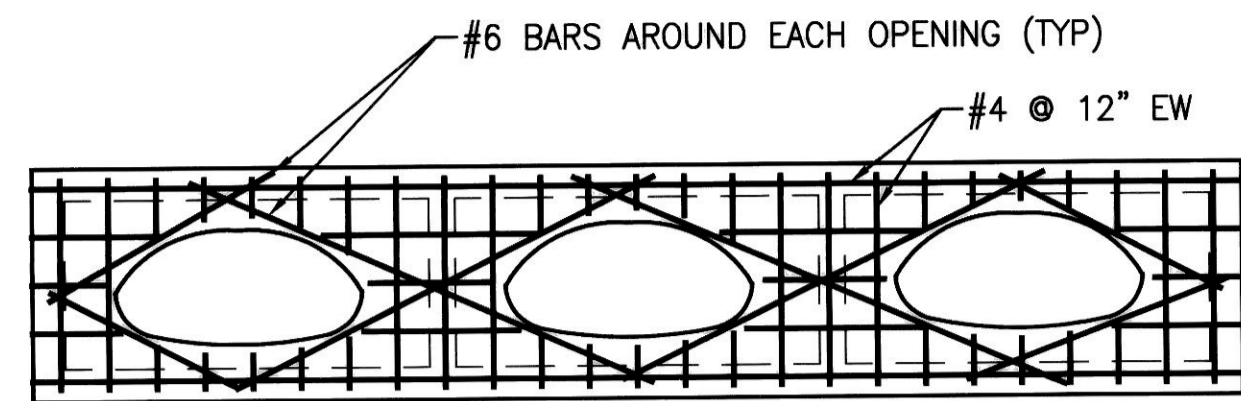
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
 RECOMMENDED FOR APPROVAL BY: _____
 APPROVED BY: _____
 DATE: _____

PERRIS VALLEY MDP LATERAL H-11
 DOWNSTREAM DETAILS

PROJECT NO. 4-0-00502
 DRAWING NO. 4-1124
 SHEET NO. 8 OF 10

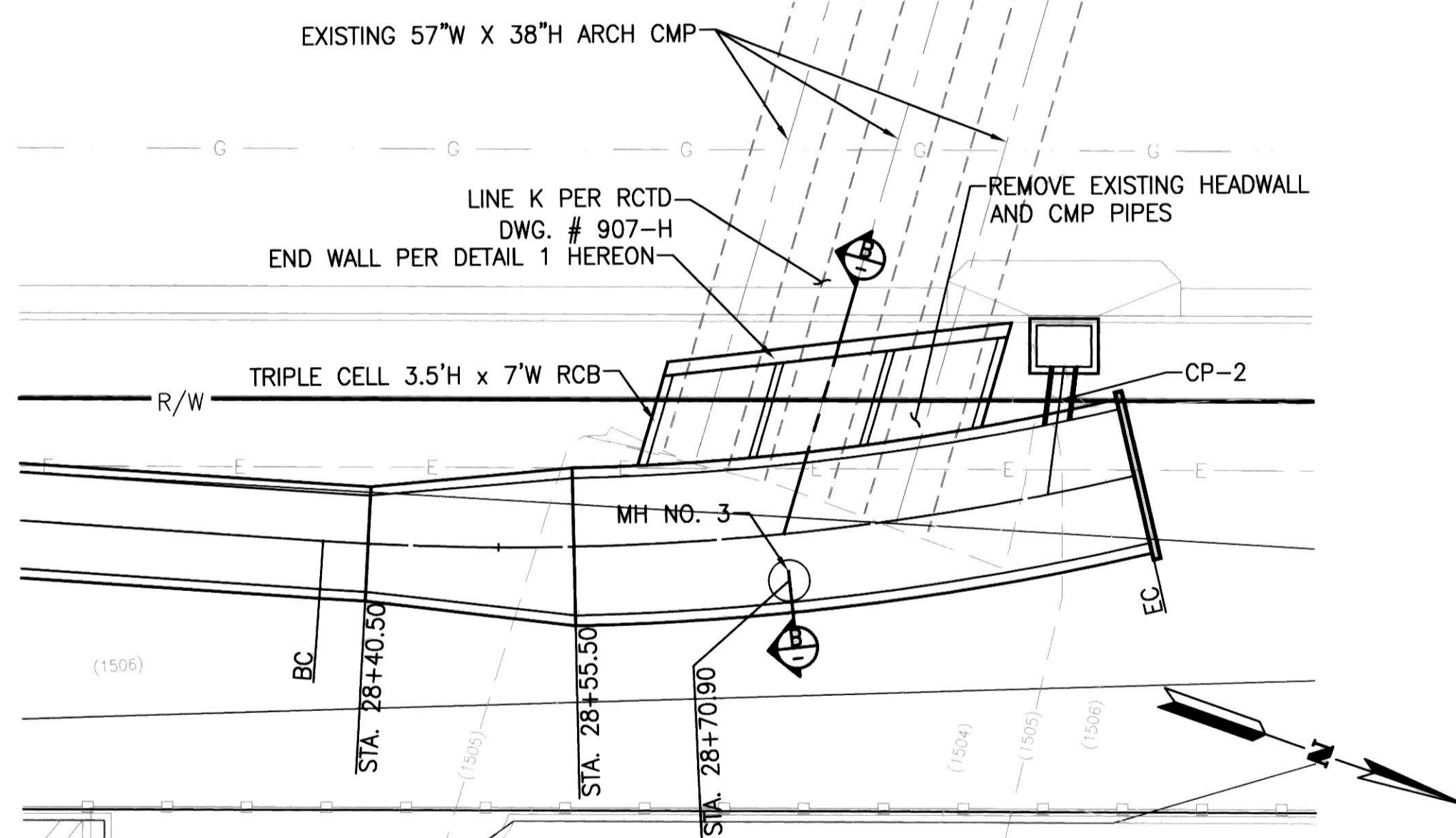
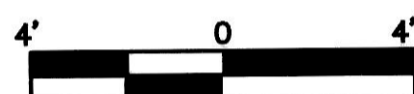
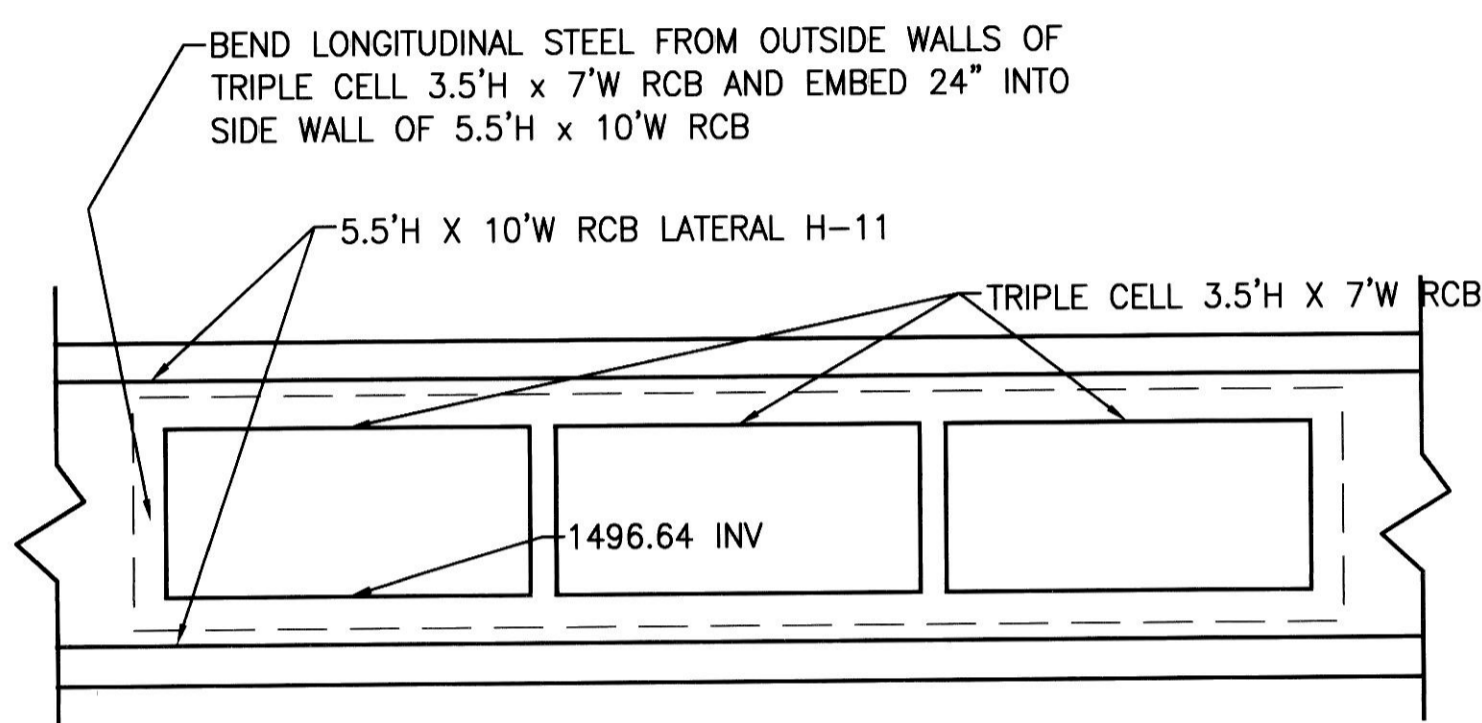
966-0

CA 2018 (18-0169) DRAWINGS PLAN SHEETS 18-0169 SD SHEET 8.DWG 3/13/2019 1:28:35 PM

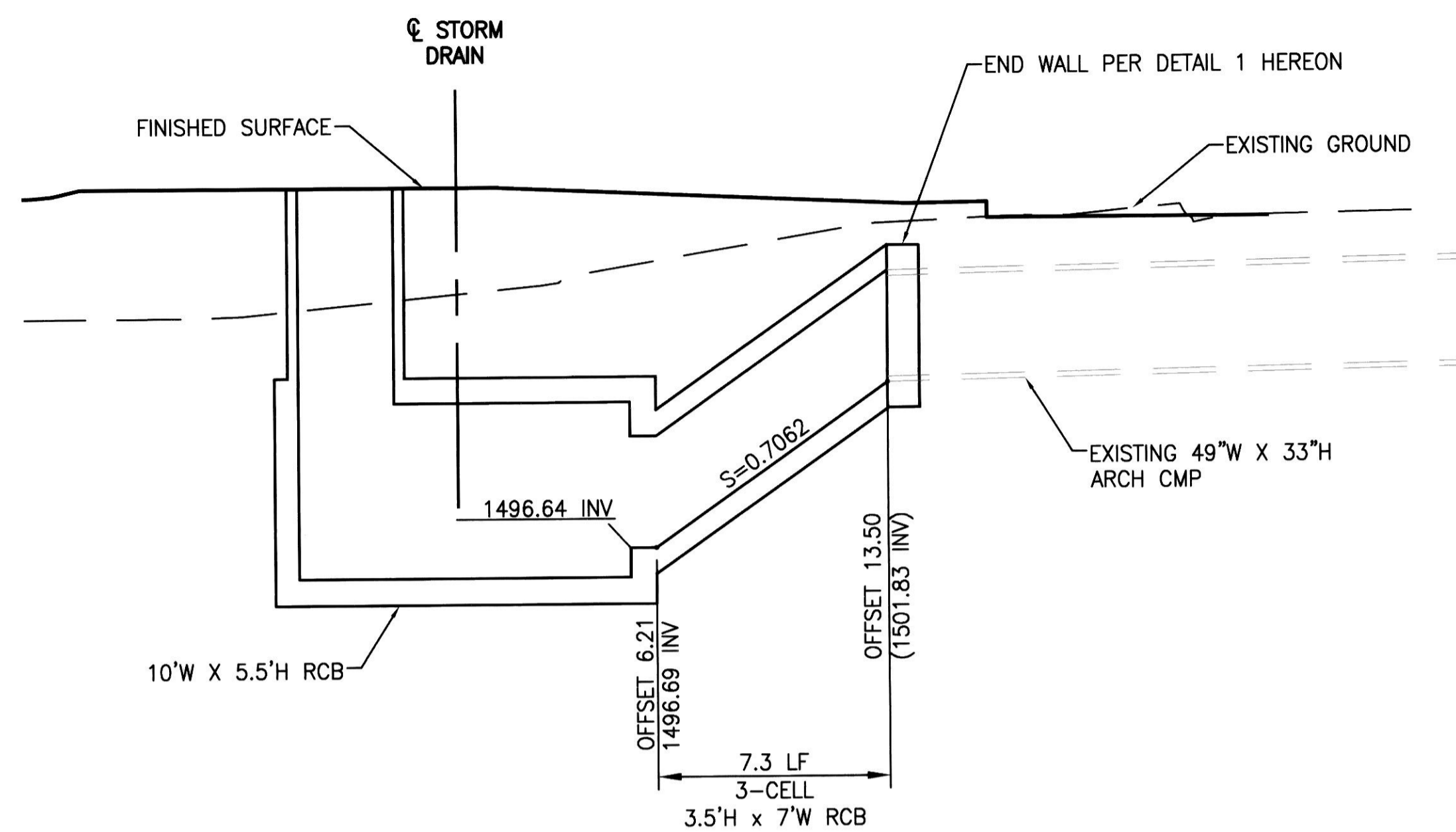


EXTEND AND BEND LONGITUDINAL BARS FROM THREE CELL RCB 18" INTO END WALL

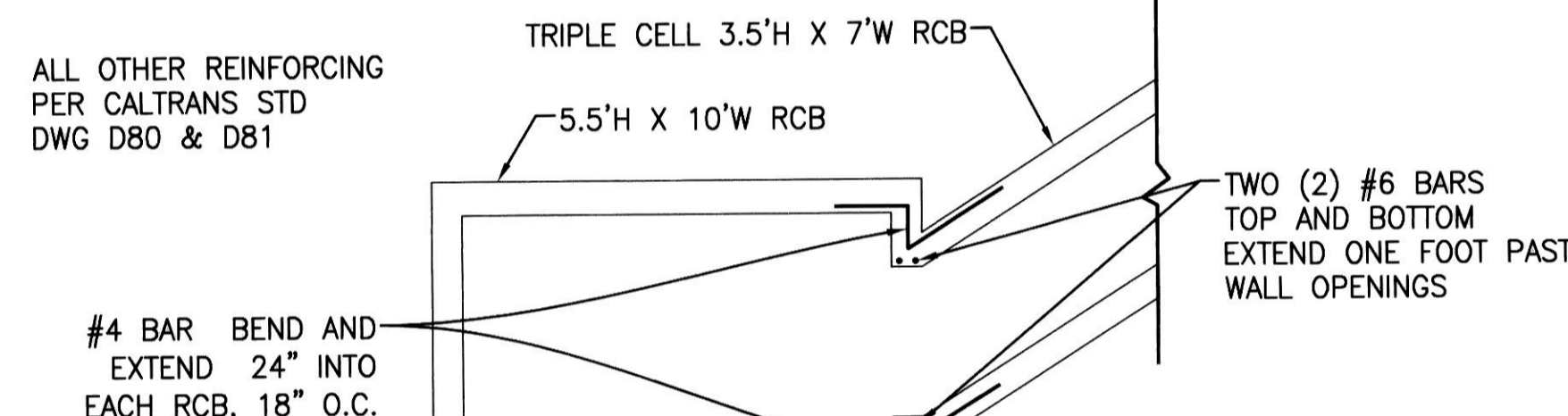
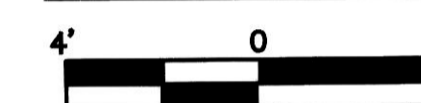
**DETAIL 1
END WALL**



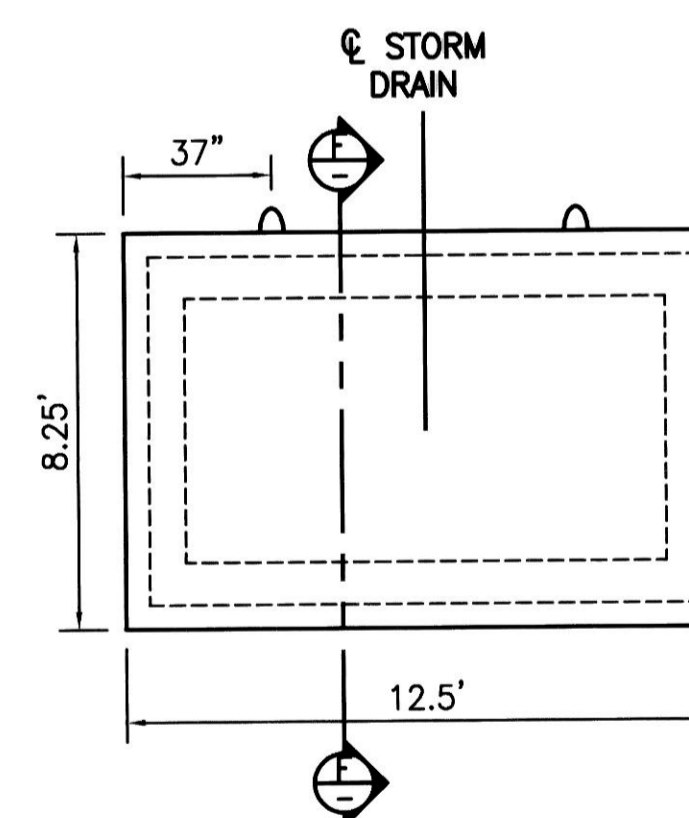
"LINE K" TO LATERAL H-11 JUNCTION STRUCTURE



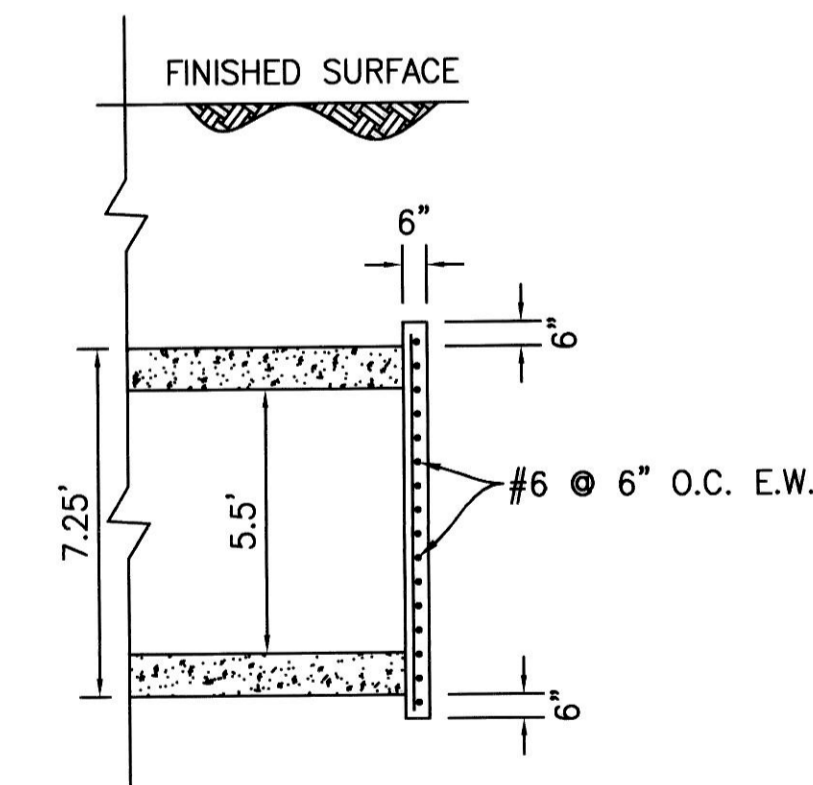
SECTION B-B



**BOX TO BOX
CONNECTION DETAIL**



MODIFIED BULKHEAD DETAIL



RECID	PLAN CHECK OVERSIGHT ENGINEER	REGISTRATION NUMBER	DATE SIGNED
	<i>[Signature]</i>	35165	3-15-19
APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.			

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRA Y STREET
RIVERSIDE CA, 92508
PH. (951) 686-1070
FAX (951) 788-1256

[Signature]
ENGINEER, RCE C67239

13 MAR 2019
DATE:



DESIGNED BY: JCC
DRAWN BY: CS
DATE DRAWN: JAN 2019
CHECKED BY: JCC

Don't Dig...Until You Call:
U.S.A. Toll Free: 1-800-422-4133
for the location of buried utility lines.
Don't disrupt vital services.
TWO WORKING DAYS BEFORE YOU DIG

BENCHMARK: SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DATE:	DATE:

PERRIS VALLEY MDP
LATERAL H-11
UPSTREAM DETAILS

PROJECT NO. 4-0-00502
DRAWING NO. 4-1124
SHEET NO. 9 OF 10

966-0

DATA	DETAIL SCHEDULE			
	13+30 TO 13+40		13+40 TO 13+50	
STATION TO STATION	13+30 TO 13+40		13+40 TO 13+50	
X	4.67	5.33	5.33	6.00
Y	11.81	9.47	9.47	6.00
HEIGHT (H)	7.14	8.28	8.28	9.42
WALLS T ₁	0'-10"		0'-10"	
WALLS T ₂	0'-10"		0'-10"	
BOTTOM SLAB T ₃	0'-10"		0'-10"	
A BARS	#5 @ 8"		#5 @ 8"	
HORIZ. LENGTH	3.50	3.50	3.50	3.50
SLOPE LENGTH	10.69	9.72	9.72	9.84
B BARS	#6 @ 8"		#6 @ 8"	
HORIZ. LENGTH	6.74	7.40	7.40	8.07
SLOPE LENGTH	3.96	3.13	3.13	2.80
C BARS	#5 @ 8"		#5 @ 8"	
SLOPE LENGTH	10.69	9.72	9.72	9.84
D BARS	#5 @ 8"		#5 @ 8"	
HORIZ. LENGTH	6.51	7.17	7.17	7.84
CONCRETE C _v /L _f	0.9	0.9	0.9	1.0
STEEL L _b /L _f	174	169	169	175

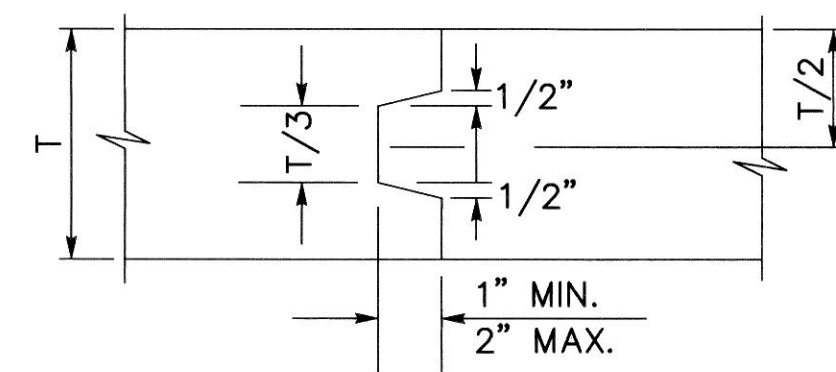
SPLICES			
BAR	LENGTH	SEC.	REMARKS
B	33.75"	L2 & L3	
D	28.20"	L2 & L3	

DESIGN DATA

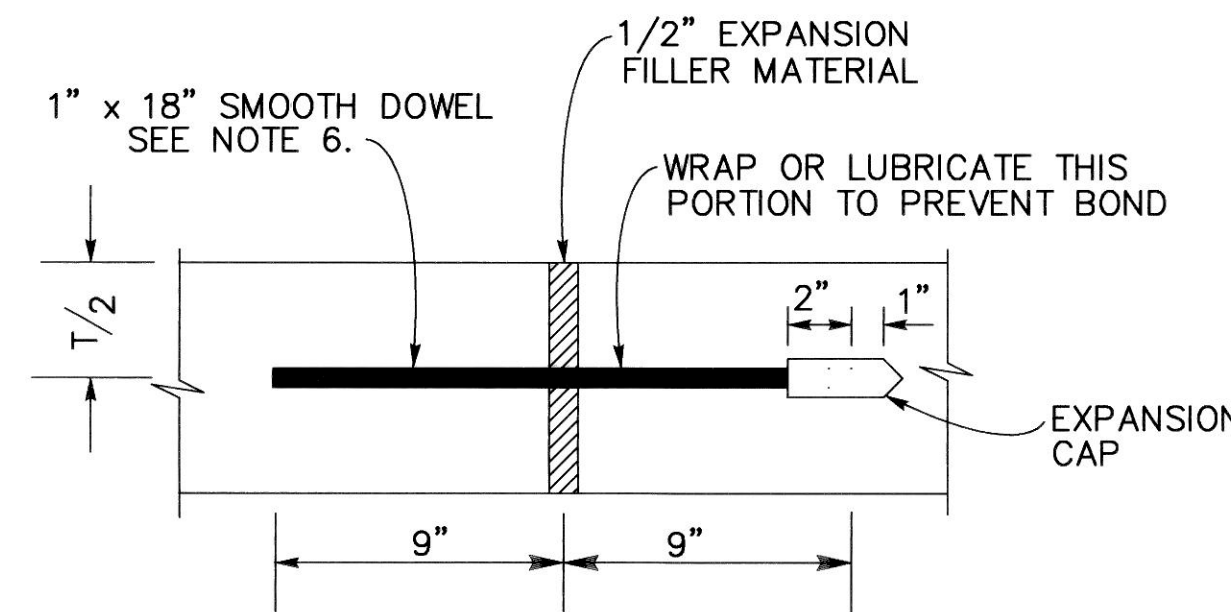
LIVE LOAD = 16,000 LBS (TRUCK AXLE)
SOIL DENSITY = 120 PCF

ALLOWABLE STRESSES:

$f'_c=4,000$ PSI
 $f_c=1,800$ PSI
 $f_y=60,000$ PSI
 $f_s=24,000$ PSI



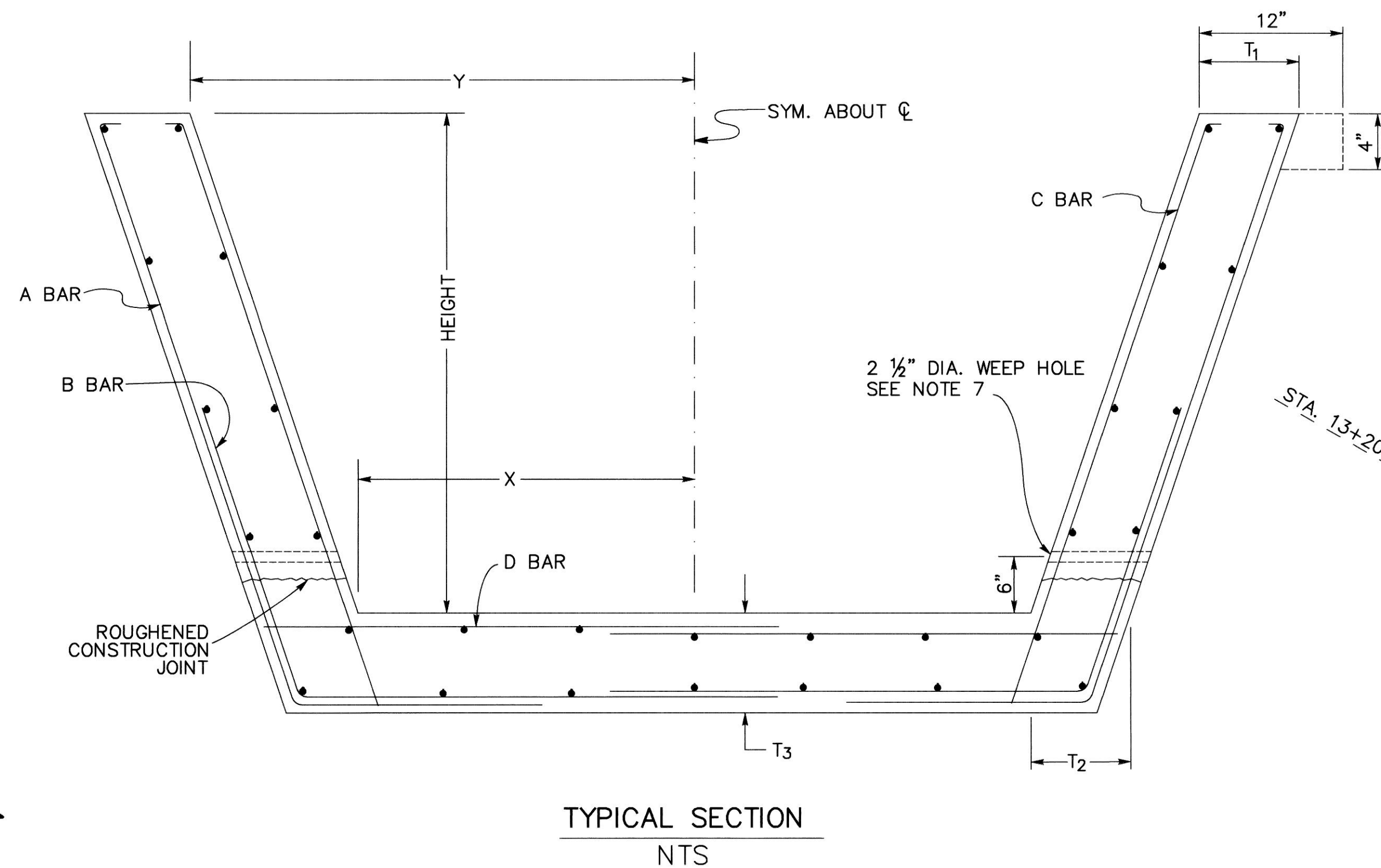
TRANSVERSE CONSTRUCTION JOINT
DETAIL A



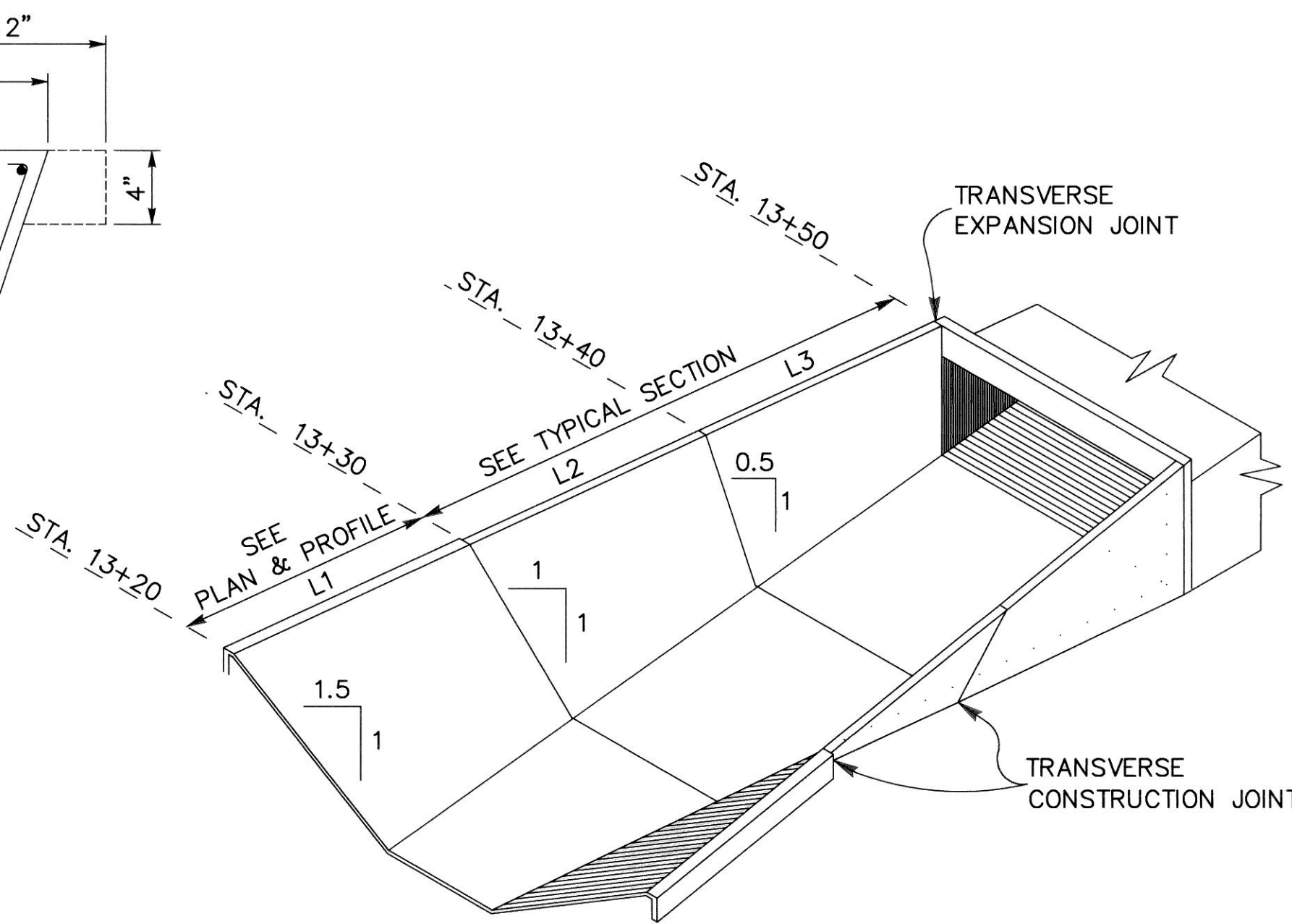
TRANSVERSE EXPANSION JOINT
DETAIL B

NOTES

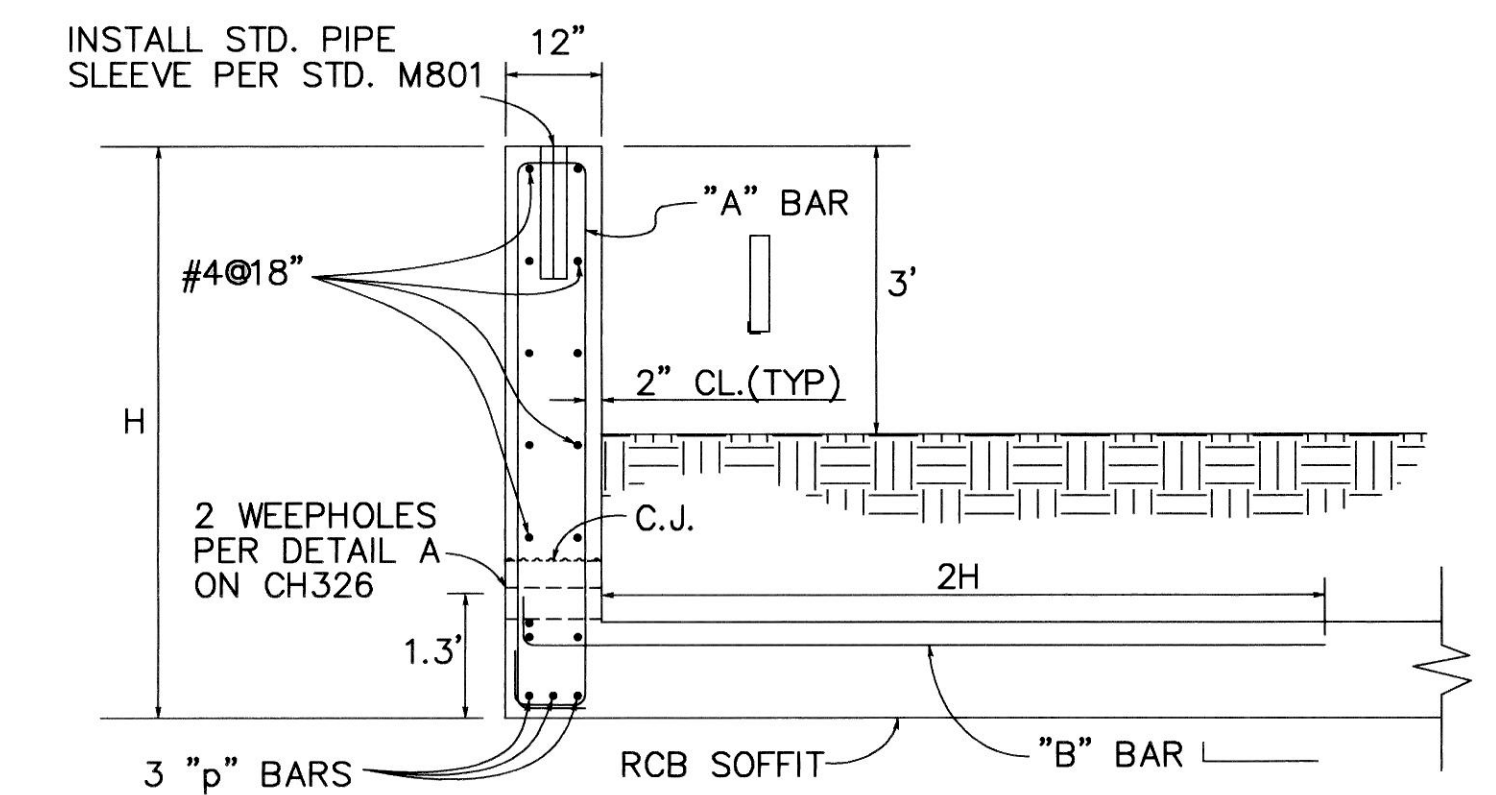
- STRUCTURAL CONCRETE SHALL BE CLASS "A".
- ALL LONGITUDINAL BARS SHALL BE #4 @ 18 INCHES. PLACE BARS IN BOTTOM SLAB SYMMETRICALLY ABOUT CENTERLINE. PLACE BARS IN WALLS STARTING AT TOP WITH 2 INCHES CLEAR COVER.
- CLEAR COVER FOR STEEL SHALL BE 2 INCHES EACH FACE FOR WALLS AND 3 INCHES EACH FACE FOR BOTTOM SLAB.
- STEEL IS DIMENSIONED TO BACK OF BAR BEND.
- FOR CONSTRUCTION ON CURVES, STRAIGHT TRANSVERSE BARS IN THE SLAB SHALL BE ALIGNED RADIALY WITH SPACING MEASURED AT WALLS. FOR L-BARS IN WALLS, SPACING SHALL BE MEASURED BETWEEN VERTICAL LEGS OF BARS.
- ALL TRANSVERSE CONSTRUCTION JOINTS SHALL BE IN A VERTICAL PLANE NORMAL TO THE CENTERLINE. CONTINUOUS KEYWAYS SHALL BE CONSTRUCTED AS SHOWN IN DETAIL A. A COMPLETE CURTAIN OF TRANSVERSE STEEL SHALL BE PLACED 3 INCHES FROM EACH FACE OF THE JOINTS AND LONGITUDINAL STEEL WILL NOT BE CONTINUOUS THROUGH THE JOINTS. AN EXPANSION JOINT SHALL BE CONSTRUCTED BETWEEN THE REINFORCED SECTIONS AS SHOWN IN DETAIL B. DOWELS SHALL BE PLACED AT 18 INCH SPACING CENTERED IN THE MIDDLE OF THE BOTTOM SLAB AND THE TOP THIRD OF SIDE WALLS. A MINIMUM OF 3 DOWELS PER SLAB AND WALL SHALL BE PLACED.
- WEEPHOLES SHALL BE FORMED IN BOTH WALLS PER STD. CH326 AT A SPACING OF 10 FEET.
- ALL QUANTITIES SHOWN ARE APPROXIMATE.
- ALL SPLICES ARE SUBJECT TO APPROVAL BY THE ENGINEER.
- SECTION L1 PAT LIMIT PER STANDARD CH326.
- THE LENGTH OF SECTIONS L1, L2, AND L3 ARE NOT NECESSARILY EQUAL. THE TOP TRANSITION SHALL BE STRAIGHT ALONG ITS ENTIRE LENGTH.



TYPICAL SECTION
NTS



PARAPET WALL REINFORCEMENT					
CROSSING	"A" BAR	"B" BAR	"p" BAR	H	SPAN
LAT H-11 STA 13+50	#5 @ 12"	#5 @ 12"	#6	5.42'	12.00'



PARAPET DETAIL
NTS

REC'D PLAN CHECK OVERSIGHT ENGINEER REGISTRATION NUMBER DATE SIGNED
 35165 3-15-19
 APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

ALBERT A. WEBB ASSOCIATES
 ENGINEERING CONSULTANTS
 3788 McCRAY STREET
 RIVERSIDE CA 92506
 PH. (951) 686-1070
 FAX (951) 788-1256
 13 MAR 2019
 ENGINEER, RCE C67239



DESIGNED BY: JCC
 DRAWN BY: CS
 DATE DRAWN: JAN 2019
 CHECKED BY: JCC

Don't Dig...Until You Call:
 U.S.A. Toll Free:
 1-800-422-4133
 for the location of buried utility lines.
 Don't disrupt vital services.
 TWO WORKING DAYS BEFORE YOU DIG

BENCHMARK: SEE SHEET 1

REF.	DESCRIPTION	APPR.	DATE

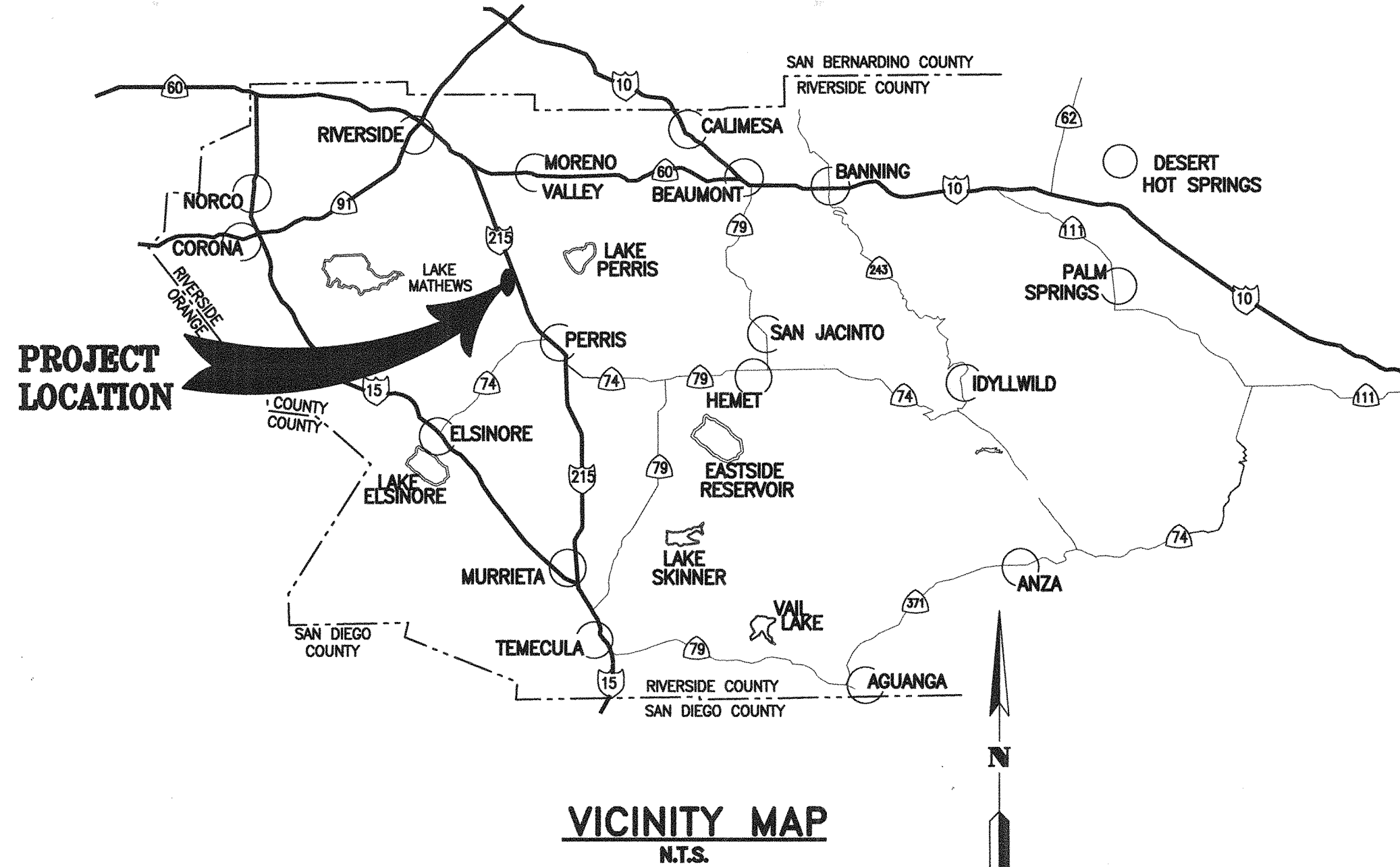
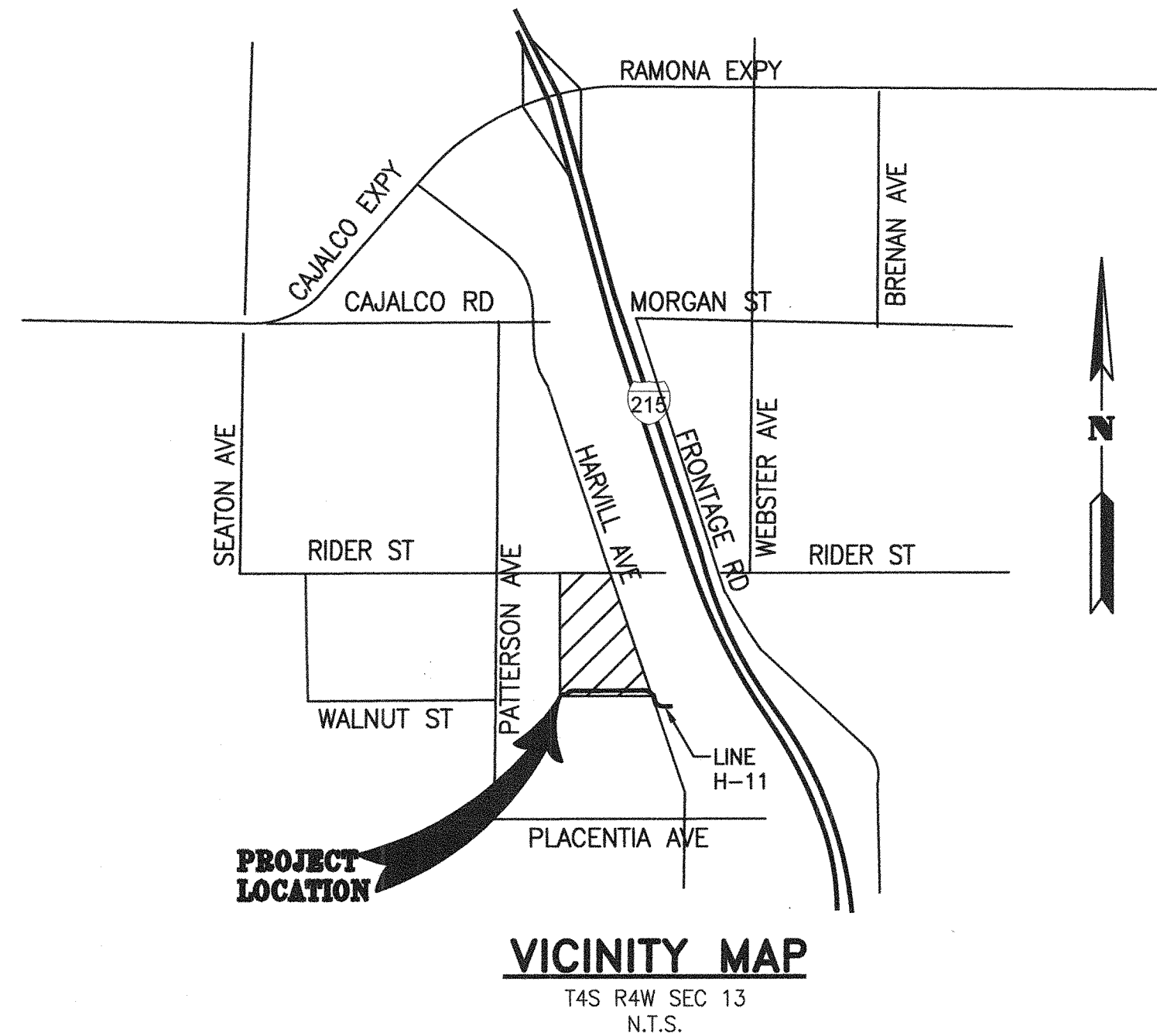
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
 RECOMMENDED FOR APPROVAL BY: _____
 APPROVED BY: _____
 DATE: _____

1P 180002 PP 26220
PERRIS VALLEY MDP LATERAL H-11
 TRANSITION DETAIL

PROJECT NO. 4-0-00502
 DRAWING NO. _____
 SHEET NO. 10 OF 10

966-0

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT



GENERAL NOTES

- THE CONTRACTOR SHALL CONSTRUCT THE FLOOD CONTROL IMPROVEMENTS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT'S M.O.U. STANDARD SPECIFICATIONS DATED JUNE 24, 2008, AND RCFC & WCD STANDARD MANUAL FOR THE LATEST DRAWINGS OF THE STANDARD MANUAL, PLEASE REFER TO THE "PUBLICATIONS AND RECORDS" PAGE FOUND ON THE DISTRICT'S WEBSITE.
- (IF) AN ENCROACHMENT PERMIT IS REQUIRED FROM RIVERSIDE COUNTY FLOOD CONTROL. CONTACT ENCROACHMENT PERMITS AT 951/955-1266. AFTER THE PERMIT IS ISSUED THE DISTRICT MUST BE NOTIFIED ONE WEEK PRIOR TO CONSTRUCTION.
- CONSTRUCTION INSPECTION WILL BE PERFORMED BY RIVERSIDE COUNTY FLOOD CONTROL. CONTACT CONSTRUCTION ADMINISTRATION AT 951/955-1288. THE DISTRICT MUST BE NOTIFIED TWENTY DAYS (20) PRIOR TO CONSTRUCTION.
- ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
- STATIONING FOR LATERALS AND CONNECTOR PIPE REFER TO THE CENTERLINE INTERSECTION STATIONS.
- FORTY-EIGHT HOURS BEFORE EXCAVATION, CALL UNDERGROUND SERVICE ALERT 1-800-227-2600.
- ALL ELEVATIONS SHOWN ARE IN FEET AND DECIMALS THEREOF BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).
- ALL COORDINATES ARE SHOWN IN FEET AND DECIMALS THEREOF BASED ON THE NORTH AMERICAN DATUM (NAD 83), CALIFORNIA COORDINATE SYSTEM (CCS), ZONE 6 AND EPOCH 2010.00.
- ALL CROSS SECTIONS ARE TAKEN LOOKING DOWNSTREAM.
- ELEVATIONS OF UTILITIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
- UNLESS OTHERWISE SPECIFIED, MINIMUM STREET RECONSTRUCTION SHALL BE 4" TYPE "B" HOT MIX ASPHALT OVER 6" CLASS 2 AGGREGATE BASE OR AS SPECIFIED BY THE ENGINEER.
- OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6" OF CLASS "B" CONCRETE.
- PIPE CONNECTED TO THE MAINLINE PIPE SHALL CONFORM TO JUNCTION STRUCTURE NO. 4 (JS 229) UNLESS OTHERWISE NOTED.
- PIPE BEDDING SHALL CONFORM TO RCFC & WCD STD. DWG. NO. M815 EXCEPT FOR COVER <2 FEET. FOR COVER <2 FEET, CONCRETE SLURRY (2000 PSI) SHALL BE USED. THE ENTIRE TRENCH SHALL BE SLURRY EXTENDING 4 INCHES MINIMUM AND 12 INCHES MAXIMUM ABOVE THE TOP OF THE PIPE.
- T-1 INDICATES SOIL BORING LOCATIONS BASED ON THE SOILS REPORT DATED NOVEMBER 3, 2015. LOCATIONS SHOWN ARE APPROXIMATE.
- "V" IS THE DEPTH OF CATCH BASINS MEASURED FROM THE TOP OF CURB TO INVERT OF CONNECTOR PIPE.
- CATCH BASINS SHALL BE LOCATED SO THAT LOCAL DEPRESSION SHALL BEGIN AT EXISTING CURB RETURN JOINT, UNLESS OTHERWISE SPECIFIED.
- ALL CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED IN KIND AND AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED.
- STANDARD DRAWINGS CALLED FOR ON THE PLAN AND PROFILE SHALL CONFORM TO DISTRICT STANDARD DRAWINGS UNLESS NOTED OTHERWISE.
- THE CONTRACTOR IS REQUIRED TO CALL ALL UTILITY AGENCIES REGARDING TEMPORARY SHORING AND SUPPORT REQUIREMENTS FOR THE VARIOUS UTILITY LINES SHOWN ON THESE PLANS.
- DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL SHOULD BE PROVIDED TO PREVENT PONDING WATER AND DAMAGE TO ADJACENT PROPERTIES.
- APPROVAL OF THESE PLANS BY THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT DOES NOT RELIEVE THE DEVELOPER'S ENGINEER OF RESPONSIBILITY FOR THE ENGINEERING DESIGN. IF FIELD CHANGES ARE REQUIRED, IT WILL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO MAKE THE NECESSARY CORRECTIONS.
- THE CONTRACTOR OR DEVELOPER SHALL SECURE ALL REQUIRED ENCROACHMENT AND/OR STATE AND FEDERAL REGULATORY PERMITS PRIOR TO THE COMMENCEMENT OF ANY WORK.
- THE CONCRETE COATING ON THE INSIDE OF ALL REINFORCED CONCRETE PIPES MUST BE INCREASED TO PROVIDE A MINIMUM OF 1-1/2 INCHES OVER THE REINFORCING AND INCREASED TO A MINIMUM OF 3-1/2 INCHES OVER REINFORCING FOR BOX CULVERT, WHEN DESIGN VELOCITIES EXCEED 20 FEET PER SECOND. THE CONCRETE DESIGN STRENGTH IN THESE REACHES SHALL BE F'C=5,000 PSI FOR VELOCITIES EXCEEDING 20 FEET PER SECOND AND F'C=6,000 PSI FOR VELOCITIES EXCEEDING 30 FEET PER SECOND.
- CONSTRUCTION JOINT FOR CALTRANS STANDARD REINFORCED CONCRETE BOX SHALL BE PLACED ACCORDING TO RCFC & WCD STANDARD DRAWING NO. BX 401.

R.C.F.C. & W.C.D. STANDARD DRAWINGS

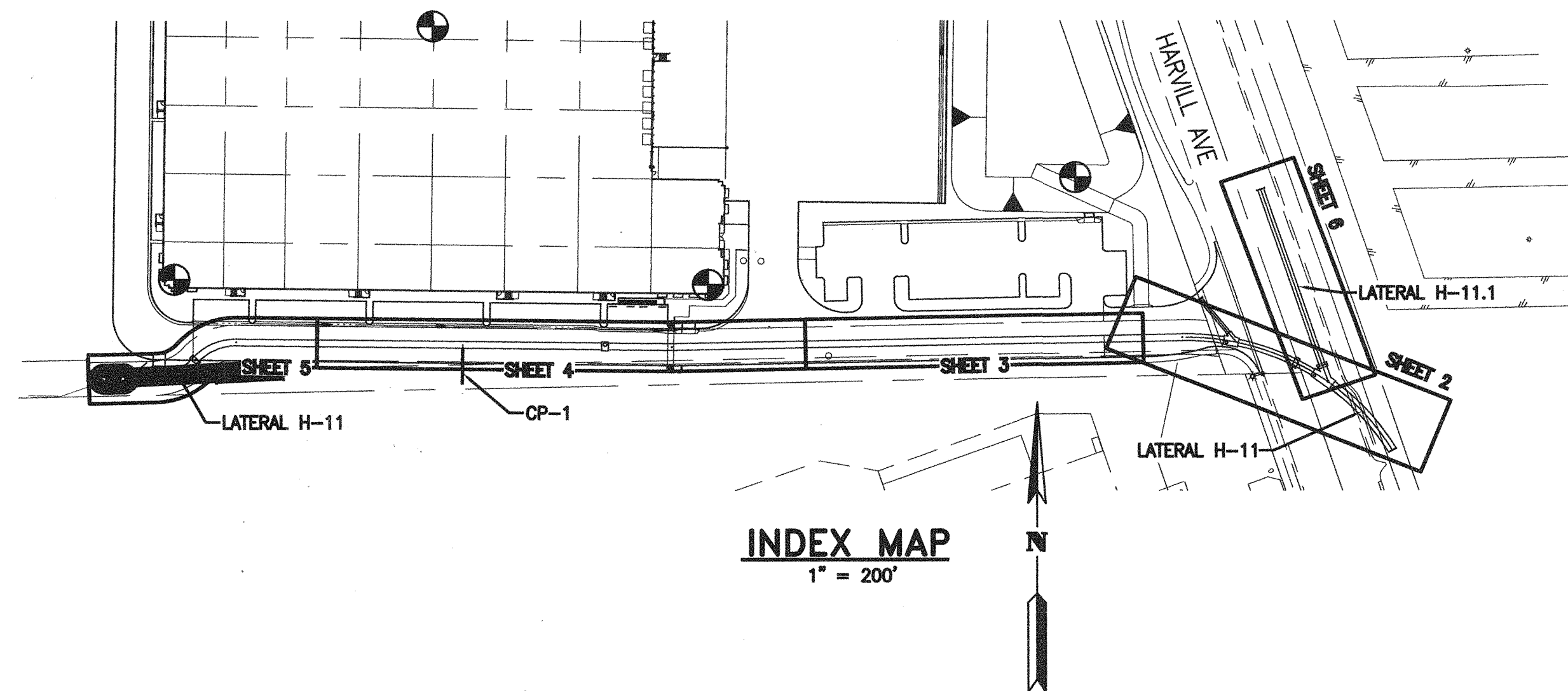
- CB 110 CONCRETE DROP INLET
- JS 229 JUNCTION STRUCTURE NO.4
- MH 254 MANHOLE NO. 4
- M 803 CONCRETE COLLAR
- M 816 CONCRETE BULKHEAD

BASIS OF BEARING

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA STATE PLANE COORDINATE SYSTEM, CCS83, ZONE 6, BASED LOCALLY ON CONTROL STATIONS "MLFP", AND "PPBF" NAD 83(NSRS2011) AS SHOWN HEREON. ALL BEARINGS SHOWN ON THIS MAP ARE GRID. QUOTED BEARINGS AND DISTANCES FROM REFERENCE MAPS OR DEEDS ARE AS SHOWN PER THAT RECORD REFERENCE. ALL DISTANCES SHOWN ARE GROUND DISTANCES UNLESS SPECIFIED OTHERWISE. GRID DISTANCES, MAY BE OBTAINED BY MULTIPLYING THE GROUND DISTANCE BY A COMBINATION FACTOR OF 0.999921668. CALCULATIONS ARE MADE AT POINT WITH COORDINATES OF:
N: 2242591.767, E: 6259065.349,
USING AN ELEVATION OF 1532.127 FEET (NAVD88).

NOTICE TO CONTRACTOR

IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND ELEVATION OF THE EXISTING FACILITIES PRIOR TO THE START OF ANY CONSTRUCTION



SHEET INDEX

TITLE SHEET
PLAN & PROFILE
ACCESS ROAD & DETAILS
CONNECTOR PIPE PROFILE

SHEET NO.

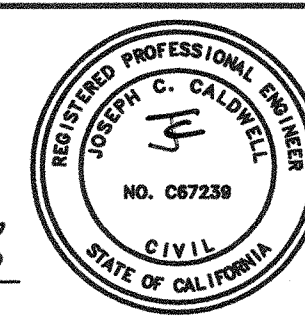
- 1
- 2-5
- 6
- 7

REC'D COUNTY OVERSIGHT ENGINEER
REGISTRATION # 35165
DATE SIGNED 4-3-19
APPROVED AS TO COMPLIANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

Don't Dig...Until You Call:
U.S.A. Toll Free:
1-800-422-4133
for the location of buried utility lines.
Don't disrupt vital services.
TWO WORKING DAYS BEFORE YOU DIG

SCALE: 1" = 200'
DATE: 06/29/2018
DESIGNED BY: CC
DRAWN BY: JJO
CHECKED BY: JCC
F.B.

APPROVED BY:
ALBERT A. WEBB
ASSOCIATES
ENGINEER, RCE C627239
DATE: 28 Nov 2018



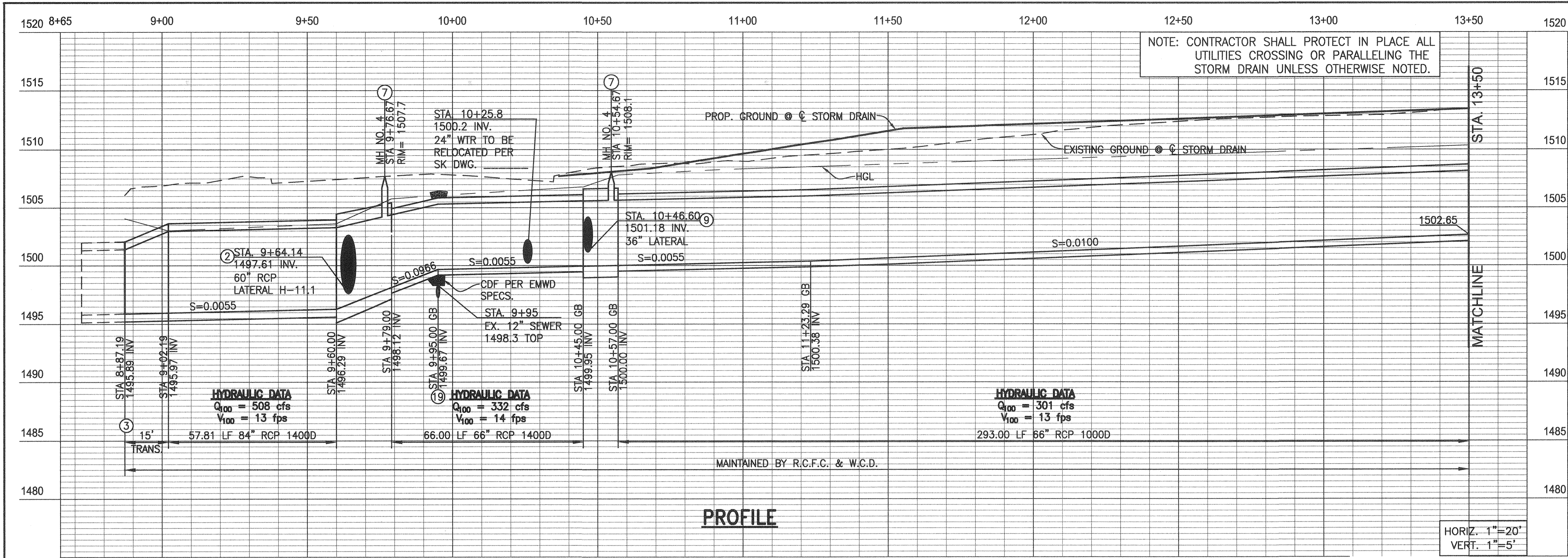
PERMANENT BENCH MARK
NGS DESIGNATION #435 (PID DX5442)
ELEV. = 1515.12' (NAVD88)
DESCRIBED BY METRO WATER DISTRICT OF SO. CALIFORNIA 1992 PERRIS, 1300 FEET (396.2 M) WEST OF AT&SF RAILROAD ALONG RIDER ST, ON TOP OF NORTH CURB FACE OF RIDER ST, 28 FEET (8.5 M) NORTH OF RIDER ST, 6 FEET (1.8 M) SOUTH OF A GTE TELEPHONE BOX (DAMAGED). A STANDARD 5-1/4 INCH ALUMINUM DISK SET FLUSH IN TOP OF CURB.

REF.	DESCRIPTION	APPR.	DATE

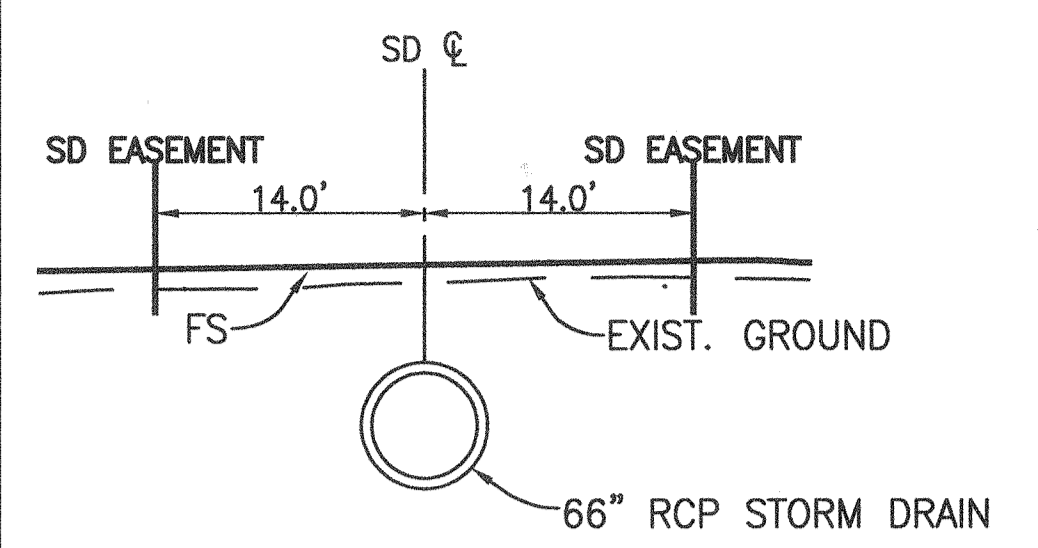
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY:
Edwin Quiroz
PLANNING ENGINEER R.E. NO.
DATE: 4/9/19

APPROVED BY:
Robert Allen
CHIEF ENGINEER R.E. NO.
DATE: 7 May 2019

IP 180028 / 966-5
PROJECT NO. 4-0-00502
DRAWING NO. 4-1128
SHEET NO. 1 7

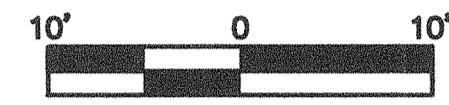


NOTE: CONTRACTOR SHALL PROTECT IN PLACE ALL UTILITIES CROSSING OR PARALLELING THE STORM DRAIN UNLESS OTHERWISE NOTED.



SECTION AT STA. 12+00

TYPICAL FROM STA 11+50 TO STA 14+00

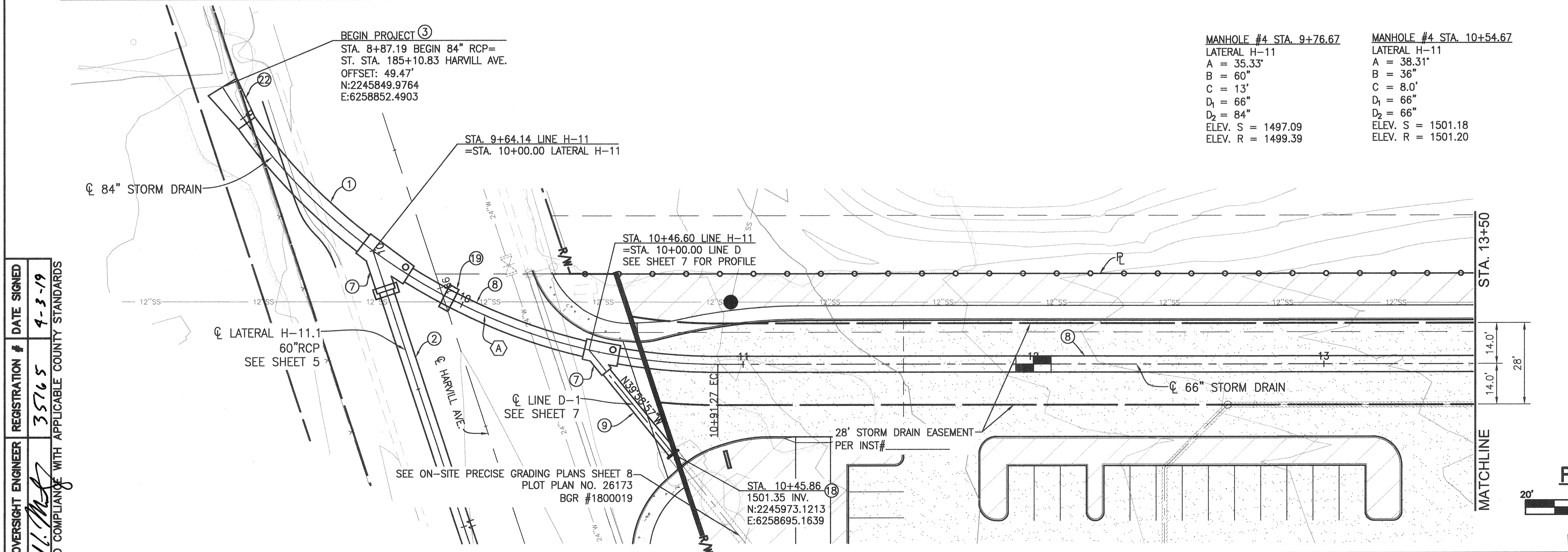


NOTES:

- ① INSTALL 84" RCP STORM DRAIN (D-LOAD PER PLAN).
- ② INSTALL 60" RCP STORM DRAIN (D-LOAD PER PLAN).
- ③ REMOVE EXISTING BULKHEAD. CONNECT TO EXISTING 5.5'H x 10'W RCB
- ⑦ CONSTRUCT MANHOLE NO. 4 PER RCFC&WCD STD. DWG. MH254
- ⑧ INSTALL 66" RCP STORM DRAIN (D-LOAD PER PLAN).
- ⑨ INSTALL 36" RCP STORM DRAIN (D-2000).
- ⑱ CONSTRUCT CONCRETE BULKHEAD PER RCFC&WCD STD. DWG. M816. SEE ON-SITE PRECISE GRADING PLANS, PP26173 FOR CONTINUATION OF 36" STORM DRAIN.
- ⑲ CONSTRUCT CONCRETE COLLAR PER RCFC&WCD STD. DWG. M803.
- ⑳ CONSTRUCT TRANSITION STRUCTURE NO.1 PER RCFC&WCD STD DWG. NO. TS301

HORIZ. 1"=20'
VERT. 1"=5'

PROFILE



MANHOLE #4 STA. 9+76.67	MANHOLE #4 STA. 10+54.67
LATERAL H-11	LATERAL H-11
A = 35.33'	A = 38.31'
B = 60"	B = 36"
C = 13'	C = 8.0'
D ₁ = 66"	D ₁ = 66"
D ₂ = 84"	D ₂ = 66"
ELEV. S = 1497.09	ELEV. S = 1501.18
ELEV. R = 1499.39	ELEV. R = 1501.20

Ⓐ CURVE DATA

Δ = 58°27'45"
R = 200.00'
T = 111.92'
L = 204.07'
BC = 8+87.19
EC = 10+91.27
PI = N 2245944.235
E 6258792.148

PLAN



RECNO	COUNTY OVERSIGHT ENGINEER	REGISTRATION #	DATE SIGNED
	<i>W. M. M.</i>	35765	4-3-19

APPROVED AS TO COMPLIANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

Don't Dig...Until You Call:
U.S.A. Toll Free:
1-800-422-4133
for the location of buried utility lines.
Don't disrupt vital services.
TWO WORKING DAYS BEFORE YOU DIG

SCALE: 1" = 20'
DATE: 06/29/2018
DESIGNED BY: CC
DRAWN BY: JJO
CHECKED BY: JCC
F.B.

APPROVED BY:
ALBERTA A.
WEBB ASSOCIATES
ENGINEER, RCE C67239

ENGINEERING CONSULTANTS
3788 McCRAE STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

REGISTERED PROFESSIONAL ENGINEER
JOSEPH G. CALDWELL
NO. C67239
CIVIL
STATE OF CALIFORNIA

DATE: 14 DEC 2018

PERMANENT BENCH MARK
SEE COVER SHEET

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

RECOMMENDED FOR APPROVAL BY:
Carl...
DATE: 04/06/19

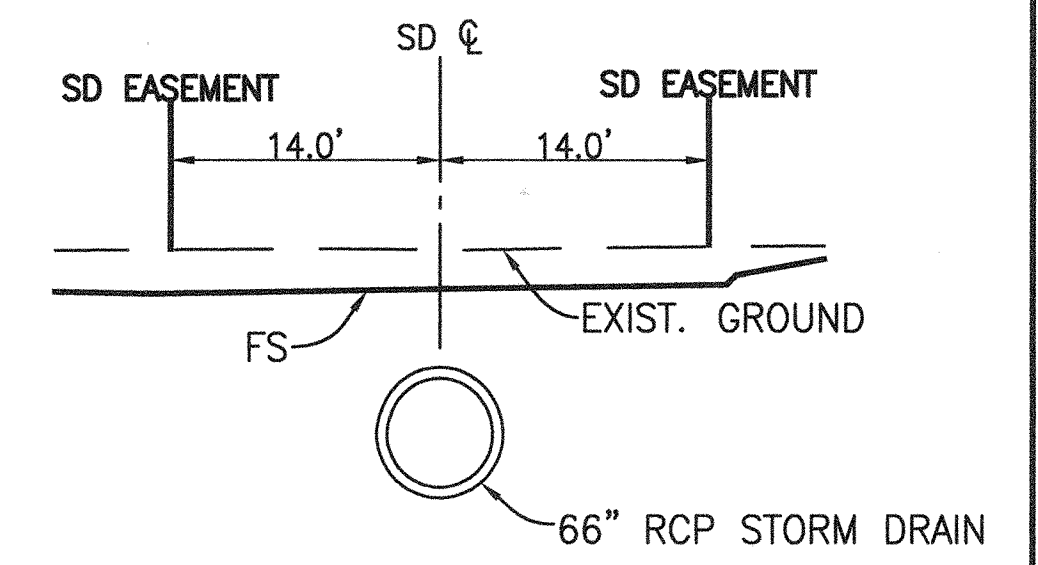
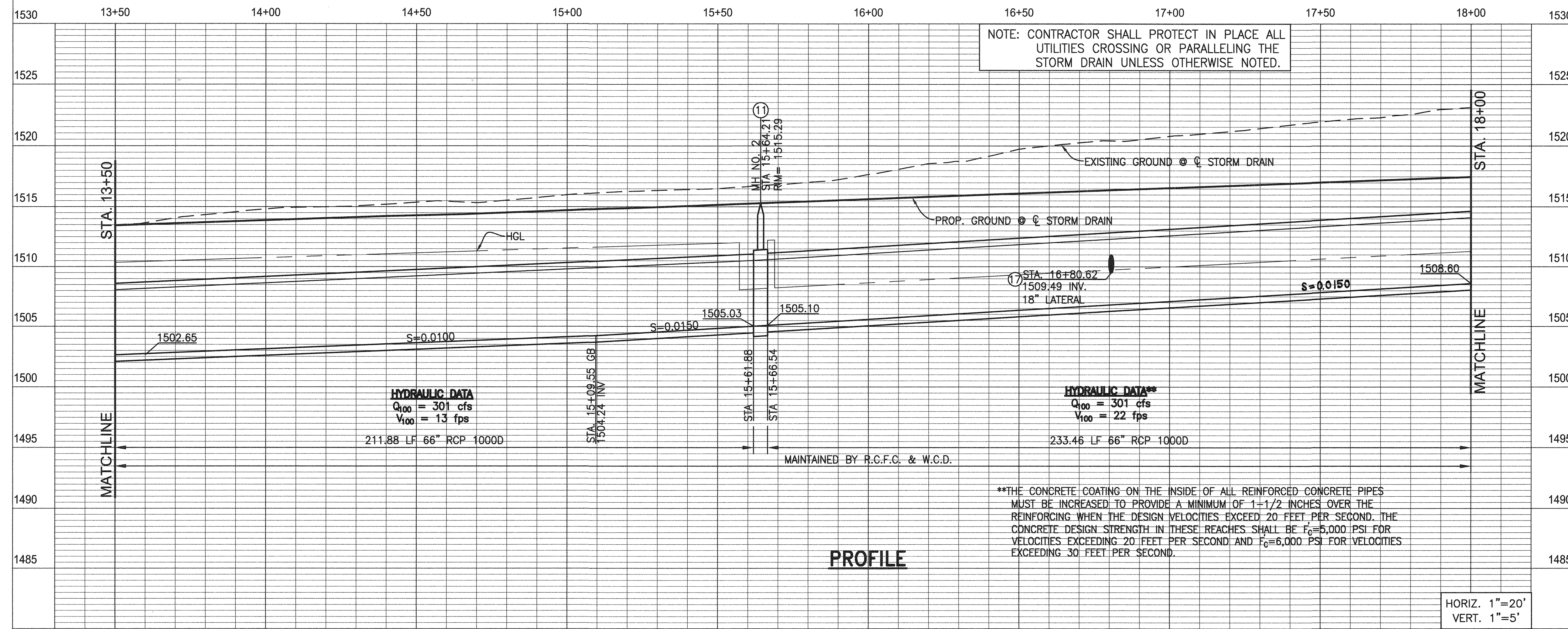
APPROVED BY:
Edwin...
DATE: 4/9/19

IP 180028 / 966-5

PERRIS VALLEY MDP
LATERAL H-11
STAGE NO. 2
STORM DRAIN
STA.10+00 TO 13+50

PROJECT NO.	DRAWING NO.	SHEET NO.
4-0-00502	4-1128	2

SUBMITTAL 2 - FOR REVIEW ONLY
\\ELSNORE\W02\2016\16-0235\DRAWINGS\PLAN SHEETS\16-0235 SD SHEETS_RCFC_2016.DWG 12/12/2016 3:26:08 PM

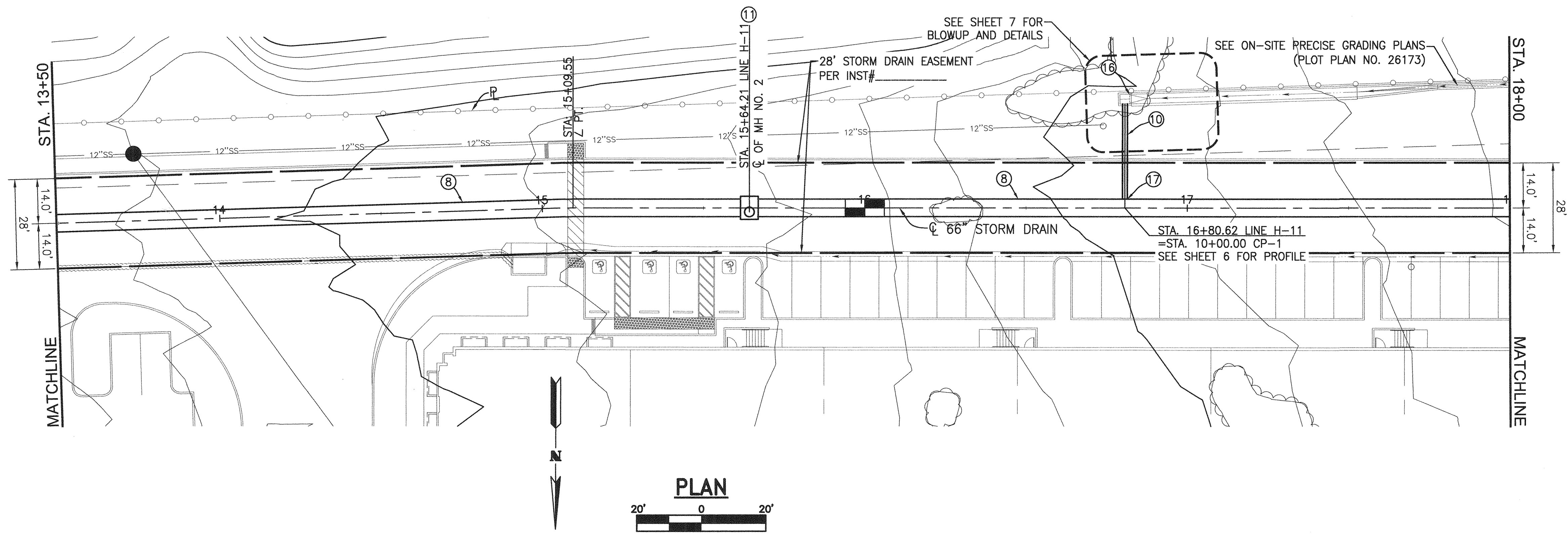


SECTION AT STA. 16+00
TYPICAL FROM STA 14+00 TO STA 18+00

PROFILE

**THE CONCRETE COATING ON THE INSIDE OF ALL REINFORCED CONCRETE PIPES MUST BE INCREASED TO PROVIDE A MINIMUM OF 1-1/2 INCHES OVER THE REINFORCING WHEN THE DESIGN VELOCITIES EXCEED 20 FEET PER SECOND. THE CONCRETE DESIGN STRENGTH IN THESE REACHES SHALL BE F_c=5,000 PSI FOR VELOCITIES EXCEEDING 20 FEET PER SECOND AND F_c=6,000 PSI FOR VELOCITIES EXCEEDING 30 FEET PER SECOND.

HORIZ. 1"=20'
VERT. 1"=5'



NOTES:

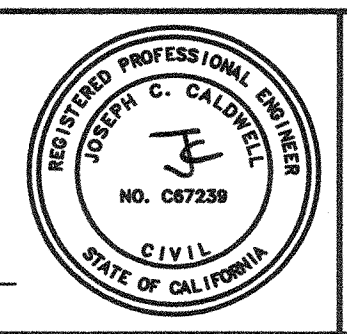
- ⑧ INSTALL 66" RCP STORM DRAIN (D-LOAD PER PLAN).
- ⑩ INSTALL 18" RCP STORM DRAIN (CLASS IV).
- ⑪ CONSTRUCT MANHOLE NO. 2 PER RCFC&WCD STD. DWG. MH252. L=4.7'
- ⑫ CONSTRUCT CONCRETE DROP INLET AND CONCRETE APRON PER RCFC&WCD STD. DWG. CB110 AND PER DETAILS ON SHEET 6.
- ⑬ CONSTRUCT JUNCTION STRUCTURE NO. 4 PER RCFC&WCD STD. DWG. JS229.

REC'D COUNTY OVERSIGHT ENGINEER REGISTRATION # DATE SIGNED
 APPROVED AS TO COMPLIANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.
 35765 1-3-19

Don't Dig...Until You Call:
U.S.A. Toll Free: 1-800-422-4133
for the location of buried utility lines.
Don't disrupt vital services.
TWO WORKING DAYS BEFORE YOU DIG

SCALE: 1"=40'
DATE: 06/29/2018
DESIGNED BY: CC
DRAWN BY: JJO
CHECKED BY: JCC
F.B.

APPROVED BY:
ALBERT A. WEBB
ENGINEERING CONSULTANTS
3788 McCRA Y STREET
RIVERSIDE CA 92506
PH. (951) 686-1070
FAX (951) 788-1256
DATE: 28 Nov 2018
ENGINEER, RCCE C67239



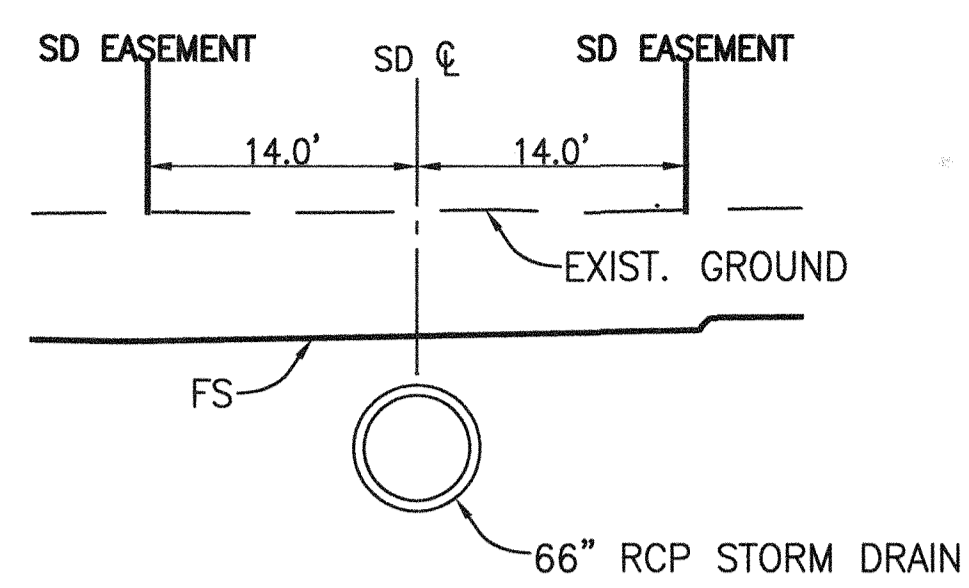
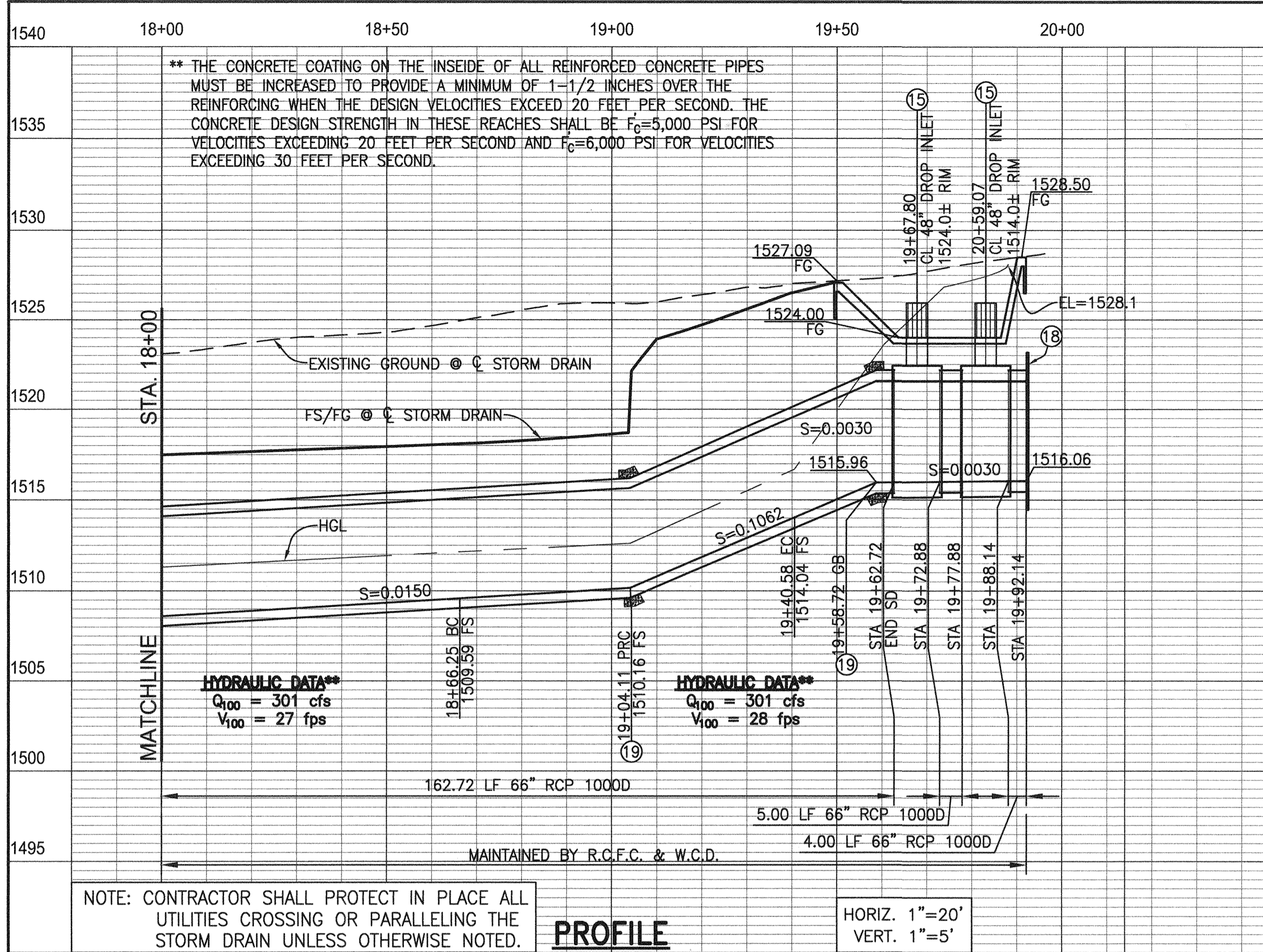
PERMANENT BENCH MARK
SEE COVER SHEET

REF.	DESCRIPTION	APPR.	DATE

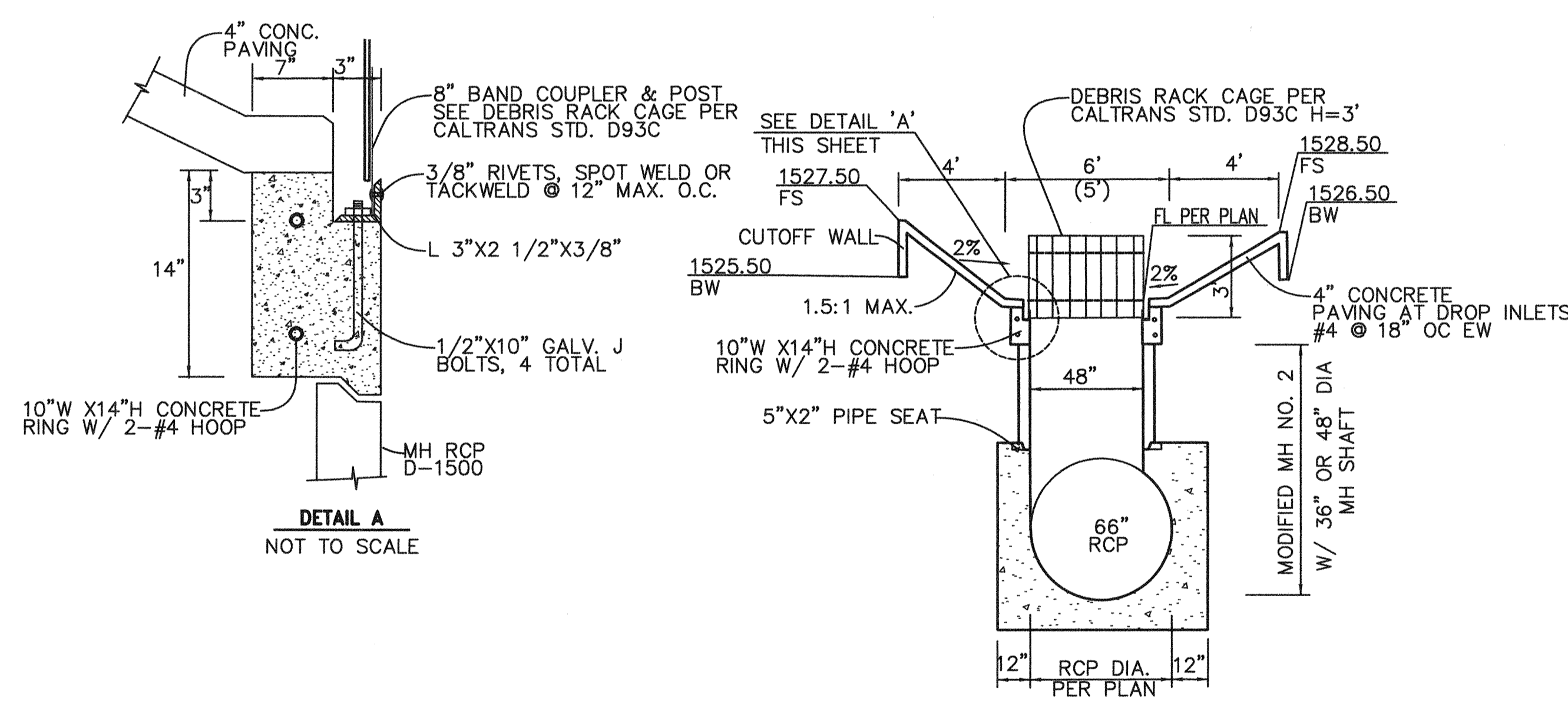
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY: [Signature]
APPROVED BY: Edwin Ramirez
DATE: 04/08/19
DATE: 4/9/19

IP 180028 / 966-5
PERRIS VALLEY MDP
LATERAL H-11
STAGE NO. 2
STORM DRAIN
STA. 13+50 TO 18+00

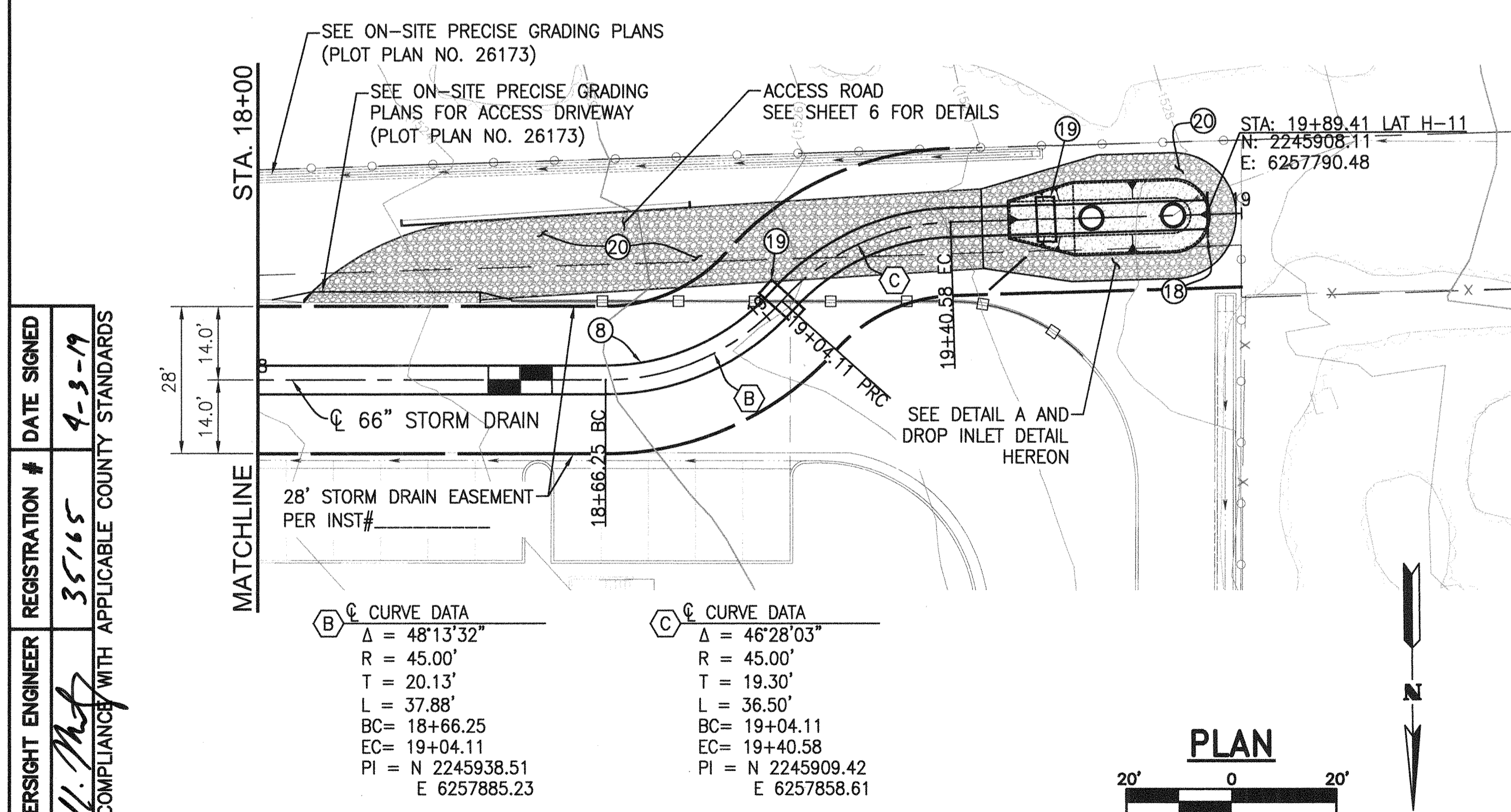
PROJECT NO. 4-0-00502
DRAWING NO. 4-1128
SHEET NO. 3 7



- NOTES:**
- ⓑ INSTALL 66" RCP STORM DRAIN (D-LOAD PER PLAN).
 - ⓓ CONSTRUCT DROP INLET PER DETAILS BELOW.
 - ⓔ CONSTRUCT CONCRETE BULKHEAD PER RCFC&WCD STD. DWG. M816.
 - ⓕ CONSTRUCT CONCRETE COLLAR PER RCFC&WCD STD. DWG. M803.
 - ⓖ INSTALL 3" THICK CLASS 2 AGGREGATE BASE MAINTENANCE ROAD.



ⓓ DROP INLET DETAIL
MODIFIED MH NO. 2 PER RCFC STD. MH 252
NOT TO SCALE



REC'D COUNTY OVERSIGHT ENGINEER REGISTRATION # DATE SIGNED
35165 4-3-19
APPROVED AS TO COMPLIANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

Don't Dig...Until You Call:
U.S.A. Toll Free:
1-800-422-4133
for the location of buried utility lines.
Don't disrupt vital services.
TWO WORKING DAYS BEFORE YOU DIG

SCALE: 1" = 20'
DATE: 06/29/2018
DESIGNED BY: CC
DRAWN BY: JJO
CHECKED BY: JCC
F.B.

APPROVED BY:
ALBERTA A. WEBB
ASSOCIATES
ENGINEER, RCE C67239
DATE: 19 Dec 2018



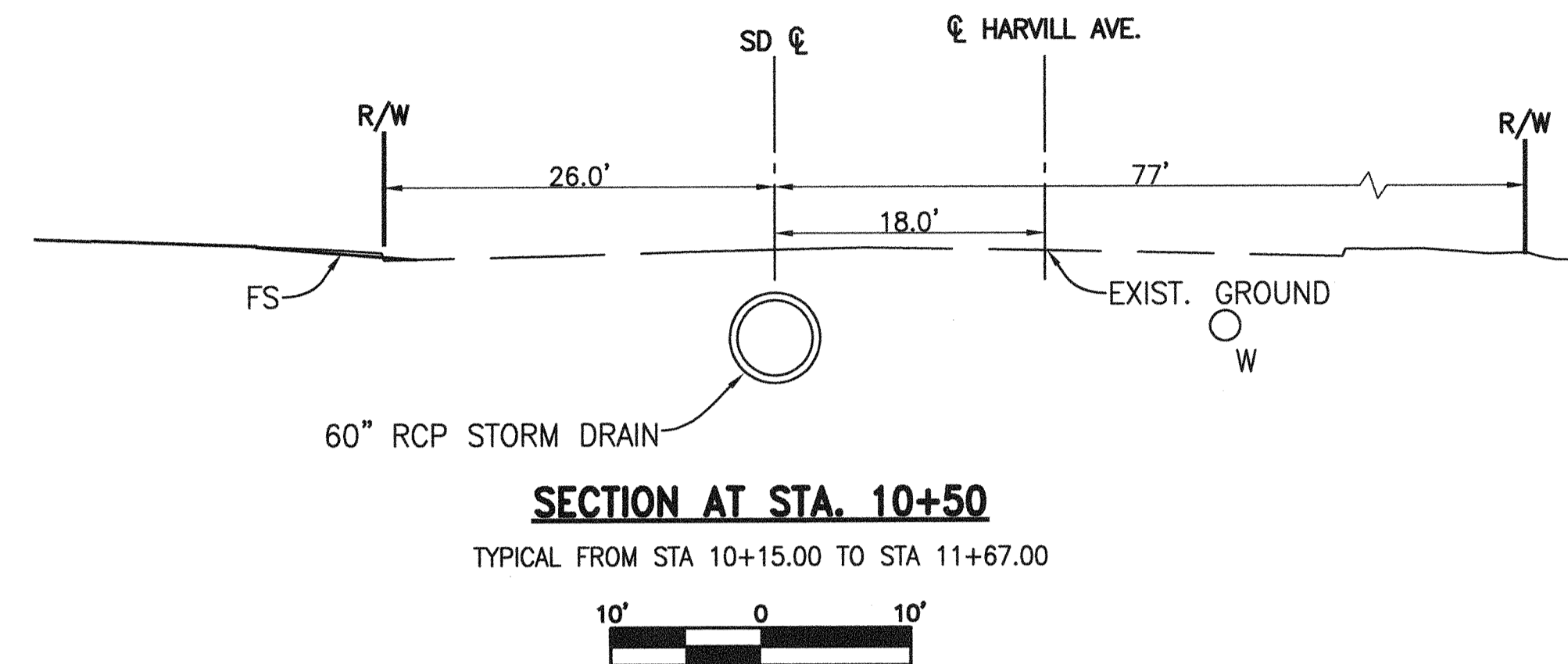
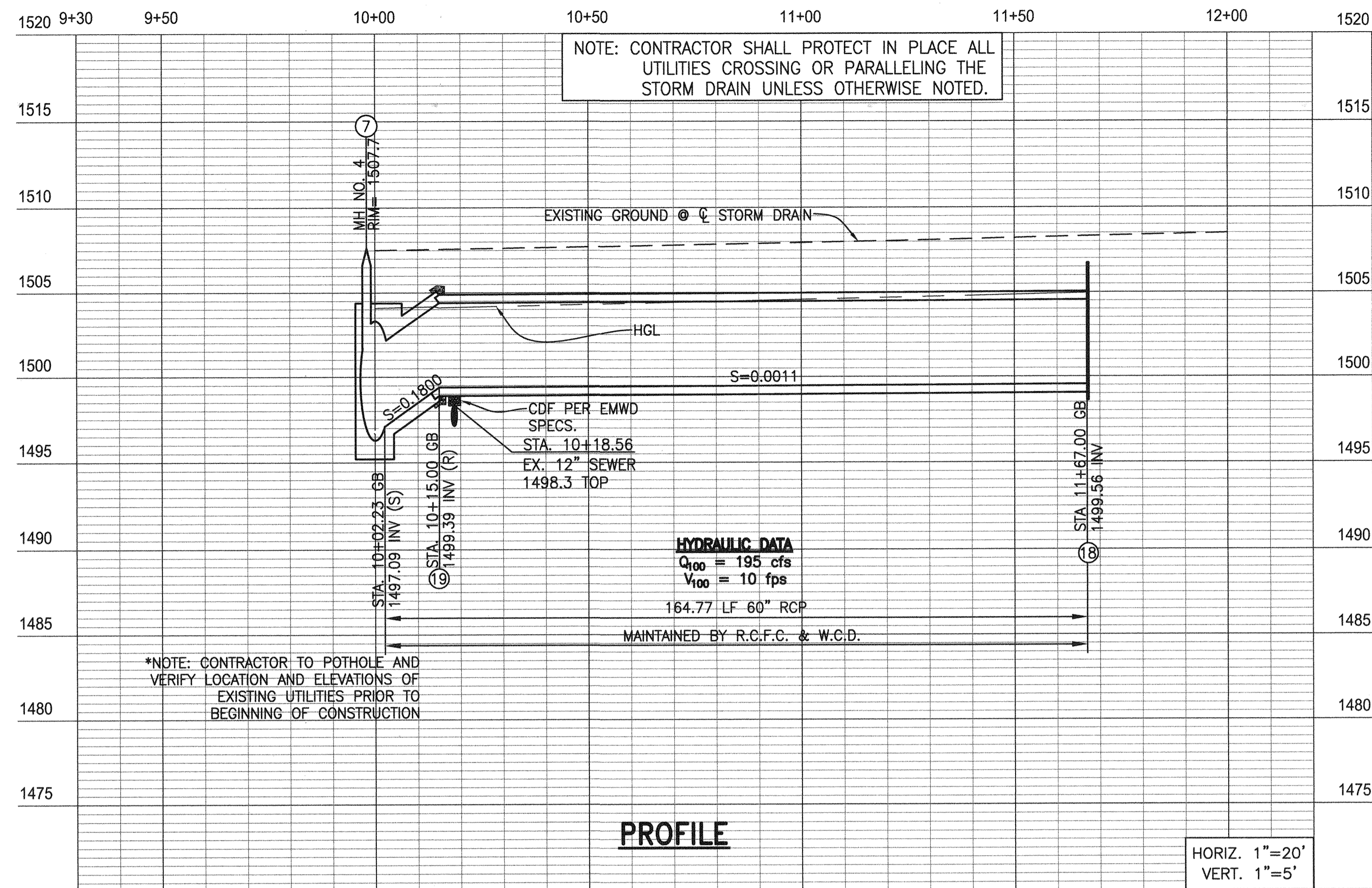
PERMANENT BENCH MARK
SEE COVER SHEET

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY: [Signature]
DATE: 04/02/17
APPROVED BY: [Signature]
DATE: 4/9/19

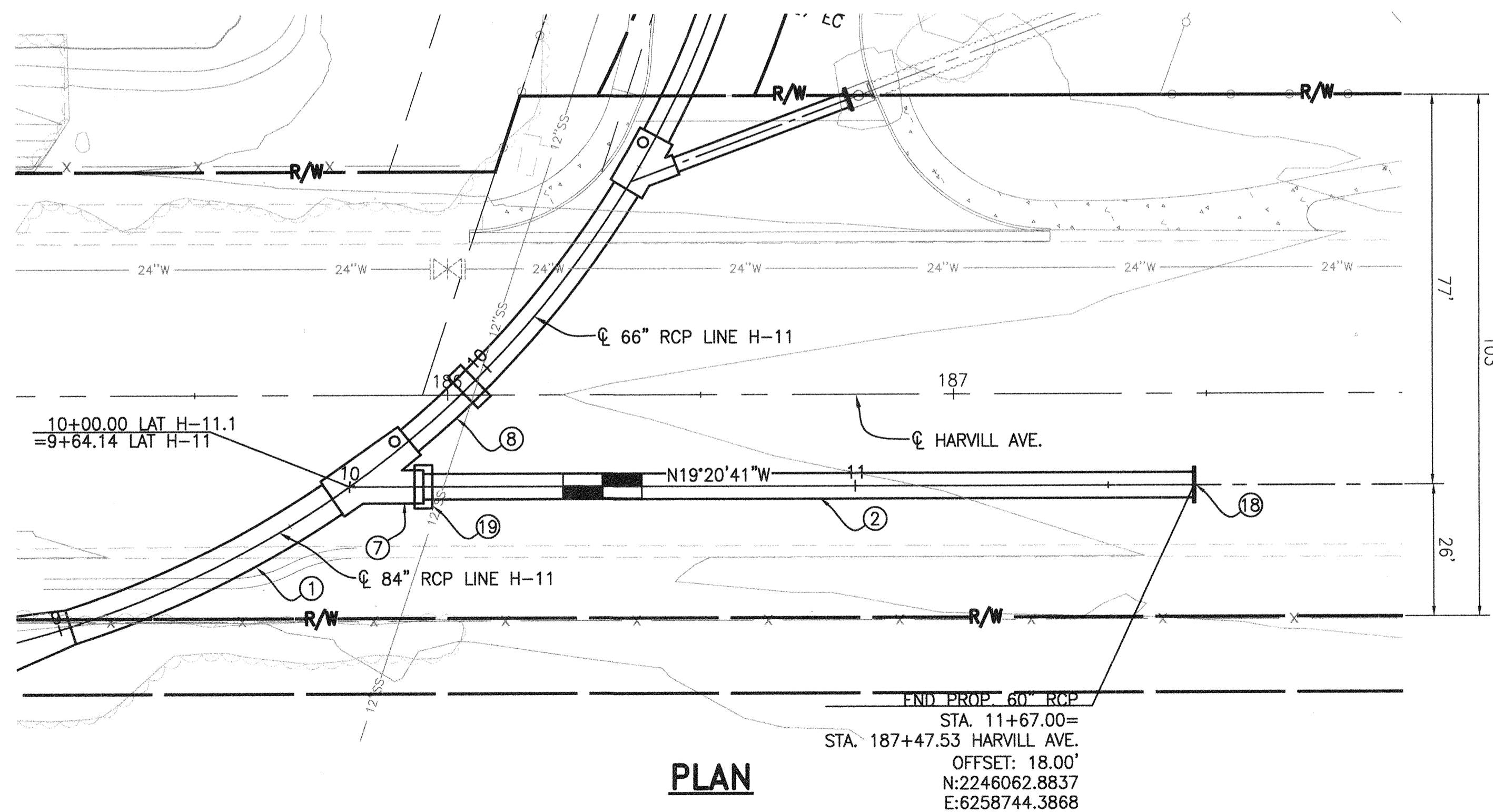
IP 180028 / 966-5
PERRIS VALLEY MDP
LATERAL H-11
STAGE NO. 2
STORM DRAIN
STA. 18+00 TO END OF PROJECT

PROJECT NO. 4-0-00502
DRAWING NO. 4-1128
SHEET NO. 4 7



NOTES:

- ① INSTALL 84" RCP STORM DRAIN (D-LOAD PER PLAN).
- ② INSTALL 60" RCP STORM DRAIN (D-LOAD PER PLAN).
- ⑦ CONSTRUCT MANHOLE NO. 4 PER RCFC&WCD STD. DWG. MH254
- ⑧ INSTALL 66" RCP STORM DRAIN (D-LOAD PER PLAN).
- ⑱ CONSTRUCT CONCRETE BULKHEAD PER RCFC&WCD STD. DWG. M816.
- ⑲ CONSTRUCT CONCRETE COLLAR PER RCFC&WCD STD. DWG. M803.

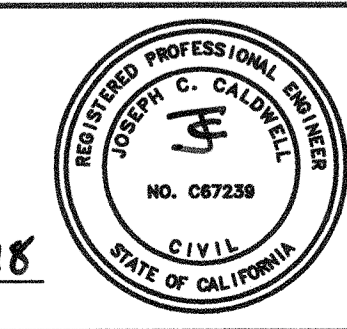


RECNO COUNTY OVERSIGHT ENGINEER REGISTRATION # DATE SIGNED
35165 4-3-19
APPROVED AS TO COMPLIANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.



SCALE: 1" = 20'
DATE: 06/29/2018
DESIGNED BY: CC
DRAWN BY: JJO
CHECKED BY: JCC
F.B.

APPROVED BY:
ALBERT A. WEBB
ASSOCIATES
ENGINEER, RCE C67239
DATE: 20 DEC 2018



PERMANENT BENCH MARK
SEE COVER SHEET

REF.	DESCRIPTION	APPR.	DATE

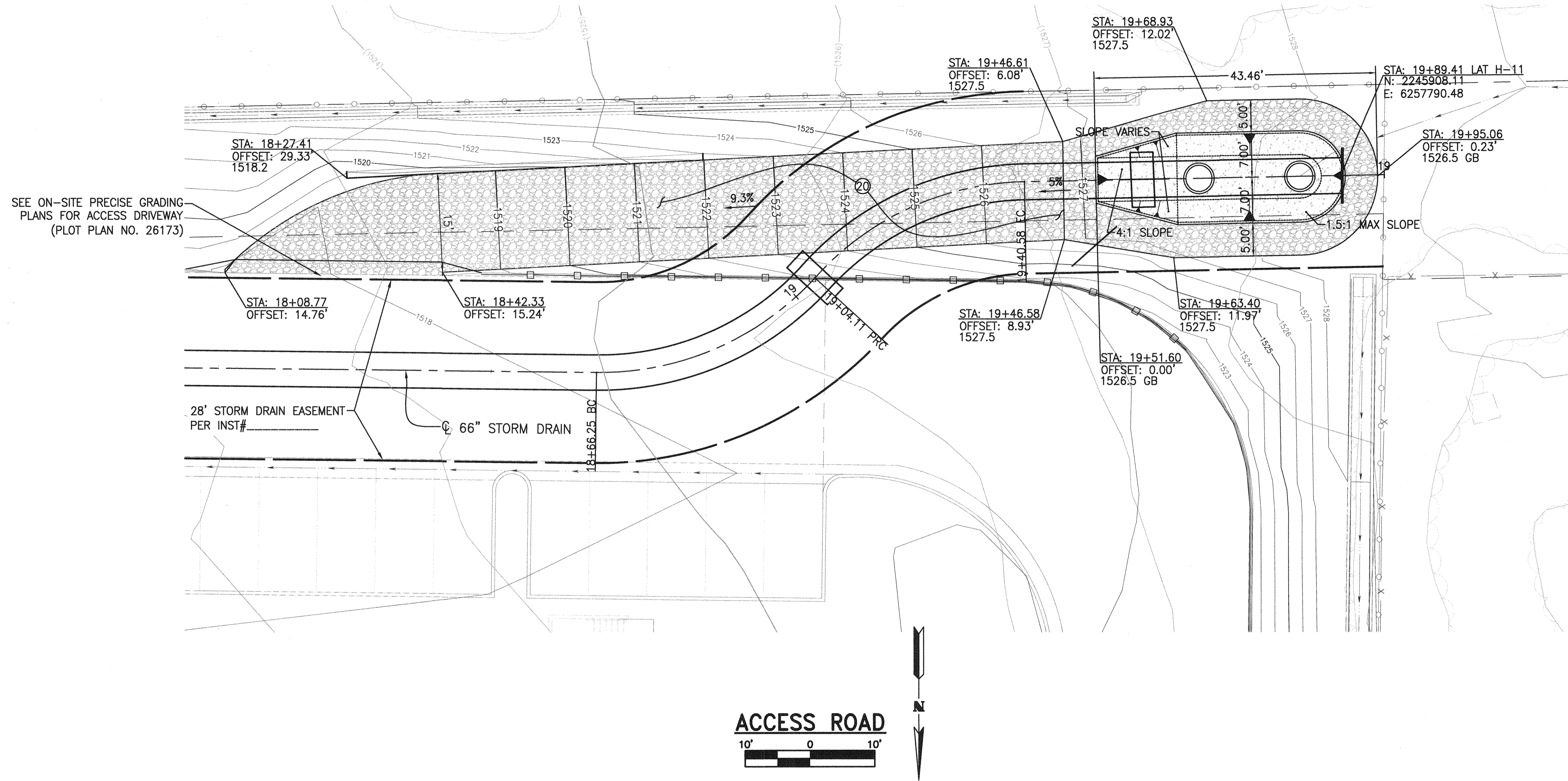
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY: [Signature]
APPROVED BY: [Signature]
DATE: 04/08/17
DATE: 4/9/19

IP 180028 / 966-5
PERRIS VALLEY MDP
LATERAL H-11.1
STAGE NO.1
STORM DRAIN
STA. 10+50 TO 11+42.55

PROJECT NO. 4-0-00502
DRAWING NO. 4-1128
SHEET NO. 5 7

NOTES:

② INSTALL 3" THICK CLASS 2 AGGREGATE BASE MAINTENANCE ROAD.

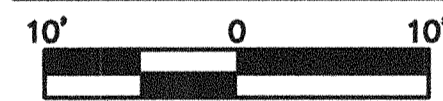


SEE ON-SITE PRECISE GRADING PLANS FOR ACCESS DRIVEWAY (PLOT PLAN NO. 26173)

28' STORM DRAIN EASEMENT PER INST#

66" STORM DRAIN

ACCESS ROAD



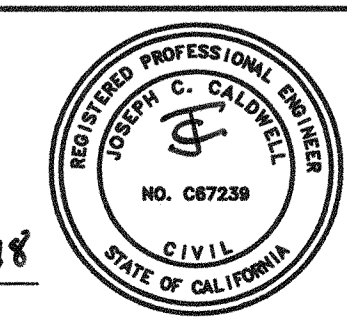
RECNO	COUNTY OVERSIGHT ENGINEER	REGISTRATION #	DATE SIGNED
	<i>William M. ...</i>	35165	4-3-19

APPROVED AS TO COMPLIANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.

Don't Dig...Until You Call:
U.S.A. Toll Free:
1-800-422-4133
for the location of buried utility lines.
Don't disrupt vital services.
TWO WORKING DAYS BEFORE YOU DIG

SCALE: 1" = 10'
DATE: 06/29/2018
DESIGNED BY: CC
DRAWN BY: JJO
CHECKED BY: JCC
F.B.

APPROVED BY:
ALBERT A. WEBB
ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAV STREET
RIVERSIDE CA, 92506
PH. (951) 686-1070
FAX (951) 788-1256
Albert A. Webb
18 DEC 2018
ENGINEER, RCE C67239
DATE:

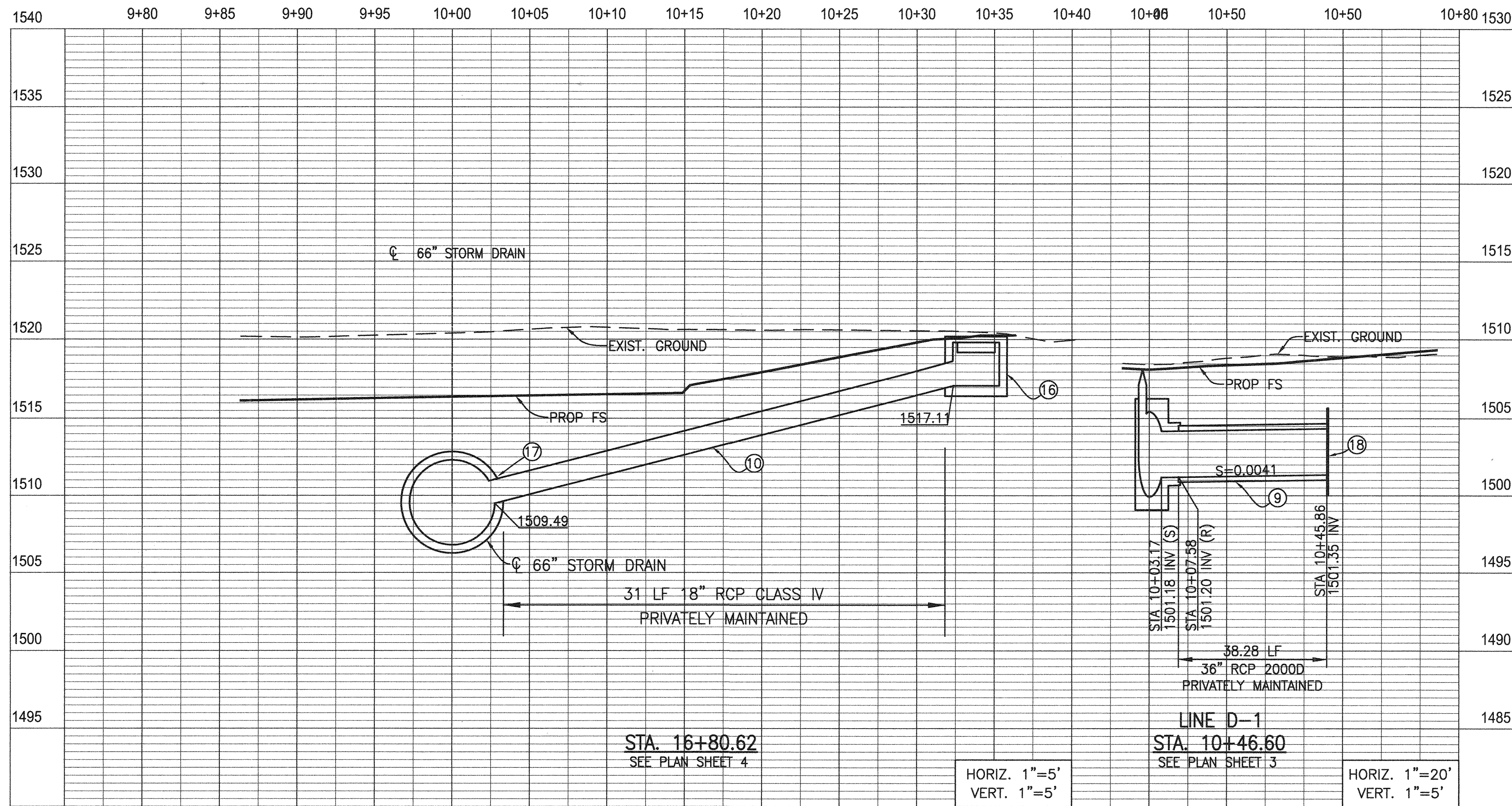


PERMANENT BENCH MARK
SEE COVER SHEET

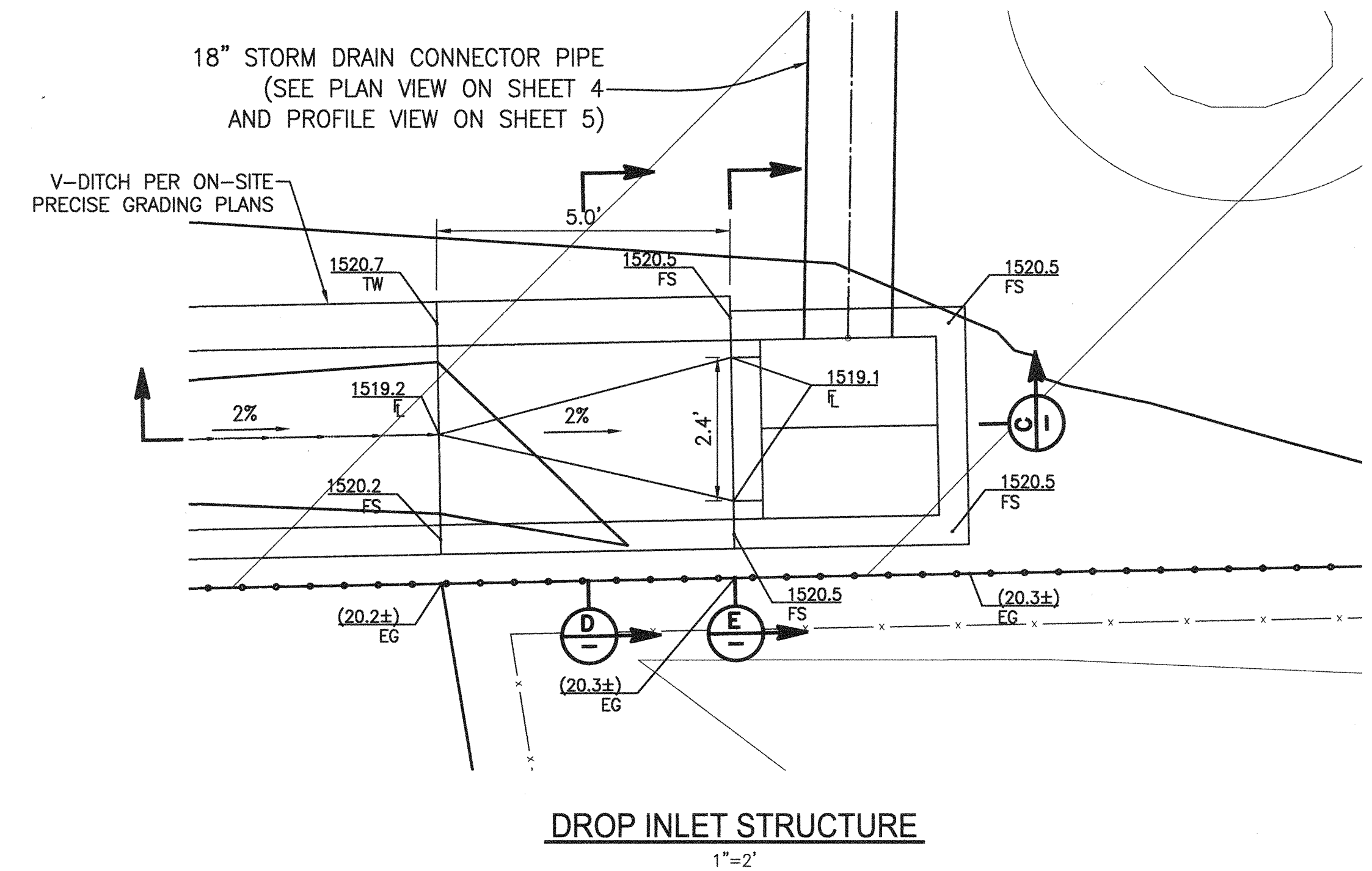
REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY: *Edwin Quiroz*
APPROVED BY: *Edwin Quiroz*
DATE: 04/08/19
DATE: 4/1/19

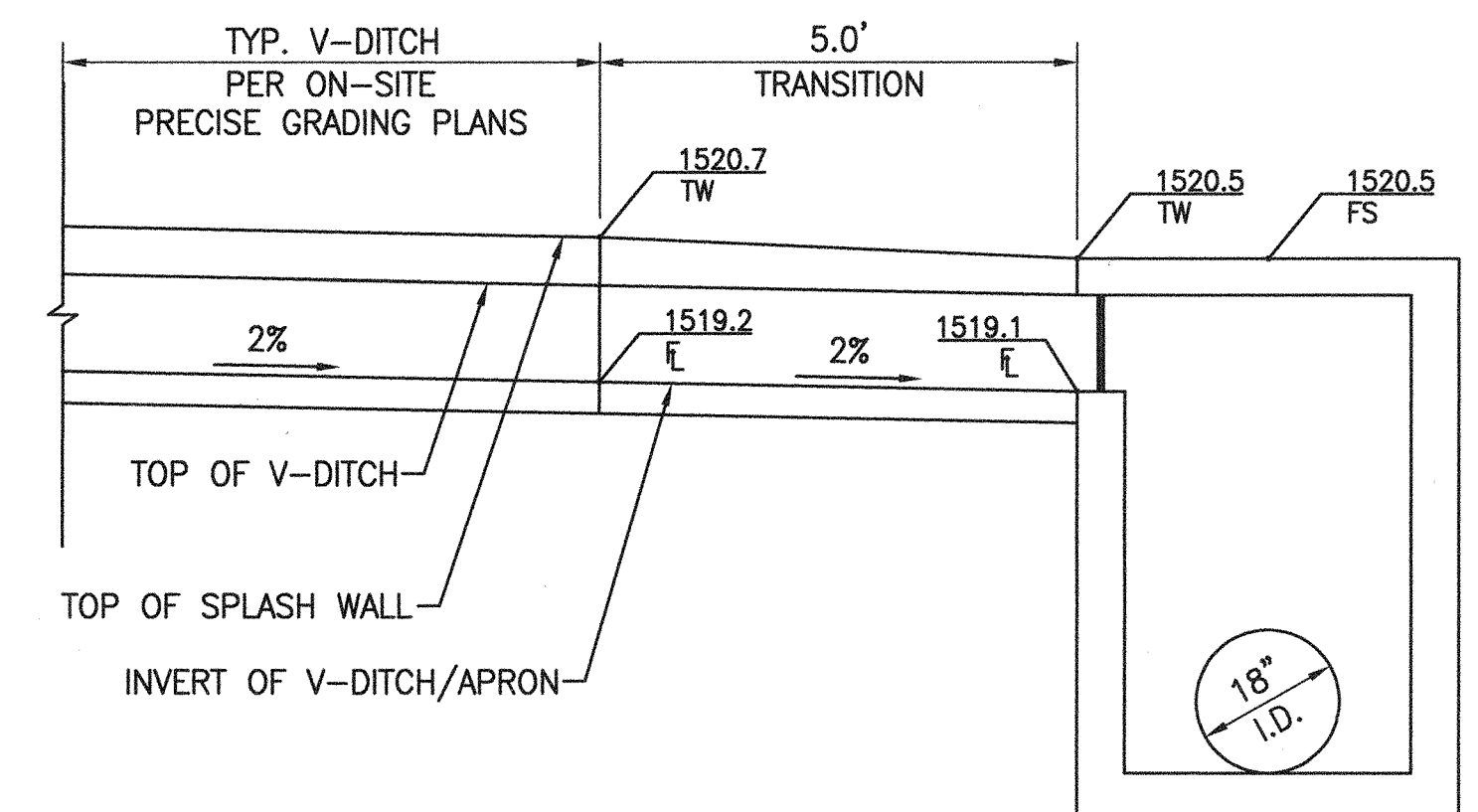
IP 180028 / 966-5
PERRIS VALLEY MDP
LATERAL H-11
STAGE NO. 2
DETAILS & ACCESS ROAD
PROJECT NO. 4-0-00502
DRAWING NO. 4-1128
SHEET NO. 6 / 7



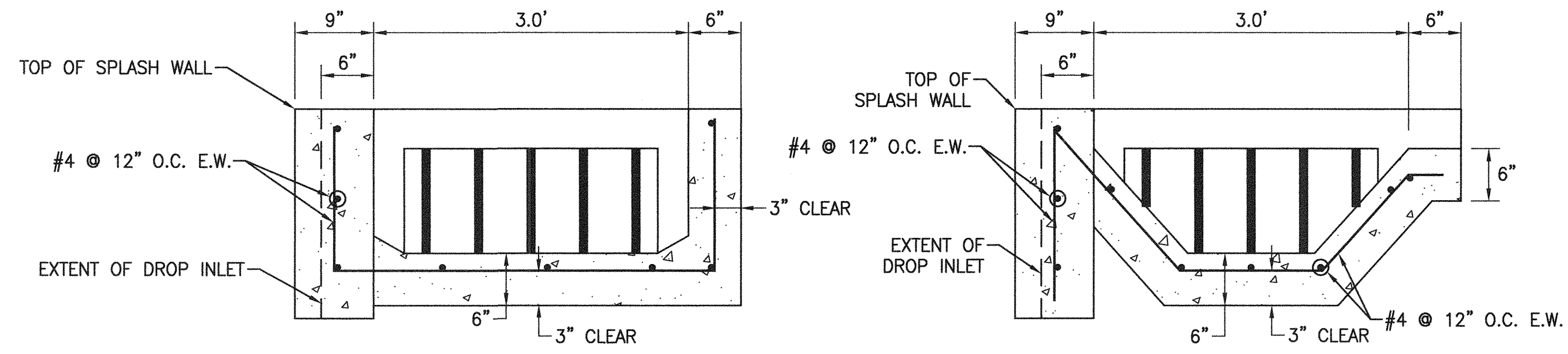
CONNECTOR PIPE PROFILES



DROP INLET STRUCTURE



CONCRETE APRON AND DROP INLET

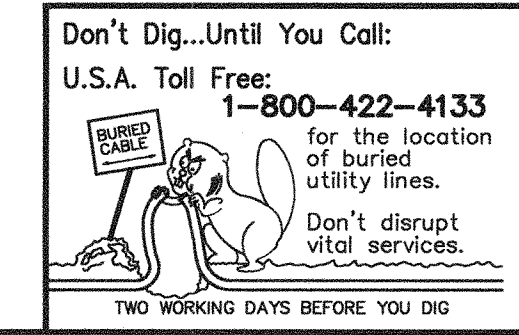


SECTION E

SECTION D

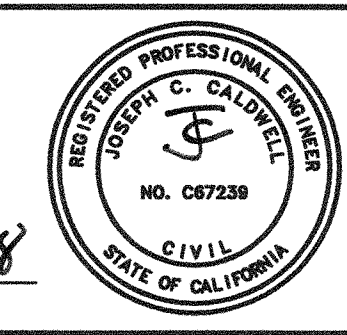
- NOTES:**
- ⑨ INSTALL 36" RCP STORM DRAIN (D-2000).
 - ⑩ INSTALL 18" RCP STORM DRAIN (CLASS IV).
 - ⑯ CONSTRUCT CONCRETE DROP INLET AND CONCRETE APRON PER RCFC&WCD STD. DWG. CB110 PER AND DETAILS HEREON.
 - ⑰ CONSTRUCT JUNCTION STRUCTURE NO. 4 PER RCFC&WCD STD. DWG. JS229.
 - ⑱ CONSTRUCT CONCRETE BULKHEAD PER RCFC&WCD STD. DWG. M816.

REC'D COUNTY OVERSIGHT ENGINEER REGISTRATION # DATE SIGNED
 35765 4-5-19
 APPROVED AS TO COMPLIANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES.



SCALE: DATE: 06/29/2018
 DESIGNED BY: CC
 DRAWN BY: JJO
 CHECKED BY: JCC
 F.B.

APPROVED BY: ALBERT A. WEBB ASSOCIATES
 ENGINEERING CONSULTANTS
 3788 McCRAY STREET
 RIVERSIDE CA, 92506
 PH. (951) 686-1070
 FAX (951) 788-1256
 ENGINEER, RCE C67239
 DATE: 2/20/2018



PERMANENT BENCH MARK
 SEE COVER SHEET

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
 RECOMMENDED FOR APPROVAL BY: _____ APPROVED BY: _____
 PLANNING ENGINEER R.E. NO. _____ CHIEF ENGINEER R.E. NO. _____
 DATE: _____ DATE: _____

IP 180028 / 966-5
 PERRIS VALLEY MDP
 LATERAL H-11
 STAGE NO. 2
 CONNECTOR PIPE PROFILE & DETAILS

PROJECT NO. 4-0-00502
 DRAWING NO. 4-1128
 SHEET NO. 7 / 7

SUBMITTAL 2 - FOR REVIEW ONLY G:\2016\16-0235\DRAWINGS\PLAN SHEETS\16-0235 SD SHEET_CP_RCP.DWG 10/8/2018 7:55:55 AM

PERRIS VALLEY MDP LINE H-11.1 PLANS

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

INDEX

TITLE SHEET
PLAN & PROFILE

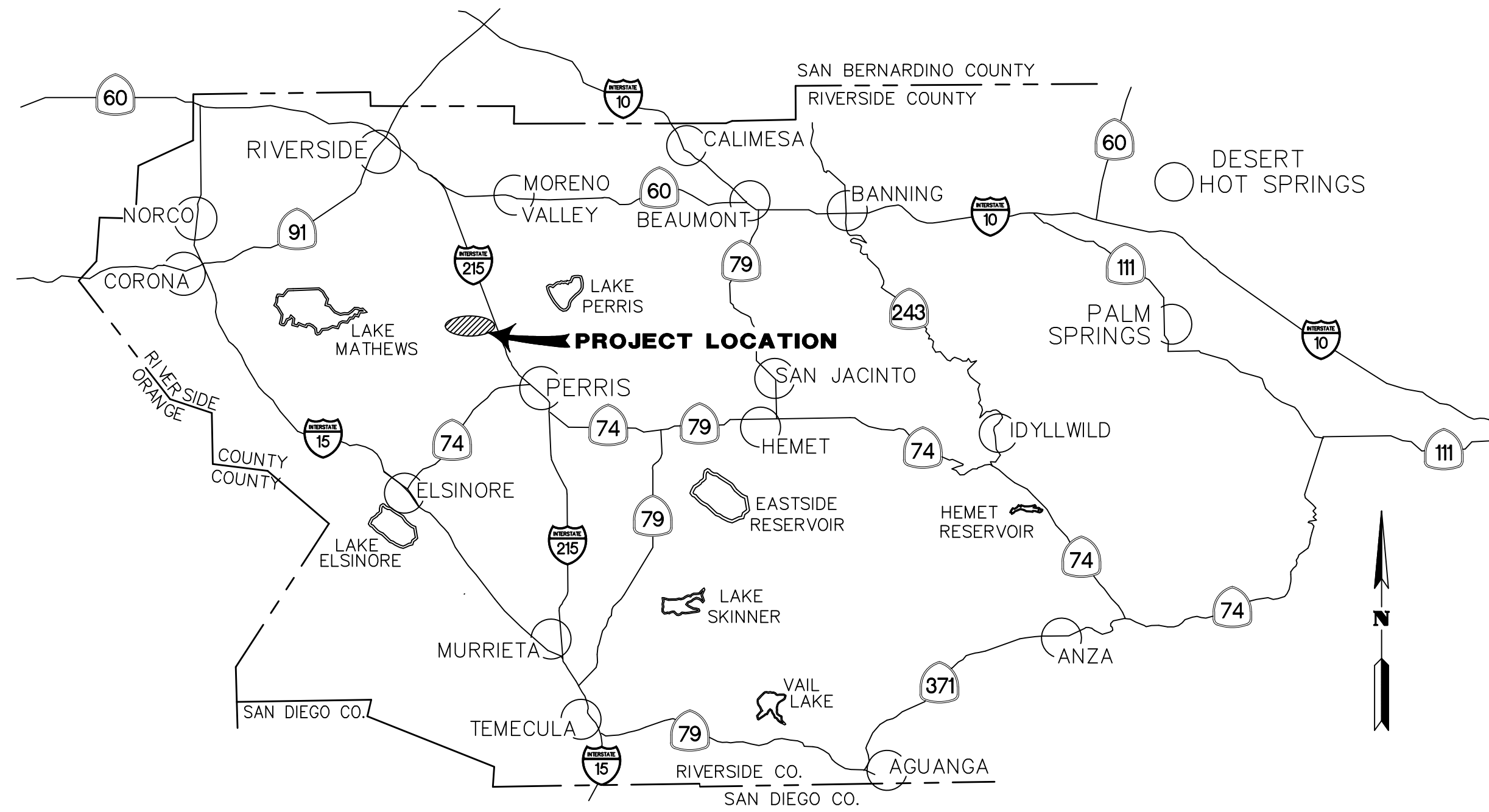
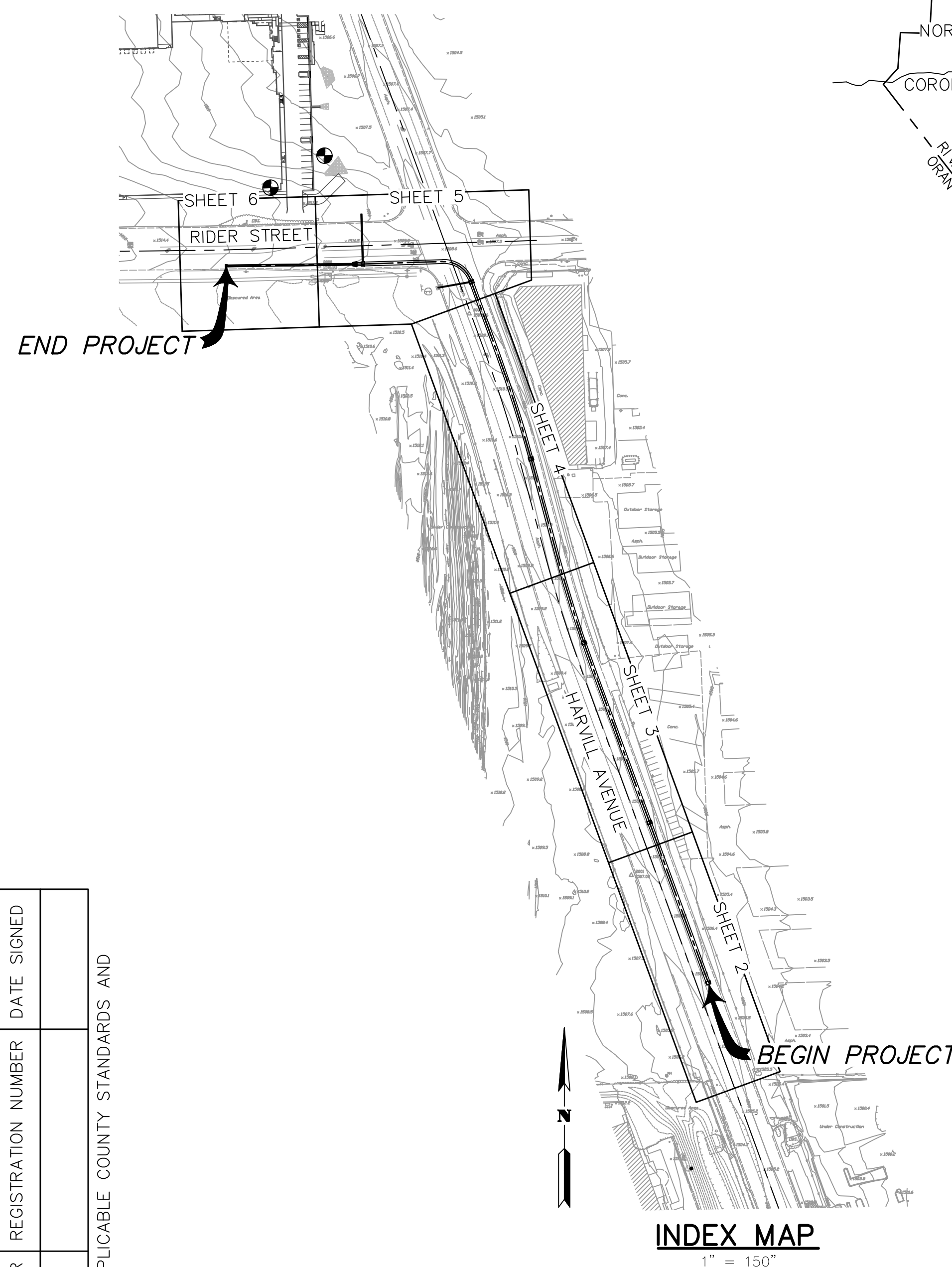
SHEET NO.
1
2-8

R.C.F.C. & W.C.D STANDARD DRAWINGS

MH252	MANHOLE NO. 2
M803	CONCRETE COLLAR
M815	CONCRETE SLURRY
M816	CONCRETE BULKHEAD
TS303	TRANSITION STRUCTURE NO. 3

NOTICE TO CONTRACTOR

IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND ELEVATION OF THE EXISTING FACILITIES PRIOR TO THE START OF ANY CONSTRUCTION.



VICINITY MAP
N.T.S.

GENERAL NOTES

1. THE CONTRACTOR SHALL CONSTRUCT THE FLOOD CONTROL IMPROVEMENTS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT'S M.O.U STANDARD SPECIFICATIONS DATED JUNE 24, 2008, AND THE DISTRICT'S STANDARD MANUAL. FOR THE LATEST DRAWINGS OF THE STANDARD MANUAL, PLEASE REFER TO THE "PUBLICATIONS AND RECORDS" PAGE FOUND ON THE DISTRICT'S WEBSITE.
2. CONTACT THE ENCROACHMENT PERMIT ENGINEER AT 951.955.1266 IF AN ENCROACHMENT PERMIT IS REQUIRED FROM THE DISTRICT. AFTER THE PERMIT IS ISSUED THE DISTRICT MUST BE NOTIFIED ONE WEEK PRIOR TO CONSTRUCTION.
3. CONTACT CONSTRUCTION MANAGEMENT AT 951.955.1288 IF CONSTRUCTION INSPECTION WILL BE PERFORMED BY THE DISTRICT. THE DISTRICT MUST BE NOTIFIED TWENTY DAYS (20) PRIOR TO CONSTRUCTION.
4. ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
5. STATIONING FOR LATERALS AND CONNECTOR PIPE REFER TO THE CENTERLINE INTERSECTION STATIONS.
6. FORTY-EIGHT HOURS BEFORE EXCAVATION, CALL UNDERGROUND SERVICE ALERT 1.800.227.2600.
7. ALL ELEVATIONS SHOWN ARE IN FEET AND DECIMALS THEREOF BASED ON THE NATIONAL GEODETIC VERTICAL DATUM (NGVD 29).
8. ALL COORDINATES ARE SHOWN IN FEET AND DECIMALS THEREOF BASED ON AN ASSUMED COORDINATE SYSTEM.
9. ALL CROSS SECTIONS ARE TAKEN LOOKING DOWNSTREAM.
10. ELEVATIONS OF UTILITIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
11. UNLESS OTHERWISE SPECIFIED, MINIMUM STREET RECONSTRUCTION SHALL BE 4" TYPE "B" HOT MIX ASPHALT OVER 6" CLASS 2 AGGREGATE BASE OR AS SPECIFIED BY THE ENGINEER.
12. OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6" OF CLASS "B" CONCRETE.
13. PIPE CONNECTED TO THE MAINLINE PIPE SHALL CONFORM TO JUNCTION STRUCTURE NO. 4 (JS 229) UNLESS OTHERWISE NOTED.
14. PIPE BEDDING SHALL CONFORM TO THE DISTRICTS STANDARD DRAWING NO. M815
15. INDICATES SOIL BORING LOCATIONS BASED ON THE SOILS REPORT DATED AUGUST 28, 2018. LOCATIONS SHOWN ARE APPROXIMATE.
16. "V" IS THE DEPTH OF CATCH BASINS MEASURED FROM THE TOP OF CURB TO INVERT OF CONNECTOR PIPE.
17. CATCH BASINS SHALL BE LOCATED SO THAT LOCAL DEPRESSION SHALL BEGIN AT EXISTING CURB RETURN JOINT, UNLESS OTHERWISE SPECIFIED.
18. ALL CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED IN KIND AND AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS UNLESS OTHERWISE NOTED.
19. STANDARD DRAWINGS CALLED FOR ON THE PLAN AND PROFILE SHALL CONFORM TO DISTRICT STANDARD DRAWINGS UNLESS NOTED OTHERWISE.
20. THE CONTRACTOR IS REQUIRED TO CALL ALL UTILITY AGENCIES REGARDING TEMPORARY SHORING AND SUPPORT REQUIREMENTS FOR THE VARIOUS UTILITY LINES SHOWN ON THESE PLANS.
21. DURING ROUGH GRADING OPERATIONS AND PRIOR TO CONSTRUCTION OF PERMANENT DRAINAGE STRUCTURES, TEMPORARY DRAINAGE CONTROL SHOULD BE PROVIDED TO PREVENT PONDING WATER AND DAMAGE TO ADJACENT PROPERTIES.
22. APPROVAL OF THESE PLANS BY THE DISTRICT DOES NOT RELIEVE THE DEVELOPER'S ENGINEER OF RESPONSIBILITY FOR THE ENGINEERING DESIGN. IF FIELD CHANGES ARE REQUIRED, IT WILL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO MAKE THE NECESSARY CORRECTIONS.
23. THE CONTRACTOR OR DEVELOPER SHALL SECURE ALL REQUIRED ENCROACHMENT AND/OR STATE AND FEDERAL REGULATORY PERMITS PRIOR TO THE COMMENCEMENT OF ANY WORK.
24. THE CONCRETE COATING ON THE INSIDE OF ALL REINFORCED CONCRETE PIPES OR STRUCTURES MUST BE INCREASED TO PROVIDE A MINIMUM OF 1-1/2 INCHES OVER THE REINFORCING AND INCREASED TO A MINIMUM OF 3-1/2 INCHES OVER REINFORCING FOR BOX CULVERT, WHEN DESIGN VELOCITIES EXCEED 20 FEET PER SECOND. THE CONCRETE DESIGN STRENGTH IN THESE REACHES SHALL BE F'C=5,000 PSI FOR VELOCITIES EXCEEDING 20 FEET PER SECOND AND F'C=6,000 PSI FOR VELOCITIES EXCEEDING 30 FEET PER SECOND.
25. CONSTRUCTION JOINTS FOR CALTRANS STANDARD REINFORCED CONCRETE BOX SHALL BE PLACED ACCORDING TO THE DISTRICT STANDARD DRAWING NO. BOX 401.

REC'D	PLAN CHECK OVERSIGHT ENGINEER	REGISTRATION NUMBER	DATE SIGNED
APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES			

HUITT-ZOLLARS
Huitt-Zollars, Inc. Ontario
3990 CONCOURS, SUITE 450 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799
PREPARED UNDER THE SUPERVISION OF: **JOHNNY MURAD**
R.C.E. EXPIRES DATE
67512 6-30-19

DESIGNED BY: J.M.
DRAWN BY: H-Z STAFF
CONSTR. SET:
CHECKED BY: J.M.
P8 NUMBER:

DIGALERT
DIAL BEFORE YOU DIG
TOLL FREE
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

PERMANENT BENCH MARK
3 3/4" ALUMINUM DISC ON TOP OF CURB
1300' WEST OF AT&T RAILROAD TRACK,
NORTH CURB OF RIDER STREET, STAMPED
METROPOLITAN WATER DISTRICT, BM 435
ELEVATION = 1512.59' (NGVD 29)

REF.	DESCRIPTION	APPR.	DATE

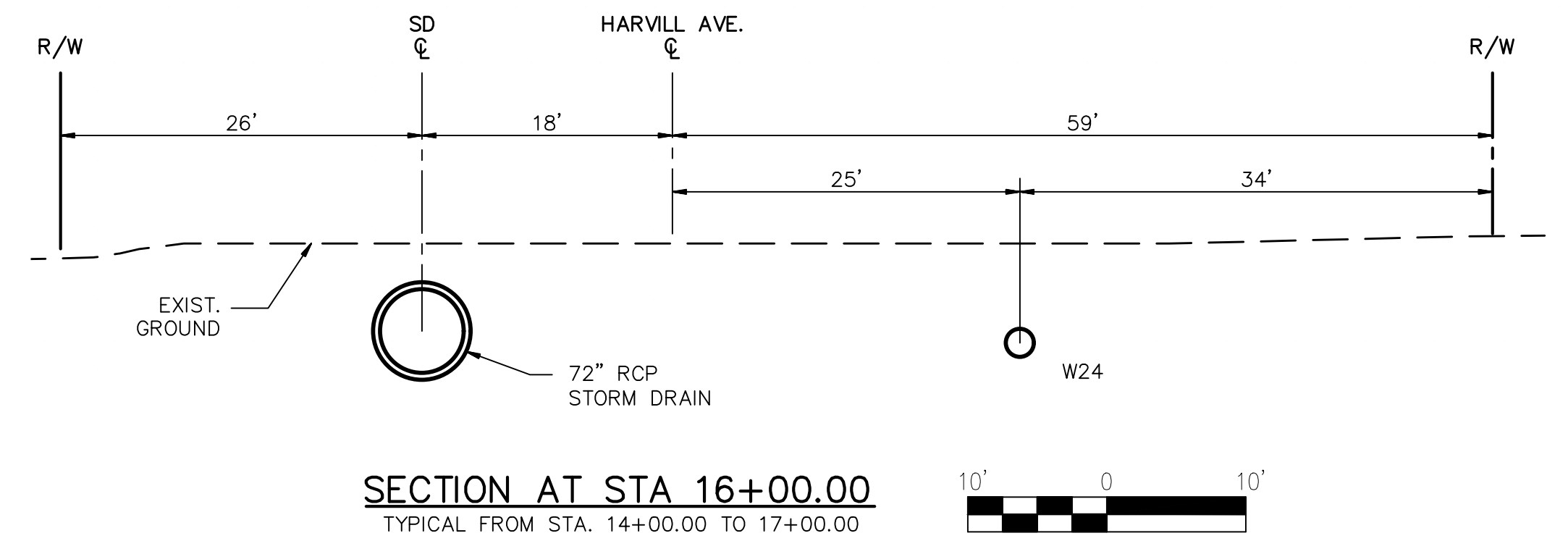
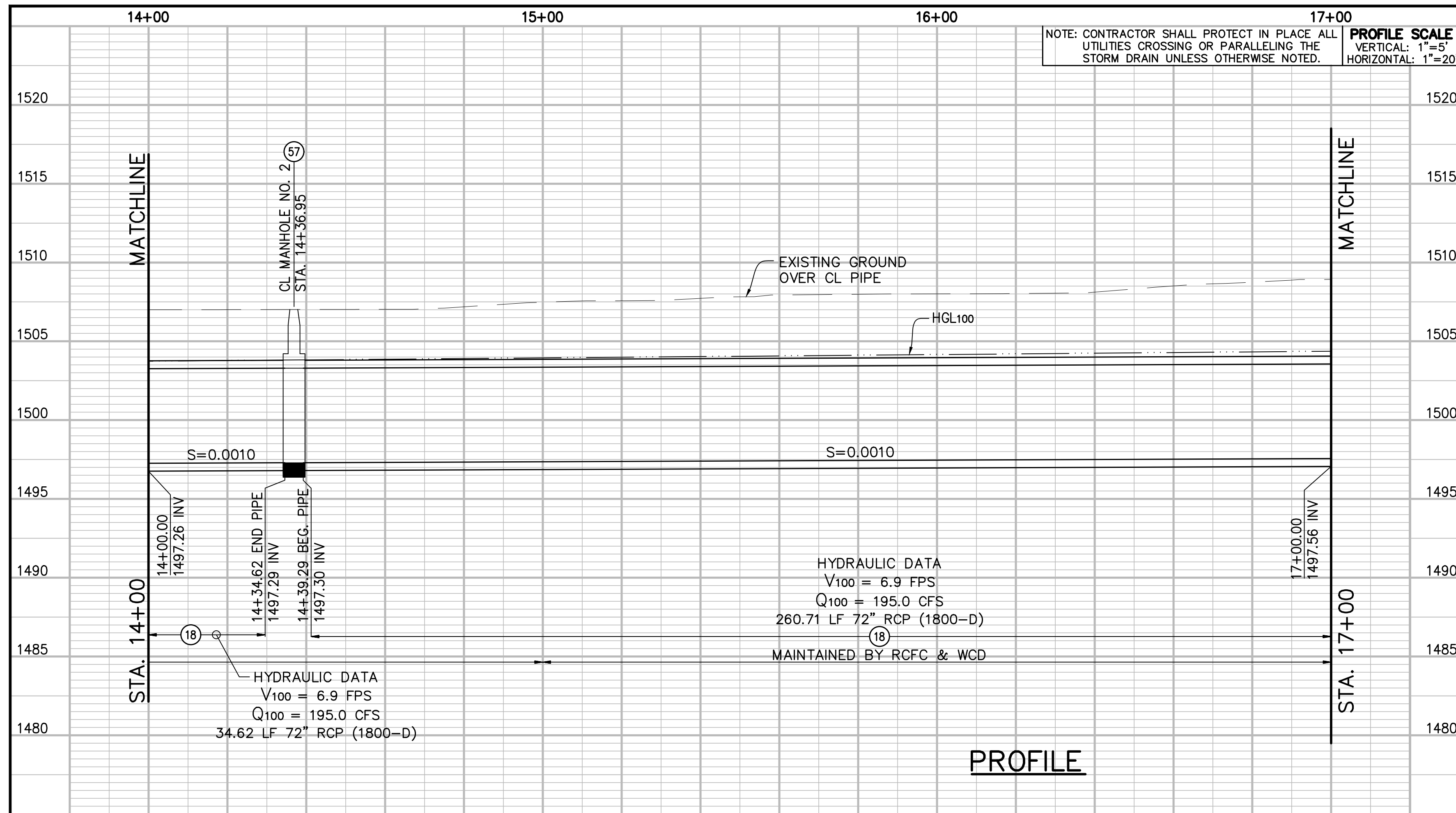
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
CHIEF OF PLANNING	GENERAL MANAGER - CHIEF ENGINEER
DATE:	DATE:

**PERRIS VALLEY MDP
LATERAL H-11.1**

TITLE SHEET
HARVILL AVE. & RIDER ST.

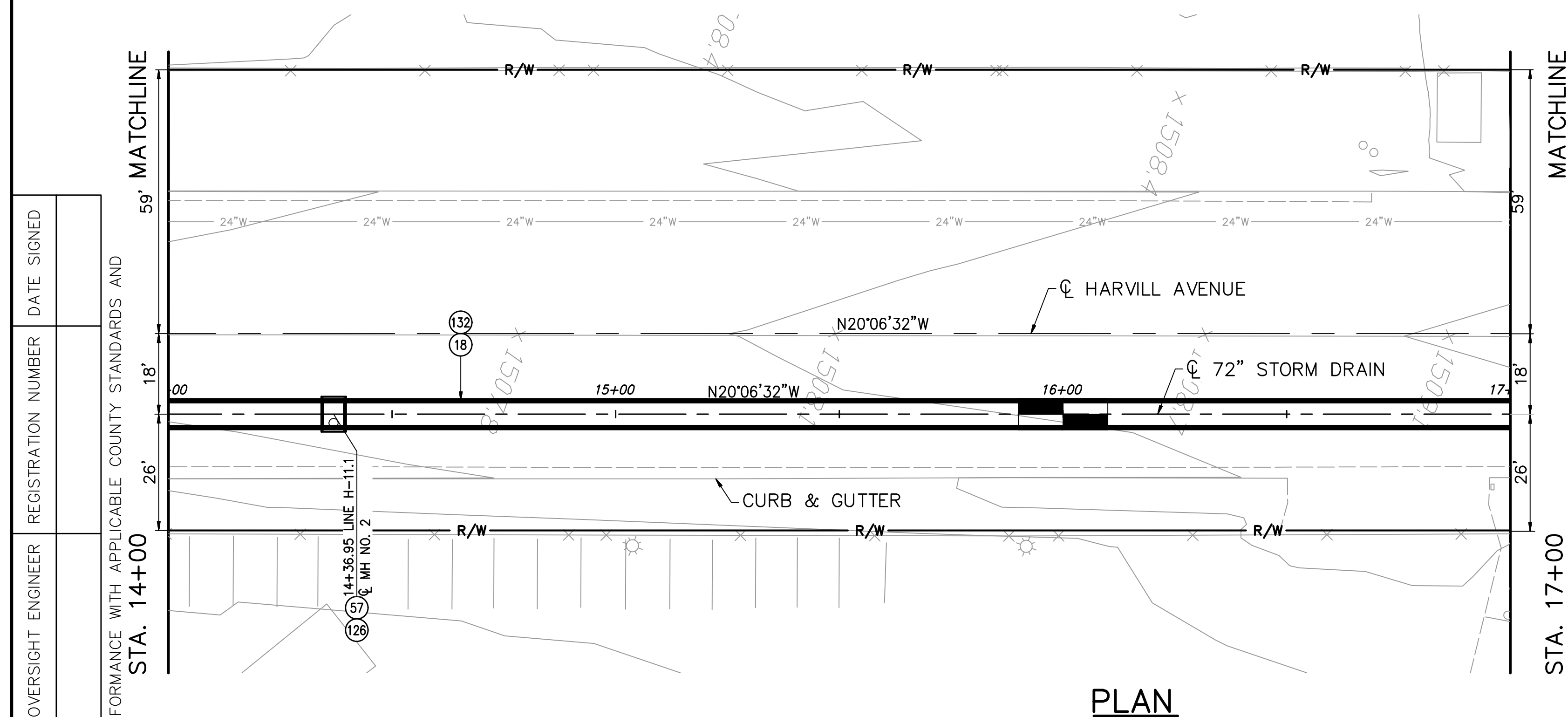
PROJECT NO.	
DRAWING NO.	
SHEET NO.	1 OF 8

H:\Pro\180959001 - Crow - Harvill et Rider Industrial\05 Design\051 Dwg\5\Storm Drain\DR01.dwg, Layout: 01, Jun 18 2019 3:25pm



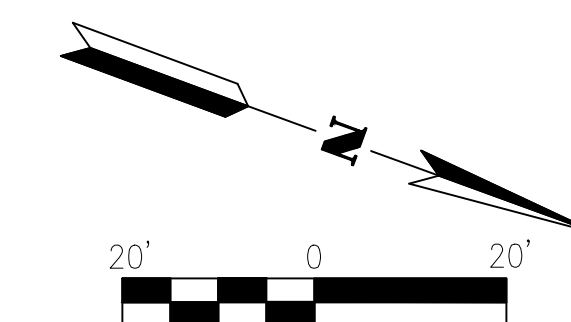
* NOTE:
 HORIZONTAL AND VERTICAL LOCATIONS TO BE VERIFIED IN THE FIELD AND ENGINEER NOTIFIED OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

MANHOLE / JUNCTION STRUCTURE DATA					
LATERAL	CL STATION	WALL STATION	STRUCTURE	A	C
-	14+36.95	-	MH NO. 2	-	-



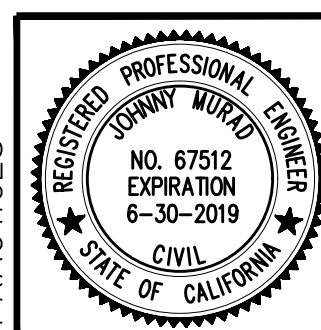
CONSTRUCTION NOTES

- (18) INSTALL 72" RCP (D-LOAD AND PROFILE AS SHOWN ON PLANS)
- (57) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C. & WCD STD. PLAN MH252
- (126) ADJUST MANHOLE RIM TO GRADE AFTER FINAL SURFACE HAS BEEN INSTALLED
- (132) SAWCUT, REMOVE AND REPLACE EXISTING AC OVER AB PAVEMENT IN KIND AFTER CONSTRUCTION



REG CD	PLAN CHECK OVERSIGHT ENGINEER	REGISTRATION NUMBER	DATE SIGNED
--------	-------------------------------	---------------------	-------------

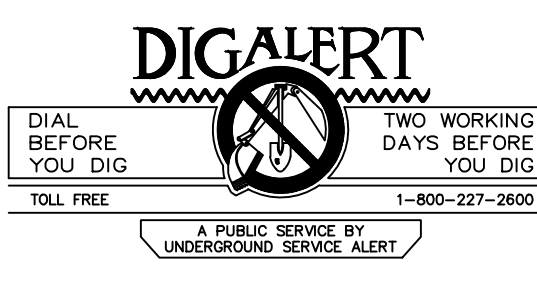
APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES



HUITT-ZOLLARS
 Huitt-Zollars, Inc. Ontario
 3990 CONCOURS, SUITE 450 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

PREPARED UNDER THE SUPERVISION OF: **JOHNNY MURAD**
 R.C.E. EXPIRES DATE
 67512 6-30-19

DESIGNED BY: J.M.
 DRAWN BY: H-Z STAFF
 CONSTR. SET:
 CHECKED BY: J.M.
 P8 NUMBER:



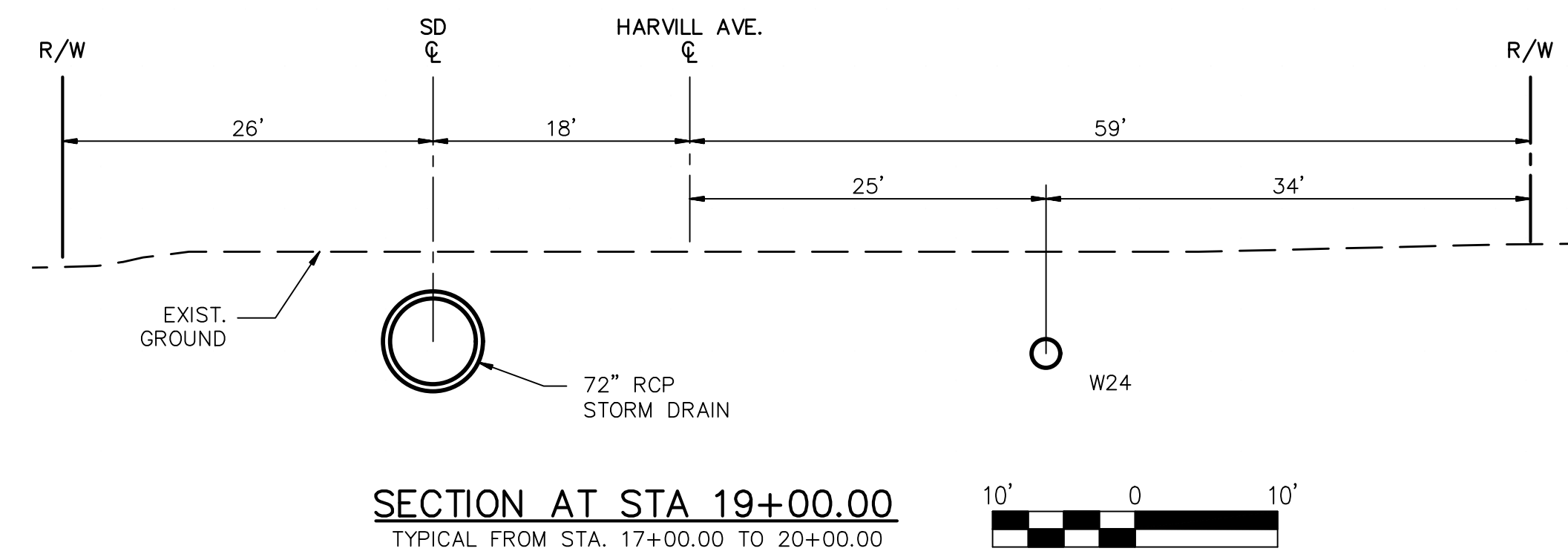
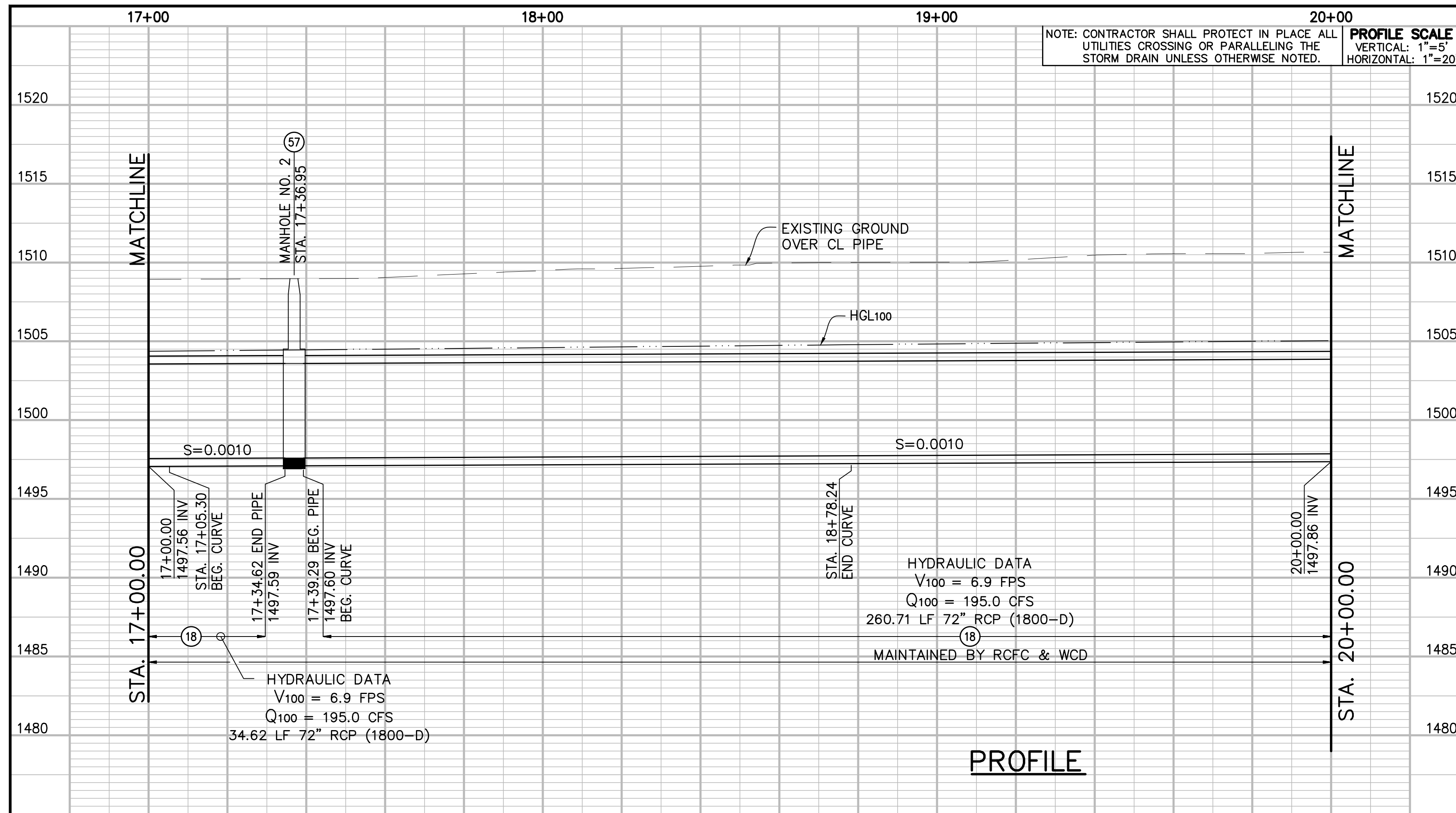
PERMANENT BENCH MARK
 3 1/4" ALUMINUM DISC ON TOP OF CURB
 1300' WEST OF AT&SF RAILROAD TRACK,
 NORTH CURB OF RIDER STREET, STAMPED
 METROPOLITAN WATER DISTRICT, BM 435
 ELEVATION = 1512.59' (NGVD 29)

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DATE:	DATE:

PERRIS VALLEY MDP
LATERAL H-11.1
 HARVILL AVENUE
 STA. 14+00.00 TO 17+00.00

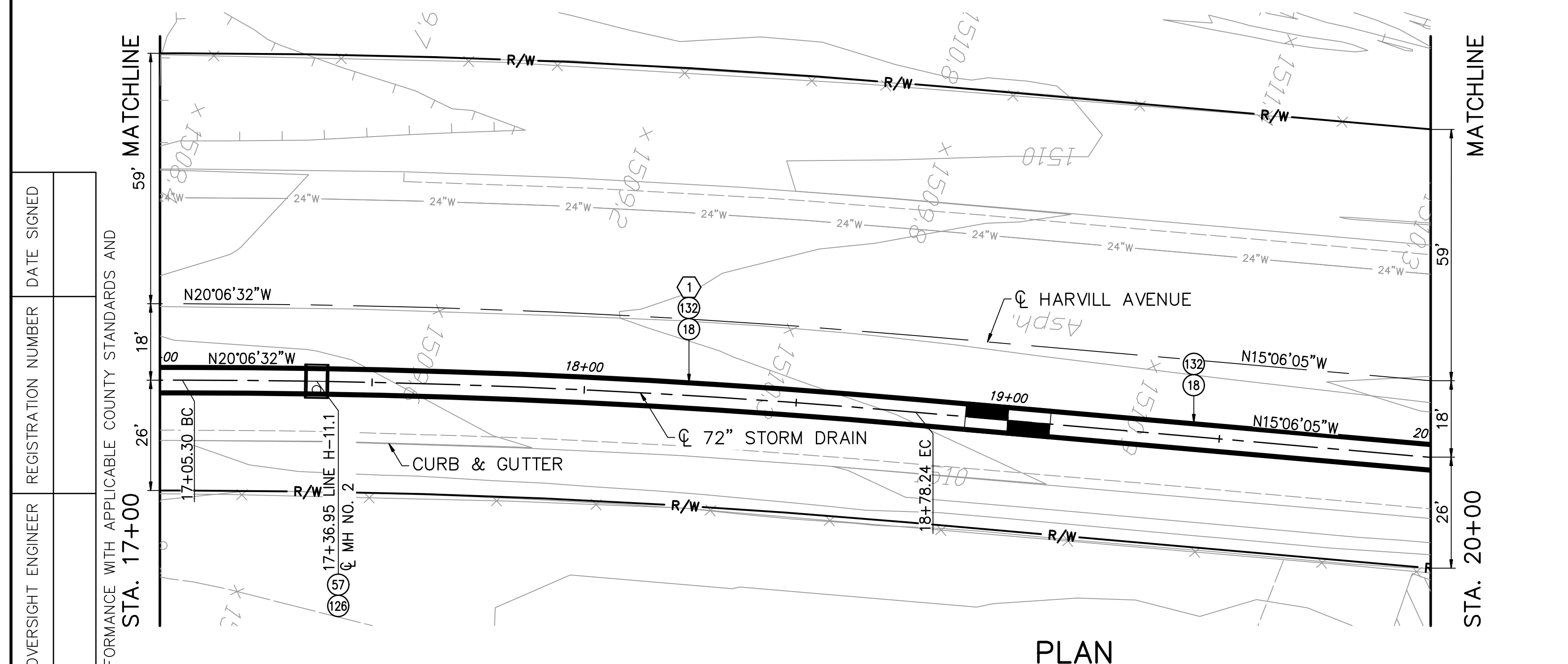
PROJECT NO.	
DRAWING NO.	
SHEET NO.	3 OF 8



* NOTE:
 HORIZONTAL AND VERTICAL LOCATIONS TO BE VERIFIED IN THE FIELD AND ENGINEER NOTIFIED OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

MANHOLE / JUNCTION STRUCTURE DATA					
LATERAL	CL STATION	WALL STATION	STRUCTURE	A	C
-	17+36.95	-	MH NO. 2	-	-

CURVE DATA	
R	1981.98
Δ	04°04'49.58"
L	141.29'
T	70.67'
B.C.	17+05.30
E.C.	18+78.24
P.I.	NORTHING 2246671.48 EASTING 6258544.08



- CONSTRUCTION NOTES**
- (18) INSTALL 72" RCP (D-LOAD AND PROFILE AS SHOWN ON PLANS)
 - (57) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C. & WCD STD. PLAN MH252
 - (126) ADJUST MANHOLE RIM TO GRADE AFTER FINAL SURFACE HAS BEEN INSTALLED
 - (132) SAWCUT, REMOVE AND REPLACE EXISTING AC OVER AB PAVEMENT IN KIND AFTER CONSTRUCTION

REG'D	PLAN CHECK OVERSIGHT ENGINEER	REGISTRATION NUMBER	DATE SIGNED
APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES			

HUITT-ZOLLARS
 Huitt-Zollars, Inc. Ontario
 3990 CONCOURS, SUITE 450 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

PREPARED UNDER THE SUPERVISION OF: **JOHNNY MURAD**
 R.C.E. EXPIRES DATE
 67512 6-30-19

DESIGNED BY: J.M.
 DRAWN BY: H-Z STAFF
 CONSTR. SET:
 CHECKED BY: J.M.
 P8 NUMBER:

DIGALERT
 TWO WORKING DAYS BEFORE YOU DIG
 1-800-227-2600
 A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

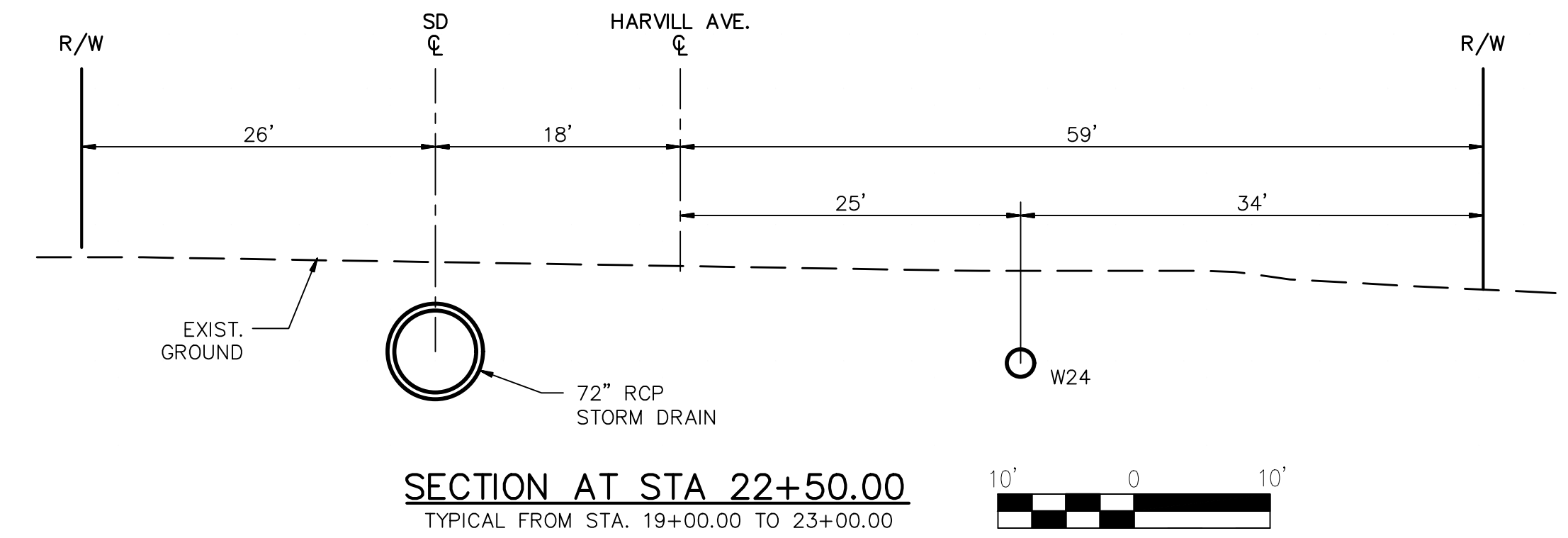
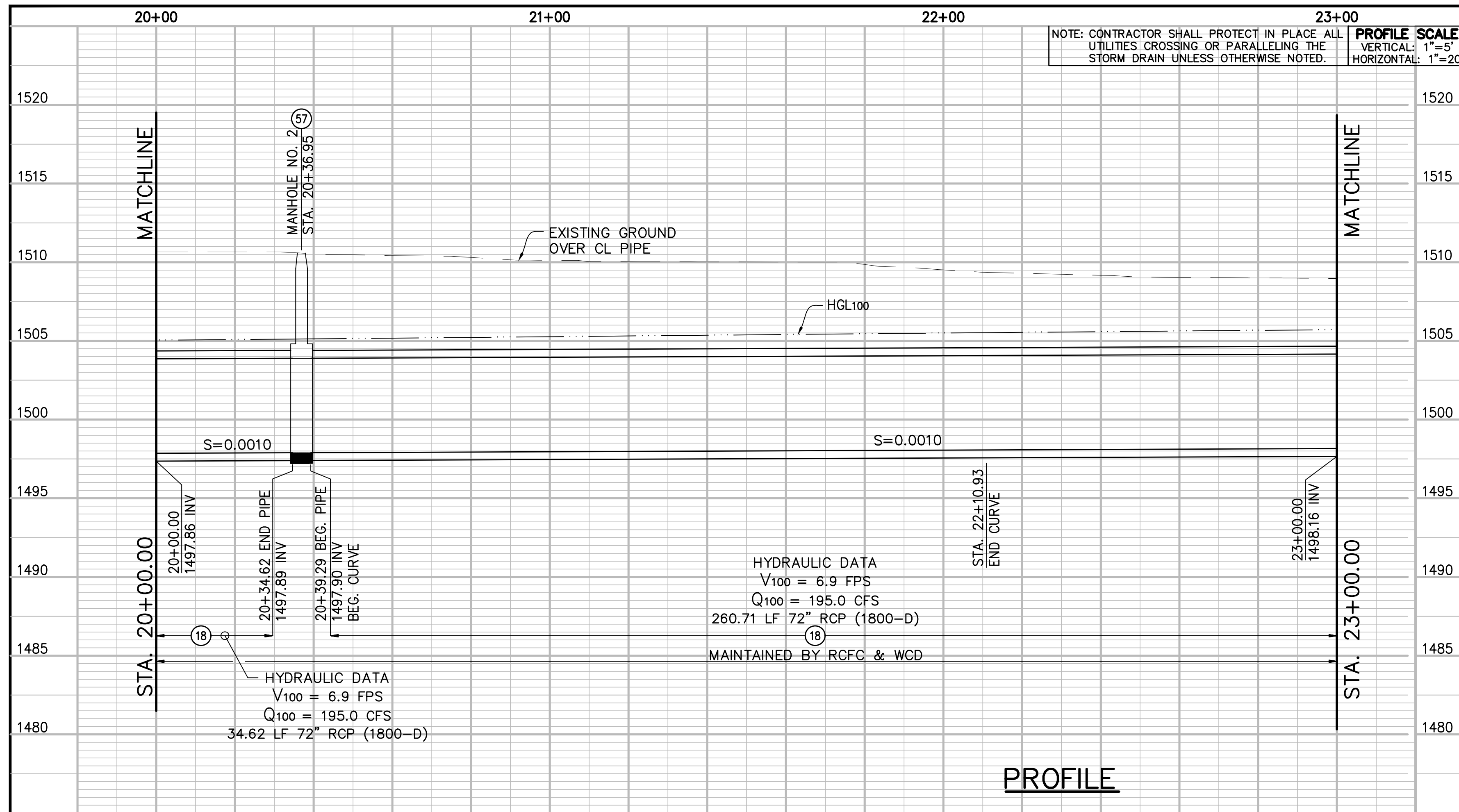
PERMANENT BENCH MARK
 3 3/4" ALUMINUM DISC ON TOP OF CURB
 1300' WEST OF AT&SF RAILROAD TRACK,
 NORTH CURB OF RIDER STREET, STAMPED
 METROPOLITAN WATER DISTRICT, BM 435
 ELEVATION = 1512.59' (NGVD 29)

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DATE:	DATE:

PERRIS VALLEY MDP
LATERAL H-11.1
 HARVILL AVENUE
 STA. 17+00.00 TO 20+00.00

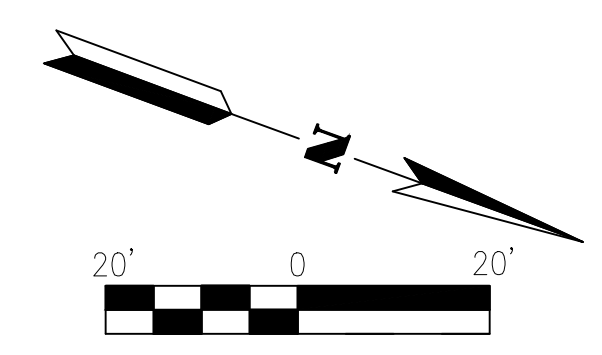
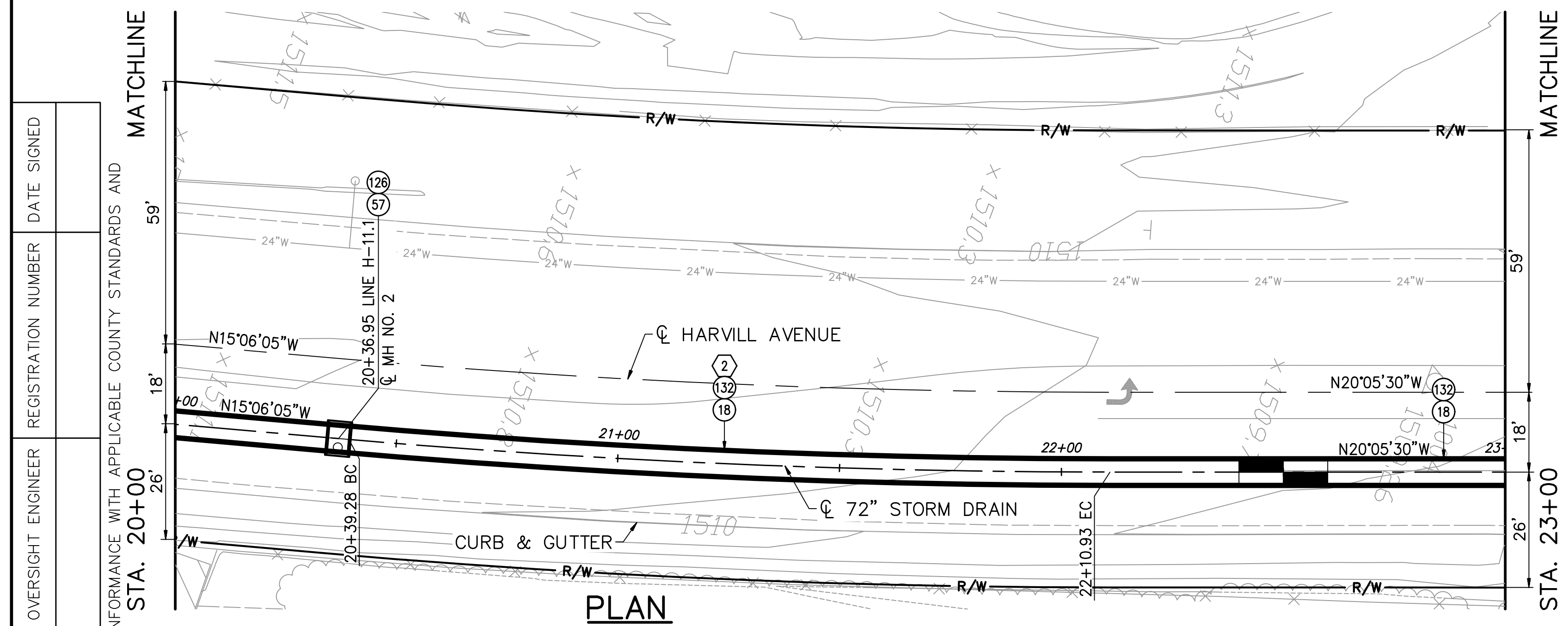
PROJECT NO.	
DRAWING NO.	
SHEET NO.	4 OF 8



* NOTE:
HORIZONTAL AND VERTICAL LOCATIONS TO BE VERIFIED IN THE FIELD AND ENGINEER NOTIFIED OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

MANHOLE / JUNCTION STRUCTURE DATA				
LATERAL	CL STATION	WALL STATION	STRUCTURE	A C
-	20+36.95	-	MH NO. 2	- -

CURVE DATA	
R	2018.02'
Δ	04°56'23.28"
L	173.98'
T	87.05'
B.C.	20+39.28
E.C.	22+10.93
P.I.	NORTHING 2246991.39 EASTING 6258457.76



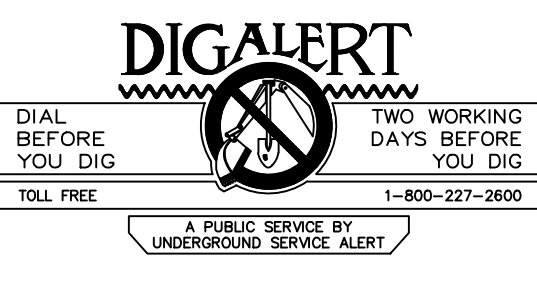
- CONSTRUCTION NOTES**
- (18) INSTALL 72" RCP (D-LOAD AND PROFILE AS SHOWN ON PLANS)
 - (57) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C. & WCD STD. PLAN MH252
 - (126) ADJUST MANHOLE RIM TO GRADE AFTER FINAL SURFACE HAS BEEN INSTALLED
 - (132) SAWCUT, REMOVE AND REPLACE EXISTING AC OVER AB PAVEMENT IN KIND AFTER CONSTRUCTION



HUITT-ZOLLARS
Ontario
3990 CONCOURS, SUITE 450 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799

PREPARED UNDER THE SUPERVISION OF: **JOHNNY MURAD**
R.C.E. EXPIRES DATE
67512 6-30-19

DESIGNED BY: J.M.
DRAWN BY: H-Z STAFF
CONSTR. SET:
CHECKED BY: J.M.
P8 NUMBER:



PERMANENT BENCH MARK
3 3/4" ALUMINUM DISC ON TOP OF CURB
1300' WEST OF AT&P RAILROAD TRACK,
NORTH CURB OF RIDER STREET, STAMPED
METROPOLITAN WATER DISTRICT, BM 435
ELEVATION = 1512.59' (NGVD 29)

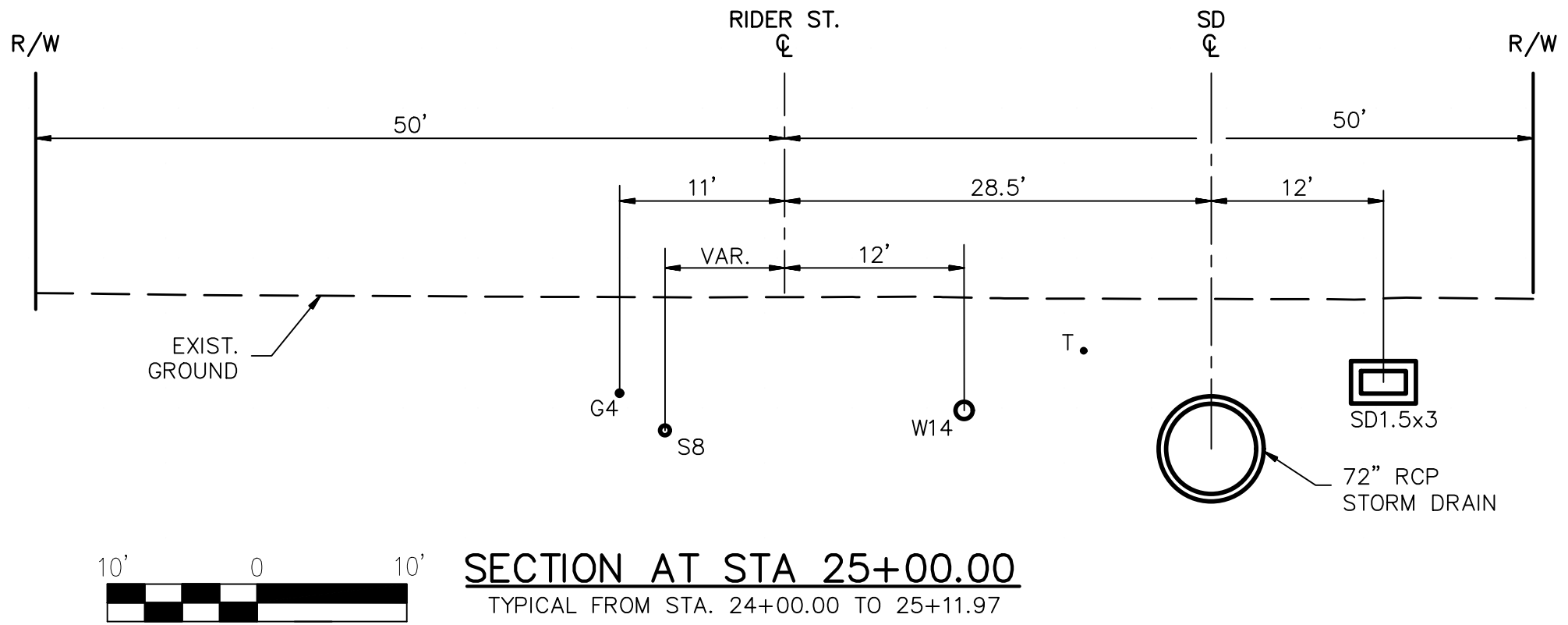
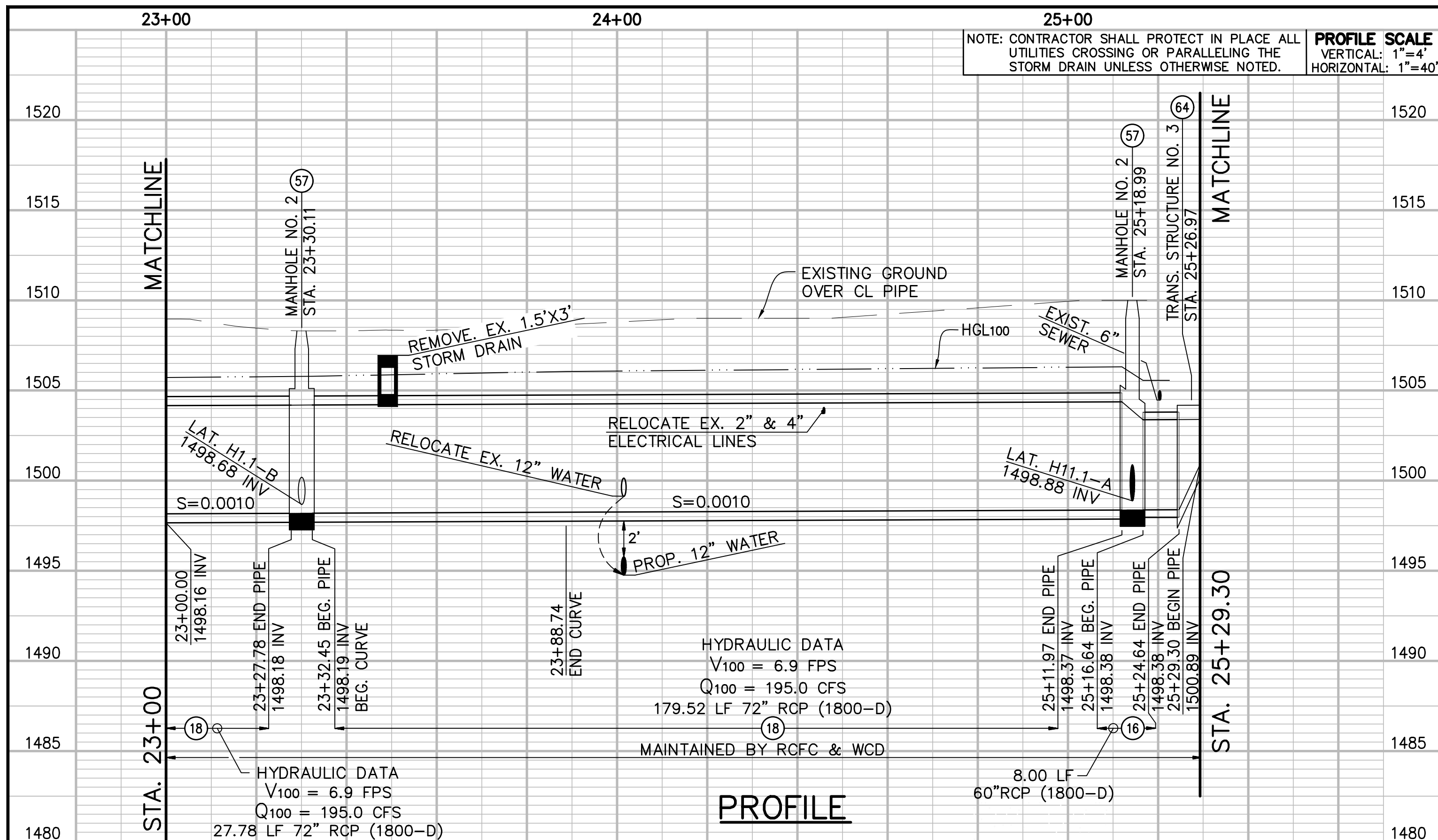
REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DATE:	DATE:

PERRIS VALLEY MDP
LATERAL H-11.1

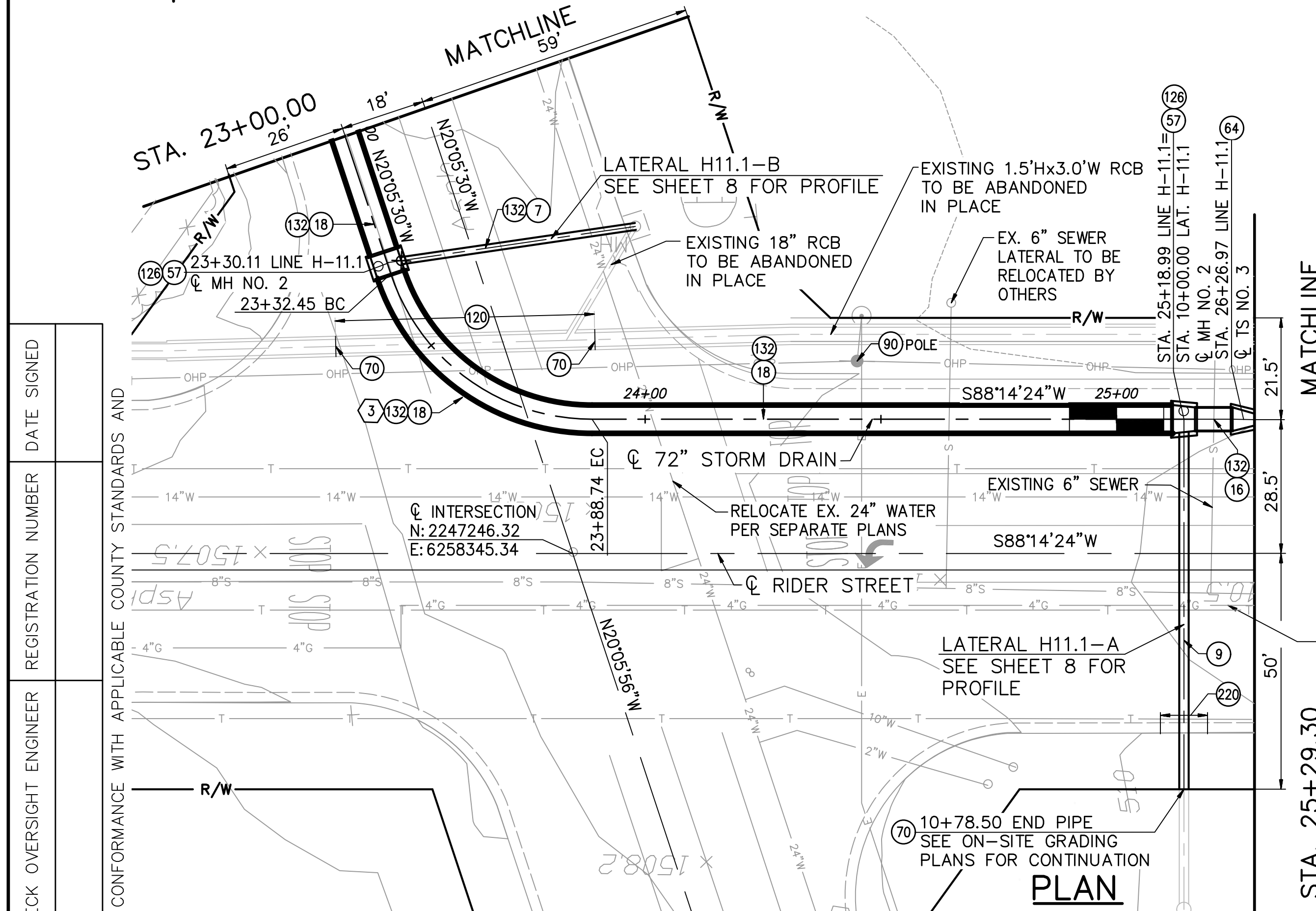
HARVILL AVENUE
STA. 20+00.00 TO 23+00.00

PROJECT NO.
DRAWING NO.
SHEET NO. 5 OF 8

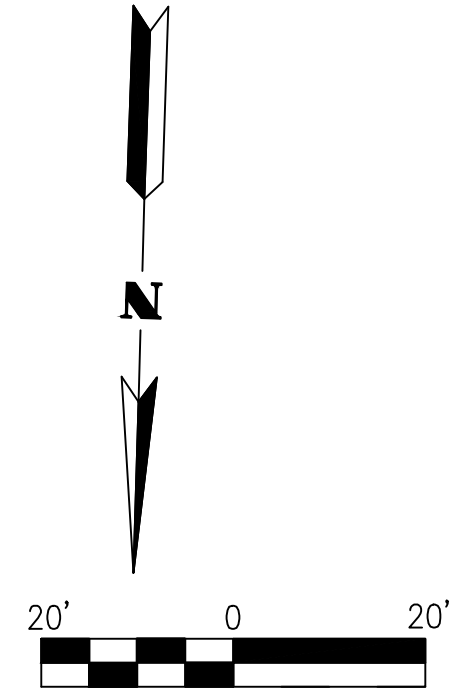


CURVE DATA		(3)
R		45.00'
L		71'40"06.60"
L		56.29'
T		32.50'
B.C.		23+39.28
E.C.		23+95.57
P.I.	NORTHING	2247225.14
	EASTING	6258372.26

MANHOLE / JUNCTION STRUCTURE DATA					
LATERAL	¢ STATION	WALL STATION	STRUCTURE	A	C
H11.1-B	23+30.11	23+30.50	MH NO. 2	80'	-
H11.1-A	25+18.99	25+18.99	MH NO. 2	90'	-



CAUTION!!!
HIGH PRESSURE GAS LINE. USE EXTREME CAUTION AND PROTECT GAS LINE IN PLACE WHILE WORKING IN THIS AREA. CONTRACTOR TO VERIFY LOCATION & ELEVATION PRIOR TO CONSTRUCTION!



- CONSTRUCTION NOTES**
- (7) INSTALL 18" RCP (D-LOAD AND PROFILE AS SHOWN ON PLANS)
 - (9) INSTALL 24" RCP (D-LOAD AND PROFILE AS SHOWN ON PLANS)
 - (10) INSTALL 30" RCP (D-LOAD AND PROFILE AS SHOWN ON PLANS)
 - (16) INSTALL 60" RCP (D-LOAD AND PROFILE AS SHOWN ON PLANS)
 - (18) INSTALL 72" RCP (D-LOAD AND PROFILE AS SHOWN ON PLANS)
 - (57) CONSTRUCT MANHOLE NO. 2 PER R.C.F.C. & WCD STD. PLAN MH252
 - (64) CONSTRUCT TRANSITION STRUCTURE NO. 3 PER R.C.F.C. & WCD STD. PLAN TS303
 - (70) CONSTRUCT CONCRETE BULKHEAD PER R.C.F.C. & W.C.D. STANDARD M816
 - (120) REMOVE 1.5'x3' RCB CULVERT
 - (126) ADJUST MANHOLE RIM TO GRADE AFTER FINAL SURFACE HAS BEEN INSTALLED
 - (132) SAWCUT, REMOVE AND REPLACE EXISTING AC OVER AB PAVEMENT IN KIND AFTER CONSTRUCTION
 - (220) SAWCUT AND REMOVE EXISTING CURB & GUTTER AND REPLACE IN KIND

RECORD PLAN CHECK OVERSIGHT ENGINEER
DATE SIGNED
REGISTRATION NUMBER
APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES

HUITT-ZOLLARS
Ontario
3990 CONCOURS, SUITE 450 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799
PREPARED UNDER THE SUPERVISION OF: **JOHNNY MURAD**
R.C.E. EXPIRES DATE
67512 6-30-19

DESIGNED BY: J.M.
DRAWN BY: H-Z STAFF
CONSTR. SET:
CHECKED BY: J.M.
P8 NUMBER:

DIGALERT
TWO WORKING DAYS BEFORE YOU DIG
1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

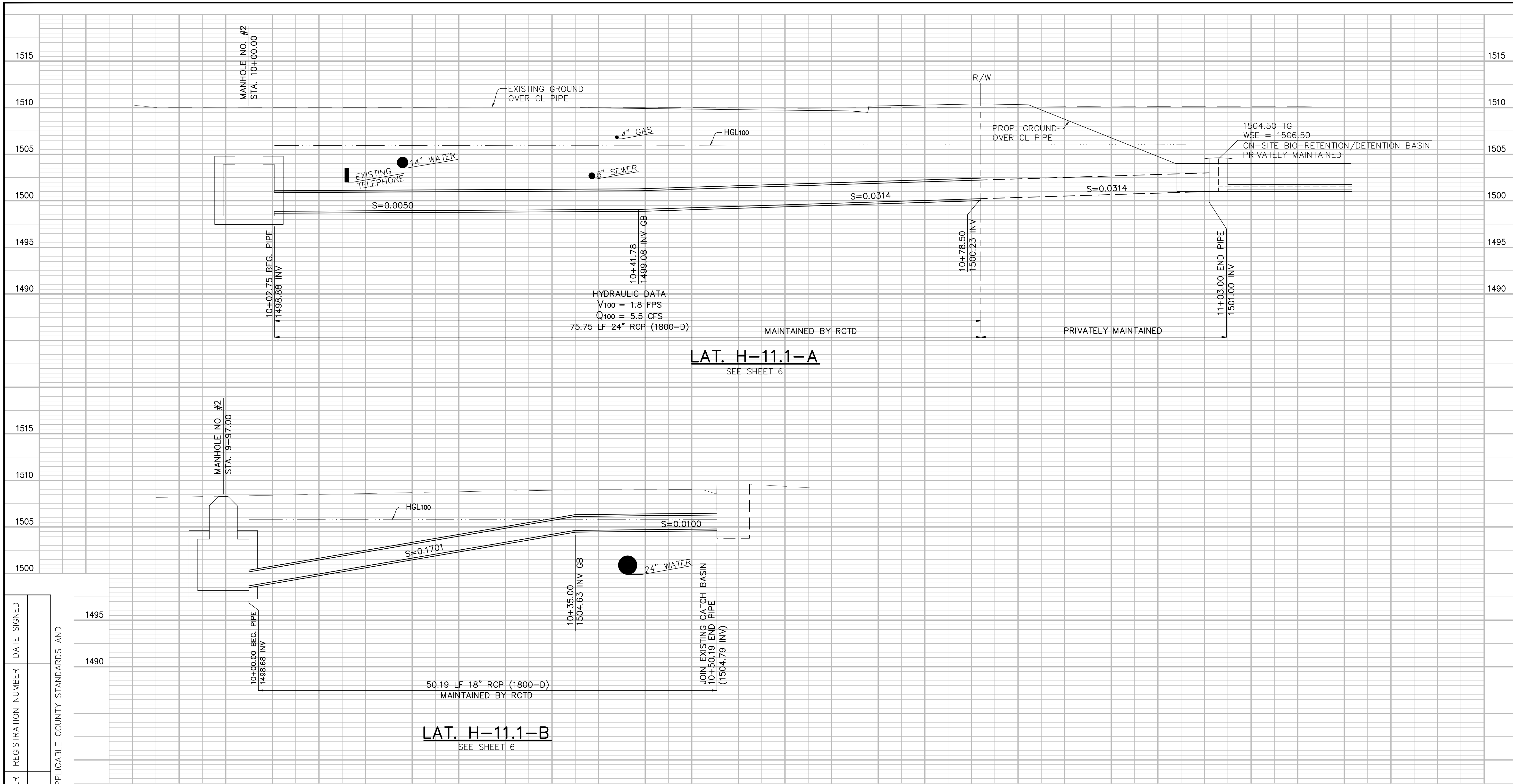
PERMANENT BENCH MARK
3 3/4" ALUMINUM DISC ON TOP OF CURB
1300' WEST OF AT&P RAILROAD TRACK,
NORTH CURB OF RIDER STREET, STAMPED
METROPOLITAN WATER DISTRICT, BM 435
ELEVATION = 1512.59' (NGVD 29)

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
RECOMMENDED FOR APPROVAL BY: _____
APPROVED BY: _____
DATE: _____ DATE: _____

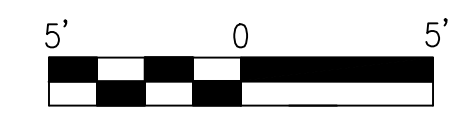
PERRIS VALLEY MDP
LATERAL H-11.1
RIDER STREET
STA. 23+00.00 TO 25+29.30

PROJECT NO.
DRAWING NO.
SHEET NO. **6** OF **8**



LAT. H-11.1-A
SEE SHEET 6

LAT. H-11.1-B
SEE SHEET 6



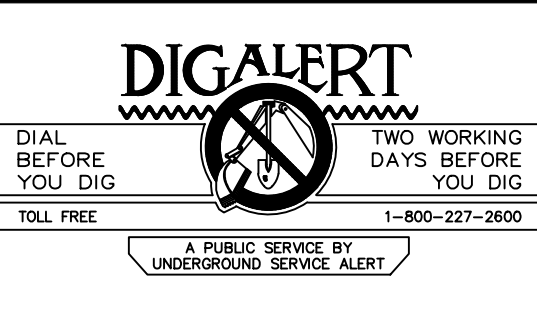
REG'D	PLAN CHECK OVERSIGHT ENGINEER	REGISTRATION NUMBER	DATE SIGNED
-------	-------------------------------	---------------------	-------------

APPROVED AS TO CONFORMANCE WITH APPLICABLE COUNTY STANDARDS AND PRACTICES



HUITT-ZOLLARS
Huittt-Zollars, Inc. Ontario
3990 CONCOURS, SUITE 450 • ONTARIO, CALIFORNIA 91764 • (909) 941-7799
PREPARED UNDER THE SUPERVISION OF: **JOHNNY MURAD**
R.C.E. EXPIRES DATE
67512 6-30-19

DESIGNED BY: J.M.
DRAWN BY: H-Z STAFF
CONSTR. SET:
CHECKED BY: J.M.
P8 NUMBER:



PERMANENT BENCH MARK
3 1/4" ALUMINUM DISC ON TOP OF CURB
1300' WEST OF AT&P RAILROAD TRACK,
NORTH CURB OF RIDER STREET, STAMPED
METROPOLITAN WATER DISTRICT, BM 435
ELEVATION = 1512.59' (NGVD 29)

REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
RECOMMENDED FOR APPROVAL BY:	APPROVED BY:
DATE:	DATE:

PERRIS VALLEY MDP
LATERAL H-11.1
PROFILE

PROJECT NO.	
DRAWING NO.	
SHEET NO.	8 OF 8

PERRIS VALLEY MDP HYDROLOGY MAPS



Project Site

THIS AREA TO BE EXCLUDED FROM AD-9 P.M.D.P. WHEN NEXT UPDATED

LEGEND

- MASTER PLAN BOUNDARY
- EXISTING FACILITY
- OPEN CHANNEL (CONC. TRAPEZOIDAL CHANNEL, SS = 1.5:1, UNLESS OTHERWISE NOTED)
- STORM DRAIN (RCP UNLESS OTHERWISE NOTED)
- FLOW RATE - IN CUBIC FEET PER SECOND, 250 = 10 YR., 250 = 100 YR.

0 1000 2000 3000
SCALE: 1" = 1000'

MASTER PLAN COST
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

**MASTER DRAINAGE PLAN
FOR THE
PERRIS VALLEY AREA**
APRIL 1991

J. F. DAVIDSON ASSOCIATES

8K3

FACILITIES' DRAINAGE BOUNDARIES

8K3

1/2

“A” STREET SOUTH – STREET IMPROVEMENT PLANS (FILE NO. 8710383-907H)

COUNTY OF RIVERSIDE, CALIFORNIA

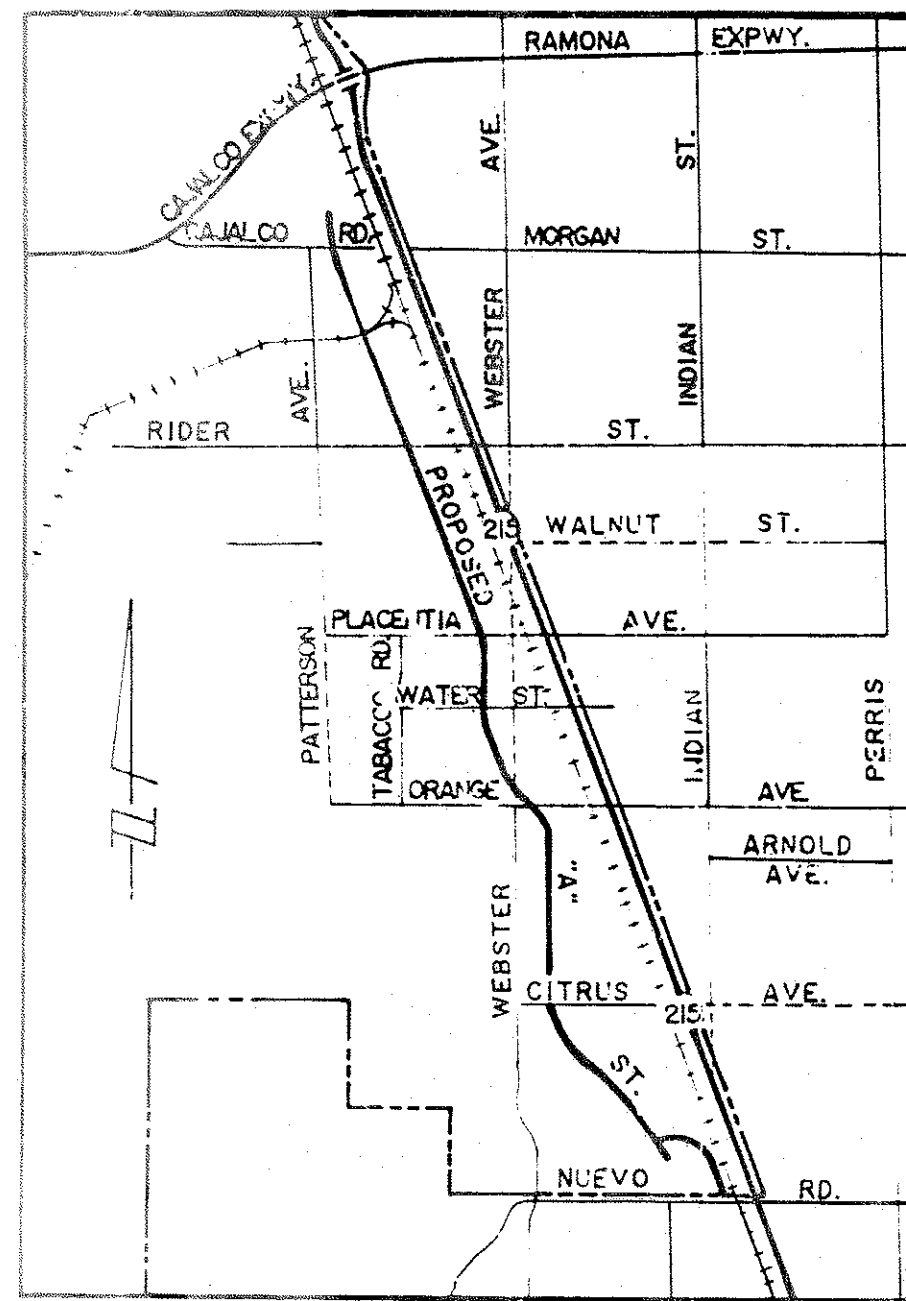
CONSTRUCTION PLANS FOR

CFD 87-1

"A" STREET SOUTH NUEVO ROAD TO CAJALCO ROAD

SHEET INDEX

TITLE	SHEET NO.
TITLE SHEET	1
QUANTITIES & MISC. DETAILS	2
TYPICAL SECTIONS	2A
STREET PLANS	3-19 - INCLUDES SHEETS 18A & 18B
STORM DRAIN PLANS	20-26
SIGNING AND STRIPING PLANS	27-36
TOTAL NUMBER OF SHEETS	38



LOCATION MAP

SCALE 1" = 1/2 mile
SECTIONS 12&13 T4S R4W
SECTIONS 18&19 T4S R3W

GENERAL NOTES

- The contractor shall be responsible for the clearing of the proposed work area, and relocation costs for all existing utilities. Permittees must inform county of construction schedule at least 48 hours prior to beginning of construction. Phone No. 275-6882.
- All work shall conform to the requirements of the Riverside County Transportation Department, Improvement Standards and Specifications, dated 1990 County Ordinance No. 461 & subsequent amendments.
- It shall be the responsibility of the contractor to notify the engineer, to install street centerline monument as required by Riverside County Ordinance No. 461.
- All underground facilities, including laterals, shall be in place prior to paving the street including, but not limited to, the following: ~~SEWER~~, WATER, ~~ELECTRIC~~, GAS, and DRAINAGE.
- Curb depressions and driveway approaches will be installed and constructed according to County Standard No. 206 and/or No. 207 as directed in the field.
- All street sections are tentative. Additional soil tests shall be taken after rough grading to determine the exact street section requirements. Use std. 401 if expansive material are encountered.
- "Asphaltic Emulsion" (Fog Seal) shall be applied not less than fourteen days following placement of the asphalt surfacing and shall be applied at a rate of 0.10 gallon per square yard. Asphaltic Emulsion shall conform to sections 37, 39 and 94 of the State Standard Specifications.
- Prime coat is required prior to paving all grades in excess of ten percent.

GENERAL NOTES CONT.

- No equipment or material may be stored on the A.T. & S.F. Railroad or Caltrans Right-of-way.
- An encroachment permit is required before any work may begin in or near the State Right-of-Way. (From Caltrans).
- All work within the State Right-of-Way shall conform to the latest State Standard Plans & Specifications or as directed by the State's representative (standards other than State must be pre-approved and justified).
- All disturbed areas in the State Right-of-Way must be treated for erosion control (Hydroseeding or equivalent, or as directed by the State's Representative). The responsibility for maintaining erosion control will not be released until the seeding is well established. The contractor will be responsible for the cost of Caltrans cleaning any drainage structures/channels which have become cluttered with debris and/or silt as a result of, or caused by, the construction project.
- Access control on the freeway will be maintained at all times, i.e., the work inside the State Right-of-Way must be fenced off with no access to the work area from the freeway.
- No freeway ramps or freeway lanes may be closed or obstructed at anytime unless specifically allowed per the encroachment permit and/or as directed by the State's Representative.
- Where survey monuments exist, such monuments shall be protected or shall be referenced and reset pursuant to business and professions code, sections 8700 to 8805 (Land surveyor's act).
- All signs, roadside markers, electrifiers, etc., shall be protected and/or replaced in-kind according to the current State Standard Plans and the current Traffic Manual, at no cost to the State.
- It shall be the responsibility of the contractor to install and maintain all construction, regulatory, guide and warning signs within the project limits and its surroundings and to provide safe passage for the travelling public and workers until the final completion and acceptance of the project by the county.

GENERAL NOTES CONT.

- It is the responsibility of the contractor to apply to Riverside County Flood Control and Water Conservation District for an encroachment permit for construction of laterals "P" and "R" contact Ken Vecchiarelli at (714) 275-1279.
- All "Grade to drain" daylight ditches shall be constructed as trapezoidal earth channels having a minimum basewidth of 5 feet and 4:1 sideslope.
- The contractor shall be responsible for ensuring that any State drainage facility which is connected to or directly affected by the contractor's operation shall be clean and operational prior to final acceptance of the permit work by the State. Adequate clean-outs and access opening shall be provided in any construction within the State's right of way for future maintenance and repair work as needed. This work shall be furnished at no cost to the State.

BENCH MARK

Riverside County Bench Mark #600-37-68 found brass disk stamped "600-37-68" in the top of a concrete post 2 1/2 miles N.W. of Perris Railroad sta. 0.2 miles S.E. of Orange Ave. 28' N.W. of Southbound Hwy. 395, 53' N.E. of A.T. & S.F. railroad tracks South end of a 16' concrete headwall established by Riverside County, 1970 elev. 1475.686'

PP25870
IP160002
FOR **ONLY**
PROPOSED CALTRANS EXTENSION OF "A" STREET (BY OTHERS)
ALBERT A. WEBB ASSOCIATES
3788 McCRAE STREET
RIVERSIDE, CALIFORNIA 92506
(951) 686-1070

MS4267, IP140052
FOR **ONLY**
ENCOMPASS ASSOCIATES, INC.
5699 COUSINS PLACE
RANCHO CUCAMONGA, CA 91737
(909) 684-0093

Underground Service Alert
Call TOLL FREE
1-800-422-4133

PRIVATE ENGINEERING NOTE
I HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF CALIFORNIA AND THAT I AM THE DESIGNER OF THE ABOVE PROJECT. I AM NOT PROVIDING ANY GUARANTEE OR WARRANTY FOR THE PROJECT. I AM NOT RESPONSIBLE FOR ANY DAMAGE TO PERSONS OR PROPERTY CAUSED BY THE PROJECT. I AM NOT RESPONSIBLE FOR ANY DAMAGE TO PERSONS OR PROPERTY CAUSED BY THE PROJECT. I AM NOT RESPONSIBLE FOR ANY DAMAGE TO PERSONS OR PROPERTY CAUSED BY THE PROJECT.

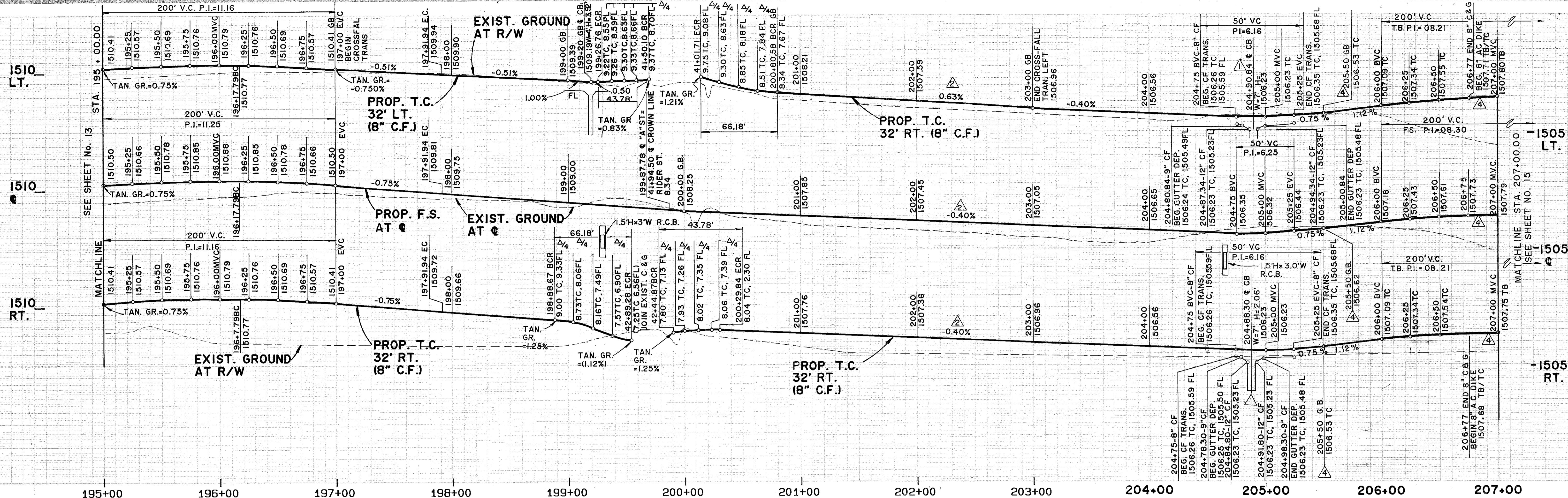
REVISIONS
1. MODIFIED & APPROV. DWY. TO SHEET 17
2. REPLACE SHEET 3B WITH 3C
3. REFER TO REVISIONS FOR CURB RETURN & 2 DWY. ON SHT. 34&35
4. DEL. LINE "U"
5. ADDED GENERAL NOTE No. 20

PREPARED UNDER THE DIRECTION OF: DATE 3-9-91
REGISTERED CIVIL ENGINEER No. 35458 EXP. DATE 9/30/95
APPROVED BY: [Signature]
FOR TRANSPORTATION DEPT. RIVERSIDE COUNTY DATE 3/25/91

J.F. Davidson Associates, Inc.
ENGINEERING PLANNING SURVEYING ARCHITECTURE
3880 Lemon Street 11200 S. Mil. W. Ave. Suite 100
P.O. Box 493 Colton, CA 92324
Riverside, CA 92502 (714) 825-1092
1744 686-7544 FAX 714-886-3994

W.C. 68-8128
IMPROVEMENT DISTRICT 13
THE COUNTY OF RIVERSIDE
STREET IMPROVEMENT PLANS
TITLE SHEET
OF 38 SHEETS
FOR COUNTY OF RIVERSIDE W.C. FILE NO. 140052

907-H



SEE BELOW FOR SEC. ALSO SEE SHT. 2A
TYP. SEC. "C" FOR ADDITIONAL INFORMATION

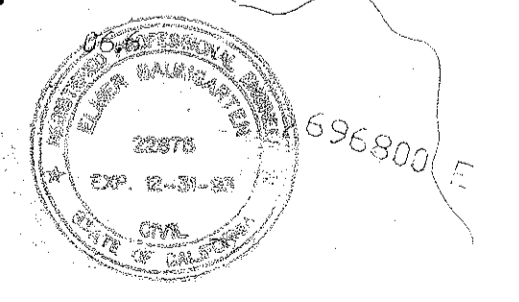
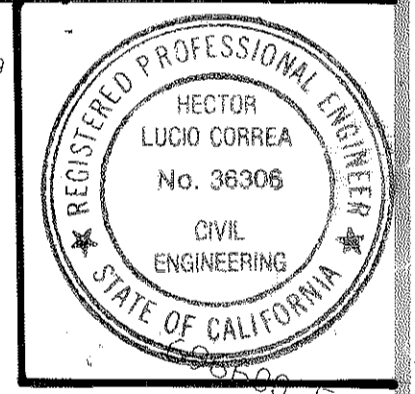
CROSSFALL TRANSITION TABLE				
STATION	A	B	C	D
197 + 00	-2%	2%	2%	6.25%
198 + 00	-2%	1%	2%	6.25%
199 + 00	-2%	0%	2%	6.25%
200 + 00	-1.25%	-1.25%		
201 + 00	-2%	0%	2%	6.25%
202 + 00	-2%	1%	2%	6.25%
203 + 00	-2%	2%	2%	6.25%

- CONSTRUCTION NOTES
- CONSTRUCT TYPE A-8 CURB AND GUTTER PER PLAN AND PROFILE HERON AND PER COUNTY OF RIVERSIDE STD. NO. 201.
 - CONSTRUCT 0.25" THICK A.C. PAVING OVER 0.83" CLASS II AGGREGATE BASE PER PLAN AND PROFILE AND PER TYPICAL SECTION ON SHEET 2A.
 - INSTALL TYPE "L-1" MARKER PER CALTRANS STD. PLAN A-73.
 - REMOVE EXISTING CURB AND GUTTER.
 - RELOCATE EXISTING C.L. FENCE TO PROPOSED RIGHT-OF-WAY. (4/15)
 - RELOCATE POWER POLES (BY OTHERS).
 - CONSTRUCT CURB DEPRESSION PER COUNTY OF RIVERSIDE STD. NO. 207.
 - CONSTRUCT 8" A.C. DIKE PER RIV. CO. STD. NO. 212 & DETAIL ON SHEET NO. 2.
 - CONSTRUCT CURB DEPRESSION PER COUNTY OF RIVERSIDE STD. 403.

CURVE DATA				
STATION	R	Δ	L	T
1	1968.00'	4°59'20"	171.36'	85.73'
2	2000.00'	4°59'20"	174.15'	87.13'
3	2032.00'	4°59'20"	176.93'	88.52'
4	35.00'	71°39'45"	43.78'	25.27'
5	35.00'	108°20'15"	66.18'	48.47'
6	35.00'	108°20'15"	66.18'	48.47'
7	35.00'	71°39'45"	43.78'	25.27'



REVISION PREPARED BY NBS/LOWRY 12/21/98
DATE 12/21/98
PREPARED UNDER THE DIRECTION OF: [Signature]
OP: [Signature]

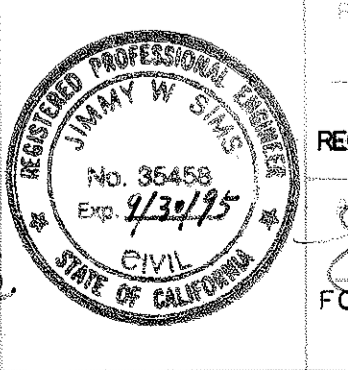


TYPICAL SECTION
N.T.S.
"A" ST.
STA. 197 + 00.00 TO 203 + 00.00

Underground Service Alert
Call TOLL FREE
1-800-422-4133

PRIVATE ENGINEERING NOTE
CONSTRUCTION CONTRACTOR ADVISED THAT IN ACCORDANCE WITH CENTRAL REGISTERED ENGINEERING PRACTICES CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME ALL RESPONSIBILITIES FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT AND TO OBTAIN ALL NECESSARY PERMITS AND INSURANCE THAT THIS REQUIREMENT SHALL BE MADE KNOWN TO THE CONTRACTOR AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR'S LIABILITY TO THE PUBLIC SHALL BE LIMITED TO THE PROFESSIONAL LIABILITY FROM ANY AND ALL NEGLIGENCE, REASONABLE OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE GULF WINDTORNOR OF DESIGN PROFESSIONAL.

REV. PROFILE
REVISED PROFILE GRADES
REVISED PROFILE GRADES
REVISED C.B. LOCATION



PREPARED UNDER THE DIRECTION OF: [Signature]
DATE 4-5-91
REGISTERED CIVIL ENGINEER No. 35458 EXP. 9/30/95
DESIGNED BY: [Signature]
FOR TRANSPORTATION DEPT. RIVERSIDE, CO., CA
DATE 6/1/91

J.F. Davidson Associates, Inc.
1800 Latham Street
Riverside, CA 92504
714-948-9244
714-948-9245
714-948-9246

W.O.#60-8126-74-1010
IMPROVEMENT DISTRICT 14
IN THE COUNTY OF RIVERSIDE
STREET IMPROVEMENT PLANS
"A" STREET
STA. 195 + 00.00 TO 207 + 00.00
SCHEDULE I IMPROVEMENTS
FOR COUNTY OF RIVERSIDE
WO.FB FILE NO. 8710383

907-H