Preliminary
Hydrology Study & Drainage Analysis

Brown Strauss Steel

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APN 532-130-008

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A. Introduction

1.1 Purpose & Scope

The following Hydrology & Hydraulics Report has been prepared for the development of the Brown Strauss Steel faculty in the City of Banning, CA to satisfy City of Banning and Riverside County Flood Control & Water Conservation District (RCFCWCD) hydrology study requirements for developments of this type.

The scope of this Study is as follows:

- Identification of floodplain(s) impacting the site.
- Identification of offsite (tributary) drainage areas and calculation of offsite (tributary) peak flows impacting the project site.
- Identification of existing conditions on-site drainage areas and calculation of peak flow rates and runoff volumes for these areas.
- Identification of developed conditions on-site drainage areas and calculation of peak flow rates and runoff volumes for these areas.
- Sizing of on-site detention/retention facilities to provide reduction in peak flows and runoff volumes pursuant to City of Banning and Riverside County requirements.
- Summary of Findings & Conclusion

1.2 Project Overview

The proposed project entails the construction of a steel yard on an undeveloped 14.27 acre property on the north side of Lincoln Street, in the City of Banning. The project site is located to the south of Interstate 10, approximately 0.25 miles west of South 8th Street, south of the railroad tracks. To the south and west is mostly undeveloped land. To the east is an industrial development consisting of three buildings and parking lots. Refer to Exhibit "A" for an aerial photo of the site and surrounding area. Refer to Exhibit "B" for an overlay of the site on the applicable USGS Quadrangle Map.



Site Location

1.1 Off-Site (Tributary) Drainage Areas

To the north of the project site is the A.T.S.F. railroad, consisting of a limited drainage tributary with elevated tracks on earthen berms, running east/west. Flows originating along the south of the A.T.S.F. railroad berms are caried to the east via existing earthen swales within the railroad right-of-way. Therefore, there are no significant offsite flows impacting the site.

1.2 Existing Conditions On-Site Areas

The existing on-site project area is generally flat, sloping to the southeast. The site is generally covered with native grass and weeds. The site sheet flows to the southeast discharging along Westward Avenue, where flow continues to the east. Some features from past use are present.

1.3 References

The following documents have been made part of this report by reference:

1.) Riverside County Flood Control & Water Conservation District (RCFCWCD) Hydrology Manual, April 1978.

2.) Site plans provided to Joseph E. Bonadiman & Associates, Inc. by Vertrees A & E, January 2023.

3.) Preliminary Grading Plan prepared by Joseph E. Bonadiman & Associates, Inc., February 2023.

B. Methodology

1.1 General Methodology

The requirements and recommendations found in the Riverside County Hydrology Manual (April 1978) provided by the Riverside County Flood Control & Water Conservation District was used as the basis for the methodology and calculations found in this Study. Off-site calculations were performed for the 10-year, 1-hour, and 100-year, 1-hour storms using Rational Method using the CivilDesign® RRIV program. On-site calculations were performed for the 10-year, 1-hour and 100-year, 1-hour storms using the Rational Method using the CivilDesign® RRIV program, and for the 1, 3, 6, and 24-hour durations of the 2, 5, 10, and 100-year storms using the Unit Hydrograph Method using the CivilDesign® UNRIV program for drainage areas larger than one square mile and/or for areas for which determination of both peak flow rates and runoff volumes were required.

For existing conditions AMC I was assumed for the 2 & 5-year storm and AMC II for 10 & 100 year storm. For developed conditions AMC I was assumed for the 2 & 5-year storm, AMC II for 10 and AMC III for the 100 years storm.

Pursuant to City of Banning Ordinance No. 1415, Section 6, on-site retention of the entire calculated developed conditions 100-year, 3-hour volume is required. The County of Riverside policy is to mitigate developed peak flows for all storm events up to and including the 10-year, 24-hour event to less or equal to that of the existing condition.

1.2 Geographic Information System (GIS) Data

Available Geographic Information System (GIS) data was utilized for this report, as follows:

- Riverside County parcel line and street centerline shapefile data was used for verification of offsite/adjacent properties and streets in the vicinity of the project site.
- Google Earth imagery was used for verification of topographic features and identified low flows (see Exhibit "A").
- A Digital Elevation Model (DEM) of the National Elevation Dataset (NED) provided by USGS was used to generate the 20' topographic contours used for the tributary drainage areas shown in this report. Digital Raster Graphics (DRGs) of USGS Quadrangles provide by CASIL were also used to verify elevations, blue line streams, and other topographical features (see Exhibit "B").

1.3 Sources of Topography

Mapping of existing conditions were established by 1-foot contour intervals, provided by Anacal Engineering Company per ALTA survey dated November 30, 2022 and AutoCAD file provided by client.

1.4 FEMA Floodplain

Per FEMA Flood Insurance Rate Map (FIRM) Panel No. 06065C0817G (effective date: August 28, 2008), the project site and study watershed lie within an unshaded Zone "X" floodplain. Unshaded Zone "X" is defined as "areas determined to be outside the annual 2% chance floodplain).

Refer to Exhibit "C" for surrounding area FIRM map used in this report.

1.5 Watershed Precipitation

Precipitation values used in this report were obtained from the NOAA Atlas II precipitation maps included in the Riverside County Hydrology Manual, and are tabulated as follows:

Table 1 – Rational Precipitation Values Summary

STORM	PRECIPITATION (IN)
10-YEAR, 1-HOUR	0.89
100-YEAR, 1-HOUR	1.32

Table 2 – Unit Hydrograph Precipitation Values Summary

STORM	PRECIPITATION (IN)
2-YEAR, 1-HOUR	0.56
100-YEAR, 1-HOUR	1.28
2-YEAR, 3-HOUR	0.96
100-YEAR, 3-HOUR	2.23
2-YEAR, 6-HOUR	1.42
100-YEAR, 6-HOUR	3.15
2-YEAR, 24-HOUR	2.65
100-YEAR, 24-HOUR	6.95

Based on the Slope of the Intensity Duration Curve map found in the Hydrology Manual, a Slope of the Intensity Duration Curve of 0.53 was used.

Refer to Exhibits "D" for the runoff index number, percent impervious, hydrologic soils groups and land cover classification/quality used in this report.

1.6 Watershed Losses

Soil types used in this report were obtained from the Natural Resources Conservation Service (NRCS) via Custom Soil Resource Report for Western Riverside Area, California. Impervious percentages, pervious cover types, and SCS Curve Numbers were obtained from Plates C.2, D-5.5, and D5.6 included in the Riverside Hydrology Manual.

Per the NRCS soils group map, the study watershed is composed of Type "A" and Type "C" soil. The undeveloped project site area has an impervious percentage of 0% (per Plate D5.6 of the Hydrology Manual) and a pervious cover of "Grass, Annual or Perennial, Fair Cover" per Plates C-2 and D5.5 of the Hydrology Manual and field investigation (February 2023) of the project site. Per the Riverside County Hydrology Manual, Plate D-5.5., the SCS Curve Number (AMC II) and percent impervious used within this report are summarized in the table below.

Table 3 –Soil Loss Rates

COVER TYPE	SOIL TYPE	QUALITY OF COVER	SCS CURVE NO. (AMC II)
GRASS, ANNUAL OR PERENNIAL	A	FAIR	50
	C	FAIR	79
RESIDENTIAL OR COMMERCIAL LANDSCAPING	A	GOOD	32
	C	GOOD	69

Refer to Exhibits "E" for the runoff index number, percent impervious, hydrologic soils groups and land cover classification/quality used in this report.

1.7 Rational Hydrology Method & Unit Hydrograph Hydrology Method Calculations

The Riverside County Rational Method (RRIV), Riverside County Unit Hydrograph Method (UNRIV), and Hydrograph Routing/Basin Analysis (ROUTE) software applications provided by CivilDesign® Corporation were used for the rational method, unit hydrograph method, and hydrograph (basin) routing calculations included in this report.

C. Existing Conditions On-site Hydrology Calculations

1.1 Existing Conditions On-Site Rational Method Calculations

Input values for the existing conditions rational method calculations prepared for this report are tabulated as follows:

Table 4 – Existing Conditions Rational Method Input Values

AREA NODE	SIZE (AC)	COVER TYPE	SOIL TYPE (%)	SCS (AMC II)		U.S. ELEV. (FT)	D.S. ELEV. (FT)	LENGTH (FT)
A1 0 - 1	9.91	UNDEVELOPED POOR	A=0.655 D=0.345	50 79	60	2402.0	2379.0	675
A2 1 - 2	4.36	UNDEVELOPED POOR	A=0.493 D=0.507	50 79	65	2379.0	2363.0	789

Output for the offsite (tributary) rational method calculations are tabulated as follows:

Table 5 – Existing Conditions Rational Method Output Calculations

B1AREA	NODE	TC_{100} (MIN.)	Q_{10} (CFS)	$*Q_{100}$ (CFS)
A	0 TO 2	16.51	19.21	30.58

Note that the existing conditions rational method calculations and associated peak flows are included for reference only, as the Riverside County Hydrology Manual does not provide an option for translation of rational method time of concentration to unit hydrograph lag time. Comparative analysis of existing vs. developed conditions for all analyzed events is therefore based solely on the unit hydrograph calculations prepared for this report.

Refer to Exhibit "F" for the "Existing On-Site Hydrologic Conditions Study Map".
Refer to Attachment No. 1 for printouts of the "Existing Conditions On-Site Calculations; 10-Year & 100-Year Rational Method".

1.2 Existing Conditions On-Site Unit Hydrograph Calculations

Input values for the existing conditions unit hydrograph calculations prepared for this report are tabulated as follows:

Table 6 – Existing Conditions Unit Hydrograph Input Values

DRAINAGE AREA	SIZE (AC)	RUNOFF INDEX (RI)	IMPERVIOUS FRACTION	L (FT)	Lc (FT)	U.S. ELEV.	D.S. ELEV.	ELEV. CHANGE	MANNING'S
A	14.27	74.5	0.00	1,464	865	2402.0	2363.0	39.0	0.030

Output for the existing conditions unit hydrograph calculations are tabulated as follows:

Table 7 – Existing Conditions Unit Hydrograph Output Calculations (2-Year 1, 3, 6, & 24-Hour)

DRAINAGE AREA	LAG (HR)	Q_{2-1} (CFS)	Q_{2-3} (CFS)	Q_{2-6} (CFS)	Q_{2-24} (CFS)	V_{2-1} (AC-FT)	V_{2-3} (AC-FT)	V_{2-6} (AC-FT))	V_{2-24} (AC-FT)
A	0.087	11.45	4.62	4.24	0.52	0.2252	0.2042	0.2521	0.3151

Table 8 – Existing Conditions Unit Hydrograph Output Calculations (5-Year 1, 3, 6, & 24-Hour)

DRAINAGE AREA	LAG (HR)	Q_{5-1} (CFS)	Q_{5-3} (CFS)	Q_{5-6} (CFS)	Q_{5-24} (CFS)	V_{5-1} (AC-FT)	V_{5-3} (AC-FT)	V_{5-6} (AC-FT)	V_{5-24} (AC-FT)
A	0.087	16.76	8.15	7.11	0.86	0.3533	0.3515	0.4066	0.4397

Table 9– Existing Conditions Unit Hydrograph Output Calculations (10-Year 1, 3, 6, & 24-Hour)

DRAINAGE AREA	LAG (HR)	Q_{10-1} (CFS)	Q_{10-3} (CFS)	Q_{10-6} (CFS)	Q_{10-24} (CFS)	V_{10-1} (AC-FT)	V_{10-3} (AC-FT)	V_{10-6} (AC-FT)	V_{10-24} (AC-FT)
A	0.087	23.75	13.70	12.32	4.76	0.6507	0.7598	0.9027	1.2608

Table 10 – Existing Conditions Unit Hydrograph Output Calculations (100-Year 1, 3, 6, & 24-Hour)

DRAINAGE AREA	LAG (HR)	Q_{100-1} (CFS)	Q_{100-3} (CFS)	Q_{100-6} (CFS)	Q_{100-24} (CFS)	V_{100-1} (AC-FT)	V_{100-3} (AC-FT)	V_{100-6} (AC-FT)	V_{100-24} (AC-FT)
A	0.087	37.70	22.86	20.32	9.69	1.1546	1.5703	1.7574	3.2553

Refer to Exhibit "F" for the "Existing Hydrologic Conditions Study Map".
Refer to Attachment No. 2 for printouts of the "Existing Conditions On-Site Calculations; 2, 5, 10, & 100-Year Unit Hydrograph".

D. Developed Conditions On-site Hydrology Calculations

1.1 Develpoed Conditions On-Site Rational Method Calculations

Input values for the existing conditions rational method calculations prepared for this report are tabulated as follows:

Table 11 – Developed Conditions Rational Method Input Values

AREA NODE	SIZE (AC)	COVER TYPE	SOIL TYPE (%)	U.S. ELEV. (FT)	D.S. ELEV. (FT)	LENGTH (FT)
A1 NODE 0 - 1	3.51	COMMERCIAL	A=0.754 C=0.246	2391.0	2383.08	533
PIPE NODE 1 - 2	24"	~	~	2379.08	2379.00	108.36
CONFLUENCE 1 OF 2						
A2 NODE 3 - 4	0.19	CONDO	A=1.00	2385.50	2384.52	136
PIPE NODE 4 - 2	8"	~	~	2380.30	2379.00	262.00
CONFLUENCE 2 OF 2						
A3 NODE 2	0.39	CONDO	A=1.00	~	~	~
PIPE NODE 2 - 5	24"	~	~	2379.00	2377.10	379.55
A4 NODE 5	0.60	CONDO	A=1.00	~	~	~
PIPE NODE 5 - 6	24"	~	~	2377.10	2376.04	105.50
A5 NODE 6	1.27	COMMERCIAL	A=0.446 C=0.554	~	~	~
PIPE NODE 6 - 7	24"	~	~	2376.04	2365.00	221.33
CONFLUENCE 1 OF 4						
A6 NODE 0 - 8	0.86	APARTMENT	A=0.900 C=0.100	2391.0	2383.12	312.87
PIPE NODE 8 - 9	12"	~	~	2380.12	2377.00	408.16
A7 NODE 9	1.32	COMMERCIAL	C=1.00	~	~	~
PIPE NODE 9 - 7	12"	~	~	2377.00	2365.50	96.38
CONFLUENCE 2 OF 4						
A8 NODE 10 - 11	0.95	COMMERCIAL	C=1.00	2384.48	2377.53	350.52
PIPE NODE 11 - 7	12"	~	~	2373.53	2365.50	96.47
3 OF 4						
A9 NODE 12 - 13	4.52	COMMERCIAL	A=0.737 C=0.263	2385.50	2374.10	766.58
PIPE NODE 13 - 7	24"	~	~	2366.40	2365.50	99.22
CONFLUENCE 4 OF 4						
A10 NODE 14	0.66	1 AC LOTS	A=0.206 C=0.794	2385.88	2362.59	921

Output for the offsite (tributary) rational method calculations are tabulated as follows:

Table 12 – Developed Conditions Rational Method Output Calculations

B1AREA	NODE	TC_{100} (MIN.)	Q_{10} (CFS)	$*Q_{100}$ (CFS)
A1 – A9	0 TO 13	10.68	26.72	40.63
A10	14 TO 15	15.36	0.82	1.31

Note that the existing conditions rational method calculations and associated peak flows are included for reference only, as the Riverside County Hydrology Manual does not provide an option for translation of rational method time of concentration to unit hydrograph lag time. Comparative analysis of existing vs. developed conditions for all analyzed events is therefore based solely on the unit hydrograph calculations prepared for this report.

Refer to Exhibit "G" for the "Existing On-Site Hydrologic Conditions Study Map".
Refer to Attachment No. 3 for printouts of the "Existing Conditions On-Site Calculations; 10-Year & 100-Year Rational Method".

1.2 Developed Conditions On-Site Unit Hydrograph Calculations

Input values for the developed conditions unit hydrograph calculations prepared for this report are tabulated as follows:

Table 13 – Developed Conditions Unit Hydrograph Input Values

DRAINAGE AREA	SIZE (AC)	RUNOFF INDEX (RI)	IMPERVIOUS FRACTION	L (FT)	Lc (FT)	U.S. ELEV.	D.S. ELEV.	ELEV. CHANGE	MANNING'S
A	14.27	46.6	0.159	2,019	766	2391.0	2362.59	28.41	0.015

Output for the developed conditions unit hydrograph calculations are tabulated as follows:

Table 14 – Developed Conditions Unit Hydrograph Output Calculations (2-Year 1, 3, 6, & 24-Hour)

DRAINAGE AREA	LAG (HR)	Q_{2-1} (CFS)	Q_{2-3} (CFS)	Q_{2-6} (CFS)	Q_{2-24} (CFS)	V_{2-1} (AC-FT)	V_{2-3} (AC-FT)	V_{2-6} (AC-FT))	V_{2-24} (AC-FT)
A	0.53	13.27	8.97	8.87	3.84	0.4934	0.8459	1.2512	2.3350

Table 15 – Developed Conditions Unit Hydrograph Output Calculations (5-Year 1, 3, 6, & 24-Hour)

DRAINAGE AREA	LAG (HR)	Q_{5-1} (CFS)	Q_{5-3} (CFS)	Q_{5-6} (CFS)	Q_{5-24} (CFS)	V_{5-1} (AC-FT)	V_{5-3} (AC-FT)	V_{5-6} (AC-FT)	V_{5-24} (AC-FT)
A	0.53	17.30	11.75	11.40	5.30	0.6425	1.1080	1.6082	3.2225

Table 16 – Developed Conditions Unit Hydrograph Output Calculations (10-Year 1, 3, 6, & 24-Hour)

DRAINAGE AREA	LAG (HR)	Q_{10-1} (CFS)	Q_{10-3} (CFS)	Q_{10-6} (CFS)	Q_{10-24} (CFS)	V_{10-1} (AC-FT)	V_{10-3} (AC-FT)	V_{10-6} (AC-FT)	V_{10-24} (AC-FT)
A	0.53	22.11	13.85	13.32	6.41	0.7813	1.3062	1.8783	3.8938

Table 17 – Developed Conditions Unit Hydrograph Output Calculations (100-Year 1, 3, 6, & 24-Hour)

DRAINAGE AREA	LAG (HR)	Q_{100-1} (CFS)	Q_{100-3} (CFS)	Q_{100-6} (CFS)	Q_{100-24} (CFS)	V_{100-1} (AC-FT)	V_{100-3} (AC-FT)	V_{100-6} (AC-FT)	V_{100-24} (AC-FT)
A	0.53	34.78	21.09	19.83	10.08	1.1941	**1.9698**	2.7785	6.1240

Refer to Exhibit "G" for the "Existing Hydrologic Conditions Study Map".
Refer to Attachment No. 4 for printouts of the "Developed Conditions On-site Calculations; On-Site 2, 5, 10, & 100-Year Unit Hydrograph".

E. Basin Routing Calculations

1.1 Detention Basin Analysis

A detention/retention basin is proposed to attenuation storm flows and for WQMP volume retention and infiltration. Input values of the depth vs. volume for detention basin routing calculations prepared for this report are tabulated as follows:

Table 18 – Detention Basins A,, System Depth vs. Volume

ELEVATION	DEPTH	VOLUME (CF)	VOLUME (AF)
2361.50	0.00	0.00	0.0000
2362.00	0.50	3,998	0.0918
2363.00	1.50	15,829	0.3634
2364.00	2.50	30,381	0.6975
2365.00	3.50	46,190	1.0604
2366.00	4.50	62,556	1.4361
2367.00	5.50	78921	1.8118
2368.00	6.50	90,732	2.0829
2368.45 (10" OUTLET)	**6.95**	**97,890**	**2.2472**
2369.00	7.50	109,283	2.5088
2370.00	8.50	121,113	2.7804
2371.00	9.50	129,110	2.9640

Table 19 – Detention Basins Output Calculations

BASIN AREA	STORM EVENT	OUTLET (IN)	OUTLET U.S. ELEV. (FT)	OUTLET D.S. ELEV. (FT)	OUTLET LENGTH (FT)	EXISTING PEAK Q (CFS)	OUTFLOW PEAK Q (CFS)	BASIN WATER DEPTH (FT)
C	2yr, 24hr	10" PIPE OUTLET	2368.45	2362.87 (d=5.58)	24.67	0.52	0.21	7.03
	5yr,24hr					0.86	*3.05*	*7.76*
	10yr, 24hr					4.76	4.62	8.03
	100yr,6hr					20.32	4.32	7.98
	100yr,24hr					9.69	**7.71**	**9.08**

Refer to Attachment No. 5 for a printout of the "Basin Routing Calculations".

F. Summary & Conclusion

1.1 Existing vs. Developed Summary

Summaries of the existing vs. developed unit hydrograph calculations are tabulated below:

Table 20 – Unit Hydrograph Summary

AREA	STORM EVENT (YEAR)	STORM EVENT (HOUR)	EXISTING PEAK Q (CFS)	DEVELOPED PEAK Q (CFS)	INCREASE PEAK Q (CFS	EXISTING VOLUME (AF)	DEVELOPED VOLUME* (AF)	INCREASE VOLUME* (AF
A	2	1	11.45	13.27	1.82	0.2252	0.4934	0.2682
	2	3	4.62	8.97	4.35	0.2042	0.8459	0.6417
	2	6	4.24	8.87	4.63	0.2521	1.2512	0.9991
	2	24	0.52	3.84	3.32	0.3151	2.3350	2.0199
	5	1	16.76	17.30	0.54	0.3533	0.6425	0.2892
	5	3	8.15	11.75	3.60	0.3515	1.1080	0.7565
	5	6	7.11	11.40	4.29	0.4066	1.6082	1.2016
	5	24	0.86	5.30	4.44	0.4397	3.2225	2.7828
	10	1	23.75	22.11	*-1.64*	0.6507	0.7813	0.1306
	10	3	13.70	13.85	0.15	0.7598	1.3062	0.5464
	10	6	12.32	13.32	1.00	0.9027	1.8783	0.9756
	10	24	4.76	6.41	1.65	1.2608	3.8938	2.6330
	100	1	37.70	34.78	*-2.92*	1.1546	1.1941	0.0395
	100	3	22.86	21.09	*-1.77*	1.5703	1.9698	0.3995
	100	6	20.32	19.83	*-0.49*	1.7574	2.7785	1.0211
	100	24	9.69	10.08	0.39	3.2553	6.1240	2.8687

* Above listed values are results prior to mitigation storage and not reflective of actual site discharge.

Pursuant to City of Banning Ordinance No. 1415, Section 6, retention of the entire calculated developed conditions 100-year, 3-hour volume of **1.9698 af** is required. The County of Riverside policy is to mitigate developed peak flows for all storm events up to and including the 10-year, 24-hour event to less or equal to that of the existing condition. An underground infiltration basin is proposed for the project. In order to reduce the developed condition peak 10-year, 24-hour flow of **6.41 cfs** to match the existing conditions peak 10-year, 24-hour flow of **4.76 cfs**, the underground infiltration basin has been sized with the total capacity of **2.2472 af**. This will allow for capture of the 100-year, 3-hour volume of 1.9698 af while allowing additional volume for storm buffering.

Based on this capture volume, the proposed infiltration basin will retain and infiltrate the entire developed conditions volumes for all events except for the 2, 5, 10-year, 24-hour; and the 100-year, 6-hour & 24-hour events. The peak flow for the developed conditions 2, 10-year, 24-hour; and 100-year, 6-hour events will be mitigated to lower than the existing conditions, as tabulated on the following page. Although not required per the County of Riverside standards, mitigation for the peak developed conditions flow for the 100-year,

24-hour event is also provided. Mitigation of the 5-year, 24-hour storm is not feasible due to the extremely low flow rate of the exiting condition.

Table 21 – Unit Hydrograph Mitigation Summary

AREA	STORM EVENT (YEAR)	STORM EVENT (HOUR)	EXISTING PEAK Q (CFS)	DEVELOPED PEAK Q (CFS)	MITIGATED DEVELOPED PEAK Q (CFS)	EXISTING VOLUME (AF)	DEVELOPED VOLUME (AF)	MITIGATED DISCHARGE VOLUME (AF)	% STORM CAPTURE
A	2	1	11.45	13.27	0.00	0.2252	0.4934	0.000	100%
		3	4.62	8.97	0.00	0.2042	0.8459	0.000	100%
		6	4.24	8.87	0.00	0.2521	1.2512	0.000	100%
		24	0.52	3.84	0.21	0.3151	2.3350	0.0878	96.2%
	5	1	16.76	17.30	0.00	0.3533	0.6425	0.000	100%
		3	8.15	11.75	0.00	0.3515	1.1080	0.000	100%
		6	7.11	11.40	0.00	0.4066	1.6082	0.000	100%
		24	0.86	5.30	*3.05*	0.4397	3.2225	0.9753	69.7%
	10	1	23.75	22.11	0.00	0.6507	0.7813	0.000	100%
		3	13.70	13.85	0.00	0.7598	1.3062	0.000	100%
		6	12.32	13.32	0.00	0.9027	1.8783	0.000	100%
		24	4.76	6.41	4.62	1.2608	3.8938	1.6466	54.6%
	100	1	37.70	34.78	0.00	1.1546	1.1941	0.000	100%
		3	22.86	21.09	0.00	1.5703	**1.9698**	0.000	100%
		6	20.32	19.83	4.32	1.7574	2.7785	0.5313	80.9%
		24	9.69	10.08	7.71	3.2553	6.1240	3.8768	63.3%

1.2 Hydraulics Calculations

The proposed underground infiltration system shall be designed to capture and infiltrate 2.2472 af, as discussed above. Discharge/overflow from the underground infiltration basin shall be via the catch basin located at the southeast corner of the property. A 10" pipe shall be routed to a 6 ft. parkway culvert outleting to curb and gutter of West Lincoln Street. The parkway culvert shall be capable of outleting the peak mitigated flow rate of 7.71 CFS, as shown in Table 22.

Refer to Attachment No. 6 for a printout of the "Parkway Culvert Capacity Calculations".

1.3 Conclusion

The proposed project will provide a retention/detention system sized to retain 2.2472 af of storm water while detaining an additional 0.7168 af of storm water. This will provide retention of the calculated developed conditions 100-year, 3-hour volume per City of Banning requirements and will provide adequate volume to mitigate developed flow rates to less than the existing condition flows rates, up to and including the 100-year, 24-hour event, with the exception of the 5-year, 24-hour storm. It should be noted that mitigation of the 5-year, 24-hour storm is not feasible due to the extremely low flow rate of the exiting condition.
reduce

With the above mitigation measure the development of the Brown Strauss Steel facility will not have a negative impact on downstream properties or facilities. WQMP mitigation for the site is proposed via an underground retention basin as a combination WQMP retention and detention basin to mitigate both WQMP and storm water impacts. For the purposes of this report the WQMP storage capacity and infiltration rates of the proposed underground system have been ignored. Refer to project specific WQMP for additional requirements.

(END)

EXHIBIT “A”

Project Watershed
Aerial Photo



AERIAL PHOTO EXHIBIT
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

PREPARED BY:
BONADIMAN
CIVILDESIGN

PREPARED FOR:

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	BROWN STRAUSS STEEL
JOB NO:	225047
PREPARED BY:	JTS
CHECKED BY:	JTS

NOTE: JOSEPH E. BONADIMAN & ASSOCIATES, INC. DOES NOT WARRANTY THE ACCURACY OF THE G.I.S. DATA PRESENTED IN THIS EXHIBIT. THIS EXHIBIT MAY CONTAIN INFORMATION COPYRIGHTED TO THE COUNTY OF SAN BERNARDINO,CA.

AERIAL PHOTO EXHIBIT
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

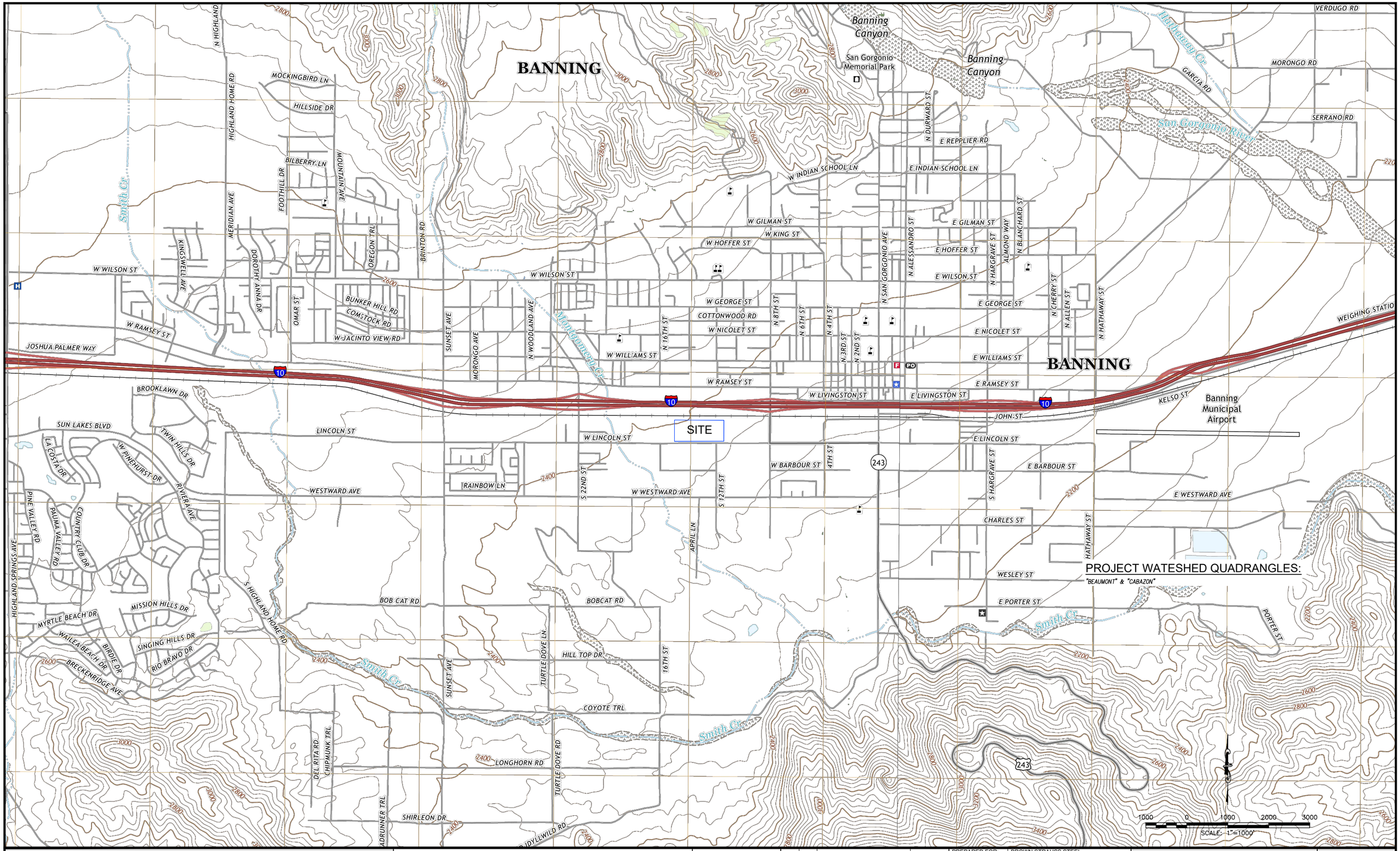
A

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 03-06-23

SHEET 1 OF 1

EXHIBIT “B”

Project Watershed
USGS Quadrangle



USGS QUADRANGLE EXHIBIT

BROWN STRAUSS STEEL

CITY OF BANNING, CA 92220

PREPARED BY:

BONADIMAN

TEL.

CIVILDESIGN

PREPARED FOR:

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	BROWN STRAUSS STEEL
JOB NO:	225047
PREPARED BY:	JTS
CHECKED BY:	JTS

NOTE: JOSEPH E. BONADIMAN & ASSOCIATES, INC. DOES NOT WARRANTY THE ACCURACY OF THE G.I.S. DATA PRESENTED IN THIS EXHIBIT. THIS EXHIBIT MAY CONTAIN INFORMATION COPYRIGHTED TO THE COUNTY OF SAN BERNARDINO,CA.

QUADRANGLE EXHIBIT
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

B

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 03-06-23

SHEET 1 OF 1

EXHIBIT “C”

FEMA Floodplain Maps

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #8202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from U.S. Geological Survey Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1994 or later.

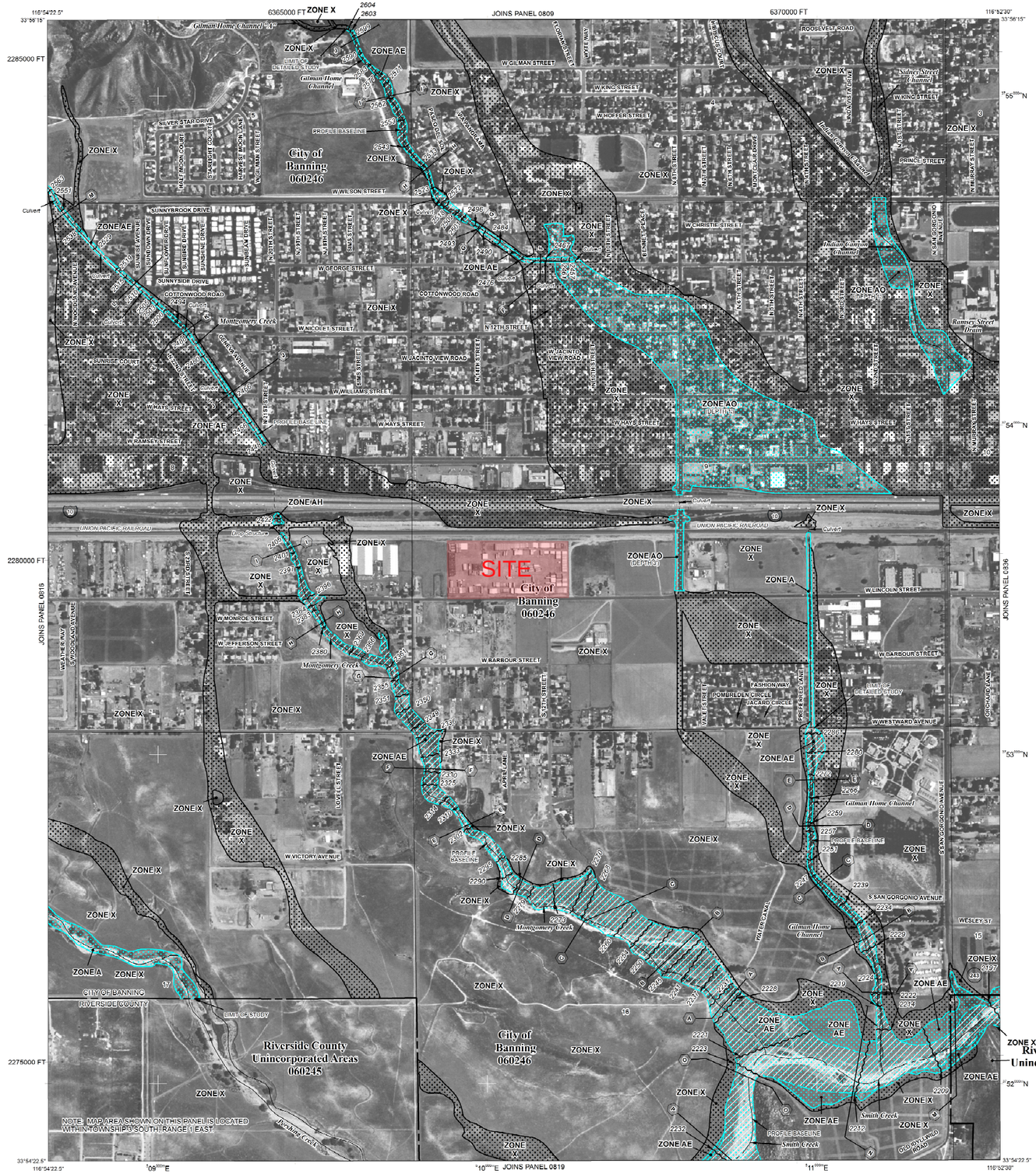
This map may reflect more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 (EL. 987)	Base Flood Elevation line and value; elevation in feet*
	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 — 23	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4376000mN	1000-meter Universal Transverse Mercator grid values, zone 11N
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone VI (FIPSZONE 0406), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
● M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 28, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent, or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0817G

FIRM

FLOOD INSURANCE RATE MAP

RIVERSIDE COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 817 OF 3805
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BANNING, CITY OF	060246	0817	G
RIVERSIDE COUNTY	060245	0817	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06065C0817G

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

EXHIBIT “D”

Riverside County
Hydrology Manual
Isohyetal Maps

RCFC & WCD

HYDROLOGY MANUAL

RAINFALL INTENSITY–INCHES PER HOUR

ANZA			BANNING			BEAUMONT			CALIMESA			CANYON LAKE		
DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR
5	4.23	6.85	5	3.32	4.93	5	3.32	4.93	5	3.57	5.30	5	3.07	4.61
6	3.80	6.16	6	3.02	4.47	6	3.02	4.47	6	3.23	4.79	6	2.81	4.23
7	3.48	5.63	7	2.78	4.12	7	2.78	4.12	7	2.97	4.40	7	2.61	3.93
8	3.22	5.21	8	2.59	3.84	8	2.59	3.84	8	2.76	4.09	8	2.45	3.68
9	3.01	4.87	9	2.43	3.61	9	2.43	3.61	9	2.58	3.83	9	2.31	3.48
10	2.83	4.58	10	2.30	3.41	10	2.30	3.41	10	2.44	3.62	10	2.20	3.31
11	2.67	4.33	11	2.19	3.24	11	2.19	3.24	11	2.31	3.43	11	2.10	3.16
12	2.54	4.12	12	2.09	3.10	12	2.09	3.10	12	2.21	3.27	12	2.01	3.03
13	2.43	3.93	13	2.00	2.97	13	2.00	2.97	13	2.11	3.13	13	1.94	2.92
14	2.33	3.77	14	1.92	2.85	14	1.92	2.85	14	2.03	3.01	14	1.87	2.82
15	2.23	3.62	15	1.86	2.75	15	1.86	2.75	15	1.95	2.89	15	1.81	2.72
16	2.15	3.49	16	1.79	2.66	16	1.79	2.66	16	1.88	2.79	16	1.75	2.64
17	2.08	3.37	17	1.74	2.58	17	1.74	2.58	17	1.82	2.70	17	1.70	2.56
18	2.01	3.26	18	1.68	2.50	18	1.68	2.50	18	1.76	2.62	18	1.66	2.50
19	1.95	3.16	19	1.64	2.43	19	1.64	2.43	19	1.71	2.54	19	1.62	2.43
20	1.89	3.06	20	1.59	2.36	20	1.59	2.36	20	1.67	2.47	20	1.58	2.37
22	1.79	2.90	22	1.51	2.25	22	1.51	2.25	22	1.58	2.34	22	1.51	2.27
24	1.70	2.76	24	1.45	2.15	24	1.45	2.15	24	1.51	2.23	24	1.44	2.17
26	1.62	2.63	26	1.39	2.06	26	1.39	2.06	26	1.44	2.14	26	1.39	2.09
28	1.56	2.52	28	1.33	1.98	28	1.33	1.98	28	1.38	2.05	28	1.34	2.02
30	1.49	2.42	30	1.29	1.91	30	1.29	1.91	30	1.33	1.98	30	1.30	1.95
32	1.44	2.33	32	1.24	1.84	32	1.24	1.84	32	1.29	1.91	32	1.26	1.89
34	1.39	2.25	34	1.20	1.78	34	1.20	1.78	34	1.24	1.85	34	1.22	1.84
36	1.34	2.18	36	1.17	1.73	36	1.17	1.73	36	1.21	1.79	36	1.19	1.79
38	1.30	2.11	38	1.13	1.68	38	1.13	1.68	38	1.17	1.74	38	1.16	1.74
40	1.27	2.05	40	1.10	1.64	40	1.10	1.64	40	1.14	1.69	40	1.13	1.70
45	1.18	1.91	45	1.04	1.54	45	1.04	1.54	45	1.07	1.58	45	1.07	1.61
50	1.11	1.80	50	.98	1.45	50	.98	1.45	50	1.01	1.49	50	1.02	1.53
55	1.05	1.70	55	.93	1.38	55	.93	1.38	55	.95	1.42	55	.97	1.46
60	1.00	1.62	60	.89	1.32	60	.89	1.32	60	.91	1.35	60	.93	1.40
65	.95	1.55	65	.85	1.27	65	.85	1.27	65	.87	1.29	65	.89	1.35
70	.91	1.48	70	.82	1.22	70	.82	1.22	70	.84	1.24	70	.86	1.30
75	.88	1.42	75	.79	1.17	75	.79	1.17	75	.80	1.19	75	.84	1.26
80	.85	1.37	80	.76	1.13	80	.76	1.13	80	.78	1.15	80	.81	1.22
85	.82	1.32	85	.74	1.10	85	.74	1.10	85	.75	1.11	85	.79	1.18
SLOPE = .580			SLOPE = .530			SLOPE = .530			SLOPE = .550			SLOPE = .480		

STANDARD INTENSITY–DURATION CURVES DATA

PLATE D-4.1 (1 of 6)

RAINFALL INTENSITY–INCHES PER HOUR

CATHEDRAL CITY			CHERRY VALLEY			CORONA			DESERT HOT SPRINGS			ELSINORE - WILDOMAR		
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	4.14	6.76	5	3.65	5.49	5	3.10	4.78	5	4.39	6.76	5	3.23	4.94
6	3.73	6.08	6	3.30	4.97	6	2.84	4.38	6	3.95	6.08	6	2.96	4.53
7	3.41	5.56	7	3.03	4.56	7	2.64	4.07	7	3.62	5.56	7	2.75	4.21
8	3.15	5.15	8	2.82	4.24	8	2.47	3.81	8	3.35	5.15	8	2.58	3.95
9	2.95	4.81	9	2.64	3.97	9	2.34	3.60	9	3.13	4.81	9	2.44	3.73
10	2.77	4.52	10	2.49	3.75	10	2.22	3.43	10	2.94	4.52	10	2.32	3.54
11	2.62	4.28	11	2.36	3.56	11	2.12	3.27	11	2.78	4.28	11	2.21	3.39
12	2.49	4.07	12	2.25	3.39	12	2.04	3.14	12	2.65	4.07	12	2.12	3.25
13	2.38	3.88	13	2.16	3.25	13	1.96	3.02	13	2.53	3.88	13	2.04	3.13
14	2.28	3.72	14	2.07	3.12	14	1.89	2.92	14	2.42	3.72	14	1.97	3.02
15	2.19	3.58	15	1.99	3.00	15	1.83	2.82	15	2.32	3.58	15	1.91	2.92
16	2.11	3.44	16	1.92	2.90	16	1.77	2.73	16	2.24	3.44	16	1.85	2.83
17	2.04	3.32	17	1.86	2.80	17	1.72	2.66	17	2.16	3.32	17	1.80	2.75
18	1.97	3.22	18	1.80	2.71	18	1.68	2.58	18	2.09	3.22	18	1.75	2.67
19	1.91	3.12	19	1.75	2.64	19	1.63	2.52	19	2.03	3.12	19	1.70	2.60
20	1.85	3.03	20	1.70	2.56	20	1.59	2.46	20	1.97	3.03	20	1.66	2.54
22	1.75	2.86	22	1.61	2.43	22	1.52	2.35	22	1.86	2.86	22	1.59	2.43
24	1.67	2.72	24	1.54	2.32	24	1.46	2.25	24	1.77	2.72	24	1.52	2.33
26	1.59	2.60	26	1.47	2.22	26	1.40	2.17	26	1.69	2.60	26	1.46	2.24
28	1.52	2.49	28	1.41	2.13	28	1.36	2.09	28	1.62	2.49	28	1.41	2.16
30	1.46	2.39	30	1.36	2.05	30	1.31	2.02	30	1.55	2.39	30	1.37	2.09
32	1.41	2.30	32	1.31	1.98	32	1.27	1.96	32	1.50	2.30	32	1.33	2.03
34	1.36	2.22	34	1.27	1.91	34	1.23	1.90	34	1.45	2.22	34	1.29	1.97
36	1.32	2.15	36	1.23	1.85	36	1.20	1.85	36	1.40	2.15	36	1.25	1.92
38	1.28	2.09	38	1.20	1.80	38	1.17	1.81	38	1.36	2.09	38	1.22	1.87
40	1.24	2.02	40	1.16	1.75	40	1.14	1.76	40	1.32	2.02	40	1.19	1.82
45	1.16	1.89	45	1.09	1.64	45	1.08	1.66	45	1.23	1.89	45	1.13	1.72
50	1.09	1.78	50	1.03	1.55	50	1.03	1.58	50	1.16	1.78	50	1.07	1.64
55	1.03	1.68	55	.98	1.47	55	.98	1.51	55	1.09	1.68	55	1.02	1.56
60	.98	1.60	60	.93	1.40	60	.94	1.45	60	1.04	1.60	60	.98	1.50
65	.94	1.53	65	.89	1.34	65	.90	1.40	65	.99	1.53	65	.94	1.44
70	.90	1.46	70	.85	1.29	70	.87	1.35	70	.95	1.46	70	.91	1.39
75	.86	1.41	75	.82	1.24	75	.84	1.30	75	.91	1.41	75	.88	1.35
80	.83	1.35	80	.79	1.20	80	.82	1.26	80	.88	1.35	80	.85	1.31
85	.80	1.31	85	.77	1.16	85	.80	1.23	85	.85	1.31	85	.83	1.27
SLOPE = .580			SLOPE = .550			SLOPE = .480			SLOPE = .580			SLOPE = .480		

STANDARD INTENSITY–DURATION CURVES DATA

RAINFALL INTENSITY–INCHES PER HOUR

HEMET			HIGHGROVE			HOMELAND – WINCHESTER			IDYLLWILD			LAKEVIEW		
DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR
5	2.84	4.40	5	3.02	4.37	5	2.91	4.37	5	4.91	7.28	5	2.77	4.16
6	2.58	4.00	6	2.75	3.97	6	2.65	3.97	6	4.47	6.62	6	2.53	3.79
7	2.37	3.68	7	2.54	3.67	7	2.44	3.67	7	4.13	6.11	7	2.34	3.51
8	2.21	3.43	8	2.37	3.42	8	2.28	3.42	8	3.85	5.70	8	2.19	3.29
9	2.08	3.23	9	2.23	3.22	9	2.15	3.22	9	3.62	5.36	9	2.07	3.10
10	1.96	3.05	10	2.11	3.05	10	2.03	3.05	10	3.43	5.08	10	1.96	2.94
11	1.87	2.90	11	2.01	2.90	11	1.93	2.90	11	3.26	4.83	11	1.87	2.80
12	1.78	2.77	12	1.92	2.77	12	1.85	2.77	12	3.12	4.62	12	1.79	2.68
13	1.71	2.65	13	1.84	2.66	13	1.77	2.66	13	2.99	4.43	13	1.72	2.58
14	1.64	2.55	14	1.77	2.56	14	1.71	2.56	14	2.88	4.26	14	1.66	2.48
15	1.58	2.46	15	1.71	2.47	15	1.64	2.47	15	2.78	4.11	15	1.60	2.40
16	1.53	2.38	16	1.65	2.39	16	1.59	2.39	16	2.68	3.98	16	1.55	2.32
17	1.48	2.30	17	1.60	2.31	17	1.54	2.31	17	2.60	3.85	17	1.50	2.25
18	1.44	2.23	18	1.55	2.24	18	1.50	2.24	18	2.52	3.74	18	1.46	2.19
19	1.40	2.17	19	1.51	2.18	19	1.45	2.18	19	2.45	3.64	19	1.42	2.13
20	1.36	2.11	20	1.47	2.12	20	1.42	2.12	20	2.39	3.54	20	1.39	2.08
22	1.29	2.01	22	1.40	2.02	22	1.35	2.02	22	2.27	3.37	22	1.32	1.98
24	1.24	1.92	24	1.34	1.93	24	1.29	1.93	24	2.17	3.22	24	1.26	1.90
26	1.18	1.84	26	1.28	1.85	26	1.24	1.85	26	2.09	3.09	26	1.22	1.82
28	1.14	1.77	28	1.23	1.78	28	1.19	1.78	28	2.01	2.97	28	1.17	1.76
30	1.10	1.70	30	1.19	1.72	30	1.15	1.72	30	1.94	2.87	30	1.13	1.70
32	1.06	1.65	32	1.15	1.66	32	1.11	1.66	32	1.87	2.77	32	1.10	1.64
34	1.03	1.59	34	1.12	1.61	34	1.07	1.61	34	1.81	2.69	34	1.06	1.59
36	1.00	1.55	36	1.08	1.57	36	1.04	1.57	36	1.76	2.61	36	1.03	1.55
38	.97	1.50	38	1.05	1.52	38	1.01	1.52	38	1.71	2.54	38	1.01	1.51
40	.94	1.46	40	1.02	1.48	40	.99	1.48	40	1.67	2.47	40	.98	1.47
45	.89	1.37	45	.96	1.39	45	.93	1.39	45	1.57	2.32	45	.92	1.39
50	.84	1.30	50	.91	1.32	50	.88	1.32	50	1.48	2.20	50	.88	1.31
55	.80	1.24	55	.87	1.26	55	.84	1.26	55	1.41	2.09	55	.84	1.25
60	.76	1.18	60	.83	1.20	60	.80	1.20	60	1.35	2.00	60	.80	1.20
65	.73	1.13	65	.80	1.15	65	.77	1.15	65	1.29	1.92	65	.77	1.15
70	.70	1.09	70	.77	1.11	70	.74	1.11	70	1.25	1.85	70	.74	1.11
75	.68	1.05	75	.74	1.07	75	.71	1.07	75	1.20	1.78	75	.72	1.07
80	.65	1.01	80	.71	1.03	80	.69	1.03	80	1.16	1.72	80	.69	1.04
85	.63	.98	85	.69	1.00	85	.67	1.00	85	1.13	1.67	85	.67	1.01
SLOPE = .530			SLOPE = .520			SLOPE = .520			SLOPE = .520			SLOPE = .500		

STANDARD
INTENSITY–DURATION
CURVES DATA

RAINFALL INTENSITY—INCHES PER HOUR

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		

RCFC & WCD

HYDROLOGY MANUAL

STANDARD INTENSITY-DURATION CURVES DATA

PLATE D-4.1 (4 of 6)

RAINFALL INTENSITY–INCHES PER HOUR

RIVERSIDE			RIVERSIDE (FOOTHILL AREAS)			RUBIDOUX			SAN JACINTO			SUN CITY		
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	2.75	3.92	5	3.14	4.71	5	3.18	4.71	5	2.81	4.16	5	3.25	4.85
6	2.48	3.55	6	2.84	4.26	6	2.87	4.26	6	2.56	3.79	6	2.95	4.40
7	2.28	3.26	7	2.61	3.91	7	2.64	3.91	7	2.37	3.51	7	2.72	4.06
8	2.12	3.03	8	2.42	3.63	8	2.45	3.63	8	2.22	3.29	8	2.53	3.78
9	1.99	2.84	9	2.27	3.41	9	2.30	3.41	9	2.09	3.10	9	2.38	3.55
10	1.88	2.68	10	2.14	3.21	10	2.17	3.21	10	1.98	2.94	10	2.25	3.36
11	1.78	2.54	11	2.03	3.05	11	2.06	3.05	11	1.89	2.80	11	2.14	3.19
12	1.70	2.42	12	1.94	2.91	12	1.96	2.91	12	1.81	2.68	12	2.04	3.05
13	1.62	2.32	13	1.86	2.78	13	1.88	2.78	13	1.74	2.58	13	1.96	2.92
14	1.56	2.23	14	1.78	2.67	14	1.80	2.67	14	1.68	2.48	14	1.88	2.81
15	1.50	2.14	15	1.71	2.57	15	1.74	2.57	15	1.62	2.40	15	1.81	2.71
16	1.45	2.07	16	1.66	2.48	16	1.68	2.48	16	1.57	2.32	16	1.75	2.62
17	1.40	2.00	17	1.60	2.40	17	1.62	2.40	17	1.52	2.25	17	1.70	2.54
18	1.36	1.94	18	1.55	2.33	18	1.57	2.33	18	1.48	2.19	18	1.65	2.46
19	1.32	1.88	19	1.51	2.26	19	1.52	2.26	19	1.44	2.13	19	1.60	2.39
20	1.28	1.83	20	1.46	2.20	20	1.48	2.20	20	1.40	2.08	20	1.56	2.33
22	1.22	1.74	22	1.39	2.08	22	1.41	2.08	22	1.34	1.98	22	1.48	2.21
24	1.16	1.66	24	1.32	1.99	24	1.34	1.99	24	1.28	1.90	24	1.41	2.11
26	1.11	1.58	26	1.27	1.90	26	1.28	1.90	26	1.23	1.82	26	1.36	2.03
28	1.06	1.52	28	1.22	1.82	28	1.23	1.82	28	1.19	1.76	28	1.30	1.95
30	1.02	1.46	30	1.17	1.76	30	1.19	1.76	30	1.15	1.70	30	1.26	1.88
32	.99	1.41	32	1.13	1.70	32	1.14	1.70	32	1.11	1.64	32	1.21	1.81
34	.96	1.37	34	1.09	1.64	34	1.11	1.64	34	1.08	1.59	34	1.18	1.76
36	.93	1.32	36	1.06	1.59	36	1.07	1.59	36	1.05	1.55	36	1.14	1.70
38	.90	1.29	38	1.03	1.54	38	1.04	1.54	38	1.02	1.51	38	1.11	1.66
40	.87	1.25	40	1.00	1.50	40	1.01	1.50	40	.99	1.47	40	1.08	1.61
45	.82	1.17	45	.94	1.41	45	.95	1.41	45	.94	1.39	45	1.01	1.51
50	.77	1.11	50	.88	1.33	50	.90	1.33	50	.89	1.31	50	.96	1.43
55	.73	1.05	55	.84	1.26	55	.85	1.26	55	.85	1.25	55	.91	1.36
60	.70	1.00	60	.80	1.20	60	.81	1.20	60	.81	1.20	60	.87	1.30
65	.67	.96	65	.77	1.15	65	.78	1.15	65	.78	1.15	65	.83	1.25
70	.64	.92	70	.73	1.10	70	.74	1.10	70	.75	1.11	70	.80	1.20
75	.62	.88	75	.71	1.06	75	.72	1.06	75	.72	1.07	75	.77	1.15
80	.60	.85	80	.68	1.02	80	.69	1.02	80	.70	1.04	80	.75	1.12
85	.58	.83	85	.66	.99	85	.67	.99	85	.68	1.01	85	.72	1.08
SLOPE = .550			SLOPE = .550			SLOPE = .550			SLOPE = .500			SLOPE = .530		

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HYDROLOGY MANUAL

STANDARD INTENSITY–DURATION CURVES DATA

PLATE D-4.1(5 of 6)

RAINFALL INTENSITY—INCHES PER HOUR

SUNNYMEAD - MORENO			WOODCREST		
DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY	
	10 YEAR	100 YEAR		10 YEAR	100 YEAR
5	2.84	4.16	5	3.37	5.30
6	2.59	3.79	6	3.05	4.79
7	2.40	3.51	7	2.80	4.40
8	2.25	3.29	8	2.60	4.09
9	2.12	3.10	9	2.44	3.83
10	2.01	2.94	10	2.30	3.62
11	1.92	2.80	11	2.19	3.43
12	1.83	2.68	12	2.08	3.27
13	1.76	2.58	13	1.99	3.13
14	1.70	2.48	14	1.91	3.01
15	1.64	2.40	15	1.84	2.89
16	1.59	2.32	16	1.78	2.79
17	1.54	2.25	17	1.72	2.70
18	1.50	2.19	18	1.67	2.62
19	1.46	2.13	19	1.62	2.54
20	1.42	2.08	20	1.57	2.47
22	1.35	1.98	22	1.49	2.34
24	1.30	1.90	24	1.42	2.23
26	1.25	1.82	26	1.36	2.14
28	1.20	1.76	28	1.31	2.05
30	1.16	1.70	30	1.26	1.98
32	1.12	1.64	32	1.22	1.91
34	1.09	1.59	34	1.19	1.85
36	1.06	1.55	36	1.14	1.79
38	1.03	1.51	38	1.11	1.74
40	1.00	1.47	40	1.07	1.69
45	.95	1.39	45	1.01	1.58
50	.90	1.31	50	.95	1.49
55	.86	1.25	55	.90	1.42
60	.82	1.20	60	.86	1.35
65	.79	1.15	65	.82	1.29
70	.76	1.11	70	.79	1.24
75	.73	1.07	75	.76	1.19
80	.71	1.04	80	.73	1.15
85	.69	1.01	85	.71	1.11
SLOPE = .500			SLOPE = .550		

STANDARD
INTENSITY-DURATION
CURVES DATA

SITE (0.56")

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

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HYDROLOGY MANUAL

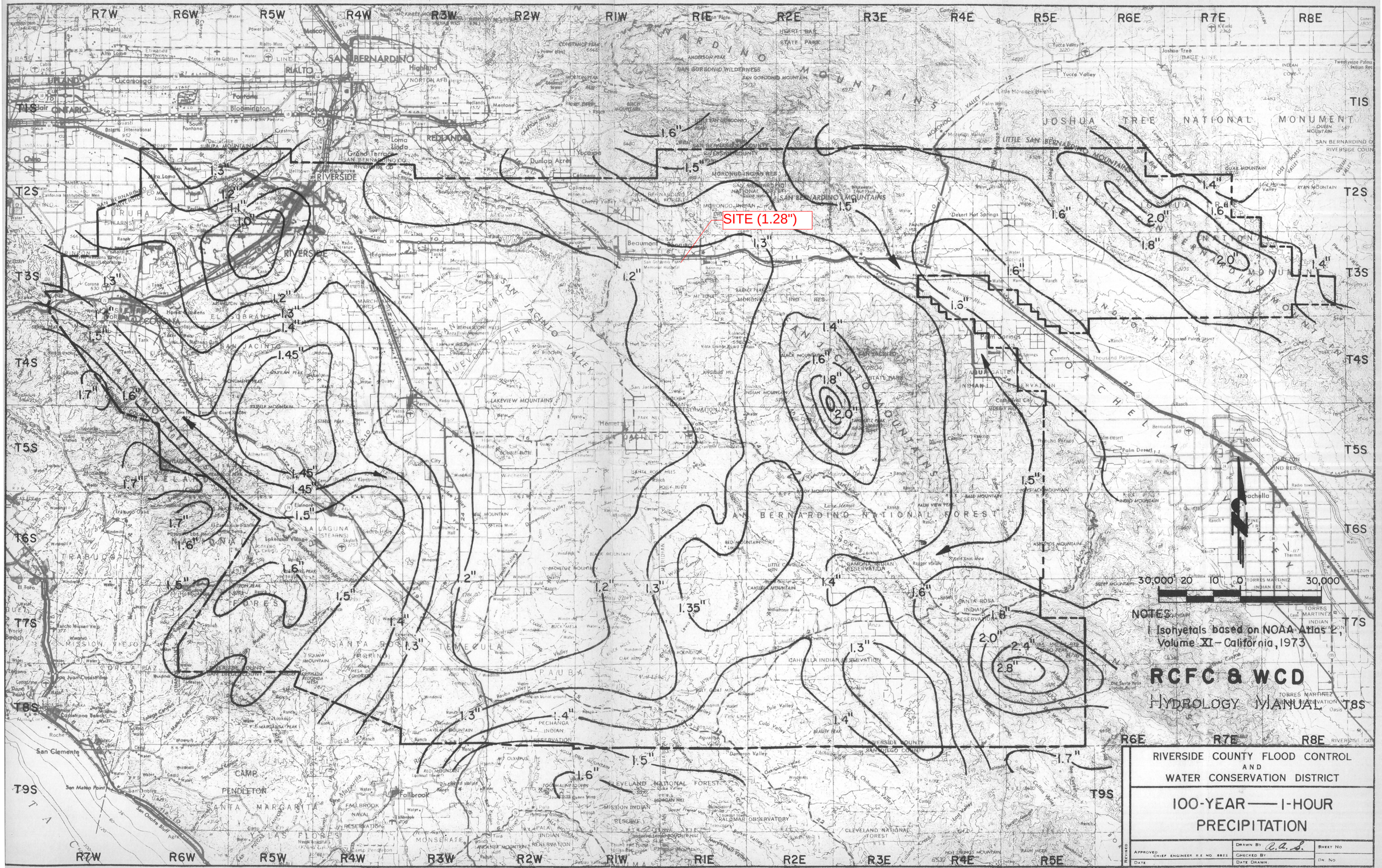
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

2-YEAR — 1-HOUR PRECIPITATION

APPROVED CHIEF ENGINEER R.E. NO. 8822	DRAWN BY R.A.S.	SHEET NO.
DATE	CHECKED BY	DR. NO.
	DATE DRAWN:	

REVISED

PLATE D-4.3


SITE (1.28")
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
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HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 1-HOUR PRECIPITATION
PLATE D-4.4

SITE (0.96")

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

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HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

2-YEAR — 3-HOUR PRECIPITATION

APPROVED CHIEF ENGINEER R.E. NO. 8822	DRAWN BY: R.A.S.	SHEET NO.
DATE	CHECKED BY:	DR. NO.
	DATE DRAWN:	

REVISED

PLATE E-5.1

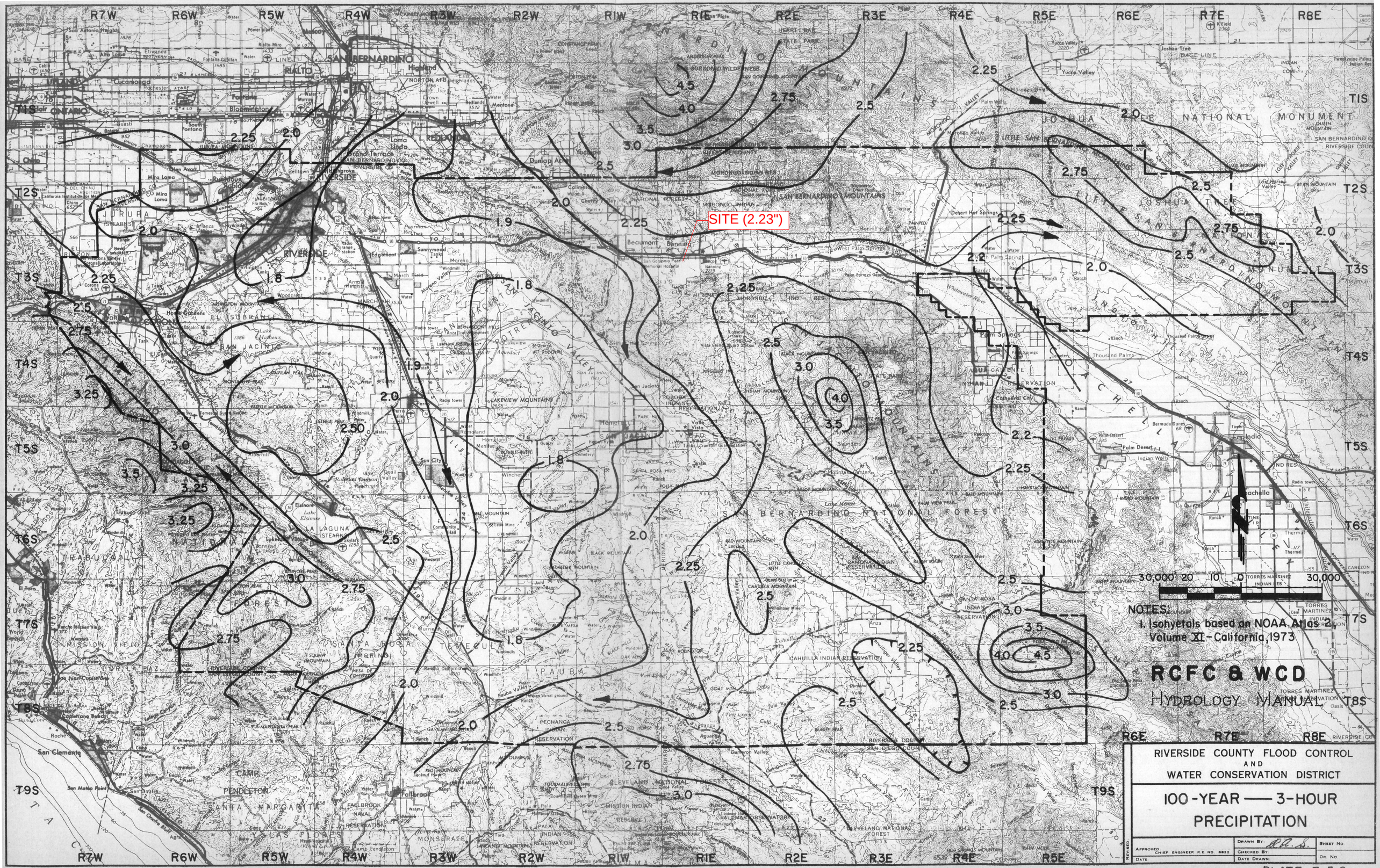
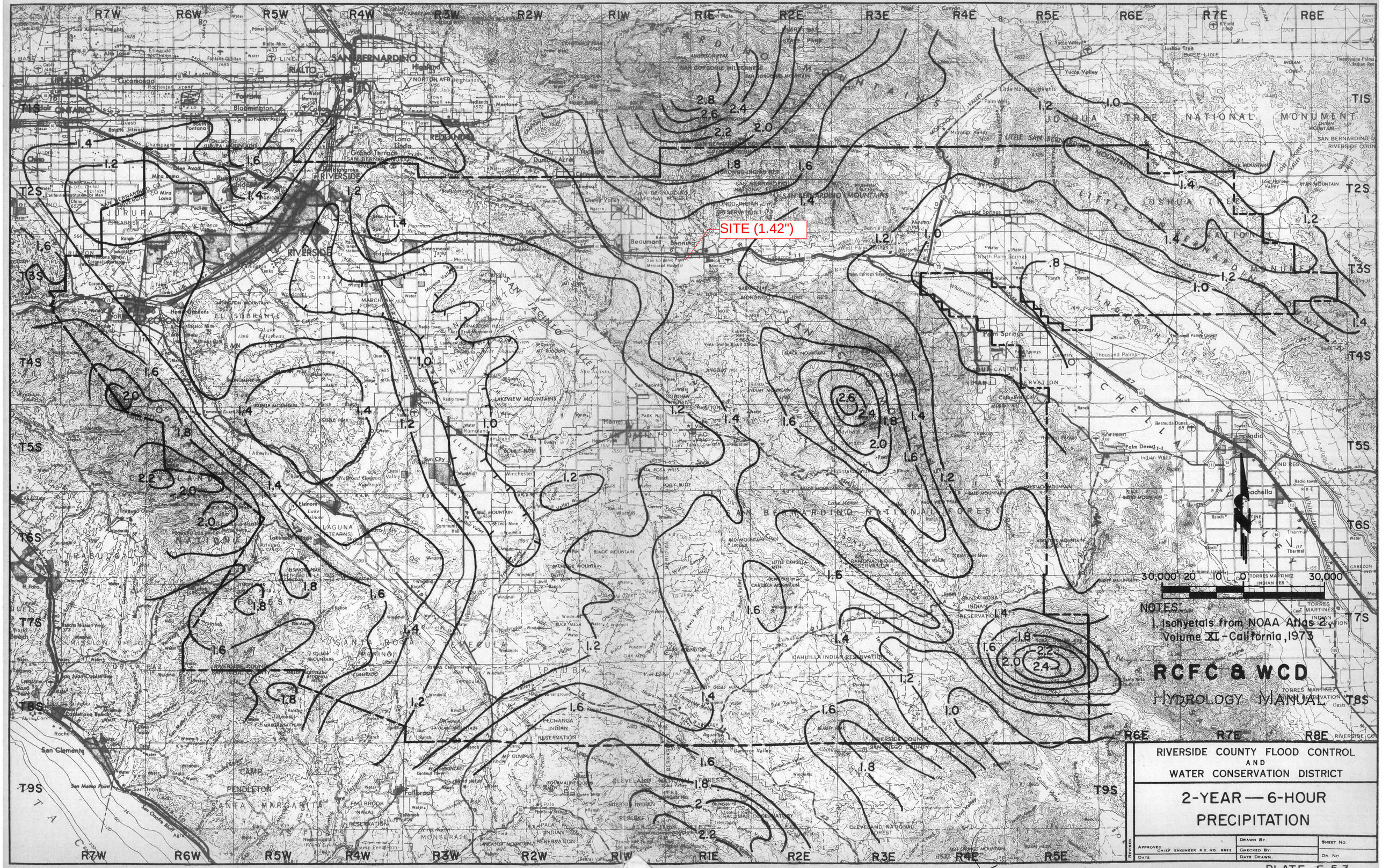
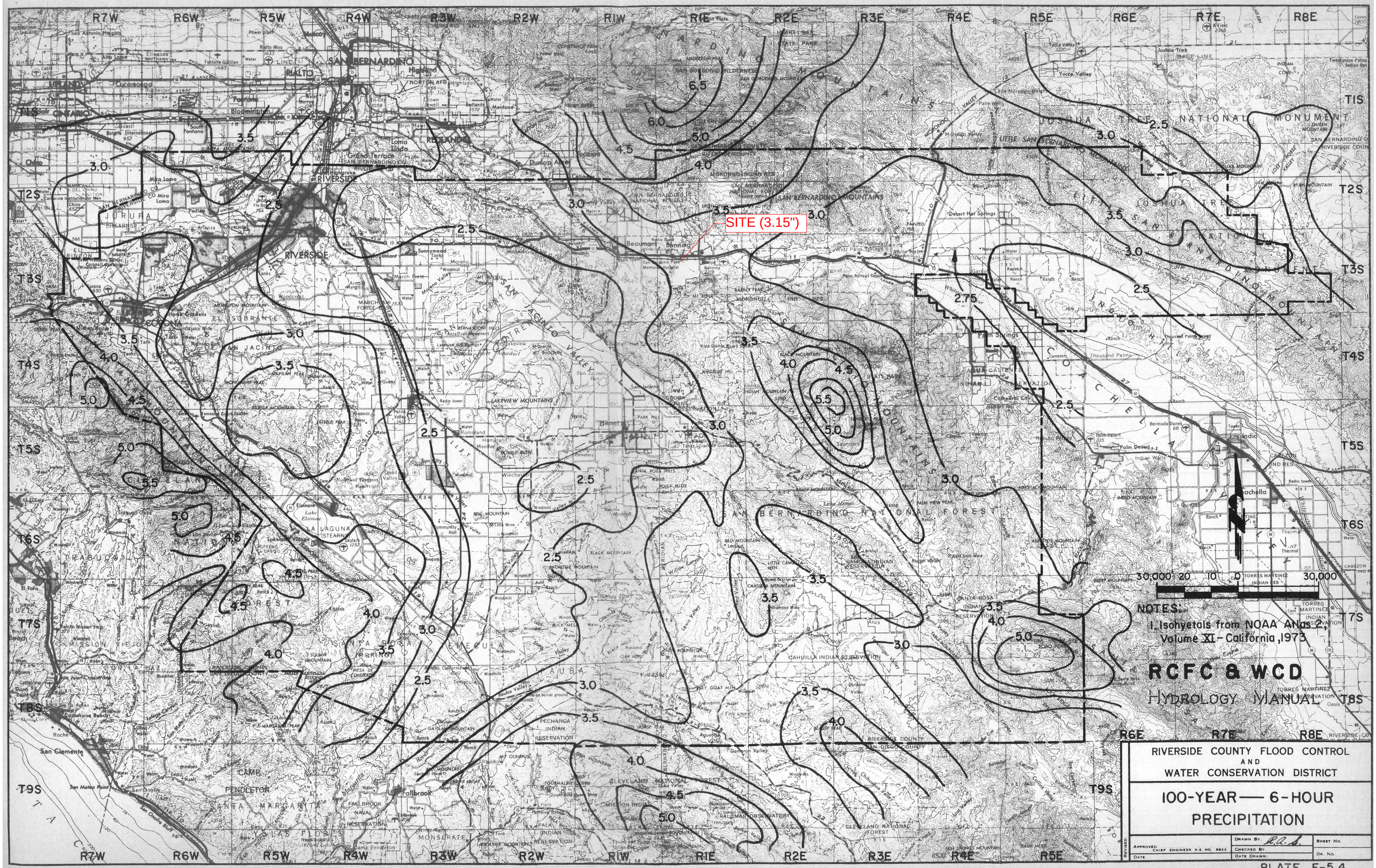

SITE (2.23")
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
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HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 3-HOUR PRECIPITATION
APPROVED CHIEF ENGINEER R.E. NO. 8822
DATE
DRAWN BY R.R.S.
CHECKED BY
DATE DRAWN
SHEET NO
DR. NO
REVISED

PLATE E-5.2


SITE (1.42")
NOTES:
1. Isohyetals from NOAA Atlas 2 Volume XI - California, 1973
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HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 6-HOUR PRECIPITATION
PLATE E-5.3


SITE (3.15")
NOTES:
1. Isohyetals from NOAA Atlas 2, Volume XI - California, 1973
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HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 6-HOUR PRECIPITATION
PLATE E-5.4

SITE (2.65")

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

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RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 24-HOUR
PRECIPITATION

APPROVED CHIEF ENGINEER R.E. NO. 8822	DRAWN BY R.A.S.	SHEET NO.
DATE	CHECKED BY	DR. NO.
REVISED	DATE DRAWN	

PLATE E-5.5

SITE (6.95")

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

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HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

100-YEAR — 24-HOUR PRECIPITATION

APPROVED CHIEF ENGINEER R.E. NO. 8822	DRAWN BY:	SHEET NO.
DATE	CHECKED BY:	DR. NO.
REVISED	DATE DRAWN:	

PLATE E-5.6

SITE (0.50)

NOTES

1. Slope of Intensity-Duration Curve based on District analysis of automatic recording rain gage records.

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RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

SLOPE OF INTENSITY DURATION CURVE

REVISED	DRAWN BY R.A.S.	SHEET NO.
APPROVED CHIEF ENGINEER R.E. NO. 5822	CHECKED BY	DR. NO.
DATE	DATE DRAWN	

PLATE D-4.6

EXHIBIT “E”

Watershed Losses

Watershed Hydrologic Soil Groups

Watershed Cover Type
&
Impervious Cover

NRCS Soils Data

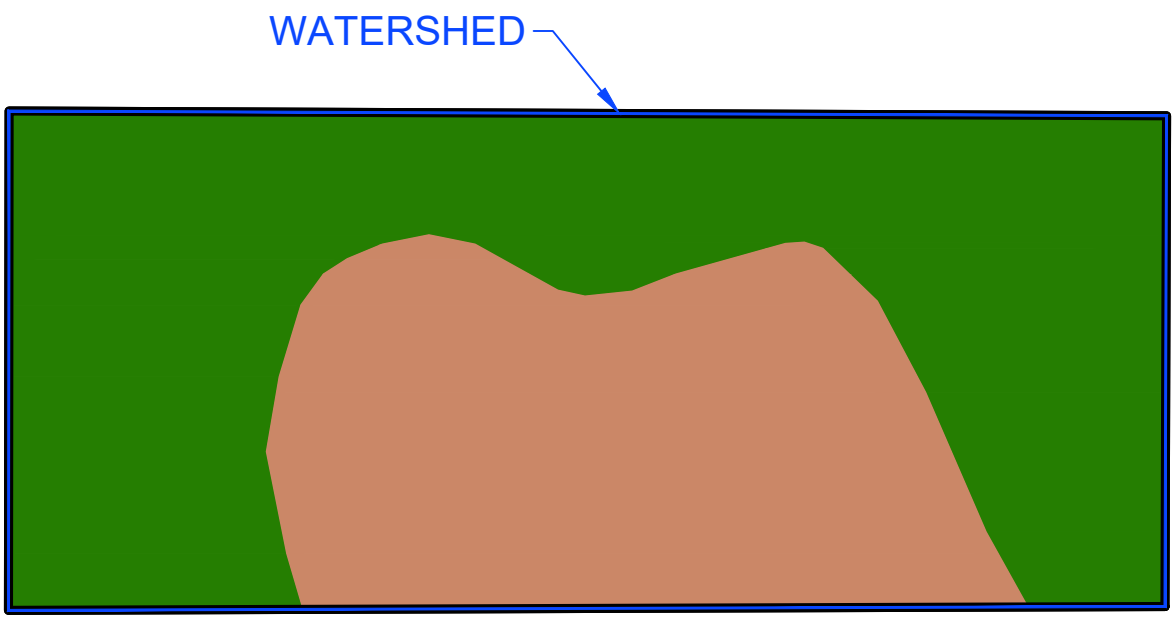
EXHIBIT "E.1"

WATERSHED HYDROLOGIC SOIL GROUPS

(SOURCE: NRCS WEB SOIL SURVEY)

HYDROLOGIC SOILS GROUPS

- A
- B
- C
- D





PREPARED BY:

BONADIMAN

TEL. (909) 885-3000

CIVILDESIGN

WATERSHED HYDROLOGIC SOIL GROUPS
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 03-06-23

E.1

SHEET 1 OF 1

COVER TYPE DESCRIPTIONS

NATURAL COVERS -

Barren - Areas with 15 percent or less of the ground surface covered by plants or litter. It includes rockland, eroded land, and shaped or graded land. Barren land does not include fallow land.

Chaparral, Broadleaf - Areas on which the principal vegetation consists of evergreen shrubs with broad, hard, stiff leaves such as manzonita, ceanothus and scrub oak. The brush cover is usually dense or moderately dense.

Chaparral, Narrowleaf - Land on which the principal vegetation consists of diffusely branched evergreen shrubs with fine needle-like leaves such as chamise and redshank. The shrubs are usually widely spaced and low in growth. If the narrowleaf chaparral shrubs are dense and high; the land should be included with broadleaf chaparral cover.

Grass, Annual - Land on which the principal vegetation consists of annual grasses and weeds such as annual bromes, wild barley, soft chess, ryegrass and filaree.

Grass, Perennial - Areas on which the principal vegetation consists of perennial grass, either native or introduced, and which grows under normal dryland conditions. Examples are Stipa or needle grass, Harding grass and wheat grass. It does not include irrigated and meadow grasses.

Meadow - Land areas with seasonally high water table, often called cienegas. Principal vegetation consists of sod-forming grasses interspersed with other plants.

Open Brush - Principal vegetation consists of soft wood shrubs, usually grayish in color. Examples include California buckwheat, California sagebrush, black sage, white sage and purple sage. It also includes vegetation on desert facing slopes where broadleaf chaparral predominate in an open shrub cover.

Woodland - Areas on which coniferous or broadleaf trees predominate. The crown or canopy density, the amount of ground surface shaded at high noon, is at least 50 percent. Open areas may have a cover of annual or perennial grasses or of brush. Plant cover under the trees is usually sparse because of leaf or needle litter accumulation.

Woodland, Grass - Areas with an open cover of broadleaf or coniferous trees usually live oak and pines, with the intervening ground space occupied by annual grasses or weeds. The trees may occur singly or in small clumps. Canopy density, the amount of ground surface shaded at high noon, is from 20 to 50 percent.

URBAN COVERS -

Residential or Commercial Landscaping - The pervious portions of commercial establishments, single and multiple family dwellings, trailer parks and schools where the predominant land cover is lawn, shrubbery and trees.

COVER TYPE DESCRIPTIONS

URBAN COVERS (cont.) -

Turf - Golf courses, parks, cemeteries, and similar lands where the predominant cover is irrigated mowed close-grown turf grass. Parks in which trees are dense may be classified as woodland.

AGRICULTURAL COVER -

Fallow - Fallow land is land plowed but not yet seeded or tilled. It is more effective than barren land in reducing storm runoff.

Legumes, Close Seeded - Alfalfa, sweetclover, timothy, etc. and combinations, either planted in close rows or broadcast.

Orchards, Deciduous - Land planted to such deciduous trees as apples, apricots, pears, walnuts and almonds. The ground cover during the rainy reason alters the hydrologic response to storm rainfall. Ground cover may be annual grass or perennial grass with or without legumes. Occasionally legumes are used alone. Use runoff index numbers which apply to the land use or the kind and condition of cover during storm periods. If orchards are kept bare by disking, or through the use of herbicides, fallow applies.

Orchards, Evergreen - Land planted to evergreen trees which include citrus and avocado orchards and coniferous plantings. The effectiveness of this kind of land use is in part determined by the tree, the litter and the ground cover. In these groves the ground cover may be legumes alone or annual or perennial grasses with or without legumes. The ground cover may be entirely litter if the tree canopy is sufficiently dense to produce a substantial quantity of fallen leaves or needles. As with deciduous orchards, management practices affect the runoff potential of evergreen orchards.

Pasture, Dryland - Equivalent to annual grass. Land on which the principal vegetation consists of annual grasses and weeds such as annual bromes, wild barley, soft chess, ryegrass and filaree.

Pasture, Irrigated - Irrigated land planted to perennial grasses and legumes for production of forage and which is cultivated only to establish or renew the stand of plants.

Row Crops - Lettuce, tomatoes, sugar beets, tulips or any field crop planted in rows far enough apart that most of the soil surface is exposed to rainfall impact throughout the growing season. At plowing, planting and harvest times it is equivalent to fallow.

Small Grain - Wheat, oats, barley, flax, etc. planted in rows close enough that the soil surface is not exposed except during planting and shortly thereafter.

Vineyards - As with orchards, ground cover and land condition must be considered in estimating runoff potential. Use runoff index numbers which apply to the kind and condition of cover. For example either annual grass or fallow may apply.

Reference: Bibliography item No. 17.

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HYDROLOGY MANUAL

COVER TYPE DESCRIPTIONS

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	72	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	28	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
AGRICULTURAL COVERS -					
Fallow (Land plowed but not tilled or seeded)		76	85	90	92

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RUNOFF INDEX NUMBERS FOR PERVIOUS AREA

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
AGRICULTURAL COVERS (cont.) -					
Legumes, Close Seeded (Alfalfa, sweetclover, timothy, etc.)	Poor	66	77	85	89
	Good	58	72	81	85
Orchards, Deciduous (Apples, apricots, pears, walnuts, etc.)		See Note 4			
Orchards, Evergreen (Citrus, avocados, etc.)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
Pasture, Dryland (Annual grasses)	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Pasture, Irrigated (Legumes and perennial grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
Row Crops (Field crops - tomatoes, sugar beets, etc.)	Poor	72	81	88	91
	Good	67	78	85	89
Small Grain (Wheat, oats, barley, etc.)	Poor	65	76	84	88
	Good	63	75	83	87
Vineyard		See Note 4			

Notes:

1. All runoff index (RI) numbers are for Antecedent Moisture Condition (AMC) II.

2. Quality of cover definitions:
   Poor-Heavily grazed or regularly burned areas. Less than 50 percent of the ground surface is protected by plant cover or brush and tree canopy.
   Fair-Moderate cover with 50 percent to 75 percent of the ground surface protected.
   Good-Heavy or dense cover with more than 75 percent of the ground surface protected.

3. See Plate C-2 for a detailed description of cover types.

4. Use runoff index numbers based on ground cover type. See discussion under "Cover Type Descriptions" on Plate C-2.

5. Reference Bibliography item 17.

ACTUAL IMPERVIOUS COVER

Land Use (1)	Range-Percent	Recommended Value For Average Conditions-Percent(2)
Natural or Agriculture	0 - 10	0
Single Family Residential: (3)		
40,000 S. F. (1 Acre) Lots	10 - 25	20
20,000 S. F. (½ Acre) Lots	30 - 45	40
7,200 - 10,000 S. F. Lots	45 - 55	50
Multiple Family Residential:		
Condominiums	45 - 70	65
Apartments	65 - 90	80
Mobile Home Park	60 - 85	75
Commercial, Downtown Business or Industrial	80 -100	90

Notes:

1. Land use should be based on ultimate development of the watershed. Long range master plans for the County and incorporated cities should be reviewed to insure reasonable land use assumptions.

2. Recommended values are based on average conditions which may not apply to a particular study area. The percentage impervious may vary greatly even on comparable sized lots due to differences in dwelling size, improvements, etc. Landscape practices should also be considered as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. A field investigation of a study area should always be made, and a review of aerial photos, where available may assist in estimating the percentage of impervious cover in developed areas.

3. For typical horse ranch subdivisions increase impervious area 5 percent over the values recommended in the table above.

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IMPERVIOUS COVER FOR DEVELOPED AREAS

PLATE D-5.6

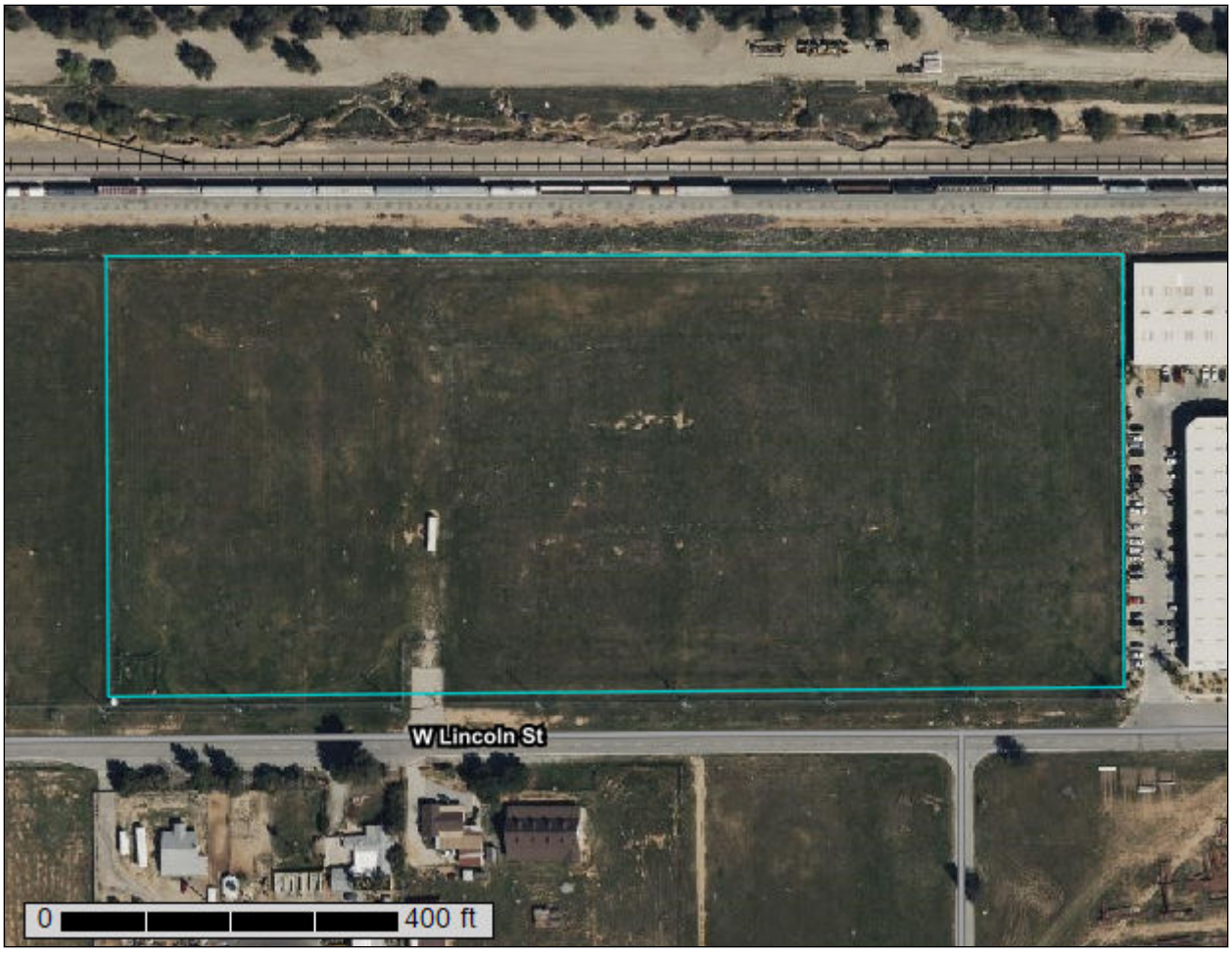
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Western Riverside Area, California



February 6, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:2,020 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 15, Sep 6, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2022—May 28, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GyC2	Greenfield sandy loam, 2 to 8 percent slopes, eroded	8.6	60.5%
RaB2	Ramona sandy loam, 2 to 5 percent slopes, eroded	5.6	39.5%
Totals for Area of Interest		**14.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Western Riverside Area, California

GyC2—Greenfield sandy loam, 2 to 8 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcvw
Elevation: 100 to 3,500 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Greenfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greenfield

Setting

Landform: Terraces, alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 26 inches: sandy loam
H2 - 26 to 43 inches: fine sandy loam
H3 - 43 to 60 inches: loam
H4 - 60 to 72 inches: stratified loamy sand to sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: R019XD029CA - LOAMY
Hydric soil rating: No

Minor Components

Pachappa

Percent of map unit: 3 percent

Hydric soil rating: No

Arlington

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 3 percent
Hydric soil rating: No

Ramona

Percent of map unit: 3 percent
Hydric soil rating: No

Hanford

Percent of map unit: 3 percent
Hydric soil rating: No

RaB2—Ramona sandy loam, 2 to 5 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcy5
Elevation: 250 to 3,500 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 230 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ramona and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ramona

Setting

Landform: Terraces, alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 14 inches: sandy loam
H2 - 14 to 23 inches: fine sandy loam
H3 - 23 to 68 inches: sandy clay loam
H4 - 68 to 74 inches: gravelly sandy loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R019XD029CA - LOAMY
Hydric soil rating: No

Minor Components

Hanford

Percent of map unit: 4 percent
Hydric soil rating: No

Arlington

Percent of map unit: 4 percent
Hydric soil rating: No

Greenfield

Percent of map unit: 4 percent
Hydric soil rating: No

Tujunga

Percent of map unit: 3 percent
Hydric soil rating: No

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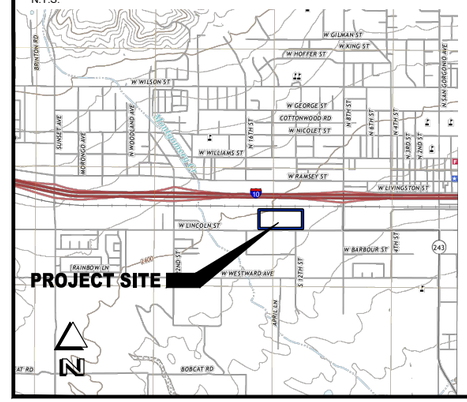
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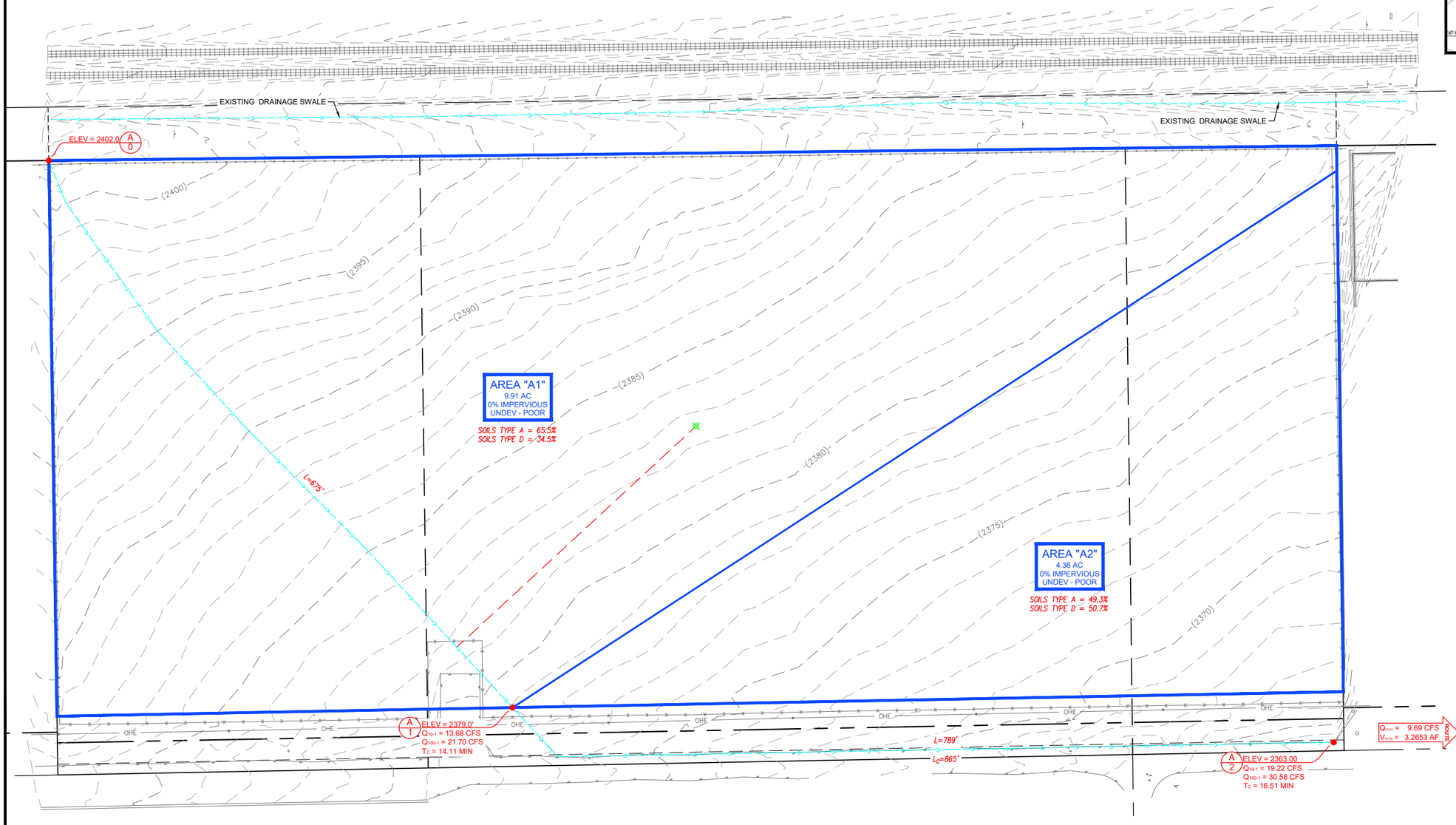
EXHIBIT “F”

Existing On-site
Hydrologic Conditions Study Map

EXHIBIT "F"
EXISTING ON-SITE HYDROLOGIC CONDITIONS
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

VICINITY MAP
N.T.S.





MAP LEGEND

AREA "A"
1.00 AC
20% IMPERVIOUS
1 AC LOTS

DRAINAGE AREA, SIZE, %, IMPERVIOUS, & CLOSEST APPROXIMATED CLASSIFICATION

A
1
ELEV = 100.00
Q_{100} = 1.0CFS

NODE LOCATION, ELEVATION, & TOTAL PEAK $Q_{100\text{-HOUR}}$

$Q_{100\text{-}24}$ = 1 CFS
$V_{100\text{-}24}$ = 1 AF
4 HOURS

UNIT HYDROGRAPH METHOD TOTAL PEAK $Q_{100\text{-}24}$

DRAINAGE AREA LIMITS

FLOW PATHS

DRAINAGE AREA CENTROIDS

50 0 50 100 150
SCALE: 1"=50'

EXISTING CONDITION EXHIBIT
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

PREPARED BY:
BONADIMAN
CIVILDESIGN

PREPARED FOR:

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	BROWN STRAUSS STEEL
JOB NO:	225047
PREPARED BY:	JTS
CHECKED BY:	JTS

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EXISTING CONDITION EXHIBIT
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

F

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 03-06-23

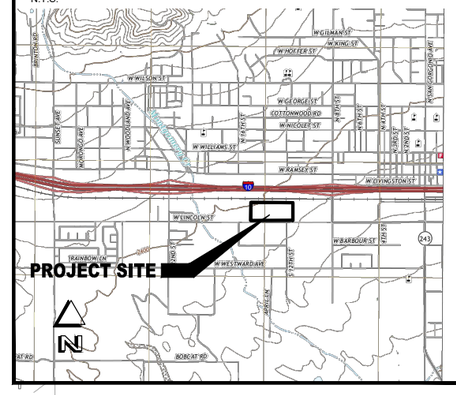
SHEET 1 OF 1

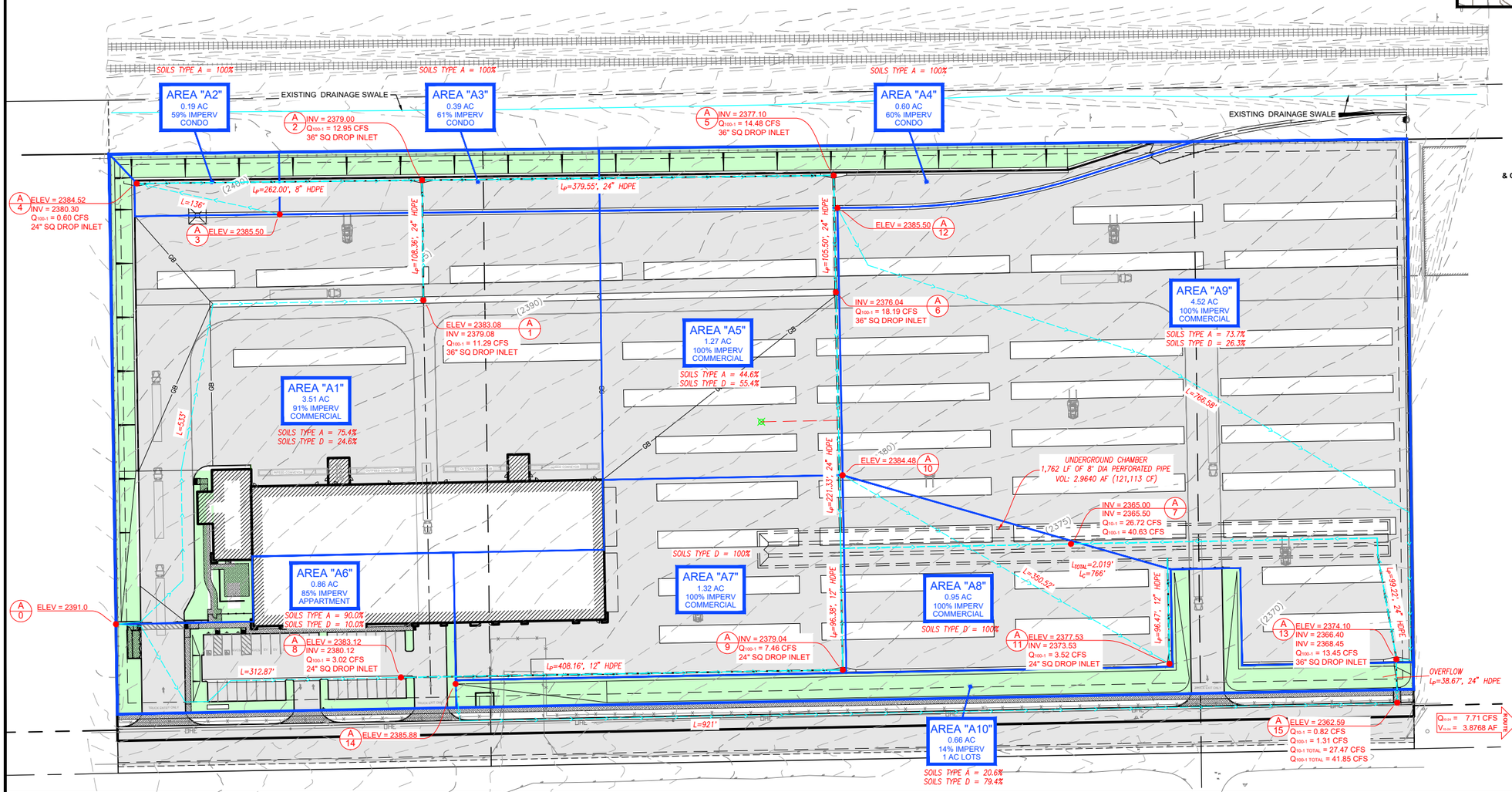
EXHIBIT “G”

Developed On-Site
Hydrologic Conditions Study Map

EXHIBIT "G"
PROPOSED ON-SITE HYDROLOGIC CONDITIONS
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

VICINITY MAP
N.T.S.





MAP LEGEND

AREA "A"
1.00 AC
20% IMPERVIOUS
1 AC LOTS

DRAINAGE AREA, SIZE, % IMPERVIOUS, & CLOSEST APPROXIMATED CLASSIFICATION

A 1 ELEV = 100.00 Q100 = 1.0CFS

NODE LOCATION, ELEVATION, & TOTAL PEAK $Q_{100\text{-HOUR}}$

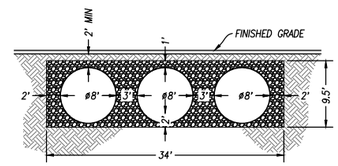
Q_{100} = 1 CFS
V_{100} = 1 AF
OUTLET

UNIT HYDROGRAPH METHOD TOTAL PEAK $Q_{100\text{-}24}$

DRAINAGE AREA LIMITS

FLOW PATHS

DRAINAGE AREA CENTROIDS



UNDERGROUND CHAMBER
N.T.S.
1,762 LF OF 8' DIA PERFORATED PIPE
VOL: 2.9640 AF (121,113 CF)

50 0 50 100 150
SCALE: 1"=50'

PROPOSED CONDITION EXHIBIT
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

PREPARED BY:
BONADIMAN
CIVILDESIGN

PREPARED FOR:

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	BROWN STRAUSS STEEL
JOB NO:	225047
PREPARED BY:	JTS
CHECKED BY:	JTS

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PROPOSED CONDITION EXHIBIT
BROWN STRAUSS STEEL
CITY OF BANNING, CA 92220

G

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 03-06-23

SHEET 1 OF 1

ATTACHMENT 1

Existing
On-Site Conditions
10-Year & 100-Year
Rational Method

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2018 Version 9.0
        Rational Hydrology Study        Date: 02/28/23  File:BROWN.out
------------------------------------------------------------------------
225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
10-YEAR, 1-HOUR STORM
BY: JTS  DATE: 02-28-23
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

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

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


Program License Serial Number 6320

------------------------------------------------------------------------
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 [ Banning ] area used.
10 year storm 10 minute intensity =  2.300(In/Hr)
10 year storm 60 minute intensity =  0.890(In/Hr)
100 year storm 10 minute intensity =  3.410(In/Hr)
100 year storm 60 minute intensity =  1.320(In/Hr)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.890(In/Hr)
Slope of intensity duration curve = 0.5300




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        0.000 to Point/Station        1.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   675.000(Ft.)
Top (of initial area) elevation =  2402.000(Ft.)
Bottom (of initial area) elevation =  2379.000(Ft.)
Difference in elevation =    23.000(Ft.)
Slope =    0.03407  s(percent)=       3.41
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   14.110 min.
Rainfall intensity =      1.917(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.720
Decimal fraction soil group A = 0.655
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.345
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  73.56
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     13.675(CFS)
Total initial stream area =        9.910(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

```
Process from Point/Station        1.000 to Point/Station        2.000
**** IMPROVED CHANNEL TRAVEL TIME ****
____________________________________________________________________________
Upstream point elevation =  2379.000(Ft.)
Downstream point elevation =  2363.000(Ft.)
Channel length thru subarea  =   789.000(Ft.)
Channel base width      =    5.000(Ft.)
Slope or 'Z' of left channel bank =   0.500
Slope or 'Z' of right channel bank =   0.500
Estimated mean flow rate at midpoint of channel =     16.475(CFS)
Manning's 'N'    = 0.030
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =     16.475(CFS)
Depth of flow =   0.659(Ft.), Average velocity =   4.692(Ft/s)
Channel flow top width =    5.659(Ft.)
Flow Velocity =    4.69(Ft/s)
Travel time  =    2.80 min.
Time of concentration =   16.91 min.

Sub-Channel No. 1 Critical depth =      0.680(Ft.)
  '     '       '     Critical flow top width =      5.680(Ft.)
  '     '       '     Critical flow velocity=    4.539(Ft/s)
  '     '       '     Critical flow area =      3.629(Sq.Ft)

 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.730
Decimal fraction soil group A = 0.493
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.507
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  76.63
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.741(In/Hr) for a    10.0 year storm
Subarea runoff =      5.539(CFS) for      4.360(Ac.)
Total runoff =     19.215(CFS)  Total area =      14.270(Ac.)
Depth of flow =   0.725(Ft.), Average velocity =   4.945(Ft/s)

Sub-Channel No. 1 Critical depth =      0.750(Ft.)
  '     '       '     Critical flow top width =      5.750(Ft.)
  '     '       '     Critical flow velocity=    4.766(Ft/s)
  '     '       '     Critical flow area =      4.031(Sq.Ft)

End of computations, total study area =           14.27 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  74.5
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2018 Version 9.0
Rational Hydrology Study Date: 02/28/23 File:EX.out

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
100-YEAR, 1-HOUR STORM
BY: JTS DATE: 02-28-23

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

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

Program License Serial Number 6320

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 [Banning] area used.
10 year storm 10 minute intensity = 2.300(In/Hr)
10 year storm 60 minute intensity = 0.890(In/Hr)
100 year storm 10 minute intensity = 3.410(In/Hr)
100 year storm 60 minute intensity = 1.320(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.320(In/Hr)
Slope of intensity duration curve = 0.5300

++

Process from Point/Station 0.000 to Point/Station 1.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 675.000(Ft.)
Top (of initial area) elevation = 2402.000(Ft.)
Bottom (of initial area) elevation = 2379.000(Ft.)
Difference in elevation = 23.000(Ft.)
Slope = 0.03407 s(percent)= 3.41
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 14.110 min.
Rainfall intensity = 2.843(In/Hr) for a 100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.770
Decimal fraction soil group A = 0.655
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.345
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 73.56
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 21.697(CFS)
Total initial stream area = 9.910(Ac.)
Pervious area fraction = 1.000

++

```
Process from Point/Station        1.000 to Point/Station        2.000
**** IMPROVED CHANNEL TRAVEL TIME ****
____________________________________________________________________________
Upstream point elevation =  2379.000(Ft.)
Downstream point elevation =  2363.000(Ft.)
Channel length thru subarea  =   789.000(Ft.)
Channel base width      =    5.000(Ft.)
Slope or 'Z' of left channel bank =   0.500
Slope or 'Z' of right channel bank =   0.500
Estimated mean flow rate at midpoint of channel =     26.181(CFS)
Manning's 'N'    = 0.030
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =     26.181(CFS)
Depth of flow =   0.878(Ft.), Average velocity =   5.484(Ft/s)
Channel flow top width =    5.878(Ft.)
Flow Velocity =    5.48(Ft/s)
Travel time  =    2.40 min.
Time of concentration =   16.51 min.

Sub-Channel No. 1 Critical depth =      0.922(Ft.)
  '     '       '     Critical flow top width =      5.922(Ft.)
  '     '       '     Critical flow velocity=    5.200(Ft/s)
  '     '       '     Critical flow area =      5.034(Sq.Ft)

 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.779
Decimal fraction soil group A = 0.493
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.507
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  76.63
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.616(In/Hr) for a   100.0 year storm
Subarea runoff =      8.884(CFS) for      4.360(Ac.)
Total runoff =     30.581(CFS)  Total area =      14.270(Ac.)
Depth of flow =   0.966(Ft.), Average velocity =   5.771(Ft/s)

Sub-Channel No. 1 Critical depth =      1.016(Ft.)
  '     '       '     Critical flow top width =      6.000(Ft.)
  '     '       '     Critical flow velocity=    5.467(Ft/s)
  '     '       '     Critical flow area =      5.594(Sq.Ft)

End of computations, total study area =           14.27 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  74.5
```

ATTACHMENT 2

Existing
On-Site Conditions
2, 5, 10, & 100-Year
Unit Hydrograph Calculations

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

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
Study date 02/28/23 File: EXHYD12.out

++

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
2-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	0.56	7.99

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	1.28	18.27

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.560(In)
Area Averaged 100-Year Rainfall = 1.280(In)

Point rain (area averaged) = 0.560(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.560(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
          14.270           74.50         0.000
         Total Area Entered =     14.27(Ac.)


        RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
        AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
        74.5  56.4      0.507     0.000        0.507       1.000      0.507
                                                          Sum (F) =   0.507
        Area averaged mean soil loss (F) (In/Hr) =  0.507
        Minimum soil loss rate ((In/Hr)) =  0.253
        (for 24 hour storm duration)
        Soil low loss rate (decimal) =   0.900
        ------------------------------------------------------------------------
        Slope of intensity-duration curve for a 1 hour storm =0.5300
        ------------------------------------------------------------------------

                       U n i t  H y d r o g r a p h
                              VALLEY S-Curve
        ------------------------------------------------------------------
                       Unit Hydrograph Data
        ------------------------------------------------------------------
        Unit time period   Time % of lag   Distribution   Unit Hydrograph
            (hrs)                           Graph %           (CFS)
        ------------------------------------------------------------------
            1   0.083         95.911         17.950             2.581
            2   0.167        191.821         48.005             6.904
            3   0.250        287.732         16.296             2.344
            4   0.333        383.642          7.287             1.048
            5   0.417        479.553          4.148             0.597
            6   0.500        575.463          2.689             0.387
            7   0.583        671.374          1.732             0.249
            8   0.667        767.284          1.088             0.156
            9   0.750        863.195          0.807             0.116
                                      Sum = 100.000   Sum=      14.381
    ------------------------------------------------------------------------


     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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
           (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
       1   0.08     3.40      0.228       (  0.507)       0.206        0.023
       2   0.17     4.70      0.316       (  0.507)       0.284        0.032
       3   0.25     4.70      0.316       (  0.507)       0.284        0.032
       4   0.33     5.10      0.343       (  0.507)       0.308        0.034
       5   0.42     5.80      0.390       (  0.507)       0.351        0.039
       6   0.50     5.90      0.396       (  0.507)       0.357        0.040
       7   0.58     7.10      0.477       (  0.507)       0.429        0.048
       8   0.67     8.70      0.585          0.507    (  0.526)        0.078
       9   0.75    13.20      0.887          0.507    (  0.798)        0.380
      10   0.83    29.70      1.996          0.507    (  1.796)        1.489
      11   0.92     7.70      0.517       (  0.507)       0.466        0.052
      12   1.00     4.00      0.269       (  0.507)       0.242        0.027
                    (Loss Rate Not Used)
         Sum =     100.0                                   Sum =     2.3
            Flood volume = Effective rainfall      0.19(In)
             times area      14.3(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
            Total soil loss =      0.37(In)
            Total soil loss =     0.441(Ac.Ft)
            Total rainfall =      0.56(In)
            Flood volume =        9808.0 Cubic Feet
            Total soil loss =       19196.3 Cubic Feet
            ------------------------------------------------------------------
             Peak flow rate of this hydrograph =     11.453(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	5.0	10.0	15.0	20.0
0+ 5	0.0004	0.06	Q				
0+10	0.0021	0.24	Q				
0+15	0.0045	0.35	Q				
0+20	0.0073	0.40	QV				
0+25	0.0104	0.46	QV				
0+30	0.0140	0.51	QV				
0+35	0.0178	0.56	Q V				
0+40	0.0227	0.71	Q V				
0+45	0.0346	1.73	Q V				
0+50	0.0811	6.76		QV			
0+55	0.1600	11.45			Q V		
1+ 0	0.1903	4.40	Q			V	
1+ 5	0.2051	2.15	Q			V	
1+10	0.2133	1.18	Q			V	
1+15	0.2184	0.75	Q			V	
1+20	0.2217	0.48	Q			V	
1+25	0.2238	0.30	Q			V	
1+30	0.2251	0.19	Q			V	
1+35	0.2251	0.01	Q			V	
1+40	0.2252	0.00	Q			V	

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

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Study date 02/28/23 File: EXHYD32.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
2-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	0.96	13.70

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	2.23	31.82

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.960(In)
Area Averaged 100-Year Rainfall = 2.230(In)

Point rain (area averaged) = 0.960(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.960(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
   14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  56.4      0.507     0.000        0.507       1.000      0.507
                                                 Sum (F) =   0.507
Area averaged mean soil loss (F) (In/Hr) =  0.507
Minimum soil loss rate ((In/Hr)) =  0.253
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
--------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
--------------------------------------------------------------------------
               Unit Hydrograph Data
--------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
--------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
--------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     1.30      0.150       (  0.507)       0.135        0.015
   2   0.17     1.30      0.150       (  0.507)       0.135        0.015
   3   0.25     1.10      0.127       (  0.507)       0.114        0.013
   4   0.33     1.50      0.173       (  0.507)       0.156        0.017
   5   0.42     1.50      0.173       (  0.507)       0.156        0.017
   6   0.50     1.80      0.207       (  0.507)       0.187        0.021
   7   0.58     1.50      0.173       (  0.507)       0.156        0.017
   8   0.67     1.80      0.207       (  0.507)       0.187        0.021
   9   0.75     1.80      0.207       (  0.507)       0.187        0.021
  10   0.83     1.50      0.173       (  0.507)       0.156        0.017
  11   0.92     1.60      0.184       (  0.507)       0.166        0.018
  12   1.00     1.80      0.207       (  0.507)       0.187        0.021
  13   1.08     2.20      0.253       (  0.507)       0.228        0.025
  14   1.17     2.20      0.253       (  0.507)       0.228        0.025
  15   1.25     2.20      0.253       (  0.507)       0.228        0.025
  16   1.33     2.00      0.230       (  0.507)       0.207        0.023
  17   1.42     2.60      0.300       (  0.507)       0.270        0.030
  18   1.50     2.70      0.311       (  0.507)       0.280        0.031
  19   1.58     2.40      0.276       (  0.507)       0.249        0.028
  20   1.67     2.70      0.311       (  0.507)       0.280        0.031
  21   1.75     3.30      0.380       (  0.507)       0.342        0.038
  22   1.83     3.10      0.357       (  0.507)       0.321        0.036
  23   1.92     2.90      0.334       (  0.507)       0.301        0.033
  24   2.00     3.00      0.346       (  0.507)       0.311        0.035
  25   2.08     3.10      0.357       (  0.507)       0.321        0.036
  26   2.17     4.20      0.484       (  0.507)       0.435        0.048
  27   2.25     5.00      0.576          0.507    (  0.518)        0.069
  28   2.33     3.50      0.403       (  0.507)       0.363        0.040
  29   2.42     6.80      0.783          0.507    (  0.705)        0.277
```

```
30   2.50     7.30      0.841          0.507    (  0.757)        0.334
31   2.58     8.20      0.945          0.507    (  0.850)        0.438
32   2.67     5.90      0.680          0.507    (  0.612)        0.173
33   2.75     2.00      0.230       (  0.507)       0.207        0.023
34   2.83     1.80      0.207       (  0.507)       0.187        0.021
35   2.92     1.80      0.207       (  0.507)       0.187        0.021
36   3.00     0.60      0.069       (  0.507)       0.062        0.007
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =     2.1
      Flood volume = Effective rainfall      0.17(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      0.79(In)
      Total soil loss =     0.937(Ac.Ft)
      Total rainfall =      0.96(In)
      Flood volume =        8893.6 Cubic Feet
      Total soil loss =       40831.4 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      4.617(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0003      0.04  Q         |         |         |         |
  0+10       0.0012      0.14  Q         |         |         |         |
  0+15       0.0024      0.17  Q         |         |         |         |
  0+20       0.0037      0.18  Q         |         |         |         |
  0+25       0.0052      0.22  QV        |         |         |         |
  0+30       0.0069      0.24  QV        |         |         |         |
  0+35       0.0087      0.26  |Q        |         |         |         |
  0+40       0.0105      0.26  |QV       |         |         |         |
  0+45       0.0124      0.28  |QV       |         |         |         |
  0+50       0.0144      0.28  |QV       |         |         |         |
  0+55       0.0162      0.26  |Q V      |         |         |         |
  1+ 0       0.0180      0.27  |Q V      |         |         |         |
  1+ 5       0.0201      0.30  |Q V      |         |         |         |
  1+10       0.0224      0.34  |Q  V     |         |         |         |
  1+15       0.0248      0.35  |Q  V     |         |         |         |
  1+20       0.0273      0.35  |Q   V    |         |         |         |
  1+25       0.0297      0.36  |Q   V    |         |         |         |
  1+30       0.0325      0.40  |Q    V   |         |         |         |
  1+35       0.0353      0.42  |Q    V   |         |         |         |
  1+40       0.0382      0.41  |Q     V  |         |         |         |
  1+45       0.0413      0.45  |Q      V |         |         |         |
  1+50       0.0447      0.50  |Q      V |         |         |         |
  1+55       0.0482      0.50  |Q       V|         |         |         |
  2+ 0       0.0515      0.49  |Q        V         |         |         |
  2+ 5       0.0549      0.50  |Q        V         |         |         |
  2+10       0.0586      0.54  | Q       |V        |         |         |
  2+15       0.0634      0.68  | Q       | V       |         |         |
  2+20       0.0688      0.79  |  Q      |  V      |         |         |
  2+25       0.0774      1.26  |    Q    |    V    |         |         |
  2+30       0.0981      3.00  |         | Q      V|         |         |
  2+35       0.1271      4.21  |         |     Q   |   V     |         |
  2+40       0.1589      4.62  |         |       Q |         |V        |
  2+45       0.1785      2.84  |         |Q        |         |   V     |
  2+50       0.1882      1.41  |    Q    |         |         |     V   |
  2+55       0.1944      0.91  |  Q      |         |         |       V |
  3+ 0       0.1988      0.64  | Q       |         |         |       V |
  3+ 5       0.2015      0.39  |Q        |         |         |        V|
  3+10       0.2029      0.21  Q         |         |         |        V|
  3+15       0.2037      0.11  Q         |         |         |        V|
  3+20       0.2040      0.04  Q         |         |         |        V|
  3+25       0.2041      0.01  Q         |         |         |        V|
```

```
    3+30       0.2041      0.01  Q        |        |        |       V|
    3+35       0.2042      0.00  Q        |        |        |       V|
    3+40       0.2042      0.00  Q        |        |        |       V|
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD62.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
2-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	1.42	20.26

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	3.15	44.95

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.420(In)
Area Averaged 100-Year Rainfall = 3.150(In)

Point rain (area averaged) = 1.420(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.420(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  56.4      0.507     0.000        0.507       1.000      0.507
                                                 Sum (F) =   0.507
Area averaged mean soil loss (F) (In/Hr) =  0.507
Minimum soil loss rate ((In/Hr)) =  0.253
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
--------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
--------------------------------------------------------------------------
               Unit Hydrograph Data
--------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
--------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
--------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     0.50      0.085       (  0.507)       0.077        0.009
   2   0.17     0.60      0.102       (  0.507)       0.092        0.010
   3   0.25     0.60      0.102       (  0.507)       0.092        0.010
   4   0.33     0.60      0.102       (  0.507)       0.092        0.010
   5   0.42     0.60      0.102       (  0.507)       0.092        0.010
   6   0.50     0.70      0.119       (  0.507)       0.107        0.012
   7   0.58     0.70      0.119       (  0.507)       0.107        0.012
   8   0.67     0.70      0.119       (  0.507)       0.107        0.012
   9   0.75     0.70      0.119       (  0.507)       0.107        0.012
  10   0.83     0.70      0.119       (  0.507)       0.107        0.012
  11   0.92     0.70      0.119       (  0.507)       0.107        0.012
  12   1.00     0.80      0.136       (  0.507)       0.123        0.014
  13   1.08     0.80      0.136       (  0.507)       0.123        0.014
  14   1.17     0.80      0.136       (  0.507)       0.123        0.014
  15   1.25     0.80      0.136       (  0.507)       0.123        0.014
  16   1.33     0.80      0.136       (  0.507)       0.123        0.014
  17   1.42     0.80      0.136       (  0.507)       0.123        0.014
  18   1.50     0.80      0.136       (  0.507)       0.123        0.014
  19   1.58     0.80      0.136       (  0.507)       0.123        0.014
  20   1.67     0.80      0.136       (  0.507)       0.123        0.014
  21   1.75     0.80      0.136       (  0.507)       0.123        0.014
  22   1.83     0.80      0.136       (  0.507)       0.123        0.014
  23   1.92     0.80      0.136       (  0.507)       0.123        0.014
  24   2.00     0.90      0.153       (  0.507)       0.138        0.015
  25   2.08     0.80      0.136       (  0.507)       0.123        0.014
  26   2.17     0.90      0.153       (  0.507)       0.138        0.015
  27   2.25     0.90      0.153       (  0.507)       0.138        0.015
  28   2.33     0.90      0.153       (  0.507)       0.138        0.015
  29   2.42     0.90      0.153       (  0.507)       0.138        0.015
```

```
30   2.50     0.90      0.153       (  0.507)       0.138        0.015
31   2.58     0.90      0.153       (  0.507)       0.138        0.015
32   2.67     0.90      0.153       (  0.507)       0.138        0.015
33   2.75     1.00      0.170       (  0.507)       0.153        0.017
34   2.83     1.00      0.170       (  0.507)       0.153        0.017
35   2.92     1.00      0.170       (  0.507)       0.153        0.017
36   3.00     1.00      0.170       (  0.507)       0.153        0.017
37   3.08     1.00      0.170       (  0.507)       0.153        0.017
38   3.17     1.10      0.187       (  0.507)       0.169        0.019
39   3.25     1.10      0.187       (  0.507)       0.169        0.019
40   3.33     1.10      0.187       (  0.507)       0.169        0.019
41   3.42     1.20      0.204       (  0.507)       0.184        0.020
42   3.50     1.30      0.222       (  0.507)       0.199        0.022
43   3.58     1.40      0.239       (  0.507)       0.215        0.024
44   3.67     1.40      0.239       (  0.507)       0.215        0.024
45   3.75     1.50      0.256       (  0.507)       0.230        0.026
46   3.83     1.50      0.256       (  0.507)       0.230        0.026
47   3.92     1.60      0.273       (  0.507)       0.245        0.027
48   4.00     1.60      0.273       (  0.507)       0.245        0.027
49   4.08     1.70      0.290       (  0.507)       0.261        0.029
50   4.17     1.80      0.307       (  0.507)       0.276        0.031
51   4.25     1.90      0.324       (  0.507)       0.291        0.032
52   4.33     2.00      0.341       (  0.507)       0.307        0.034
53   4.42     2.10      0.358       (  0.507)       0.322        0.036
54   4.50     2.10      0.358       (  0.507)       0.322        0.036
55   4.58     2.20      0.375       (  0.507)       0.337        0.037
56   4.67     2.30      0.392       (  0.507)       0.353        0.039
57   4.75     2.40      0.409       (  0.507)       0.368        0.041
58   4.83     2.40      0.409       (  0.507)       0.368        0.041
59   4.92     2.50      0.426       (  0.507)       0.383        0.043
60   5.00     2.60      0.443       (  0.507)       0.399        0.044
61   5.08     3.10      0.528       (  0.507)       0.475        0.053
62   5.17     3.60      0.613          0.507    (  0.552)       0.107
63   5.25     3.90      0.665          0.507    (  0.598)       0.158
64   5.33     4.20      0.716          0.507    (  0.644)       0.209
65   5.42     4.70      0.801          0.507    (  0.721)       0.294
66   5.50     5.60      0.954          0.507    (  0.859)       0.447
67   5.58     1.90      0.324       (  0.507)       0.291        0.032
68   5.67     0.90      0.153       (  0.507)       0.138        0.015
69   5.75     0.60      0.102       (  0.507)       0.092        0.010
70   5.83     0.50      0.085       (  0.507)       0.077        0.009
71   5.92     0.30      0.051       (  0.507)       0.046        0.005
72   6.00     0.20      0.034       (  0.507)       0.031        0.003
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     2.5
      Flood volume = Effective rainfall      0.21(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
      Total soil loss =      1.21(In)
      Total soil loss =     1.436(Ac.Ft)
      Total rainfall =      1.42(In)
      Flood volume =       10981.9 Cubic Feet
      Total soil loss =       62570.6 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      4.244(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.02  Q         |         |         |         |
  0+10       0.0007      0.09  Q         |         |         |         |
  0+15       0.0015      0.12  Q         |         |         |         |
  0+20       0.0024      0.13  Q         |         |         |         |
  0+25       0.0034      0.14  Q         |         |         |         |
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0+30       0.0044      0.15  Q         |         |         |         |
0+35       0.0055      0.16  Q         |         |         |         |
0+40       0.0066      0.17  QV        |         |         |         |
0+45       0.0078      0.17  QV        |         |         |         |
0+50       0.0090      0.17  QV        |         |         |         |
0+55       0.0101      0.17  QV        |         |         |         |
1+ 0       0.0113      0.18  QV        |         |         |         |
1+ 5       0.0126      0.19  Q V       |         |         |         |
1+10       0.0140      0.19  Q V       |         |         |         |
1+15       0.0153      0.19  Q V       |         |         |         |
1+20       0.0166      0.19  Q V       |         |         |         |
1+25       0.0180      0.20  Q V       |         |         |         |
1+30       0.0193      0.20  Q  V      |         |         |         |
1+35       0.0207      0.20  Q  V      |         |         |         |
1+40       0.0220      0.20  Q  V      |         |         |         |
1+45       0.0234      0.20  Q  V      |         |         |         |
1+50       0.0247      0.20  Q  V      |         |         |         |
1+55       0.0261      0.20  Q   V     |         |         |         |
2+ 0       0.0275      0.20  Q   V     |         |         |         |
2+ 5       0.0289      0.21  Q   V     |         |         |         |
2+10       0.0303      0.20  Q   V     |         |         |         |
2+15       0.0318      0.21  Q    V    |         |         |         |
2+20       0.0333      0.22  Q    V    |         |         |         |
2+25       0.0348      0.22  Q    V    |         |         |         |
2+30       0.0363      0.22  Q    V    |         |         |         |
2+35       0.0378      0.22  Q    V    |         |         |         |
2+40       0.0393      0.22  Q     V   |         |         |         |
2+45       0.0409      0.22  Q     V   |         |         |         |
2+50       0.0425      0.24  Q     V   |         |         |         |
2+55       0.0442      0.24  Q      V  |         |         |         |
3+ 0       0.0458      0.24  Q      V  |         |         |         |
3+ 5       0.0475      0.24  Q      V  |         |         |         |
3+10       0.0492      0.25  Q      V  |         |         |         |
3+15       0.0510      0.26  |Q      V |         |         |         |
3+20       0.0528      0.27  |Q      V |         |         |         |
3+25       0.0547      0.27  |Q      V |         |         |         |
3+30       0.0567      0.29  |Q      V |         |         |         |
3+35       0.0588      0.31  |Q       V|         |         |         |
3+40       0.0611      0.33  |Q       V|         |         |         |
3+45       0.0634      0.34  |Q        V         |         |         |
3+50       0.0659      0.35  |Q        V         |         |         |
3+55       0.0684      0.36  |Q        V         |         |         |
4+ 0       0.0710      0.38  |Q        |V        |         |         |
4+ 5       0.0737      0.39  |Q        |V        |         |         |
4+10       0.0765      0.41  |Q        | V       |         |         |
4+15       0.0795      0.43  |Q        | V       |         |         |
4+20       0.0826      0.45  |Q        |  V      |         |         |
4+25       0.0859      0.48  |Q        |  V      |         |         |
4+30       0.0893      0.50  |Q        |   V     |         |         |
4+35       0.0928      0.51  | Q       |   V     |         |         |
4+40       0.0965      0.53  | Q       |    V    |         |         |
4+45       0.1003      0.55  | Q       |    V    |         |         |
4+50       0.1042      0.57  | Q       |     V   |         |         |
4+55       0.1082      0.58  | Q       |      V  |         |         |
5+ 0       0.1124      0.60  | Q       |      V  |         |         |
5+ 5       0.1168      0.64  | Q       |       V |         |         |
5+10       0.1227      0.85  |  Q      |        V|         |         |
5+15       0.1321      1.38  |    Q    |         V         |         |
5+20       0.1459      2.00  |      Q  |          |  V     |         |
5+25       0.1649      2.76  |         |Q         |     V  |         |
5+30       0.1921      3.95  |         |    Q     |        V         |
5+35       0.2213      4.24  |         |     Q    |         |    V   |
5+40       0.2340      1.85  |      Q  |          |         |     V  |
5+45       0.2409      1.00  |  Q      |          |         |      V |
5+50       0.2452      0.63  | Q       |          |         |      V |
5+55       0.2482      0.43  |Q        |          |         |       V|
6+ 0       0.2501      0.28  |Q        |          |         |       V|
6+ 5       0.2513      0.17  Q         |          |         |       V|
6+10       0.2519      0.08  Q         |          |         |       V|
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    6+15       0.2520      0.02  Q        |         |         |        V|
    6+20       0.2520      0.01  Q        |         |         |        V|
    6+25       0.2521      0.01  Q        |         |         |        V|
    6+30       0.2521      0.00  Q        |         |         |        V|
    6+35       0.2521      0.00  Q        |         |         |        V|
    6+40       0.2521      0.00  Q        |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD242.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
2-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	2.65	37.82

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	6.95	99.18

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.650(In)
Area Averaged 100-Year Rainfall = 6.950(In)

Point rain (area averaged) = 2.650(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.650(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  56.4      0.507     0.000        0.507       1.000      0.507
                                                 Sum (F) =   0.507
Area averaged mean soil loss (F) (In/Hr) =  0.507
Minimum soil loss rate ((In/Hr)) =  0.253
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)        Max    |   Low        (In/Hr)
   1   0.08     0.07      0.021       (  0.898)       0.019        0.002
   2   0.17     0.07      0.021       (  0.895)       0.019        0.002
   3   0.25     0.07      0.021       (  0.891)       0.019        0.002
   4   0.33     0.10      0.032       (  0.888)       0.029        0.003
   5   0.42     0.10      0.032       (  0.884)       0.029        0.003
   6   0.50     0.10      0.032       (  0.881)       0.029        0.003
   7   0.58     0.10      0.032       (  0.878)       0.029        0.003
   8   0.67     0.10      0.032       (  0.874)       0.029        0.003
   9   0.75     0.10      0.032       (  0.871)       0.029        0.003
  10   0.83     0.13      0.042       (  0.867)       0.038        0.004
  11   0.92     0.13      0.042       (  0.864)       0.038        0.004
  12   1.00     0.13      0.042       (  0.860)       0.038        0.004
  13   1.08     0.10      0.032       (  0.857)       0.029        0.003
  14   1.17     0.10      0.032       (  0.854)       0.029        0.003
  15   1.25     0.10      0.032       (  0.850)       0.029        0.003
  16   1.33     0.10      0.032       (  0.847)       0.029        0.003
  17   1.42     0.10      0.032       (  0.844)       0.029        0.003
  18   1.50     0.10      0.032       (  0.840)       0.029        0.003
  19   1.58     0.10      0.032       (  0.837)       0.029        0.003
  20   1.67     0.10      0.032       (  0.833)       0.029        0.003
  21   1.75     0.10      0.032       (  0.830)       0.029        0.003
  22   1.83     0.13      0.042       (  0.827)       0.038        0.004
  23   1.92     0.13      0.042       (  0.823)       0.038        0.004
  24   2.00     0.13      0.042       (  0.820)       0.038        0.004
  25   2.08     0.13      0.042       (  0.817)       0.038        0.004
  26   2.17     0.13      0.042       (  0.813)       0.038        0.004
  27   2.25     0.13      0.042       (  0.810)       0.038        0.004
  28   2.33     0.13      0.042       (  0.807)       0.038        0.004
  29   2.42     0.13      0.042       (  0.804)       0.038        0.004
```

30	2.50	0.13	0.042	(0.800)	0.038	0.004
31	2.58	0.17	0.053	(0.797)	0.048	0.005
32	2.67	0.17	0.053	(0.794)	0.048	0.005
33	2.75	0.17	0.053	(0.790)	0.048	0.005
34	2.83	0.17	0.053	(0.787)	0.048	0.005
35	2.92	0.17	0.053	(0.784)	0.048	0.005
36	3.00	0.17	0.053	(0.781)	0.048	0.005
37	3.08	0.17	0.053	(0.777)	0.048	0.005
38	3.17	0.17	0.053	(0.774)	0.048	0.005
39	3.25	0.17	0.053	(0.771)	0.048	0.005
40	3.33	0.17	0.053	(0.768)	0.048	0.005
41	3.42	0.17	0.053	(0.765)	0.048	0.005
42	3.50	0.17	0.053	(0.761)	0.048	0.005
43	3.58	0.17	0.053	(0.758)	0.048	0.005
44	3.67	0.17	0.053	(0.755)	0.048	0.005
45	3.75	0.17	0.053	(0.752)	0.048	0.005
46	3.83	0.20	0.064	(0.749)	0.057	0.006
47	3.92	0.20	0.064	(0.746)	0.057	0.006
48	4.00	0.20	0.064	(0.742)	0.057	0.006
49	4.08	0.20	0.064	(0.739)	0.057	0.006
50	4.17	0.20	0.064	(0.736)	0.057	0.006
51	4.25	0.20	0.064	(0.733)	0.057	0.006
52	4.33	0.23	0.074	(0.730)	0.067	0.007
53	4.42	0.23	0.074	(0.727)	0.067	0.007
54	4.50	0.23	0.074	(0.724)	0.067	0.007
55	4.58	0.23	0.074	(0.721)	0.067	0.007
56	4.67	0.23	0.074	(0.717)	0.067	0.007
57	4.75	0.23	0.074	(0.714)	0.067	0.007
58	4.83	0.27	0.085	(0.711)	0.076	0.008
59	4.92	0.27	0.085	(0.708)	0.076	0.008
60	5.00	0.27	0.085	(0.705)	0.076	0.008
61	5.08	0.20	0.064	(0.702)	0.057	0.006
62	5.17	0.20	0.064	(0.699)	0.057	0.006
63	5.25	0.20	0.064	(0.696)	0.057	0.006
64	5.33	0.23	0.074	(0.693)	0.067	0.007
65	5.42	0.23	0.074	(0.690)	0.067	0.007
66	5.50	0.23	0.074	(0.687)	0.067	0.007
67	5.58	0.27	0.085	(0.684)	0.076	0.008
68	5.67	0.27	0.085	(0.681)	0.076	0.008
69	5.75	0.27	0.085	(0.678)	0.076	0.008
70	5.83	0.27	0.085	(0.675)	0.076	0.008
71	5.92	0.27	0.085	(0.672)	0.076	0.008
72	6.00	0.27	0.085	(0.669)	0.076	0.008
73	6.08	0.30	0.095	(0.666)	0.086	0.010
74	6.17	0.30	0.095	(0.663)	0.086	0.010
75	6.25	0.30	0.095	(0.660)	0.086	0.010
76	6.33	0.30	0.095	(0.657)	0.086	0.010
77	6.42	0.30	0.095	(0.654)	0.086	0.010
78	6.50	0.30	0.095	(0.651)	0.086	0.010
79	6.58	0.33	0.106	(0.648)	0.095	0.011
80	6.67	0.33	0.106	(0.645)	0.095	0.011
81	6.75	0.33	0.106	(0.642)	0.095	0.011
82	6.83	0.33	0.106	(0.639)	0.095	0.011
83	6.92	0.33	0.106	(0.637)	0.095	0.011
84	7.00	0.33	0.106	(0.634)	0.095	0.011
85	7.08	0.33	0.106	(0.631)	0.095	0.011
86	7.17	0.33	0.106	(0.628)	0.095	0.011
87	7.25	0.33	0.106	(0.625)	0.095	0.011
88	7.33	0.37	0.117	(0.622)	0.105	0.012
89	7.42	0.37	0.117	(0.619)	0.105	0.012
90	7.50	0.37	0.117	(0.617)	0.105	0.012
91	7.58	0.40	0.127	(0.614)	0.114	0.013
92	7.67	0.40	0.127	(0.611)	0.114	0.013
93	7.75	0.40	0.127	(0.608)	0.114	0.013
94	7.83	0.43	0.138	(0.605)	0.124	0.014
95	7.92	0.43	0.138	(0.602)	0.124	0.014
96	8.00	0.43	0.138	(0.600)	0.124	0.014
97	8.08	0.50	0.159	(0.597)	0.143	0.016
98	8.17	0.50	0.159	(0.594)	0.143	0.016

99	8.25	0.50	0.159	(0.591)	0.143	0.016
100	8.33	0.50	0.159	(0.589)	0.143	0.016
101	8.42	0.50	0.159	(0.586)	0.143	0.016
102	8.50	0.50	0.159	(0.583)	0.143	0.016
103	8.58	0.53	0.170	(0.580)	0.153	0.017
104	8.67	0.53	0.170	(0.578)	0.153	0.017
105	8.75	0.53	0.170	(0.575)	0.153	0.017
106	8.83	0.57	0.180	(0.572)	0.162	0.018
107	8.92	0.57	0.180	(0.569)	0.162	0.018
108	9.00	0.57	0.180	(0.567)	0.162	0.018
109	9.08	0.63	0.201	(0.564)	0.181	0.020
110	9.17	0.63	0.201	(0.561)	0.181	0.020
111	9.25	0.63	0.201	(0.559)	0.181	0.020
112	9.33	0.67	0.212	(0.556)	0.191	0.021
113	9.42	0.67	0.212	(0.553)	0.191	0.021
114	9.50	0.67	0.212	(0.551)	0.191	0.021
115	9.58	0.70	0.223	(0.548)	0.200	0.022
116	9.67	0.70	0.223	(0.546)	0.200	0.022
117	9.75	0.70	0.223	(0.543)	0.200	0.022
118	9.83	0.73	0.233	(0.540)	0.210	0.023
119	9.92	0.73	0.233	(0.538)	0.210	0.023
120	10.00	0.73	0.233	(0.535)	0.210	0.023
121	10.08	0.50	0.159	(0.533)	0.143	0.016
122	10.17	0.50	0.159	(0.530)	0.143	0.016
123	10.25	0.50	0.159	(0.527)	0.143	0.016
124	10.33	0.50	0.159	(0.525)	0.143	0.016
125	10.42	0.50	0.159	(0.522)	0.143	0.016
126	10.50	0.50	0.159	(0.520)	0.143	0.016
127	10.58	0.67	0.212	(0.517)	0.191	0.021
128	10.67	0.67	0.212	(0.515)	0.191	0.021
129	10.75	0.67	0.212	(0.512)	0.191	0.021
130	10.83	0.67	0.212	(0.510)	0.191	0.021
131	10.92	0.67	0.212	(0.507)	0.191	0.021
132	11.00	0.67	0.212	(0.505)	0.191	0.021
133	11.08	0.63	0.201	(0.502)	0.181	0.020
134	11.17	0.63	0.201	(0.500)	0.181	0.020
135	11.25	0.63	0.201	(0.497)	0.181	0.020
136	11.33	0.63	0.201	(0.495)	0.181	0.020
137	11.42	0.63	0.201	(0.492)	0.181	0.020
138	11.50	0.63	0.201	(0.490)	0.181	0.020
139	11.58	0.57	0.180	(0.487)	0.162	0.018
140	11.67	0.57	0.180	(0.485)	0.162	0.018
141	11.75	0.57	0.180	(0.483)	0.162	0.018
142	11.83	0.60	0.191	(0.480)	0.172	0.019
143	11.92	0.60	0.191	(0.478)	0.172	0.019
144	12.00	0.60	0.191	(0.475)	0.172	0.019
145	12.08	0.83	0.265	(0.473)	0.238	0.026
146	12.17	0.83	0.265	(0.471)	0.238	0.026
147	12.25	0.83	0.265	(0.468)	0.238	0.026
148	12.33	0.87	0.276	(0.466)	0.248	0.028
149	12.42	0.87	0.276	(0.464)	0.248	0.028
150	12.50	0.87	0.276	(0.461)	0.248	0.028
151	12.58	0.93	0.297	(0.459)	0.267	0.030
152	12.67	0.93	0.297	(0.457)	0.267	0.030
153	12.75	0.93	0.297	(0.454)	0.267	0.030
154	12.83	0.97	0.307	(0.452)	0.277	0.031
155	12.92	0.97	0.307	(0.450)	0.277	0.031
156	13.00	0.97	0.307	(0.447)	0.277	0.031
157	13.08	1.13	0.360	(0.445)	0.324	0.036
158	13.17	1.13	0.360	(0.443)	0.324	0.036
159	13.25	1.13	0.360	(0.441)	0.324	0.036
160	13.33	1.13	0.360	(0.438)	0.324	0.036
161	13.42	1.13	0.360	(0.436)	0.324	0.036
162	13.50	1.13	0.360	(0.434)	0.324	0.036
163	13.58	0.77	0.244	(0.432)	0.219	0.024
164	13.67	0.77	0.244	(0.430)	0.219	0.024
165	13.75	0.77	0.244	(0.427)	0.219	0.024
166	13.83	0.77	0.244	(0.425)	0.219	0.024
167	13.92	0.77	0.244	(0.423)	0.219	0.024

168	14.00	0.77	0.244	(	0.421)	0.219	0.024
169	14.08	0.90	0.286	(	0.419)	0.258	0.029
170	14.17	0.90	0.286	(	0.417)	0.258	0.029
171	14.25	0.90	0.286	(	0.414)	0.258	0.029
172	14.33	0.87	0.276	(	0.412)	0.248	0.028
173	14.42	0.87	0.276	(	0.410)	0.248	0.028
174	14.50	0.87	0.276	(	0.408)	0.248	0.028
175	14.58	0.87	0.276	(	0.406)	0.248	0.028
176	14.67	0.87	0.276	(	0.404)	0.248	0.028
177	14.75	0.87	0.276	(	0.402)	0.248	0.028
178	14.83	0.83	0.265	(	0.400)	0.238	0.026
179	14.92	0.83	0.265	(	0.398)	0.238	0.026
180	15.00	0.83	0.265	(	0.396)	0.238	0.026
181	15.08	0.80	0.254	(	0.394)	0.229	0.025
182	15.17	0.80	0.254	(	0.392)	0.229	0.025
183	15.25	0.80	0.254	(	0.390)	0.229	0.025
184	15.33	0.77	0.244	(	0.388)	0.219	0.024
185	15.42	0.77	0.244	(	0.386)	0.219	0.024
186	15.50	0.77	0.244	(	0.384)	0.219	0.024
187	15.58	0.63	0.201	(	0.382)	0.181	0.020
188	15.67	0.63	0.201	(	0.380)	0.181	0.020
189	15.75	0.63	0.201	(	0.378)	0.181	0.020
190	15.83	0.63	0.201	(	0.376)	0.181	0.020
191	15.92	0.63	0.201	(	0.374)	0.181	0.020
192	16.00	0.63	0.201	(	0.372)	0.181	0.020
193	16.08	0.13	0.042	(	0.370)	0.038	0.004
194	16.17	0.13	0.042	(	0.368)	0.038	0.004
195	16.25	0.13	0.042	(	0.366)	0.038	0.004
196	16.33	0.13	0.042	(	0.365)	0.038	0.004
197	16.42	0.13	0.042	(	0.363)	0.038	0.004
198	16.50	0.13	0.042	(	0.361)	0.038	0.004
199	16.58	0.10	0.032	(	0.359)	0.029	0.003
200	16.67	0.10	0.032	(	0.357)	0.029	0.003
201	16.75	0.10	0.032	(	0.355)	0.029	0.003
202	16.83	0.10	0.032	(	0.354)	0.029	0.003
203	16.92	0.10	0.032	(	0.352)	0.029	0.003
204	17.00	0.10	0.032	(	0.350)	0.029	0.003
205	17.08	0.17	0.053	(	0.348)	0.048	0.005
206	17.17	0.17	0.053	(	0.346)	0.048	0.005
207	17.25	0.17	0.053	(	0.345)	0.048	0.005
208	17.33	0.17	0.053	(	0.343)	0.048	0.005
209	17.42	0.17	0.053	(	0.341)	0.048	0.005
210	17.50	0.17	0.053	(	0.340)	0.048	0.005
211	17.58	0.17	0.053	(	0.338)	0.048	0.005
212	17.67	0.17	0.053	(	0.336)	0.048	0.005
213	17.75	0.17	0.053	(	0.335)	0.048	0.005
214	17.83	0.13	0.042	(	0.333)	0.038	0.004
215	17.92	0.13	0.042	(	0.331)	0.038	0.004
216	18.00	0.13	0.042	(	0.330)	0.038	0.004
217	18.08	0.13	0.042	(	0.328)	0.038	0.004
218	18.17	0.13	0.042	(	0.326)	0.038	0.004
219	18.25	0.13	0.042	(	0.325)	0.038	0.004
220	18.33	0.13	0.042	(	0.323)	0.038	0.004
221	18.42	0.13	0.042	(	0.322)	0.038	0.004
222	18.50	0.13	0.042	(	0.320)	0.038	0.004
223	18.58	0.10	0.032	(	0.318)	0.029	0.003
224	18.67	0.10	0.032	(	0.317)	0.029	0.003
225	18.75	0.10	0.032	(	0.315)	0.029	0.003
226	18.83	0.07	0.021	(	0.314)	0.019	0.002
227	18.92	0.07	0.021	(	0.312)	0.019	0.002
228	19.00	0.07	0.021	(	0.311)	0.019	0.002
229	19.08	0.10	0.032	(	0.309)	0.029	0.003
230	19.17	0.10	0.032	(	0.308)	0.029	0.003
231	19.25	0.10	0.032	(	0.307)	0.029	0.003
232	19.33	0.13	0.042	(	0.305)	0.038	0.004
233	19.42	0.13	0.042	(	0.304)	0.038	0.004
234	19.50	0.13	0.042	(	0.302)	0.038	0.004
235	19.58	0.10	0.032	(	0.301)	0.029	0.003
236	19.67	0.10	0.032	(	0.300)	0.029	0.003

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237  19.75     0.10      0.032       (  0.298)       0.029        0.003
238  19.83     0.07      0.021       (  0.297)       0.019        0.002
239  19.92     0.07      0.021       (  0.296)       0.019        0.002
240  20.00     0.07      0.021       (  0.294)       0.019        0.002
241  20.08     0.10      0.032       (  0.293)       0.029        0.003
242  20.17     0.10      0.032       (  0.292)       0.029        0.003
243  20.25     0.10      0.032       (  0.290)       0.029        0.003
244  20.33     0.10      0.032       (  0.289)       0.029        0.003
245  20.42     0.10      0.032       (  0.288)       0.029        0.003
246  20.50     0.10      0.032       (  0.287)       0.029        0.003
247  20.58     0.10      0.032       (  0.285)       0.029        0.003
248  20.67     0.10      0.032       (  0.284)       0.029        0.003
249  20.75     0.10      0.032       (  0.283)       0.029        0.003
250  20.83     0.07      0.021       (  0.282)       0.019        0.002
251  20.92     0.07      0.021       (  0.281)       0.019        0.002
252  21.00     0.07      0.021       (  0.280)       0.019        0.002
253  21.08     0.10      0.032       (  0.279)       0.029        0.003
254  21.17     0.10      0.032       (  0.277)       0.029        0.003
255  21.25     0.10      0.032       (  0.276)       0.029        0.003
256  21.33     0.07      0.021       (  0.275)       0.019        0.002
257  21.42     0.07      0.021       (  0.274)       0.019        0.002
258  21.50     0.07      0.021       (  0.273)       0.019        0.002
259  21.58     0.10      0.032       (  0.272)       0.029        0.003
260  21.67     0.10      0.032       (  0.271)       0.029        0.003
261  21.75     0.10      0.032       (  0.270)       0.029        0.003
262  21.83     0.07      0.021       (  0.269)       0.019        0.002
263  21.92     0.07      0.021       (  0.268)       0.019        0.002
264  22.00     0.07      0.021       (  0.268)       0.019        0.002
265  22.08     0.10      0.032       (  0.267)       0.029        0.003
266  22.17     0.10      0.032       (  0.266)       0.029        0.003
267  22.25     0.10      0.032       (  0.265)       0.029        0.003
268  22.33     0.07      0.021       (  0.264)       0.019        0.002
269  22.42     0.07      0.021       (  0.263)       0.019        0.002
270  22.50     0.07      0.021       (  0.263)       0.019        0.002
271  22.58     0.07      0.021       (  0.262)       0.019        0.002
272  22.67     0.07      0.021       (  0.261)       0.019        0.002
273  22.75     0.07      0.021       (  0.260)       0.019        0.002
274  22.83     0.07      0.021       (  0.260)       0.019        0.002
275  22.92     0.07      0.021       (  0.259)       0.019        0.002
276  23.00     0.07      0.021       (  0.258)       0.019        0.002
277  23.08     0.07      0.021       (  0.258)       0.019        0.002
278  23.17     0.07      0.021       (  0.257)       0.019        0.002
279  23.25     0.07      0.021       (  0.257)       0.019        0.002
280  23.33     0.07      0.021       (  0.256)       0.019        0.002
281  23.42     0.07      0.021       (  0.256)       0.019        0.002
282  23.50     0.07      0.021       (  0.255)       0.019        0.002
283  23.58     0.07      0.021       (  0.255)       0.019        0.002
284  23.67     0.07      0.021       (  0.254)       0.019        0.002
285  23.75     0.07      0.021       (  0.254)       0.019        0.002
286  23.83     0.07      0.021       (  0.254)       0.019        0.002
287  23.92     0.07      0.021       (  0.254)       0.019        0.002
288  24.00     0.07      0.021       (  0.253)       0.019        0.002
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     3.2
       Flood volume = Effective rainfall      0.26(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
       Total soil loss =      2.38(In)
       Total soil loss =     2.836(Ac.Ft)
       Total rainfall =      2.65(In)
       Flood volume =       13726.6 Cubic Feet
       Total soil loss =      123539.8 Cubic Feet
       ------------------------------------------------------------------
        Peak flow rate of this hydrograph =      0.516(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))
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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	0.03	Q	|	|	|	|
0+20	0.0006	0.03	Q	|	|	|	|
0+25	0.0008	0.04	Q	|	|	|	|
0+30	0.0011	0.04	Q	|	|	|	|
0+35	0.0014	0.04	Q	|	|	|	|
0+40	0.0017	0.04	Q	|	|	|	|
0+45	0.0020	0.05	Q	|	|	|	|
0+50	0.0024	0.05	Q	|	|	|	|
0+55	0.0027	0.06	Q	|	|	|	|
1+ 0	0.0031	0.06	Q	|	|	|	|
1+ 5	0.0035	0.06	Q	|	|	|	|
1+10	0.0039	0.05	Q	|	|	|	|
1+15	0.0042	0.05	Q	|	|	|	|
1+20	0.0045	0.05	Q	|	|	|	|
1+25	0.0049	0.05	Q	|	|	|	|
1+30	0.0052	0.05	Q	|	|	|	|
1+35	0.0055	0.05	Q	|	|	|	|
1+40	0.0058	0.05	Q	|	|	|	|
1+45	0.0061	0.05	Q	|	|	|	|
1+50	0.0065	0.05	Q	|	|	|	|
1+55	0.0068	0.06	Q	|	|	|	|
2+ 0	0.0072	0.06	Q	|	|	|	|
2+ 5	0.0077	0.06	Q	|	|	|	|
2+10	0.0081	0.06	QV	|	|	|	|
2+15	0.0085	0.06	QV	|	|	|	|
2+20	0.0089	0.06	QV	|	|	|	|
2+25	0.0093	0.06	QV	|	|	|	|
2+30	0.0097	0.06	QV	|	|	|	|
2+35	0.0102	0.06	QV	|	|	|	|
2+40	0.0107	0.07	QV	|	|	|	|
2+45	0.0112	0.07	QV	|	|	|	|
2+50	0.0117	0.07	QV	|	|	|	|
2+55	0.0122	0.08	QV	|	|	|	|
3+ 0	0.0127	0.08	QV	|	|	|	|
3+ 5	0.0133	0.08	QV	|	|	|	|
3+10	0.0138	0.08	QV	|	|	|	|
3+15	0.0143	0.08	QV	|	|	|	|
3+20	0.0148	0.08	QV	|	|	|	|
3+25	0.0154	0.08	QV	|	|	|	|
3+30	0.0159	0.08	Q V	|	|	|	|
3+35	0.0164	0.08	Q V	|	|	|	|
3+40	0.0169	0.08	Q V	|	|	|	|
3+45	0.0175	0.08	Q V	|	|	|	|
3+50	0.0180	0.08	Q V	|	|	|	|
3+55	0.0186	0.09	Q V	|	|	|	|
4+ 0	0.0192	0.09	Q V	|	|	|	|
4+ 5	0.0198	0.09	Q V	|	|	|	|
4+10	0.0204	0.09	Q V	|	|	|	|
4+15	0.0211	0.09	Q V	|	|	|	|
4+20	0.0217	0.09	Q V	|	|	|	|
4+25	0.0224	0.10	Q V	|	|	|	|
4+30	0.0231	0.10	Q V	|	|	|	|
4+35	0.0239	0.11	Q V	|	|	|	|
4+40	0.0246	0.11	Q V	|	|	|	|
4+45	0.0253	0.11	Q V	|	|	|	|
4+50	0.0261	0.11	Q V	|	|	|	|
4+55	0.0269	0.12	Q V	|	|	|	|
5+ 0	0.0277	0.12	Q V	|	|	|	|
5+ 5	0.0285	0.11	Q V	|	|	|	|
5+10	0.0292	0.10	Q V	|	|	|	|
5+15	0.0298	0.10	Q V	|	|	|	|
5+20	0.0305	0.10	Q V	|	|	|	|
5+25	0.0312	0.10	Q V	|	|	|	|

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 5+30      0.0320      0.11  Q   V     |         |         |         |
 5+35      0.0327      0.11  Q   V     |         |         |         |
 5+40      0.0335      0.12  Q   V     |         |         |         |
 5+45      0.0343      0.12  Q   V     |         |         |         |
 5+50      0.0351      0.12  Q   V     |         |         |         |
 5+55      0.0360      0.12  Q   V     |         |         |         |
 6+ 0      0.0368      0.12  Q   V     |         |         |         |
 6+ 5      0.0377      0.12  Q   V     |         |         |         |
 6+10      0.0386      0.13  Q   V     |         |         |         |
 6+15      0.0395      0.13  Q    V    |         |         |         |
 6+20      0.0404      0.14  Q    V    |         |         |         |
 6+25      0.0414      0.14  Q    V    |         |         |         |
 6+30      0.0423      0.14  Q    V    |         |         |         |
 6+35      0.0433      0.14  Q    V    |         |         |         |
 6+40      0.0443      0.15  Q    V    |         |         |         |
 6+45      0.0453      0.15  Q    V    |         |         |         |
 6+50      0.0464      0.15  Q    V    |         |         |         |
 6+55      0.0474      0.15  Q     V   |         |         |         |
 7+ 0      0.0485      0.15  Q     V   |         |         |         |
 7+ 5      0.0495      0.15  Q     V   |         |         |         |
 7+10      0.0506      0.15  Q     V   |         |         |         |
 7+15      0.0516      0.15  Q     V   |         |         |         |
 7+20      0.0527      0.16  Q     V   |         |         |         |
 7+25      0.0538      0.16  Q     V   |         |         |         |
 7+30      0.0549      0.17  Q     V   |         |         |         |
 7+35      0.0561      0.17  Q      V  |         |         |         |
 7+40      0.0573      0.18  Q      V  |         |         |         |
 7+45      0.0586      0.18  Q      V  |         |         |         |
 7+50      0.0598      0.18  Q      V  |         |         |         |
 7+55      0.0611      0.19  Q      V  |         |         |         |
 8+ 0      0.0625      0.20  Q      V  |         |         |         |
 8+ 5      0.0639      0.20  Q       V |         |         |         |
 8+10      0.0654      0.22  Q       V |         |         |         |
 8+15      0.0669      0.22  Q       V |         |         |         |
 8+20      0.0685      0.23  Q       V |         |         |         |
 8+25      0.0700      0.23  Q       V |         |         |         |
 8+30      0.0716      0.23  Q        V|         |         |         |
 8+35      0.0732      0.23  Q        V|         |         |         |
 8+40      0.0748      0.24  Q        V|         |         |         |
 8+45      0.0765      0.24  Q        V|         |         |         |
 8+50      0.0782      0.25  Q        V|         |         |         |
 8+55      0.0799      0.25  |Q        V         |         |         |
 9+ 0      0.0817      0.26  |Q        V         |         |         |
 9+ 5      0.0835      0.26  |Q        V         |         |         |
 9+10      0.0854      0.28  |Q        V         |         |         |
 9+15      0.0874      0.28  |Q        |V        |         |         |
 9+20      0.0893      0.29  |Q        |V        |         |         |
 9+25      0.0914      0.30  |Q        |V        |         |         |
 9+30      0.0935      0.30  |Q        |V        |         |         |
 9+35      0.0956      0.31  |Q        | V       |         |         |
 9+40      0.0977      0.31  |Q        | V       |         |         |
 9+45      0.0999      0.32  |Q        | V       |         |         |
 9+50      0.1021      0.32  |Q        | V       |         |         |
 9+55      0.1044      0.33  |Q        |  V      |         |         |
10+ 0      0.1067      0.33  |Q        |  V      |         |         |
10+ 5      0.1089      0.31  |Q        |  V      |         |         |
10+10      0.1107      0.26  |Q        |   V     |         |         |
10+15      0.1124      0.25  Q         |   V     |         |         |
10+20      0.1140      0.24  Q         |   V     |         |         |
10+25      0.1157      0.24  Q         |   V     |         |         |
10+30      0.1173      0.23  Q         |   V     |         |         |
10+35      0.1189      0.24  Q         |    V    |         |         |
10+40      0.1209      0.28  |Q        |    V    |         |         |
10+45      0.1229      0.29  |Q        |    V    |         |         |
10+50      0.1249      0.30  |Q        |    V    |         |         |
10+55      0.1270      0.30  |Q        |     V   |         |         |
11+ 0      0.1291      0.30  |Q        |     V   |         |         |
11+ 5      0.1311      0.30  |Q        |     V   |         |         |
11+10      0.1332      0.29  |Q        |     V   |         |         |
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11+15       0.1352      0.29  |Q        |      V  |         |         |
11+20       0.1372      0.29  |Q        |      V  |         |         |
11+25       0.1392      0.29  |Q        |      V  |         |         |
11+30       0.1412      0.29  |Q        |      V  |         |         |
11+35       0.1431      0.28  |Q        |       V |         |         |
11+40       0.1450      0.27  |Q        |       V |         |         |
11+45       0.1468      0.26  |Q        |       V |         |         |
11+50       0.1487      0.27  |Q        |       V |         |         |
11+55       0.1505      0.27  |Q        |        V|         |         |
12+ 0       0.1524      0.27  |Q        |        V|         |         |
12+ 5       0.1544      0.29  |Q        |        V|         |         |
12+10       0.1568      0.34  |Q        |        V|         |         |
12+15       0.1593      0.36  |Q        |         V         |         |
12+20       0.1618      0.37  |Q        |         V         |         |
12+25       0.1645      0.38  |Q        |         V         |         |
12+30       0.1672      0.39  |Q        |         |V        |         |
12+35       0.1699      0.40  |Q        |         |V        |         |
12+40       0.1728      0.41  |Q        |         |V        |         |
12+45       0.1757      0.42  |Q        |         | V       |         |
12+50       0.1786      0.43  |Q        |         | V       |         |
12+55       0.1816      0.44  |Q        |         |  V      |         |
13+ 0       0.1846      0.44  |Q        |         |  V      |         |
13+ 5       0.1878      0.45  |Q        |         |  V      |         |
13+10       0.1911      0.49  |Q        |         |   V     |         |
13+15       0.1946      0.50  | Q       |         |   V     |         |
13+20       0.1981      0.51  | Q       |         |    V    |         |
13+25       0.2017      0.51  | Q       |         |    V    |         |
13+30       0.2052      0.52  | Q       |         |     V   |         |
13+35       0.2086      0.49  |Q        |         |     V   |         |
13+40       0.2114      0.41  |Q        |         |     V   |         |
13+45       0.2140      0.38  |Q        |         |      V  |         |
13+50       0.2165      0.37  |Q        |         |      V  |         |
13+55       0.2190      0.36  |Q        |         |      V  |         |
14+ 0       0.2215      0.36  |Q        |         |       V |         |
14+ 5       0.2240      0.36  |Q        |         |       V |         |
14+10       0.2267      0.39  |Q        |         |       V |         |
14+15       0.2295      0.40  |Q        |         |        V|         |
14+20       0.2322      0.40  |Q        |         |        V|         |
14+25       0.2350      0.40  |Q        |         |        V|         |
14+30       0.2377      0.40  |Q        |         |         V         |
14+35       0.2404      0.40  |Q        |         |         V         |
14+40       0.2432      0.40  |Q        |         |         V         |
14+45       0.2459      0.40  |Q        |         |         |V        |
14+50       0.2486      0.39  |Q        |         |         |V        |
14+55       0.2513      0.39  |Q        |         |         |V        |
15+ 0       0.2539      0.38  |Q        |         |         | V       |
15+ 5       0.2566      0.38  |Q        |         |         | V       |
15+10       0.2591      0.37  |Q        |         |         | V       |
15+15       0.2617      0.37  |Q        |         |         |  V      |
15+20       0.2642      0.37  |Q        |         |         |  V      |
15+25       0.2666      0.36  |Q        |         |         |  V      |
15+30       0.2691      0.35  |Q        |         |         |   V     |
15+35       0.2714      0.34  |Q        |         |         |   V     |
15+40       0.2736      0.31  |Q        |         |         |   V     |
15+45       0.2756      0.30  |Q        |         |         |   V     |
15+50       0.2777      0.30  |Q        |         |         |    V    |
15+55       0.2797      0.29  |Q        |         |         |    V    |
16+ 0       0.2817      0.29  |Q        |         |         |    V    |
16+ 5       0.2834      0.25  Q        |         |         |    V    |
16+10       0.2844      0.14  Q        |         |         |     V   |
16+15       0.2851      0.10  Q        |         |         |     V   |
16+20       0.2857      0.08  Q        |         |         |     V   |
16+25       0.2862      0.08  Q        |         |         |     V   |
16+30       0.2867      0.07  Q        |         |         |     V   |
16+35       0.2871      0.06  Q        |         |         |     V   |
16+40       0.2875      0.05  Q        |         |         |     V   |
16+45       0.2878      0.05  Q        |         |         |     V   |
16+50       0.2881      0.05  Q        |         |         |     V   |
16+55       0.2885      0.05  Q        |         |         |     V   |
```

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17+ 0       0.2888      0.05  Q        |         |         |     V   |
17+ 5       0.2891      0.05  Q        |         |         |     V   |
17+10       0.2896      0.07  Q        |         |         |     V   |
17+15       0.2901      0.07  Q        |         |         |     V   |
17+20       0.2906      0.07  Q        |         |         |     V   |
17+25       0.2911      0.07  Q        |         |         |     V   |
17+30       0.2916      0.08  Q        |         |         |      V  |
17+35       0.2921      0.08  Q        |         |         |      V  |
17+40       0.2927      0.08  Q        |         |         |      V  |
17+45       0.2932      0.08  Q        |         |         |      V  |
17+50       0.2937      0.07  Q        |         |         |      V  |
17+55       0.2941      0.07  Q        |         |         |      V  |
18+ 0       0.2946      0.06  Q        |         |         |      V  |
18+ 5       0.2950      0.06  Q        |         |         |      V  |
18+10       0.2954      0.06  Q        |         |         |      V  |
18+15       0.2959      0.06  Q        |         |         |      V  |
18+20       0.2963      0.06  Q        |         |         |      V  |
18+25       0.2967      0.06  Q        |         |         |      V  |
18+30       0.2971      0.06  Q        |         |         |      V  |
18+35       0.2975      0.06  Q        |         |         |      V  |
18+40       0.2979      0.05  Q        |         |         |      V  |
18+45       0.2982      0.05  Q        |         |         |      V  |
18+50       0.2985      0.04  Q        |         |         |      V  |
18+55       0.2988      0.04  Q        |         |         |      V  |
19+ 0       0.2990      0.03  Q        |         |         |      V  |
19+ 5       0.2992      0.04  Q        |         |         |      V  |
19+10       0.2995      0.04  Q        |         |         |       V |
19+15       0.2998      0.04  Q        |         |         |       V |
19+20       0.3002      0.05  Q        |         |         |       V |
19+25       0.3005      0.05  Q        |         |         |       V |
19+30       0.3009      0.06  Q        |         |         |       V |
19+35       0.3013      0.06  Q        |         |         |       V |
19+40       0.3017      0.05  Q        |         |         |       V |
19+45       0.3020      0.05  Q        |         |         |       V |
19+50       0.3023      0.04  Q        |         |         |       V |
19+55       0.3026      0.04  Q        |         |         |       V |
20+ 0       0.3028      0.03  Q        |         |         |       V |
20+ 5       0.3030      0.04  Q        |         |         |       V |
20+10       0.3033      0.04  Q        |         |         |       V |
20+15       0.3036      0.04  Q        |         |         |       V |
20+20       0.3039      0.04  Q        |         |         |       V |
20+25       0.3042      0.04  Q        |         |         |       V |
20+30       0.3045      0.05  Q        |         |         |       V |
20+35       0.3049      0.05  Q        |         |         |       V |
20+40       0.3052      0.05  Q        |         |         |       V |
20+45       0.3055      0.05  Q        |         |         |       V |
20+50       0.3058      0.04  Q        |         |         |       V |
20+55       0.3060      0.04  Q        |         |         |       V |
21+ 0       0.3063      0.03  Q        |         |         |       V |
21+ 5       0.3065      0.03  Q        |         |         |       V |
21+10       0.3068      0.04  Q        |         |         |       V |
21+15       0.3071      0.04  Q        |         |         |       V |
21+20       0.3074      0.04  Q        |         |         |        V|
21+25       0.3076      0.03  Q        |         |         |        V|
21+30       0.3078      0.03  Q        |         |         |        V|
21+35       0.3081      0.03  Q        |         |         |        V|
21+40       0.3084      0.04  Q        |         |         |        V|
21+45       0.3087      0.04  Q        |         |         |        V|
21+50       0.3089      0.04  Q        |         |         |        V|
21+55       0.3092      0.03  Q        |         |         |        V|
22+ 0       0.3094      0.03  Q        |         |         |        V|
22+ 5       0.3097      0.03  Q        |         |         |        V|
22+10       0.3099      0.04  Q        |         |         |        V|
22+15       0.3102      0.04  Q        |         |         |        V|
22+20       0.3105      0.04  Q        |         |         |        V|
22+25       0.3108      0.03  Q        |         |         |        V|
22+30       0.3110      0.03  Q        |         |         |        V|
22+35       0.3112      0.03  Q        |         |         |        V|
22+40       0.3114      0.03  Q        |         |         |        V|
```

```
   22+45       0.3116      0.03  Q        |         |         |        V|
   22+50       0.3118      0.03  Q        |         |         |        V|
   22+55       0.3121      0.03  Q        |         |         |        V|
   23+ 0       0.3123      0.03  Q        |         |         |        V|
   23+ 5       0.3125      0.03  Q        |         |         |        V|
   23+10       0.3127      0.03  Q        |         |         |        V|
   23+15       0.3129      0.03  Q        |         |         |        V|
   23+20       0.3131      0.03  Q        |         |         |        V|
   23+25       0.3133      0.03  Q        |         |         |        V|
   23+30       0.3135      0.03  Q        |         |         |        V|
   23+35       0.3137      0.03  Q        |         |         |        V|
   23+40       0.3140      0.03  Q        |         |         |        V|
   23+45       0.3142      0.03  Q        |         |         |        V|
   23+50       0.3144      0.03  Q        |         |         |        V|
   23+55       0.3146      0.03  Q        |         |         |        V|
   24+ 0       0.3148      0.03  Q        |         |         |        V|
   24+ 5       0.3150      0.03  Q        |         |         |        V|
   24+10       0.3150      0.01  Q        |         |         |        V|
   24+15       0.3151      0.01  Q        |         |         |        V|
   24+20       0.3151      0.00  Q        |         |         |        V|
   24+25       0.3151      0.00  Q        |         |         |        V|
   24+30       0.3151      0.00  Q        |         |         |        V|
   24+35       0.3151      0.00  Q        |         |         |        V|
   24+40       0.3151      0.00  Q        |         |         |        V|
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD15.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
5-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	0.56	7.99

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	1.28	18.27

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.560(In)
Area Averaged 100-Year Rainfall = 1.280(In)

Point rain (area averaged) = 0.729(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.729(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


 RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
 AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
 74.5  56.4      0.507     0.000        0.507       1.000      0.507
                                                  Sum (F) =   0.507
 Area averaged mean soil loss (F) (In/Hr) =  0.507
 Minimum soil loss rate ((In/Hr)) =  0.253
 (for 24 hour storm duration)
 Soil low loss rate (decimal) =   0.900
 ------------------------------------------------------------------------
 Slope of intensity-duration curve for a 1 hour storm =0.5300
 ------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
 ------------------------------------------------------------------
               Unit Hydrograph Data
 ------------------------------------------------------------------
 Unit time period   Time % of lag   Distribution   Unit Hydrograph
     (hrs)                          Graph %           (CFS)
 ------------------------------------------------------------------
     1   0.083         95.911         17.950             2.581
     2   0.167        191.821         48.005             6.904
     3   0.250        287.732         16.296             2.344
     4   0.333        383.642          7.287             1.048
     5   0.417        479.553          4.148             0.597
     6   0.500        575.463          2.689             0.387
     7   0.583        671.374          1.732             0.249
     8   0.667        767.284          1.088             0.156
     9   0.750        863.195          0.807             0.116
                                Sum = 100.000   Sum=      14.381
-----------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     3.40      0.297       (  0.507)       0.268        0.030
   2   0.17     4.70      0.411       (  0.507)       0.370        0.041
   3   0.25     4.70      0.411       (  0.507)       0.370        0.041
   4   0.33     5.10      0.446       (  0.507)       0.401        0.045
   5   0.42     5.80      0.507       (  0.507)       0.456        0.051
   6   0.50     5.90      0.516       (  0.507)       0.464        0.052
   7   0.58     7.10      0.621          0.507    (  0.559)        0.114
   8   0.67     8.70      0.761          0.507    (  0.685)        0.254
   9   0.75    13.20      1.154          0.507    (  1.039)        0.647
  10   0.83    29.70      2.597          0.507    (  2.337)        2.090
  11   0.92     7.70      0.673          0.507    (  0.606)        0.166
  12   1.00     4.00      0.350       (  0.507)       0.315        0.035
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     3.6
        Flood volume = Effective rainfall      0.30(In)
         times area      14.3(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
        Total soil loss =      0.43(In)
        Total soil loss =     0.513(Ac.Ft)
        Total rainfall =      0.73(In)
        Flood volume =       15389.9 Cubic Feet
        Total soil loss =       22348.9 Cubic Feet
        ---------------------------------------------------------------
         Peak flow rate of this hydrograph =     16.761(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	5.0	10.0	15.0	20.0
0+ 5	0.0005	0.08	Q				
0+10	0.0027	0.31	Q				
0+15	0.0058	0.46	Q				
0+20	0.0095	0.53	Q				
0+25	0.0136	0.60	Q				
0+30	0.0182	0.67	QV				
0+35	0.0241	0.86	QV				
0+40	0.0357	1.67	QV				
0+45	0.0619	3.81	Q				
0+50	0.1353	10.66		V	Q		
0+55	0.2507	16.76			V	Q	
1+ 0	0.2992	7.04		Q		V	
1+ 5	0.3223	3.35	Q				V
1+10	0.3350	1.84	Q				V
1+15	0.3430	1.16	Q				V
1+20	0.3480	0.74	Q				V
1+25	0.3512	0.46	Q				V
1+30	0.3531	0.28	Q				V
1+35	0.3533	0.02	Q				V
1+40	0.3533	0.00	Q				V

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

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Study date 02/28/23 File: EXHYD35.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
5-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	0.96	13.70

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	2.23	31.82

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.960(In)
Area Averaged 100-Year Rainfall = 2.230(In)

Point rain (area averaged) = 1.257(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.257(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  56.4      0.507     0.000        0.507       1.000      0.507
                                                 Sum (F) =   0.507
Area averaged mean soil loss (F) (In/Hr) =  0.507
Minimum soil loss rate ((In/Hr)) =  0.253
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     1.30      0.196       (  0.507)       0.177        0.020
   2   0.17     1.30      0.196       (  0.507)       0.177        0.020
   3   0.25     1.10      0.166       (  0.507)       0.149        0.017
   4   0.33     1.50      0.226       (  0.507)       0.204        0.023
   5   0.42     1.50      0.226       (  0.507)       0.204        0.023
   6   0.50     1.80      0.272       (  0.507)       0.244        0.027
   7   0.58     1.50      0.226       (  0.507)       0.204        0.023
   8   0.67     1.80      0.272       (  0.507)       0.244        0.027
   9   0.75     1.80      0.272       (  0.507)       0.244        0.027
  10   0.83     1.50      0.226       (  0.507)       0.204        0.023
  11   0.92     1.60      0.241       (  0.507)       0.217        0.024
  12   1.00     1.80      0.272       (  0.507)       0.244        0.027
  13   1.08     2.20      0.332       (  0.507)       0.299        0.033
  14   1.17     2.20      0.332       (  0.507)       0.299        0.033
  15   1.25     2.20      0.332       (  0.507)       0.299        0.033
  16   1.33     2.00      0.302       (  0.507)       0.272        0.030
  17   1.42     2.60      0.392       (  0.507)       0.353        0.039
  18   1.50     2.70      0.407       (  0.507)       0.367        0.041
  19   1.58     2.40      0.362       (  0.507)       0.326        0.036
  20   1.67     2.70      0.407       (  0.507)       0.367        0.041
  21   1.75     3.30      0.498       (  0.507)       0.448        0.050
  22   1.83     3.10      0.468       (  0.507)       0.421        0.047
  23   1.92     2.90      0.438       (  0.507)       0.394        0.044
  24   2.00     3.00      0.453       (  0.507)       0.407        0.045
  25   2.08     3.10      0.468       (  0.507)       0.421        0.047
  26   2.17     4.20      0.634          0.507    (  0.570)        0.127
  27   2.25     5.00      0.754          0.507    (  0.679)        0.248
  28   2.33     3.50      0.528       (  0.507)       0.475        0.053
  29   2.42     6.80      1.026          0.507    (  0.923)        0.519
```

```
30   2.50     7.30      1.101          0.507    (  0.991)        0.595
31   2.58     8.20      1.237          0.507    (  1.114)        0.731
32   2.67     5.90      0.890          0.507    (  0.801)        0.384
33   2.75     2.00      0.302       (  0.507)       0.272        0.030
34   2.83     1.80      0.272       (  0.507)       0.244        0.027
35   2.92     1.80      0.272       (  0.507)       0.244        0.027
36   3.00     0.60      0.091       (  0.507)       0.081        0.009
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =     3.5
      Flood volume = Effective rainfall      0.30(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
      Total soil loss =      0.96(In)
      Total soil loss =     1.144(Ac.Ft)
      Total rainfall =      1.26(In)
      Flood volume =       15312.9 Cubic Feet
      Total soil loss =       49819.9 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      8.147(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0003      0.05  Q         |         |         |         |
  0+10       0.0016      0.19  Q         |         |         |         |
  0+15       0.0032      0.22  Q         |         |         |         |
  0+20       0.0048      0.24  Q         |         |         |         |
  0+25       0.0068      0.29  VQ        |         |         |         |
  0+30       0.0090      0.32  |Q        |         |         |         |
  0+35       0.0114      0.35  |Q        |         |         |         |
  0+40       0.0137      0.34  |Q        |         |         |         |
  0+45       0.0163      0.37  |Q        |         |         |         |
  0+50       0.0188      0.37  |QV       |         |         |         |
  0+55       0.0212      0.35  |QV       |         |         |         |
  1+ 0       0.0236      0.36  |QV       |         |         |         |
  1+ 5       0.0263      0.39  |QV       |         |         |         |
  1+10       0.0294      0.44  |Q V      |         |         |         |
  1+15       0.0325      0.46  |Q V      |         |         |         |
  1+20       0.0357      0.46  |Q  V     |         |         |         |
  1+25       0.0389      0.47  |Q  V     |         |         |         |
  1+30       0.0425      0.53  | Q V     |         |         |         |
  1+35       0.0463      0.55  | Q  V    |         |         |         |
  1+40       0.0500      0.54  | Q  V    |         |         |         |
  1+45       0.0541      0.59  | Q   V   |         |         |         |
  1+50       0.0586      0.65  | Q   V   |         |         |         |
  1+55       0.0631      0.65  | Q    V  |         |         |         |
  2+ 0       0.0675      0.64  | Q    V  |         |         |         |
  2+ 5       0.0720      0.65  | Q     V |         |         |         |
  2+10       0.0780      0.87  |  Q    V |         |         |         |
  2+15       0.0899      1.74  |     Q   V         |         |         |
  2+20       0.1055      2.26  |        Q| V       |         |         |
  2+25       0.1227      2.49  |        Q|  V      |         |         |
  2+30       0.1614      5.62  |         |       V | Q       |         |
  2+35       0.2130      7.49  |         |         |   V    Q|         |
  2+40       0.2691      8.15  |         |         |         V Q       |
  2+45       0.3068      5.48  |         |         |Q        |   V     |
  2+50       0.3245      2.57  |         Q         |         |     V   |
  2+55       0.3353      1.56  |     Q   |         |         |       V |
  3+ 0       0.3425      1.05  |   Q     |         |         |       V |
  3+ 5       0.3471      0.66  | Q       |         |         |        V|
  3+10       0.3495      0.36  |Q        |         |         |        V|
  3+15       0.3508      0.19  Q         |         |         |        V|
  3+20       0.3513      0.07  Q         |         |         |        V|
  3+25       0.3514      0.02  Q         |         |         |        V|
```

```
    3+30       0.3515      0.01  Q        |        |        |       V|
    3+35       0.3515      0.00  Q        |        |        |       V|
    3+40       0.3515      0.00  Q        |        |        |        V
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD65.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
5-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	1.42	20.26

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	3.15	44.95

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.420(In)
Area Averaged 100-Year Rainfall = 3.150(In)

Point rain (area averaged) = 1.825(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.825(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  56.4      0.507     0.000        0.507       1.000      0.507
                                                 Sum (F) =   0.507
Area averaged mean soil loss (F) (In/Hr) =  0.507
Minimum soil loss rate ((In/Hr)) =  0.253
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)        Max    |   Low        (In/Hr)
   1   0.08     0.50      0.110       (  0.507)       0.099        0.011
   2   0.17     0.60      0.131       (  0.507)       0.118        0.013
   3   0.25     0.60      0.131       (  0.507)       0.118        0.013
   4   0.33     0.60      0.131       (  0.507)       0.118        0.013
   5   0.42     0.60      0.131       (  0.507)       0.118        0.013
   6   0.50     0.70      0.153       (  0.507)       0.138        0.015
   7   0.58     0.70      0.153       (  0.507)       0.138        0.015
   8   0.67     0.70      0.153       (  0.507)       0.138        0.015
   9   0.75     0.70      0.153       (  0.507)       0.138        0.015
  10   0.83     0.70      0.153       (  0.507)       0.138        0.015
  11   0.92     0.70      0.153       (  0.507)       0.138        0.015
  12   1.00     0.80      0.175       (  0.507)       0.158        0.018
  13   1.08     0.80      0.175       (  0.507)       0.158        0.018
  14   1.17     0.80      0.175       (  0.507)       0.158        0.018
  15   1.25     0.80      0.175       (  0.507)       0.158        0.018
  16   1.33     0.80      0.175       (  0.507)       0.158        0.018
  17   1.42     0.80      0.175       (  0.507)       0.158        0.018
  18   1.50     0.80      0.175       (  0.507)       0.158        0.018
  19   1.58     0.80      0.175       (  0.507)       0.158        0.018
  20   1.67     0.80      0.175       (  0.507)       0.158        0.018
  21   1.75     0.80      0.175       (  0.507)       0.158        0.018
  22   1.83     0.80      0.175       (  0.507)       0.158        0.018
  23   1.92     0.80      0.175       (  0.507)       0.158        0.018
  24   2.00     0.90      0.197       (  0.507)       0.177        0.020
  25   2.08     0.80      0.175       (  0.507)       0.158        0.018
  26   2.17     0.90      0.197       (  0.507)       0.177        0.020
  27   2.25     0.90      0.197       (  0.507)       0.177        0.020
  28   2.33     0.90      0.197       (  0.507)       0.177        0.020
  29   2.42     0.90      0.197       (  0.507)       0.177        0.020
```

```
30   2.50     0.90      0.197       (  0.507)       0.177        0.020
31   2.58     0.90      0.197       (  0.507)       0.177        0.020
32   2.67     0.90      0.197       (  0.507)       0.177        0.020
33   2.75     1.00      0.219       (  0.507)       0.197        0.022
34   2.83     1.00      0.219       (  0.507)       0.197        0.022
35   2.92     1.00      0.219       (  0.507)       0.197        0.022
36   3.00     1.00      0.219       (  0.507)       0.197        0.022
37   3.08     1.00      0.219       (  0.507)       0.197        0.022
38   3.17     1.10      0.241       (  0.507)       0.217        0.024
39   3.25     1.10      0.241       (  0.507)       0.217        0.024
40   3.33     1.10      0.241       (  0.507)       0.217        0.024
41   3.42     1.20      0.263       (  0.507)       0.237        0.026
42   3.50     1.30      0.285       (  0.507)       0.256        0.028
43   3.58     1.40      0.307       (  0.507)       0.276        0.031
44   3.67     1.40      0.307       (  0.507)       0.276        0.031
45   3.75     1.50      0.329       (  0.507)       0.296        0.033
46   3.83     1.50      0.329       (  0.507)       0.296        0.033
47   3.92     1.60      0.350       (  0.507)       0.315        0.035
48   4.00     1.60      0.350       (  0.507)       0.315        0.035
49   4.08     1.70      0.372       (  0.507)       0.335        0.037
50   4.17     1.80      0.394       (  0.507)       0.355        0.039
51   4.25     1.90      0.416       (  0.507)       0.375        0.042
52   4.33     2.00      0.438       (  0.507)       0.394        0.044
53   4.42     2.10      0.460       (  0.507)       0.414        0.046
54   4.50     2.10      0.460       (  0.507)       0.414        0.046
55   4.58     2.20      0.482       (  0.507)       0.434        0.048
56   4.67     2.30      0.504       (  0.507)       0.453        0.050
57   4.75     2.40      0.526       (  0.507)       0.473        0.053
58   4.83     2.40      0.526       (  0.507)       0.473        0.053
59   4.92     2.50      0.548       (  0.507)       0.493        0.055
60   5.00     2.60      0.569          0.507    (  0.512)        0.063
61   5.08     3.10      0.679          0.507    (  0.611)        0.172
62   5.17     3.60      0.788          0.507    (  0.710)        0.282
63   5.25     3.90      0.854          0.507    (  0.769)        0.347
64   5.33     4.20      0.920          0.507    (  0.828)        0.413
65   5.42     4.70      1.029          0.507    (  0.926)        0.523
66   5.50     5.60      1.226          0.507    (  1.104)        0.720
67   5.58     1.90      0.416       (  0.507)       0.375        0.042
68   5.67     0.90      0.197       (  0.507)       0.177        0.020
69   5.75     0.60      0.131       (  0.507)       0.118        0.013
70   5.83     0.50      0.110       (  0.507)       0.099        0.011
71   5.92     0.30      0.066       (  0.507)       0.059        0.007
72   6.00     0.20      0.044       (  0.507)       0.039        0.004
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     4.1
      Flood volume = Effective rainfall      0.34(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
      Total soil loss =      1.48(In)
      Total soil loss =     1.764(Ac.Ft)
      Total rainfall =      1.83(In)
      Flood volume =       17711.9 Cubic Feet
      Total soil loss =       76829.5 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      7.113(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0009      0.11  Q         |         |         |         |
  0+15       0.0020      0.15  Q         |         |         |         |
  0+20       0.0031      0.17  Q         |         |         |         |
  0+25       0.0043      0.18  Q         |         |         |         |
```

```
0+30       0.0056      0.19  Q         |         |         |         |
0+35       0.0071      0.21  Q         |         |         |         |
0+40       0.0085      0.21  Q         |         |         |         |
0+45       0.0100      0.22  Q         |         |         |         |
0+50       0.0115      0.22  QV        |         |         |         |
0+55       0.0130      0.22  QV        |         |         |         |
1+ 0       0.0146      0.23  QV        |         |         |         |
1+ 5       0.0162      0.24  QV        |         |         |         |
1+10       0.0179      0.25  QV        |         |         |         |
1+15       0.0197      0.25  QV        |         |         |         |
1+20       0.0214      0.25  |QV       |         |         |         |
1+25       0.0231      0.25  |QV       |         |         |         |
1+30       0.0248      0.25  |QV       |         |         |         |
1+35       0.0266      0.25  |QV       |         |         |         |
1+40       0.0283      0.25  |QV       |         |         |         |
1+45       0.0300      0.25  |QV       |         |         |         |
1+50       0.0318      0.25  |Q V      |         |         |         |
1+55       0.0335      0.25  |Q V      |         |         |         |
2+ 0       0.0353      0.26  |Q V      |         |         |         |
2+ 5       0.0371      0.27  |Q V      |         |         |         |
2+10       0.0389      0.26  |Q V      |         |         |         |
2+15       0.0408      0.28  |Q  V     |         |         |         |
2+20       0.0428      0.28  |Q  V     |         |         |         |
2+25       0.0447      0.28  |Q  V     |         |         |         |
2+30       0.0466      0.28  |Q  V     |         |         |         |
2+35       0.0486      0.28  |Q  V     |         |         |         |
2+40       0.0505      0.28  |Q  V     |         |         |         |
2+45       0.0525      0.29  |Q   V    |         |         |         |
2+50       0.0546      0.30  |Q   V    |         |         |         |
2+55       0.0568      0.31  |Q   V    |         |         |         |
3+ 0       0.0589      0.31  |Q   V    |         |         |         |
3+ 5       0.0611      0.31  |Q    V   |         |         |         |
3+10       0.0633      0.32  |Q    V   |         |         |         |
3+15       0.0656      0.34  |Q    V   |         |         |         |
3+20       0.0679      0.34  |Q    V   |         |         |         |
3+25       0.0703      0.35  |Q    V   |         |         |         |
3+30       0.0729      0.37  |Q     V  |         |         |         |
3+35       0.0756      0.40  |Q     V  |         |         |         |
3+40       0.0785      0.42  |Q     V  |         |         |         |
3+45       0.0815      0.44  |Q      V |         |         |         |
3+50       0.0847      0.46  |Q      V |         |         |         |
3+55       0.0879      0.47  |Q      V |         |         |         |
4+ 0       0.0913      0.49  |Q      V |         |         |         |
4+ 5       0.0947      0.50  | Q      V|         |         |         |
4+10       0.0983      0.53  | Q      V|         |         |         |
4+15       0.1021      0.55  | Q       V         |         |         |
4+20       0.1062      0.58  | Q       V         |         |         |
4+25       0.1104      0.61  | Q       V         |         |         |
4+30       0.1148      0.64  | Q       |V        |         |         |
4+35       0.1193      0.65  | Q       |V        |         |         |
4+40       0.1240      0.68  | Q       | V       |         |         |
4+45       0.1289      0.71  | Q       | V       |         |         |
4+50       0.1339      0.73  | Q       |  V      |         |         |
4+55       0.1391      0.75  |  Q      |  V      |         |         |
5+ 0       0.1446      0.79  |  Q      |   V     |         |         |
5+ 5       0.1524      1.14  |   Q     |   V     |         |         |
5+10       0.1675      2.20  |       Q |     V   |         |         |
5+15       0.1909      3.39  |         |  Q    V |         |         |
5+20       0.2212      4.39  |         |     Q   |V        |         |
5+25       0.2588      5.47  |         |         |Q   V    |         |
5+30       0.3075      7.07  |         |         |       Q V         |
5+35       0.3565      7.11  |         |         |       Q |    V    |
5+40       0.3776      3.06  |         | Q       |         |     V   |
5+45       0.3889      1.64  |     Q   |         |         |      V  |
5+50       0.3960      1.03  |   Q     |         |         |      V  |
5+55       0.4007      0.68  | Q       |         |         |       V |
6+ 0       0.4037      0.43  |Q        |         |         |       V |
6+ 5       0.4054      0.26  |Q        |         |         |       V |
6+10       0.4063      0.12  Q         |         |         |       V |
```

```
    6+15       0.4064      0.02  Q        |         |         |        V|
    6+20       0.4065      0.01  Q        |         |         |        V|
    6+25       0.4066      0.01  Q        |         |         |        V|
    6+30       0.4066      0.00  Q        |         |         |        V|
    6+35       0.4066      0.00  Q        |         |         |        V|
    6+40       0.4066      0.00  Q        |         |         |        V|
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD245.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
5-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	2.65	37.82

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	6.95	99.18

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.650(In)
Area Averaged 100-Year Rainfall = 6.950(In)

Point rain (area averaged) = 3.657(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.657(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
   14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  56.4      0.507     0.000        0.507       1.000      0.507
                                                 Sum (F) =   0.507
Area averaged mean soil loss (F) (In/Hr) =  0.507
Minimum soil loss rate ((In/Hr)) =  0.253
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
--------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
--------------------------------------------------------------------------
               Unit Hydrograph Data
--------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
--------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
--------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)        Max    |   Low        (In/Hr)
   1   0.08     0.07      0.029       (  0.898)       0.026        0.003
   2   0.17     0.07      0.029       (  0.895)       0.026        0.003
   3   0.25     0.07      0.029       (  0.891)       0.026        0.003
   4   0.33     0.10      0.044       (  0.888)       0.039        0.004
   5   0.42     0.10      0.044       (  0.884)       0.039        0.004
   6   0.50     0.10      0.044       (  0.881)       0.039        0.004
   7   0.58     0.10      0.044       (  0.878)       0.039        0.004
   8   0.67     0.10      0.044       (  0.874)       0.039        0.004
   9   0.75     0.10      0.044       (  0.871)       0.039        0.004
  10   0.83     0.13      0.059       (  0.867)       0.053        0.006
  11   0.92     0.13      0.059       (  0.864)       0.053        0.006
  12   1.00     0.13      0.059       (  0.860)       0.053        0.006
  13   1.08     0.10      0.044       (  0.857)       0.039        0.004
  14   1.17     0.10      0.044       (  0.854)       0.039        0.004
  15   1.25     0.10      0.044       (  0.850)       0.039        0.004
  16   1.33     0.10      0.044       (  0.847)       0.039        0.004
  17   1.42     0.10      0.044       (  0.844)       0.039        0.004
  18   1.50     0.10      0.044       (  0.840)       0.039        0.004
  19   1.58     0.10      0.044       (  0.837)       0.039        0.004
  20   1.67     0.10      0.044       (  0.833)       0.039        0.004
  21   1.75     0.10      0.044       (  0.830)       0.039        0.004
  22   1.83     0.13      0.059       (  0.827)       0.053        0.006
  23   1.92     0.13      0.059       (  0.823)       0.053        0.006
  24   2.00     0.13      0.059       (  0.820)       0.053        0.006
  25   2.08     0.13      0.059       (  0.817)       0.053        0.006
  26   2.17     0.13      0.059       (  0.813)       0.053        0.006
  27   2.25     0.13      0.059       (  0.810)       0.053        0.006
  28   2.33     0.13      0.059       (  0.807)       0.053        0.006
  29   2.42     0.13      0.059       (  0.804)       0.053        0.006
```

30	2.50	0.13	0.059	(0.800)	0.053	0.006
31	2.58	0.17	0.073	(0.797)	0.066	0.007
32	2.67	0.17	0.073	(0.794)	0.066	0.007
33	2.75	0.17	0.073	(0.790)	0.066	0.007
34	2.83	0.17	0.073	(0.787)	0.066	0.007
35	2.92	0.17	0.073	(0.784)	0.066	0.007
36	3.00	0.17	0.073	(0.781)	0.066	0.007
37	3.08	0.17	0.073	(0.777)	0.066	0.007
38	3.17	0.17	0.073	(0.774)	0.066	0.007
39	3.25	0.17	0.073	(0.771)	0.066	0.007
40	3.33	0.17	0.073	(0.768)	0.066	0.007
41	3.42	0.17	0.073	(0.765)	0.066	0.007
42	3.50	0.17	0.073	(0.761)	0.066	0.007
43	3.58	0.17	0.073	(0.758)	0.066	0.007
44	3.67	0.17	0.073	(0.755)	0.066	0.007
45	3.75	0.17	0.073	(0.752)	0.066	0.007
46	3.83	0.20	0.088	(0.749)	0.079	0.009
47	3.92	0.20	0.088	(0.746)	0.079	0.009
48	4.00	0.20	0.088	(0.742)	0.079	0.009
49	4.08	0.20	0.088	(0.739)	0.079	0.009
50	4.17	0.20	0.088	(0.736)	0.079	0.009
51	4.25	0.20	0.088	(0.733)	0.079	0.009
52	4.33	0.23	0.102	(0.730)	0.092	0.010
53	4.42	0.23	0.102	(0.727)	0.092	0.010
54	4.50	0.23	0.102	(0.724)	0.092	0.010
55	4.58	0.23	0.102	(0.721)	0.092	0.010
56	4.67	0.23	0.102	(0.717)	0.092	0.010
57	4.75	0.23	0.102	(0.714)	0.092	0.010
58	4.83	0.27	0.117	(0.711)	0.105	0.012
59	4.92	0.27	0.117	(0.708)	0.105	0.012
60	5.00	0.27	0.117	(0.705)	0.105	0.012
61	5.08	0.20	0.088	(0.702)	0.079	0.009
62	5.17	0.20	0.088	(0.699)	0.079	0.009
63	5.25	0.20	0.088	(0.696)	0.079	0.009
64	5.33	0.23	0.102	(0.693)	0.092	0.010
65	5.42	0.23	0.102	(0.690)	0.092	0.010
66	5.50	0.23	0.102	(0.687)	0.092	0.010
67	5.58	0.27	0.117	(0.684)	0.105	0.012
68	5.67	0.27	0.117	(0.681)	0.105	0.012
69	5.75	0.27	0.117	(0.678)	0.105	0.012
70	5.83	0.27	0.117	(0.675)	0.105	0.012
71	5.92	0.27	0.117	(0.672)	0.105	0.012
72	6.00	0.27	0.117	(0.669)	0.105	0.012
73	6.08	0.30	0.132	(0.666)	0.118	0.013
74	6.17	0.30	0.132	(0.663)	0.118	0.013
75	6.25	0.30	0.132	(0.660)	0.118	0.013
76	6.33	0.30	0.132	(0.657)	0.118	0.013
77	6.42	0.30	0.132	(0.654)	0.118	0.013
78	6.50	0.30	0.132	(0.651)	0.118	0.013
79	6.58	0.33	0.146	(0.648)	0.132	0.015
80	6.67	0.33	0.146	(0.645)	0.132	0.015
81	6.75	0.33	0.146	(0.642)	0.132	0.015
82	6.83	0.33	0.146	(0.639)	0.132	0.015
83	6.92	0.33	0.146	(0.637)	0.132	0.015
84	7.00	0.33	0.146	(0.634)	0.132	0.015
85	7.08	0.33	0.146	(0.631)	0.132	0.015
86	7.17	0.33	0.146	(0.628)	0.132	0.015
87	7.25	0.33	0.146	(0.625)	0.132	0.015
88	7.33	0.37	0.161	(0.622)	0.145	0.016
89	7.42	0.37	0.161	(0.619)	0.145	0.016
90	7.50	0.37	0.161	(0.617)	0.145	0.016
91	7.58	0.40	0.176	(0.614)	0.158	0.018
92	7.67	0.40	0.176	(0.611)	0.158	0.018
93	7.75	0.40	0.176	(0.608)	0.158	0.018
94	7.83	0.43	0.190	(0.605)	0.171	0.019
95	7.92	0.43	0.190	(0.602)	0.171	0.019
96	8.00	0.43	0.190	(0.600)	0.171	0.019
97	8.08	0.50	0.219	(0.597)	0.197	0.022
98	8.17	0.50	0.219	(0.594)	0.197	0.022

99	8.25	0.50	0.219	(	0.591)		0.197		0.022
100	8.33	0.50	0.219	(	0.589)		0.197		0.022
101	8.42	0.50	0.219	(	0.586)		0.197		0.022
102	8.50	0.50	0.219	(	0.583)		0.197		0.022
103	8.58	0.53	0.234	(	0.580)		0.211		0.023
104	8.67	0.53	0.234	(	0.578)		0.211		0.023
105	8.75	0.53	0.234	(	0.575)		0.211		0.023
106	8.83	0.57	0.249	(	0.572)		0.224		0.025
107	8.92	0.57	0.249	(	0.569)		0.224		0.025
108	9.00	0.57	0.249	(	0.567)		0.224		0.025
109	9.08	0.63	0.278	(	0.564)		0.250		0.028
110	9.17	0.63	0.278	(	0.561)		0.250		0.028
111	9.25	0.63	0.278	(	0.559)		0.250		0.028
112	9.33	0.67	0.293	(	0.556)		0.263		0.029
113	9.42	0.67	0.293	(	0.553)		0.263		0.029
114	9.50	0.67	0.293	(	0.551)		0.263		0.029
115	9.58	0.70	0.307	(	0.548)		0.276		0.031
116	9.67	0.70	0.307	(	0.546)		0.276		0.031
117	9.75	0.70	0.307	(	0.543)		0.276		0.031
118	9.83	0.73	0.322	(	0.540)		0.290		0.032
119	9.92	0.73	0.322	(	0.538)		0.290		0.032
120	10.00	0.73	0.322	(	0.535)		0.290		0.032
121	10.08	0.50	0.219	(	0.533)		0.197		0.022
122	10.17	0.50	0.219	(	0.530)		0.197		0.022
123	10.25	0.50	0.219	(	0.527)		0.197		0.022
124	10.33	0.50	0.219	(	0.525)		0.197		0.022
125	10.42	0.50	0.219	(	0.522)		0.197		0.022
126	10.50	0.50	0.219	(	0.520)		0.197		0.022
127	10.58	0.67	0.293	(	0.517)		0.263		0.029
128	10.67	0.67	0.293	(	0.515)		0.263		0.029
129	10.75	0.67	0.293	(	0.512)		0.263		0.029
130	10.83	0.67	0.293	(	0.510)		0.263		0.029
131	10.92	0.67	0.293	(	0.507)		0.263		0.029
132	11.00	0.67	0.293	(	0.505)		0.263		0.029
133	11.08	0.63	0.278	(	0.502)		0.250		0.028
134	11.17	0.63	0.278	(	0.500)		0.250		0.028
135	11.25	0.63	0.278	(	0.497)		0.250		0.028
136	11.33	0.63	0.278	(	0.495)		0.250		0.028
137	11.42	0.63	0.278	(	0.492)		0.250		0.028
138	11.50	0.63	0.278	(	0.490)		0.250		0.028
139	11.58	0.57	0.249	(	0.487)		0.224		0.025
140	11.67	0.57	0.249	(	0.485)		0.224		0.025
141	11.75	0.57	0.249	(	0.483)		0.224		0.025
142	11.83	0.60	0.263	(	0.480)		0.237		0.026
143	11.92	0.60	0.263	(	0.478)		0.237		0.026
144	12.00	0.60	0.263	(	0.475)		0.237		0.026
145	12.08	0.83	0.366	(	0.473)		0.329		0.037
146	12.17	0.83	0.366	(	0.471)		0.329		0.037
147	12.25	0.83	0.366	(	0.468)		0.329		0.037
148	12.33	0.87	0.380	(	0.466)		0.342		0.038
149	12.42	0.87	0.380	(	0.464)		0.342		0.038
150	12.50	0.87	0.380	(	0.461)		0.342		0.038
151	12.58	0.93	0.410	(	0.459)		0.369		0.041
152	12.67	0.93	0.410	(	0.457)		0.369		0.041
153	12.75	0.93	0.410	(	0.454)		0.369		0.041
154	12.83	0.97	0.424	(	0.452)		0.382		0.042
155	12.92	0.97	0.424	(	0.450)		0.382		0.042
156	13.00	0.97	0.424	(	0.447)		0.382		0.042
157	13.08	1.13	0.497		0.445	(	0.448)		0.052
158	13.17	1.13	0.497		0.443	(	0.448)		0.054
159	13.25	1.13	0.497		0.441	(	0.448)		0.057
160	13.33	1.13	0.497		0.438	(	0.448)		0.059
161	13.42	1.13	0.497		0.436	(	0.448)		0.061
162	13.50	1.13	0.497		0.434	(	0.448)		0.063
163	13.58	0.77	0.336	(	0.432)		0.303		0.034
164	13.67	0.77	0.336	(	0.430)		0.303		0.034
165	13.75	0.77	0.336	(	0.427)		0.303		0.034
166	13.83	0.77	0.336	(	0.425)		0.303		0.034
167	13.92	0.77	0.336	(	0.423)		0.303		0.034

168	14.00	0.77	0.336	(	0.421)	0.303	0.034
169	14.08	0.90	0.395	(	0.419)	0.355	0.039
170	14.17	0.90	0.395	(	0.417)	0.355	0.039
171	14.25	0.90	0.395	(	0.414)	0.355	0.039
172	14.33	0.87	0.380	(	0.412)	0.342	0.038
173	14.42	0.87	0.380	(	0.410)	0.342	0.038
174	14.50	0.87	0.380	(	0.408)	0.342	0.038
175	14.58	0.87	0.380	(	0.406)	0.342	0.038
176	14.67	0.87	0.380	(	0.404)	0.342	0.038
177	14.75	0.87	0.380	(	0.402)	0.342	0.038
178	14.83	0.83	0.366	(	0.400)	0.329	0.037
179	14.92	0.83	0.366	(	0.398)	0.329	0.037
180	15.00	0.83	0.366	(	0.396)	0.329	0.037
181	15.08	0.80	0.351	(	0.394)	0.316	0.035
182	15.17	0.80	0.351	(	0.392)	0.316	0.035
183	15.25	0.80	0.351	(	0.390)	0.316	0.035
184	15.33	0.77	0.336	(	0.388)	0.303	0.034
185	15.42	0.77	0.336	(	0.386)	0.303	0.034
186	15.50	0.77	0.336	(	0.384)	0.303	0.034
187	15.58	0.63	0.278	(	0.382)	0.250	0.028
188	15.67	0.63	0.278	(	0.380)	0.250	0.028
189	15.75	0.63	0.278	(	0.378)	0.250	0.028
190	15.83	0.63	0.278	(	0.376)	0.250	0.028
191	15.92	0.63	0.278	(	0.374)	0.250	0.028
192	16.00	0.63	0.278	(	0.372)	0.250	0.028
193	16.08	0.13	0.059	(	0.370)	0.053	0.006
194	16.17	0.13	0.059	(	0.368)	0.053	0.006
195	16.25	0.13	0.059	(	0.366)	0.053	0.006
196	16.33	0.13	0.059	(	0.365)	0.053	0.006
197	16.42	0.13	0.059	(	0.363)	0.053	0.006
198	16.50	0.13	0.059	(	0.361)	0.053	0.006
199	16.58	0.10	0.044	(	0.359)	0.039	0.004
200	16.67	0.10	0.044	(	0.357)	0.039	0.004
201	16.75	0.10	0.044	(	0.355)	0.039	0.004
202	16.83	0.10	0.044	(	0.354)	0.039	0.004
203	16.92	0.10	0.044	(	0.352)	0.039	0.004
204	17.00	0.10	0.044	(	0.350)	0.039	0.004
205	17.08	0.17	0.073	(	0.348)	0.066	0.007
206	17.17	0.17	0.073	(	0.346)	0.066	0.007
207	17.25	0.17	0.073	(	0.345)	0.066	0.007
208	17.33	0.17	0.073	(	0.343)	0.066	0.007
209	17.42	0.17	0.073	(	0.341)	0.066	0.007
210	17.50	0.17	0.073	(	0.340)	0.066	0.007
211	17.58	0.17	0.073	(	0.338)	0.066	0.007
212	17.67	0.17	0.073	(	0.336)	0.066	0.007
213	17.75	0.17	0.073	(	0.335)	0.066	0.007
214	17.83	0.13	0.059	(	0.333)	0.053	0.006
215	17.92	0.13	0.059	(	0.331)	0.053	0.006
216	18.00	0.13	0.059	(	0.330)	0.053	0.006
217	18.08	0.13	0.059	(	0.328)	0.053	0.006
218	18.17	0.13	0.059	(	0.326)	0.053	0.006
219	18.25	0.13	0.059	(	0.325)	0.053	0.006
220	18.33	0.13	0.059	(	0.323)	0.053	0.006
221	18.42	0.13	0.059	(	0.322)	0.053	0.006
222	18.50	0.13	0.059	(	0.320)	0.053	0.006
223	18.58	0.10	0.044	(	0.318)	0.039	0.004
224	18.67	0.10	0.044	(	0.317)	0.039	0.004
225	18.75	0.10	0.044	(	0.315)	0.039	0.004
226	18.83	0.07	0.029	(	0.314)	0.026	0.003
227	18.92	0.07	0.029	(	0.312)	0.026	0.003
228	19.00	0.07	0.029	(	0.311)	0.026	0.003
229	19.08	0.10	0.044	(	0.309)	0.039	0.004
230	19.17	0.10	0.044	(	0.308)	0.039	0.004
231	19.25	0.10	0.044	(	0.307)	0.039	0.004
232	19.33	0.13	0.059	(	0.305)	0.053	0.006
233	19.42	0.13	0.059	(	0.304)	0.053	0.006
234	19.50	0.13	0.059	(	0.302)	0.053	0.006
235	19.58	0.10	0.044	(	0.301)	0.039	0.004
236	19.67	0.10	0.044	(	0.300)	0.039	0.004

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237  19.75     0.10      0.044       (  0.298)       0.039        0.004
238  19.83     0.07      0.029       (  0.297)       0.026        0.003
239  19.92     0.07      0.029       (  0.296)       0.026        0.003
240  20.00     0.07      0.029       (  0.294)       0.026        0.003
241  20.08     0.10      0.044       (  0.293)       0.039        0.004
242  20.17     0.10      0.044       (  0.292)       0.039        0.004
243  20.25     0.10      0.044       (  0.290)       0.039        0.004
244  20.33     0.10      0.044       (  0.289)       0.039        0.004
245  20.42     0.10      0.044       (  0.288)       0.039        0.004
246  20.50     0.10      0.044       (  0.287)       0.039        0.004
247  20.58     0.10      0.044       (  0.285)       0.039        0.004
248  20.67     0.10      0.044       (  0.284)       0.039        0.004
249  20.75     0.10      0.044       (  0.283)       0.039        0.004
250  20.83     0.07      0.029       (  0.282)       0.026        0.003
251  20.92     0.07      0.029       (  0.281)       0.026        0.003
252  21.00     0.07      0.029       (  0.280)       0.026        0.003
253  21.08     0.10      0.044       (  0.279)       0.039        0.004
254  21.17     0.10      0.044       (  0.277)       0.039        0.004
255  21.25     0.10      0.044       (  0.276)       0.039        0.004
256  21.33     0.07      0.029       (  0.275)       0.026        0.003
257  21.42     0.07      0.029       (  0.274)       0.026        0.003
258  21.50     0.07      0.029       (  0.273)       0.026        0.003
259  21.58     0.10      0.044       (  0.272)       0.039        0.004
260  21.67     0.10      0.044       (  0.271)       0.039        0.004
261  21.75     0.10      0.044       (  0.270)       0.039        0.004
262  21.83     0.07      0.029       (  0.269)       0.026        0.003
263  21.92     0.07      0.029       (  0.268)       0.026        0.003
264  22.00     0.07      0.029       (  0.268)       0.026        0.003
265  22.08     0.10      0.044       (  0.267)       0.039        0.004
266  22.17     0.10      0.044       (  0.266)       0.039        0.004
267  22.25     0.10      0.044       (  0.265)       0.039        0.004
268  22.33     0.07      0.029       (  0.264)       0.026        0.003
269  22.42     0.07      0.029       (  0.263)       0.026        0.003
270  22.50     0.07      0.029       (  0.263)       0.026        0.003
271  22.58     0.07      0.029       (  0.262)       0.026        0.003
272  22.67     0.07      0.029       (  0.261)       0.026        0.003
273  22.75     0.07      0.029       (  0.260)       0.026        0.003
274  22.83     0.07      0.029       (  0.260)       0.026        0.003
275  22.92     0.07      0.029       (  0.259)       0.026        0.003
276  23.00     0.07      0.029       (  0.258)       0.026        0.003
277  23.08     0.07      0.029       (  0.258)       0.026        0.003
278  23.17     0.07      0.029       (  0.257)       0.026        0.003
279  23.25     0.07      0.029       (  0.257)       0.026        0.003
280  23.33     0.07      0.029       (  0.256)       0.026        0.003
281  23.42     0.07      0.029       (  0.256)       0.026        0.003
282  23.50     0.07      0.029       (  0.255)       0.026        0.003
283  23.58     0.07      0.029       (  0.255)       0.026        0.003
284  23.67     0.07      0.029       (  0.254)       0.026        0.003
285  23.75     0.07      0.029       (  0.254)       0.026        0.003
286  23.83     0.07      0.029       (  0.254)       0.026        0.003
287  23.92     0.07      0.029       (  0.254)       0.026        0.003
288  24.00     0.07      0.029       (  0.253)       0.026        0.003
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     4.4
       Flood volume = Effective rainfall      0.37(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
       Total soil loss =      3.29(In)
       Total soil loss =     3.909(Ac.Ft)
       Total rainfall =      3.66(In)
       Flood volume =       19151.6 Cubic Feet
       Total soil loss =      170284.6 Cubic Feet
       ---------------------------------------------------------------------
        Peak flow rate of this hydrograph =      0.858(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	0.0008	0.04	Q				
0+25	0.0011	0.05	Q				
0+30	0.0015	0.06	Q				
0+35	0.0019	0.06	Q				
0+40	0.0024	0.06	Q				
0+45	0.0028	0.06	Q				
0+50	0.0033	0.07	Q				
0+55	0.0038	0.08	Q				
1+ 0	0.0043	0.08	Q				
1+ 5	0.0049	0.08	Q				
1+10	0.0054	0.07	Q				
1+15	0.0058	0.07	Q				
1+20	0.0063	0.06	Q				
1+25	0.0067	0.06	Q				
1+30	0.0071	0.06	Q				
1+35	0.0076	0.06	Q				
1+40	0.0080	0.06	Q				
1+45	0.0085	0.06	Q				
1+50	0.0089	0.07	Q				
1+55	0.0094	0.08	Q				
2+ 0	0.0100	0.08	Q				
2+ 5	0.0106	0.08	Q				
2+10	0.0111	0.08	QV				
2+15	0.0117	0.08	QV				
2+20	0.0123	0.08	QV				
2+25	0.0129	0.08	QV				
2+30	0.0134	0.08	QV				
2+35	0.0140	0.09	QV				
2+40	0.0147	0.10	QV				
2+45	0.0154	0.10	QV				
2+50	0.0161	0.10	QV				
2+55	0.0168	0.10	QV				
3+ 0	0.0176	0.10	QV				
3+ 5	0.0183	0.10	QV				
3+10	0.0190	0.11	QV				
3+15	0.0197	0.11	QV				
3+20	0.0205	0.11	QV				
3+25	0.0212	0.11	QV				
3+30	0.0219	0.11	QV				
3+35	0.0226	0.11	Q V				
3+40	0.0234	0.11	Q V				
3+45	0.0241	0.11	Q V				
3+50	0.0248	0.11	Q V				
3+55	0.0257	0.12	Q V				
4+ 0	0.0265	0.12	Q V				
4+ 5	0.0274	0.12	Q V				
4+10	0.0282	0.12	Q V				
4+15	0.0291	0.13	Q V				
4+20	0.0300	0.13	Q V				
4+25	0.0309	0.14	Q V				
4+30	0.0319	0.14	Q V				
4+35	0.0329	0.15	Q V				
4+40	0.0339	0.15	Q V				
4+45	0.0349	0.15	Q V				
4+50	0.0360	0.15	Q V				
4+55	0.0371	0.16	Q V				
5+ 0	0.0382	0.16	Q V				
5+ 5	0.0393	0.16	Q V				
5+10	0.0403	0.14	Q V				
5+15	0.0412	0.13	Q V				
5+20	0.0421	0.13	Q V				
5+25	0.0431	0.14	Q V				

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 5+30      0.0441      0.15  Q   V     |         |         |         |
 5+35      0.0451      0.15  Q   V     |         |         |         |
 5+40      0.0462      0.16  Q   V     |         |         |         |
 5+45      0.0474      0.16  Q   V     |         |         |         |
 5+50      0.0485      0.17  Q   V     |         |         |         |
 5+55      0.0497      0.17  Q   V     |         |         |         |
 6+ 0      0.0508      0.17  Q   V     |         |         |         |
 6+ 5      0.0520      0.17  Q   V     |         |         |         |
 6+10      0.0532      0.18  Q   V     |         |         |         |
 6+15      0.0545      0.19  Q   V     |         |         |         |
 6+20      0.0558      0.19  Q    V    |         |         |         |
 6+25      0.0571      0.19  Q    V    |         |         |         |
 6+30      0.0584      0.19  Q    V    |         |         |         |
 6+35      0.0597      0.19  Q    V    |         |         |         |
 6+40      0.0611      0.20  Q    V    |         |         |         |
 6+45      0.0626      0.21  Q    V    |         |         |         |
 6+50      0.0640      0.21  Q    V    |         |         |         |
 6+55      0.0654      0.21  Q    V    |         |         |         |
 7+ 0      0.0669      0.21  Q     V   |         |         |         |
 7+ 5      0.0683      0.21  Q     V   |         |         |         |
 7+10      0.0698      0.21  Q     V   |         |         |         |
 7+15      0.0712      0.21  Q     V   |         |         |         |
 7+20      0.0727      0.21  Q     V   |         |         |         |
 7+25      0.0742      0.22  Q     V   |         |         |         |
 7+30      0.0758      0.23  Q     V   |         |         |         |
 7+35      0.0774      0.23  Q      V  |         |         |         |
 7+40      0.0791      0.24  Q      V  |         |         |         |
 7+45      0.0808      0.25  Q      V  |         |         |         |
 7+50      0.0826      0.25  |Q     V  |         |         |         |
 7+55      0.0844      0.26  |Q     V  |         |         |         |
 8+ 0      0.0862      0.27  |Q     V  |         |         |         |
 8+ 5      0.0881      0.28  |Q      V |         |         |         |
 8+10      0.0902      0.30  |Q      V |         |         |         |
 8+15      0.0923      0.31  |Q      V |         |         |         |
 8+20      0.0945      0.31  |Q      V |         |         |         |
 8+25      0.0966      0.31  |Q      V |         |         |         |
 8+30      0.0988      0.31  |Q      V |         |         |         |
 8+35      0.1010      0.32  |Q       V|         |         |         |
 8+40      0.1033      0.33  |Q       V|         |         |         |
 8+45      0.1055      0.33  |Q       V|         |         |         |
 8+50      0.1079      0.34  |Q       V|         |         |         |
 8+55      0.1103      0.35  |Q        V         |         |         |
 9+ 0      0.1127      0.35  |Q        V         |         |         |
 9+ 5      0.1152      0.36  |Q        V         |         |         |
 9+10      0.1179      0.38  |Q        V         |         |         |
 9+15      0.1206      0.39  |Q        V         |         |         |
 9+20      0.1233      0.40  |Q        |V        |         |         |
 9+25      0.1261      0.41  |Q        |V        |         |         |
 9+30      0.1290      0.42  |Q        |V        |         |         |
 9+35      0.1319      0.42  |Q        | V       |         |         |
 9+40      0.1349      0.43  |Q        | V       |         |         |
 9+45      0.1379      0.44  |Q        | V       |         |         |
 9+50      0.1410      0.44  |Q        | V       |         |         |
 9+55      0.1441      0.45  |Q        |  V      |         |         |
10+ 0      0.1472      0.46  |Q        |  V      |         |         |
10+ 5      0.1502      0.43  |Q        |  V      |         |         |
10+10      0.1527      0.36  |Q        |  V      |         |         |
10+15      0.1551      0.34  |Q        |   V     |         |         |
10+20      0.1574      0.33  |Q        |   V     |         |         |
10+25      0.1596      0.32  |Q        |   V     |         |         |
10+30      0.1618      0.32  |Q        |   V     |         |         |
10+35      0.1641      0.34  |Q        |   V     |         |         |
10+40      0.1668      0.39  |Q        |    V    |         |         |
10+45      0.1696      0.40  |Q        |    V    |         |         |
10+50      0.1724      0.41  |Q        |    V    |         |         |
10+55      0.1752      0.41  |Q        |    V    |         |         |
11+ 0      0.1781      0.42  |Q        |     V   |         |         |
11+ 5      0.1810      0.42  |Q        |     V   |         |         |
11+10      0.1838      0.41  |Q        |     V   |         |         |
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11+15       0.1866      0.40  |Q        |     V   |         |         |
11+20       0.1893      0.40  |Q        |      V  |         |         |
11+25       0.1921      0.40  |Q        |      V  |         |         |
11+30       0.1949      0.40  |Q        |      V  |         |         |
11+35       0.1976      0.39  |Q        |      V  |         |         |
11+40       0.2001      0.37  |Q        |       V |         |         |
11+45       0.2026      0.37  |Q        |       V |         |         |
11+50       0.2052      0.37  |Q        |       V |         |         |
11+55       0.2077      0.37  |Q        |       V |         |         |
12+ 0       0.2103      0.38  |Q        |        V|         |         |
12+ 5       0.2131      0.40  |Q        |        V|         |         |
12+10       0.2164      0.48  |Q        |        V|         |         |
12+15       0.2198      0.50  |Q        |        V|         |         |
12+20       0.2234      0.51  | Q       |         V         |         |
12+25       0.2270      0.53  | Q       |         V         |         |
12+30       0.2307      0.54  | Q       |         V         |         |
12+35       0.2345      0.55  | Q       |         |V        |         |
12+40       0.2385      0.57  | Q       |         |V        |         |
12+45       0.2425      0.58  | Q       |         | V       |         |
12+50       0.2465      0.59  | Q       |         | V       |         |
12+55       0.2506      0.60  | Q       |         | V       |         |
13+ 0       0.2548      0.61  | Q       |         |  V      |         |
13+ 5       0.2592      0.63  | Q       |         |  V      |         |
13+10       0.2640      0.71  | Q       |         |   V     |         |
13+15       0.2692      0.75  |  Q      |         |   V     |         |
13+20       0.2746      0.79  |  Q      |         |   V     |         |
13+25       0.2803      0.82  |  Q      |         |    V    |         |
13+30       0.2862      0.86  |  Q      |         |     V   |         |
13+35       0.2918      0.81  |  Q      |         |     V   |         |
13+40       0.2960      0.62  | Q       |         |     V   |         |
13+45       0.2999      0.55  | Q       |         |      V  |         |
13+50       0.3035      0.52  | Q       |         |      V  |         |
13+55       0.3070      0.51  | Q       |         |      V  |         |
14+ 0       0.3104      0.50  |Q        |         |       V |         |
14+ 5       0.3139      0.51  | Q       |         |       V |         |
14+10       0.3176      0.54  | Q       |         |       V |         |
14+15       0.3215      0.55  | Q       |         |        V|         |
14+20       0.3253      0.56  | Q       |         |        V|         |
14+25       0.3291      0.55  | Q       |         |        V|         |
14+30       0.3328      0.55  | Q       |         |         V         |
14+35       0.3366      0.55  | Q       |         |         V         |
14+40       0.3404      0.55  | Q       |         |         V         |
14+45       0.3442      0.55  | Q       |         |         |V        |
14+50       0.3479      0.54  | Q       |         |         |V        |
14+55       0.3516      0.53  | Q       |         |         |V        |
15+ 0       0.3552      0.53  | Q       |         |         | V       |
15+ 5       0.3588      0.52  | Q       |         |         | V       |
15+10       0.3624      0.51  | Q       |         |         | V       |
15+15       0.3659      0.51  | Q       |         |         |  V      |
15+20       0.3694      0.50  | Q       |         |         |  V      |
15+25       0.3728      0.49  |Q        |         |         |  V      |
15+30       0.3761      0.49  |Q        |         |         |   V     |
15+35       0.3794      0.47  |Q        |         |         |   V     |
15+40       0.3823      0.43  |Q        |         |         |   V     |
15+45       0.3852      0.42  |Q        |         |         |    V    |
15+50       0.3880      0.41  |Q        |         |         |    V    |
15+55       0.3908      0.41  |Q        |         |         |    V    |
16+ 0       0.3936      0.40  |Q        |         |         |    V    |
16+ 5       0.3959      0.34  |Q        |         |         |     V   |
16+10       0.3973      0.19  Q        |         |         |     V   |
16+15       0.3982      0.14  Q        |         |         |     V   |
16+20       0.3990      0.12  Q        |         |         |     V   |
16+25       0.3998      0.10  Q        |         |         |     V   |
16+30       0.4004      0.10  Q        |         |         |     V   |
16+35       0.4010      0.09  Q        |         |         |     V   |
16+40       0.4015      0.07  Q        |         |         |     V   |
16+45       0.4020      0.07  Q        |         |         |     V   |
16+50       0.4024      0.07  Q        |         |         |     V   |
16+55       0.4029      0.06  Q        |         |         |     V   |
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17+ 0       0.4033      0.06  Q        |         |         |     V   |
17+ 5       0.4038      0.07  Q        |         |         |     V   |
17+10       0.4044      0.09  Q        |         |         |     V   |
17+15       0.4051      0.10  Q        |         |         |     V   |
17+20       0.4058      0.10  Q        |         |         |     V   |
17+25       0.4065      0.10  Q        |         |         |     V   |
17+30       0.4072      0.10  Q        |         |         |      V  |
17+35       0.4079      0.10  Q        |         |         |      V  |
17+40       0.4087      0.10  Q        |         |         |      V  |
17+45       0.4094      0.11  Q        |         |         |      V  |
17+50       0.4101      0.10  Q        |         |         |      V  |
17+55       0.4107      0.09  Q        |         |         |      V  |
18+ 0       0.4113      0.09  Q        |         |         |      V  |
18+ 5       0.4119      0.09  Q        |         |         |      V  |
18+10       0.4125      0.09  Q        |         |         |      V  |
18+15       0.4131      0.08  Q        |         |         |      V  |
18+20       0.4137      0.08  Q        |         |         |      V  |
18+25       0.4143      0.08  Q        |         |         |      V  |
18+30       0.4148      0.08  Q        |         |         |      V  |
18+35       0.4154      0.08  Q        |         |         |      V  |
18+40       0.4159      0.07  Q        |         |         |      V  |
18+45       0.4163      0.07  Q        |         |         |      V  |
18+50       0.4168      0.06  Q        |         |         |      V  |
18+55       0.4171      0.05  Q        |         |         |      V  |
19+ 0       0.4174      0.05  Q        |         |         |      V  |
19+ 5       0.4178      0.05  Q        |         |         |       V |
19+10       0.4182      0.06  Q        |         |         |       V |
19+15       0.4186      0.06  Q        |         |         |       V |
19+20       0.4190      0.07  Q        |         |         |       V |
19+25       0.4195      0.08  Q        |         |         |       V |
19+30       0.4201      0.08  Q        |         |         |       V |
19+35       0.4206      0.08  Q        |         |         |       V |
19+40       0.4211      0.07  Q        |         |         |       V |
19+45       0.4216      0.07  Q        |         |         |       V |
19+50       0.4220      0.06  Q        |         |         |       V |
19+55       0.4223      0.05  Q        |         |         |       V |
20+ 0       0.4226      0.05  Q        |         |         |       V |
20+ 5       0.4230      0.05  Q        |         |         |       V |
20+10       0.4234      0.06  Q        |         |         |       V |
20+15       0.4238      0.06  Q        |         |         |       V |
20+20       0.4242      0.06  Q        |         |         |       V |
20+25       0.4246      0.06  Q        |         |         |       V |
20+30       0.4251      0.06  Q        |         |         |       V |
20+35       0.4255      0.06  Q        |         |         |       V |
20+40       0.4259      0.06  Q        |         |         |       V |
20+45       0.4264      0.06  Q        |         |         |       V |
20+50       0.4268      0.06  Q        |         |         |       V |
20+55       0.4271      0.05  Q        |         |         |       V |
21+ 0       0.4274      0.05  Q        |         |         |       V |
21+ 5       0.4278      0.05  Q        |         |         |       V |
21+10       0.4282      0.06  Q        |         |         |       V |
21+15       0.4286      0.06  Q        |         |         |       V |
21+20       0.4290      0.06  Q        |         |         |        V|
21+25       0.4293      0.05  Q        |         |         |        V|
21+30       0.4296      0.05  Q        |         |         |        V|
21+35       0.4299      0.05  Q        |         |         |        V|
21+40       0.4303      0.06  Q        |         |         |        V|
21+45       0.4307      0.06  Q        |         |         |        V|
21+50       0.4311      0.06  Q        |         |         |        V|
21+55       0.4315      0.05  Q        |         |         |        V|
22+ 0       0.4318      0.05  Q        |         |         |        V|
22+ 5       0.4321      0.05  Q        |         |         |        V|
22+10       0.4325      0.06  Q        |         |         |        V|
22+15       0.4329      0.06  Q        |         |         |        V|
22+20       0.4333      0.06  Q        |         |         |        V|
22+25       0.4336      0.05  Q        |         |         |        V|
22+30       0.4340      0.05  Q        |         |         |        V|
22+35       0.4343      0.04  Q        |         |         |        V|
22+40       0.4346      0.04  Q        |         |         |        V|
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   22+45       0.4349      0.04  Q        |         |         |        V|
   22+50       0.4351      0.04  Q        |         |         |        V|
   22+55       0.4354      0.04  Q        |         |         |        V|
   23+ 0       0.4357      0.04  Q        |         |         |        V|
   23+ 5       0.4360      0.04  Q        |         |         |        V|
   23+10       0.4363      0.04  Q        |         |         |        V|
   23+15       0.4366      0.04  Q        |         |         |        V|
   23+20       0.4369      0.04  Q        |         |         |        V|
   23+25       0.4372      0.04  Q        |         |         |        V|
   23+30       0.4375      0.04  Q        |         |         |        V|
   23+35       0.4378      0.04  Q        |         |         |        V|
   23+40       0.4380      0.04  Q        |         |         |        V|
   23+45       0.4383      0.04  Q        |         |         |        V|
   23+50       0.4386      0.04  Q        |         |         |        V|
   23+55       0.4389      0.04  Q        |         |         |        V|
   24+ 0       0.4392      0.04  Q        |         |         |        V|
   24+ 5       0.4394      0.03  Q        |         |         |        V|
   24+10       0.4395      0.01  Q        |         |         |        V|
   24+15       0.4396      0.01  Q        |         |         |        V|
   24+20       0.4396      0.00  Q        |         |         |        V|
   24+25       0.4396      0.00  Q        |         |         |        V|
   24+30       0.4397      0.00  Q        |         |         |        V|
   24+35       0.4397      0.00  Q        |         |         |        V|
   24+40       0.4397      0.00  Q        |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD110.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
10-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	0.56	7.99

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	1.28	18.27

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.560(In)
Area Averaged 100-Year Rainfall = 1.280(In)

Point rain (area averaged) = 0.856(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.856(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


 RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
 AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
 74.5  74.5      0.309     0.000        0.309       1.000      0.309
                                                  Sum (F) =   0.309
 Area averaged mean soil loss (F) (In/Hr) =  0.309
 Minimum soil loss rate ((In/Hr)) =  0.154
 (for 24 hour storm duration)
 Soil low loss rate (decimal) =   0.900
 ------------------------------------------------------------------------
 Slope of intensity-duration curve for a 1 hour storm =0.5300
 ------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
 ------------------------------------------------------------------------
                Unit Hydrograph Data
 ------------------------------------------------------------------------
 Unit time period   Time % of lag   Distribution   Unit Hydrograph
     (hrs)                          Graph %            (CFS)
 ------------------------------------------------------------------------
     1   0.083         95.911         17.950              2.581
     2   0.167        191.821         48.005              6.904
     3   0.250        287.732         16.296              2.344
     4   0.333        383.642          7.287              1.048
     5   0.417        479.553          4.148              0.597
     6   0.500        575.463          2.689              0.387
     7   0.583        671.374          1.732              0.249
     8   0.667        767.284          1.088              0.156
     9   0.750        863.195          0.807              0.116
                                 Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     3.40      0.349          0.309    (  0.314)        0.040
   2   0.17     4.70      0.483          0.309    (  0.435)        0.174
   3   0.25     4.70      0.483          0.309    (  0.435)        0.174
   4   0.33     5.10      0.524          0.309    (  0.472)        0.215
   5   0.42     5.80      0.596          0.309    (  0.536)        0.287
   6   0.50     5.90      0.606          0.309    (  0.546)        0.297
   7   0.58     7.10      0.729          0.309    (  0.656)        0.420
   8   0.67     8.70      0.894          0.309    (  0.804)        0.585
   9   0.75    13.20      1.356          0.309    (  1.220)        1.047
  10   0.83    29.70      3.051          0.309    (  2.746)        2.742
  11   0.92     7.70      0.791          0.309    (  0.712)        0.482
  12   1.00     4.00      0.411          0.309    (  0.370)        0.102
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     6.6
       Flood volume = Effective rainfall      0.55(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       0.7(Ac.Ft)
       Total soil loss =      0.31(In)
       Total soil loss =     0.367(Ac.Ft)
       Total rainfall =      0.86(In)
       Flood volume =       28345.2 Cubic Feet
       Total soil loss =       16001.1 Cubic Feet
       ---------------------------------------------------------------------
        Peak flow rate of this hydrograph =     23.747(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	7.5	15.0	22.5	30.0
0+ 5	0.0007	0.10	Q				
0+10	0.0057	0.73	Q				
0+15	0.0178	1.75	VQ				
0+20	0.0330	2.21	Q				
0+25	0.0525	2.84	Q				
0+30	0.0770	3.56	Q				
0+35	0.1061	4.22	QV				
0+40	0.1450	5.66	QV				
0+45	0.2027	8.37	QV				
0+50	0.3164	16.52		V	Q		
0+55	0.4800	23.75			V	Q	
1+ 0	0.5611	11.78		Q		V	
1+ 5	0.6007	5.75	Q			V	
1+10	0.6216	3.03	Q			V	
1+15	0.6344	1.86	Q			V	
1+20	0.6424	1.16	Q			V	
1+25	0.6473	0.71	Q			V	
1+30	0.6501	0.42	Q			V	
1+35	0.6506	0.07	Q			V	
1+40	0.6507	0.01	Q			V	

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

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Study date 02/28/23 File: EXHYD310.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
10-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	0.96	13.70

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	2.23	31.82

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.960(In)
Area Averaged 100-Year Rainfall = 2.230(In)

Point rain (area averaged) = 1.482(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.482(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %

```
   14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  74.5      0.309     0.000        0.309       1.000      0.309
                                                 Sum (F) =   0.309
Area averaged mean soil loss (F) (In/Hr) =  0.309
Minimum soil loss rate ((In/Hr)) =  0.154
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)        Max   |   Low         (In/Hr)
   1   0.08     1.30      0.231       (  0.309)       0.208        0.023
   2   0.17     1.30      0.231       (  0.309)       0.208        0.023
   3   0.25     1.10      0.196       (  0.309)       0.176        0.020
   4   0.33     1.50      0.267       (  0.309)       0.240        0.027
   5   0.42     1.50      0.267       (  0.309)       0.240        0.027
   6   0.50     1.80      0.320       (  0.309)       0.288        0.032
   7   0.58     1.50      0.267       (  0.309)       0.240        0.027
   8   0.67     1.80      0.320       (  0.309)       0.288        0.032
   9   0.75     1.80      0.320       (  0.309)       0.288        0.032
  10   0.83     1.50      0.267       (  0.309)       0.240        0.027
  11   0.92     1.60      0.285       (  0.309)       0.256        0.028
  12   1.00     1.80      0.320       (  0.309)       0.288        0.032
  13   1.08     2.20      0.391          0.309    (  0.352)        0.082
  14   1.17     2.20      0.391          0.309    (  0.352)        0.082
  15   1.25     2.20      0.391          0.309    (  0.352)        0.082
  16   1.33     2.00      0.356          0.309    (  0.320)        0.047
  17   1.42     2.60      0.463          0.309    (  0.416)        0.154
  18   1.50     2.70      0.480          0.309    (  0.432)        0.171
  19   1.58     2.40      0.427          0.309    (  0.384)        0.118
  20   1.67     2.70      0.480          0.309    (  0.432)        0.171
  21   1.75     3.30      0.587          0.309    (  0.528)        0.278
  22   1.83     3.10      0.551          0.309    (  0.496)        0.243
  23   1.92     2.90      0.516          0.309    (  0.464)        0.207
  24   2.00     3.00      0.534          0.309    (  0.480)        0.225
  25   2.08     3.10      0.551          0.309    (  0.496)        0.243
  26   2.17     4.20      0.747          0.309    (  0.672)        0.438
  27   2.25     5.00      0.889          0.309    (  0.800)        0.581
  28   2.33     3.50      0.623          0.309    (  0.560)        0.314
  29   2.42     6.80      1.210          0.309    (  1.089)        0.901
```

```
30   2.50     7.30      1.299          0.309    (  1.169)        0.990
31   2.58     8.20      1.459          0.309    (  1.313)        1.150
32   2.67     5.90      1.050          0.309    (  0.945)        0.741
33   2.75     2.00      0.356          0.309    (  0.320)        0.047
34   2.83     1.80      0.320       (  0.309)       0.288        0.032
35   2.92     1.80      0.320       (  0.309)       0.288        0.032
36   3.00     0.60      0.107       (  0.309)       0.096        0.011
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =     7.7
      Flood volume = Effective rainfall      0.64(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       0.8(Ac.Ft)
      Total soil loss =      0.84(In)
      Total soil loss =     1.003(Ac.Ft)
      Total rainfall =      1.48(In)
      Flood volume =       33098.6 Cubic Feet
      Total soil loss =       43689.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     13.705(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        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0004      0.06  Q         |         |         |         |
  0+10       0.0019      0.22  Q         |         |         |         |
  0+15       0.0037      0.26  Q         |         |         |         |
  0+20       0.0057      0.28  Q         |         |         |         |
  0+25       0.0080      0.34  Q         |         |         |         |
  0+30       0.0106      0.37  Q         |         |         |         |
  0+35       0.0134      0.41  Q         |         |         |         |
  0+40       0.0162      0.40  Q         |         |         |         |
  0+45       0.0192      0.44  QV        |         |         |         |
  0+50       0.0222      0.43  QV        |         |         |         |
  0+55       0.0250      0.41  QV        |         |         |         |
  1+ 0       0.0279      0.42  QV        |         |         |         |
  1+ 5       0.0318      0.58  |Q        |         |         |         |
  1+10       0.0382      0.93  |QV       |         |         |         |
  1+15       0.0455      1.05  | Q       |         |         |         |
  1+20       0.0525      1.02  | Q       |         |         |         |
  1+25       0.0599      1.08  | QV      |         |         |         |
  1+30       0.0723      1.80  |  Q      |         |         |         |
  1+35       0.0861      2.01  |   Q     |         |         |         |
  1+40       0.0993      1.92  |  Q V    |         |         |         |
  1+45       0.1166      2.51  |    QV   |         |         |         |
  1+50       0.1391      3.27  |     QV  |         |         |         |
  1+55       0.1614      3.23  |     Q V |         |         |         |
  2+ 0       0.1827      3.09  |     Q  V|         |         |         |
  2+ 5       0.2049      3.22  |     Q   V         |         |         |
  2+10       0.2317      3.88  |      Q  | V       |         |         |
  2+15       0.2706      5.66  |         |Q  V     |         |         |
  2+20       0.3150      6.44  |         | Q   V   |         |         |
  2+25       0.3609      6.67  |         |  Q    V |         |         |
  2+30       0.4339     10.59  |         |         |QV       |         |
  2+35       0.5226     12.88  |         |         |    Q V  |         |
  2+40       0.6170     13.70  |         |         |      Q  | V       |
  2+45       0.6849      9.87  |         |        Q|         |     V   |
  2+50       0.7160      4.51  |        Q|         |         |      V  |
  2+55       0.7339      2.60  |    Q    |         |         |       V |
  3+ 0       0.7455      1.68  |  Q      |         |         |        V|
  3+ 5       0.7527      1.04  | Q       |         |         |        V|
  3+10       0.7566      0.58  |Q        |         |         |        V|
  3+15       0.7587      0.30  Q         |         |         |        V|
  3+20       0.7596      0.12  Q         |         |         |        V|
  3+25       0.7597      0.02  Q         |         |         |        V|
```

```
    3+30       0.7598      0.01  Q        |        |        |       V|
    3+35       0.7598      0.01  Q        |        |        |       V|
    3+40       0.7598      0.00  Q        |        |        |        V
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD610.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
10-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	1.42	20.26

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	3.15	44.95

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.420(In)
Area Averaged 100-Year Rainfall = 3.150(In)

Point rain (area averaged) = 2.132(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.132(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  74.5      0.309     0.000        0.309       1.000      0.309
                                                 Sum (F) =   0.309
Area averaged mean soil loss (F) (In/Hr) =  0.309
Minimum soil loss rate ((In/Hr)) =  0.154
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)        Max    |   Low        (In/Hr)
   1   0.08     0.50      0.128       (  0.309)       0.115        0.013
   2   0.17     0.60      0.153       (  0.309)       0.138        0.015
   3   0.25     0.60      0.153       (  0.309)       0.138        0.015
   4   0.33     0.60      0.153       (  0.309)       0.138        0.015
   5   0.42     0.60      0.153       (  0.309)       0.138        0.015
   6   0.50     0.70      0.179       (  0.309)       0.161        0.018
   7   0.58     0.70      0.179       (  0.309)       0.161        0.018
   8   0.67     0.70      0.179       (  0.309)       0.161        0.018
   9   0.75     0.70      0.179       (  0.309)       0.161        0.018
  10   0.83     0.70      0.179       (  0.309)       0.161        0.018
  11   0.92     0.70      0.179       (  0.309)       0.161        0.018
  12   1.00     0.80      0.205       (  0.309)       0.184        0.020
  13   1.08     0.80      0.205       (  0.309)       0.184        0.020
  14   1.17     0.80      0.205       (  0.309)       0.184        0.020
  15   1.25     0.80      0.205       (  0.309)       0.184        0.020
  16   1.33     0.80      0.205       (  0.309)       0.184        0.020
  17   1.42     0.80      0.205       (  0.309)       0.184        0.020
  18   1.50     0.80      0.205       (  0.309)       0.184        0.020
  19   1.58     0.80      0.205       (  0.309)       0.184        0.020
  20   1.67     0.80      0.205       (  0.309)       0.184        0.020
  21   1.75     0.80      0.205       (  0.309)       0.184        0.020
  22   1.83     0.80      0.205       (  0.309)       0.184        0.020
  23   1.92     0.80      0.205       (  0.309)       0.184        0.020
  24   2.00     0.90      0.230       (  0.309)       0.207        0.023
  25   2.08     0.80      0.205       (  0.309)       0.184        0.020
  26   2.17     0.90      0.230       (  0.309)       0.207        0.023
  27   2.25     0.90      0.230       (  0.309)       0.207        0.023
  28   2.33     0.90      0.230       (  0.309)       0.207        0.023
  29   2.42     0.90      0.230       (  0.309)       0.207        0.023
```

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30   2.50     0.90      0.230       (  0.309)       0.207        0.023
31   2.58     0.90      0.230       (  0.309)       0.207        0.023
32   2.67     0.90      0.230       (  0.309)       0.207        0.023
33   2.75     1.00      0.256       (  0.309)       0.230        0.026
34   2.83     1.00      0.256       (  0.309)       0.230        0.026
35   2.92     1.00      0.256       (  0.309)       0.230        0.026
36   3.00     1.00      0.256       (  0.309)       0.230        0.026
37   3.08     1.00      0.256       (  0.309)       0.230        0.026
38   3.17     1.10      0.281       (  0.309)       0.253        0.028
39   3.25     1.10      0.281       (  0.309)       0.253        0.028
40   3.33     1.10      0.281       (  0.309)       0.253        0.028
41   3.42     1.20      0.307       (  0.309)       0.276        0.031
42   3.50     1.30      0.333       (  0.309)       0.299        0.033
43   3.58     1.40      0.358          0.309    (  0.322)        0.049
44   3.67     1.40      0.358          0.309    (  0.322)        0.049
45   3.75     1.50      0.384          0.309    (  0.345)        0.075
46   3.83     1.50      0.384          0.309    (  0.345)        0.075
47   3.92     1.60      0.409          0.309    (  0.368)        0.100
48   4.00     1.60      0.409          0.309    (  0.368)        0.100
49   4.08     1.70      0.435          0.309    (  0.391)        0.126
50   4.17     1.80      0.460          0.309    (  0.414)        0.152
51   4.25     1.90      0.486          0.309    (  0.437)        0.177
52   4.33     2.00      0.512          0.309    (  0.460)        0.203
53   4.42     2.10      0.537          0.309    (  0.483)        0.228
54   4.50     2.10      0.537          0.309    (  0.483)        0.228
55   4.58     2.20      0.563          0.309    (  0.506)        0.254
56   4.67     2.30      0.588          0.309    (  0.529)        0.279
57   4.75     2.40      0.614          0.309    (  0.553)        0.305
58   4.83     2.40      0.614          0.309    (  0.553)        0.305
59   4.92     2.50      0.639          0.309    (  0.576)        0.331
60   5.00     2.60      0.665          0.309    (  0.599)        0.356
61   5.08     3.10      0.793          0.309    (  0.714)        0.484
62   5.17     3.60      0.921          0.309    (  0.829)        0.612
63   5.25     3.90      0.998          0.309    (  0.898)        0.689
64   5.33     4.20      1.074          0.309    (  0.967)        0.765
65   5.42     4.70      1.202          0.309    (  1.082)        0.893
66   5.50     5.60      1.432          0.309    (  1.289)        1.124
67   5.58     1.90      0.486          0.309    (  0.437)        0.177
68   5.67     0.90      0.230       (  0.309)       0.207        0.023
69   5.75     0.60      0.153       (  0.309)       0.138        0.015
70   5.83     0.50      0.128       (  0.309)       0.115        0.013
71   5.92     0.30      0.077       (  0.309)       0.069        0.008
72   6.00     0.20      0.051       (  0.309)       0.046        0.005
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     9.1
      Flood volume = Effective rainfall      0.76(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       0.9(Ac.Ft)
      Total soil loss =      1.37(In)
      Total soil loss =     1.632(Ac.Ft)
      Total rainfall =      2.13(In)
      Flood volume =       39320.0 Cubic Feet
      Total soil loss =       71098.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     12.318(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        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0011      0.13  Q         |         |         |         |
  0+15       0.0023      0.18  Q         |         |         |         |
  0+20       0.0037      0.20  Q         |         |         |         |
  0+25       0.0051      0.21  Q         |         |         |         |
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0+30       0.0066      0.22  Q         |         |         |         |
0+35       0.0082      0.24  Q         |         |         |         |
0+40       0.0100      0.25  Q         |         |         |         |
0+45       0.0117      0.25  Q         |         |         |         |
0+50       0.0135      0.26  Q         |         |         |         |
0+55       0.0152      0.26  Q         |         |         |         |
1+ 0       0.0170      0.26  Q         |         |         |         |
1+ 5       0.0190      0.28  Q         |         |         |         |
1+10       0.0210      0.29  Q         |         |         |         |
1+15       0.0230      0.29  QV        |         |         |         |
1+20       0.0250      0.29  QV        |         |         |         |
1+25       0.0270      0.29  QV        |         |         |         |
1+30       0.0290      0.29  QV        |         |         |         |
1+35       0.0310      0.29  QV        |         |         |         |
1+40       0.0331      0.29  QV        |         |         |         |
1+45       0.0351      0.29  QV        |         |         |         |
1+50       0.0371      0.29  QV        |         |         |         |
1+55       0.0391      0.29  QV        |         |         |         |
2+ 0       0.0412      0.30  QV        |         |         |         |
2+ 5       0.0434      0.31  QV        |         |         |         |
2+10       0.0455      0.31  Q V       |         |         |         |
2+15       0.0477      0.32  Q V       |         |         |         |
2+20       0.0499      0.33  Q V       |         |         |         |
2+25       0.0522      0.33  Q V       |         |         |         |
2+30       0.0545      0.33  Q V       |         |         |         |
2+35       0.0568      0.33  Q V       |         |         |         |
2+40       0.0590      0.33  Q V       |         |         |         |
2+45       0.0614      0.34  Q V       |         |         |         |
2+50       0.0638      0.36  Q V       |         |         |         |
2+55       0.0663      0.36  Q V       |         |         |         |
3+ 0       0.0688      0.36  Q  V      |         |         |         |
3+ 5       0.0713      0.37  Q  V      |         |         |         |
3+10       0.0739      0.37  Q  V      |         |         |         |
3+15       0.0766      0.39  Q  V      |         |         |         |
3+20       0.0793      0.40  Q  V      |         |         |         |
3+25       0.0821      0.41  Q  V      |         |         |         |
3+30       0.0851      0.43  Q  V      |         |         |         |
3+35       0.0886      0.50  Q  V      |         |         |         |
3+40       0.0928      0.62  |Q  V      |         |         |         |
3+45       0.0978      0.73  |Q  V      |         |         |         |
3+50       0.1042      0.92  |Q  V      |         |         |         |
3+55       0.1115      1.06  | Q V      |         |         |         |
4+ 0       0.1202      1.27  | Q  V     |         |         |         |
4+ 5       0.1300      1.42  | Q  V     |         |         |         |
4+10       0.1417      1.70  |  Q  V    |         |         |         |
4+15       0.1557      2.03  |   Q V    |         |         |         |
4+20       0.1720      2.37  |   Q  V   |         |         |         |
4+25       0.1907      2.72  |    Q  V  |         |         |         |
4+30       0.2115      3.02  |     Q  V|         |         |         |
4+35       0.2336      3.20  |     Q   V         |         |         |
4+40       0.2577      3.51  |      Q  |V        |         |         |
4+45       0.2842      3.85  |      Q  | V       |         |         |
4+50       0.3127      4.14  |       Q |  V      |         |         |
4+55       0.3425      4.32  |       Q |    V    |         |         |
5+ 0       0.3743      4.62  |        Q|     V   |         |         |
5+ 5       0.4102      5.22  |         Q       V |         |         |
5+10       0.4553      6.54  |         |  Q      V         |         |
5+15       0.5102      7.98  |         |    Q    | V       |         |
5+20       0.5734      9.17  |         |       Q |    V    |         |
5+25       0.6453     10.44  |         |         Q       V |         |
5+30       0.7302     12.32  |         |         |   Q     | V       |
5+35       0.8127     11.98  |         |         |  Q      |     V   |
5+40       0.8529      5.85  |         |Q        |         |      V  |
5+45       0.8732      2.94  |    Q    |         |         |       V |
5+50       0.8854      1.76  |  Q      |         |         |        V|
5+55       0.8932      1.13  | Q       |         |         |        V|
6+ 0       0.8980      0.70  |Q        |         |         |        V|
6+ 5       0.9008      0.41  Q         |         |         |        V|
6+10       0.9022      0.20  Q         |         |         |        V|
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    6+15       0.9025      0.04  Q        |         |         |        V|
    6+20       0.9026      0.01  Q        |         |         |        V|
    6+25       0.9026      0.01  Q        |         |         |        V|
    6+30       0.9026      0.00  Q        |         |         |        V|
    6+35       0.9027      0.00  Q        |         |         |        V|
    6+40       0.9027      0.00  Q        |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD2410.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
10-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	2.65	37.82

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	6.95	99.18

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.650(In)
Area Averaged 100-Year Rainfall = 6.950(In)

Point rain (area averaged) = 4.419(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 4.419(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  74.5      0.309     0.000        0.309       1.000      0.309
                                                 Sum (F) =   0.309
Area averaged mean soil loss (F) (In/Hr) =  0.309
Minimum soil loss rate ((In/Hr)) =  0.154
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)        Max   |   Low         (In/Hr)
   1   0.08     0.07      0.035       (  0.548)       0.032        0.004
   2   0.17     0.07      0.035       (  0.545)       0.032        0.004
   3   0.25     0.07      0.035       (  0.543)       0.032        0.004
   4   0.33     0.10      0.053       (  0.541)       0.048        0.005
   5   0.42     0.10      0.053       (  0.539)       0.048        0.005
   6   0.50     0.10      0.053       (  0.537)       0.048        0.005
   7   0.58     0.10      0.053       (  0.535)       0.048        0.005
   8   0.67     0.10      0.053       (  0.533)       0.048        0.005
   9   0.75     0.10      0.053       (  0.531)       0.048        0.005
  10   0.83     0.13      0.071       (  0.529)       0.064        0.007
  11   0.92     0.13      0.071       (  0.527)       0.064        0.007
  12   1.00     0.13      0.071       (  0.525)       0.064        0.007
  13   1.08     0.10      0.053       (  0.522)       0.048        0.005
  14   1.17     0.10      0.053       (  0.520)       0.048        0.005
  15   1.25     0.10      0.053       (  0.518)       0.048        0.005
  16   1.33     0.10      0.053       (  0.516)       0.048        0.005
  17   1.42     0.10      0.053       (  0.514)       0.048        0.005
  18   1.50     0.10      0.053       (  0.512)       0.048        0.005
  19   1.58     0.10      0.053       (  0.510)       0.048        0.005
  20   1.67     0.10      0.053       (  0.508)       0.048        0.005
  21   1.75     0.10      0.053       (  0.506)       0.048        0.005
  22   1.83     0.13      0.071       (  0.504)       0.064        0.007
  23   1.92     0.13      0.071       (  0.502)       0.064        0.007
  24   2.00     0.13      0.071       (  0.500)       0.064        0.007
  25   2.08     0.13      0.071       (  0.498)       0.064        0.007
  26   2.17     0.13      0.071       (  0.496)       0.064        0.007
  27   2.25     0.13      0.071       (  0.494)       0.064        0.007
  28   2.33     0.13      0.071       (  0.492)       0.064        0.007
  29   2.42     0.13      0.071       (  0.490)       0.064        0.007
```

30	2.50	0.13	0.071	(0.488)	0.064	0.007
31	2.58	0.17	0.088	(0.486)	0.080	0.009
32	2.67	0.17	0.088	(0.484)	0.080	0.009
33	2.75	0.17	0.088	(0.482)	0.080	0.009
34	2.83	0.17	0.088	(0.480)	0.080	0.009
35	2.92	0.17	0.088	(0.478)	0.080	0.009
36	3.00	0.17	0.088	(0.476)	0.080	0.009
37	3.08	0.17	0.088	(0.474)	0.080	0.009
38	3.17	0.17	0.088	(0.472)	0.080	0.009
39	3.25	0.17	0.088	(0.470)	0.080	0.009
40	3.33	0.17	0.088	(0.468)	0.080	0.009
41	3.42	0.17	0.088	(0.466)	0.080	0.009
42	3.50	0.17	0.088	(0.464)	0.080	0.009
43	3.58	0.17	0.088	(0.462)	0.080	0.009
44	3.67	0.17	0.088	(0.460)	0.080	0.009
45	3.75	0.17	0.088	(0.458)	0.080	0.009
46	3.83	0.20	0.106	(0.456)	0.095	0.011
47	3.92	0.20	0.106	(0.454)	0.095	0.011
48	4.00	0.20	0.106	(0.453)	0.095	0.011
49	4.08	0.20	0.106	(0.451)	0.095	0.011
50	4.17	0.20	0.106	(0.449)	0.095	0.011
51	4.25	0.20	0.106	(0.447)	0.095	0.011
52	4.33	0.23	0.124	(0.445)	0.111	0.012
53	4.42	0.23	0.124	(0.443)	0.111	0.012
54	4.50	0.23	0.124	(0.441)	0.111	0.012
55	4.58	0.23	0.124	(0.439)	0.111	0.012
56	4.67	0.23	0.124	(0.437)	0.111	0.012
57	4.75	0.23	0.124	(0.435)	0.111	0.012
58	4.83	0.27	0.141	(0.434)	0.127	0.014
59	4.92	0.27	0.141	(0.432)	0.127	0.014
60	5.00	0.27	0.141	(0.430)	0.127	0.014
61	5.08	0.20	0.106	(0.428)	0.095	0.011
62	5.17	0.20	0.106	(0.426)	0.095	0.011
63	5.25	0.20	0.106	(0.424)	0.095	0.011
64	5.33	0.23	0.124	(0.422)	0.111	0.012
65	5.42	0.23	0.124	(0.421)	0.111	0.012
66	5.50	0.23	0.124	(0.419)	0.111	0.012
67	5.58	0.27	0.141	(0.417)	0.127	0.014
68	5.67	0.27	0.141	(0.415)	0.127	0.014
69	5.75	0.27	0.141	(0.413)	0.127	0.014
70	5.83	0.27	0.141	(0.411)	0.127	0.014
71	5.92	0.27	0.141	(0.410)	0.127	0.014
72	6.00	0.27	0.141	(0.408)	0.127	0.014
73	6.08	0.30	0.159	(0.406)	0.143	0.016
74	6.17	0.30	0.159	(0.404)	0.143	0.016
75	6.25	0.30	0.159	(0.402)	0.143	0.016
76	6.33	0.30	0.159	(0.401)	0.143	0.016
77	6.42	0.30	0.159	(0.399)	0.143	0.016
78	6.50	0.30	0.159	(0.397)	0.143	0.016
79	6.58	0.33	0.177	(0.395)	0.159	0.018
80	6.67	0.33	0.177	(0.393)	0.159	0.018
81	6.75	0.33	0.177	(0.392)	0.159	0.018
82	6.83	0.33	0.177	(0.390)	0.159	0.018
83	6.92	0.33	0.177	(0.388)	0.159	0.018
84	7.00	0.33	0.177	(0.386)	0.159	0.018
85	7.08	0.33	0.177	(0.385)	0.159	0.018
86	7.17	0.33	0.177	(0.383)	0.159	0.018
87	7.25	0.33	0.177	(0.381)	0.159	0.018
88	7.33	0.37	0.194	(0.379)	0.175	0.019
89	7.42	0.37	0.194	(0.378)	0.175	0.019
90	7.50	0.37	0.194	(0.376)	0.175	0.019
91	7.58	0.40	0.212	(0.374)	0.191	0.021
92	7.67	0.40	0.212	(0.372)	0.191	0.021
93	7.75	0.40	0.212	(0.371)	0.191	0.021
94	7.83	0.43	0.230	(0.369)	0.207	0.023
95	7.92	0.43	0.230	(0.367)	0.207	0.023
96	8.00	0.43	0.230	(0.366)	0.207	0.023
97	8.08	0.50	0.265	(0.364)	0.239	0.027
98	8.17	0.50	0.265	(0.362)	0.239	0.027

99	8.25	0.50	0.265	(	0.360)	0.239		0.027
100	8.33	0.50	0.265	(	0.359)	0.239		0.027
101	8.42	0.50	0.265	(	0.357)	0.239		0.027
102	8.50	0.50	0.265	(	0.355)	0.239		0.027
103	8.58	0.53	0.283	(	0.354)	0.255		0.028
104	8.67	0.53	0.283	(	0.352)	0.255		0.028
105	8.75	0.53	0.283	(	0.350)	0.255		0.028
106	8.83	0.57	0.300	(	0.349)	0.270		0.030
107	8.92	0.57	0.300	(	0.347)	0.270		0.030
108	9.00	0.57	0.300	(	0.346)	0.270		0.030
109	9.08	0.63	0.336	(	0.344)	0.302		0.034
110	9.17	0.63	0.336	(	0.342)	0.302		0.034
111	9.25	0.63	0.336	(	0.341)	0.302		0.034
112	9.33	0.67	0.354	(	0.339)	0.318		0.035
113	9.42	0.67	0.354	(	0.337)	0.318		0.035
114	9.50	0.67	0.354	(	0.336)	0.318		0.035
115	9.58	0.70	0.371	(	0.334)	0.334		0.037
116	9.67	0.70	0.371		0.333	(	0.334)	0.039
117	9.75	0.70	0.371		0.331	(	0.334)	0.040
118	9.83	0.73	0.389		0.329	(	0.350)	0.059
119	9.92	0.73	0.389		0.328	(	0.350)	0.061
120	10.00	0.73	0.389		0.326	(	0.350)	0.063
121	10.08	0.50	0.265	(	0.325)	0.239		0.027
122	10.17	0.50	0.265	(	0.323)	0.239		0.027
123	10.25	0.50	0.265	(	0.321)	0.239		0.027
124	10.33	0.50	0.265	(	0.320)	0.239		0.027
125	10.42	0.50	0.265	(	0.318)	0.239		0.027
126	10.50	0.50	0.265	(	0.317)	0.239		0.027
127	10.58	0.67	0.354		0.315	(	0.318)	0.038
128	10.67	0.67	0.354		0.314	(	0.318)	0.040
129	10.75	0.67	0.354		0.312	(	0.318)	0.041
130	10.83	0.67	0.354		0.311	(	0.318)	0.043
131	10.92	0.67	0.354		0.309	(	0.318)	0.044
132	11.00	0.67	0.354		0.308	(	0.318)	0.046
133	11.08	0.63	0.336	(	0.306)	0.302		0.034
134	11.17	0.63	0.336	(	0.305)	0.302		0.034
135	11.25	0.63	0.336	(	0.303)	0.302		0.034
136	11.33	0.63	0.336		0.302	(	0.302)	0.034
137	11.42	0.63	0.336		0.300	(	0.302)	0.036
138	11.50	0.63	0.336		0.299	(	0.302)	0.037
139	11.58	0.57	0.300	(	0.297)	0.270		0.030
140	11.67	0.57	0.300	(	0.296)	0.270		0.030
141	11.75	0.57	0.300	(	0.294)	0.270		0.030
142	11.83	0.60	0.318	(	0.293)	0.286		0.032
143	11.92	0.60	0.318	(	0.291)	0.286		0.032
144	12.00	0.60	0.318	(	0.290)	0.286		0.032
145	12.08	0.83	0.442		0.288	(	0.398)	0.154
146	12.17	0.83	0.442		0.287	(	0.398)	0.155
147	12.25	0.83	0.442		0.285	(	0.398)	0.156
148	12.33	0.87	0.460		0.284	(	0.414)	0.176
149	12.42	0.87	0.460		0.283	(	0.414)	0.177
150	12.50	0.87	0.460		0.281	(	0.414)	0.178
151	12.58	0.93	0.495		0.280	(	0.445)	0.215
152	12.67	0.93	0.495		0.278	(	0.445)	0.217
153	12.75	0.93	0.495		0.277	(	0.445)	0.218
154	12.83	0.97	0.513		0.276	(	0.461)	0.237
155	12.92	0.97	0.513		0.274	(	0.461)	0.238
156	13.00	0.97	0.513		0.273	(	0.461)	0.240
157	13.08	1.13	0.601		0.271	(	0.541)	0.330
158	13.17	1.13	0.601		0.270	(	0.541)	0.331
159	13.25	1.13	0.601		0.269	(	0.541)	0.332
160	13.33	1.13	0.601		0.267	(	0.541)	0.334
161	13.42	1.13	0.601		0.266	(	0.541)	0.335
162	13.50	1.13	0.601		0.265	(	0.541)	0.336
163	13.58	0.77	0.407		0.263	(	0.366)	0.143
164	13.67	0.77	0.407		0.262	(	0.366)	0.145
165	13.75	0.77	0.407		0.261	(	0.366)	0.146
166	13.83	0.77	0.407		0.259	(	0.366)	0.147
167	13.92	0.77	0.407		0.258	(	0.366)	0.149

168	14.00	0.77	0.407		0.257	(0.366)		0.150
169	14.08	0.90	0.477		0.255	(0.430)		0.222
170	14.17	0.90	0.477		0.254	(0.430)		0.223
171	14.25	0.90	0.477		0.253	(0.430)		0.225
172	14.33	0.87	0.460		0.251	(0.414)		0.208
173	14.42	0.87	0.460		0.250	(0.414)		0.209
174	14.50	0.87	0.460		0.249	(0.414)		0.211
175	14.58	0.87	0.460		0.248	(0.414)		0.212
176	14.67	0.87	0.460		0.246	(0.414)		0.213
177	14.75	0.87	0.460		0.245	(0.414)		0.215
178	14.83	0.83	0.442		0.244	(0.398)		0.198
179	14.92	0.83	0.442		0.243	(0.398)		0.199
180	15.00	0.83	0.442		0.241	(0.398)		0.201
181	15.08	0.80	0.424		0.240	(0.382)		0.184
182	15.17	0.80	0.424		0.239	(0.382)		0.185
183	15.25	0.80	0.424		0.238	(0.382)		0.187
184	15.33	0.77	0.407		0.236	(0.366)		0.170
185	15.42	0.77	0.407		0.235	(0.366)		0.171
186	15.50	0.77	0.407		0.234	(0.366)		0.173
187	15.58	0.63	0.336		0.233	(0.302)		0.103
188	15.67	0.63	0.336		0.232	(0.302)		0.104
189	15.75	0.63	0.336		0.230	(0.302)		0.105
190	15.83	0.63	0.336		0.229	(0.302)		0.107
191	15.92	0.63	0.336		0.228	(0.302)		0.108
192	16.00	0.63	0.336		0.227	(0.302)		0.109
193	16.08	0.13	0.071	(0.226)		0.064		0.007
194	16.17	0.13	0.071	(0.225)		0.064		0.007
195	16.25	0.13	0.071	(0.223)		0.064		0.007
196	16.33	0.13	0.071	(0.222)		0.064		0.007
197	16.42	0.13	0.071	(0.221)		0.064		0.007
198	16.50	0.13	0.071	(0.220)		0.064		0.007
199	16.58	0.10	0.053	(0.219)		0.048		0.005
200	16.67	0.10	0.053	(0.218)		0.048		0.005
201	16.75	0.10	0.053	(0.217)		0.048		0.005
202	16.83	0.10	0.053	(0.216)		0.048		0.005
203	16.92	0.10	0.053	(0.214)		0.048		0.005
204	17.00	0.10	0.053	(0.213)		0.048		0.005
205	17.08	0.17	0.088	(0.212)		0.080		0.009
206	17.17	0.17	0.088	(0.211)		0.080		0.009
207	17.25	0.17	0.088	(0.210)		0.080		0.009
208	17.33	0.17	0.088	(0.209)		0.080		0.009
209	17.42	0.17	0.088	(0.208)		0.080		0.009
210	17.50	0.17	0.088	(0.207)		0.080		0.009
211	17.58	0.17	0.088	(0.206)		0.080		0.009
212	17.67	0.17	0.088	(0.205)		0.080		0.009
213	17.75	0.17	0.088	(0.204)		0.080		0.009
214	17.83	0.13	0.071	(0.203)		0.064		0.007
215	17.92	0.13	0.071	(0.202)		0.064		0.007
216	18.00	0.13	0.071	(0.201)		0.064		0.007
217	18.08	0.13	0.071	(0.200)		0.064		0.007
218	18.17	0.13	0.071	(0.199)		0.064		0.007
219	18.25	0.13	0.071	(0.198)		0.064		0.007
220	18.33	0.13	0.071	(0.197)		0.064		0.007
221	18.42	0.13	0.071	(0.196)		0.064		0.007
222	18.50	0.13	0.071	(0.195)		0.064		0.007
223	18.58	0.10	0.053	(0.194)		0.048		0.005
224	18.67	0.10	0.053	(0.193)		0.048		0.005
225	18.75	0.10	0.053	(0.192)		0.048		0.005
226	18.83	0.07	0.035	(0.191)		0.032		0.004
227	18.92	0.07	0.035	(0.190)		0.032		0.004
228	19.00	0.07	0.035	(0.190)		0.032		0.004
229	19.08	0.10	0.053	(0.189)		0.048		0.005
230	19.17	0.10	0.053	(0.188)		0.048		0.005
231	19.25	0.10	0.053	(0.187)		0.048		0.005
232	19.33	0.13	0.071	(0.186)		0.064		0.007
233	19.42	0.13	0.071	(0.185)		0.064		0.007
234	19.50	0.13	0.071	(0.184)		0.064		0.007
235	19.58	0.10	0.053	(0.183)		0.048		0.005
236	19.67	0.10	0.053	(0.183)		0.048		0.005

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237  19.75     0.10      0.053       (  0.182)       0.048        0.005
238  19.83     0.07      0.035       (  0.181)       0.032        0.004
239  19.92     0.07      0.035       (  0.180)       0.032        0.004
240  20.00     0.07      0.035       (  0.179)       0.032        0.004
241  20.08     0.10      0.053       (  0.179)       0.048        0.005
242  20.17     0.10      0.053       (  0.178)       0.048        0.005
243  20.25     0.10      0.053       (  0.177)       0.048        0.005
244  20.33     0.10      0.053       (  0.176)       0.048        0.005
245  20.42     0.10      0.053       (  0.176)       0.048        0.005
246  20.50     0.10      0.053       (  0.175)       0.048        0.005
247  20.58     0.10      0.053       (  0.174)       0.048        0.005
248  20.67     0.10      0.053       (  0.173)       0.048        0.005
249  20.75     0.10      0.053       (  0.173)       0.048        0.005
250  20.83     0.07      0.035       (  0.172)       0.032        0.004
251  20.92     0.07      0.035       (  0.171)       0.032        0.004
252  21.00     0.07      0.035       (  0.170)       0.032        0.004
253  21.08     0.10      0.053       (  0.170)       0.048        0.005
254  21.17     0.10      0.053       (  0.169)       0.048        0.005
255  21.25     0.10      0.053       (  0.168)       0.048        0.005
256  21.33     0.07      0.035       (  0.168)       0.032        0.004
257  21.42     0.07      0.035       (  0.167)       0.032        0.004
258  21.50     0.07      0.035       (  0.167)       0.032        0.004
259  21.58     0.10      0.053       (  0.166)       0.048        0.005
260  21.67     0.10      0.053       (  0.165)       0.048        0.005
261  21.75     0.10      0.053       (  0.165)       0.048        0.005
262  21.83     0.07      0.035       (  0.164)       0.032        0.004
263  21.92     0.07      0.035       (  0.164)       0.032        0.004
264  22.00     0.07      0.035       (  0.163)       0.032        0.004
265  22.08     0.10      0.053       (  0.163)       0.048        0.005
266  22.17     0.10      0.053       (  0.162)       0.048        0.005
267  22.25     0.10      0.053       (  0.162)       0.048        0.005
268  22.33     0.07      0.035       (  0.161)       0.032        0.004
269  22.42     0.07      0.035       (  0.161)       0.032        0.004
270  22.50     0.07      0.035       (  0.160)       0.032        0.004
271  22.58     0.07      0.035       (  0.160)       0.032        0.004
272  22.67     0.07      0.035       (  0.159)       0.032        0.004
273  22.75     0.07      0.035       (  0.159)       0.032        0.004
274  22.83     0.07      0.035       (  0.158)       0.032        0.004
275  22.92     0.07      0.035       (  0.158)       0.032        0.004
276  23.00     0.07      0.035       (  0.157)       0.032        0.004
277  23.08     0.07      0.035       (  0.157)       0.032        0.004
278  23.17     0.07      0.035       (  0.157)       0.032        0.004
279  23.25     0.07      0.035       (  0.156)       0.032        0.004
280  23.33     0.07      0.035       (  0.156)       0.032        0.004
281  23.42     0.07      0.035       (  0.156)       0.032        0.004
282  23.50     0.07      0.035       (  0.156)       0.032        0.004
283  23.58     0.07      0.035       (  0.155)       0.032        0.004
284  23.67     0.07      0.035       (  0.155)       0.032        0.004
285  23.75     0.07      0.035       (  0.155)       0.032        0.004
286  23.83     0.07      0.035       (  0.155)       0.032        0.004
287  23.92     0.07      0.035       (  0.155)       0.032        0.004
288  24.00     0.07      0.035       (  0.154)       0.032        0.004
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    12.7
       Flood volume = Effective rainfall      1.06(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       1.3(Ac.Ft)
       Total soil loss =      3.36(In)
       Total soil loss =     3.994(Ac.Ft)
       Total rainfall =      4.42(In)
       Flood volume =       54921.2 Cubic Feet
       Total soil loss =      173979.9 Cubic Feet
       ---------------------------------------------------------------------
        Peak flow rate of this hydrograph =      4.764(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))
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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	0.0003	0.03	Q				
0+15	0.0006	0.04	Q				
0+20	0.0009	0.05	Q				
0+25	0.0014	0.06	Q				
0+30	0.0019	0.07	Q				
0+35	0.0024	0.07	Q				
0+40	0.0029	0.07	Q				
0+45	0.0034	0.08	Q				
0+50	0.0039	0.08	Q				
0+55	0.0046	0.09	Q				
1+ 0	0.0052	0.10	Q				
1+ 5	0.0059	0.09	Q				
1+10	0.0065	0.08	Q				
1+15	0.0070	0.08	Q				
1+20	0.0076	0.08	Q				
1+25	0.0081	0.08	Q				
1+30	0.0086	0.08	Q				
1+35	0.0092	0.08	Q				
1+40	0.0097	0.08	Q				
1+45	0.0102	0.08	Q				
1+50	0.0108	0.08	Q				
1+55	0.0114	0.09	Q				
2+ 0	0.0121	0.10	Q				
2+ 5	0.0128	0.10	Q				
2+10	0.0134	0.10	Q				
2+15	0.0141	0.10	Q				
2+20	0.0148	0.10	Q				
2+25	0.0155	0.10	Q				
2+30	0.0162	0.10	Q				
2+35	0.0170	0.11	Q				
2+40	0.0178	0.12	Q				
2+45	0.0186	0.12	Q				
2+50	0.0195	0.12	Q				
2+55	0.0204	0.13	Q				
3+ 0	0.0212	0.13	Q				
3+ 5	0.0221	0.13	Q				
3+10	0.0230	0.13	Q				
3+15	0.0238	0.13	Q				
3+20	0.0247	0.13	Q				
3+25	0.0256	0.13	Q				
3+30	0.0265	0.13	Q				
3+35	0.0274	0.13	Q				
3+40	0.0282	0.13	Q				
3+45	0.0291	0.13	Q				
3+50	0.0300	0.13	Q				
3+55	0.0310	0.14	Q				
4+ 0	0.0320	0.15	QV				
4+ 5	0.0331	0.15	QV				
4+10	0.0341	0.15	QV				
4+15	0.0351	0.15	QV				
4+20	0.0362	0.16	QV				
4+25	0.0374	0.17	QV				
4+30	0.0386	0.17	QV				
4+35	0.0398	0.18	QV				
4+40	0.0410	0.18	QV				
4+45	0.0422	0.18	QV				
4+50	0.0435	0.18	QV				
4+55	0.0448	0.19	QV				
5+ 0	0.0462	0.20	QV				
5+ 5	0.0475	0.19	QV				
5+10	0.0487	0.17	QV				
5+15	0.0498	0.16	QV				
5+20	0.0509	0.16	QV				
5+25	0.0521	0.17	QV				

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 5+30      0.0533      0.18  QV       |        |        |        |
 5+35      0.0545      0.18  QV       |        |        |        |
 5+40      0.0559      0.19  QV       |        |        |        |
 5+45      0.0572      0.20  QV       |        |        |        |
 5+50      0.0586      0.20  QV       |        |        |        |
 5+55      0.0600      0.20  QV       |        |        |        |
 6+ 0      0.0614      0.20  QV       |        |        |        |
 6+ 5      0.0628      0.21  QV       |        |        |        |
 6+10      0.0643      0.22  Q V      |        |        |        |
 6+15      0.0659      0.22  Q V      |        |        |        |
 6+20      0.0674      0.23  Q V      |        |        |        |
 6+25      0.0690      0.23  Q V      |        |        |        |
 6+30      0.0706      0.23  Q V      |        |        |        |
 6+35      0.0722      0.23  Q V      |        |        |        |
 6+40      0.0739      0.25  Q V      |        |        |        |
 6+45      0.0756      0.25  Q V      |        |        |        |
 6+50      0.0773      0.25  |QV      |        |        |        |
 6+55      0.0791      0.25  |QV      |        |        |        |
 7+ 0      0.0808      0.25  |QV      |        |        |        |
 7+ 5      0.0826      0.25  |QV      |        |        |        |
 7+10      0.0843      0.25  |QV      |        |        |        |
 7+15      0.0861      0.25  |QV      |        |        |        |
 7+20      0.0878      0.26  |QV      |        |        |        |
 7+25      0.0897      0.27  |QV      |        |        |        |
 7+30      0.0916      0.28  |QV      |        |        |        |
 7+35      0.0935      0.28  |QV      |        |        |        |
 7+40      0.0956      0.29  |Q V     |        |        |        |
 7+45      0.0976      0.30  |Q V     |        |        |        |
 7+50      0.0998      0.31  |Q V     |        |        |        |
 7+55      0.1020      0.32  |Q V     |        |        |        |
 8+ 0      0.1042      0.33  |Q V     |        |        |        |
 8+ 5      0.1065      0.34  |Q V     |        |        |        |
 8+10      0.1090      0.36  |Q V     |        |        |        |
 8+15      0.1116      0.37  |Q V     |        |        |        |
 8+20      0.1142      0.38  |Q V     |        |        |        |
 8+25      0.1168      0.38  |Q V     |        |        |        |
 8+30      0.1194      0.38  |Q V     |        |        |        |
 8+35      0.1220      0.39  |Q V     |        |        |        |
 8+40      0.1248      0.40  |Q V     |        |        |        |
 8+45      0.1275      0.40  |Q  V    |        |        |        |
 8+50      0.1304      0.41  |Q  V    |        |        |        |
 8+55      0.1333      0.42  |Q  V    |        |        |        |
 9+ 0      0.1362      0.43  |Q  V    |        |        |        |
 9+ 5      0.1392      0.44  |Q  V    |        |        |        |
 9+10      0.1424      0.46  |Q  V    |        |        |        |
 9+15      0.1457      0.47  |Q  V    |        |        |        |
 9+20      0.1490      0.48  |Q  V    |        |        |        |
 9+25      0.1524      0.50  |Q  V    |        |        |        |
 9+30      0.1559      0.50  | Q V    |        |        |        |
 9+35      0.1594      0.51  | Q  V   |        |        |        |
 9+40      0.1630      0.53  | Q  V   |        |        |        |
 9+45      0.1668      0.55  | Q  V   |        |        |        |
 9+50      0.1710      0.61  | Q  V   |        |        |        |
 9+55      0.1762      0.76  |  Q V   |        |        |        |
10+ 0      0.1819      0.82  |  Q V   |        |        |        |
10+ 5      0.1872      0.76  |  Q V   |        |        |        |
10+10      0.1908      0.53  | Q   V  |        |        |        |
10+15      0.1940      0.46  |Q    V  |        |        |        |
10+20      0.1969      0.43  |Q    V  |        |        |        |
10+25      0.1998      0.41  |Q    V  |        |        |        |
10+30      0.2025      0.40  |Q    V  |        |        |        |
10+35      0.2054      0.42  |Q    V  |        |        |        |
10+40      0.2089      0.50  | Q   V  |        |        |        |
10+45      0.2126      0.54  | Q   V  |        |        |        |
10+50      0.2165      0.57  | Q   V  |        |        |        |
10+55      0.2206      0.60  | Q   V  |        |        |        |
11+ 0      0.2249      0.62  | Q    V |        |        |        |
11+ 5      0.2291      0.61  | Q    V |        |        |        |
11+10      0.2328      0.53  | Q    V |        |        |        |
```

11+15	0.2363	0.51	| Q V |	|	|	|
11+20	0.2397	0.50	| Q V |	|	|	|
11+25	0.2432	0.50	| Q V |	|	|	|
11+30	0.2467	0.51	| Q V |	|	|	|
11+35	0.2502	0.51	| Q V |	|	|	|
11+40	0.2534	0.46	|Q V |	|	|	|
11+45	0.2565	0.45	|Q V |	|	|	|
11+50	0.2596	0.45	|Q V |	|	|	|
11+55	0.2627	0.45	|Q V |	|	|	|
12+ 0	0.2658	0.46	|Q V |	|	|	|
12+ 5	0.2711	0.77	| Q V |	|	|	|
12+10	0.2823	1.62	| Q V |	|	|	|
12+15	0.2955	1.91	| Q V|	|	|	|
12+20	0.3100	2.11	| QV|	|	|	|
12+25	0.3259	2.32	| QV |	|	|	|
12+30	0.3427	2.43	| QV |	|	|	|
12+35	0.3605	2.59	| QV |	|	|	|
12+40	0.3803	2.88	| QV |	|	|	|
12+45	0.4010	3.00	| Q |	|	|	|
12+50	0.4224	3.11	| QV |	|	|	|
12+55	0.4450	3.28	| QV |	|	|	|
13+ 0	0.4681	3.36	| QV |	|	|	|
13+ 5	0.4931	3.63	| QV |	|	|	|
13+10	0.5226	4.28	| VQ |	|	|	|
13+15	0.5537	4.52	| VQ |	|	|	|
13+20	0.5856	4.63	| Q |	|	|	|
13+25	0.6180	4.71	| QV|	|	|	|
13+30	0.6508	4.76	| QV |	|	|	|
13+35	0.6805	4.30	| Q |V |	|	|	|
13+40	0.7011	2.99	|Q | V |	|	|	|
13+45	0.7188	2.57	| Q | V |	|	|	|
13+50	0.7352	2.38	| Q| | V |	|	|	|
13+55	0.7509	2.29	| Q| | V |	|	|	|
14+ 0	0.7663	2.23	| Q | | V |	|	|	|
14+ 5	0.7827	2.38	| Q| | V |	|	|	|
14+10	0.8024	2.86	| |Q | V |	|	|	|
14+15	0.8232	3.02	| | Q | V |	|	|	|
14+20	0.8443	3.07	| | Q | V |	|	|	|
14+25	0.8650	3.01	| | Q | V |	|	|	|
14+30	0.8858	3.01	| | Q | V |	|	|	|
14+35	0.9066	3.03	| | Q | V |	|	|	|
14+40	0.9276	3.05	| | Q | V|	|	|	|
14+45	0.9487	3.07	| | Q | V |	|	|	|
14+50	0.9696	3.04	| | Q | V |	|	|	|
14+55	0.9898	2.93	| |Q | V |	|	|	|
15+ 0	1.0098	2.90	| |Q | V |	|	|	|
15+ 5	1.0295	2.86	| |Q | V |	|	|	|
15+10	1.0484	2.74	| Q | V |	|	|	|
15+15	1.0671	2.71	| Q | V |	|	|	|
15+20	1.0854	2.66	| Q | V |	|	|	|
15+25	1.1029	2.54	| Q | V |	|	|	|
15+30	1.1202	2.51	| Q | V |	|	|	|
15+35	1.1362	2.32	| Q| V |	|	|	|
15+40	1.1489	1.84	| Q | V |	|	|	|
15+45	1.1604	1.68	| Q | V |	|	|	|
15+50	1.1716	1.62	| Q | V |	|	|	|
15+55	1.1825	1.59	| Q | V |	|	|	|
16+ 0	1.1934	1.58	| Q | V |	|	|	|
16+ 5	1.2025	1.31	| Q | V |	|	|	|
16+10	1.2066	0.60	| Q | V |	|	|	|
16+15	1.2091	0.36	|Q | V |	|	|	|
16+20	1.2108	0.25	|Q | V |	|	|	|
16+25	1.2121	0.19	|Q | V |	|	|	|
16+30	1.2132	0.15	|Q | V |	|	|	|
16+35	1.2141	0.12	|Q | V |	|	|	|
16+40	1.2147	0.10	|Q | V |	|	|	|
16+45	1.2153	0.08	|Q | V |	|	|	|
16+50	1.2158	0.08	|Q | V |	|	|	|
16+55	1.2164	0.08	|Q | V |	|	|	|

17+ 0	1.2169	0.08	Q	|	|	|	V |
17+ 5	1.2175	0.09	Q	|	|	|	V |
17+10	1.2182	0.11	Q	|	|	|	V |
17+15	1.2191	0.12	Q	|	|	|	V |
17+20	1.2199	0.12	Q	|	|	|	V |
17+25	1.2208	0.12	Q	|	|	|	V |
17+30	1.2216	0.13	Q	|	|	|	V |
17+35	1.2225	0.13	Q	|	|	|	V |
17+40	1.2234	0.13	Q	|	|	|	V |
17+45	1.2242	0.13	Q	|	|	|	V |
17+50	1.2251	0.12	Q	|	|	|	V |
17+55	1.2258	0.11	Q	|	|	|	V |
18+ 0	1.2266	0.11	Q	|	|	|	V |
18+ 5	1.2273	0.10	Q	|	|	|	V |
18+10	1.2280	0.10	Q	|	|	|	V |
18+15	1.2287	0.10	Q	|	|	|	V |
18+20	1.2294	0.10	Q	|	|	|	V|
18+25	1.2301	0.10	Q	|	|	|	V|
18+30	1.2308	0.10	Q	|	|	|	V|
18+35	1.2315	0.10	Q	|	|	|	V|
18+40	1.2321	0.08	Q	|	|	|	V|
18+45	1.2326	0.08	Q	|	|	|	V|
18+50	1.2331	0.07	Q	|	|	|	V|
18+55	1.2336	0.06	Q	|	|	|	V|
19+ 0	1.2339	0.06	Q	|	|	|	V|
19+ 5	1.2344	0.06	Q	|	|	|	V|
19+10	1.2348	0.07	Q	|	|	|	V|
19+15	1.2353	0.07	Q	|	|	|	V|
19+20	1.2359	0.08	Q	|	|	|	V|
19+25	1.2365	0.09	Q	|	|	|	V|
19+30	1.2372	0.10	Q	|	|	|	V|
19+35	1.2378	0.09	Q	|	|	|	V|
19+40	1.2384	0.08	Q	|	|	|	V|
19+45	1.2389	0.08	Q	|	|	|	V|
19+50	1.2394	0.07	Q	|	|	|	V|
19+55	1.2399	0.06	Q	|	|	|	V|
20+ 0	1.2403	0.06	Q	|	|	|	V|
20+ 5	1.2407	0.06	Q	|	|	|	V|
20+10	1.2411	0.07	Q	|	|	|	V|
20+15	1.2416	0.07	Q	|	|	|	V|
20+20	1.2421	0.07	Q	|	|	|	V|
20+25	1.2427	0.07	Q	|	|	|	V|
20+30	1.2432	0.08	Q	|	|	|	V|
20+35	1.2437	0.08	Q	|	|	|	V|
20+40	1.2442	0.08	Q	|	|	|	V|
20+45	1.2448	0.08	Q	|	|	|	V|
20+50	1.2452	0.07	Q	|	|	|	V|
20+55	1.2457	0.06	Q	|	|	|	V|
21+ 0	1.2460	0.06	Q	|	|	|	V|
21+ 5	1.2464	0.06	Q	|	|	|	V|
21+10	1.2469	0.07	Q	|	|	|	V|
21+15	1.2474	0.07	Q	|	|	|	V|
21+20	1.2479	0.07	Q	|	|	|	V|
21+25	1.2483	0.06	Q	|	|	|	V|
21+30	1.2487	0.05	Q	|	|	|	V|
21+35	1.2491	0.06	Q	|	|	|	V|
21+40	1.2495	0.07	Q	|	|	|	V|
21+45	1.2500	0.07	Q	|	|	|	V|
21+50	1.2505	0.07	Q	|	|	|	V|
21+55	1.2509	0.06	Q	|	|	|	V|
22+ 0	1.2513	0.05	Q	|	|	|	V|
22+ 5	1.2517	0.06	Q	|	|	|	V|
22+10	1.2522	0.07	Q	|	|	|	V|
22+15	1.2527	0.07	Q	|	|	|	V|
22+20	1.2532	0.07	Q	|	|	|	V|
22+25	1.2536	0.06	Q	|	|	|	V|
22+30	1.2539	0.05	Q	|	|	|	V|
22+35	1.2543	0.05	Q	|	|	|	V|
22+40	1.2547	0.05	Q	|	|	|	V|

```
   22+45       1.2550      0.05  Q        |         |         |        V|
   22+50       1.2554      0.05  Q        |         |         |        V|
   22+55       1.2557      0.05  Q        |         |         |        V|
   23+ 0       1.2561      0.05  Q        |         |         |        V|
   23+ 5       1.2564      0.05  Q        |         |         |        V|
   23+10       1.2568      0.05  Q        |         |         |        V|
   23+15       1.2571      0.05  Q        |         |         |        V|
   23+20       1.2575      0.05  Q        |         |         |        V|
   23+25       1.2578      0.05  Q        |         |         |        V|
   23+30       1.2582      0.05  Q        |         |         |        V|
   23+35       1.2585      0.05  Q        |         |         |        V|
   23+40       1.2589      0.05  Q        |         |         |        V|
   23+45       1.2592      0.05  Q        |         |         |        V|
   23+50       1.2596      0.05  Q        |         |         |        V|
   23+55       1.2599      0.05  Q        |         |         |        V|
   24+ 0       1.2603      0.05  Q        |         |         |        V|
   24+ 5       1.2606      0.04  Q        |         |         |        V|
   24+10       1.2607      0.02  Q        |         |         |        V|
   24+15       1.2607      0.01  Q        |         |         |        V|
   24+20       1.2608      0.01  Q        |         |         |        V|
   24+25       1.2608      0.00  Q        |         |         |        V|
   24+30       1.2608      0.00  Q        |         |         |        V|
   24+35       1.2608      0.00  Q        |         |         |        V|
   24+40       1.2608      0.00  Q        |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD1100.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
100-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	0.56	7.99

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	1.28	18.27

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.560(In)
Area Averaged 100-Year Rainfall = 1.280(In)

Point rain (area averaged) = 1.280(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.280(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
   14.270          74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  74.5      0.309     0.000        0.309       1.000      0.309
                                                 Sum (F) =   0.309
Area averaged mean soil loss (F) (In/Hr) =  0.309
Minimum soil loss rate ((In/Hr)) =  0.154
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.5300
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %           (CFS)
------------------------------------------------------------------
    1   0.083         95.911         17.950             2.581
    2   0.167        191.821         48.005             6.904
    3   0.250        287.732         16.296             2.344
    4   0.333        383.642          7.287             1.048
    5   0.417        479.553          4.148             0.597
    6   0.500        575.463          2.689             0.387
    7   0.583        671.374          1.732             0.249
    8   0.667        767.284          1.088             0.156
    9   0.750        863.195          0.807             0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     3.40      0.522          0.309    (  0.470)        0.213
   2   0.17     4.70      0.722          0.309    (  0.650)        0.413
   3   0.25     4.70      0.722          0.309    (  0.650)        0.413
   4   0.33     5.10      0.783          0.309    (  0.705)        0.474
   5   0.42     5.80      0.891          0.309    (  0.802)        0.582
   6   0.50     5.90      0.906          0.309    (  0.816)        0.597
   7   0.58     7.10      1.090          0.309    (  0.981)        0.782
   8   0.67     8.70      1.336          0.309    (  1.203)        1.027
   9   0.75    13.20      2.027          0.309    (  1.825)        1.718
  10   0.83    29.70      4.561          0.309    (  4.105)        4.252
  11   0.92     7.70      1.183          0.309    (  1.064)        0.874
  12   1.00     4.00      0.614          0.309    (  0.553)        0.305
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    11.7
       Flood volume = Effective rainfall      0.97(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       1.2(Ac.Ft)
       Total soil loss =      0.31(In)
       Total soil loss =     0.367(Ac.Ft)
       Total rainfall =      1.28(In)
       Flood volume =       50294.5 Cubic Feet
       Total soil loss =       16001.1 Cubic Feet
       ------------------------------------------------------------------
        Peak flow rate of this hydrograph =     37.700(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	10.0	20.0	30.0	40.0
0+ 5	0.0038	0.55	Q				
0+10	0.0213	2.54	V Q				
0+15	0.0517	4.42	V Q				
0+20	0.0880	5.27	V Q				
0+25	0.1314	6.31	V Q				
0+30	0.1827	7.44	VQ				
0+35	0.2410	8.46	Q				
0+40	0.3142	10.64	Q				
0+45	0.4156	14.72	Q				
0+50	0.6008	26.89	V Q				
0+55	0.8604	37.70	V Q				
1+ 0	0.9969	19.81	Q V				
1+ 5	1.0685	10.40	Q V				
1+10	1.1048	5.28	Q V				
1+15	1.1266	3.17	Q V				
1+20	1.1402	1.97	Q V				
1+25	1.1485	1.20	Q V				
1+30	1.1533	0.71	Q V				
1+35	1.1544	0.15	Q V				
1+40	1.1546	0.04	Q V				

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

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Study date 02/28/23 File: EXHYD3100.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
100-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	0.96	13.70

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	2.23	31.82

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.960(In)
Area Averaged 100-Year Rainfall = 2.230(In)

Point rain (area averaged) = 2.230(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.230(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  74.5      0.309     0.000        0.309       1.000      0.309
                                                 Sum (F) =   0.309
Area averaged mean soil loss (F) (In/Hr) =  0.309
Minimum soil loss rate ((In/Hr)) =  0.154
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     1.30      0.348          0.309    (  0.313)        0.039
   2   0.17     1.30      0.348          0.309    (  0.313)        0.039
   3   0.25     1.10      0.294       (  0.309)       0.265        0.029
   4   0.33     1.50      0.401          0.309    (  0.361)        0.092
   5   0.42     1.50      0.401          0.309    (  0.361)        0.092
   6   0.50     1.80      0.482          0.309    (  0.433)        0.173
   7   0.58     1.50      0.401          0.309    (  0.361)        0.092
   8   0.67     1.80      0.482          0.309    (  0.433)        0.173
   9   0.75     1.80      0.482          0.309    (  0.433)        0.173
  10   0.83     1.50      0.401          0.309    (  0.361)        0.092
  11   0.92     1.60      0.428          0.309    (  0.385)        0.119
  12   1.00     1.80      0.482          0.309    (  0.433)        0.173
  13   1.08     2.20      0.589          0.309    (  0.530)        0.280
  14   1.17     2.20      0.589          0.309    (  0.530)        0.280
  15   1.25     2.20      0.589          0.309    (  0.530)        0.280
  16   1.33     2.00      0.535          0.309    (  0.482)        0.226
  17   1.42     2.60      0.696          0.309    (  0.626)        0.387
  18   1.50     2.70      0.722          0.309    (  0.650)        0.414
  19   1.58     2.40      0.642          0.309    (  0.578)        0.333
  20   1.67     2.70      0.722          0.309    (  0.650)        0.414
  21   1.75     3.30      0.883          0.309    (  0.795)        0.574
  22   1.83     3.10      0.830          0.309    (  0.747)        0.521
  23   1.92     2.90      0.776          0.309    (  0.698)        0.467
  24   2.00     3.00      0.803          0.309    (  0.722)        0.494
  25   2.08     3.10      0.830          0.309    (  0.747)        0.521
  26   2.17     4.20      1.124          0.309    (  1.011)        0.815
  27   2.25     5.00      1.338          0.309    (  1.204)        1.029
  28   2.33     3.50      0.937          0.309    (  0.843)        0.628
  29   2.42     6.80      1.820          0.309    (  1.638)        1.511
```

```
30   2.50     7.30      1.953          0.309    (  1.758)        1.644
31   2.58     8.20      2.194          0.309    (  1.975)        1.885
32   2.67     5.90      1.579          0.309    (  1.421)        1.270
33   2.75     2.00      0.535          0.309    (  0.482)        0.226
34   2.83     1.80      0.482          0.309    (  0.433)        0.173
35   2.92     1.80      0.482          0.309    (  0.433)        0.173
36   3.00     0.60      0.161       (  0.309)       0.144        0.016
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    15.8
      Flood volume = Effective rainfall      1.32(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       1.6(Ac.Ft)
      Total soil loss =      0.91(In)
      Total soil loss =     1.081(Ac.Ft)
      Total rainfall =      2.23(In)
      Flood volume =       68403.4 Cubic Feet
      Total soil loss =       47103.6 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     22.857(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        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0007      0.10  Q         |         |         |         |
  0+10       0.0032      0.37  Q         |         |         |         |
  0+15       0.0062      0.44  Q         |         |         |         |
  0+20       0.0102      0.57  Q         |         |         |         |
  0+25       0.0172      1.01  VQ        |         |         |         |
  0+30       0.0266      1.37  VQ        |         |         |         |
  0+35       0.0389      1.79  V Q       |         |         |         |
  0+40       0.0504      1.67  |VQ       |         |         |         |
  0+45       0.0652      2.15  |VQ       |         |         |         |
  0+50       0.0797      2.11  | Q       |         |         |         |
  0+55       0.0914      1.70  | Q       |         |         |         |
  1+ 0       0.1043      1.87  | Q       |         |         |         |
  1+ 5       0.1217      2.52  |  Q      |         |         |         |
  1+10       0.1450      3.38  |  VQ     |         |         |         |
  1+15       0.1703      3.68  |   Q     |         |         |         |
  1+20       0.1957      3.69  |   Q     |         |         |         |
  1+25       0.2219      3.81  |    Q    |         |         |         |
  1+30       0.2558      4.91  |     Q   |         |         |         |
  1+35       0.2919      5.25  |     QV  |         |         |         |
  1+40       0.3272      5.12  |     Q V |         |         |         |
  1+45       0.3686      6.02  |       QV|         |         |         |
  1+50       0.4179      7.16  |        QV         |         |         |
  1+55       0.4669      7.11  |        Q|V        |         |         |
  2+ 0       0.5143      6.89  |        Q|  V      |         |         |
  2+ 5       0.5632      7.09  |        Q|   V     |         |         |
  2+10       0.6189      8.08  |         Q    V    |         |         |
  2+15       0.6929     10.75  |         |   Q  V  |         |         |
  2+20       0.7751     11.93  |         |    Q   V|         |         |
  2+25       0.8596     12.27  |         |     Q   |V        |         |
  2+30       0.9848     18.18  |         |         |   QV    |         |
  2+35       1.1336     21.62  |         |         |       Q |         |
  2+40       1.2911     22.86  |         |         |         Q V       |
  2+45       1.4088     17.09  |         |         | Q       |    V    |
  2+50       1.4703      8.94  |         |Q        |         |      V  |
  2+55       1.5107      5.86  |      Q  |         |         |       V |
  3+ 0       1.5388      4.08  |    Q    |         |         |        V|
  3+ 5       1.5541      2.23  | Q       |         |         |        V|
  3+10       1.5625      1.21  |Q        |         |         |        V|
  3+15       1.5670      0.66  Q         |         |         |        V|
  3+20       1.5691      0.30  Q         |         |         |        V|
  3+25       1.5698      0.10  Q         |         |         |        V|
```

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    3+30       1.5702      0.05  Q        |        |        |       V|
    3+35       1.5703      0.02  Q        |        |        |       V|
    3+40       1.5703      0.00  Q        |        |        |       V|
-------------------------------------------------------------------------
```

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

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
Study date 02/28/23 File: EXHYD6100.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
100-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	1.42	20.26

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	3.15	44.95

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.420(In)
Area Averaged 100-Year Rainfall = 3.150(In)

Point rain (area averaged) = 3.150(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.150(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
   14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  74.5      0.309     0.000        0.309       1.000      0.309
                                                 Sum (F) =   0.309
Area averaged mean soil loss (F) (In/Hr) =  0.309
Minimum soil loss rate ((In/Hr)) =  0.154
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
               Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max    |   Low        (In/Hr)
   1   0.08     0.50      0.189       (  0.309)       0.170        0.019
   2   0.17     0.60      0.227       (  0.309)       0.204        0.023
   3   0.25     0.60      0.227       (  0.309)       0.204        0.023
   4   0.33     0.60      0.227       (  0.309)       0.204        0.023
   5   0.42     0.60      0.227       (  0.309)       0.204        0.023
   6   0.50     0.70      0.265       (  0.309)       0.238        0.026
   7   0.58     0.70      0.265       (  0.309)       0.238        0.026
   8   0.67     0.70      0.265       (  0.309)       0.238        0.026
   9   0.75     0.70      0.265       (  0.309)       0.238        0.026
  10   0.83     0.70      0.265       (  0.309)       0.238        0.026
  11   0.92     0.70      0.265       (  0.309)       0.238        0.026
  12   1.00     0.80      0.302       (  0.309)       0.272        0.030
  13   1.08     0.80      0.302       (  0.309)       0.272        0.030
  14   1.17     0.80      0.302       (  0.309)       0.272        0.030
  15   1.25     0.80      0.302       (  0.309)       0.272        0.030
  16   1.33     0.80      0.302       (  0.309)       0.272        0.030
  17   1.42     0.80      0.302       (  0.309)       0.272        0.030
  18   1.50     0.80      0.302       (  0.309)       0.272        0.030
  19   1.58     0.80      0.302       (  0.309)       0.272        0.030
  20   1.67     0.80      0.302       (  0.309)       0.272        0.030
  21   1.75     0.80      0.302       (  0.309)       0.272        0.030
  22   1.83     0.80      0.302       (  0.309)       0.272        0.030
  23   1.92     0.80      0.302       (  0.309)       0.272        0.030
  24   2.00     0.90      0.340       (  0.309)       0.306        0.034
  25   2.08     0.80      0.302       (  0.309)       0.272        0.030
  26   2.17     0.90      0.340       (  0.309)       0.306        0.034
  27   2.25     0.90      0.340       (  0.309)       0.306        0.034
  28   2.33     0.90      0.340       (  0.309)       0.306        0.034
  29   2.42     0.90      0.340       (  0.309)       0.306        0.034
```

```
30   2.50     0.90      0.340       (  0.309)       0.306        0.034
31   2.58     0.90      0.340       (  0.309)       0.306        0.034
32   2.67     0.90      0.340       (  0.309)       0.306        0.034
33   2.75     1.00      0.378          0.309    (  0.340)        0.069
34   2.83     1.00      0.378          0.309    (  0.340)        0.069
35   2.92     1.00      0.378          0.309    (  0.340)        0.069
36   3.00     1.00      0.378          0.309    (  0.340)        0.069
37   3.08     1.00      0.378          0.309    (  0.340)        0.069
38   3.17     1.10      0.416          0.309    (  0.374)        0.107
39   3.25     1.10      0.416          0.309    (  0.374)        0.107
40   3.33     1.10      0.416          0.309    (  0.374)        0.107
41   3.42     1.20      0.454          0.309    (  0.408)        0.145
42   3.50     1.30      0.491          0.309    (  0.442)        0.182
43   3.58     1.40      0.529          0.309    (  0.476)        0.220
44   3.67     1.40      0.529          0.309    (  0.476)        0.220
45   3.75     1.50      0.567          0.309    (  0.510)        0.258
46   3.83     1.50      0.567          0.309    (  0.510)        0.258
47   3.92     1.60      0.605          0.309    (  0.544)        0.296
48   4.00     1.60      0.605          0.309    (  0.544)        0.296
49   4.08     1.70      0.643          0.309    (  0.578)        0.334
50   4.17     1.80      0.680          0.309    (  0.612)        0.371
51   4.25     1.90      0.718          0.309    (  0.646)        0.409
52   4.33     2.00      0.756          0.309    (  0.680)        0.447
53   4.42     2.10      0.794          0.309    (  0.714)        0.485
54   4.50     2.10      0.794          0.309    (  0.714)        0.485
55   4.58     2.20      0.832          0.309    (  0.748)        0.523
56   4.67     2.30      0.869          0.309    (  0.782)        0.560
57   4.75     2.40      0.907          0.309    (  0.816)        0.598
58   4.83     2.40      0.907          0.309    (  0.816)        0.598
59   4.92     2.50      0.945          0.309    (  0.850)        0.636
60   5.00     2.60      0.983          0.309    (  0.884)        0.674
61   5.08     3.10      1.172          0.309    (  1.055)        0.863
62   5.17     3.60      1.361          0.309    (  1.225)        1.052
63   5.25     3.90      1.474          0.309    (  1.327)        1.165
64   5.33     4.20      1.588          0.309    (  1.429)        1.279
65   5.42     4.70      1.777          0.309    (  1.599)        1.468
66   5.50     5.60      2.117          0.309    (  1.905)        1.808
67   5.58     1.90      0.718          0.309    (  0.646)        0.409
68   5.67     0.90      0.340       (  0.309)       0.306        0.034
69   5.75     0.60      0.227       (  0.309)       0.204        0.023
70   5.83     0.50      0.189       (  0.309)       0.170        0.019
71   5.92     0.30      0.113       (  0.309)       0.102        0.011
72   6.00     0.20      0.076       (  0.309)       0.068        0.008
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    17.7
      Flood volume = Effective rainfall      1.48(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       1.8(Ac.Ft)
      Total soil loss =      1.67(In)
      Total soil loss =     1.988(Ac.Ft)
      Total rainfall =      3.15(In)
      Flood volume =       76550.4 Cubic Feet
      Total soil loss =       86611.9 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     20.325(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        7.5      15.0      22.5      30.0
-----------------------------------------------------------------------
  0+ 5       0.0003      0.05  Q         |         |         |         |
  0+10       0.0016      0.19  Q         |         |         |         |
  0+15       0.0034      0.26  Q         |         |         |         |
  0+20       0.0054      0.29  Q         |         |         |         |
  0+25       0.0075      0.30  Q         |         |         |         |
```

```
0+30       0.0097      0.32  Q         |         |         |         |
0+35       0.0122      0.36  Q         |         |         |         |
0+40       0.0147      0.37  Q         |         |         |         |
0+45       0.0173      0.37  Q         |         |         |         |
0+50       0.0199      0.38  Q         |         |         |         |
0+55       0.0225      0.38  Q         |         |         |         |
1+ 0       0.0252      0.39  Q         |         |         |         |
1+ 5       0.0280      0.42  Q         |         |         |         |
1+10       0.0310      0.43  Q         |         |         |         |
1+15       0.0339      0.43  Q         |         |         |         |
1+20       0.0369      0.43  Q         |         |         |         |
1+25       0.0399      0.43  Q         |         |         |         |
1+30       0.0429      0.43  Q         |         |         |         |
1+35       0.0459      0.43  QV        |         |         |         |
1+40       0.0489      0.44  QV        |         |         |         |
1+45       0.0519      0.44  QV        |         |         |         |
1+50       0.0549      0.44  QV        |         |         |         |
1+55       0.0578      0.44  QV        |         |         |         |
2+ 0       0.0609      0.44  QV        |         |         |         |
2+ 5       0.0641      0.46  QV        |         |         |         |
2+10       0.0672      0.45  QV        |         |         |         |
2+15       0.0705      0.47  QV        |         |         |         |
2+20       0.0738      0.48  QV        |         |         |         |
2+25       0.0771      0.49  QV        |         |         |         |
2+30       0.0805      0.49  QV        |         |         |         |
2+35       0.0839      0.49  QV        |         |         |         |
2+40       0.0872      0.49  QV        |         |         |         |
2+45       0.0912      0.58  Q V       |         |         |         |
2+50       0.0969      0.82  |QV       |         |         |         |
2+55       0.1031      0.90  |QV       |         |         |         |
3+ 0       0.1096      0.94  |QV       |         |         |         |
3+ 5       0.1162      0.96  |QV       |         |         |         |
3+10       0.1236      1.07  |QV       |         |         |         |
3+15       0.1329      1.34  |Q V      |         |         |         |
3+20       0.1428      1.44  |Q V      |         |         |         |
3+25       0.1536      1.58  | QV      |         |         |         |
3+30       0.1671      1.96  | QV      |         |         |         |
3+35       0.1838      2.42  |  QV     |         |         |         |
3+40       0.2032      2.82  |  QV     |         |         |         |
3+45       0.2244      3.07  |   QV    |         |         |         |
3+50       0.2480      3.42  |   QV    |         |         |         |
3+55       0.2731      3.65  |   Q V   |         |         |         |
4+ 0       0.3005      3.98  |    QV   |         |         |         |
4+ 5       0.3295      4.21  |    Q V  |         |         |         |
4+10       0.3614      4.63  |     Q V |         |         |         |
4+15       0.3966      5.12  |     Q  V|         |         |         |
4+20       0.4354      5.62  |      Q V|         |         |         |
4+25       0.4777      6.15  |       Q V         |         |         |
4+30       0.5230      6.58  |       Q |V        |         |         |
4+35       0.5702      6.86  |        Q| V       |         |         |
4+40       0.6206      7.31  |        Q|   V     |         |         |
4+45       0.6744      7.81  |         Q    V    |         |         |
4+50       0.7311      8.24  |         Q     V   |         |         |
4+55       0.7896      8.50  |         |Q     V  |         |         |
5+ 0       0.8513      8.95  |         |Q       V|         |         |
5+ 5       0.9190      9.84  |         |  Q      V         |         |
5+10       1.0002     11.79  |         |    Q    | V       |         |
5+15       1.0960     13.91  |         |       Q |   V     |         |
5+20       1.2040     15.68  |         |         Q      V  |         |
5+25       1.3249     17.55  |         |         |  Q      V         |
5+30       1.4649     20.32  |         |         |     Q   |  V      |
5+35       1.6014     19.82  |         |         |    Q    |    V    |
5+40       1.6729     10.38  |         |  Q      |         |      V  |
5+45       1.7079      5.07  |    Q    |         |         |      V  |
5+50       1.7284      2.98  |  Q      |         |         |       V |
5+55       1.7415      1.89  | Q       |         |         |       V |
6+ 0       1.7495      1.17  |Q        |         |         |       V |
6+ 5       1.7542      0.68  Q         |         |         |       V |
6+10       1.7565      0.33  Q         |         |         |       V |
```

```
    6+15       1.7571      0.08  Q        |         |         |        V|
    6+20       1.7572      0.02  Q        |         |         |        V|
    6+25       1.7573      0.01  Q        |         |         |        V|
    6+30       1.7573      0.01  Q        |         |         |        V|
    6+35       1.7574      0.00  Q        |         |         |        V|
    6+40       1.7574      0.00  Q        |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 02/28/23 File: EXHYD24100.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
EXISITNG CONDITIONS
100-YEAR STORM
BY: JTS DATE: 02-28-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1464.00(Ft.)
Length along longest watercourse measured to centroid = 865.00(Ft.)
Length along longest watercourse = 0.277 Mi.
Length along longest watercourse measured to centroid = 0.164 Mi.
Difference in elevation = 39.00(Ft.)
Slope along watercourse = 140.6557 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.087 Hr.
Lag time = 5.21 Min.
25% of lag time = 1.30 Min.
40% of lag time = 2.09 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]
14.27	2.65	37.82

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	6.95	99.18

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.650(In)
Area Averaged 100-Year Rainfall = 6.950(In)

Point rain (area averaged) = 6.950(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 6.950(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           74.50         0.000
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
74.5  74.5      0.309     0.000        0.309       1.000      0.309
                                                 Sum (F) =   0.309
Area averaged mean soil loss (F) (In/Hr) =  0.309
Minimum soil loss rate ((In/Hr)) =  0.154
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083         95.911         17.950              2.581
    2   0.167        191.821         48.005              6.904
    3   0.250        287.732         16.296              2.344
    4   0.333        383.642          7.287              1.048
    5   0.417        479.553          4.148              0.597
    6   0.500        575.463          2.689              0.387
    7   0.583        671.374          1.732              0.249
    8   0.667        767.284          1.088              0.156
    9   0.750        863.195          0.807              0.116
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)        Max   |   Low         (In/Hr)
   1   0.08     0.07      0.056       (  0.548)       0.050        0.006
   2   0.17     0.07      0.056       (  0.545)       0.050        0.006
   3   0.25     0.07      0.056       (  0.543)       0.050        0.006
   4   0.33     0.10      0.083       (  0.541)       0.075        0.008
   5   0.42     0.10      0.083       (  0.539)       0.075        0.008
   6   0.50     0.10      0.083       (  0.537)       0.075        0.008
   7   0.58     0.10      0.083       (  0.535)       0.075        0.008
   8   0.67     0.10      0.083       (  0.533)       0.075        0.008
   9   0.75     0.10      0.083       (  0.531)       0.075        0.008
  10   0.83     0.13      0.111       (  0.529)       0.100        0.011
  11   0.92     0.13      0.111       (  0.527)       0.100        0.011
  12   1.00     0.13      0.111       (  0.525)       0.100        0.011
  13   1.08     0.10      0.083       (  0.522)       0.075        0.008
  14   1.17     0.10      0.083       (  0.520)       0.075        0.008
  15   1.25     0.10      0.083       (  0.518)       0.075        0.008
  16   1.33     0.10      0.083       (  0.516)       0.075        0.008
  17   1.42     0.10      0.083       (  0.514)       0.075        0.008
  18   1.50     0.10      0.083       (  0.512)       0.075        0.008
  19   1.58     0.10      0.083       (  0.510)       0.075        0.008
  20   1.67     0.10      0.083       (  0.508)       0.075        0.008
  21   1.75     0.10      0.083       (  0.506)       0.075        0.008
  22   1.83     0.13      0.111       (  0.504)       0.100        0.011
  23   1.92     0.13      0.111       (  0.502)       0.100        0.011
  24   2.00     0.13      0.111       (  0.500)       0.100        0.011
  25   2.08     0.13      0.111       (  0.498)       0.100        0.011
  26   2.17     0.13      0.111       (  0.496)       0.100        0.011
  27   2.25     0.13      0.111       (  0.494)       0.100        0.011
  28   2.33     0.13      0.111       (  0.492)       0.100        0.011
  29   2.42     0.13      0.111       (  0.490)       0.100        0.011
```

30	2.50	0.13	0.111	(	0.488)	0.100	0.011
31	2.58	0.17	0.139	(	0.486)	0.125	0.014
32	2.67	0.17	0.139	(	0.484)	0.125	0.014
33	2.75	0.17	0.139	(	0.482)	0.125	0.014
34	2.83	0.17	0.139	(	0.480)	0.125	0.014
35	2.92	0.17	0.139	(	0.478)	0.125	0.014
36	3.00	0.17	0.139	(	0.476)	0.125	0.014
37	3.08	0.17	0.139	(	0.474)	0.125	0.014
38	3.17	0.17	0.139	(	0.472)	0.125	0.014
39	3.25	0.17	0.139	(	0.470)	0.125	0.014
40	3.33	0.17	0.139	(	0.468)	0.125	0.014
41	3.42	0.17	0.139	(	0.466)	0.125	0.014
42	3.50	0.17	0.139	(	0.464)	0.125	0.014
43	3.58	0.17	0.139	(	0.462)	0.125	0.014
44	3.67	0.17	0.139	(	0.460)	0.125	0.014
45	3.75	0.17	0.139	(	0.458)	0.125	0.014
46	3.83	0.20	0.167	(	0.456)	0.150	0.017
47	3.92	0.20	0.167	(	0.454)	0.150	0.017
48	4.00	0.20	0.167	(	0.453)	0.150	0.017
49	4.08	0.20	0.167	(	0.451)	0.150	0.017
50	4.17	0.20	0.167	(	0.449)	0.150	0.017
51	4.25	0.20	0.167	(	0.447)	0.150	0.017
52	4.33	0.23	0.195	(	0.445)	0.175	0.019
53	4.42	0.23	0.195	(	0.443)	0.175	0.019
54	4.50	0.23	0.195	(	0.441)	0.175	0.019
55	4.58	0.23	0.195	(	0.439)	0.175	0.019
56	4.67	0.23	0.195	(	0.437)	0.175	0.019
57	4.75	0.23	0.195	(	0.435)	0.175	0.019
58	4.83	0.27	0.222	(	0.434)	0.200	0.022
59	4.92	0.27	0.222	(	0.432)	0.200	0.022
60	5.00	0.27	0.222	(	0.430)	0.200	0.022
61	5.08	0.20	0.167	(	0.428)	0.150	0.017
62	5.17	0.20	0.167	(	0.426)	0.150	0.017
63	5.25	0.20	0.167	(	0.424)	0.150	0.017
64	5.33	0.23	0.195	(	0.422)	0.175	0.019
65	5.42	0.23	0.195	(	0.421)	0.175	0.019
66	5.50	0.23	0.195	(	0.419)	0.175	0.019
67	5.58	0.27	0.222	(	0.417)	0.200	0.022
68	5.67	0.27	0.222	(	0.415)	0.200	0.022
69	5.75	0.27	0.222	(	0.413)	0.200	0.022
70	5.83	0.27	0.222	(	0.411)	0.200	0.022
71	5.92	0.27	0.222	(	0.410)	0.200	0.022
72	6.00	0.27	0.222	(	0.408)	0.200	0.022
73	6.08	0.30	0.250	(	0.406)	0.225	0.025
74	6.17	0.30	0.250	(	0.404)	0.225	0.025
75	6.25	0.30	0.250	(	0.402)	0.225	0.025
76	6.33	0.30	0.250	(	0.401)	0.225	0.025
77	6.42	0.30	0.250	(	0.399)	0.225	0.025
78	6.50	0.30	0.250	(	0.397)	0.225	0.025
79	6.58	0.33	0.278	(	0.395)	0.250	0.028
80	6.67	0.33	0.278	(	0.393)	0.250	0.028
81	6.75	0.33	0.278	(	0.392)	0.250	0.028
82	6.83	0.33	0.278	(	0.390)	0.250	0.028
83	6.92	0.33	0.278	(	0.388)	0.250	0.028
84	7.00	0.33	0.278	(	0.386)	0.250	0.028
85	7.08	0.33	0.278	(	0.385)	0.250	0.028
86	7.17	0.33	0.278	(	0.383)	0.250	0.028
87	7.25	0.33	0.278	(	0.381)	0.250	0.028
88	7.33	0.37	0.306	(	0.379)	0.275	0.031
89	7.42	0.37	0.306	(	0.378)	0.275	0.031
90	7.50	0.37	0.306	(	0.376)	0.275	0.031
91	7.58	0.40	0.334	(	0.374)	0.300	0.033
92	7.67	0.40	0.334	(	0.372)	0.300	0.033
93	7.75	0.40	0.334	(	0.371)	0.300	0.033
94	7.83	0.43	0.361	(	0.369)	0.325	0.036
95	7.92	0.43	0.361	(	0.367)	0.325	0.036
96	8.00	0.43	0.361	(	0.366)	0.325	0.036
97	8.08	0.50	0.417		0.364	(0.375)	0.053
98	8.17	0.50	0.417		0.362	(0.375)	0.055

99	8.25	0.50	0.417	0.360	(	0.375)	0.056
100	8.33	0.50	0.417	0.359	(	0.375)	0.058
101	8.42	0.50	0.417	0.357	(	0.375)	0.060
102	8.50	0.50	0.417	0.355	(	0.375)	0.062
103	8.58	0.53	0.445	0.354	(	0.400)	0.091
104	8.67	0.53	0.445	0.352	(	0.400)	0.093
105	8.75	0.53	0.445	0.350	(	0.400)	0.094
106	8.83	0.57	0.473	0.349	(	0.425)	0.124
107	8.92	0.57	0.473	0.347	(	0.425)	0.125
108	9.00	0.57	0.473	0.346	(	0.425)	0.127
109	9.08	0.63	0.528	0.344	(	0.475)	0.184
110	9.17	0.63	0.528	0.342	(	0.475)	0.186
111	9.25	0.63	0.528	0.341	(	0.475)	0.188
112	9.33	0.67	0.556	0.339	(	0.500)	0.217
113	9.42	0.67	0.556	0.337	(	0.500)	0.219
114	9.50	0.67	0.556	0.336	(	0.500)	0.220
115	9.58	0.70	0.584	0.334	(	0.525)	0.250
116	9.67	0.70	0.584	0.333	(	0.525)	0.251
117	9.75	0.70	0.584	0.331	(	0.525)	0.253
118	9.83	0.73	0.612	0.329	(	0.550)	0.282
119	9.92	0.73	0.612	0.328	(	0.550)	0.284
120	10.00	0.73	0.612	0.326	(	0.550)	0.285
121	10.08	0.50	0.417	0.325	(	0.375)	0.092
122	10.17	0.50	0.417	0.323	(	0.375)	0.094
123	10.25	0.50	0.417	0.321	(	0.375)	0.096
124	10.33	0.50	0.417	0.320	(	0.375)	0.097
125	10.42	0.50	0.417	0.318	(	0.375)	0.099
126	10.50	0.50	0.417	0.317	(	0.375)	0.100
127	10.58	0.67	0.556	0.315	(	0.500)	0.241
128	10.67	0.67	0.556	0.314	(	0.500)	0.242
129	10.75	0.67	0.556	0.312	(	0.500)	0.244
130	10.83	0.67	0.556	0.311	(	0.500)	0.245
131	10.92	0.67	0.556	0.309	(	0.500)	0.247
132	11.00	0.67	0.556	0.308	(	0.500)	0.248
133	11.08	0.63	0.528	0.306	(	0.475)	0.222
134	11.17	0.63	0.528	0.305	(	0.475)	0.224
135	11.25	0.63	0.528	0.303	(	0.475)	0.225
136	11.33	0.63	0.528	0.302	(	0.475)	0.227
137	11.42	0.63	0.528	0.300	(	0.475)	0.228
138	11.50	0.63	0.528	0.299	(	0.475)	0.230
139	11.58	0.57	0.473	0.297	(	0.425)	0.175
140	11.67	0.57	0.473	0.296	(	0.425)	0.177
141	11.75	0.57	0.473	0.294	(	0.425)	0.178
142	11.83	0.60	0.500	0.293	(	0.450)	0.208
143	11.92	0.60	0.500	0.291	(	0.450)	0.209
144	12.00	0.60	0.500	0.290	(	0.450)	0.211
145	12.08	0.83	0.695	0.288	(	0.625)	0.407
146	12.17	0.83	0.695	0.287	(	0.625)	0.408
147	12.25	0.83	0.695	0.285	(	0.625)	0.410
148	12.33	0.87	0.723	0.284	(	0.651)	0.439
149	12.42	0.87	0.723	0.283	(	0.651)	0.440
150	12.50	0.87	0.723	0.281	(	0.651)	0.442
151	12.58	0.93	0.778	0.280	(	0.701)	0.499
152	12.67	0.93	0.778	0.278	(	0.701)	0.500
153	12.75	0.93	0.778	0.277	(	0.701)	0.501
154	12.83	0.97	0.806	0.276	(	0.726)	0.531
155	12.92	0.97	0.806	0.274	(	0.726)	0.532
156	13.00	0.97	0.806	0.273	(	0.726)	0.533
157	13.08	1.13	0.945	0.271	(	0.851)	0.674
158	13.17	1.13	0.945	0.270	(	0.851)	0.675
159	13.25	1.13	0.945	0.269	(	0.851)	0.677
160	13.33	1.13	0.945	0.267	(	0.851)	0.678
161	13.42	1.13	0.945	0.266	(	0.851)	0.679
162	13.50	1.13	0.945	0.265	(	0.851)	0.681
163	13.58	0.77	0.639	0.263	(	0.575)	0.376
164	13.67	0.77	0.639	0.262	(	0.575)	0.377
165	13.75	0.77	0.639	0.261	(	0.575)	0.379
166	13.83	0.77	0.639	0.259	(	0.575)	0.380
167	13.92	0.77	0.639	0.258	(	0.575)	0.381

168	14.00	0.77	0.639		0.257	(0.575)	0.383
169	14.08	0.90	0.751		0.255	(0.676)	0.495
170	14.17	0.90	0.751		0.254	(0.676)	0.497
171	14.25	0.90	0.751		0.253	(0.676)	0.498
172	14.33	0.87	0.723		0.251	(0.651)	0.471
173	14.42	0.87	0.723		0.250	(0.651)	0.473
174	14.50	0.87	0.723		0.249	(0.651)	0.474
175	14.58	0.87	0.723		0.248	(0.651)	0.475
176	14.67	0.87	0.723		0.246	(0.651)	0.477
177	14.75	0.87	0.723		0.245	(0.651)	0.478
178	14.83	0.83	0.695		0.244	(0.625)	0.451
179	14.92	0.83	0.695		0.243	(0.625)	0.452
180	15.00	0.83	0.695		0.241	(0.625)	0.454
181	15.08	0.80	0.667		0.240	(0.600)	0.427
182	15.17	0.80	0.667		0.239	(0.600)	0.428
183	15.25	0.80	0.667		0.238	(0.600)	0.430
184	15.33	0.77	0.639		0.236	(0.575)	0.403
185	15.42	0.77	0.639		0.235	(0.575)	0.404
186	15.50	0.77	0.639		0.234	(0.575)	0.405
187	15.58	0.63	0.528		0.233	(0.475)	0.295
188	15.67	0.63	0.528		0.232	(0.475)	0.297
189	15.75	0.63	0.528		0.230	(0.475)	0.298
190	15.83	0.63	0.528		0.229	(0.475)	0.299
191	15.92	0.63	0.528		0.228	(0.475)	0.300
192	16.00	0.63	0.528		0.227	(0.475)	0.301
193	16.08	0.13	0.111	(0.226)		0.100	0.011
194	16.17	0.13	0.111	(0.225)		0.100	0.011
195	16.25	0.13	0.111	(0.223)		0.100	0.011
196	16.33	0.13	0.111	(0.222)		0.100	0.011
197	16.42	0.13	0.111	(0.221)		0.100	0.011
198	16.50	0.13	0.111	(0.220)		0.100	0.011
199	16.58	0.10	0.083	(0.219)		0.075	0.008
200	16.67	0.10	0.083	(0.218)		0.075	0.008
201	16.75	0.10	0.083	(0.217)		0.075	0.008
202	16.83	0.10	0.083	(0.216)		0.075	0.008
203	16.92	0.10	0.083	(0.214)		0.075	0.008
204	17.00	0.10	0.083	(0.213)		0.075	0.008
205	17.08	0.17	0.139	(0.212)		0.125	0.014
206	17.17	0.17	0.139	(0.211)		0.125	0.014
207	17.25	0.17	0.139	(0.210)		0.125	0.014
208	17.33	0.17	0.139	(0.209)		0.125	0.014
209	17.42	0.17	0.139	(0.208)		0.125	0.014
210	17.50	0.17	0.139	(0.207)		0.125	0.014
211	17.58	0.17	0.139	(0.206)		0.125	0.014
212	17.67	0.17	0.139	(0.205)		0.125	0.014
213	17.75	0.17	0.139	(0.204)		0.125	0.014
214	17.83	0.13	0.111	(0.203)		0.100	0.011
215	17.92	0.13	0.111	(0.202)		0.100	0.011
216	18.00	0.13	0.111	(0.201)		0.100	0.011
217	18.08	0.13	0.111	(0.200)		0.100	0.011
218	18.17	0.13	0.111	(0.199)		0.100	0.011
219	18.25	0.13	0.111	(0.198)		0.100	0.011
220	18.33	0.13	0.111	(0.197)		0.100	0.011
221	18.42	0.13	0.111	(0.196)		0.100	0.011
222	18.50	0.13	0.111	(0.195)		0.100	0.011
223	18.58	0.10	0.083	(0.194)		0.075	0.008
224	18.67	0.10	0.083	(0.193)		0.075	0.008
225	18.75	0.10	0.083	(0.192)		0.075	0.008
226	18.83	0.07	0.056	(0.191)		0.050	0.006
227	18.92	0.07	0.056	(0.190)		0.050	0.006
228	19.00	0.07	0.056	(0.190)		0.050	0.006
229	19.08	0.10	0.083	(0.189)		0.075	0.008
230	19.17	0.10	0.083	(0.188)		0.075	0.008
231	19.25	0.10	0.083	(0.187)		0.075	0.008
232	19.33	0.13	0.111	(0.186)		0.100	0.011
233	19.42	0.13	0.111	(0.185)		0.100	0.011
234	19.50	0.13	0.111	(0.184)		0.100	0.011
235	19.58	0.10	0.083	(0.183)		0.075	0.008
236	19.67	0.10	0.083	(0.183)		0.075	0.008

237	19.75	0.10	0.083	(0.182)	0.075	0.008
238	19.83	0.07	0.056	(0.181)	0.050	0.006
239	19.92	0.07	0.056	(0.180)	0.050	0.006
240	20.00	0.07	0.056	(0.179)	0.050	0.006
241	20.08	0.10	0.083	(0.179)	0.075	0.008
242	20.17	0.10	0.083	(0.178)	0.075	0.008
243	20.25	0.10	0.083	(0.177)	0.075	0.008
244	20.33	0.10	0.083	(0.176)	0.075	0.008
245	20.42	0.10	0.083	(0.176)	0.075	0.008
246	20.50	0.10	0.083	(0.175)	0.075	0.008
247	20.58	0.10	0.083	(0.174)	0.075	0.008
248	20.67	0.10	0.083	(0.173)	0.075	0.008
249	20.75	0.10	0.083	(0.173)	0.075	0.008
250	20.83	0.07	0.056	(0.172)	0.050	0.006
251	20.92	0.07	0.056	(0.171)	0.050	0.006
252	21.00	0.07	0.056	(0.170)	0.050	0.006
253	21.08	0.10	0.083	(0.170)	0.075	0.008
254	21.17	0.10	0.083	(0.169)	0.075	0.008
255	21.25	0.10	0.083	(0.168)	0.075	0.008
256	21.33	0.07	0.056	(0.168)	0.050	0.006
257	21.42	0.07	0.056	(0.167)	0.050	0.006
258	21.50	0.07	0.056	(0.167)	0.050	0.006
259	21.58	0.10	0.083	(0.166)	0.075	0.008
260	21.67	0.10	0.083	(0.165)	0.075	0.008
261	21.75	0.10	0.083	(0.165)	0.075	0.008
262	21.83	0.07	0.056	(0.164)	0.050	0.006
263	21.92	0.07	0.056	(0.164)	0.050	0.006
264	22.00	0.07	0.056	(0.163)	0.050	0.006
265	22.08	0.10	0.083	(0.163)	0.075	0.008
266	22.17	0.10	0.083	(0.162)	0.075	0.008
267	22.25	0.10	0.083	(0.162)	0.075	0.008
268	22.33	0.07	0.056	(0.161)	0.050	0.006
269	22.42	0.07	0.056	(0.161)	0.050	0.006
270	22.50	0.07	0.056	(0.160)	0.050	0.006
271	22.58	0.07	0.056	(0.160)	0.050	0.006
272	22.67	0.07	0.056	(0.159)	0.050	0.006
273	22.75	0.07	0.056	(0.159)	0.050	0.006
274	22.83	0.07	0.056	(0.158)	0.050	0.006
275	22.92	0.07	0.056	(0.158)	0.050	0.006
276	23.00	0.07	0.056	(0.157)	0.050	0.006
277	23.08	0.07	0.056	(0.157)	0.050	0.006
278	23.17	0.07	0.056	(0.157)	0.050	0.006
279	23.25	0.07	0.056	(0.156)	0.050	0.006
280	23.33	0.07	0.056	(0.156)	0.050	0.006
281	23.42	0.07	0.056	(0.156)	0.050	0.006
282	23.50	0.07	0.056	(0.156)	0.050	0.006
283	23.58	0.07	0.056	(0.155)	0.050	0.006
284	23.67	0.07	0.056	(0.155)	0.050	0.006
285	23.75	0.07	0.056	(0.155)	0.050	0.006
286	23.83	0.07	0.056	(0.155)	0.050	0.006
287	23.92	0.07	0.056	(0.155)	0.050	0.006
288	24.00	0.07	0.056	(0.154)	0.050	0.006

(Loss Rate Not Used)

Sum = 100.0 Sum = 32.8

Flood volume = Effective rainfall 2.74(In)
times area 14.3(Ac.)/[(In)/(Ft.)] = 3.3(Ac.Ft)
Total soil loss = 4.21(In)
Total soil loss = 5.009(Ac.Ft)
Total rainfall = 6.95(In)
Flood volume = 141799.7 Cubic Feet
Total soil loss = 218200.9 Cubic Feet

Peak flow rate of this hydrograph = 9.690(CFS)

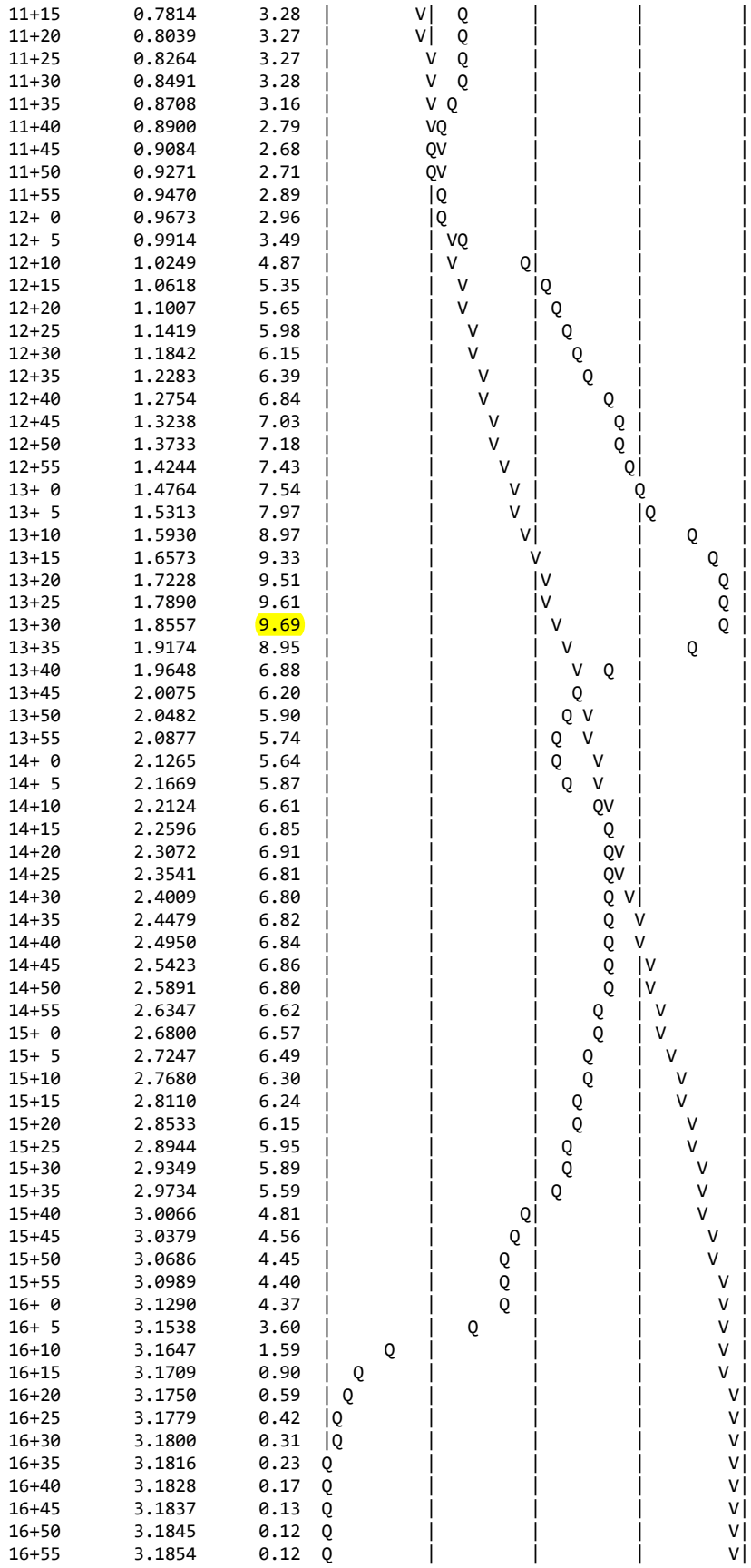
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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

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	0.0005	0.05	Q				
0+15	0.0009	0.07	Q				
0+20	0.0015	0.08	Q				
0+25	0.0022	0.10	Q				
0+30	0.0029	0.11	Q				
0+35	0.0037	0.11	Q				
0+40	0.0045	0.12	Q				
0+45	0.0053	0.12	Q				
0+50	0.0062	0.13	Q				
0+55	0.0072	0.15	Q				
1+ 0	0.0083	0.15	Q				
1+ 5	0.0093	0.15	Q				
1+10	0.0102	0.13	Q				
1+15	0.0110	0.13	Q				
1+20	0.0119	0.12	Q				
1+25	0.0127	0.12	Q				
1+30	0.0136	0.12	Q				
1+35	0.0144	0.12	Q				
1+40	0.0152	0.12	Q				
1+45	0.0161	0.12	Q				
1+50	0.0169	0.13	Q				
1+55	0.0179	0.15	Q				
2+ 0	0.0190	0.15	Q				
2+ 5	0.0201	0.16	Q				
2+10	0.0212	0.16	Q				
2+15	0.0222	0.16	Q				
2+20	0.0233	0.16	Q				
2+25	0.0244	0.16	Q				
2+30	0.0255	0.16	Q				
2+35	0.0267	0.17	Q				
2+40	0.0280	0.19	Q				
2+45	0.0293	0.19	Q				
2+50	0.0307	0.20	Q				
2+55	0.0320	0.20	Q				
3+ 0	0.0334	0.20	Q				
3+ 5	0.0348	0.20	Q				
3+10	0.0361	0.20	Q				
3+15	0.0375	0.20	Q				
3+20	0.0389	0.20	Q				
3+25	0.0403	0.20	Q				
3+30	0.0416	0.20	Q				
3+35	0.0430	0.20	Q				
3+40	0.0444	0.20	Q				
3+45	0.0458	0.20	Q				
3+50	0.0472	0.21	Q				
3+55	0.0488	0.23	Q				
4+ 0	0.0504	0.23	Q				
4+ 5	0.0520	0.24	Q				
4+10	0.0536	0.24	Q				
4+15	0.0553	0.24	Q				
4+20	0.0570	0.25	Q				
4+25	0.0588	0.27	VQ				
4+30	0.0607	0.27	VQ				
4+35	0.0626	0.28	VQ				
4+40	0.0645	0.28	VQ				
4+45	0.0664	0.28	VQ				
4+50	0.0684	0.29	VQ				
4+55	0.0705	0.31	VQ				
5+ 0	0.0726	0.31	VQ				
5+ 5	0.0747	0.30	VQ				
5+10	0.0765	0.26	VQ				
5+15	0.0783	0.25	VQ				
5+20	0.0800	0.25	VQ				
5+25	0.0819	0.27	|Q				

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 5+30      0.0838     0.28  |Q       |        |        |        |
 5+35      0.0858     0.28  |Q       |        |        |        |
 5+40      0.0879     0.30  |Q       |        |        |        |
 5+45      0.0900     0.31  |Q       |        |        |        |
 5+50      0.0922     0.32  |Q       |        |        |        |
 5+55      0.0944     0.32  |Q       |        |        |        |
 6+ 0      0.0965     0.32  |Q       |        |        |        |
 6+ 5      0.0988     0.33  |Q       |        |        |        |
 6+10      0.1012     0.35  |Q       |        |        |        |
 6+15      0.1036     0.35  |Q       |        |        |        |
 6+20      0.1061     0.36  |Q       |        |        |        |
 6+25      0.1085     0.36  |Q       |        |        |        |
 6+30      0.1110     0.36  |Q       |        |        |        |
 6+35      0.1135     0.37  |Q       |        |        |        |
 6+40      0.1162     0.39  |Q       |        |        |        |
 6+45      0.1189     0.39  |Q       |        |        |        |
 6+50      0.1216     0.40  |Q       |        |        |        |
 6+55      0.1243     0.40  |Q       |        |        |        |
 7+ 0      0.1271     0.40  |Q       |        |        |        |
 7+ 5      0.1298     0.40  |Q       |        |        |        |
 7+10      0.1326     0.40  |Q       |        |        |        |
 7+15      0.1353     0.40  |Q       |        |        |        |
 7+20      0.1382     0.41  |Q       |        |        |        |
 7+25      0.1411     0.43  |Q       |        |        |        |
 7+30      0.1441     0.43  |Q       |        |        |        |
 7+35      0.1471     0.44  |Q       |        |        |        |
 7+40      0.1503     0.46  |Q       |        |        |        |
 7+45      0.1536     0.47  |Q       |        |        |        |
 7+50      0.1569     0.48  |Q       |        |        |        |
 7+55      0.1603     0.50  |VQ      |        |        |        |
 8+ 0      0.1639     0.51  | Q      |        |        |        |
 8+ 5      0.1677     0.56  | Q      |        |        |        |
 8+10      0.1724     0.68  | Q      |        |        |        |
 8+15      0.1775     0.74  | Q      |        |        |        |
 8+20      0.1829     0.78  | VQ     |        |        |        |
 8+25      0.1885     0.81  | VQ     |        |        |        |
 8+30      0.1942     0.84  | VQ     |        |        |        |
 8+35      0.2007     0.94  | VQ     |        |        |        |
 8+40      0.2087     1.16  | V Q    |        |        |        |
 8+45      0.2173     1.25  | V Q    |        |        |        |
 8+50      0.2267     1.37  | V  Q   |        |        |        |
 8+55      0.2378     1.61  | V   Q  |        |        |        |
 9+ 0      0.2496     1.71  |  V  Q  |        |        |        |
 9+ 5      0.2627     1.91  |  V   Q |        |        |        |
 9+10      0.2788     2.34  |  V    Q|        |        |        |
 9+15      0.2961     2.51  |  V     Q        |        |        |
 9+20      0.3144     2.67  |  V     Q        |        |        |
 9+25      0.3345     2.92  |   V    |Q       |        |        |
 9+30      0.3554     3.03  |   V    | Q      |        |        |
 9+35      0.3772     3.17  |   V    | Q      |        |        |
 9+40      0.4007     3.41  |   V    |  Q     |        |        |
 9+45      0.4249     3.52  |    V   |   Q    |        |        |
 9+50      0.4501     3.65  |    V   |   Q    |        |        |
 9+55      0.4768     3.88  |    V   |    Q   |        |        |
10+ 0      0.5042     3.99  |     V  |    Q   |        |        |
10+ 5      0.5286     3.54  |     V  |   Q    |        |        |
10+10      0.5441     2.24  |     V Q|        |        |        |
10+15      0.5566     1.82  |     VQ |        |        |        |
10+20      0.5679     1.65  |     Q  |        |        |        |
10+25      0.5787     1.56  |     QV |        |        |        |
10+30      0.5891     1.51  |     QV |        |        |        |
10+35      0.6017     1.84  |      Q |        |        |        |
10+40      0.6210     2.79  |      V |Q       |        |        |
10+45      0.6424     3.12  |      V | Q      |        |        |
10+50      0.6651     3.29  |       V|  Q     |        |        |
10+55      0.6884     3.39  |       V|  Q     |        |        |
11+ 0      0.7123     3.47  |       V|  Q     |        |        |
11+ 5      0.7361     3.45  |        V|  Q     |        |        |
11+10      0.7588     3.30  |        V|  Q     |        |        |
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17+ 0	3.1862	0.12	Q	|	|	|	V|
17+ 5	3.1871	0.14	Q	|	|	|	V|
17+10	3.1883	0.17	Q	|	|	|	V|
17+15	3.1896	0.19	Q	|	|	|	V|
17+20	3.1909	0.19	Q	|	|	|	V|
17+25	3.1923	0.19	Q	|	|	|	V|
17+30	3.1936	0.20	Q	|	|	|	V|
17+35	3.1950	0.20	Q	|	|	|	V|
17+40	3.1964	0.20	Q	|	|	|	V|
17+45	3.1977	0.20	Q	|	|	|	V|
17+50	3.1991	0.19	Q	|	|	|	V|
17+55	3.2003	0.17	Q	|	|	|	V|
18+ 0	3.2014	0.17	Q	|	|	|	V|
18+ 5	3.2025	0.16	Q	|	|	|	V|
18+10	3.2037	0.16	Q	|	|	|	V|
18+15	3.2048	0.16	Q	|	|	|	V|
18+20	3.2059	0.16	Q	|	|	|	V|
18+25	3.2070	0.16	Q	|	|	|	V|
18+30	3.2081	0.16	Q	|	|	|	V|
18+35	3.2091	0.15	Q	|	|	|	V|
18+40	3.2101	0.13	Q	|	|	|	V|
18+45	3.2109	0.13	Q	|	|	|	V|
18+50	3.2117	0.12	Q	|	|	|	V|
18+55	3.2124	0.10	Q	|	|	|	V|
19+ 0	3.2130	0.09	Q	|	|	|	V|
19+ 5	3.2137	0.09	Q	|	|	|	V|
19+10	3.2144	0.11	Q	|	|	|	V|
19+15	3.2152	0.11	Q	|	|	|	V|
19+20	3.2160	0.12	Q	|	|	|	V|
19+25	3.2170	0.14	Q	|	|	|	V|
19+30	3.2181	0.15	Q	|	|	|	V|
19+35	3.2191	0.15	Q	|	|	|	V|
19+40	3.2200	0.13	Q	|	|	|	V|
19+45	3.2209	0.13	Q	|	|	|	V|
19+50	3.2217	0.12	Q	|	|	|	V|
19+55	3.2223	0.10	Q	|	|	|	V|
20+ 0	3.2229	0.09	Q	|	|	|	V|
20+ 5	3.2236	0.09	Q	|	|	|	V|
20+10	3.2243	0.11	Q	|	|	|	V|
20+15	3.2251	0.11	Q	|	|	|	V|
20+20	3.2259	0.12	Q	|	|	|	V|
20+25	3.2267	0.12	Q	|	|	|	V|
20+30	3.2275	0.12	Q	|	|	|	V|
20+35	3.2284	0.12	Q	|	|	|	V|
20+40	3.2292	0.12	Q	|	|	|	V|
20+45	3.2300	0.12	Q	|	|	|	V|
20+50	3.2308	0.11	Q	|	|	|	V|
20+55	3.2314	0.09	Q	|	|	|	V|
21+ 0	3.2320	0.09	Q	|	|	|	V|
21+ 5	3.2327	0.09	Q	|	|	|	V|
21+10	3.2334	0.11	Q	|	|	|	V|
21+15	3.2342	0.11	Q	|	|	|	V|
21+20	3.2350	0.11	Q	|	|	|	V|
21+25	3.2356	0.09	Q	|	|	|	V|
21+30	3.2362	0.09	Q	|	|	|	V|
21+35	3.2368	0.09	Q	|	|	|	V|
21+40	3.2375	0.11	Q	|	|	|	V|
21+45	3.2383	0.11	Q	|	|	|	V|
21+50	3.2391	0.11	Q	|	|	|	V|
21+55	3.2397	0.09	Q	|	|	|	V|
22+ 0	3.2403	0.09	Q	|	|	|	V|
22+ 5	3.2409	0.09	Q	|	|	|	V|
22+10	3.2417	0.11	Q	|	|	|	V|
22+15	3.2425	0.11	Q	|	|	|	V|
22+20	3.2432	0.11	Q	|	|	|	V|
22+25	3.2438	0.09	Q	|	|	|	V|
22+30	3.2444	0.09	Q	|	|	|	V|
22+35	3.2450	0.08	Q	|	|	|	V|
22+40	3.2456	0.08	Q	|	|	|	V|

22+45	3.2461	0.08	Q				V
22+50	3.2467	0.08	Q				V
22+55	3.2472	0.08	Q				V
23+ 0	3.2478	0.08	Q				V
23+ 5	3.2483	0.08	Q				V
23+10	3.2489	0.08	Q				V
23+15	3.2495	0.08	Q				V
23+20	3.2500	0.08	Q				V
23+25	3.2506	0.08	Q				V
23+30	3.2511	0.08	Q				V
23+35	3.2517	0.08	Q				V
23+40	3.2522	0.08	Q				V
23+45	3.2528	0.08	Q				V
23+50	3.2533	0.08	Q				V
23+55	3.2539	0.08	Q				V
24+ 0	3.2544	0.08	Q				V
24+ 5	3.2549	0.07	Q				V
24+10	3.2550	0.03	Q				V
24+15	3.2551	0.01	Q				V
24+20	3.2552	0.01	Q				V
24+25	3.2552	0.01	Q				V
24+30	3.2553	0.00	Q				V
24+35	3.2553	0.00	Q				V
24+40	3.2553	0.00	Q				V

ATTACHMENT 3

Developed
On-Site Conditions
10-Year & 100-Year
Rational Method

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2018 Version 9.0
Rational Hydrology Study Date: 03/05/23 File:dev.out

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
10-YEAR, 1-HOUR STORM
BY: JTS DATE: 03-05-23

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

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

Program License Serial Number 6320

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 [Banning] area used.
10 year storm 10 minute intensity = 2.300(In/Hr)
10 year storm 60 minute intensity = 0.890(In/Hr)
100 year storm 10 minute intensity = 3.410(In/Hr)
100 year storm 60 minute intensity = 1.320(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.890(In/Hr)
Slope of intensity duration curve = 0.5300

++

Process from Point/Station 0.000 to Point/Station 1.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 533.000(Ft.)
Top (of initial area) elevation = 2391.000(Ft.)
Bottom (of initial area) elevation = 2383.080(Ft.)
Difference in elevation = 7.920(Ft.)
Slope = 0.01486 s(percent)= 1.49
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 8.579 min.
Rainfall intensity = 2.495(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.861
Decimal fraction soil group A = 0.754
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.246
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 41.10
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 7.540(CFS)
Total initial stream area = 3.510(Ac.)
Pervious area fraction = 0.100

++

```
Process from Point/Station        1.000 to Point/Station        2.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2379.080(Ft.)
Downstream point/station elevation =  2379.000(Ft.)
Pipe length  =   108.36(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     7.540(CFS)
Given pipe size =     24.00(In.)
NOTE: Normal flow is pressure flow in user selected pipe size.
The approximate hydraulic grade line above the pipe invert is
     0.175(Ft.)  at the headworks or inlet of the pipe(s)
 Pipe friction loss =      0.120(Ft.)
 Minor friction loss =      0.134(Ft.)  K-factor =   1.50
Pipe flow velocity =      2.40(Ft/s)
Travel time through pipe =    0.75 min.
Time of concentration (TC) =     9.33 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      3.510(Ac.)
Runoff from this stream =      7.540(CFS)
Time of concentration =    9.33 min.
Rainfall intensity =     2.386(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   136.000(Ft.)
Top (of initial area) elevation =  2385.500(Ft.)
Bottom (of initial area) elevation =  2384.520(Ft.)
Difference in elevation =     0.980(Ft.)
Slope =    0.00721  s(percent)=       0.72
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.081 min.
Rainfall intensity =      2.762(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.741
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      0.389(CFS)
Total initial stream area =        0.190(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        2.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2380.300(Ft.)
Downstream point/station elevation =  2379.000(Ft.)
Pipe length  =   262.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     0.389(CFS)
Given pipe size =      8.00(In.)
Calculated individual pipe flow  =     0.389(CFS)
Normal flow depth in pipe =    3.80(In.)
Flow top width inside pipe =    7.99(In.)
Critical Depth =    3.48(In.)
Pipe flow velocity =      2.38(Ft/s)
Travel time through pipe =    1.83 min.
```

```
Time of concentration (TC) =     8.91 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        2.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.190(Ac.)
Runoff from this stream =      0.389(CFS)
Time of concentration =    8.91 min.
Rainfall intensity =     2.445(In/Hr)
Summary of stream data:

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


1        7.540      9.33                2.386
2        0.389      8.91                2.445
Largest stream flow has longer time of concentration
Qp =      7.540 + sum of
          Qb         Ia/Ib
           0.389 *    0.976 =      0.379
Qp =      7.920

Total of 2 streams to confluence:
Flow rates before confluence point:
       7.540       0.389
Area of streams before confluence:
        3.510        0.190
Results of confluence:
Total flow rate =      7.920(CFS)
Time of concentration =     9.331 min.
Effective stream area after confluence =      3.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        2.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
CONDOMINIUM subarea type
Runoff Coefficient = 0.729
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Time of concentration =     9.33 min.
Rainfall intensity =      2.386(In/Hr) for a    10.0 year storm
Subarea runoff =      0.679(CFS) for      0.390(Ac.)
Total runoff =      8.598(CFS)  Total area =       4.090(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
________________________________________________________________________
Upstream point/station elevation =  2379.000(Ft.)
Downstream point/station elevation =  2377.100(Ft.)
Pipe length  =   379.55(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     8.598(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =     8.598(CFS)
Normal flow depth in pipe =   12.52(In.)
Flow top width inside pipe =   23.98(In.)
Critical Depth =   12.54(In.)
Pipe flow velocity =      5.18(Ft/s)
```

```
Travel time through pipe =    1.22 min.
Time of concentration (TC) =    10.55 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        5.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
CONDOMINIUM subarea type
Runoff Coefficient = 0.724
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Time of concentration =    10.55 min.
Rainfall intensity =      2.236(In/Hr) for a    10.0 year storm
Subarea runoff =      0.971(CFS) for      0.600(Ac.)
Total runoff =      9.569(CFS)  Total area =       4.690(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
________________________________________________________________________
Upstream point/station elevation =  2377.100(Ft.)
Downstream point/station elevation =  2376.040(Ft.)
Pipe length  =   105.50(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     9.569(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =     9.569(CFS)
Normal flow depth in pipe =   10.88(In.)
Flow top width inside pipe =   23.89(In.)
Critical Depth =   13.26(In.)
Pipe flow velocity =      6.91(Ft/s)
Travel time through pipe =    0.25 min.
Time of concentration (TC) =    10.81 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        6.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.868
Decimal fraction soil group A = 0.446
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.554
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  52.50
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    10.81 min.
Rainfall intensity =      2.208(In/Hr) for a    10.0 year storm
Subarea runoff =      2.434(CFS) for      1.270(Ac.)
Total runoff =     12.004(CFS)  Total area =       5.960(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
________________________________________________________________________
Upstream point/station elevation =  2376.040(Ft.)
Downstream point/station elevation =  2365.000(Ft.)
Pipe length  =   221.33(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    12.004(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =    12.004(CFS)
Normal flow depth in pipe =    7.96(In.)
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Flow top width inside pipe =   22.60(In.)
Critical Depth =   14.94(In.)
Pipe flow velocity =     13.18(Ft/s)
Travel time through pipe =    0.28 min.
Time of concentration (TC) =    11.09 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        7.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.960(Ac.)
Runoff from this stream =     12.004(CFS)
Time of concentration =   11.09 min.
Rainfall intensity =     2.178(In/Hr)


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Process from Point/Station        0.000 to Point/Station        8.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   312.870(Ft.)
Top (of initial area) elevation =  2391.000(Ft.)
Bottom (of initial area) elevation =  2383.120(Ft.)
Difference in elevation =     7.880(Ft.)
Slope =    0.02519  s(percent)=       2.52
TC = k(0.323)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    6.716 min.
Rainfall intensity =      2.841(In/Hr) for a    10.0 year storm
APARTMENT subarea type
Runoff Coefficient = 0.818
Decimal fraction soil group A = 0.900
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.100
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  35.70
Pervious area fraction =  0.200; Impervious fraction =  0.800
Initial subarea runoff =      1.997(CFS)
Total initial stream area =        0.860(Ac.)
Pervious area fraction = 0.200


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Process from Point/Station        8.000 to Point/Station        9.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2380.120(Ft.)
Downstream point/station elevation =  2377.000(Ft.)
Pipe length  =   408.16(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     1.997(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     1.997(CFS)
Normal flow depth in pipe =    6.98(In.)
Flow top width inside pipe =   11.84(In.)
Critical Depth =    7.23(In.)
Pipe flow velocity =      4.21(Ft/s)
Travel time through pipe =    1.62 min.
Time of concentration (TC) =     8.33 min.


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Process from Point/Station        9.000 to Point/Station        9.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.883
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
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Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     8.33 min.
Rainfall intensity =      2.534(In/Hr) for a    10.0 year storm
Subarea runoff =      2.953(CFS) for      1.320(Ac.)
Total runoff =      4.950(CFS)  Total area =       2.180(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        9.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2377.000(Ft.)
Downstream point/station elevation =  2365.500(Ft.)
Pipe length  =    96.38(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     4.950(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     4.950(CFS)
Normal flow depth in pipe =    5.30(In.)
Flow top width inside pipe =   11.92(In.)
Critical Depth =   10.97(In.)
Pipe flow velocity =     14.82(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =     8.44 min.


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Process from Point/Station        9.000 to Point/Station        7.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      2.180(Ac.)
Runoff from this stream =      4.950(CFS)
Time of concentration =    8.44 min.
Rainfall intensity =     2.517(In/Hr)


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Process from Point/Station       10.000 to Point/Station       11.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   350.520(Ft.)
Top (of initial area) elevation =  2384.480(Ft.)
Bottom (of initial area) elevation =  2377.530(Ft.)
Difference in elevation =     6.950(Ft.)
Slope =    0.01983  s(percent)=       1.98
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    6.848 min.
Rainfall intensity =      2.812(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.884
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      2.362(CFS)
Total initial stream area =        0.950(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2377.530(Ft.)
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Downstream point/station elevation =  2365.500(Ft.)
Pipe length  =    96.47(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     2.362(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     2.362(CFS)
Normal flow depth in pipe =    3.52(In.)
Flow top width inside pipe =   10.93(In.)
Critical Depth =    7.89(In.)
Pipe flow velocity =     12.28(Ft/s)
Travel time through pipe =    0.13 min.
Time of concentration (TC) =     6.98 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station        7.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      0.950(Ac.)
Runoff from this stream =      2.362(CFS)
Time of concentration =    6.98 min.
Rainfall intensity =     2.784(In/Hr)


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Process from Point/Station       12.000 to Point/Station       13.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   766.580(Ft.)
Top (of initial area) elevation =  2385.500(Ft.)
Bottom (of initial area) elevation =  2374.100(Ft.)
Difference in elevation =    11.400(Ft.)
Slope =    0.01487  s(percent)=       1.49
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.919 min.
Rainfall intensity =      2.310(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.860
Decimal fraction soil group A = 0.737
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.263
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  41.73
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      8.979(CFS)
Total initial stream area =        4.520(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station       13.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2366.400(Ft.)
Downstream point/station elevation =  2365.500(Ft.)
Pipe length  =    99.22(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     8.979(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =     8.979(CFS)
Normal flow depth in pipe =   10.80(In.)
Flow top width inside pipe =   23.88(In.)
Critical Depth =   12.84(In.)
Pipe flow velocity =      6.55(Ft/s)
Travel time through pipe =    0.25 min.
Time of concentration (TC) =    10.17 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station        7.000
```

**** CONFLUENCE OF MINOR STREAMS ****

Along Main Stream number: 1 in normal stream number 4
Stream flow area = 4.520(Ac.)
Runoff from this stream = 8.979(CFS)
Time of concentration = 10.17 min.
Rainfall intensity = 2.280(In/Hr)
Summary of stream data:

Stream No.	Flow rate (CFS)	TC (min)	Rainfall Intensity (In/Hr)
1	12.004	11.09	2.178
2	4.950	8.44	2.517
3	2.362	6.98	2.784
4	8.979	10.17	2.280

Largest stream flow has longer time of concentration
Qp = 12.004 + sum of

Qb		Ia/Ib		
4.950	*	0.865	=	4.284
Qb		Ia/Ib		
2.362	*	0.782	=	1.848
Qb		Ia/Ib		
8.979	*	0.955	=	8.579

Qp = 26.715

Total of 4 streams to confluence:
Flow rates before confluence point:
12.004 4.950 2.362 8.979
Area of streams before confluence:
5.960 2.180 0.950 4.520
Results of confluence:
Total flow rate = 26.715(CFS)
Time of concentration = 11.085 min.
Effective stream area after confluence = 13.610(Ac.)

++
Process from Point/Station 14.000 to Point/Station 15.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 921.000(Ft.)
Top (of initial area) elevation = 2385.880(Ft.)
Bottom (of initial area) elevation = 2362.590(Ft.)
Difference in elevation = 23.290(Ft.)
Slope = 0.02529 s(percent)= 2.53
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 15.359 min.
Rainfall intensity = 1.832(In/Hr) for a 10.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.674
Decimal fraction soil group A = 0.206
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.794
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 61.38
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 0.815(CFS)
Total initial stream area = 0.660(Ac.)
Pervious area fraction = 0.800
End of computations, total study area = 14.27 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.159
Area averaged RI index number = 46.6

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2018 Version 9.0
Rational Hydrology Study Date: 03/05/23 File:dev.out

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
100-YEAR, 1-HOUR STORM
BY: JTS DATE: 03-05-23

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

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

Program License Serial Number 6320

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 [Banning] area used.
10 year storm 10 minute intensity = 2.300(In/Hr)
10 year storm 60 minute intensity = 0.890(In/Hr)
100 year storm 10 minute intensity = 3.410(In/Hr)
100 year storm 60 minute intensity = 1.320(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.320(In/Hr)
Slope of intensity duration curve = 0.5300

++

Process from Point/Station 0.000 to Point/Station 1.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 533.000(Ft.)
Top (of initial area) elevation = 2391.000(Ft.)
Bottom (of initial area) elevation = 2383.080(Ft.)
Difference in elevation = 7.920(Ft.)
Slope = 0.01486 s(percent)= 1.49
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 8.579 min.
Rainfall intensity = 3.701(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.869
Decimal fraction soil group A = 0.754
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.246
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 41.10
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 11.292(CFS)
Total initial stream area = 3.510(Ac.)
Pervious area fraction = 0.100

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Process from Point/Station        1.000 to Point/Station        2.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2379.080(Ft.)
Downstream point/station elevation =  2379.000(Ft.)
Pipe length  =   108.36(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    11.292(CFS)
Given pipe size =     24.00(In.)
NOTE: Normal flow is pressure flow in user selected pipe size.
The approximate hydraulic grade line above the pipe invert is
     0.491(Ft.)  at the headworks or inlet of the pipe(s)
 Pipe friction loss =      0.270(Ft.)
 Minor friction loss =      0.301(Ft.)  K-factor =   1.50
Pipe flow velocity =      3.59(Ft/s)
Travel time through pipe =    0.50 min.
Time of concentration (TC) =     9.08 min.


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Process from Point/Station        1.000 to Point/Station        2.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      3.510(Ac.)
Runoff from this stream =     11.292(CFS)
Time of concentration =    9.08 min.
Rainfall intensity =     3.591(In/Hr)


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Process from Point/Station        3.000 to Point/Station        4.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   136.000(Ft.)
Top (of initial area) elevation =  2385.500(Ft.)
Bottom (of initial area) elevation =  2384.520(Ft.)
Difference in elevation =     0.980(Ft.)
Slope =    0.00721  s(percent)=       0.72
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.081 min.
Rainfall intensity =      4.097(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.771
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      0.600(CFS)
Total initial stream area =       0.190(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station        4.000 to Point/Station        2.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2380.300(Ft.)
Downstream point/station elevation =  2379.000(Ft.)
Pipe length  =   262.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     0.600(CFS)
Given pipe size =      8.00(In.)
Calculated individual pipe flow  =     0.600(CFS)
Normal flow depth in pipe =    4.96(In.)
Flow top width inside pipe =    7.77(In.)
Critical Depth =    4.37(In.)
Pipe flow velocity =      2.64(Ft/s)
Travel time through pipe =    1.65 min.
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Time of concentration (TC) =     8.73 min.


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Process from Point/Station        4.000 to Point/Station        2.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.190(Ac.)
Runoff from this stream =      0.600(CFS)
Time of concentration =    8.73 min.
Rainfall intensity =     3.666(In/Hr)
Summary of stream data:

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


1       11.292      9.08                 3.591
2        0.600      8.73                 3.666
Largest stream flow has longer time of concentration
Qp =     11.292 + sum of
          Qb         Ia/Ib
           0.600 *    0.980 =      0.588
Qp =     11.881

Total of 2 streams to confluence:
Flow rates before confluence point:
      11.292       0.600
Area of streams before confluence:
        3.510        0.190
Results of confluence:
Total flow rate =     11.881(CFS)
Time of concentration =     9.081 min.
Effective stream area after confluence =      3.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        2.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
CONDOMINIUM subarea type
Runoff Coefficient = 0.761
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Time of concentration =     9.08 min.
Rainfall intensity =      3.591(In/Hr) for a   100.0 year storm
Subarea runoff =      1.066(CFS) for      0.390(Ac.)
Total runoff =     12.946(CFS)  Total area =       4.090(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2379.000(Ft.)
Downstream point/station elevation =  2377.100(Ft.)
Pipe length  =   379.55(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    12.946(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =    12.946(CFS)
Normal flow depth in pipe =   16.36(In.)
Flow top width inside pipe =   22.36(In.)
Critical Depth =   15.54(In.)
Pipe flow velocity =      5.67(Ft/s)
```

```
Travel time through pipe =    1.12 min.
Time of concentration (TC) =    10.20 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        5.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
CONDOMINIUM subarea type
Runoff Coefficient = 0.756
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Time of concentration =    10.20 min.
Rainfall intensity =      3.377(In/Hr) for a   100.0 year storm
Subarea runoff =      1.532(CFS) for      0.600(Ac.)
Total runoff =     14.479(CFS)  Total area =       4.690(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2377.100(Ft.)
Downstream point/station elevation =  2376.040(Ft.)
Pipe length  =   105.50(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    14.479(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =    14.479(CFS)
Normal flow depth in pipe =   13.93(In.)
Flow top width inside pipe =   23.69(In.)
Critical Depth =   16.44(In.)
Pipe flow velocity =      7.65(Ft/s)
Travel time through pipe =    0.23 min.
Time of concentration (TC) =    10.43 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        6.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.876
Decimal fraction soil group A = 0.446
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.554
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  52.50
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    10.43 min.
Rainfall intensity =      3.337(In/Hr) for a   100.0 year storm
Subarea runoff =      3.713(CFS) for      1.270(Ac.)
Total runoff =     18.192(CFS)  Total area =       5.960(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2376.040(Ft.)
Downstream point/station elevation =  2365.000(Ft.)
Pipe length  =   221.33(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    18.192(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =    18.192(CFS)
Normal flow depth in pipe =    9.96(In.)
```

```
Flow top width inside pipe =   23.65(In.)
Critical Depth =   18.43(In.)
Pipe flow velocity =     14.77(Ft/s)
Travel time through pipe =    0.25 min.
Time of concentration (TC) =    10.68 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        7.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.960(Ac.)
Runoff from this stream =     18.192(CFS)
Time of concentration =   10.68 min.
Rainfall intensity =     3.296(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        0.000 to Point/Station        8.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   312.870(Ft.)
Top (of initial area) elevation =  2391.000(Ft.)
Bottom (of initial area) elevation =  2383.120(Ft.)
Difference in elevation =     7.880(Ft.)
Slope =    0.02519  s(percent)=       2.52
TC = k(0.323)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    6.716 min.
Rainfall intensity =      4.213(In/Hr) for a   100.0 year storm
APARTMENT subarea type
Runoff Coefficient = 0.835
Decimal fraction soil group A = 0.900
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.100
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  35.70
Pervious area fraction =  0.200; Impervious fraction =  0.800
Initial subarea runoff =      3.024(CFS)
Total initial stream area =        0.860(Ac.)
Pervious area fraction = 0.200


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        8.000 to Point/Station        9.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2380.120(Ft.)
Downstream point/station elevation =  2377.000(Ft.)
Pipe length  =   408.16(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     3.024(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     3.024(CFS)
Normal flow depth in pipe =    9.54(In.)
Flow top width inside pipe =    9.69(In.)
Critical Depth =    8.94(In.)
Pipe flow velocity =      4.52(Ft/s)
Travel time through pipe =    1.51 min.
Time of concentration (TC) =     8.22 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        9.000 to Point/Station        9.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.888
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
```

```
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     8.22 min.
Rainfall intensity =      3.785(In/Hr) for a   100.0 year storm
Subarea runoff =      4.435(CFS) for      1.320(Ac.)
Total runoff =      7.460(CFS)  Total area =       2.180(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        9.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2377.000(Ft.)
Downstream point/station elevation =  2365.500(Ft.)
Pipe length  =    96.38(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     7.460(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     7.460(CFS)
Normal flow depth in pipe =    6.74(In.)
Flow top width inside pipe =   11.91(In.)
Critical depth could not be calculated.
Pipe flow velocity =     16.41(Ft/s)
Travel time through pipe =    0.10 min.
Time of concentration (TC) =     8.32 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        9.000 to Point/Station        7.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      2.180(Ac.)
Runoff from this stream =      7.460(CFS)
Time of concentration =    8.32 min.
Rainfall intensity =     3.761(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.000 to Point/Station       11.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   350.520(Ft.)
Top (of initial area) elevation =  2384.480(Ft.)
Bottom (of initial area) elevation =  2377.530(Ft.)
Difference in elevation =     6.950(Ft.)
Slope =    0.01983  s(percent)=       1.98
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    6.848 min.
Rainfall intensity =      4.170(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.889
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      3.521(CFS)
Total initial stream area =        0.950(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2377.530(Ft.)
```

```
Downstream point/station elevation =  2365.500(Ft.)
Pipe length  =    96.47(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     3.521(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     3.521(CFS)
Normal flow depth in pipe =    4.34(In.)
Flow top width inside pipe =   11.53(In.)
Critical Depth =    9.62(In.)
Pipe flow velocity =     13.74(Ft/s)
Travel time through pipe =    0.12 min.
Time of concentration (TC) =     6.96 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station        7.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      0.950(Ac.)
Runoff from this stream =      3.521(CFS)
Time of concentration =    6.96 min.
Rainfall intensity =     4.133(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station       13.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   766.580(Ft.)
Top (of initial area) elevation =  2385.500(Ft.)
Bottom (of initial area) elevation =  2374.100(Ft.)
Difference in elevation =    11.400(Ft.)
Slope =    0.01487  s(percent)=       1.49
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.919 min.
Rainfall intensity =      3.427(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.868
Decimal fraction soil group A = 0.737
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.263
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  41.73
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     13.449(CFS)
Total initial stream area =        4.520(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station        7.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  2366.400(Ft.)
Downstream point/station elevation =  2365.500(Ft.)
Pipe length  =    99.22(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.449(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =    13.449(CFS)
Normal flow depth in pipe =   13.73(In.)
Flow top width inside pipe =   23.75(In.)
Critical Depth =   15.84(In.)
Pipe flow velocity =      7.23(Ft/s)
Travel time through pipe =    0.23 min.
Time of concentration (TC) =    10.15 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station        7.000
```

```
**** CONFLUENCE OF MINOR STREAMS ****
____________________________________________________________________
Along Main Stream number: 1 in normal stream number 4
Stream flow area =      4.520(Ac.)
Runoff from this stream =     13.449(CFS)
Time of concentration =   10.15 min.
Rainfall intensity =     3.385(In/Hr)
Summary of stream data:

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


1       18.192     10.68                 3.296
2        7.460      8.32                 3.761
3        3.521      6.96                 4.133
4       13.449     10.15                 3.385
Largest stream flow has longer time of concentration
Qp =     18.192 + sum of
          Qb         Ia/Ib
           7.460 *    0.876 =      6.536
          Qb         Ia/Ib
           3.521 *    0.797 =      2.807
          Qb         Ia/Ib
           13.449 *    0.973 =     13.092
Qp =     40.627

Total of 4 streams to confluence:
Flow rates before confluence point:
      18.192       7.460       3.521      13.449
Area of streams before confluence:
        5.960        2.180        0.950        4.520
Results of confluence:
Total flow rate =     40.627(CFS)
Time of concentration =    10.676 min.
Effective stream area after confluence =     13.610(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       15.000
**** INITIAL AREA EVALUATION ****
____________________________________________________________________
Initial area flow distance =   921.000(Ft.)
Top (of initial area) elevation =  2385.880(Ft.)
Bottom (of initial area) elevation =  2362.590(Ft.)
Difference in elevation =    23.290(Ft.)
Slope =    0.02529  s(percent)=       2.53
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.359 min.
Rainfall intensity =      2.718(In/Hr) for a   100.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.730
Decimal fraction soil group A = 0.206
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.794
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  61.38
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      1.310(CFS)
Total initial stream area =        0.660(Ac.)
Pervious area fraction = 0.800
End of computations, total study area =           14.27 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.159
Area averaged RI index number =  46.6
```

ATTACHMENT 4

Developed
On-Site Conditions
2, 5, 10, & 100-Year
Unit Hydrograph Calculations

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

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Study date 03/02/23 File: devhyd12.out

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
2-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	0.56	7.99

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	1.28	18.27

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.560(In)
Area Averaged 100-Year Rainfall = 1.280(In)

Point rain (area averaged) = 0.560(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.560(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
          14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


 RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
 AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
 46.6  27.6      0.779     0.159        0.668       1.000      0.668
                                                  Sum (F) =   0.668
 Area averaged mean soil loss (F) (In/Hr) =  0.668
 Minimum soil loss rate ((In/Hr)) =  0.334
 (for 24 hour storm duration)
 Soil low loss rate (decimal) =   0.259
 ------------------------------------------------------------------------
 Slope of intensity-duration curve for a 1 hour storm =0.5300
 ------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
 ------------------------------------------------------------------------
                Unit Hydrograph Data
 ------------------------------------------------------------------------
 Unit time period   Time % of lag   Distribution   Unit Hydrograph
     (hrs)                          Graph %           (CFS)
 ------------------------------------------------------------------------
     1   0.083        157.487         34.939             5.025
     2   0.167        314.973         46.456             6.681
     3   0.250        472.460         10.764             1.548
     4   0.333        629.946          4.657             0.670
     5   0.417        787.433          2.267             0.326
     6   0.500        944.919          0.918             0.132
                                 Sum = 100.000   Sum=     14.381
-------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.228       (  0.668)       0.059        0.169
   2   0.17     4.70      0.316       (  0.668)       0.082        0.234
   3   0.25     4.70      0.316       (  0.668)       0.082        0.234
   4   0.33     5.10      0.343       (  0.668)       0.089        0.254
   5   0.42     5.80      0.390       (  0.668)       0.101        0.289
   6   0.50     5.90      0.396       (  0.668)       0.103        0.294
   7   0.58     7.10      0.477       (  0.668)       0.124        0.354
   8   0.67     8.70      0.585       (  0.668)       0.151        0.433
   9   0.75    13.20      0.887       (  0.668)       0.230        0.657
  10   0.83    29.70      1.996       (  0.668)       0.517        1.479
  11   0.92     7.70      0.517       (  0.668)       0.134        0.383
  12   1.00     4.00      0.269       (  0.668)       0.070        0.199
                (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     5.0
        Flood volume = Effective rainfall      0.41(In)
         times area      14.3(Ac.)/[(In)/(Ft.)] =       0.5(Ac.Ft)
        Total soil loss =      0.15(In)
        Total soil loss =     0.172(Ac.Ft)
        Total rainfall =      0.56(In)
        Flood volume =       21492.2 Cubic Feet
        Total soil loss =        7512.1 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =     13.274(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 5.0 10.0 15.0 20.0
0+ 5	0.0059	0.85	VQ
0+10	0.0218	2.31	V Q
0+15	0.0424	3.00	V Q
0+20	0.0653	3.32	VQ
0+25	0.0909	3.72	Q
0+30	0.1189	4.06	QV
0+35	0.1496	4.47	Q V
0+40	0.1861	5.30	Q V
0+45	0.2348	7.07	Q V
0+50	0.3235	12.87	QV
0+55	0.4149	13.27	Q V
1+ 0	0.4595	6.48	Q V
1+ 5	0.4815	3.19	Q V
1+10	0.4893	1.13	Q V
1+15	0.4924	0.45	Q V
1+20	0.4932	0.12	Q V
1+25	0.4934	0.03	Q V

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

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Study date 03/02/23 File: devhyd32.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
2-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	0.96	13.70

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	2.23	31.82

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.960(In)
Area Averaged 100-Year Rainfall = 2.230(In)

Point rain (area averaged) = 0.960(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.960(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %

```
   14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  27.6      0.779     0.159        0.668       1.000      0.668
                                                 Sum (F) =   0.668
Area averaged mean soil loss (F) (In/Hr) =  0.668
Minimum soil loss rate ((In/Hr)) =  0.334
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     1.30      0.150       (  0.668)       0.039        0.111
    2   0.17     1.30      0.150       (  0.668)       0.039        0.111
    3   0.25     1.10      0.127       (  0.668)       0.033        0.094
    4   0.33     1.50      0.173       (  0.668)       0.045        0.128
    5   0.42     1.50      0.173       (  0.668)       0.045        0.128
    6   0.50     1.80      0.207       (  0.668)       0.054        0.154
    7   0.58     1.50      0.173       (  0.668)       0.045        0.128
    8   0.67     1.80      0.207       (  0.668)       0.054        0.154
    9   0.75     1.80      0.207       (  0.668)       0.054        0.154
   10   0.83     1.50      0.173       (  0.668)       0.045        0.128
   11   0.92     1.60      0.184       (  0.668)       0.048        0.137
   12   1.00     1.80      0.207       (  0.668)       0.054        0.154
   13   1.08     2.20      0.253       (  0.668)       0.066        0.188
   14   1.17     2.20      0.253       (  0.668)       0.066        0.188
   15   1.25     2.20      0.253       (  0.668)       0.066        0.188
   16   1.33     2.00      0.230       (  0.668)       0.060        0.171
   17   1.42     2.60      0.300       (  0.668)       0.078        0.222
   18   1.50     2.70      0.311       (  0.668)       0.081        0.230
   19   1.58     2.40      0.276       (  0.668)       0.072        0.205
   20   1.67     2.70      0.311       (  0.668)       0.081        0.230
   21   1.75     3.30      0.380       (  0.668)       0.098        0.282
   22   1.83     3.10      0.357       (  0.668)       0.092        0.265
   23   1.92     2.90      0.334       (  0.668)       0.087        0.248
   24   2.00     3.00      0.346       (  0.668)       0.090        0.256
   25   2.08     3.10      0.357       (  0.668)       0.092        0.265
   26   2.17     4.20      0.484       (  0.668)       0.125        0.359
   27   2.25     5.00      0.576       (  0.668)       0.149        0.427
   28   2.33     3.50      0.403       (  0.668)       0.104        0.299
   29   2.42     6.80      0.783       (  0.668)       0.203        0.580
   30   2.50     7.30      0.841       (  0.668)       0.218        0.623
   31   2.58     8.20      0.945       (  0.668)       0.245        0.700
   32   2.67     5.90      0.680       (  0.668)       0.176        0.504
```

```
33   2.75     2.00      0.230       (  0.668)       0.060        0.171
34   2.83     1.80      0.207       (  0.668)       0.054        0.154
35   2.92     1.80      0.207       (  0.668)       0.054        0.154
36   3.00     0.60      0.069       (  0.668)       0.018        0.051
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =     8.5
      Flood volume = Effective rainfall      0.71(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       0.8(Ac.Ft)
      Total soil loss =      0.25(In)
      Total soil loss =     0.296(Ac.Ft)
      Total rainfall =      0.96(In)
      Flood volume =       36846.2 Cubic Feet
      Total soil loss =       12878.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      8.970(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0038      0.56  V Q       |         |         |         |
  0+10       0.0128      1.30  V    Q    |         |         |         |
  0+15       0.0223      1.39  |V   Q    |         |         |         |
  0+20       0.0328      1.52  |V    Q   |         |         |         |
  0+25       0.0449      1.76  | V    Q  |         |         |         |
  0+30       0.0582      1.94  | V    Q  |         |         |         |
  0+35       0.0720      2.00  |  V    Q |         |         |         |
  0+40       0.0858      2.01  |   V   Q |         |         |         |
  0+45       0.1007      2.16  |   V   Q |         |         |         |
  0+50       0.1149      2.06  |    V  Q |         |         |         |
  0+55       0.1283      1.95  |     VQ  |         |         |         |
  1+ 0       0.1424      2.05  |     V Q |         |         |         |
  1+ 5       0.1586      2.34  |      V Q|         |         |         |
  1+10       0.1764      2.59  |       V Q         |         |         |
  1+15       0.1947      2.65  |        VQ         |         |         |
  1+20       0.2126      2.60  |         Q         |         |         |
  1+25       0.2315      2.76  |         VQ        |         |         |
  1+30       0.2530      3.12  |         |VQ       |         |         |
  1+35       0.2745      3.11  |         | Q       |         |         |
  1+40       0.2959      3.11  |         | QV      |         |         |
  1+45       0.3202      3.52  |         |   QV    |         |         |
  1+50       0.3464      3.81  |         |    QV   |         |         |
  1+55       0.3719      3.70  |         |   Q  V  |         |         |
  2+ 0       0.3970      3.64  |         |   Q   V |         |         |
  2+ 5       0.4227      3.73  |         |   Q    V|         |         |
  2+10       0.4520      4.26  |         |      Q  |V        |         |
  2+15       0.4881      5.24  |         |         Q  V      |         |
  2+20       0.5239      5.20  |         |         Q   V     |         |
  2+25       0.5648      5.94  |         |         |  Q  V   |         |
  2+30       0.6193      7.91  |         |         |        V|Q        |
  2+35       0.6811      8.97  |         |         |         | V  Q    |
  2+40       0.7411      8.72  |         |         |         |   QV    |
  2+45       0.7821      5.95  |         |         |  Q      |     V   |
  2+50       0.8058      3.44  |         |  Q      |         |       V |
  2+55       0.8245      2.71  |         Q         |         |       V |
  3+ 0       0.8375      1.89  |       Q |         |         |        V|
  3+ 5       0.8431      0.81  |  Q      |         |         |        V|
  3+10       0.8448      0.25  |Q        |         |         |        V|
  3+15       0.8456      0.10  Q         |         |         |        V|
  3+20       0.8458      0.04  Q         |         |         |        V|
  3+25       0.8459      0.01  Q         |         |         |        V|
-------------------------------------------------------------------------
```

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

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
Study date 03/02/23 File: devhyd62.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
2-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	1.42	20.26

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	3.15	44.95

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.420(In)
Area Averaged 100-Year Rainfall = 3.150(In)

Point rain (area averaged) = 1.420(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.420(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  27.6      0.779     0.159        0.668       1.000      0.668
                                                 Sum (F) =   0.668
Area averaged mean soil loss (F) (In/Hr) =  0.668
Minimum soil loss rate ((In/Hr)) =  0.334
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     0.50      0.085       (  0.668)       0.022        0.063
    2   0.17     0.60      0.102       (  0.668)       0.026        0.076
    3   0.25     0.60      0.102       (  0.668)       0.026        0.076
    4   0.33     0.60      0.102       (  0.668)       0.026        0.076
    5   0.42     0.60      0.102       (  0.668)       0.026        0.076
    6   0.50     0.70      0.119       (  0.668)       0.031        0.088
    7   0.58     0.70      0.119       (  0.668)       0.031        0.088
    8   0.67     0.70      0.119       (  0.668)       0.031        0.088
    9   0.75     0.70      0.119       (  0.668)       0.031        0.088
   10   0.83     0.70      0.119       (  0.668)       0.031        0.088
   11   0.92     0.70      0.119       (  0.668)       0.031        0.088
   12   1.00     0.80      0.136       (  0.668)       0.035        0.101
   13   1.08     0.80      0.136       (  0.668)       0.035        0.101
   14   1.17     0.80      0.136       (  0.668)       0.035        0.101
   15   1.25     0.80      0.136       (  0.668)       0.035        0.101
   16   1.33     0.80      0.136       (  0.668)       0.035        0.101
   17   1.42     0.80      0.136       (  0.668)       0.035        0.101
   18   1.50     0.80      0.136       (  0.668)       0.035        0.101
   19   1.58     0.80      0.136       (  0.668)       0.035        0.101
   20   1.67     0.80      0.136       (  0.668)       0.035        0.101
   21   1.75     0.80      0.136       (  0.668)       0.035        0.101
   22   1.83     0.80      0.136       (  0.668)       0.035        0.101
   23   1.92     0.80      0.136       (  0.668)       0.035        0.101
   24   2.00     0.90      0.153       (  0.668)       0.040        0.114
   25   2.08     0.80      0.136       (  0.668)       0.035        0.101
   26   2.17     0.90      0.153       (  0.668)       0.040        0.114
   27   2.25     0.90      0.153       (  0.668)       0.040        0.114
   28   2.33     0.90      0.153       (  0.668)       0.040        0.114
   29   2.42     0.90      0.153       (  0.668)       0.040        0.114
   30   2.50     0.90      0.153       (  0.668)       0.040        0.114
   31   2.58     0.90      0.153       (  0.668)       0.040        0.114
   32   2.67     0.90      0.153       (  0.668)       0.040        0.114
```

```
33   2.75     1.00      0.170       (  0.668)       0.044        0.126
34   2.83     1.00      0.170       (  0.668)       0.044        0.126
35   2.92     1.00      0.170       (  0.668)       0.044        0.126
36   3.00     1.00      0.170       (  0.668)       0.044        0.126
37   3.08     1.00      0.170       (  0.668)       0.044        0.126
38   3.17     1.10      0.187       (  0.668)       0.049        0.139
39   3.25     1.10      0.187       (  0.668)       0.049        0.139
40   3.33     1.10      0.187       (  0.668)       0.049        0.139
41   3.42     1.20      0.204       (  0.668)       0.053        0.152
42   3.50     1.30      0.222       (  0.668)       0.057        0.164
43   3.58     1.40      0.239       (  0.668)       0.062        0.177
44   3.67     1.40      0.239       (  0.668)       0.062        0.177
45   3.75     1.50      0.256       (  0.668)       0.066        0.189
46   3.83     1.50      0.256       (  0.668)       0.066        0.189
47   3.92     1.60      0.273       (  0.668)       0.071        0.202
48   4.00     1.60      0.273       (  0.668)       0.071        0.202
49   4.08     1.70      0.290       (  0.668)       0.075        0.215
50   4.17     1.80      0.307       (  0.668)       0.079        0.227
51   4.25     1.90      0.324       (  0.668)       0.084        0.240
52   4.33     2.00      0.341       (  0.668)       0.088        0.253
53   4.42     2.10      0.358       (  0.668)       0.093        0.265
54   4.50     2.10      0.358       (  0.668)       0.093        0.265
55   4.58     2.20      0.375       (  0.668)       0.097        0.278
56   4.67     2.30      0.392       (  0.668)       0.102        0.290
57   4.75     2.40      0.409       (  0.668)       0.106        0.303
58   4.83     2.40      0.409       (  0.668)       0.106        0.303
59   4.92     2.50      0.426       (  0.668)       0.110        0.316
60   5.00     2.60      0.443       (  0.668)       0.115        0.328
61   5.08     3.10      0.528       (  0.668)       0.137        0.391
62   5.17     3.60      0.613       (  0.668)       0.159        0.455
63   5.25     3.90      0.665       (  0.668)       0.172        0.492
64   5.33     4.20      0.716       (  0.668)       0.185        0.530
65   5.42     4.70      0.801       (  0.668)       0.207        0.593
66   5.50     5.60      0.954       (  0.668)       0.247        0.707
67   5.58     1.90      0.324       (  0.668)       0.084        0.240
68   5.67     0.90      0.153       (  0.668)       0.040        0.114
69   5.75     0.60      0.102       (  0.668)       0.026        0.076
70   5.83     0.50      0.085       (  0.668)       0.022        0.063
71   5.92     0.30      0.051       (  0.668)       0.013        0.038
72   6.00     0.20      0.034       (  0.668)       0.009        0.025
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    12.6
      Flood volume = Effective rainfall      1.05(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       1.3(Ac.Ft)
      Total soil loss =      0.37(In)
      Total soil loss =     0.437(Ac.Ft)
      Total rainfall =      1.42(In)
      Flood volume =       54502.4 Cubic Feet
      Total soil loss =       19050.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      8.873(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0022      0.32  VQ        |         |         |         |
  0+10       0.0077      0.80  V  Q      |         |         |         |
  0+15       0.0145      0.99  V  Q      |         |         |         |
  0+20       0.0217      1.05  V   Q     |         |         |         |
  0+25       0.0291      1.08  V   Q     |         |         |         |
  0+30       0.0371      1.15  |V  Q     |         |         |         |
  0+35       0.0456      1.24  |V  Q     |         |         |         |
  0+40       0.0542      1.26  |V   Q    |         |         |         |
```

```
0+45      0.0630     1.27  | V  Q    |         |         |         |
0+50      0.0717     1.27  | V  Q    |         |         |         |
0+55      0.0805     1.27  | V  Q    |         |         |         |
1+ 0      0.0897     1.34  | V  Q    |         |         |         |
1+ 5      0.0994     1.42  |  V Q    |         |         |         |
1+10      0.1093     1.44  |  V Q    |         |         |         |
1+15      0.1193     1.45  |  V Q    |         |         |         |
1+20      0.1293     1.45  |   VQ    |         |         |         |
1+25      0.1393     1.45  |   VQ    |         |         |         |
1+30      0.1493     1.45  |   VQ    |         |         |         |
1+35      0.1593     1.45  |    Q    |         |         |         |
1+40      0.1694     1.45  |    Q    |         |         |         |
1+45      0.1794     1.45  |    Q    |         |         |         |
1+50      0.1894     1.45  |    QV   |         |         |         |
1+55      0.1994     1.45  |    QV   |         |         |         |
2+ 0      0.2098     1.52  |     Q   |         |         |         |
2+ 5      0.2204     1.54  |     QV  |         |         |         |
2+10      0.2310     1.54  |     QV  |         |         |         |
2+15      0.2421     1.61  |     QV  |         |         |         |
2+20      0.2533     1.62  |     Q V |         |         |         |
2+25      0.2645     1.63  |     Q V |         |         |         |
2+30      0.2758     1.63  |     Q V |         |         |         |
2+35      0.2870     1.64  |     Q  V|         |         |         |
2+40      0.2983     1.64  |     Q  V|         |         |         |
2+45      0.3100     1.70  |     Q  V|         |         |         |
2+50      0.3223     1.78  |      Q  V         |         |         |
2+55      0.3347     1.80  |      Q  V         |         |         |
3+ 0      0.3471     1.81  |      Q  |V        |         |         |
3+ 5      0.3596     1.82  |      Q  |V        |         |         |
3+10      0.3726     1.88  |      Q  |V        |         |         |
3+15      0.3861     1.96  |      Q  | V       |         |         |
3+20      0.3998     1.98  |      Q  | V       |         |         |
3+25      0.4139     2.06  |       Q |  V      |         |         |
3+30      0.4292     2.21  |       Q |  V      |         |         |
3+35      0.4455     2.38  |        Q|   V     |         |         |
3+40      0.4627     2.49  |        Q|   V     |         |         |
3+45      0.4805     2.59  |         Q    V    |         |         |
3+50      0.4990     2.68  |         Q    V    |         |         |
3+55      0.5181     2.77  |         |Q    V   |         |         |
4+ 0      0.5378     2.87  |         |Q     V  |         |         |
4+ 5      0.5582     2.95  |         |Q     V  |         |         |
4+10      0.5796     3.11  |         | Q     V |         |         |
4+15      0.6022     3.28  |         |  Q     V|         |         |
4+20      0.6260     3.46  |         |  Q      V         |         |
4+25      0.6511     3.64  |         |   Q     V         |         |
4+30      0.6770     3.76  |         |    Q    |V        |         |
4+35      0.7036     3.86  |         |    Q    | V       |         |
4+40      0.7313     4.02  |         |     Q   |  V      |         |
4+45      0.7601     4.19  |         |     Q   |   V     |         |
4+50      0.7898     4.31  |         |      Q  |    V    |         |
4+55      0.8201     4.40  |         |      Q  |     V   |         |
5+ 0      0.8515     4.56  |         |       Q |      V  |         |
5+ 5      0.8859     4.99  |         |        Q|       V |         |
5+10      0.9256     5.76  |         |         |  Q     V|         |
5+15      0.9702     6.48  |         |         |    Q    |V        |
5+20      1.0189     7.07  |         |         |       Q | V       |
5+25      1.0724     7.77  |         |         |         |Q  V     |
5+30      1.1335     8.87  |         |         |         |    QV   |
5+35      1.1847     7.43  |         |         |        Q|      V  |
5+40      1.2116     3.91  |         |    Q    |         |       V |
5+45      1.2271     2.25  |       Q |         |         |        V|
5+50      1.2372     1.47  |    Q    |         |         |        V|
5+55      1.2439     0.98  |  Q      |         |         |        V|
6+ 0      1.2480     0.60  | Q       |         |         |        V|
6+ 5      1.2502     0.31  |Q        |         |         |        V|
6+10      1.2508     0.10  Q         |         |         |        V|
6+15      1.2511     0.04  Q         |         |         |        V|
6+20      1.2512     0.01  Q         |         |         |        V|
6+25      1.2512     0.00  Q         |         |         |         V
```

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

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Study date 03/02/23 File: devhyd242.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
2-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	2.65	37.82

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	6.95	99.18

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.650(In)
Area Averaged 100-Year Rainfall = 6.950(In)

Point rain (area averaged) = 2.650(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.650(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
   14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  27.6      0.779     0.159        0.668       1.000      0.668
                                                 Sum (F) =   0.668
Area averaged mean soil loss (F) (In/Hr) =  0.668
Minimum soil loss rate ((In/Hr)) =  0.334
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     0.07      0.021       (  1.184)       0.005        0.016
    2   0.17     0.07      0.021       (  1.179)       0.005        0.016
    3   0.25     0.07      0.021       (  1.174)       0.005        0.016
    4   0.33     0.10      0.032       (  1.170)       0.008        0.024
    5   0.42     0.10      0.032       (  1.165)       0.008        0.024
    6   0.50     0.10      0.032       (  1.161)       0.008        0.024
    7   0.58     0.10      0.032       (  1.156)       0.008        0.024
    8   0.67     0.10      0.032       (  1.152)       0.008        0.024
    9   0.75     0.10      0.032       (  1.147)       0.008        0.024
   10   0.83     0.13      0.042       (  1.143)       0.011        0.031
   11   0.92     0.13      0.042       (  1.138)       0.011        0.031
   12   1.00     0.13      0.042       (  1.134)       0.011        0.031
   13   1.08     0.10      0.032       (  1.129)       0.008        0.024
   14   1.17     0.10      0.032       (  1.125)       0.008        0.024
   15   1.25     0.10      0.032       (  1.120)       0.008        0.024
   16   1.33     0.10      0.032       (  1.116)       0.008        0.024
   17   1.42     0.10      0.032       (  1.111)       0.008        0.024
   18   1.50     0.10      0.032       (  1.107)       0.008        0.024
   19   1.58     0.10      0.032       (  1.103)       0.008        0.024
   20   1.67     0.10      0.032       (  1.098)       0.008        0.024
   21   1.75     0.10      0.032       (  1.094)       0.008        0.024
   22   1.83     0.13      0.042       (  1.089)       0.011        0.031
   23   1.92     0.13      0.042       (  1.085)       0.011        0.031
   24   2.00     0.13      0.042       (  1.081)       0.011        0.031
   25   2.08     0.13      0.042       (  1.076)       0.011        0.031
   26   2.17     0.13      0.042       (  1.072)       0.011        0.031
   27   2.25     0.13      0.042       (  1.068)       0.011        0.031
   28   2.33     0.13      0.042       (  1.063)       0.011        0.031
   29   2.42     0.13      0.042       (  1.059)       0.011        0.031
   30   2.50     0.13      0.042       (  1.055)       0.011        0.031
   31   2.58     0.17      0.053       (  1.050)       0.014        0.039
   32   2.67     0.17      0.053       (  1.046)       0.014        0.039
```

33	2.75	0.17	0.053	(1.042)	0.014	0.039
34	2.83	0.17	0.053	(1.037)	0.014	0.039
35	2.92	0.17	0.053	(1.033)	0.014	0.039
36	3.00	0.17	0.053	(1.029)	0.014	0.039
37	3.08	0.17	0.053	(1.024)	0.014	0.039
38	3.17	0.17	0.053	(1.020)	0.014	0.039
39	3.25	0.17	0.053	(1.016)	0.014	0.039
40	3.33	0.17	0.053	(1.012)	0.014	0.039
41	3.42	0.17	0.053	(1.008)	0.014	0.039
42	3.50	0.17	0.053	(1.003)	0.014	0.039
43	3.58	0.17	0.053	(0.999)	0.014	0.039
44	3.67	0.17	0.053	(0.995)	0.014	0.039
45	3.75	0.17	0.053	(0.991)	0.014	0.039
46	3.83	0.20	0.064	(0.987)	0.016	0.047
47	3.92	0.20	0.064	(0.982)	0.016	0.047
48	4.00	0.20	0.064	(0.978)	0.016	0.047
49	4.08	0.20	0.064	(0.974)	0.016	0.047
50	4.17	0.20	0.064	(0.970)	0.016	0.047
51	4.25	0.20	0.064	(0.966)	0.016	0.047
52	4.33	0.23	0.074	(0.962)	0.019	0.055
53	4.42	0.23	0.074	(0.958)	0.019	0.055
54	4.50	0.23	0.074	(0.953)	0.019	0.055
55	4.58	0.23	0.074	(0.949)	0.019	0.055
56	4.67	0.23	0.074	(0.945)	0.019	0.055
57	4.75	0.23	0.074	(0.941)	0.019	0.055
58	4.83	0.27	0.085	(0.937)	0.022	0.063
59	4.92	0.27	0.085	(0.933)	0.022	0.063
60	5.00	0.27	0.085	(0.929)	0.022	0.063
61	5.08	0.20	0.064	(0.925)	0.016	0.047
62	5.17	0.20	0.064	(0.921)	0.016	0.047
63	5.25	0.20	0.064	(0.917)	0.016	0.047
64	5.33	0.23	0.074	(0.913)	0.019	0.055
65	5.42	0.23	0.074	(0.909)	0.019	0.055
66	5.50	0.23	0.074	(0.905)	0.019	0.055
67	5.58	0.27	0.085	(0.901)	0.022	0.063
68	5.67	0.27	0.085	(0.897)	0.022	0.063
69	5.75	0.27	0.085	(0.893)	0.022	0.063
70	5.83	0.27	0.085	(0.889)	0.022	0.063
71	5.92	0.27	0.085	(0.885)	0.022	0.063
72	6.00	0.27	0.085	(0.881)	0.022	0.063
73	6.08	0.30	0.095	(0.877)	0.025	0.071
74	6.17	0.30	0.095	(0.874)	0.025	0.071
75	6.25	0.30	0.095	(0.870)	0.025	0.071
76	6.33	0.30	0.095	(0.866)	0.025	0.071
77	6.42	0.30	0.095	(0.862)	0.025	0.071
78	6.50	0.30	0.095	(0.858)	0.025	0.071
79	6.58	0.33	0.106	(0.854)	0.027	0.079
80	6.67	0.33	0.106	(0.850)	0.027	0.079
81	6.75	0.33	0.106	(0.846)	0.027	0.079
82	6.83	0.33	0.106	(0.843)	0.027	0.079
83	6.92	0.33	0.106	(0.839)	0.027	0.079
84	7.00	0.33	0.106	(0.835)	0.027	0.079
85	7.08	0.33	0.106	(0.831)	0.027	0.079
86	7.17	0.33	0.106	(0.827)	0.027	0.079
87	7.25	0.33	0.106	(0.824)	0.027	0.079
88	7.33	0.37	0.117	(0.820)	0.030	0.086
89	7.42	0.37	0.117	(0.816)	0.030	0.086
90	7.50	0.37	0.117	(0.812)	0.030	0.086
91	7.58	0.40	0.127	(0.809)	0.033	0.094
92	7.67	0.40	0.127	(0.805)	0.033	0.094
93	7.75	0.40	0.127	(0.801)	0.033	0.094
94	7.83	0.43	0.138	(0.798)	0.036	0.102
95	7.92	0.43	0.138	(0.794)	0.036	0.102
96	8.00	0.43	0.138	(0.790)	0.036	0.102
97	8.08	0.50	0.159	(0.787)	0.041	0.118
98	8.17	0.50	0.159	(0.783)	0.041	0.118
99	8.25	0.50	0.159	(0.779)	0.041	0.118
100	8.33	0.50	0.159	(0.776)	0.041	0.118
101	8.42	0.50	0.159	(0.772)	0.041	0.118

102	8.50	0.50	0.159	(0.768)	0.041	0.118
103	8.58	0.53	0.170	(0.765)	0.044	0.126
104	8.67	0.53	0.170	(0.761)	0.044	0.126
105	8.75	0.53	0.170	(0.758)	0.044	0.126
106	8.83	0.57	0.180	(0.754)	0.047	0.134
107	8.92	0.57	0.180	(0.750)	0.047	0.134
108	9.00	0.57	0.180	(0.747)	0.047	0.134
109	9.08	0.63	0.201	(0.743)	0.052	0.149
110	9.17	0.63	0.201	(0.740)	0.052	0.149
111	9.25	0.63	0.201	(0.736)	0.052	0.149
112	9.33	0.67	0.212	(0.733)	0.055	0.157
113	9.42	0.67	0.212	(0.729)	0.055	0.157
114	9.50	0.67	0.212	(0.726)	0.055	0.157
115	9.58	0.70	0.223	(0.722)	0.058	0.165
116	9.67	0.70	0.223	(0.719)	0.058	0.165
117	9.75	0.70	0.223	(0.715)	0.058	0.165
118	9.83	0.73	0.233	(0.712)	0.060	0.173
119	9.92	0.73	0.233	(0.709)	0.060	0.173
120	10.00	0.73	0.233	(0.705)	0.060	0.173
121	10.08	0.50	0.159	(0.702)	0.041	0.118
122	10.17	0.50	0.159	(0.698)	0.041	0.118
123	10.25	0.50	0.159	(0.695)	0.041	0.118
124	10.33	0.50	0.159	(0.692)	0.041	0.118
125	10.42	0.50	0.159	(0.688)	0.041	0.118
126	10.50	0.50	0.159	(0.685)	0.041	0.118
127	10.58	0.67	0.212	(0.681)	0.055	0.157
128	10.67	0.67	0.212	(0.678)	0.055	0.157
129	10.75	0.67	0.212	(0.675)	0.055	0.157
130	10.83	0.67	0.212	(0.672)	0.055	0.157
131	10.92	0.67	0.212	(0.668)	0.055	0.157
132	11.00	0.67	0.212	(0.665)	0.055	0.157
133	11.08	0.63	0.201	(0.662)	0.052	0.149
134	11.17	0.63	0.201	(0.658)	0.052	0.149
135	11.25	0.63	0.201	(0.655)	0.052	0.149
136	11.33	0.63	0.201	(0.652)	0.052	0.149
137	11.42	0.63	0.201	(0.649)	0.052	0.149
138	11.50	0.63	0.201	(0.645)	0.052	0.149
139	11.58	0.57	0.180	(0.642)	0.047	0.134
140	11.67	0.57	0.180	(0.639)	0.047	0.134
141	11.75	0.57	0.180	(0.636)	0.047	0.134
142	11.83	0.60	0.191	(0.633)	0.049	0.141
143	11.92	0.60	0.191	(0.630)	0.049	0.141
144	12.00	0.60	0.191	(0.626)	0.049	0.141
145	12.08	0.83	0.265	(0.623)	0.069	0.196
146	12.17	0.83	0.265	(0.620)	0.069	0.196
147	12.25	0.83	0.265	(0.617)	0.069	0.196
148	12.33	0.87	0.276	(0.614)	0.071	0.204
149	12.42	0.87	0.276	(0.611)	0.071	0.204
150	12.50	0.87	0.276	(0.608)	0.071	0.204
151	12.58	0.93	0.297	(0.605)	0.077	0.220
152	12.67	0.93	0.297	(0.602)	0.077	0.220
153	12.75	0.93	0.297	(0.599)	0.077	0.220
154	12.83	0.97	0.307	(0.596)	0.080	0.228
155	12.92	0.97	0.307	(0.593)	0.080	0.228
156	13.00	0.97	0.307	(0.590)	0.080	0.228
157	13.08	1.13	0.360	(0.587)	0.093	0.267
158	13.17	1.13	0.360	(0.584)	0.093	0.267
159	13.25	1.13	0.360	(0.581)	0.093	0.267
160	13.33	1.13	0.360	(0.578)	0.093	0.267
161	13.42	1.13	0.360	(0.575)	0.093	0.267
162	13.50	1.13	0.360	(0.572)	0.093	0.267
163	13.58	0.77	0.244	(0.569)	0.063	0.181
164	13.67	0.77	0.244	(0.566)	0.063	0.181
165	13.75	0.77	0.244	(0.563)	0.063	0.181
166	13.83	0.77	0.244	(0.560)	0.063	0.181
167	13.92	0.77	0.244	(0.557)	0.063	0.181
168	14.00	0.77	0.244	(0.555)	0.063	0.181
169	14.08	0.90	0.286	(0.552)	0.074	0.212
170	14.17	0.90	0.286	(0.549)	0.074	0.212

171	14.25	0.90	0.286	(	0.546)	0.074	0.212
172	14.33	0.87	0.276	(	0.543)	0.071	0.204
173	14.42	0.87	0.276	(	0.541)	0.071	0.204
174	14.50	0.87	0.276	(	0.538)	0.071	0.204
175	14.58	0.87	0.276	(	0.535)	0.071	0.204
176	14.67	0.87	0.276	(	0.532)	0.071	0.204
177	14.75	0.87	0.276	(	0.530)	0.071	0.204
178	14.83	0.83	0.265	(	0.527)	0.069	0.196
179	14.92	0.83	0.265	(	0.524)	0.069	0.196
180	15.00	0.83	0.265	(	0.521)	0.069	0.196
181	15.08	0.80	0.254	(	0.519)	0.066	0.189
182	15.17	0.80	0.254	(	0.516)	0.066	0.189
183	15.25	0.80	0.254	(	0.514)	0.066	0.189
184	15.33	0.77	0.244	(	0.511)	0.063	0.181
185	15.42	0.77	0.244	(	0.508)	0.063	0.181
186	15.50	0.77	0.244	(	0.506)	0.063	0.181
187	15.58	0.63	0.201	(	0.503)	0.052	0.149
188	15.67	0.63	0.201	(	0.500)	0.052	0.149
189	15.75	0.63	0.201	(	0.498)	0.052	0.149
190	15.83	0.63	0.201	(	0.495)	0.052	0.149
191	15.92	0.63	0.201	(	0.493)	0.052	0.149
192	16.00	0.63	0.201	(	0.490)	0.052	0.149
193	16.08	0.13	0.042	(	0.488)	0.011	0.031
194	16.17	0.13	0.042	(	0.485)	0.011	0.031
195	16.25	0.13	0.042	(	0.483)	0.011	0.031
196	16.33	0.13	0.042	(	0.480)	0.011	0.031
197	16.42	0.13	0.042	(	0.478)	0.011	0.031
198	16.50	0.13	0.042	(	0.476)	0.011	0.031
199	16.58	0.10	0.032	(	0.473)	0.008	0.024
200	16.67	0.10	0.032	(	0.471)	0.008	0.024
201	16.75	0.10	0.032	(	0.468)	0.008	0.024
202	16.83	0.10	0.032	(	0.466)	0.008	0.024
203	16.92	0.10	0.032	(	0.464)	0.008	0.024
204	17.00	0.10	0.032	(	0.461)	0.008	0.024
205	17.08	0.17	0.053	(	0.459)	0.014	0.039
206	17.17	0.17	0.053	(	0.457)	0.014	0.039
207	17.25	0.17	0.053	(	0.454)	0.014	0.039
208	17.33	0.17	0.053	(	0.452)	0.014	0.039
209	17.42	0.17	0.053	(	0.450)	0.014	0.039
210	17.50	0.17	0.053	(	0.447)	0.014	0.039
211	17.58	0.17	0.053	(	0.445)	0.014	0.039
212	17.67	0.17	0.053	(	0.443)	0.014	0.039
213	17.75	0.17	0.053	(	0.441)	0.014	0.039
214	17.83	0.13	0.042	(	0.439)	0.011	0.031
215	17.92	0.13	0.042	(	0.436)	0.011	0.031
216	18.00	0.13	0.042	(	0.434)	0.011	0.031
217	18.08	0.13	0.042	(	0.432)	0.011	0.031
218	18.17	0.13	0.042	(	0.430)	0.011	0.031
219	18.25	0.13	0.042	(	0.428)	0.011	0.031
220	18.33	0.13	0.042	(	0.426)	0.011	0.031
221	18.42	0.13	0.042	(	0.424)	0.011	0.031
222	18.50	0.13	0.042	(	0.422)	0.011	0.031
223	18.58	0.10	0.032	(	0.420)	0.008	0.024
224	18.67	0.10	0.032	(	0.418)	0.008	0.024
225	18.75	0.10	0.032	(	0.416)	0.008	0.024
226	18.83	0.07	0.021	(	0.414)	0.005	0.016
227	18.92	0.07	0.021	(	0.412)	0.005	0.016
228	19.00	0.07	0.021	(	0.410)	0.005	0.016
229	19.08	0.10	0.032	(	0.408)	0.008	0.024
230	19.17	0.10	0.032	(	0.406)	0.008	0.024
231	19.25	0.10	0.032	(	0.404)	0.008	0.024
232	19.33	0.13	0.042	(	0.402)	0.011	0.031
233	19.42	0.13	0.042	(	0.400)	0.011	0.031
234	19.50	0.13	0.042	(	0.398)	0.011	0.031
235	19.58	0.10	0.032	(	0.397)	0.008	0.024
236	19.67	0.10	0.032	(	0.395)	0.008	0.024
237	19.75	0.10	0.032	(	0.393)	0.008	0.024
238	19.83	0.07	0.021	(	0.391)	0.005	0.016
239	19.92	0.07	0.021	(	0.389)	0.005	0.016

```
240  20.00     0.07      0.021       (  0.388)       0.005        0.016
241  20.08     0.10      0.032       (  0.386)       0.008        0.024
242  20.17     0.10      0.032       (  0.384)       0.008        0.024
243  20.25     0.10      0.032       (  0.383)       0.008        0.024
244  20.33     0.10      0.032       (  0.381)       0.008        0.024
245  20.42     0.10      0.032       (  0.379)       0.008        0.024
246  20.50     0.10      0.032       (  0.378)       0.008        0.024
247  20.58     0.10      0.032       (  0.376)       0.008        0.024
248  20.67     0.10      0.032       (  0.375)       0.008        0.024
249  20.75     0.10      0.032       (  0.373)       0.008        0.024
250  20.83     0.07      0.021       (  0.372)       0.005        0.016
251  20.92     0.07      0.021       (  0.370)       0.005        0.016
252  21.00     0.07      0.021       (  0.369)       0.005        0.016
253  21.08     0.10      0.032       (  0.367)       0.008        0.024
254  21.17     0.10      0.032       (  0.366)       0.008        0.024
255  21.25     0.10      0.032       (  0.364)       0.008        0.024
256  21.33     0.07      0.021       (  0.363)       0.005        0.016
257  21.42     0.07      0.021       (  0.361)       0.005        0.016
258  21.50     0.07      0.021       (  0.360)       0.005        0.016
259  21.58     0.10      0.032       (  0.359)       0.008        0.024
260  21.67     0.10      0.032       (  0.357)       0.008        0.024
261  21.75     0.10      0.032       (  0.356)       0.008        0.024
262  21.83     0.07      0.021       (  0.355)       0.005        0.016
263  21.92     0.07      0.021       (  0.354)       0.005        0.016
264  22.00     0.07      0.021       (  0.353)       0.005        0.016
265  22.08     0.10      0.032       (  0.351)       0.008        0.024
266  22.17     0.10      0.032       (  0.350)       0.008        0.024
267  22.25     0.10      0.032       (  0.349)       0.008        0.024
268  22.33     0.07      0.021       (  0.348)       0.005        0.016
269  22.42     0.07      0.021       (  0.347)       0.005        0.016
270  22.50     0.07      0.021       (  0.346)       0.005        0.016
271  22.58     0.07      0.021       (  0.345)       0.005        0.016
272  22.67     0.07      0.021       (  0.344)       0.005        0.016
273  22.75     0.07      0.021       (  0.343)       0.005        0.016
274  22.83     0.07      0.021       (  0.342)       0.005        0.016
275  22.92     0.07      0.021       (  0.341)       0.005        0.016
276  23.00     0.07      0.021       (  0.340)       0.005        0.016
277  23.08     0.07      0.021       (  0.340)       0.005        0.016
278  23.17     0.07      0.021       (  0.339)       0.005        0.016
279  23.25     0.07      0.021       (  0.338)       0.005        0.016
280  23.33     0.07      0.021       (  0.337)       0.005        0.016
281  23.42     0.07      0.021       (  0.337)       0.005        0.016
282  23.50     0.07      0.021       (  0.336)       0.005        0.016
283  23.58     0.07      0.021       (  0.336)       0.005        0.016
284  23.67     0.07      0.021       (  0.335)       0.005        0.016
285  23.75     0.07      0.021       (  0.335)       0.005        0.016
286  23.83     0.07      0.021       (  0.334)       0.005        0.016
287  23.92     0.07      0.021       (  0.334)       0.005        0.016
288  24.00     0.07      0.021       (  0.334)       0.005        0.016
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    23.6
       Flood volume = Effective rainfall      1.96(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       2.3(Ac.Ft)
       Total soil loss =      0.69(In)
       Total soil loss =     0.816(Ac.Ft)
       Total rainfall =      2.65(In)
       Flood volume =      101714.4 Cubic Feet
       Total soil loss =       35552.0 Cubic Feet
       ---------------------------------------------------------------------
        Peak flow rate of this hydrograph =      3.843(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	0.08	Q			
0+10	0.0018	0.18	Q			
0+15	0.0032	0.21	Q			
0+20	0.0050	0.26	VQ			
0+25	0.0072	0.32	VQ			
0+30	0.0095	0.33	VQ			
0+35	0.0118	0.34	VQ			
0+40	0.0141	0.34	VQ			
0+45	0.0164	0.34	VQ			
0+50	0.0191	0.38	VQ			
0+55	0.0220	0.43	VQ			
1+ 0	0.0251	0.44	VQ			
1+ 5	0.0279	0.41	VQ			
1+10	0.0304	0.36	VQ			
1+15	0.0328	0.35	VQ			
1+20	0.0351	0.34	VQ			
1+25	0.0375	0.34	VQ			
1+30	0.0398	0.34	VQ			
1+35	0.0421	0.34	VQ			
1+40	0.0445	0.34	VQ			
1+45	0.0468	0.34	VQ			
1+50	0.0494	0.38	VQ			
1+55	0.0524	0.43	VQ			
2+ 0	0.0554	0.44	VQ			
2+ 5	0.0585	0.45	|Q			
2+10	0.0616	0.45	|Q			
2+15	0.0647	0.45	|Q			
2+20	0.0679	0.45	|Q			
2+25	0.0710	0.45	|Q			
2+30	0.0741	0.45	|Q			
2+35	0.0775	0.49	|Q			
2+40	0.0812	0.54	|VQ			
2+45	0.0850	0.56	|VQ			
2+50	0.0889	0.56	|VQ			
2+55	0.0928	0.56	|VQ			
3+ 0	0.0967	0.57	|VQ			
3+ 5	0.1006	0.57	|VQ			
3+10	0.1045	0.57	|VQ			
3+15	0.1084	0.57	|VQ			
3+20	0.1123	0.57	|VQ			
3+25	0.1161	0.57	|VQ			
3+30	0.1200	0.57	| Q			
3+35	0.1239	0.57	| Q			
3+40	0.1278	0.57	| Q			
3+45	0.1317	0.57	| Q			
3+50	0.1359	0.60	| Q			
3+55	0.1404	0.66	| Q			
4+ 0	0.1450	0.67	| Q			
4+ 5	0.1497	0.67	| Q			
4+10	0.1543	0.68	| Q			
4+15	0.1590	0.68	| Q			
4+20	0.1639	0.72	| Q			
4+25	0.1692	0.77	| VQ			
4+30	0.1746	0.78	| VQ			
4+35	0.1800	0.79	| Q			
4+40	0.1855	0.79	| Q			
4+45	0.1909	0.79	| Q			
4+50	0.1967	0.83	| Q			
4+55	0.2027	0.88	| Q			
5+ 0	0.2089	0.90	| Q			
5+ 5	0.2146	0.82	| Q			
5+10	0.2195	0.72	| QV			
5+15	0.2243	0.70	| QV			
5+20	0.2293	0.72	| QV			
5+25	0.2346	0.77	| QV			
5+30	0.2400	0.78	| QV			
5+35	0.2457	0.83	| QV			
5+40	0.2518	0.88	| QV			

5+45	0.2579	0.90	QV			
5+50	0.2641	0.90	QV			
5+55	0.2704	0.90	QV			
6+ 0	0.2766	0.90	QV			
6+ 5	0.2831	0.94	QV			
6+10	0.2899	1.00	QV			
6+15	0.2969	1.01	QV			
6+20	0.3039	1.01	QV			
6+25	0.3109	1.02	QV			
6+30	0.3179	1.02	QV			
6+35	0.3252	1.06	QV			
6+40	0.3328	1.11	QV			
6+45	0.3405	1.12	QV			
6+50	0.3483	1.13	QV			
6+55	0.3560	1.13	Q V			
7+ 0	0.3638	1.13	Q V			
7+ 5	0.3716	1.13	Q V			
7+10	0.3794	1.13	Q V			
7+15	0.3872	1.13	Q V			
7+20	0.3952	1.17	Q V			
7+25	0.4037	1.22	Q V			
7+30	0.4122	1.23	Q V			
7+35	0.4210	1.28	Q V			
7+40	0.4302	1.33	Q V			
7+45	0.4394	1.35	Q V			
7+50	0.4490	1.39	Q V			
7+55	0.4590	1.45	Q V			
8+ 0	0.4690	1.46	Q V			
8+ 5	0.4797	1.54	Q V			
8+10	0.4911	1.65	Q V			
8+15	0.5026	1.68	Q V			
8+20	0.5142	1.69	Q V			
8+25	0.5259	1.69	Q V			
8+30	0.5376	1.70	Q V			
8+35	0.5495	1.73	Q V			
8+40	0.5618	1.79	Q V			
8+45	0.5742	1.80	Q V			
8+50	0.5869	1.84	Q V			
8+55	0.6000	1.90	Q V			
9+ 0	0.6132	1.91	Q V			
9+ 5	0.6269	2.00	Q V			
9+10	0.6414	2.10	Q V			
9+15	0.6561	2.13	Q V			
9+20	0.6711	2.18	Q V			
9+25	0.6865	2.24	Q V			
9+30	0.7020	2.25	Q V			
9+35	0.7178	2.30	Q V			
9+40	0.7340	2.35	Q V			
9+45	0.7503	2.36	Q V			
9+50	0.7669	2.41	Q V			
9+55	0.7839	2.46	Q V			
10+ 0	0.8009	2.48	Q V			
10+ 5	0.8161	2.21	Q V			
10+10	0.8288	1.84	Q V			
10+15	0.8409	1.76	Q V			
10+20	0.8528	1.72	Q V			
10+25	0.8645	1.70	Q V			
10+30	0.8762	1.70	Q V			
10+35	0.8892	1.89	Q V			
10+40	0.9040	2.16	Q V			
10+45	0.9193	2.22	Q V			
10+50	0.9347	2.24	Q V			
10+55	0.9503	2.26	Q V			
11+ 0	0.9658	2.26	Q V			
11+ 5	0.9811	2.22	Q V			
11+10	0.9961	2.17	Q V			
11+15	1.0109	2.16	Q V			
11+20	1.0257	2.15	Q V			
11+25	1.0405	2.15	Q V			

11+30	1.0553	2.15		Q		V	
11+35	1.0696	2.07		Q		V	
11+40	1.0831	1.96		Q		V	
11+45	1.0964	1.94		Q		V	
11+50	1.1100	1.97		Q		V	
11+55	1.1239	2.02		Q		V	
12+ 0	1.1378	2.03		Q		V	
12+ 5	1.1537	2.31		Q		V	
12+10	1.1721	2.68		Q		V	
12+15	1.1912	2.76		Q		V	
12+20	1.2107	2.84		Q		V	
12+25	1.2308	2.91		Q		V	
12+30	1.2509	2.93		Q		V	
12+35	1.2717	3.01		Q		V	
12+40	1.2932	3.12		Q		V	
12+45	1.3149	3.15		Q		V	
12+50	1.3369	3.20		Q		V	
12+55	1.3593	3.25		Q		V	
13+ 0	1.3818	3.27		Q		V	
13+ 5	1.4057	3.47		Q		V	
13+10	1.4315	3.74		Q		V	
13+15	1.4576	3.80		Q		V	
13+20	1.4839	3.82		Q		V	
13+25	1.5104	3.84		Q		V	
13+30	1.5368	3.84		Q		V	
13+35	1.5603	3.41		Q		V	
13+40	1.5798	2.83		Q		V	
13+45	1.5984	2.70		Q		V	
13+50	1.6166	2.64		Q		V	
13+55	1.6345	2.61		Q		V	
14+ 0	1.6524	2.60		Q		V	
14+ 5	1.6714	2.76		Q		V	
14+10	1.6919	2.97		Q		V	
14+15	1.7126	3.02		Q		V	
14+20	1.7333	3.00		Q		V	
14+25	1.7536	2.96		Q		V	
14+30	1.7739	2.95		Q		V	
14+35	1.7942	2.94		Q		V	
14+40	1.8144	2.94		Q		V	
14+45	1.8347	2.94		Q		V	
14+50	1.8546	2.90		Q		V	
14+55	1.8742	2.85		Q		V	
15+ 0	1.8938	2.83		Q		V	
15+ 5	1.9130	2.79		Q		V	
15+10	1.9318	2.73		Q		V	
15+15	1.9505	2.72		Q		V	
15+20	1.9690	2.68		Q		V	
15+25	1.9870	2.62		Q		V	
15+30	2.0050	2.61		Q		V	
15+35	2.0218	2.45		Q		V	
15+40	2.0372	2.23		Q		V	
15+45	2.0522	2.18		Q		V	
15+50	2.0671	2.16		Q		V	
15+55	2.0819	2.15		Q		V	
16+ 0	2.0967	2.15		Q		V	
16+ 5	2.1074	1.56		Q		V	
16+10	2.1127	0.77	Q			V	
16+15	2.1168	0.59	Q			V	
16+20	2.1202	0.51	Q			V	
16+25	2.1235	0.47	Q			V	
16+30	2.1266	0.45	Q			V	
16+35	2.1294	0.41	Q			V	
16+40	2.1319	0.36	Q			V	
16+45	2.1343	0.35	Q			V	
16+50	2.1367	0.34	Q			V	
16+55	2.1390	0.34	Q			V	
17+ 0	2.1413	0.34	Q			V	
17+ 5	2.1442	0.42	Q			V	
17+10	2.1478	0.52	Q			V	

17+15	2.1516	0.55	| Q	|	|	|	V |
17+20	2.1554	0.56	| Q	|	|	|	V |
17+25	2.1593	0.56	| Q	|	|	|	V |
17+30	2.1632	0.57	| Q	|	|	|	V |
17+35	2.1671	0.57	| Q	|	|	|	V |
17+40	2.1710	0.57	| Q	|	|	|	V |
17+45	2.1749	0.57	| Q	|	|	|	V |
17+50	2.1785	0.53	| Q	|	|	|	V |
17+55	2.1818	0.47	|Q	|	|	|	V |
18+ 0	2.1849	0.46	|Q	|	|	|	V |
18+ 5	2.1881	0.46	|Q	|	|	|	V |
18+10	2.1912	0.45	|Q	|	|	|	V |
18+15	2.1943	0.45	|Q	|	|	|	V |
18+20	2.1974	0.45	|Q	|	|	|	V |
18+25	2.2005	0.45	|Q	|	|	|	V |
18+30	2.2036	0.45	|Q	|	|	|	V |
18+35	2.2065	0.41	|Q	|	|	|	V |
18+40	2.2090	0.36	|Q	|	|	|	V |
18+45	2.2114	0.35	|Q	|	|	|	V |
18+50	2.2134	0.30	|Q	|	|	|	V |
18+55	2.2152	0.25	Q	|	|	|	V |
19+ 0	2.2168	0.23	Q	|	|	|	V |
19+ 5	2.2186	0.27	|Q	|	|	|	V |
19+10	2.2208	0.32	|Q	|	|	|	V |
19+15	2.2231	0.33	|Q	|	|	|	V |
19+20	2.2257	0.37	|Q	|	|	|	V |
19+25	2.2286	0.43	|Q	|	|	|	V |
19+30	2.2317	0.44	|Q	|	|	|	V |
19+35	2.2345	0.41	|Q	|	|	|	V |
19+40	2.2370	0.36	|Q	|	|	|	V |
19+45	2.2394	0.35	|Q	|	|	|	V |
19+50	2.2415	0.30	|Q	|	|	|	V |
19+55	2.2432	0.25	Q	|	|	|	V |
20+ 0	2.2448	0.23	Q	|	|	|	V |
20+ 5	2.2466	0.27	|Q	|	|	|	V |
20+10	2.2488	0.32	|Q	|	|	|	V |
20+15	2.2511	0.33	|Q	|	|	|	V |
20+20	2.2534	0.34	|Q	|	|	|	V |
20+25	2.2558	0.34	|Q	|	|	|	V |
20+30	2.2581	0.34	|Q	|	|	|	V |
20+35	2.2604	0.34	|Q	|	|	|	V |
20+40	2.2628	0.34	|Q	|	|	|	V |
20+45	2.2651	0.34	|Q	|	|	|	V |
20+50	2.2672	0.30	|Q	|	|	|	V |
20+55	2.2689	0.25	Q	|	|	|	V |
21+ 0	2.2705	0.23	Q	|	|	|	V |
21+ 5	2.2723	0.27	|Q	|	|	|	V |
21+10	2.2745	0.32	|Q	|	|	|	V |
21+15	2.2768	0.33	|Q	|	|	|	V|
21+20	2.2788	0.30	|Q	|	|	|	V|
21+25	2.2805	0.25	Q	|	|	|	V|
21+30	2.2822	0.23	Q	|	|	|	V|
21+35	2.2840	0.27	|Q	|	|	|	V|
21+40	2.2862	0.32	|Q	|	|	|	V|
21+45	2.2885	0.33	|Q	|	|	|	V|
21+50	2.2905	0.30	|Q	|	|	|	V|
21+55	2.2922	0.25	Q	|	|	|	V|
22+ 0	2.2938	0.23	Q	|	|	|	V|
22+ 5	2.2957	0.27	|Q	|	|	|	V|
22+10	2.2979	0.32	|Q	|	|	|	V|
22+15	2.3002	0.33	|Q	|	|	|	V|
22+20	2.3022	0.30	|Q	|	|	|	V|
22+25	2.3039	0.25	Q	|	|	|	V|
22+30	2.3055	0.23	Q	|	|	|	V|
22+35	2.3071	0.23	Q	|	|	|	V|
22+40	2.3086	0.23	Q	|	|	|	V|
22+45	2.3102	0.23	Q	|	|	|	V|
22+50	2.3118	0.23	Q	|	|	|	V|
22+55	2.3133	0.23	Q	|	|	|	V|

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   23+ 0       2.3149      0.23  Q        |         |         |        V|
   23+ 5       2.3164      0.23  Q        |         |         |        V|
   23+10       2.3180      0.23  Q        |         |         |        V|
   23+15       2.3195      0.23  Q        |         |         |        V|
   23+20       2.3211      0.23  Q        |         |         |        V|
   23+25       2.3227      0.23  Q        |         |         |        V|
   23+30       2.3242      0.23  Q        |         |         |        V|
   23+35       2.3258      0.23  Q        |         |         |        V|
   23+40       2.3273      0.23  Q        |         |         |        V|
   23+45       2.3289      0.23  Q        |         |         |        V|
   23+50       2.3304      0.23  Q        |         |         |        V|
   23+55       2.3320      0.23  Q        |         |         |        V|
   24+ 0       2.3336      0.23  Q        |         |         |        V|
   24+ 5       2.3346      0.15  Q        |         |         |        V|
   24+10       2.3349      0.04  Q        |         |         |        V|
   24+15       2.3350      0.02  Q        |         |         |        V|
   24+20       2.3350      0.01  Q        |         |         |        V|
   24+25       2.3350      0.00  Q        |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 03/02/23 File: devhyd15.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
5-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	0.56	7.99

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	1.28	18.27

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.560(In)
Area Averaged 100-Year Rainfall = 1.280(In)

Point rain (area averaged) = 0.729(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.729(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %

```
    14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


 RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
 AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
 46.6  27.6      0.779     0.159        0.668       1.000      0.668
                                                  Sum (F) =   0.668
 Area averaged mean soil loss (F) (In/Hr) =  0.668
 Minimum soil loss rate ((In/Hr)) =  0.334
 (for 24 hour storm duration)
 Soil low loss rate (decimal) =   0.259
 ------------------------------------------------------------------------
 Slope of intensity-duration curve for a 1 hour storm =0.5300
 ------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
 ------------------------------------------------------------------------
                Unit Hydrograph Data
 ------------------------------------------------------------------------
 Unit time period   Time % of lag   Distribution   Unit Hydrograph
     (hrs)                          Graph %           (CFS)
 ------------------------------------------------------------------------
     1   0.083        157.487         34.939             5.025
     2   0.167        314.973         46.456             6.681
     3   0.250        472.460         10.764             1.548
     4   0.333        629.946          4.657             0.670
     5   0.417        787.433          2.267             0.326
     6   0.500        944.919          0.918             0.132
                                 Sum = 100.000   Sum=     14.381
-------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     3.40      0.297       (  0.668)      0.077        0.220
    2   0.17     4.70      0.411       (  0.668)      0.106        0.304
    3   0.25     4.70      0.411       (  0.668)      0.106        0.304
    4   0.33     5.10      0.446       (  0.668)      0.115        0.330
    5   0.42     5.80      0.507       (  0.668)      0.131        0.376
    6   0.50     5.90      0.516       (  0.668)      0.134        0.382
    7   0.58     7.10      0.621       (  0.668)      0.161        0.460
    8   0.67     8.70      0.761       (  0.668)      0.197        0.564
    9   0.75    13.20      1.154       (  0.668)      0.299        0.855
   10   0.83    29.70      2.597          0.668    (  0.673)      1.929
   11   0.92     7.70      0.673       (  0.668)      0.174        0.499
   12   1.00     4.00      0.350       (  0.668)      0.091        0.259
                 (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     6.5
    Flood volume = Effective rainfall      0.54(In)
     times area      14.3(Ac.)/[(In)/(Ft.)] =       0.6(Ac.Ft)
    Total soil loss =      0.19(In)
    Total soil loss =     0.224(Ac.Ft)
    Total rainfall =      0.73(In)
    Flood volume =       27985.2 Cubic Feet
    Total soil loss =        9753.6 Cubic Feet
    ------------------------------------------------------------------------
     Peak flow rate of this hydrograph =     17.304(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	5.0	10.0	15.0	20.0
0+ 5	0.0076	1.11	V Q				
0+10	0.0283	3.00	V Q				
0+15	0.0552	3.91	V Q				
0+20	0.0849	4.32	V Q				
0+25	0.1183	4.84	V Q				
0+30	0.1546	5.28	VQ				
0+35	0.1947	5.81	QV				
0+40	0.2422	6.90	Q V				
0+45	0.3055	9.20	QV				
0+50	0.4210	16.77	V			Q	
0+55	0.5402	17.30	VQ				
1+ 0	0.5983	8.44	Q			V	
1+ 5	0.6269	4.15	Q			V	
1+10	0.6371	1.48	Q			V	
1+15	0.6412	0.59	Q			V	
1+20	0.6422	0.15	Q			V	
1+25	0.6425	0.03	Q			V	

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

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Study date 03/02/23 File: devhyd35.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
5-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	0.96	13.70

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	2.23	31.82

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.960(In)
Area Averaged 100-Year Rainfall = 2.230(In)

Point rain (area averaged) = 1.257(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.257(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %

```
   14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  27.6      0.779     0.159        0.668       1.000      0.668
                                                 Sum (F) =   0.668
Area averaged mean soil loss (F) (In/Hr) =  0.668
Minimum soil loss rate ((In/Hr)) =  0.334
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     1.30      0.196       (  0.668)       0.051        0.145
    2   0.17     1.30      0.196       (  0.668)       0.051        0.145
    3   0.25     1.10      0.166       (  0.668)       0.043        0.123
    4   0.33     1.50      0.226       (  0.668)       0.059        0.168
    5   0.42     1.50      0.226       (  0.668)       0.059        0.168
    6   0.50     1.80      0.272       (  0.668)       0.070        0.201
    7   0.58     1.50      0.226       (  0.668)       0.059        0.168
    8   0.67     1.80      0.272       (  0.668)       0.070        0.201
    9   0.75     1.80      0.272       (  0.668)       0.070        0.201
   10   0.83     1.50      0.226       (  0.668)       0.059        0.168
   11   0.92     1.60      0.241       (  0.668)       0.063        0.179
   12   1.00     1.80      0.272       (  0.668)       0.070        0.201
   13   1.08     2.20      0.332       (  0.668)       0.086        0.246
   14   1.17     2.20      0.332       (  0.668)       0.086        0.246
   15   1.25     2.20      0.332       (  0.668)       0.086        0.246
   16   1.33     2.00      0.302       (  0.668)       0.078        0.224
   17   1.42     2.60      0.392       (  0.668)       0.102        0.291
   18   1.50     2.70      0.407       (  0.668)       0.106        0.302
   19   1.58     2.40      0.362       (  0.668)       0.094        0.268
   20   1.67     2.70      0.407       (  0.668)       0.106        0.302
   21   1.75     3.30      0.498       (  0.668)       0.129        0.369
   22   1.83     3.10      0.468       (  0.668)       0.121        0.347
   23   1.92     2.90      0.438       (  0.668)       0.113        0.324
   24   2.00     3.00      0.453       (  0.668)       0.117        0.335
   25   2.08     3.10      0.468       (  0.668)       0.121        0.347
   26   2.17     4.20      0.634       (  0.668)       0.164        0.470
   27   2.25     5.00      0.754       (  0.668)       0.195        0.559
   28   2.33     3.50      0.528       (  0.668)       0.137        0.391
   29   2.42     6.80      1.026       (  0.668)       0.266        0.760
   30   2.50     7.30      1.101       (  0.668)       0.285        0.816
   31   2.58     8.20      1.237       (  0.668)       0.320        0.917
   32   2.67     5.90      0.890       (  0.668)       0.231        0.660
```

```
33   2.75     2.00      0.302       (  0.668)       0.078        0.224
34   2.83     1.80      0.272       (  0.668)       0.070        0.201
35   2.92     1.80      0.272       (  0.668)       0.070        0.201
36   3.00     0.60      0.091       (  0.668)       0.023        0.067
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    11.2
      Flood volume = Effective rainfall      0.93(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       1.1(Ac.Ft)
      Total soil loss =      0.33(In)
      Total soil loss =     0.387(Ac.Ft)
      Total rainfall =      1.26(In)
      Flood volume =       48263.4 Cubic Feet
      Total soil loss =       16869.4 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     11.749(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        5.0      10.0      15.0      20.0
---------------------------------------------------------------------------
  0+ 5       0.0050      0.73  VQ        |         |         |         |
  0+10       0.0168      1.70  V  Q      |         |         |         |
  0+15       0.0293      1.81  |V Q      |         |         |         |
  0+20       0.0429      1.99  |V Q      |         |         |         |
  0+25       0.0588      2.30  | V Q     |         |         |         |
  0+30       0.0763      2.54  | V  Q    |         |         |         |
  0+35       0.0943      2.62  |  V Q    |         |         |         |
  0+40       0.1124      2.63  |   VQ    |         |         |         |
  0+45       0.1319      2.83  |   VQ    |         |         |         |
  0+50       0.1505      2.70  |    Q    |         |         |         |
  0+55       0.1681      2.55  |    QV   |         |         |         |
  1+ 0       0.1866      2.69  |    QV   |         |         |         |
  1+ 5       0.2077      3.06  |     QV  |         |         |         |
  1+10       0.2311      3.39  |     Q V |         |         |         |
  1+15       0.2550      3.48  |     Q  V|         |         |         |
  1+20       0.2784      3.40  |     Q   V         |         |         |
  1+25       0.3033      3.61  |      Q  V         |         |         |
  1+30       0.3314      4.08  |       Q |V        |         |         |
  1+35       0.3595      4.08  |       Q | V       |         |         |
  1+40       0.3876      4.08  |       Q |  V      |         |         |
  1+45       0.4194      4.62  |        Q|    V    |         |         |
  1+50       0.4538      4.99  |        Q|     V   |         |         |
  1+55       0.4872      4.85  |        Q|      V  |         |         |
  2+ 0       0.5200      4.77  |        Q|       V |         |         |
  2+ 5       0.5536      4.88  |        Q|        V|         |         |
  2+10       0.5920      5.58  |         |Q        |V        |         |
  2+15       0.6393      6.86  |         |  Q      |  V      |         |
  2+20       0.6862      6.82  |         |  Q      |   V     |         |
  2+25       0.7398      7.78  |         |    Q    |     V   |         |
  2+30       0.8112     10.36  |         |         Q       V|         |
  2+35       0.8921     11.75  |         |         |  Q      | V       |
  2+40       0.9707     11.42  |         |         | Q       |    V    |
  2+45       1.0245      7.80  |         |    Q    |         |     V   |
  2+50       1.0555      4.51  |        Q|         |         |       V |
  2+55       1.0800      3.55  |      Q  |         |         |       V |
  3+ 0       1.0971      2.48  |   Q     |         |         |        V|
  3+ 5       1.1043      1.06  | Q       |         |         |        V|
  3+10       1.1066      0.33  Q         |         |         |        V|
  3+15       1.1076      0.14  Q         |         |         |        V|
  3+20       1.1079      0.05  Q         |         |         |        V|
  3+25       1.1080      0.01  Q         |         |         |         V
---------------------------------------------------------------------------
```

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

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Study date 03/02/23 File: devhyd65.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
5-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	1.42	20.26

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	3.15	44.95

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.420(In)
Area Averaged 100-Year Rainfall = 3.150(In)

Point rain (area averaged) = 1.825(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.825(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
   14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  27.6      0.779     0.159        0.668       1.000      0.668
                                                 Sum (F) =   0.668
Area averaged mean soil loss (F) (In/Hr) =  0.668
Minimum soil loss rate ((In/Hr)) =  0.334
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

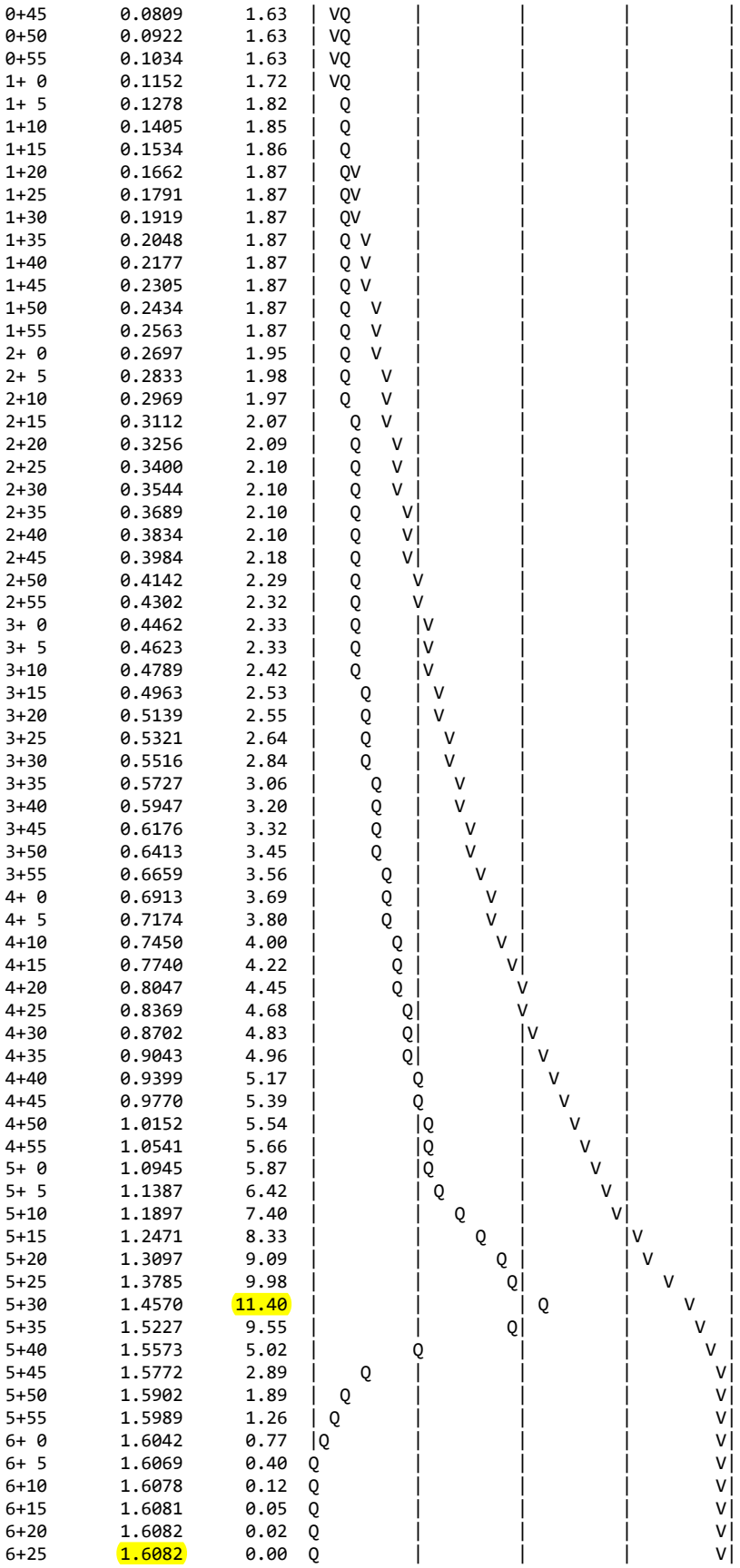
                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     0.50      0.110       (  0.668)       0.028        0.081
    2   0.17     0.60      0.131       (  0.668)       0.034        0.097
    3   0.25     0.60      0.131       (  0.668)       0.034        0.097
    4   0.33     0.60      0.131       (  0.668)       0.034        0.097
    5   0.42     0.60      0.131       (  0.668)       0.034        0.097
    6   0.50     0.70      0.153       (  0.668)       0.040        0.114
    7   0.58     0.70      0.153       (  0.668)       0.040        0.114
    8   0.67     0.70      0.153       (  0.668)       0.040        0.114
    9   0.75     0.70      0.153       (  0.668)       0.040        0.114
   10   0.83     0.70      0.153       (  0.668)       0.040        0.114
   11   0.92     0.70      0.153       (  0.668)       0.040        0.114
   12   1.00     0.80      0.175       (  0.668)       0.045        0.130
   13   1.08     0.80      0.175       (  0.668)       0.045        0.130
   14   1.17     0.80      0.175       (  0.668)       0.045        0.130
   15   1.25     0.80      0.175       (  0.668)       0.045        0.130
   16   1.33     0.80      0.175       (  0.668)       0.045        0.130
   17   1.42     0.80      0.175       (  0.668)       0.045        0.130
   18   1.50     0.80      0.175       (  0.668)       0.045        0.130
   19   1.58     0.80      0.175       (  0.668)       0.045        0.130
   20   1.67     0.80      0.175       (  0.668)       0.045        0.130
   21   1.75     0.80      0.175       (  0.668)       0.045        0.130
   22   1.83     0.80      0.175       (  0.668)       0.045        0.130
   23   1.92     0.80      0.175       (  0.668)       0.045        0.130
   24   2.00     0.90      0.197       (  0.668)       0.051        0.146
   25   2.08     0.80      0.175       (  0.668)       0.045        0.130
   26   2.17     0.90      0.197       (  0.668)       0.051        0.146
   27   2.25     0.90      0.197       (  0.668)       0.051        0.146
   28   2.33     0.90      0.197       (  0.668)       0.051        0.146
   29   2.42     0.90      0.197       (  0.668)       0.051        0.146
   30   2.50     0.90      0.197       (  0.668)       0.051        0.146
   31   2.58     0.90      0.197       (  0.668)       0.051        0.146
   32   2.67     0.90      0.197       (  0.668)       0.051        0.146
```

```
33   2.75     1.00      0.219       (  0.668)       0.057        0.162
34   2.83     1.00      0.219       (  0.668)       0.057        0.162
35   2.92     1.00      0.219       (  0.668)       0.057        0.162
36   3.00     1.00      0.219       (  0.668)       0.057        0.162
37   3.08     1.00      0.219       (  0.668)       0.057        0.162
38   3.17     1.10      0.241       (  0.668)       0.062        0.179
39   3.25     1.10      0.241       (  0.668)       0.062        0.179
40   3.33     1.10      0.241       (  0.668)       0.062        0.179
41   3.42     1.20      0.263       (  0.668)       0.068        0.195
42   3.50     1.30      0.285       (  0.668)       0.074        0.211
43   3.58     1.40      0.307       (  0.668)       0.079        0.227
44   3.67     1.40      0.307       (  0.668)       0.079        0.227
45   3.75     1.50      0.329       (  0.668)       0.085        0.243
46   3.83     1.50      0.329       (  0.668)       0.085        0.243
47   3.92     1.60      0.350       (  0.668)       0.091        0.260
48   4.00     1.60      0.350       (  0.668)       0.091        0.260
49   4.08     1.70      0.372       (  0.668)       0.096        0.276
50   4.17     1.80      0.394       (  0.668)       0.102        0.292
51   4.25     1.90      0.416       (  0.668)       0.108        0.308
52   4.33     2.00      0.438       (  0.668)       0.113        0.325
53   4.42     2.10      0.460       (  0.668)       0.119        0.341
54   4.50     2.10      0.460       (  0.668)       0.119        0.341
55   4.58     2.20      0.482       (  0.668)       0.125        0.357
56   4.67     2.30      0.504       (  0.668)       0.130        0.373
57   4.75     2.40      0.526       (  0.668)       0.136        0.389
58   4.83     2.40      0.526       (  0.668)       0.136        0.389
59   4.92     2.50      0.548       (  0.668)       0.142        0.406
60   5.00     2.60      0.569       (  0.668)       0.147        0.422
61   5.08     3.10      0.679       (  0.668)       0.176        0.503
62   5.17     3.60      0.788       (  0.668)       0.204        0.584
63   5.25     3.90      0.854       (  0.668)       0.221        0.633
64   5.33     4.20      0.920       (  0.668)       0.238        0.682
65   5.42     4.70      1.029       (  0.668)       0.267        0.763
66   5.50     5.60      1.226       (  0.668)       0.318        0.909
67   5.58     1.90      0.416       (  0.668)       0.108        0.308
68   5.67     0.90      0.197       (  0.668)       0.051        0.146
69   5.75     0.60      0.131       (  0.668)       0.034        0.097
70   5.83     0.50      0.110       (  0.668)       0.028        0.081
71   5.92     0.30      0.066       (  0.668)       0.017        0.049
72   6.00     0.20      0.044       (  0.668)       0.011        0.032
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    16.2
      Flood volume = Effective rainfall      1.35(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       1.6(Ac.Ft)
      Total soil loss =      0.47(In)
      Total soil loss =     0.562(Ac.Ft)
      Total rainfall =      1.83(In)
      Flood volume =       70055.1 Cubic Feet
      Total soil loss =       24486.2 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     11.404(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        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0028      0.41  Q         |         |         |         |
  0+10       0.0099      1.03  V Q       |         |         |         |
  0+15       0.0186      1.27  V Q       |         |         |         |
  0+20       0.0279      1.35  V Q       |         |         |         |
  0+25       0.0374      1.38  V Q       |         |         |         |
  0+30       0.0476      1.48  |VQ       |         |         |         |
  0+35       0.0586      1.59  |V Q      |         |         |         |
  0+40       0.0697      1.62  |V Q      |         |         |         |
```



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

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Study date 03/02/23 File: devhyd245.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
5-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	2.65	37.82

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	6.95	99.18

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.650(In)
Area Averaged 100-Year Rainfall = 6.950(In)

Point rain (area averaged) = 3.657(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.657(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %

```
   14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  27.6      0.779     0.159        0.668       1.000      0.668
                                                 Sum (F) =   0.668
Area averaged mean soil loss (F) (In/Hr) =  0.668
Minimum soil loss rate ((In/Hr)) =  0.334
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     0.07      0.029       (  1.184)       0.008        0.022
    2   0.17     0.07      0.029       (  1.179)       0.008        0.022
    3   0.25     0.07      0.029       (  1.174)       0.008        0.022
    4   0.33     0.10      0.044       (  1.170)       0.011        0.033
    5   0.42     0.10      0.044       (  1.165)       0.011        0.033
    6   0.50     0.10      0.044       (  1.161)       0.011        0.033
    7   0.58     0.10      0.044       (  1.156)       0.011        0.033
    8   0.67     0.10      0.044       (  1.152)       0.011        0.033
    9   0.75     0.10      0.044       (  1.147)       0.011        0.033
   10   0.83     0.13      0.059       (  1.143)       0.015        0.043
   11   0.92     0.13      0.059       (  1.138)       0.015        0.043
   12   1.00     0.13      0.059       (  1.134)       0.015        0.043
   13   1.08     0.10      0.044       (  1.129)       0.011        0.033
   14   1.17     0.10      0.044       (  1.125)       0.011        0.033
   15   1.25     0.10      0.044       (  1.120)       0.011        0.033
   16   1.33     0.10      0.044       (  1.116)       0.011        0.033
   17   1.42     0.10      0.044       (  1.111)       0.011        0.033
   18   1.50     0.10      0.044       (  1.107)       0.011        0.033
   19   1.58     0.10      0.044       (  1.103)       0.011        0.033
   20   1.67     0.10      0.044       (  1.098)       0.011        0.033
   21   1.75     0.10      0.044       (  1.094)       0.011        0.033
   22   1.83     0.13      0.059       (  1.089)       0.015        0.043
   23   1.92     0.13      0.059       (  1.085)       0.015        0.043
   24   2.00     0.13      0.059       (  1.081)       0.015        0.043
   25   2.08     0.13      0.059       (  1.076)       0.015        0.043
   26   2.17     0.13      0.059       (  1.072)       0.015        0.043
   27   2.25     0.13      0.059       (  1.068)       0.015        0.043
   28   2.33     0.13      0.059       (  1.063)       0.015        0.043
   29   2.42     0.13      0.059       (  1.059)       0.015        0.043
   30   2.50     0.13      0.059       (  1.055)       0.015        0.043
   31   2.58     0.17      0.073       (  1.050)       0.019        0.054
   32   2.67     0.17      0.073       (  1.046)       0.019        0.054
```

33	2.75	0.17	0.073	(1.042)	0.019	0.054
34	2.83	0.17	0.073	(1.037)	0.019	0.054
35	2.92	0.17	0.073	(1.033)	0.019	0.054
36	3.00	0.17	0.073	(1.029)	0.019	0.054
37	3.08	0.17	0.073	(1.024)	0.019	0.054
38	3.17	0.17	0.073	(1.020)	0.019	0.054
39	3.25	0.17	0.073	(1.016)	0.019	0.054
40	3.33	0.17	0.073	(1.012)	0.019	0.054
41	3.42	0.17	0.073	(1.008)	0.019	0.054
42	3.50	0.17	0.073	(1.003)	0.019	0.054
43	3.58	0.17	0.073	(0.999)	0.019	0.054
44	3.67	0.17	0.073	(0.995)	0.019	0.054
45	3.75	0.17	0.073	(0.991)	0.019	0.054
46	3.83	0.20	0.088	(0.987)	0.023	0.065
47	3.92	0.20	0.088	(0.982)	0.023	0.065
48	4.00	0.20	0.088	(0.978)	0.023	0.065
49	4.08	0.20	0.088	(0.974)	0.023	0.065
50	4.17	0.20	0.088	(0.970)	0.023	0.065
51	4.25	0.20	0.088	(0.966)	0.023	0.065
52	4.33	0.23	0.102	(0.962)	0.027	0.076
53	4.42	0.23	0.102	(0.958)	0.027	0.076
54	4.50	0.23	0.102	(0.953)	0.027	0.076
55	4.58	0.23	0.102	(0.949)	0.027	0.076
56	4.67	0.23	0.102	(0.945)	0.027	0.076
57	4.75	0.23	0.102	(0.941)	0.027	0.076
58	4.83	0.27	0.117	(0.937)	0.030	0.087
59	4.92	0.27	0.117	(0.933)	0.030	0.087
60	5.00	0.27	0.117	(0.929)	0.030	0.087
61	5.08	0.20	0.088	(0.925)	0.023	0.065
62	5.17	0.20	0.088	(0.921)	0.023	0.065
63	5.25	0.20	0.088	(0.917)	0.023	0.065
64	5.33	0.23	0.102	(0.913)	0.027	0.076
65	5.42	0.23	0.102	(0.909)	0.027	0.076
66	5.50	0.23	0.102	(0.905)	0.027	0.076
67	5.58	0.27	0.117	(0.901)	0.030	0.087
68	5.67	0.27	0.117	(0.897)	0.030	0.087
69	5.75	0.27	0.117	(0.893)	0.030	0.087
70	5.83	0.27	0.117	(0.889)	0.030	0.087
71	5.92	0.27	0.117	(0.885)	0.030	0.087
72	6.00	0.27	0.117	(0.881)	0.030	0.087
73	6.08	0.30	0.132	(0.877)	0.034	0.098
74	6.17	0.30	0.132	(0.874)	0.034	0.098
75	6.25	0.30	0.132	(0.870)	0.034	0.098
76	6.33	0.30	0.132	(0.866)	0.034	0.098
77	6.42	0.30	0.132	(0.862)	0.034	0.098
78	6.50	0.30	0.132	(0.858)	0.034	0.098
79	6.58	0.33	0.146	(0.854)	0.038	0.108
80	6.67	0.33	0.146	(0.850)	0.038	0.108
81	6.75	0.33	0.146	(0.846)	0.038	0.108
82	6.83	0.33	0.146	(0.843)	0.038	0.108
83	6.92	0.33	0.146	(0.839)	0.038	0.108
84	7.00	0.33	0.146	(0.835)	0.038	0.108
85	7.08	0.33	0.146	(0.831)	0.038	0.108
86	7.17	0.33	0.146	(0.827)	0.038	0.108
87	7.25	0.33	0.146	(0.824)	0.038	0.108
88	7.33	0.37	0.161	(0.820)	0.042	0.119
89	7.42	0.37	0.161	(0.816)	0.042	0.119
90	7.50	0.37	0.161	(0.812)	0.042	0.119
91	7.58	0.40	0.176	(0.809)	0.045	0.130
92	7.67	0.40	0.176	(0.805)	0.045	0.130
93	7.75	0.40	0.176	(0.801)	0.045	0.130
94	7.83	0.43	0.190	(0.798)	0.049	0.141
95	7.92	0.43	0.190	(0.794)	0.049	0.141
96	8.00	0.43	0.190	(0.790)	0.049	0.141
97	8.08	0.50	0.219	(0.787)	0.057	0.163
98	8.17	0.50	0.219	(0.783)	0.057	0.163
99	8.25	0.50	0.219	(0.779)	0.057	0.163
100	8.33	0.50	0.219	(0.776)	0.057	0.163
101	8.42	0.50	0.219	(0.772)	0.057	0.163

102	8.50	0.50	0.219	(0.768)	0.057	0.163
103	8.58	0.53	0.234	(0.765)	0.061	0.173
104	8.67	0.53	0.234	(0.761)	0.061	0.173
105	8.75	0.53	0.234	(0.758)	0.061	0.173
106	8.83	0.57	0.249	(0.754)	0.064	0.184
107	8.92	0.57	0.249	(0.750)	0.064	0.184
108	9.00	0.57	0.249	(0.747)	0.064	0.184
109	9.08	0.63	0.278	(0.743)	0.072	0.206
110	9.17	0.63	0.278	(0.740)	0.072	0.206
111	9.25	0.63	0.278	(0.736)	0.072	0.206
112	9.33	0.67	0.293	(0.733)	0.076	0.217
113	9.42	0.67	0.293	(0.729)	0.076	0.217
114	9.50	0.67	0.293	(0.726)	0.076	0.217
115	9.58	0.70	0.307	(0.722)	0.080	0.228
116	9.67	0.70	0.307	(0.719)	0.080	0.228
117	9.75	0.70	0.307	(0.715)	0.080	0.228
118	9.83	0.73	0.322	(0.712)	0.083	0.238
119	9.92	0.73	0.322	(0.709)	0.083	0.238
120	10.00	0.73	0.322	(0.705)	0.083	0.238
121	10.08	0.50	0.219	(0.702)	0.057	0.163
122	10.17	0.50	0.219	(0.698)	0.057	0.163
123	10.25	0.50	0.219	(0.695)	0.057	0.163
124	10.33	0.50	0.219	(0.692)	0.057	0.163
125	10.42	0.50	0.219	(0.688)	0.057	0.163
126	10.50	0.50	0.219	(0.685)	0.057	0.163
127	10.58	0.67	0.293	(0.681)	0.076	0.217
128	10.67	0.67	0.293	(0.678)	0.076	0.217
129	10.75	0.67	0.293	(0.675)	0.076	0.217
130	10.83	0.67	0.293	(0.672)	0.076	0.217
131	10.92	0.67	0.293	(0.668)	0.076	0.217
132	11.00	0.67	0.293	(0.665)	0.076	0.217
133	11.08	0.63	0.278	(0.662)	0.072	0.206
134	11.17	0.63	0.278	(0.658)	0.072	0.206
135	11.25	0.63	0.278	(0.655)	0.072	0.206
136	11.33	0.63	0.278	(0.652)	0.072	0.206
137	11.42	0.63	0.278	(0.649)	0.072	0.206
138	11.50	0.63	0.278	(0.645)	0.072	0.206
139	11.58	0.57	0.249	(0.642)	0.064	0.184
140	11.67	0.57	0.249	(0.639)	0.064	0.184
141	11.75	0.57	0.249	(0.636)	0.064	0.184
142	11.83	0.60	0.263	(0.633)	0.068	0.195
143	11.92	0.60	0.263	(0.630)	0.068	0.195
144	12.00	0.60	0.263	(0.626)	0.068	0.195
145	12.08	0.83	0.366	(0.623)	0.095	0.271
146	12.17	0.83	0.366	(0.620)	0.095	0.271
147	12.25	0.83	0.366	(0.617)	0.095	0.271
148	12.33	0.87	0.380	(0.614)	0.099	0.282
149	12.42	0.87	0.380	(0.611)	0.099	0.282
150	12.50	0.87	0.380	(0.608)	0.099	0.282
151	12.58	0.93	0.410	(0.605)	0.106	0.304
152	12.67	0.93	0.410	(0.602)	0.106	0.304
153	12.75	0.93	0.410	(0.599)	0.106	0.304
154	12.83	0.97	0.424	(0.596)	0.110	0.314
155	12.92	0.97	0.424	(0.593)	0.110	0.314
156	13.00	0.97	0.424	(0.590)	0.110	0.314
157	13.08	1.13	0.497	(0.587)	0.129	0.369
158	13.17	1.13	0.497	(0.584)	0.129	0.369
159	13.25	1.13	0.497	(0.581)	0.129	0.369
160	13.33	1.13	0.497	(0.578)	0.129	0.369
161	13.42	1.13	0.497	(0.575)	0.129	0.369
162	13.50	1.13	0.497	(0.572)	0.129	0.369
163	13.58	0.77	0.336	(0.569)	0.087	0.249
164	13.67	0.77	0.336	(0.566)	0.087	0.249
165	13.75	0.77	0.336	(0.563)	0.087	0.249
166	13.83	0.77	0.336	(0.560)	0.087	0.249
167	13.92	0.77	0.336	(0.557)	0.087	0.249
168	14.00	0.77	0.336	(0.555)	0.087	0.249
169	14.08	0.90	0.395	(0.552)	0.102	0.293
170	14.17	0.90	0.395	(0.549)	0.102	0.293

171	14.25	0.90	0.395	(0.546)	0.102	0.293
172	14.33	0.87	0.380	(0.543)	0.099	0.282
173	14.42	0.87	0.380	(0.541)	0.099	0.282
174	14.50	0.87	0.380	(0.538)	0.099	0.282
175	14.58	0.87	0.380	(0.535)	0.099	0.282
176	14.67	0.87	0.380	(0.532)	0.099	0.282
177	14.75	0.87	0.380	(0.530)	0.099	0.282
178	14.83	0.83	0.366	(0.527)	0.095	0.271
179	14.92	0.83	0.366	(0.524)	0.095	0.271
180	15.00	0.83	0.366	(0.521)	0.095	0.271
181	15.08	0.80	0.351	(0.519)	0.091	0.260
182	15.17	0.80	0.351	(0.516)	0.091	0.260
183	15.25	0.80	0.351	(0.514)	0.091	0.260
184	15.33	0.77	0.336	(0.511)	0.087	0.249
185	15.42	0.77	0.336	(0.508)	0.087	0.249
186	15.50	0.77	0.336	(0.506)	0.087	0.249
187	15.58	0.63	0.278	(0.503)	0.072	0.206
188	15.67	0.63	0.278	(0.500)	0.072	0.206
189	15.75	0.63	0.278	(0.498)	0.072	0.206
190	15.83	0.63	0.278	(0.495)	0.072	0.206
191	15.92	0.63	0.278	(0.493)	0.072	0.206
192	16.00	0.63	0.278	(0.490)	0.072	0.206
193	16.08	0.13	0.059	(0.488)	0.015	0.043
194	16.17	0.13	0.059	(0.485)	0.015	0.043
195	16.25	0.13	0.059	(0.483)	0.015	0.043
196	16.33	0.13	0.059	(0.480)	0.015	0.043
197	16.42	0.13	0.059	(0.478)	0.015	0.043
198	16.50	0.13	0.059	(0.476)	0.015	0.043
199	16.58	0.10	0.044	(0.473)	0.011	0.033
200	16.67	0.10	0.044	(0.471)	0.011	0.033
201	16.75	0.10	0.044	(0.468)	0.011	0.033
202	16.83	0.10	0.044	(0.466)	0.011	0.033
203	16.92	0.10	0.044	(0.464)	0.011	0.033
204	17.00	0.10	0.044	(0.461)	0.011	0.033
205	17.08	0.17	0.073	(0.459)	0.019	0.054
206	17.17	0.17	0.073	(0.457)	0.019	0.054
207	17.25	0.17	0.073	(0.454)	0.019	0.054
208	17.33	0.17	0.073	(0.452)	0.019	0.054
209	17.42	0.17	0.073	(0.450)	0.019	0.054
210	17.50	0.17	0.073	(0.447)	0.019	0.054
211	17.58	0.17	0.073	(0.445)	0.019	0.054
212	17.67	0.17	0.073	(0.443)	0.019	0.054
213	17.75	0.17	0.073	(0.441)	0.019	0.054
214	17.83	0.13	0.059	(0.439)	0.015	0.043
215	17.92	0.13	0.059	(0.436)	0.015	0.043
216	18.00	0.13	0.059	(0.434)	0.015	0.043
217	18.08	0.13	0.059	(0.432)	0.015	0.043
218	18.17	0.13	0.059	(0.430)	0.015	0.043
219	18.25	0.13	0.059	(0.428)	0.015	0.043
220	18.33	0.13	0.059	(0.426)	0.015	0.043
221	18.42	0.13	0.059	(0.424)	0.015	0.043
222	18.50	0.13	0.059	(0.422)	0.015	0.043
223	18.58	0.10	0.044	(0.420)	0.011	0.033
224	18.67	0.10	0.044	(0.418)	0.011	0.033
225	18.75	0.10	0.044	(0.416)	0.011	0.033
226	18.83	0.07	0.029	(0.414)	0.008	0.022
227	18.92	0.07	0.029	(0.412)	0.008	0.022
228	19.00	0.07	0.029	(0.410)	0.008	0.022
229	19.08	0.10	0.044	(0.408)	0.011	0.033
230	19.17	0.10	0.044	(0.406)	0.011	0.033
231	19.25	0.10	0.044	(0.404)	0.011	0.033
232	19.33	0.13	0.059	(0.402)	0.015	0.043
233	19.42	0.13	0.059	(0.400)	0.015	0.043
234	19.50	0.13	0.059	(0.398)	0.015	0.043
235	19.58	0.10	0.044	(0.397)	0.011	0.033
236	19.67	0.10	0.044	(0.395)	0.011	0.033
237	19.75	0.10	0.044	(0.393)	0.011	0.033
238	19.83	0.07	0.029	(0.391)	0.008	0.022
239	19.92	0.07	0.029	(0.389)	0.008	0.022

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240  20.00     0.07      0.029       (  0.388)       0.008        0.022
241  20.08     0.10      0.044       (  0.386)       0.011        0.033
242  20.17     0.10      0.044       (  0.384)       0.011        0.033
243  20.25     0.10      0.044       (  0.383)       0.011        0.033
244  20.33     0.10      0.044       (  0.381)       0.011        0.033
245  20.42     0.10      0.044       (  0.379)       0.011        0.033
246  20.50     0.10      0.044       (  0.378)       0.011        0.033
247  20.58     0.10      0.044       (  0.376)       0.011        0.033
248  20.67     0.10      0.044       (  0.375)       0.011        0.033
249  20.75     0.10      0.044       (  0.373)       0.011        0.033
250  20.83     0.07      0.029       (  0.372)       0.008        0.022
251  20.92     0.07      0.029       (  0.370)       0.008        0.022
252  21.00     0.07      0.029       (  0.369)       0.008        0.022
253  21.08     0.10      0.044       (  0.367)       0.011        0.033
254  21.17     0.10      0.044       (  0.366)       0.011        0.033
255  21.25     0.10      0.044       (  0.364)       0.011        0.033
256  21.33     0.07      0.029       (  0.363)       0.008        0.022
257  21.42     0.07      0.029       (  0.361)       0.008        0.022
258  21.50     0.07      0.029       (  0.360)       0.008        0.022
259  21.58     0.10      0.044       (  0.359)       0.011        0.033
260  21.67     0.10      0.044       (  0.357)       0.011        0.033
261  21.75     0.10      0.044       (  0.356)       0.011        0.033
262  21.83     0.07      0.029       (  0.355)       0.008        0.022
263  21.92     0.07      0.029       (  0.354)       0.008        0.022
264  22.00     0.07      0.029       (  0.353)       0.008        0.022
265  22.08     0.10      0.044       (  0.351)       0.011        0.033
266  22.17     0.10      0.044       (  0.350)       0.011        0.033
267  22.25     0.10      0.044       (  0.349)       0.011        0.033
268  22.33     0.07      0.029       (  0.348)       0.008        0.022
269  22.42     0.07      0.029       (  0.347)       0.008        0.022
270  22.50     0.07      0.029       (  0.346)       0.008        0.022
271  22.58     0.07      0.029       (  0.345)       0.008        0.022
272  22.67     0.07      0.029       (  0.344)       0.008        0.022
273  22.75     0.07      0.029       (  0.343)       0.008        0.022
274  22.83     0.07      0.029       (  0.342)       0.008        0.022
275  22.92     0.07      0.029       (  0.341)       0.008        0.022
276  23.00     0.07      0.029       (  0.340)       0.008        0.022
277  23.08     0.07      0.029       (  0.340)       0.008        0.022
278  23.17     0.07      0.029       (  0.339)       0.008        0.022
279  23.25     0.07      0.029       (  0.338)       0.008        0.022
280  23.33     0.07      0.029       (  0.337)       0.008        0.022
281  23.42     0.07      0.029       (  0.337)       0.008        0.022
282  23.50     0.07      0.029       (  0.336)       0.008        0.022
283  23.58     0.07      0.029       (  0.336)       0.008        0.022
284  23.67     0.07      0.029       (  0.335)       0.008        0.022
285  23.75     0.07      0.029       (  0.335)       0.008        0.022
286  23.83     0.07      0.029       (  0.334)       0.008        0.022
287  23.92     0.07      0.029       (  0.334)       0.008        0.022
288  24.00     0.07      0.029       (  0.334)       0.008        0.022
             (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    32.5
       Flood volume = Effective rainfall      2.71(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       3.2(Ac.Ft)
       Total soil loss =      0.95(In)
       Total soil loss =     1.126(Ac.Ft)
       Total rainfall =      3.66(In)
       Flood volume =      140372.2 Cubic Feet
       Total soil loss =       49064.0 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =      5.303(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
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0+ 5	0.0008	0.11	Q				
0+10	0.0025	0.25	VQ				
0+15	0.0045	0.29	VQ				
0+20	0.0069	0.36	VQ				
0+25	0.0099	0.44	VQ				
0+30	0.0131	0.46	VQ				
0+35	0.0163	0.46	VQ				
0+40	0.0195	0.47	VQ				
0+45	0.0227	0.47	VQ				
0+50	0.0263	0.52	V Q				
0+55	0.0304	0.59	V Q				
1+ 0	0.0346	0.61	V Q				
1+ 5	0.0385	0.56	V Q				
1+10	0.0419	0.50	VQ				
1+15	0.0452	0.48	VQ				
1+20	0.0485	0.47	VQ				
1+25	0.0517	0.47	VQ				
1+30	0.0549	0.47	VQ				
1+35	0.0581	0.47	VQ				
1+40	0.0614	0.47	VQ				
1+45	0.0646	0.47	VQ				
1+50	0.0682	0.52	V Q				
1+55	0.0723	0.59	V Q				
2+ 0	0.0765	0.61	V Q				
2+ 5	0.0808	0.62	|VQ				
2+10	0.0850	0.62	|VQ				
2+15	0.0893	0.62	|VQ				
2+20	0.0936	0.62	|VQ				
2+25	0.0979	0.62	|VQ				
2+30	0.1022	0.62	|VQ				
2+35	0.1069	0.68	|VQ				
2+40	0.1121	0.75	|V Q				
2+45	0.1174	0.77	|V Q				
2+50	0.1227	0.77	|V Q				
2+55	0.1281	0.78	|V Q				
3+ 0	0.1334	0.78	|V Q				
3+ 5	0.1388	0.78	|V Q				
3+10	0.1442	0.78	|V Q				
3+15	0.1495	0.78	|V Q				
3+20	0.1549	0.78	|V Q				
3+25	0.1603	0.78	|V Q				
3+30	0.1657	0.78	| VQ				
3+35	0.1710	0.78	| VQ				
3+40	0.1764	0.78	| VQ				
3+45	0.1818	0.78	| VQ				
3+50	0.1875	0.83	| VQ				
3+55	0.1938	0.91	| VQ				
4+ 0	0.2001	0.92	| VQ				
4+ 5	0.2065	0.93	| VQ				
4+10	0.2130	0.93	| VQ				
4+15	0.2194	0.94	| VQ				
4+20	0.2262	0.99	| VQ				
4+25	0.2336	1.06	| V Q				
4+30	0.2410	1.08	| V Q				
4+35	0.2485	1.09	| VQ				
4+40	0.2560	1.09	| VQ				
4+45	0.2635	1.09	| VQ				
4+50	0.2714	1.15	| VQ				
4+55	0.2798	1.22	| VQ				
5+ 0	0.2883	1.24	| VQ				
5+ 5	0.2961	1.13	| VQ				
5+10	0.3029	0.99	| Q				
5+15	0.3096	0.96	| Q				
5+20	0.3164	1.00	| VQ				
5+25	0.3238	1.07	| Q				
5+30	0.3312	1.08	| Q				
5+35	0.3391	1.14	| Q				
5+40	0.3475	1.22	| Q				

5+45	0.3560	1.24	Q			
5+50	0.3645	1.24	Q			
5+55	0.3731	1.25	Q			
6+ 0	0.3817	1.25	Q			
6+ 5	0.3907	1.30	VQ			
6+10	0.4001	1.37	VQ			
6+15	0.4097	1.39	Q			
6+20	0.4194	1.40	Q			
6+25	0.4290	1.40	Q			
6+30	0.4387	1.40	Q			
6+35	0.4487	1.46	Q			
6+40	0.4593	1.53	VQ			
6+45	0.4699	1.55	VQ			
6+50	0.4806	1.55	VQ			
6+55	0.4914	1.56	Q			
7+ 0	0.5021	1.56	Q			
7+ 5	0.5128	1.56	Q			
7+10	0.5236	1.56	Q			
7+15	0.5343	1.56	Q			
7+20	0.5454	1.61	Q			
7+25	0.5571	1.69	Q			
7+30	0.5688	1.70	QV			
7+35	0.5810	1.77	Q			
7+40	0.5936	1.84	Q			
7+45	0.6064	1.86	Q			
7+50	0.6197	1.92	Q			
7+55	0.6334	2.00	Q			
8+ 0	0.6473	2.02	Q			
8+ 5	0.6620	2.13	Q			
8+10	0.6777	2.28	VQ			
8+15	0.6936	2.32	VQ			
8+20	0.7097	2.33	VQ			
8+25	0.7258	2.34	Q			
8+30	0.7419	2.34	Q			
8+35	0.7584	2.39	Q			
8+40	0.7754	2.47	Q			
8+45	0.7925	2.48	Q			
8+50	0.8100	2.55	Q			
8+55	0.8280	2.62	Q			
9+ 0	0.8462	2.64	Q			
9+ 5	0.8652	2.76	VQ			
9+10	0.8852	2.90	VQ			
9+15	0.9054	2.94	Q			
9+20	0.9261	3.01	VQ			
9+25	0.9474	3.09	VQ			
9+30	0.9688	3.11	Q			
9+35	0.9906	3.17	Q			
9+40	1.0130	3.24	Q			
9+45	1.0355	3.26	VQ			
9+50	1.0584	3.32	Q			
9+55	1.0818	3.40	Q			
10+ 0	1.1053	3.42	Q			
10+ 5	1.1263	3.04	QV			
10+10	1.1438	2.54	Q V			
10+15	1.1605	2.43	Q V			
10+20	1.1769	2.37	Q V			
10+25	1.1930	2.35	Q V			
10+30	1.2091	2.34	Q V			
10+35	1.2271	2.61	Q V			
10+40	1.2476	2.97	Q V			
10+45	1.2687	3.06	Q V			
10+50	1.2900	3.09	Q V			
10+55	1.3114	3.11	Q V			
11+ 0	1.3329	3.12	Q V			
11+ 5	1.3540	3.06	Q V			
11+10	1.3746	2.99	Q V			
11+15	1.3951	2.98	Q V			
11+20	1.4156	2.97	Q V			
11+25	1.4360	2.96	Q V			

11+30	1.4564	2.96	|	|Q V |	|	|
11+35	1.4761	2.85	|	|Q V |	|	|
11+40	1.4947	2.71	|	Q V |	|	|
11+45	1.5131	2.68	|	Q V |	|	|
11+50	1.5318	2.72	|	Q V|	|	|
11+55	1.5510	2.78	|	|Q V|	|	|
12+ 0	1.5703	2.80	|	|Q V|	|	|
12+ 5	1.5922	3.18	|	| Q V|	|	|
12+10	1.6176	3.69	|	| Q V	|	|
12+15	1.6439	3.81	|	| Q V	|	|
12+20	1.6709	3.92	|	| Q V	|	|
12+25	1.6985	4.02	|	| Q |V	|	|
12+30	1.7264	4.04	|	| Q |V	|	|
12+35	1.7550	4.16	|	| Q |V	|	|
12+40	1.7847	4.31	|	| Q | V	|	|
12+45	1.8146	4.34	|	| Q | V	|	|
12+50	1.8450	4.41	|	| Q | V	|	|
12+55	1.8759	4.49	|	| Q | V	|	|
13+ 0	1.9070	4.51	|	| Q | V	|	|
13+ 5	1.9400	4.79	|	| Q| V	|	|
13+10	1.9755	5.16	|	| Q V	|	|
13+15	2.0116	5.24	|	| Q V	|	|
13+20	2.0479	5.28	|	| |Q V	|	|
13+25	2.0844	5.30	|	| |Q V	|	|
13+30	2.1209	5.30	|	| |Q V	|	|
13+35	2.1533	4.70	|	| Q | V	|	|
13+40	2.1802	3.91	|	| Q | V	|	|
13+45	2.2059	3.72	|	| Q | V	|	|
13+50	2.2309	3.64	|	| Q | V	|	|
13+55	2.2558	3.60	|	| Q | V	|	|
14+ 0	2.2805	3.59	|	| Q | V	|	|
14+ 5	2.3067	3.81	|	| Q | V	|	|
14+10	2.3349	4.10	|	| Q | V	|	|
14+15	2.3635	4.16	|	| Q | V|	|	|
14+20	2.3920	4.14	|	| Q | V|	|	|
14+25	2.4201	4.08	|	| Q | V	|	|
14+30	2.4481	4.07	|	| Q | V	|	|
14+35	2.4761	4.06	|	| Q | V	|	|
14+40	2.5040	4.06	|	| Q | |V	|	|
14+45	2.5320	4.06	|	| Q | |V	|	|
14+50	2.5595	4.00	|	| Q | |V	|	|
14+55	2.5866	3.93	|	| Q | | V	|	|
15+ 0	2.6135	3.91	|	| Q | | V	|	|
15+ 5	2.6400	3.85	|	| Q | | V	|	|
15+10	2.6660	3.77	|	| Q | | V	|	|
15+15	2.6919	3.76	|	| Q | | V	|	|
15+20	2.7173	3.69	|	| Q | | V	|	|
15+25	2.7422	3.62	|	| Q | | V	|	|
15+30	2.7670	3.60	|	| Q | | V	|	|
15+35	2.7903	3.37	|	| Q | | V	|	|
15+40	2.8115	3.08	|	| Q | | V	|	|
15+45	2.8322	3.01	|	| Q | | V	|	|
15+50	2.8528	2.98	|	|Q | | V	|	|
15+55	2.8732	2.97	|	|Q | | V	|	|
16+ 0	2.8936	2.96	|	|Q | | V	|	|
16+ 5	2.9084	2.15	|	Q | | | V	|	|
16+10	2.9157	1.06	|	Q | | | V	|	|
16+15	2.9213	0.81	|	Q | | | V	|	|
16+20	2.9261	0.70	|	Q | | | V	|	|
16+25	2.9305	0.65	|	Q | | | V	|	|
16+30	2.9348	0.62	|	Q | | | V	|	|
16+35	2.9387	0.57	|	Q | | | V	|	|
16+40	2.9422	0.50	|	|Q | | | V	|	|
16+45	2.9455	0.48	|	|Q | | | V	|	|
16+50	2.9487	0.47	|	|Q | | | V	|	|
16+55	2.9520	0.47	|	|Q | | | V	|	|
17+ 0	2.9552	0.47	|	|Q | | | V	|	|
17+ 5	2.9591	0.58	|	| Q | | | V	|	|
17+10	2.9641	0.72	|	| Q | | | V	|	|

17+15	2.9693	0.76	| Q	|	|	|	V |
17+20	2.9746	0.77	| Q	|	|	|	V |
17+25	2.9800	0.78	| Q	|	|	|	V |
17+30	2.9853	0.78	| Q	|	|	|	V |
17+35	2.9907	0.78	| Q	|	|	|	V |
17+40	2.9961	0.78	| Q	|	|	|	V |
17+45	3.0015	0.78	| Q	|	|	|	V |
17+50	3.0065	0.73	| Q	|	|	|	V |
17+55	3.0110	0.65	| Q	|	|	|	V |
18+ 0	3.0153	0.64	| Q	|	|	|	V |
18+ 5	3.0197	0.63	| Q	|	|	|	V |
18+10	3.0240	0.63	| Q	|	|	|	V |
18+15	3.0283	0.62	| Q	|	|	|	V |
18+20	3.0326	0.62	| Q	|	|	|	V |
18+25	3.0369	0.62	| Q	|	|	|	V |
18+30	3.0412	0.62	| Q	|	|	|	V |
18+35	3.0451	0.57	| Q	|	|	|	V |
18+40	3.0485	0.50	|Q	|	|	|	V |
18+45	3.0518	0.48	|Q	|	|	|	V |
18+50	3.0547	0.42	|Q	|	|	|	V |
18+55	3.0570	0.34	|Q	|	|	|	V |
19+ 0	3.0593	0.32	|Q	|	|	|	V |
19+ 5	3.0618	0.37	|Q	|	|	|	V |
19+10	3.0649	0.44	|Q	|	|	|	V |
19+15	3.0680	0.46	|Q	|	|	|	V |
19+20	3.0716	0.52	| Q	|	|	|	V |
19+25	3.0757	0.59	| Q	|	|	|	V |
19+30	3.0799	0.61	| Q	|	|	|	V |
19+35	3.0838	0.56	| Q	|	|	|	V |
19+40	3.0872	0.50	|Q	|	|	|	V |
19+45	3.0905	0.48	|Q	|	|	|	V |
19+50	3.0934	0.42	|Q	|	|	|	V |
19+55	3.0957	0.34	|Q	|	|	|	V |
20+ 0	3.0979	0.32	|Q	|	|	|	V |
20+ 5	3.1005	0.37	|Q	|	|	|	V |
20+10	3.1035	0.44	|Q	|	|	|	V |
20+15	3.1067	0.46	|Q	|	|	|	V |
20+20	3.1099	0.46	|Q	|	|	|	V |
20+25	3.1131	0.47	|Q	|	|	|	V |
20+30	3.1163	0.47	|Q	|	|	|	V |
20+35	3.1195	0.47	|Q	|	|	|	V |
20+40	3.1227	0.47	|Q	|	|	|	V |
20+45	3.1260	0.47	|Q	|	|	|	V |
20+50	3.1288	0.41	|Q	|	|	|	V |
20+55	3.1312	0.34	|Q	|	|	|	V |
21+ 0	3.1334	0.32	|Q	|	|	|	V |
21+ 5	3.1360	0.37	|Q	|	|	|	V |
21+10	3.1390	0.44	|Q	|	|	|	V |
21+15	3.1421	0.46	|Q	|	|	|	V|
21+20	3.1449	0.41	|Q	|	|	|	V|
21+25	3.1473	0.34	|Q	|	|	|	V|
21+30	3.1495	0.32	|Q	|	|	|	V|
21+35	3.1521	0.37	|Q	|	|	|	V|
21+40	3.1551	0.44	|Q	|	|	|	V|
21+45	3.1582	0.46	|Q	|	|	|	V|
21+50	3.1611	0.41	|Q	|	|	|	V|
21+55	3.1634	0.34	|Q	|	|	|	V|
22+ 0	3.1656	0.32	|Q	|	|	|	V|
22+ 5	3.1682	0.37	|Q	|	|	|	V|
22+10	3.1712	0.44	|Q	|	|	|	V|
22+15	3.1744	0.46	|Q	|	|	|	V|
22+20	3.1772	0.41	|Q	|	|	|	V|
22+25	3.1795	0.34	|Q	|	|	|	V|
22+30	3.1817	0.32	|Q	|	|	|	V|
22+35	3.1839	0.32	|Q	|	|	|	V|
22+40	3.1861	0.31	|Q	|	|	|	V|
22+45	3.1882	0.31	|Q	|	|	|	V|
22+50	3.1904	0.31	|Q	|	|	|	V|
22+55	3.1925	0.31	|Q	|	|	|	V|

```
   23+ 0       3.1947      0.31  |Q        |         |         |        V|
   23+ 5       3.1968      0.31  |Q        |         |         |        V|
   23+10       3.1990      0.31  |Q        |         |         |        V|
   23+15       3.2011      0.31  |Q        |         |         |        V|
   23+20       3.2033      0.31  |Q        |         |         |        V|
   23+25       3.2054      0.31  |Q        |         |         |        V|
   23+30       3.2076      0.31  |Q        |         |         |        V|
   23+35       3.2097      0.31  |Q        |         |         |        V|
   23+40       3.2119      0.31  |Q        |         |         |        V|
   23+45       3.2140      0.31  |Q        |         |         |        V|
   23+50       3.2162      0.31  |Q        |         |         |        V|
   23+55       3.2183      0.31  |Q        |         |         |        V|
   24+ 0       3.2204      0.31  |Q        |         |         |        V|
   24+ 5       3.2218      0.20  Q         |         |         |        V|
   24+10       3.2222      0.06  Q         |         |         |        V|
   24+15       3.2224      0.02  Q         |         |         |        V|
   24+20       3.2225      0.01  Q         |         |         |        V|
   24+25       3.2225      0.00  Q         |         |         |        V|
------------------------------------------------------------------------
```

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

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Study date 03/02/23 File: DEVHYD110.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
10-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	0.56	7.99

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	1.28	18.27

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.560(In)
Area Averaged 100-Year Rainfall = 1.280(In)

Point rain (area averaged) = 0.856(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.856(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
          14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


 RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
 AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
 46.6  46.6      0.605     0.159        0.519       1.000      0.519
                                                  Sum (F) =   0.519
 Area averaged mean soil loss (F) (In/Hr) =  0.519
 Minimum soil loss rate ((In/Hr)) =  0.259
 (for 24 hour storm duration)
 Soil low loss rate (decimal) =   0.259
 ------------------------------------------------------------------------
 Slope of intensity-duration curve for a 1 hour storm =0.5300
 ------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
 ------------------------------------------------------------------
                Unit Hydrograph Data
 ------------------------------------------------------------------
 Unit time period   Time % of lag   Distribution   Unit Hydrograph
     (hrs)                          Graph %           (CFS)
 ------------------------------------------------------------------
     1   0.083        157.487         34.939             5.025
     2   0.167        314.973         46.456             6.681
     3   0.250        472.460         10.764             1.548
     4   0.333        629.946          4.657             0.670
     5   0.417        787.433          2.267             0.326
     6   0.500        944.919          0.918             0.132
                                Sum = 100.000   Sum=      14.381
-----------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.349       (  0.519)      0.090        0.259
   2   0.17     4.70      0.483       (  0.519)      0.125        0.358
   3   0.25     4.70      0.483       (  0.519)      0.125        0.358
   4   0.33     5.10      0.524       (  0.519)      0.136        0.388
   5   0.42     5.80      0.596       (  0.519)      0.154        0.442
   6   0.50     5.90      0.606       (  0.519)      0.157        0.449
   7   0.58     7.10      0.729       (  0.519)      0.189        0.540
   8   0.67     8.70      0.894       (  0.519)      0.231        0.662
   9   0.75    13.20      1.356       (  0.519)      0.351        1.005
  10   0.83    29.70      3.051          0.519    (  0.790)      2.532
  11   0.92     7.70      0.791       (  0.519)      0.205        0.586
  12   1.00     4.00      0.411       (  0.519)      0.106        0.304
                (Loss Rate Not Used)
     Sum =     100.0                                 Sum =     7.9
        Flood volume = Effective rainfall      0.66(In)
         times area      14.3(Ac.)/[(In)/(Ft.)] =       0.8(Ac.Ft)
        Total soil loss =      0.20(In)
        Total soil loss =     0.237(Ac.Ft)
        Total rainfall =      0.86(In)
        Flood volume =       34032.7 Cubic Feet
        Total soil loss =       10313.5 Cubic Feet
        ------------------------------------------------------------------
         Peak flow rate of this hydrograph =     22.111(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	7.5	15.0	22.5	30.0
0+ 5	0.0090	1.30	VQ				
0+10	0.0333	3.53	V Q				
0+15	0.0649	4.59	V Q				
0+20	0.0998	5.07	VQ				
0+25	0.1390	5.69	Q				
0+30	0.1817	6.20	QV				
0+35	0.2287	6.83	Q V				
0+40	0.2846	8.11	Q V				
0+45	0.3590	10.81	Q V				
0+50	0.5040	21.04	V Q				
0+55	0.6562	22.11	Q V				
1+ 0	0.7274	10.33	Q			V	
1+ 5	0.7622	5.06	Q			V	
1+10	0.7748	1.82	Q			V	
1+15	0.7798	0.73	Q			V	
1+20	0.7810	0.18	Q			V	
1+25	0.7813	0.04	Q			V	

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

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

Program License Serial Number 6320

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

 English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
10-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	0.96	13.70

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	2.23	31.82

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.960(In)
Area Averaged 100-Year Rainfall = 2.230(In)

Point rain (area averaged) = 1.482(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.482(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  46.6      0.605     0.159        0.519       1.000      0.519
                                                 Sum (F) =   0.519
Area averaged mean soil loss (F) (In/Hr) =  0.519
Minimum soil loss rate ((In/Hr)) =  0.259
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     1.30      0.231       (  0.519)       0.060        0.171
    2   0.17     1.30      0.231       (  0.519)       0.060        0.171
    3   0.25     1.10      0.196       (  0.519)       0.051        0.145
    4   0.33     1.50      0.267       (  0.519)       0.069        0.198
    5   0.42     1.50      0.267       (  0.519)       0.069        0.198
    6   0.50     1.80      0.320       (  0.519)       0.083        0.237
    7   0.58     1.50      0.267       (  0.519)       0.069        0.198
    8   0.67     1.80      0.320       (  0.519)       0.083        0.237
    9   0.75     1.80      0.320       (  0.519)       0.083        0.237
   10   0.83     1.50      0.267       (  0.519)       0.069        0.198
   11   0.92     1.60      0.285       (  0.519)       0.074        0.211
   12   1.00     1.80      0.320       (  0.519)       0.083        0.237
   13   1.08     2.20      0.391       (  0.519)       0.101        0.290
   14   1.17     2.20      0.391       (  0.519)       0.101        0.290
   15   1.25     2.20      0.391       (  0.519)       0.101        0.290
   16   1.33     2.00      0.356       (  0.519)       0.092        0.264
   17   1.42     2.60      0.463       (  0.519)       0.120        0.343
   18   1.50     2.70      0.480       (  0.519)       0.124        0.356
   19   1.58     2.40      0.427       (  0.519)       0.111        0.316
   20   1.67     2.70      0.480       (  0.519)       0.124        0.356
   21   1.75     3.30      0.587       (  0.519)       0.152        0.435
   22   1.83     3.10      0.551       (  0.519)       0.143        0.409
   23   1.92     2.90      0.516       (  0.519)       0.134        0.382
   24   2.00     3.00      0.534       (  0.519)       0.138        0.395
   25   2.08     3.10      0.551       (  0.519)       0.143        0.409
   26   2.17     4.20      0.747       (  0.519)       0.194        0.554
   27   2.25     5.00      0.889       (  0.519)       0.230        0.659
   28   2.33     3.50      0.623       (  0.519)       0.161        0.461
   29   2.42     6.80      1.210       (  0.519)       0.313        0.896
   30   2.50     7.30      1.299       (  0.519)       0.336        0.962
   31   2.58     8.20      1.459       (  0.519)       0.378        1.081
   32   2.67     5.90      1.050       (  0.519)       0.272        0.778
```

```
33   2.75     2.00      0.356       (  0.519)       0.092        0.264
34   2.83     1.80      0.320       (  0.519)       0.083        0.237
35   2.92     1.80      0.320       (  0.519)       0.083        0.237
36   3.00     0.60      0.107       (  0.519)       0.028        0.079
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    13.2
      Flood volume = Effective rainfall      1.10(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       1.3(Ac.Ft)
      Total soil loss =      0.38(In)
      Total soil loss =     0.457(Ac.Ft)
      Total rainfall =      1.48(In)
      Flood volume =       56900.1 Cubic Feet
      Total soil loss =       19888.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     13.852(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        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0059      0.86  VQ        |         |         |         |
  0+10       0.0198      2.01  V   Q     |         |         |         |
  0+15       0.0345      2.14  |V  Q     |         |         |         |
  0+20       0.0506      2.34  |V  Q     |         |         |         |
  0+25       0.0693      2.71  | V  Q    |         |         |         |
  0+30       0.0899      3.00  | V  Q    |         |         |         |
  0+35       0.1112      3.09  |  V  Q   |         |         |         |
  0+40       0.1325      3.10  |   V Q   |         |         |         |
  0+45       0.1555      3.33  |   V Q   |         |         |         |
  0+50       0.1774      3.18  |    VQ   |         |         |         |
  0+55       0.1981      3.00  |     Q   |         |         |         |
  1+ 0       0.2200      3.17  |     Q   |         |         |         |
  1+ 5       0.2448      3.61  |      Q  |         |         |         |
  1+10       0.2724      4.00  |       Q |         |         |         |
  1+15       0.3006      4.10  |       QV|         |         |         |
  1+20       0.3283      4.01  |       Q V         |         |         |
  1+25       0.3576      4.25  |       Q V         |         |         |
  1+30       0.3907      4.82  |        Q|V        |         |         |
  1+35       0.4239      4.81  |        Q| V       |         |         |
  1+40       0.4570      4.81  |        Q|  V      |         |         |
  1+45       0.4944      5.44  |         Q    V    |         |         |
  1+50       0.5350      5.89  |         |Q    V   |         |         |
  1+55       0.5744      5.72  |         |Q     V  |         |         |
  2+ 0       0.6131      5.63  |         |Q      V |         |         |
  2+ 5       0.6527      5.75  |         |Q       V|         |         |
  2+10       0.6980      6.57  |         |  Q      |V        |         |
  2+15       0.7537      8.09  |         |     Q   |  V      |         |
  2+20       0.8090      8.04  |         |     Q   |   V     |         |
  2+25       0.8722      9.17  |         |       Q |     V   |         |
  2+30       0.9563     12.22  |         |         |   Q    V|         |
  2+35       1.0517     13.85  |         |         |      Q  | V       |
  2+40       1.1445     13.46  |         |         |     Q   |    V    |
  2+45       1.2078      9.20  |         |       Q |         |     V   |
  2+50       1.2444      5.32  |         Q         |         |       V |
  2+55       1.2732      4.19  |       Q |         |         |       V |
  3+ 0       1.2934      2.92  |    Q    |         |         |        V|
  3+ 5       1.3020      1.24  | Q       |         |         |        V|
  3+10       1.3047      0.39  Q         |         |         |        V|
  3+15       1.3058      0.16  Q         |         |         |        V|
  3+20       1.3062      0.06  Q         |         |         |        V|
  3+25       1.3062      0.01  Q         |         |         |        V|
-------------------------------------------------------------------------
```

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

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Study date 03/02/23 File: DEVHYD610.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
10-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	1.42	20.26

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	3.15	44.95

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.420(In)
Area Averaged 100-Year Rainfall = 3.150(In)

Point rain (area averaged) = 2.132(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.132(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %

```
   14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  46.6      0.605     0.159        0.519       1.000      0.519
                                                 Sum (F) =   0.519
Area averaged mean soil loss (F) (In/Hr) =  0.519
Minimum soil loss rate ((In/Hr)) =  0.259
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     0.50      0.128       (  0.519)       0.033        0.095
    2   0.17     0.60      0.153       (  0.519)       0.040        0.114
    3   0.25     0.60      0.153       (  0.519)       0.040        0.114
    4   0.33     0.60      0.153       (  0.519)       0.040        0.114
    5   0.42     0.60      0.153       (  0.519)       0.040        0.114
    6   0.50     0.70      0.179       (  0.519)       0.046        0.133
    7   0.58     0.70      0.179       (  0.519)       0.046        0.133
    8   0.67     0.70      0.179       (  0.519)       0.046        0.133
    9   0.75     0.70      0.179       (  0.519)       0.046        0.133
   10   0.83     0.70      0.179       (  0.519)       0.046        0.133
   11   0.92     0.70      0.179       (  0.519)       0.046        0.133
   12   1.00     0.80      0.205       (  0.519)       0.053        0.152
   13   1.08     0.80      0.205       (  0.519)       0.053        0.152
   14   1.17     0.80      0.205       (  0.519)       0.053        0.152
   15   1.25     0.80      0.205       (  0.519)       0.053        0.152
   16   1.33     0.80      0.205       (  0.519)       0.053        0.152
   17   1.42     0.80      0.205       (  0.519)       0.053        0.152
   18   1.50     0.80      0.205       (  0.519)       0.053        0.152
   19   1.58     0.80      0.205       (  0.519)       0.053        0.152
   20   1.67     0.80      0.205       (  0.519)       0.053        0.152
   21   1.75     0.80      0.205       (  0.519)       0.053        0.152
   22   1.83     0.80      0.205       (  0.519)       0.053        0.152
   23   1.92     0.80      0.205       (  0.519)       0.053        0.152
   24   2.00     0.90      0.230       (  0.519)       0.060        0.171
   25   2.08     0.80      0.205       (  0.519)       0.053        0.152
   26   2.17     0.90      0.230       (  0.519)       0.060        0.171
   27   2.25     0.90      0.230       (  0.519)       0.060        0.171
   28   2.33     0.90      0.230       (  0.519)       0.060        0.171
   29   2.42     0.90      0.230       (  0.519)       0.060        0.171
   30   2.50     0.90      0.230       (  0.519)       0.060        0.171
   31   2.58     0.90      0.230       (  0.519)       0.060        0.171
   32   2.67     0.90      0.230       (  0.519)       0.060        0.171
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33   2.75     1.00      0.256       (  0.519)       0.066        0.190
34   2.83     1.00      0.256       (  0.519)       0.066        0.190
35   2.92     1.00      0.256       (  0.519)       0.066        0.190
36   3.00     1.00      0.256       (  0.519)       0.066        0.190
37   3.08     1.00      0.256       (  0.519)       0.066        0.190
38   3.17     1.10      0.281       (  0.519)       0.073        0.208
39   3.25     1.10      0.281       (  0.519)       0.073        0.208
40   3.33     1.10      0.281       (  0.519)       0.073        0.208
41   3.42     1.20      0.307       (  0.519)       0.080        0.227
42   3.50     1.30      0.333       (  0.519)       0.086        0.246
43   3.58     1.40      0.358       (  0.519)       0.093        0.265
44   3.67     1.40      0.358       (  0.519)       0.093        0.265
45   3.75     1.50      0.384       (  0.519)       0.099        0.284
46   3.83     1.50      0.384       (  0.519)       0.099        0.284
47   3.92     1.60      0.409       (  0.519)       0.106        0.303
48   4.00     1.60      0.409       (  0.519)       0.106        0.303
49   4.08     1.70      0.435       (  0.519)       0.113        0.322
50   4.17     1.80      0.460       (  0.519)       0.119        0.341
51   4.25     1.90      0.486       (  0.519)       0.126        0.360
52   4.33     2.00      0.512       (  0.519)       0.133        0.379
53   4.42     2.10      0.537       (  0.519)       0.139        0.398
54   4.50     2.10      0.537       (  0.519)       0.139        0.398
55   4.58     2.20      0.563       (  0.519)       0.146        0.417
56   4.67     2.30      0.588       (  0.519)       0.152        0.436
57   4.75     2.40      0.614       (  0.519)       0.159        0.455
58   4.83     2.40      0.614       (  0.519)       0.159        0.455
59   4.92     2.50      0.639       (  0.519)       0.166        0.474
60   5.00     2.60      0.665       (  0.519)       0.172        0.493
61   5.08     3.10      0.793       (  0.519)       0.205        0.588
62   5.17     3.60      0.921       (  0.519)       0.239        0.682
63   5.25     3.90      0.998       (  0.519)       0.258        0.739
64   5.33     4.20      1.074       (  0.519)       0.278        0.796
65   5.42     4.70      1.202       (  0.519)       0.311        0.891
66   5.50     5.60      1.432       (  0.519)       0.371        1.061
67   5.58     1.90      0.486       (  0.519)       0.126        0.360
68   5.67     0.90      0.230       (  0.519)       0.060        0.171
69   5.75     0.60      0.153       (  0.519)       0.040        0.114
70   5.83     0.50      0.128       (  0.519)       0.033        0.095
71   5.92     0.30      0.077       (  0.519)       0.020        0.057
72   6.00     0.20      0.051       (  0.519)       0.013        0.038
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    19.0
      Flood volume = Effective rainfall      1.58(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       1.9(Ac.Ft)
      Total soil loss =      0.55(In)
      Total soil loss =     0.657(Ac.Ft)
      Total rainfall =      2.13(In)
      Flood volume =       81820.3 Cubic Feet
      Total soil loss =       28598.4 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     13.320(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        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0033      0.48  Q         |         |         |         |
  0+10       0.0116      1.21  V Q       |         |         |         |
  0+15       0.0218      1.48  V Q       |         |         |         |
  0+20       0.0326      1.57  V  Q      |         |         |         |
  0+25       0.0437      1.62  V  Q      |         |         |         |
  0+30       0.0556      1.73  |V Q      |         |         |         |
  0+35       0.0684      1.86  |V Q      |         |         |         |
  0+40       0.0814      1.89  |V Q      |         |         |         |
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0+45      0.0945     1.90  | VQ      |         |         |         |
0+50      0.1076     1.91  | VQ      |         |         |         |
0+55      0.1208     1.91  | VQ      |         |         |         |
1+ 0      0.1346     2.00  | V Q     |         |         |         |
1+ 5      0.1493     2.13  |  VQ     |         |         |         |
1+10      0.1642     2.16  |  VQ     |         |         |         |
1+15      0.1791     2.17  |  VQ     |         |         |         |
1+20      0.1941     2.18  |   Q     |         |         |         |
1+25      0.2092     2.18  |   Q     |         |         |         |
1+30      0.2242     2.18  |   Q     |         |         |         |
1+35      0.2392     2.18  |   QV    |         |         |         |
1+40      0.2542     2.18  |   QV    |         |         |         |
1+45      0.2693     2.18  |   QV    |         |         |         |
1+50      0.2843     2.18  |   Q V   |         |         |         |
1+55      0.2993     2.18  |   Q V   |         |         |         |
2+ 0      0.3150     2.28  |   Q V   |         |         |         |
2+ 5      0.3309     2.31  |   Q  V  |         |         |         |
2+10      0.3468     2.31  |   Q  V  |         |         |         |
2+15      0.3634     2.42  |   Q  V  |         |         |         |
2+20      0.3802     2.44  |   Q   V |         |         |         |
2+25      0.3971     2.45  |   Q   V |         |         |         |
2+30      0.4140     2.45  |   Q   V |         |         |         |
2+35      0.4309     2.45  |   Q    V|         |         |         |
2+40      0.4478     2.45  |   Q    V|         |         |         |
2+45      0.4653     2.55  |    Q   V|         |         |         |
2+50      0.4838     2.68  |    Q    V         |         |         |
2+55      0.5024     2.71  |    Q    V         |         |         |
3+ 0      0.5211     2.72  |    Q    |V        |         |         |
3+ 5      0.5399     2.72  |    Q    |V        |         |         |
3+10      0.5593     2.82  |    Q    |V        |         |         |
3+15      0.5797     2.95  |    Q    | V       |         |         |
3+20      0.6002     2.98  |    Q    | V       |         |         |
3+25      0.6214     3.09  |     Q   |  V      |         |         |
3+30      0.6443     3.31  |     Q   |  V      |         |         |
3+35      0.6688     3.57  |      Q  |   V     |         |         |
3+40      0.6946     3.74  |      Q  |   V     |         |         |
3+45      0.7213     3.88  |      Q  |    V    |         |         |
3+50      0.7491     4.03  |       Q |    V    |         |         |
3+55      0.7777     4.16  |       Q |     V   |         |         |
4+ 0      0.8074     4.30  |       Q |      V  |         |         |
4+ 5      0.8379     4.44  |       Q |      V  |         |         |
4+10      0.8701     4.67  |        Q|       V |         |         |
4+15      0.9040     4.93  |        Q|        V|         |         |
4+20      0.9398     5.20  |         Q         V         |         |
4+25      0.9775     5.47  |         Q         V         |         |
4+30      1.0164     5.64  |         |Q        |V        |         |
4+35      1.0562     5.79  |         |Q        | V       |         |
4+40      1.0978     6.03  |         | Q       |  V      |         |
4+45      1.1411     6.29  |         | Q       |   V     |         |
4+50      1.1856     6.46  |         | Q       |    V    |         |
4+55      1.2312     6.61  |         |  Q      |     V   |         |
5+ 0      1.2783     6.85  |         |  Q      |      V  |         |
5+ 5      1.3300     7.49  |         |   Q     |       V |         |
5+10      1.3895     8.65  |         |      Q  |        V|         |
5+15      1.4565     9.73  |         |        Q|         |V        |
5+20      1.5297    10.62  |         |         |Q        | V       |
5+25      1.6100    11.66  |         |         |  Q      |   V     |
5+30      1.7017    13.32  |         |         |    Q    |     V   |
5+35      1.7785    11.15  |         |         | Q       |      V  |
5+40      1.8189     5.86  |         |Q        |         |       V |
5+45      1.8421     3.38  |     Q   |         |         |        V|
5+50      1.8573     2.21  |   Q     |         |         |        V|
5+55      1.8674     1.47  | Q       |         |         |        V|
6+ 0      1.8736     0.90  |Q        |         |         |        V|
6+ 5      1.8768     0.46  Q         |         |         |        V|
6+10      1.8778     0.14  Q         |         |         |        V|
6+15      1.8782     0.06  Q         |         |         |        V|
6+20      1.8783     0.02  Q         |         |         |        V|
6+25      1.8783     0.01  Q         |         |         |         V
```

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

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Study date 03/02/23 File: DEVHYD2410.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
10-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	2.65	37.82

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	6.95	99.18

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.650(In)
Area Averaged 100-Year Rainfall = 6.950(In)

Point rain (area averaged) = 4.419(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 4.419(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
    14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  46.6      0.605     0.159        0.519       1.000      0.519
                                                 Sum (F) =   0.519
Area averaged mean soil loss (F) (In/Hr) =  0.519
Minimum soil loss rate ((In/Hr)) =  0.259
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     0.07      0.035       (  0.920)       0.009        0.026
    2   0.17     0.07      0.035       (  0.916)       0.009        0.026
    3   0.25     0.07      0.035       (  0.912)       0.009        0.026
    4   0.33     0.10      0.053       (  0.909)       0.014        0.039
    5   0.42     0.10      0.053       (  0.905)       0.014        0.039
    6   0.50     0.10      0.053       (  0.902)       0.014        0.039
    7   0.58     0.10      0.053       (  0.898)       0.014        0.039
    8   0.67     0.10      0.053       (  0.895)       0.014        0.039
    9   0.75     0.10      0.053       (  0.891)       0.014        0.039
   10   0.83     0.13      0.071       (  0.888)       0.018        0.052
   11   0.92     0.13      0.071       (  0.884)       0.018        0.052
   12   1.00     0.13      0.071       (  0.881)       0.018        0.052
   13   1.08     0.10      0.053       (  0.877)       0.014        0.039
   14   1.17     0.10      0.053       (  0.874)       0.014        0.039
   15   1.25     0.10      0.053       (  0.870)       0.014        0.039
   16   1.33     0.10      0.053       (  0.867)       0.014        0.039
   17   1.42     0.10      0.053       (  0.863)       0.014        0.039
   18   1.50     0.10      0.053       (  0.860)       0.014        0.039
   19   1.58     0.10      0.053       (  0.857)       0.014        0.039
   20   1.67     0.10      0.053       (  0.853)       0.014        0.039
   21   1.75     0.10      0.053       (  0.850)       0.014        0.039
   22   1.83     0.13      0.071       (  0.846)       0.018        0.052
   23   1.92     0.13      0.071       (  0.843)       0.018        0.052
   24   2.00     0.13      0.071       (  0.839)       0.018        0.052
   25   2.08     0.13      0.071       (  0.836)       0.018        0.052
   26   2.17     0.13      0.071       (  0.833)       0.018        0.052
   27   2.25     0.13      0.071       (  0.829)       0.018        0.052
   28   2.33     0.13      0.071       (  0.826)       0.018        0.052
   29   2.42     0.13      0.071       (  0.823)       0.018        0.052
   30   2.50     0.13      0.071       (  0.819)       0.018        0.052
   31   2.58     0.17      0.088       (  0.816)       0.023        0.065
   32   2.67     0.17      0.088       (  0.813)       0.023        0.065
```

33	2.75	0.17	0.088	(0.809)	0.023	0.065
34	2.83	0.17	0.088	(0.806)	0.023	0.065
35	2.92	0.17	0.088	(0.803)	0.023	0.065
36	3.00	0.17	0.088	(0.799)	0.023	0.065
37	3.08	0.17	0.088	(0.796)	0.023	0.065
38	3.17	0.17	0.088	(0.793)	0.023	0.065
39	3.25	0.17	0.088	(0.789)	0.023	0.065
40	3.33	0.17	0.088	(0.786)	0.023	0.065
41	3.42	0.17	0.088	(0.783)	0.023	0.065
42	3.50	0.17	0.088	(0.779)	0.023	0.065
43	3.58	0.17	0.088	(0.776)	0.023	0.065
44	3.67	0.17	0.088	(0.773)	0.023	0.065
45	3.75	0.17	0.088	(0.770)	0.023	0.065
46	3.83	0.20	0.106	(0.766)	0.027	0.079
47	3.92	0.20	0.106	(0.763)	0.027	0.079
48	4.00	0.20	0.106	(0.760)	0.027	0.079
49	4.08	0.20	0.106	(0.757)	0.027	0.079
50	4.17	0.20	0.106	(0.754)	0.027	0.079
51	4.25	0.20	0.106	(0.750)	0.027	0.079
52	4.33	0.23	0.124	(0.747)	0.032	0.092
53	4.42	0.23	0.124	(0.744)	0.032	0.092
54	4.50	0.23	0.124	(0.741)	0.032	0.092
55	4.58	0.23	0.124	(0.738)	0.032	0.092
56	4.67	0.23	0.124	(0.734)	0.032	0.092
57	4.75	0.23	0.124	(0.731)	0.032	0.092
58	4.83	0.27	0.141	(0.728)	0.037	0.105
59	4.92	0.27	0.141	(0.725)	0.037	0.105
60	5.00	0.27	0.141	(0.722)	0.037	0.105
61	5.08	0.20	0.106	(0.719)	0.027	0.079
62	5.17	0.20	0.106	(0.716)	0.027	0.079
63	5.25	0.20	0.106	(0.712)	0.027	0.079
64	5.33	0.23	0.124	(0.709)	0.032	0.092
65	5.42	0.23	0.124	(0.706)	0.032	0.092
66	5.50	0.23	0.124	(0.703)	0.032	0.092
67	5.58	0.27	0.141	(0.700)	0.037	0.105
68	5.67	0.27	0.141	(0.697)	0.037	0.105
69	5.75	0.27	0.141	(0.694)	0.037	0.105
70	5.83	0.27	0.141	(0.691)	0.037	0.105
71	5.92	0.27	0.141	(0.688)	0.037	0.105
72	6.00	0.27	0.141	(0.685)	0.037	0.105
73	6.08	0.30	0.159	(0.682)	0.041	0.118
74	6.17	0.30	0.159	(0.679)	0.041	0.118
75	6.25	0.30	0.159	(0.676)	0.041	0.118
76	6.33	0.30	0.159	(0.673)	0.041	0.118
77	6.42	0.30	0.159	(0.670)	0.041	0.118
78	6.50	0.30	0.159	(0.667)	0.041	0.118
79	6.58	0.33	0.177	(0.664)	0.046	0.131
80	6.67	0.33	0.177	(0.661)	0.046	0.131
81	6.75	0.33	0.177	(0.658)	0.046	0.131
82	6.83	0.33	0.177	(0.655)	0.046	0.131
83	6.92	0.33	0.177	(0.652)	0.046	0.131
84	7.00	0.33	0.177	(0.649)	0.046	0.131
85	7.08	0.33	0.177	(0.646)	0.046	0.131
86	7.17	0.33	0.177	(0.643)	0.046	0.131
87	7.25	0.33	0.177	(0.640)	0.046	0.131
88	7.33	0.37	0.194	(0.637)	0.050	0.144
89	7.42	0.37	0.194	(0.634)	0.050	0.144
90	7.50	0.37	0.194	(0.631)	0.050	0.144
91	7.58	0.40	0.212	(0.628)	0.055	0.157
92	7.67	0.40	0.212	(0.625)	0.055	0.157
93	7.75	0.40	0.212	(0.622)	0.055	0.157
94	7.83	0.43	0.230	(0.620)	0.060	0.170
95	7.92	0.43	0.230	(0.617)	0.060	0.170
96	8.00	0.43	0.230	(0.614)	0.060	0.170
97	8.08	0.50	0.265	(0.611)	0.069	0.196
98	8.17	0.50	0.265	(0.608)	0.069	0.196
99	8.25	0.50	0.265	(0.605)	0.069	0.196
100	8.33	0.50	0.265	(0.603)	0.069	0.196
101	8.42	0.50	0.265	(0.600)	0.069	0.196

102	8.50	0.50	0.265	(0.597)	0.069	0.196
103	8.58	0.53	0.283	(0.594)	0.073	0.210
104	8.67	0.53	0.283	(0.591)	0.073	0.210
105	8.75	0.53	0.283	(0.589)	0.073	0.210
106	8.83	0.57	0.300	(0.586)	0.078	0.223
107	8.92	0.57	0.300	(0.583)	0.078	0.223
108	9.00	0.57	0.300	(0.580)	0.078	0.223
109	9.08	0.63	0.336	(0.577)	0.087	0.249
110	9.17	0.63	0.336	(0.575)	0.087	0.249
111	9.25	0.63	0.336	(0.572)	0.087	0.249
112	9.33	0.67	0.354	(0.569)	0.092	0.262
113	9.42	0.67	0.354	(0.567)	0.092	0.262
114	9.50	0.67	0.354	(0.564)	0.092	0.262
115	9.58	0.70	0.371	(0.561)	0.096	0.275
116	9.67	0.70	0.371	(0.558)	0.096	0.275
117	9.75	0.70	0.371	(0.556)	0.096	0.275
118	9.83	0.73	0.389	(0.553)	0.101	0.288
119	9.92	0.73	0.389	(0.550)	0.101	0.288
120	10.00	0.73	0.389	(0.548)	0.101	0.288
121	10.08	0.50	0.265	(0.545)	0.069	0.196
122	10.17	0.50	0.265	(0.542)	0.069	0.196
123	10.25	0.50	0.265	(0.540)	0.069	0.196
124	10.33	0.50	0.265	(0.537)	0.069	0.196
125	10.42	0.50	0.265	(0.535)	0.069	0.196
126	10.50	0.50	0.265	(0.532)	0.069	0.196
127	10.58	0.67	0.354	(0.529)	0.092	0.262
128	10.67	0.67	0.354	(0.527)	0.092	0.262
129	10.75	0.67	0.354	(0.524)	0.092	0.262
130	10.83	0.67	0.354	(0.522)	0.092	0.262
131	10.92	0.67	0.354	(0.519)	0.092	0.262
132	11.00	0.67	0.354	(0.517)	0.092	0.262
133	11.08	0.63	0.336	(0.514)	0.087	0.249
134	11.17	0.63	0.336	(0.511)	0.087	0.249
135	11.25	0.63	0.336	(0.509)	0.087	0.249
136	11.33	0.63	0.336	(0.506)	0.087	0.249
137	11.42	0.63	0.336	(0.504)	0.087	0.249
138	11.50	0.63	0.336	(0.501)	0.087	0.249
139	11.58	0.57	0.300	(0.499)	0.078	0.223
140	11.67	0.57	0.300	(0.496)	0.078	0.223
141	11.75	0.57	0.300	(0.494)	0.078	0.223
142	11.83	0.60	0.318	(0.492)	0.082	0.236
143	11.92	0.60	0.318	(0.489)	0.082	0.236
144	12.00	0.60	0.318	(0.487)	0.082	0.236
145	12.08	0.83	0.442	(0.484)	0.114	0.327
146	12.17	0.83	0.442	(0.482)	0.114	0.327
147	12.25	0.83	0.442	(0.479)	0.114	0.327
148	12.33	0.87	0.460	(0.477)	0.119	0.341
149	12.42	0.87	0.460	(0.475)	0.119	0.341
150	12.50	0.87	0.460	(0.472)	0.119	0.341
151	12.58	0.93	0.495	(0.470)	0.128	0.367
152	12.67	0.93	0.495	(0.467)	0.128	0.367
153	12.75	0.93	0.495	(0.465)	0.128	0.367
154	12.83	0.97	0.513	(0.463)	0.133	0.380
155	12.92	0.97	0.513	(0.460)	0.133	0.380
156	13.00	0.97	0.513	(0.458)	0.133	0.380
157	13.08	1.13	0.601	(0.456)	0.156	0.445
158	13.17	1.13	0.601	(0.453)	0.156	0.445
159	13.25	1.13	0.601	(0.451)	0.156	0.445
160	13.33	1.13	0.601	(0.449)	0.156	0.445
161	13.42	1.13	0.601	(0.447)	0.156	0.445
162	13.50	1.13	0.601	(0.444)	0.156	0.445
163	13.58	0.77	0.407	(0.442)	0.105	0.301
164	13.67	0.77	0.407	(0.440)	0.105	0.301
165	13.75	0.77	0.407	(0.438)	0.105	0.301
166	13.83	0.77	0.407	(0.435)	0.105	0.301
167	13.92	0.77	0.407	(0.433)	0.105	0.301
168	14.00	0.77	0.407	(0.431)	0.105	0.301
169	14.08	0.90	0.477	(0.429)	0.124	0.354
170	14.17	0.90	0.477	(0.426)	0.124	0.354

171	14.25	0.90	0.477	(	0.424)	0.124	0.354
172	14.33	0.87	0.460	(	0.422)	0.119	0.341
173	14.42	0.87	0.460	(	0.420)	0.119	0.341
174	14.50	0.87	0.460	(	0.418)	0.119	0.341
175	14.58	0.87	0.460	(	0.416)	0.119	0.341
176	14.67	0.87	0.460	(	0.414)	0.119	0.341
177	14.75	0.87	0.460	(	0.411)	0.119	0.341
178	14.83	0.83	0.442	(	0.409)	0.114	0.327
179	14.92	0.83	0.442	(	0.407)	0.114	0.327
180	15.00	0.83	0.442	(	0.405)	0.114	0.327
181	15.08	0.80	0.424	(	0.403)	0.110	0.314
182	15.17	0.80	0.424	(	0.401)	0.110	0.314
183	15.25	0.80	0.424	(	0.399)	0.110	0.314
184	15.33	0.77	0.407	(	0.397)	0.105	0.301
185	15.42	0.77	0.407	(	0.395)	0.105	0.301
186	15.50	0.77	0.407	(	0.393)	0.105	0.301
187	15.58	0.63	0.336	(	0.391)	0.087	0.249
188	15.67	0.63	0.336	(	0.389)	0.087	0.249
189	15.75	0.63	0.336	(	0.387)	0.087	0.249
190	15.83	0.63	0.336	(	0.385)	0.087	0.249
191	15.92	0.63	0.336	(	0.383)	0.087	0.249
192	16.00	0.63	0.336	(	0.381)	0.087	0.249
193	16.08	0.13	0.071	(	0.379)	0.018	0.052
194	16.17	0.13	0.071	(	0.377)	0.018	0.052
195	16.25	0.13	0.071	(	0.375)	0.018	0.052
196	16.33	0.13	0.071	(	0.373)	0.018	0.052
197	16.42	0.13	0.071	(	0.371)	0.018	0.052
198	16.50	0.13	0.071	(	0.369)	0.018	0.052
199	16.58	0.10	0.053	(	0.368)	0.014	0.039
200	16.67	0.10	0.053	(	0.366)	0.014	0.039
201	16.75	0.10	0.053	(	0.364)	0.014	0.039
202	16.83	0.10	0.053	(	0.362)	0.014	0.039
203	16.92	0.10	0.053	(	0.360)	0.014	0.039
204	17.00	0.10	0.053	(	0.358)	0.014	0.039
205	17.08	0.17	0.088	(	0.356)	0.023	0.065
206	17.17	0.17	0.088	(	0.355)	0.023	0.065
207	17.25	0.17	0.088	(	0.353)	0.023	0.065
208	17.33	0.17	0.088	(	0.351)	0.023	0.065
209	17.42	0.17	0.088	(	0.349)	0.023	0.065
210	17.50	0.17	0.088	(	0.348)	0.023	0.065
211	17.58	0.17	0.088	(	0.346)	0.023	0.065
212	17.67	0.17	0.088	(	0.344)	0.023	0.065
213	17.75	0.17	0.088	(	0.342)	0.023	0.065
214	17.83	0.13	0.071	(	0.341)	0.018	0.052
215	17.92	0.13	0.071	(	0.339)	0.018	0.052
216	18.00	0.13	0.071	(	0.337)	0.018	0.052
217	18.08	0.13	0.071	(	0.336)	0.018	0.052
218	18.17	0.13	0.071	(	0.334)	0.018	0.052
219	18.25	0.13	0.071	(	0.332)	0.018	0.052
220	18.33	0.13	0.071	(	0.331)	0.018	0.052
221	18.42	0.13	0.071	(	0.329)	0.018	0.052
222	18.50	0.13	0.071	(	0.328)	0.018	0.052
223	18.58	0.10	0.053	(	0.326)	0.014	0.039
224	18.67	0.10	0.053	(	0.324)	0.014	0.039
225	18.75	0.10	0.053	(	0.323)	0.014	0.039
226	18.83	0.07	0.035	(	0.321)	0.009	0.026
227	18.92	0.07	0.035	(	0.320)	0.009	0.026
228	19.00	0.07	0.035	(	0.318)	0.009	0.026
229	19.08	0.10	0.053	(	0.317)	0.014	0.039
230	19.17	0.10	0.053	(	0.315)	0.014	0.039
231	19.25	0.10	0.053	(	0.314)	0.014	0.039
232	19.33	0.13	0.071	(	0.312)	0.018	0.052
233	19.42	0.13	0.071	(	0.311)	0.018	0.052
234	19.50	0.13	0.071	(	0.309)	0.018	0.052
235	19.58	0.10	0.053	(	0.308)	0.014	0.039
236	19.67	0.10	0.053	(	0.307)	0.014	0.039
237	19.75	0.10	0.053	(	0.305)	0.014	0.039
238	19.83	0.07	0.035	(	0.304)	0.009	0.026
239	19.92	0.07	0.035	(	0.303)	0.009	0.026

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240  20.00     0.07      0.035       (  0.301)       0.009        0.026
241  20.08     0.10      0.053       (  0.300)       0.014        0.039
242  20.17     0.10      0.053       (  0.299)       0.014        0.039
243  20.25     0.10      0.053       (  0.297)       0.014        0.039
244  20.33     0.10      0.053       (  0.296)       0.014        0.039
245  20.42     0.10      0.053       (  0.295)       0.014        0.039
246  20.50     0.10      0.053       (  0.293)       0.014        0.039
247  20.58     0.10      0.053       (  0.292)       0.014        0.039
248  20.67     0.10      0.053       (  0.291)       0.014        0.039
249  20.75     0.10      0.053       (  0.290)       0.014        0.039
250  20.83     0.07      0.035       (  0.289)       0.009        0.026
251  20.92     0.07      0.035       (  0.287)       0.009        0.026
252  21.00     0.07      0.035       (  0.286)       0.009        0.026
253  21.08     0.10      0.053       (  0.285)       0.014        0.039
254  21.17     0.10      0.053       (  0.284)       0.014        0.039
255  21.25     0.10      0.053       (  0.283)       0.014        0.039
256  21.33     0.07      0.035       (  0.282)       0.009        0.026
257  21.42     0.07      0.035       (  0.281)       0.009        0.026
258  21.50     0.07      0.035       (  0.280)       0.009        0.026
259  21.58     0.10      0.053       (  0.279)       0.014        0.039
260  21.67     0.10      0.053       (  0.278)       0.014        0.039
261  21.75     0.10      0.053       (  0.277)       0.014        0.039
262  21.83     0.07      0.035       (  0.276)       0.009        0.026
263  21.92     0.07      0.035       (  0.275)       0.009        0.026
264  22.00     0.07      0.035       (  0.274)       0.009        0.026
265  22.08     0.10      0.053       (  0.273)       0.014        0.039
266  22.17     0.10      0.053       (  0.272)       0.014        0.039
267  22.25     0.10      0.053       (  0.271)       0.014        0.039
268  22.33     0.07      0.035       (  0.270)       0.009        0.026
269  22.42     0.07      0.035       (  0.270)       0.009        0.026
270  22.50     0.07      0.035       (  0.269)       0.009        0.026
271  22.58     0.07      0.035       (  0.268)       0.009        0.026
272  22.67     0.07      0.035       (  0.267)       0.009        0.026
273  22.75     0.07      0.035       (  0.266)       0.009        0.026
274  22.83     0.07      0.035       (  0.266)       0.009        0.026
275  22.92     0.07      0.035       (  0.265)       0.009        0.026
276  23.00     0.07      0.035       (  0.264)       0.009        0.026
277  23.08     0.07      0.035       (  0.264)       0.009        0.026
278  23.17     0.07      0.035       (  0.263)       0.009        0.026
279  23.25     0.07      0.035       (  0.263)       0.009        0.026
280  23.33     0.07      0.035       (  0.262)       0.009        0.026
281  23.42     0.07      0.035       (  0.262)       0.009        0.026
282  23.50     0.07      0.035       (  0.261)       0.009        0.026
283  23.58     0.07      0.035       (  0.261)       0.009        0.026
284  23.67     0.07      0.035       (  0.260)       0.009        0.026
285  23.75     0.07      0.035       (  0.260)       0.009        0.026
286  23.83     0.07      0.035       (  0.260)       0.009        0.026
287  23.92     0.07      0.035       (  0.260)       0.009        0.026
288  24.00     0.07      0.035       (  0.259)       0.009        0.026
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    39.3
       Flood volume = Effective rainfall      3.27(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       3.9(Ac.Ft)
       Total soil loss =      1.14(In)
       Total soil loss =     1.361(Ac.Ft)
       Total rainfall =      4.42(In)
       Flood volume =      169615.7 Cubic Feet
       Total soil loss =       59285.4 Cubic Feet
       ---------------------------------------------------------------------
        Peak flow rate of this hydrograph =      6.408(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
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0+ 5	0.0009	0.13	Q			
0+10	0.0030	0.31	VQ			
0+15	0.0054	0.35	VQ			
0+20	0.0084	0.43	VQ			
0+25	0.0120	0.53	V Q			
0+30	0.0158	0.55	V Q			
0+35	0.0197	0.56	V Q			
0+40	0.0235	0.56	V Q			
0+45	0.0274	0.57	V Q			
0+50	0.0318	0.63	V Q			
0+55	0.0367	0.72	V Q			
1+ 0	0.0418	0.74	V Q			
1+ 5	0.0465	0.68	V Q			
1+10	0.0506	0.60	V Q			
1+15	0.0546	0.58	V Q			
1+20	0.0586	0.57	V Q			
1+25	0.0625	0.57	V Q			
1+30	0.0664	0.57	V Q			
1+35	0.0703	0.57	V Q			
1+40	0.0742	0.57	V Q			
1+45	0.0780	0.57	V Q			
1+50	0.0824	0.63	V Q			
1+55	0.0873	0.72	V Q			
2+ 0	0.0924	0.74	V Q			
2+ 5	0.0976	0.75	|VQ			
2+10	0.1028	0.75	|V Q			
2+15	0.1080	0.75	|V Q			
2+20	0.1131	0.75	|V Q			
2+25	0.1183	0.75	|V Q			
2+30	0.1235	0.75	|V Q			
2+35	0.1292	0.82	|V Q			
2+40	0.1354	0.91	|V Q			
2+45	0.1418	0.93	|V Q			
2+50	0.1483	0.94	|V Q			
2+55	0.1547	0.94	|V Q			
3+ 0	0.1612	0.94	|V Q			
3+ 5	0.1677	0.94	|V Q			
3+10	0.1742	0.94	|V Q			
3+15	0.1807	0.94	|V Q			
3+20	0.1872	0.94	|V Q			
3+25	0.1937	0.94	|V Q			
3+30	0.2002	0.94	| VQ			
3+35	0.2067	0.94	| VQ			
3+40	0.2131	0.94	| VQ			
3+45	0.2196	0.94	| VQ			
3+50	0.2266	1.01	| V Q			
3+55	0.2341	1.10	| V Q			
4+ 0	0.2418	1.12	| V Q			
4+ 5	0.2496	1.12	| V Q			
4+10	0.2573	1.13	| V Q			
4+15	0.2651	1.13	| V Q			
4+20	0.2734	1.20	| V Q			
4+25	0.2822	1.28	| V Q			
4+30	0.2912	1.30	| V Q			
4+35	0.3002	1.31	| V Q			
4+40	0.3093	1.32	| V Q			
4+45	0.3184	1.32	| V Q			
4+50	0.3279	1.39	| V Q			
4+55	0.3381	1.47	| V Q			
5+ 0	0.3484	1.49	| V Q			
5+ 5	0.3578	1.37	| V Q			
5+10	0.3661	1.20	| VQ			
5+15	0.3740	1.16	| VQ			
5+20	0.3824	1.21	| VQ			
5+25	0.3912	1.29	| VQ			
5+30	0.4002	1.30	| VQ			
5+35	0.4097	1.38	| VQ			
5+40	0.4198	1.47	| VQ			

5+45	0.4301	1.49	VQ			
5+50	0.4405	1.50	V Q			
5+55	0.4508	1.51	V Q			
6+ 0	0.4612	1.51	V Q			
6+ 5	0.4721	1.57	V Q			
6+10	0.4835	1.66	V Q			
6+15	0.4951	1.68	VQ			
6+20	0.5067	1.69	VQ			
6+25	0.5184	1.69	VQ			
6+30	0.5301	1.70	VQ			
6+35	0.5422	1.76	V Q			
6+40	0.5549	1.85	V Q			
6+45	0.5678	1.87	V Q			
6+50	0.5808	1.88	V Q			
6+55	0.5937	1.88	VQ			
7+ 0	0.6067	1.88	VQ			
7+ 5	0.6197	1.88	VQ			
7+10	0.6327	1.88	VQ			
7+15	0.6456	1.88	VQ			
7+20	0.6591	1.95	VQ			
7+25	0.6731	2.04	V Q			
7+30	0.6873	2.06	VQ			
7+35	0.7020	2.13	VQ			
7+40	0.7173	2.22	VQ			
7+45	0.7328	2.25	VQ			
7+50	0.7488	2.32	V Q			
7+55	0.7654	2.41	V Q			
8+ 0	0.7822	2.44	VQ			
8+ 5	0.7999	2.58	V Q			
8+10	0.8189	2.76	V Q			
8+15	0.8381	2.80	V Q			
8+20	0.8575	2.81	V Q			
8+25	0.8770	2.82	V Q			
8+30	0.8964	2.83	V Q			
8+35	0.9164	2.89	V Q			
8+40	0.9369	2.98	V Q			
8+45	0.9576	3.00	V Q			
8+50	0.9787	3.08	V Q			
8+55	1.0005	3.17	V Q			
9+ 0	1.0225	3.19	V Q			
9+ 5	1.0454	3.33	V Q			
9+10	1.0696	3.51	V Q			
9+15	1.0941	3.55	V Q			
9+20	1.1191	3.63	V Q			
9+25	1.1448	3.73	V Q			
9+30	1.1706	3.75	V Q			
9+35	1.1970	3.83	V Q			
9+40	1.2240	3.92	V Q			
9+45	1.2512	3.94	V Q			
9+50	1.2788	4.02	V Q			
9+55	1.3071	4.11	V Q			
10+ 0	1.3356	4.13	V Q			
10+ 5	1.3609	3.68	VQ			
10+10	1.3821	3.07	Q V			
10+15	1.4023	2.93	Q V			
10+20	1.4220	2.87	Q V			
10+25	1.4416	2.84	Q V			
10+30	1.4610	2.83	Q V			
10+35	1.4828	3.16	Q V			
10+40	1.5075	3.59	QV			
10+45	1.5330	3.70	QV			
10+50	1.5587	3.74	Q V			
10+55	1.5846	3.76	QV			
11+ 0	1.6106	3.77	QV			
11+ 5	1.6361	3.70	Q V			
11+10	1.6610	3.62	Q V			
11+15	1.6858	3.60	Q V			
11+20	1.7105	3.59	Q V			
11+25	1.7351	3.58	Q V			

11+30	1.7598	3.58	|	| Q V |	|	|
11+35	1.7836	3.45	|	| Q V |	|	|
11+40	1.8061	3.27	|	| Q V |	|	|
11+45	1.8284	3.23	|	|Q V |	|	|
11+50	1.8510	3.28	|	| Q V|	|	|
11+55	1.8741	3.36	|	| Q V|	|	|
12+ 0	1.8974	3.38	|	| Q V|	|	|
12+ 5	1.9239	3.85	|	| Q V|	|	|
12+10	1.9546	4.46	|	| Q V	|	|
12+15	1.9864	4.61	|	| Q V	|	|
12+20	2.0190	4.74	|	| Q V	|	|
12+25	2.0524	4.85	|	| Q|V	|	|
12+30	2.0860	4.89	|	| Q|V	|	|
12+35	2.1206	5.03	|	| QV	|	|
12+40	2.1565	5.21	|	| Q V	|	|
12+45	2.1926	5.25	|	| Q V	|	|
12+50	2.2293	5.33	|	| |QV	|	|
12+55	2.2667	5.43	|	| |Q V	|	|
13+ 0	2.3043	5.45	|	| |Q V	|	|
13+ 5	2.3441	5.79	|	| | QV	|	|
13+10	2.3870	6.23	|	| | Q	|	|
13+15	2.4307	6.33	|	| | VQ	|	|
13+20	2.4746	6.38	|	| | Q	|	|
13+25	2.5187	6.40	|	| | Q	|	|
13+30	2.5628	6.41	|	| | QV	|	|
13+35	2.6019	5.68	|	| | Q V	|	|
13+40	2.6344	4.72	|	| Q | V	|	|
13+45	2.6654	4.50	|	| Q | V	|	|
13+50	2.6957	4.40	|	| Q | V	|	|
13+55	2.7257	4.35	|	| Q | V	|	|
14+ 0	2.7556	4.33	|	| Q | V	|	|
14+ 5	2.7872	4.60	|	| Q | V	|	|
14+10	2.8213	4.95	|	| Q| V	|	|
14+15	2.8559	5.03	|	| Q V|	|	|
14+20	2.8904	5.00	|	| Q| V|	|	|
14+25	2.9243	4.93	|	| Q| V	|	|
14+30	2.9582	4.91	|	| Q| V	|	|
14+35	2.9919	4.91	|	| Q| V	|	|
14+40	3.0257	4.90	|	| Q| |V	|	|
14+45	3.0594	4.90	|	| Q| |V	|	|
14+50	3.0927	4.83	|	| Q| |V	|	|
14+55	3.1254	4.75	|	| Q | | V	|	|
15+ 0	3.1580	4.73	|	| Q | | V	|	|
15+ 5	3.1900	4.65	|	| Q | | V	|	|
15+10	3.2214	4.56	|	| Q | | V	|	|
15+15	3.2527	4.54	|	| Q | | V	|	|
15+20	3.2834	4.46	|	| Q | | V	|	|
15+25	3.3135	4.37	|	| Q | | V	|	|
15+30	3.3435	4.35	|	| Q | | V	|	|
15+35	3.3716	4.08	|	| Q | | V	|	|
15+40	3.3972	3.72	|	| Q | | V	|	|
15+45	3.4223	3.64	|	| Q | | V	|	|
15+50	3.4471	3.60	|	| Q | | V	|	|
15+55	3.4718	3.59	|	| Q | | V	|	|
16+ 0	3.4965	3.58	|	| Q | | V	|	|
16+ 5	3.5143	2.59	|	Q | | V	|	|
16+10	3.5231	1.28	|	Q | | V	|	|
16+15	3.5298	0.98	| Q	| | V	|	|
16+20	3.5357	0.84	| Q	| | V	|	|
16+25	3.5410	0.78	| Q	| | V	|	|
16+30	3.5462	0.75	| Q	| | V	|	|
16+35	3.5510	0.69	|Q	| | V	|	|
16+40	3.5551	0.60	|Q	| | V	|	|
16+45	3.5591	0.58	|Q	| | V	|	|
16+50	3.5630	0.57	|Q	| | V	|	|
16+55	3.5669	0.57	|Q	| | V	|	|
17+ 0	3.5708	0.57	|Q	| | V	|	|
17+ 5	3.5756	0.70	|Q	| | V	|	|
17+10	3.5816	0.87	| Q	| | V	|	|

17+15	3.5879	0.91	| Q	|	|	|	V |
17+20	3.5943	0.93	| Q	|	|	|	V |
17+25	3.6008	0.94	| Q	|	|	|	V |
17+30	3.6073	0.94	| Q	|	|	|	V |
17+35	3.6138	0.94	| Q	|	|	|	V |
17+40	3.6203	0.94	| Q	|	|	|	V |
17+45	3.6267	0.94	| Q	|	|	|	V |
17+50	3.6328	0.88	| Q	|	|	|	V |
17+55	3.6382	0.79	| Q	|	|	|	V |
18+ 0	3.6435	0.77	| Q	|	|	|	V |
18+ 5	3.6487	0.76	| Q	|	|	|	V |
18+10	3.6539	0.76	| Q	|	|	|	V |
18+15	3.6591	0.75	| Q	|	|	|	V |
18+20	3.6643	0.75	| Q	|	|	|	V |
18+25	3.6695	0.75	| Q	|	|	|	V |
18+30	3.6747	0.75	| Q	|	|	|	V |
18+35	3.6795	0.69	| Q	|	|	|	V |
18+40	3.6836	0.60	| Q	|	|	|	V |
18+45	3.6876	0.58	| Q	|	|	|	V |
18+50	3.6911	0.51	| Q	|	|	|	V |
18+55	3.6939	0.41	|Q	|	|	|	V |
19+ 0	3.6966	0.39	|Q	|	|	|	V |
19+ 5	3.6997	0.45	|Q	|	|	|	V |
19+10	3.7034	0.53	| Q	|	|	|	V |
19+15	3.7072	0.55	| Q	|	|	|	V |
19+20	3.7115	0.63	| Q	|	|	|	V |
19+25	3.7164	0.72	| Q	|	|	|	V |
19+30	3.7215	0.74	| Q	|	|	|	V |
19+35	3.7262	0.68	| Q	|	|	|	V |
19+40	3.7303	0.60	| Q	|	|	|	V |
19+45	3.7343	0.58	| Q	|	|	|	V |
19+50	3.7378	0.51	| Q	|	|	|	V |
19+55	3.7406	0.41	|Q	|	|	|	V |
20+ 0	3.7433	0.39	|Q	|	|	|	V |
20+ 5	3.7464	0.45	|Q	|	|	|	V |
20+10	3.7501	0.53	| Q	|	|	|	V |
20+15	3.7539	0.55	| Q	|	|	|	V |
20+20	3.7577	0.56	| Q	|	|	|	V |
20+25	3.7616	0.56	| Q	|	|	|	V |
20+30	3.7655	0.57	| Q	|	|	|	V |
20+35	3.7694	0.57	| Q	|	|	|	V |
20+40	3.7733	0.57	| Q	|	|	|	V |
20+45	3.7772	0.57	| Q	|	|	|	V |
20+50	3.7806	0.50	|Q	|	|	|	V |
20+55	3.7835	0.41	|Q	|	|	|	V |
21+ 0	3.7862	0.39	|Q	|	|	|	V |
21+ 5	3.7893	0.45	|Q	|	|	|	V |
21+10	3.7929	0.53	| Q	|	|	|	V |
21+15	3.7967	0.55	| Q	|	|	|	V|
21+20	3.8001	0.49	|Q	|	|	|	V|
21+25	3.8029	0.41	|Q	|	|	|	V|
21+30	3.8056	0.39	|Q	|	|	|	V|
21+35	3.8087	0.45	|Q	|	|	|	V|
21+40	3.8124	0.53	| Q	|	|	|	V|
21+45	3.8162	0.55	| Q	|	|	|	V|
21+50	3.8196	0.49	|Q	|	|	|	V|
21+55	3.8224	0.41	|Q	|	|	|	V|
22+ 0	3.8251	0.39	|Q	|	|	|	V|
22+ 5	3.8282	0.45	|Q	|	|	|	V|
22+10	3.8319	0.53	| Q	|	|	|	V|
22+15	3.8357	0.55	| Q	|	|	|	V|
22+20	3.8391	0.49	|Q	|	|	|	V|
22+25	3.8419	0.41	|Q	|	|	|	V|
22+30	3.8446	0.39	|Q	|	|	|	V|
22+35	3.8472	0.38	|Q	|	|	|	V|
22+40	3.8498	0.38	|Q	|	|	|	V|
22+45	3.8524	0.38	|Q	|	|	|	V|
22+50	3.8550	0.38	|Q	|	|	|	V|
22+55	3.8576	0.38	|Q	|	|	|	V|

```
   23+ 0       3.8602      0.38  |Q        |         |         |        V|
   23+ 5       3.8628      0.38  |Q        |         |         |        V|
   23+10       3.8654      0.38  |Q        |         |         |        V|
   23+15       3.8680      0.38  |Q        |         |         |        V|
   23+20       3.8706      0.38  |Q        |         |         |        V|
   23+25       3.8732      0.38  |Q        |         |         |        V|
   23+30       3.8758      0.38  |Q        |         |         |        V|
   23+35       3.8784      0.38  |Q        |         |         |        V|
   23+40       3.8810      0.38  |Q        |         |         |        V|
   23+45       3.8836      0.38  |Q        |         |         |        V|
   23+50       3.8862      0.38  |Q        |         |         |        V|
   23+55       3.8888      0.38  |Q        |         |         |        V|
   24+ 0       3.8914      0.38  |Q        |         |         |        V|
   24+ 5       3.8930      0.25  Q         |         |         |        V|
   24+10       3.8935      0.07  Q         |         |         |        V|
   24+15       3.8937      0.03  Q         |         |         |        V|
   24+20       3.8938      0.01  Q         |         |         |        V|
   24+25       3.8938      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

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

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Study date 03/02/23 File: DEVHYD1100.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
100-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	0.56	7.99

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	1.28	18.27

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.560(In)
Area Averaged 100-Year Rainfall = 1.280(In)

Point rain (area averaged) = 1.280(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.280(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
          14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


 RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
 AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
 46.6  46.6      0.605     0.159        0.519       1.000      0.519
                                                  Sum (F) =   0.519
 Area averaged mean soil loss (F) (In/Hr) =  0.519
 Minimum soil loss rate ((In/Hr)) =  0.259
 (for 24 hour storm duration)
 Soil low loss rate (decimal) =   0.259
 ------------------------------------------------------------------------
 Slope of intensity-duration curve for a 1 hour storm =0.5300
 ------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
 ------------------------------------------------------------------
                Unit Hydrograph Data
 ------------------------------------------------------------------
 Unit time period   Time % of lag   Distribution   Unit Hydrograph
     (hrs)                          Graph %           (CFS)
 ------------------------------------------------------------------
     1   0.083        157.487         34.939             5.025
     2   0.167        314.973         46.456             6.681
     3   0.250        472.460         10.764             1.548
     4   0.333        629.946          4.657             0.670
     5   0.417        787.433          2.267             0.326
     6   0.500        944.919          0.918             0.132
                                 Sum = 100.000   Sum=     14.381
-----------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     3.40      0.522       (  0.519)      0.135        0.387
    2   0.17     4.70      0.722       (  0.519)      0.187        0.535
    3   0.25     4.70      0.722       (  0.519)      0.187        0.535
    4   0.33     5.10      0.783       (  0.519)      0.203        0.580
    5   0.42     5.80      0.891       (  0.519)      0.231        0.660
    6   0.50     5.90      0.906       (  0.519)      0.235        0.671
    7   0.58     7.10      1.090       (  0.519)      0.282        0.808
    8   0.67     8.70      1.336       (  0.519)      0.346        0.990
    9   0.75    13.20      2.027          0.519    (  0.525)        1.509
   10   0.83    29.70      4.561          0.519    (  1.181)        4.043
   11   0.92     7.70      1.183       (  0.519)      0.306        0.876
   12   1.00     4.00      0.614       (  0.519)      0.159        0.455
                (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    12.0
       Flood volume = Effective rainfall      1.00(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       1.2(Ac.Ft)
       Total soil loss =      0.28(In)
       Total soil loss =     0.328(Ac.Ft)
       Total rainfall =      1.28(In)
       Flood volume =       52013.1 Cubic Feet
       Total soil loss =       14282.5 Cubic Feet
       ------------------------------------------------------------------
        Peak flow rate of this hydrograph =     34.780(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	10.0	20.0	30.0	40.0
0+ 5	0.0134	1.95	VQ				
0+10	0.0497	5.28	V Q				
0+15	0.0970	6.86	V Q				
0+20	0.1492	7.58	V Q				
0+25	0.2078	8.51	V Q				
0+30	0.2717	9.27	Q				
0+35	0.3420	10.21	QV				
0+40	0.4254	12.12	Q V				
0+45	0.5370	16.20	QV				
0+50	0.7628	32.79	V			Q	
0+55	1.0023	34.78				VQ	
1+ 0	1.1115	15.85	Q			V	
1+ 5	1.1647	7.73	Q				V
1+10	1.1841	2.81	Q				V
1+15	1.1918	1.12	Q				V
1+20	1.1936	0.26	Q				V
1+25	1.1941	0.06	Q				V

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

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

Program License Serial Number 6320

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225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
100-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	0.96	13.70

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	2.23	31.82

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.960(In)
Area Averaged 100-Year Rainfall = 2.230(In)

Point rain (area averaged) = 2.230(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.230(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
   14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  46.6      0.605     0.159        0.519       1.000      0.519
                                                 Sum (F) =   0.519
Area averaged mean soil loss (F) (In/Hr) =  0.519
Minimum soil loss rate ((In/Hr)) =  0.259
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     1.30      0.348       (  0.519)       0.090        0.258
    2   0.17     1.30      0.348       (  0.519)       0.090        0.258
    3   0.25     1.10      0.294       (  0.519)       0.076        0.218
    4   0.33     1.50      0.401       (  0.519)       0.104        0.297
    5   0.42     1.50      0.401       (  0.519)       0.104        0.297
    6   0.50     1.80      0.482       (  0.519)       0.125        0.357
    7   0.58     1.50      0.401       (  0.519)       0.104        0.297
    8   0.67     1.80      0.482       (  0.519)       0.125        0.357
    9   0.75     1.80      0.482       (  0.519)       0.125        0.357
   10   0.83     1.50      0.401       (  0.519)       0.104        0.297
   11   0.92     1.60      0.428       (  0.519)       0.111        0.317
   12   1.00     1.80      0.482       (  0.519)       0.125        0.357
   13   1.08     2.20      0.589       (  0.519)       0.152        0.436
   14   1.17     2.20      0.589       (  0.519)       0.152        0.436
   15   1.25     2.20      0.589       (  0.519)       0.152        0.436
   16   1.33     2.00      0.535       (  0.519)       0.139        0.397
   17   1.42     2.60      0.696       (  0.519)       0.180        0.516
   18   1.50     2.70      0.722       (  0.519)       0.187        0.535
   19   1.58     2.40      0.642       (  0.519)       0.166        0.476
   20   1.67     2.70      0.722       (  0.519)       0.187        0.535
   21   1.75     3.30      0.883       (  0.519)       0.229        0.654
   22   1.83     3.10      0.830       (  0.519)       0.215        0.615
   23   1.92     2.90      0.776       (  0.519)       0.201        0.575
   24   2.00     3.00      0.803       (  0.519)       0.208        0.595
   25   2.08     3.10      0.830       (  0.519)       0.215        0.615
   26   2.17     4.20      1.124       (  0.519)       0.291        0.833
   27   2.25     5.00      1.338       (  0.519)       0.347        0.991
   28   2.33     3.50      0.937       (  0.519)       0.243        0.694
   29   2.42     6.80      1.820       (  0.519)       0.471        1.348
   30   2.50     7.30      1.953       (  0.519)       0.506        1.447
   31   2.58     8.20      2.194          0.519    (  0.568)        1.675
   32   2.67     5.90      1.579       (  0.519)       0.409        1.170
```

```
33   2.75     2.00      0.535       (  0.519)       0.139        0.397
34   2.83     1.80      0.482       (  0.519)       0.125        0.357
35   2.92     1.80      0.482       (  0.519)       0.125        0.357
36   3.00     0.60      0.161       (  0.519)       0.042        0.119
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    19.9
      Flood volume = Effective rainfall      1.66(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       2.0(Ac.Ft)
      Total soil loss =      0.57(In)
      Total soil loss =     0.682(Ac.Ft)
      Total rainfall =      2.23(In)
      Flood volume =       85804.8 Cubic Feet
      Total soil loss =       29702.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     21.085(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        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0089      1.30  VQ        |         |         |         |
  0+10       0.0297      3.02  V   Q     |         |         |         |
  0+15       0.0519      3.22  |V  Q     |         |         |         |
  0+20       0.0762      3.53  |V  Q     |         |         |         |
  0+25       0.1042      4.08  | V  Q    |         |         |         |
  0+30       0.1353      4.51  | V   Q   |         |         |         |
  0+35       0.1673      4.65  |  V  Q   |         |         |         |
  0+40       0.1994      4.66  |   V Q   |         |         |         |
  0+45       0.2339      5.02  |   V Q   |         |         |         |
  0+50       0.2669      4.79  |    VQ   |         |         |         |
  0+55       0.2980      4.52  |     Q   |         |         |         |
  1+ 0       0.3309      4.77  |     Q   |         |         |         |
  1+ 5       0.3683      5.43  |      Q  |         |         |         |
  1+10       0.4097      6.02  |       Q |         |         |         |
  1+15       0.4522      6.17  |       QV|         |         |         |
  1+20       0.4938      6.04  |       Q V         |         |         |
  1+25       0.5379      6.40  |       Q V         |         |         |
  1+30       0.5877      7.24  |        Q|V        |         |         |
  1+35       0.6376      7.23  |        Q| V       |         |         |
  1+40       0.6874      7.23  |        Q|  V      |         |         |
  1+45       0.7438      8.18  |         Q    V    |         |         |
  1+50       0.8047      8.85  |         |Q    V   |         |         |
  1+55       0.8640      8.60  |         |Q     V  |         |         |
  2+ 0       0.9222      8.46  |         |Q      V |         |         |
  2+ 5       0.9818      8.65  |         |Q       V|         |         |
  2+10       1.0499      9.89  |         |  Q      |V        |         |
  2+15       1.1337     12.17  |         |     Q   |  V      |         |
  2+20       1.2170     12.09  |         |     Q   |   V     |         |
  2+25       1.3120     13.79  |         |       Q |     V   |         |
  2+30       1.4386     18.38  |         |         |   Q    V|         |
  2+35       1.5838     21.09  |         |         |       Q | V       |
  2+40       1.7255     20.58  |         |         |      Q  |    V    |
  2+45       1.8213     13.91  |         |       Q |         |     V   |
  2+50       1.8766      8.03  |         Q         |         |       V |
  2+55       1.9201      6.32  |       Q |         |         |       V |
  3+ 0       1.9505      4.41  |    Q    |         |         |        V|
  3+ 5       1.9634      1.87  | Q       |         |         |        V|
  3+10       1.9674      0.59  Q         |         |         |        V|
  3+15       1.9691      0.24  Q         |         |         |        V|
  3+20       1.9697      0.09  Q         |         |         |        V|
  3+25       1.9698      0.02  Q         |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 03/02/23 File: DEVHYD6100.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
100-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	1.42	20.26

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	3.15	44.95

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.420(In)
Area Averaged 100-Year Rainfall = 3.150(In)

Point rain (area averaged) = 3.150(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.150(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
   14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  46.6      0.605     0.159        0.519       1.000      0.519
                                                 Sum (F) =   0.519
Area averaged mean soil loss (F) (In/Hr) =  0.519
Minimum soil loss rate ((In/Hr)) =  0.259
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     0.50      0.189       (  0.519)       0.049        0.140
    2   0.17     0.60      0.227       (  0.519)       0.059        0.168
    3   0.25     0.60      0.227       (  0.519)       0.059        0.168
    4   0.33     0.60      0.227       (  0.519)       0.059        0.168
    5   0.42     0.60      0.227       (  0.519)       0.059        0.168
    6   0.50     0.70      0.265       (  0.519)       0.069        0.196
    7   0.58     0.70      0.265       (  0.519)       0.069        0.196
    8   0.67     0.70      0.265       (  0.519)       0.069        0.196
    9   0.75     0.70      0.265       (  0.519)       0.069        0.196
   10   0.83     0.70      0.265       (  0.519)       0.069        0.196
   11   0.92     0.70      0.265       (  0.519)       0.069        0.196
   12   1.00     0.80      0.302       (  0.519)       0.078        0.224
   13   1.08     0.80      0.302       (  0.519)       0.078        0.224
   14   1.17     0.80      0.302       (  0.519)       0.078        0.224
   15   1.25     0.80      0.302       (  0.519)       0.078        0.224
   16   1.33     0.80      0.302       (  0.519)       0.078        0.224
   17   1.42     0.80      0.302       (  0.519)       0.078        0.224
   18   1.50     0.80      0.302       (  0.519)       0.078        0.224
   19   1.58     0.80      0.302       (  0.519)       0.078        0.224
   20   1.67     0.80      0.302       (  0.519)       0.078        0.224
   21   1.75     0.80      0.302       (  0.519)       0.078        0.224
   22   1.83     0.80      0.302       (  0.519)       0.078        0.224
   23   1.92     0.80      0.302       (  0.519)       0.078        0.224
   24   2.00     0.90      0.340       (  0.519)       0.088        0.252
   25   2.08     0.80      0.302       (  0.519)       0.078        0.224
   26   2.17     0.90      0.340       (  0.519)       0.088        0.252
   27   2.25     0.90      0.340       (  0.519)       0.088        0.252
   28   2.33     0.90      0.340       (  0.519)       0.088        0.252
   29   2.42     0.90      0.340       (  0.519)       0.088        0.252
   30   2.50     0.90      0.340       (  0.519)       0.088        0.252
   31   2.58     0.90      0.340       (  0.519)       0.088        0.252
   32   2.67     0.90      0.340       (  0.519)       0.088        0.252
```

```
33   2.75     1.00      0.378       (  0.519)       0.098        0.280
34   2.83     1.00      0.378       (  0.519)       0.098        0.280
35   2.92     1.00      0.378       (  0.519)       0.098        0.280
36   3.00     1.00      0.378       (  0.519)       0.098        0.280
37   3.08     1.00      0.378       (  0.519)       0.098        0.280
38   3.17     1.10      0.416       (  0.519)       0.108        0.308
39   3.25     1.10      0.416       (  0.519)       0.108        0.308
40   3.33     1.10      0.416       (  0.519)       0.108        0.308
41   3.42     1.20      0.454       (  0.519)       0.117        0.336
42   3.50     1.30      0.491       (  0.519)       0.127        0.364
43   3.58     1.40      0.529       (  0.519)       0.137        0.392
44   3.67     1.40      0.529       (  0.519)       0.137        0.392
45   3.75     1.50      0.567       (  0.519)       0.147        0.420
46   3.83     1.50      0.567       (  0.519)       0.147        0.420
47   3.92     1.60      0.605       (  0.519)       0.157        0.448
48   4.00     1.60      0.605       (  0.519)       0.157        0.448
49   4.08     1.70      0.643       (  0.519)       0.166        0.476
50   4.17     1.80      0.680       (  0.519)       0.176        0.504
51   4.25     1.90      0.718       (  0.519)       0.186        0.532
52   4.33     2.00      0.756       (  0.519)       0.196        0.560
53   4.42     2.10      0.794       (  0.519)       0.206        0.588
54   4.50     2.10      0.794       (  0.519)       0.206        0.588
55   4.58     2.20      0.832       (  0.519)       0.215        0.616
56   4.67     2.30      0.869       (  0.519)       0.225        0.644
57   4.75     2.40      0.907       (  0.519)       0.235        0.672
58   4.83     2.40      0.907       (  0.519)       0.235        0.672
59   4.92     2.50      0.945       (  0.519)       0.245        0.700
60   5.00     2.60      0.983       (  0.519)       0.255        0.728
61   5.08     3.10      1.172       (  0.519)       0.303        0.868
62   5.17     3.60      1.361       (  0.519)       0.352        1.008
63   5.25     3.90      1.474       (  0.519)       0.382        1.092
64   5.33     4.20      1.588       (  0.519)       0.411        1.176
65   5.42     4.70      1.777       (  0.519)       0.460        1.316
66   5.50     5.60      2.117          0.519    (  0.548)       1.598
67   5.58     1.90      0.718       (  0.519)       0.186        0.532
68   5.67     0.90      0.340       (  0.519)       0.088        0.252
69   5.75     0.60      0.227       (  0.519)       0.059        0.168
70   5.83     0.50      0.189       (  0.519)       0.049        0.140
71   5.92     0.30      0.113       (  0.519)       0.029        0.084
72   6.00     0.20      0.076       (  0.519)       0.020        0.056
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    28.0
      Flood volume = Effective rainfall      2.34(In)
       times area      14.3(Ac.)/[(In)/(Ft.)] =       2.8(Ac.Ft)
      Total soil loss =      0.81(In)
      Total soil loss =     0.967(Ac.Ft)
      Total rainfall =      3.15(In)
      Flood volume =      121030.7 Cubic Feet
      Total soil loss =       42131.6 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     19.830(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        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0048      0.70  VQ        |         |         |         |
  0+10       0.0171      1.78  V  Q      |         |         |         |
  0+15       0.0322      2.19  V   Q     |         |         |         |
  0+20       0.0482      2.32  V   Q     |         |         |         |
  0+25       0.0646      2.39  V   Q     |         |         |         |
  0+30       0.0822      2.56  |V   Q    |         |         |         |
  0+35       0.1011      2.75  |V   Q    |         |         |         |
  0+40       0.1203      2.79  |V   Q    |         |         |         |
```

```
0+45      0.1397     2.81  | V  Q    |         |         |         |
0+50      0.1591     2.82  | V  Q    |         |         |         |
0+55      0.1785     2.82  | V  Q    |         |         |         |
1+ 0      0.1989     2.96  | V  Q    |         |         |         |
1+ 5      0.2206     3.15  |  V  Q   |         |         |         |
1+10      0.2426     3.19  |  V  Q   |         |         |         |
1+15      0.2647     3.21  |  V  Q   |         |         |         |
1+20      0.2869     3.22  |   V Q   |         |         |         |
1+25      0.3091     3.22  |   V Q   |         |         |         |
1+30      0.3313     3.22  |   V Q   |         |         |         |
1+35      0.3535     3.22  |    VQ   |         |         |         |
1+40      0.3757     3.22  |    VQ   |         |         |         |
1+45      0.3979     3.22  |    VQ   |         |         |         |
1+50      0.4201     3.22  |     Q   |         |         |         |
1+55      0.4423     3.22  |     Q   |         |         |         |
2+ 0      0.4655     3.36  |     Q   |         |         |         |
2+ 5      0.4890     3.41  |     QV  |         |         |         |
2+10      0.5124     3.41  |     QV  |         |         |         |
2+15      0.5370     3.57  |      Q  |         |         |         |
2+20      0.5618     3.60  |      QV |         |         |         |
2+25      0.5868     3.62  |      QV |         |         |         |
2+30      0.6117     3.62  |      QV |         |         |         |
2+35      0.6367     3.63  |      Q V|         |         |         |
2+40      0.6617     3.63  |      Q V|         |         |         |
2+45      0.6876     3.77  |      Q V|         |         |         |
2+50      0.7149     3.96  |      Q  V         |         |         |
2+55      0.7424     4.00  |      Q  V         |         |         |
3+ 0      0.7701     4.02  |       Q |V        |         |         |
3+ 5      0.7978     4.03  |       Q |V        |         |         |
3+10      0.8265     4.17  |       Q |V        |         |         |
3+15      0.8565     4.36  |       Q | V       |         |         |
3+20      0.8869     4.40  |       Q | V       |         |         |
3+25      0.9183     4.56  |        Q|  V      |         |         |
3+30      0.9520     4.90  |        Q|  V      |         |         |
3+35      0.9883     5.27  |         Q   V     |         |         |
3+40      1.0264     5.52  |         |Q  V     |         |         |
3+45      1.0659     5.73  |         |Q   V    |         |         |
3+50      1.1069     5.95  |         |Q   V    |         |         |
3+55      1.1492     6.15  |         | Q   V   |         |         |
4+ 0      1.1930     6.36  |         | Q    V  |         |         |
4+ 5      1.2382     6.55  |         |  Q   V  |         |         |
4+10      1.2857     6.90  |         |  Q    V |         |         |
4+15      1.3359     7.28  |         |   Q    V|         |         |
4+20      1.3888     7.68  |         |    Q   V|         |         |
4+25      1.4444     8.08  |         |     Q   V         |         |
4+30      1.5018     8.34  |         |     Q   |V        |         |
4+35      1.5608     8.56  |         |      Q  | V       |         |
4+40      1.6222     8.92  |         |      Q  |  V      |         |
4+45      1.6862     9.30  |         |       Q |   V     |         |
4+50      1.7520     9.55  |         |        Q|    V    |         |
4+55      1.8192     9.76  |         |        Q|     V   |         |
5+ 0      1.8890    10.12  |         |         Q     V  |         |
5+ 5      1.9652    11.07  |         |         | Q     V |         |
5+10      2.0532    12.78  |         |         |    Q   V|         |
5+15      2.1523    14.38  |         |         |       Q V         |
5+20      2.2603    15.69  |         |         |         |QV       |
5+25      2.3790    17.23  |         |         |         |   Q     |
5+30      2.5156    19.83  |         |         |         |     V  Q|
5+35      2.6304    16.67  |         |         |         |  Q   V  |
5+40      2.6904     8.71  |         |      Q  |         |       V |
5+45      2.7249     5.01  |         Q         |         |        V|
5+50      2.7474     3.27  |     Q   |         |         |        V|
5+55      2.7623     2.17  |   Q     |         |         |        V|
6+ 0      2.7715     1.33  | Q       |         |         |        V|
6+ 5      2.7762     0.69  |Q        |         |         |        V|
6+10      2.7777     0.21  Q         |         |         |        V|
6+15      2.7782     0.08  Q         |         |         |        V|
6+20      2.7784     0.03  Q         |         |         |        V|
6+25      2.7785     0.01  Q         |         |         |         V
```

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

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Study date 03/02/23 File: DEVHYD24100.out

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

Program License Serial Number 6320

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

English Units used in output format

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
DEVELOPED CONDITIONS
100-YEAR STORM
BY: JTS DATE: 03-02-23

Drainage Area = 14.27(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.27(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 2019.00(Ft.)
Length along longest watercourse measured to centroid = 766.00(Ft.)
Length along longest watercourse = 0.382 Mi.
Length along longest watercourse measured to centroid = 0.145 Mi.
Difference in elevation = 28.41(Ft.)
Slope along watercourse = 74.2966 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.053 Hr.
Lag time = 3.17 Min.
25% of lag time = 0.79 Min.
40% of lag time = 1.27 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]
14.27	2.65	37.82

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
14.27	6.95	99.18

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.650(In)
Area Averaged 100-Year Rainfall = 6.950(In)

Point rain (area averaged) = 6.950(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 6.950(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %

```
   14.270           46.60         0.159
 Total Area Entered =     14.27(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
46.6  46.6      0.605     0.159        0.519       1.000      0.519
                                                 Sum (F) =   0.519
Area averaged mean soil loss (F) (In/Hr) =  0.519
Minimum soil loss rate ((In/Hr)) =  0.259
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.259
------------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                       VALLEY S-Curve
------------------------------------------------------------------------
                Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        157.487         34.939              5.025
    2   0.167        314.973         46.456              6.681
    3   0.250        472.460         10.764              1.548
    4   0.333        629.946          4.657              0.670
    5   0.417        787.433          2.267              0.326
    6   0.500        944.919          0.918              0.132
                              Sum = 100.000   Sum=      14.381
------------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
    1   0.08     0.07      0.056       (  0.920)       0.014        0.041
    2   0.17     0.07      0.056       (  0.916)       0.014        0.041
    3   0.25     0.07      0.056       (  0.912)       0.014        0.041
    4   0.33     0.10      0.083       (  0.909)       0.022        0.062
    5   0.42     0.10      0.083       (  0.905)       0.022        0.062
    6   0.50     0.10      0.083       (  0.902)       0.022        0.062
    7   0.58     0.10      0.083       (  0.898)       0.022        0.062
    8   0.67     0.10      0.083       (  0.895)       0.022        0.062
    9   0.75     0.10      0.083       (  0.891)       0.022        0.062
   10   0.83     0.13      0.111       (  0.888)       0.029        0.082
   11   0.92     0.13      0.111       (  0.884)       0.029        0.082
   12   1.00     0.13      0.111       (  0.881)       0.029        0.082
   13   1.08     0.10      0.083       (  0.877)       0.022        0.062
   14   1.17     0.10      0.083       (  0.874)       0.022        0.062
   15   1.25     0.10      0.083       (  0.870)       0.022        0.062
   16   1.33     0.10      0.083       (  0.867)       0.022        0.062
   17   1.42     0.10      0.083       (  0.863)       0.022        0.062
   18   1.50     0.10      0.083       (  0.860)       0.022        0.062
   19   1.58     0.10      0.083       (  0.857)       0.022        0.062
   20   1.67     0.10      0.083       (  0.853)       0.022        0.062
   21   1.75     0.10      0.083       (  0.850)       0.022        0.062
   22   1.83     0.13      0.111       (  0.846)       0.029        0.082
   23   1.92     0.13      0.111       (  0.843)       0.029        0.082
   24   2.00     0.13      0.111       (  0.839)       0.029        0.082
   25   2.08     0.13      0.111       (  0.836)       0.029        0.082
   26   2.17     0.13      0.111       (  0.833)       0.029        0.082
   27   2.25     0.13      0.111       (  0.829)       0.029        0.082
   28   2.33     0.13      0.111       (  0.826)       0.029        0.082
   29   2.42     0.13      0.111       (  0.823)       0.029        0.082
   30   2.50     0.13      0.111       (  0.819)       0.029        0.082
   31   2.58     0.17      0.139       (  0.816)       0.036        0.103
   32   2.67     0.17      0.139       (  0.813)       0.036        0.103
```

33	2.75	0.17	0.139	(0.809)	0.036	0.103
34	2.83	0.17	0.139	(0.806)	0.036	0.103
35	2.92	0.17	0.139	(0.803)	0.036	0.103
36	3.00	0.17	0.139	(0.799)	0.036	0.103
37	3.08	0.17	0.139	(0.796)	0.036	0.103
38	3.17	0.17	0.139	(0.793)	0.036	0.103
39	3.25	0.17	0.139	(0.789)	0.036	0.103
40	3.33	0.17	0.139	(0.786)	0.036	0.103
41	3.42	0.17	0.139	(0.783)	0.036	0.103
42	3.50	0.17	0.139	(0.779)	0.036	0.103
43	3.58	0.17	0.139	(0.776)	0.036	0.103
44	3.67	0.17	0.139	(0.773)	0.036	0.103
45	3.75	0.17	0.139	(0.770)	0.036	0.103
46	3.83	0.20	0.167	(0.766)	0.043	0.124
47	3.92	0.20	0.167	(0.763)	0.043	0.124
48	4.00	0.20	0.167	(0.760)	0.043	0.124
49	4.08	0.20	0.167	(0.757)	0.043	0.124
50	4.17	0.20	0.167	(0.754)	0.043	0.124
51	4.25	0.20	0.167	(0.750)	0.043	0.124
52	4.33	0.23	0.195	(0.747)	0.050	0.144
53	4.42	0.23	0.195	(0.744)	0.050	0.144
54	4.50	0.23	0.195	(0.741)	0.050	0.144
55	4.58	0.23	0.195	(0.738)	0.050	0.144
56	4.67	0.23	0.195	(0.734)	0.050	0.144
57	4.75	0.23	0.195	(0.731)	0.050	0.144
58	4.83	0.27	0.222	(0.728)	0.058	0.165
59	4.92	0.27	0.222	(0.725)	0.058	0.165
60	5.00	0.27	0.222	(0.722)	0.058	0.165
61	5.08	0.20	0.167	(0.719)	0.043	0.124
62	5.17	0.20	0.167	(0.716)	0.043	0.124
63	5.25	0.20	0.167	(0.712)	0.043	0.124
64	5.33	0.23	0.195	(0.709)	0.050	0.144
65	5.42	0.23	0.195	(0.706)	0.050	0.144
66	5.50	0.23	0.195	(0.703)	0.050	0.144
67	5.58	0.27	0.222	(0.700)	0.058	0.165
68	5.67	0.27	0.222	(0.697)	0.058	0.165
69	5.75	0.27	0.222	(0.694)	0.058	0.165
70	5.83	0.27	0.222	(0.691)	0.058	0.165
71	5.92	0.27	0.222	(0.688)	0.058	0.165
72	6.00	0.27	0.222	(0.685)	0.058	0.165
73	6.08	0.30	0.250	(0.682)	0.065	0.185
74	6.17	0.30	0.250	(0.679)	0.065	0.185
75	6.25	0.30	0.250	(0.676)	0.065	0.185
76	6.33	0.30	0.250	(0.673)	0.065	0.185
77	6.42	0.30	0.250	(0.670)	0.065	0.185
78	6.50	0.30	0.250	(0.667)	0.065	0.185
79	6.58	0.33	0.278	(0.664)	0.072	0.206
80	6.67	0.33	0.278	(0.661)	0.072	0.206
81	6.75	0.33	0.278	(0.658)	0.072	0.206
82	6.83	0.33	0.278	(0.655)	0.072	0.206
83	6.92	0.33	0.278	(0.652)	0.072	0.206
84	7.00	0.33	0.278	(0.649)	0.072	0.206
85	7.08	0.33	0.278	(0.646)	0.072	0.206
86	7.17	0.33	0.278	(0.643)	0.072	0.206
87	7.25	0.33	0.278	(0.640)	0.072	0.206
88	7.33	0.37	0.306	(0.637)	0.079	0.227
89	7.42	0.37	0.306	(0.634)	0.079	0.227
90	7.50	0.37	0.306	(0.631)	0.079	0.227
91	7.58	0.40	0.334	(0.628)	0.086	0.247
92	7.67	0.40	0.334	(0.625)	0.086	0.247
93	7.75	0.40	0.334	(0.622)	0.086	0.247
94	7.83	0.43	0.361	(0.620)	0.094	0.268
95	7.92	0.43	0.361	(0.617)	0.094	0.268
96	8.00	0.43	0.361	(0.614)	0.094	0.268
97	8.08	0.50	0.417	(0.611)	0.108	0.309
98	8.17	0.50	0.417	(0.608)	0.108	0.309
99	8.25	0.50	0.417	(0.605)	0.108	0.309
100	8.33	0.50	0.417	(0.603)	0.108	0.309
101	8.42	0.50	0.417	(0.600)	0.108	0.309

102	8.50	0.50	0.417	(0.597)	0.108	0.309
103	8.58	0.53	0.445	(0.594)	0.115	0.330
104	8.67	0.53	0.445	(0.591)	0.115	0.330
105	8.75	0.53	0.445	(0.589)	0.115	0.330
106	8.83	0.57	0.473	(0.586)	0.122	0.350
107	8.92	0.57	0.473	(0.583)	0.122	0.350
108	9.00	0.57	0.473	(0.580)	0.122	0.350
109	9.08	0.63	0.528	(0.577)	0.137	0.391
110	9.17	0.63	0.528	(0.575)	0.137	0.391
111	9.25	0.63	0.528	(0.572)	0.137	0.391
112	9.33	0.67	0.556	(0.569)	0.144	0.412
113	9.42	0.67	0.556	(0.567)	0.144	0.412
114	9.50	0.67	0.556	(0.564)	0.144	0.412
115	9.58	0.70	0.584	(0.561)	0.151	0.433
116	9.67	0.70	0.584	(0.558)	0.151	0.433
117	9.75	0.70	0.584	(0.556)	0.151	0.433
118	9.83	0.73	0.612	(0.553)	0.158	0.453
119	9.92	0.73	0.612	(0.550)	0.158	0.453
120	10.00	0.73	0.612	(0.548)	0.158	0.453
121	10.08	0.50	0.417	(0.545)	0.108	0.309
122	10.17	0.50	0.417	(0.542)	0.108	0.309
123	10.25	0.50	0.417	(0.540)	0.108	0.309
124	10.33	0.50	0.417	(0.537)	0.108	0.309
125	10.42	0.50	0.417	(0.535)	0.108	0.309
126	10.50	0.50	0.417	(0.532)	0.108	0.309
127	10.58	0.67	0.556	(0.529)	0.144	0.412
128	10.67	0.67	0.556	(0.527)	0.144	0.412
129	10.75	0.67	0.556	(0.524)	0.144	0.412
130	10.83	0.67	0.556	(0.522)	0.144	0.412
131	10.92	0.67	0.556	(0.519)	0.144	0.412
132	11.00	0.67	0.556	(0.517)	0.144	0.412
133	11.08	0.63	0.528	(0.514)	0.137	0.391
134	11.17	0.63	0.528	(0.511)	0.137	0.391
135	11.25	0.63	0.528	(0.509)	0.137	0.391
136	11.33	0.63	0.528	(0.506)	0.137	0.391
137	11.42	0.63	0.528	(0.504)	0.137	0.391
138	11.50	0.63	0.528	(0.501)	0.137	0.391
139	11.58	0.57	0.473	(0.499)	0.122	0.350
140	11.67	0.57	0.473	(0.496)	0.122	0.350
141	11.75	0.57	0.473	(0.494)	0.122	0.350
142	11.83	0.60	0.500	(0.492)	0.130	0.371
143	11.92	0.60	0.500	(0.489)	0.130	0.371
144	12.00	0.60	0.500	(0.487)	0.130	0.371
145	12.08	0.83	0.695	(0.484)	0.180	0.515
146	12.17	0.83	0.695	(0.482)	0.180	0.515
147	12.25	0.83	0.695	(0.479)	0.180	0.515
148	12.33	0.87	0.723	(0.477)	0.187	0.536
149	12.42	0.87	0.723	(0.475)	0.187	0.536
150	12.50	0.87	0.723	(0.472)	0.187	0.536
151	12.58	0.93	0.778	(0.470)	0.202	0.577
152	12.67	0.93	0.778	(0.467)	0.202	0.577
153	12.75	0.93	0.778	(0.465)	0.202	0.577
154	12.83	0.97	0.806	(0.463)	0.209	0.597
155	12.92	0.97	0.806	(0.460)	0.209	0.597
156	13.00	0.97	0.806	(0.458)	0.209	0.597
157	13.08	1.13	0.945	(0.456)	0.245	0.700
158	13.17	1.13	0.945	(0.453)	0.245	0.700
159	13.25	1.13	0.945	(0.451)	0.245	0.700
160	13.33	1.13	0.945	(0.449)	0.245	0.700
161	13.42	1.13	0.945	(0.447)	0.245	0.700
162	13.50	1.13	0.945	(0.444)	0.245	0.700
163	13.58	0.77	0.639	(0.442)	0.166	0.474
164	13.67	0.77	0.639	(0.440)	0.166	0.474
165	13.75	0.77	0.639	(0.438)	0.166	0.474
166	13.83	0.77	0.639	(0.435)	0.166	0.474
167	13.92	0.77	0.639	(0.433)	0.166	0.474
168	14.00	0.77	0.639	(0.431)	0.166	0.474
169	14.08	0.90	0.751	(0.429)	0.194	0.556
170	14.17	0.90	0.751	(0.426)	0.194	0.556

171	14.25	0.90	0.751	(	0.424)	0.194	0.556
172	14.33	0.87	0.723	(	0.422)	0.187	0.536
173	14.42	0.87	0.723	(	0.420)	0.187	0.536
174	14.50	0.87	0.723	(	0.418)	0.187	0.536
175	14.58	0.87	0.723	(	0.416)	0.187	0.536
176	14.67	0.87	0.723	(	0.414)	0.187	0.536
177	14.75	0.87	0.723	(	0.411)	0.187	0.536
178	14.83	0.83	0.695	(	0.409)	0.180	0.515
179	14.92	0.83	0.695	(	0.407)	0.180	0.515
180	15.00	0.83	0.695	(	0.405)	0.180	0.515
181	15.08	0.80	0.667	(	0.403)	0.173	0.494
182	15.17	0.80	0.667	(	0.401)	0.173	0.494
183	15.25	0.80	0.667	(	0.399)	0.173	0.494
184	15.33	0.77	0.639	(	0.397)	0.166	0.474
185	15.42	0.77	0.639	(	0.395)	0.166	0.474
186	15.50	0.77	0.639	(	0.393)	0.166	0.474
187	15.58	0.63	0.528	(	0.391)	0.137	0.391
188	15.67	0.63	0.528	(	0.389)	0.137	0.391
189	15.75	0.63	0.528	(	0.387)	0.137	0.391
190	15.83	0.63	0.528	(	0.385)	0.137	0.391
191	15.92	0.63	0.528	(	0.383)	0.137	0.391
192	16.00	0.63	0.528	(	0.381)	0.137	0.391
193	16.08	0.13	0.111	(	0.379)	0.029	0.082
194	16.17	0.13	0.111	(	0.377)	0.029	0.082
195	16.25	0.13	0.111	(	0.375)	0.029	0.082
196	16.33	0.13	0.111	(	0.373)	0.029	0.082
197	16.42	0.13	0.111	(	0.371)	0.029	0.082
198	16.50	0.13	0.111	(	0.369)	0.029	0.082
199	16.58	0.10	0.083	(	0.368)	0.022	0.062
200	16.67	0.10	0.083	(	0.366)	0.022	0.062
201	16.75	0.10	0.083	(	0.364)	0.022	0.062
202	16.83	0.10	0.083	(	0.362)	0.022	0.062
203	16.92	0.10	0.083	(	0.360)	0.022	0.062
204	17.00	0.10	0.083	(	0.358)	0.022	0.062
205	17.08	0.17	0.139	(	0.356)	0.036	0.103
206	17.17	0.17	0.139	(	0.355)	0.036	0.103
207	17.25	0.17	0.139	(	0.353)	0.036	0.103
208	17.33	0.17	0.139	(	0.351)	0.036	0.103
209	17.42	0.17	0.139	(	0.349)	0.036	0.103
210	17.50	0.17	0.139	(	0.348)	0.036	0.103
211	17.58	0.17	0.139	(	0.346)	0.036	0.103
212	17.67	0.17	0.139	(	0.344)	0.036	0.103
213	17.75	0.17	0.139	(	0.342)	0.036	0.103
214	17.83	0.13	0.111	(	0.341)	0.029	0.082
215	17.92	0.13	0.111	(	0.339)	0.029	0.082
216	18.00	0.13	0.111	(	0.337)	0.029	0.082
217	18.08	0.13	0.111	(	0.336)	0.029	0.082
218	18.17	0.13	0.111	(	0.334)	0.029	0.082
219	18.25	0.13	0.111	(	0.332)	0.029	0.082
220	18.33	0.13	0.111	(	0.331)	0.029	0.082
221	18.42	0.13	0.111	(	0.329)	0.029	0.082
222	18.50	0.13	0.111	(	0.328)	0.029	0.082
223	18.58	0.10	0.083	(	0.326)	0.022	0.062
224	18.67	0.10	0.083	(	0.324)	0.022	0.062
225	18.75	0.10	0.083	(	0.323)	0.022	0.062
226	18.83	0.07	0.056	(	0.321)	0.014	0.041
227	18.92	0.07	0.056	(	0.320)	0.014	0.041
228	19.00	0.07	0.056	(	0.318)	0.014	0.041
229	19.08	0.10	0.083	(	0.317)	0.022	0.062
230	19.17	0.10	0.083	(	0.315)	0.022	0.062
231	19.25	0.10	0.083	(	0.314)	0.022	0.062
232	19.33	0.13	0.111	(	0.312)	0.029	0.082
233	19.42	0.13	0.111	(	0.311)	0.029	0.082
234	19.50	0.13	0.111	(	0.309)	0.029	0.082
235	19.58	0.10	0.083	(	0.308)	0.022	0.062
236	19.67	0.10	0.083	(	0.307)	0.022	0.062
237	19.75	0.10	0.083	(	0.305)	0.022	0.062
238	19.83	0.07	0.056	(	0.304)	0.014	0.041
239	19.92	0.07	0.056	(	0.303)	0.014	0.041

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240  20.00     0.07      0.056       (  0.301)       0.014        0.041
241  20.08     0.10      0.083       (  0.300)       0.022        0.062
242  20.17     0.10      0.083       (  0.299)       0.022        0.062
243  20.25     0.10      0.083       (  0.297)       0.022        0.062
244  20.33     0.10      0.083       (  0.296)       0.022        0.062
245  20.42     0.10      0.083       (  0.295)       0.022        0.062
246  20.50     0.10      0.083       (  0.293)       0.022        0.062
247  20.58     0.10      0.083       (  0.292)       0.022        0.062
248  20.67     0.10      0.083       (  0.291)       0.022        0.062
249  20.75     0.10      0.083       (  0.290)       0.022        0.062
250  20.83     0.07      0.056       (  0.289)       0.014        0.041
251  20.92     0.07      0.056       (  0.287)       0.014        0.041
252  21.00     0.07      0.056       (  0.286)       0.014        0.041
253  21.08     0.10      0.083       (  0.285)       0.022        0.062
254  21.17     0.10      0.083       (  0.284)       0.022        0.062
255  21.25     0.10      0.083       (  0.283)       0.022        0.062
256  21.33     0.07      0.056       (  0.282)       0.014        0.041
257  21.42     0.07      0.056       (  0.281)       0.014        0.041
258  21.50     0.07      0.056       (  0.280)       0.014        0.041
259  21.58     0.10      0.083       (  0.279)       0.022        0.062
260  21.67     0.10      0.083       (  0.278)       0.022        0.062
261  21.75     0.10      0.083       (  0.277)       0.022        0.062
262  21.83     0.07      0.056       (  0.276)       0.014        0.041
263  21.92     0.07      0.056       (  0.275)       0.014        0.041
264  22.00     0.07      0.056       (  0.274)       0.014        0.041
265  22.08     0.10      0.083       (  0.273)       0.022        0.062
266  22.17     0.10      0.083       (  0.272)       0.022        0.062
267  22.25     0.10      0.083       (  0.271)       0.022        0.062
268  22.33     0.07      0.056       (  0.270)       0.014        0.041
269  22.42     0.07      0.056       (  0.270)       0.014        0.041
270  22.50     0.07      0.056       (  0.269)       0.014        0.041
271  22.58     0.07      0.056       (  0.268)       0.014        0.041
272  22.67     0.07      0.056       (  0.267)       0.014        0.041
273  22.75     0.07      0.056       (  0.266)       0.014        0.041
274  22.83     0.07      0.056       (  0.266)       0.014        0.041
275  22.92     0.07      0.056       (  0.265)       0.014        0.041
276  23.00     0.07      0.056       (  0.264)       0.014        0.041
277  23.08     0.07      0.056       (  0.264)       0.014        0.041
278  23.17     0.07      0.056       (  0.263)       0.014        0.041
279  23.25     0.07      0.056       (  0.263)       0.014        0.041
280  23.33     0.07      0.056       (  0.262)       0.014        0.041
281  23.42     0.07      0.056       (  0.262)       0.014        0.041
282  23.50     0.07      0.056       (  0.261)       0.014        0.041
283  23.58     0.07      0.056       (  0.261)       0.014        0.041
284  23.67     0.07      0.056       (  0.260)       0.014        0.041
285  23.75     0.07      0.056       (  0.260)       0.014        0.041
286  23.83     0.07      0.056       (  0.260)       0.014        0.041
287  23.92     0.07      0.056       (  0.260)       0.014        0.041
288  24.00     0.07      0.056       (  0.259)       0.014        0.041
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    61.8
       Flood volume = Effective rainfall      5.15(In)
        times area      14.3(Ac.)/[(In)/(Ft.)] =       6.1(Ac.Ft)
       Total soil loss =      1.80(In)
       Total soil loss =     2.140(Ac.Ft)
       Total rainfall =      6.95(In)
       Flood volume =      266760.5 Cubic Feet
       Total soil loss =       93240.2 Cubic Feet
       ---------------------------------------------------------------------
        Peak flow rate of this hydrograph =     10.078(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        5.0      10.0      15.0      20.0
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0+ 5	0.0014	0.21	Q				
0+10	0.0047	0.48	Q				
0+15	0.0085	0.55	VQ				
0+20	0.0132	0.68	VQ				
0+25	0.0189	0.83	VQ				
0+30	0.0248	0.87	VQ				
0+35	0.0309	0.88	VQ				
0+40	0.0370	0.89	VQ				
0+45	0.0431	0.89	VQ				
0+50	0.0500	0.99	VQ				
0+55	0.0578	1.13	V Q				
1+ 0	0.0658	1.16	V Q				
1+ 5	0.0732	1.07	V Q				
1+10	0.0796	0.94	VQ				
1+15	0.0859	0.91	VQ				
1+20	0.0921	0.90	VQ				
1+25	0.0983	0.89	VQ				
1+30	0.1044	0.89	VQ				
1+35	0.1105	0.89	VQ				
1+40	0.1166	0.89	VQ				
1+45	0.1227	0.89	VQ				
1+50	0.1296	0.99	VQ				
1+55	0.1374	1.13	V Q				
2+ 0	0.1454	1.16	V Q				
2+ 5	0.1535	1.18	|VQ				
2+10	0.1616	1.18	|VQ				
2+15	0.1698	1.19	|VQ				
2+20	0.1780	1.19	|VQ				
2+25	0.1861	1.19	|VQ				
2+30	0.1943	1.19	|VQ				
2+35	0.2032	1.29	|VQ				
2+40	0.2130	1.43	|VQ				
2+45	0.2230	1.46	|VQ				
2+50	0.2332	1.47	|VQ				
2+55	0.2434	1.48	|VQ				
3+ 0	0.2536	1.48	|VQ				
3+ 5	0.2638	1.48	|VQ				
3+10	0.2740	1.48	|VQ				
3+15	0.2842	1.48	|VQ				
3+20	0.2944	1.48	|VQ				
3+25	0.3046	1.48	|VQ				
3+30	0.3148	1.48	| Q				
3+35	0.3250	1.48	| Q				
3+40	0.3352	1.48	| Q				
3+45	0.3454	1.48	| Q				
3+50	0.3564	1.59	| VQ				
3+55	0.3682	1.72	| VQ				
4+ 0	0.3803	1.76	| VQ				
4+ 5	0.3925	1.77	| VQ				
4+10	0.4047	1.78	| VQ				
4+15	0.4170	1.78	| VQ				
4+20	0.4299	1.88	| VQ				
4+25	0.4438	2.02	| V Q				
4+30	0.4580	2.05	| V Q				
4+35	0.4722	2.07	| VQ				
4+40	0.4865	2.07	| VQ				
4+45	0.5008	2.07	| VQ				
4+50	0.5158	2.18	| VQ				
4+55	0.5317	2.32	| VQ				
5+ 0	0.5479	2.35	| VQ				
5+ 5	0.5627	2.15	| VQ				
5+10	0.5757	1.89	| Q				
5+15	0.5883	1.82	| Q				
5+20	0.6014	1.90	| Q				
5+25	0.6153	2.03	| Q				
5+30	0.6294	2.05	| Q				
5+35	0.6444	2.17	| Q				
5+40	0.6603	2.31	| Q				

5+45	0.6765	2.35	Q			
5+50	0.6927	2.36	Q			
5+55	0.7091	2.37	Q			
6+ 0	0.7254	2.37	Q			
6+ 5	0.7424	2.47	Q			
6+10	0.7604	2.61	VQ			
6+15	0.7786	2.64	Q			
6+20	0.7969	2.66	Q			
6+25	0.8153	2.66	Q			
6+30	0.8337	2.67	Q			
6+35	0.8528	2.77	Q			
6+40	0.8728	2.91	Q			
6+45	0.8930	2.94	Q			
6+50	0.9134	2.95	Q			
6+55	0.9338	2.96	QV			
7+ 0	0.9542	2.96	QV			
7+ 5	0.9746	2.96	QV			
7+10	0.9950	2.96	QV			
7+15	1.0154	2.96	QV			
7+20	1.0366	3.07	Q			
7+25	1.0586	3.21	Q			
7+30	1.0809	3.24	QV			
7+35	1.1040	3.35	QV			
7+40	1.1281	3.50	QV			
7+45	1.1525	3.53	Q			
7+50	1.1776	3.65	Q			
7+55	1.2037	3.80	Q			
8+ 0	1.2301	3.83	QV			
8+ 5	1.2580	4.05	Q			
8+10	1.2879	4.33	Q			
8+15	1.3182	4.40	Q			
8+20	1.3487	4.43	Q			
8+25	1.3792	4.44	QV			
8+30	1.4099	4.45	QV			
8+35	1.4412	4.55	Q			
8+40	1.4735	4.69	Q			
8+45	1.5060	4.72	Q			
8+50	1.5393	4.84	QV			
8+55	1.5736	4.98	QV			
9+ 0	1.6081	5.02	Q			
9+ 5	1.6442	5.24	Q			
9+10	1.6822	5.52	VQ			
9+15	1.7207	5.59	Q			
9+20	1.7600	5.72	Q			
9+25	1.8004	5.87	Q			
9+30	1.8411	5.90	QV			
9+35	1.8826	6.02	Q			
9+40	1.9251	6.17	Q			
9+45	1.9678	6.20	Q			
9+50	2.0113	6.32	QV			
9+55	2.0558	6.46	QV			
10+ 0	2.1005	6.50	QV			
10+ 5	2.1404	5.79	Q V			
10+10	2.1736	4.83	Q V			
10+15	2.2054	4.61	Q V			
10+20	2.2365	4.51	Q V			
10+25	2.2672	4.47	Q V			
10+30	2.2978	4.45	Q V			
10+35	2.3320	4.96	Q V			
10+40	2.3709	5.65	Q V			
10+45	2.4110	5.81	Q V			
10+50	2.4515	5.88	Q V			
10+55	2.4922	5.91	Q V			
11+ 0	2.5330	5.93	Q V			
11+ 5	2.5731	5.82	Q V			
11+10	2.6123	5.69	Q V			
11+15	2.6513	5.65	Q V			
11+20	2.6901	5.64	Q V			
11+25	2.7289	5.63	Q V			

11+30	2.7677	5.63	|	|Q V |	|	|
11+35	2.8051	5.42	|	Q V |	|	|
11+40	2.8405	5.15	|	Q V |	|	|
11+45	2.8755	5.09	|	Q V |	|	|
11+50	2.9111	5.16	|	Q V|	|	|
11+55	2.9475	5.29	|	Q V|	|	|
12+ 0	2.9841	5.31	|	Q V|	|	|
12+ 5	3.0257	6.05	|	| Q V|	|	|
12+10	3.0741	7.02	|	| Q V	|	|
12+15	3.1240	7.25	|	| Q V	|	|
12+20	3.1753	7.45	|	| Q V	|	|
12+25	3.2279	7.63	|	| Q |V	|	|
12+30	3.2808	7.68	|	| Q |V	|	|
12+35	3.3352	7.90	|	| Q |V	|	|
12+40	3.3916	8.19	|	| Q | V	|	|
12+45	3.4484	8.25	|	| Q | V	|	|
12+50	3.5062	8.38	|	| Q | V	|	|
12+55	3.5650	8.54	|	| Q | V	|	|
13+ 0	3.6240	8.57	|	| Q | V	|	|
13+ 5	3.6867	9.10	|	| Q | V	|	|
13+10	3.7542	9.80	|	| Q| V	|	|
13+15	3.8228	9.96	|	| Q| V	|	|
13+20	3.8919	10.03	|	| Q V	|	|
13+25	3.9612	10.06	|	| Q V	|	|
13+30	4.0306	10.08	|	| Q V	|	|
13+35	4.0921	8.94	|	| Q | V	|	|
13+40	4.1433	7.42	|	| Q | V	|	|
13+45	4.1920	7.07	|	| Q | V	|	|
13+50	4.2396	6.92	|	| Q | V	|	|
13+55	4.2868	6.85	|	| Q | V	|	|
14+ 0	4.3338	6.82	|	| Q | V	|	|
14+ 5	4.3836	7.23	|	| Q | V	|	|
14+10	4.4372	7.78	|	| Q | V	|	|
14+15	4.4916	7.91	|	| Q | V|	|	|
14+20	4.5458	7.86	|	| Q | V|	|	|
14+25	4.5992	7.75	|	| Q | V	|	|
14+30	4.6524	7.73	|	| Q | V	|	|
14+35	4.7055	7.72	|	| Q | V	|	|
14+40	4.7586	7.71	|	| Q | |V	|	|
14+45	4.8117	7.71	|	| Q | |V	|	|
14+50	4.8641	7.60	|	| Q | |V	|	|
14+55	4.9155	7.47	|	| Q | | V	|	|
15+ 0	4.9667	7.43	|	| Q | | V	|	|
15+ 5	5.0170	7.32	|	| Q | | V	|	|
15+10	5.0664	7.17	|	| Q | | V	|	|
15+15	5.1156	7.14	|	| Q | | V	|	|
15+20	5.1639	7.02	|	| Q | | V	|	|
15+25	5.2113	6.88	|	| Q | | V	|	|
15+30	5.2584	6.84	|	| Q | | V	|	|
15+35	5.3026	6.41	|	| Q | | V	|	|
15+40	5.3429	5.85	|	|Q | | V	|	|
15+45	5.3823	5.72	|	|Q | | V	|	|
15+50	5.4213	5.67	|	|Q | | V	|	|
15+55	5.4602	5.64	|	|Q | | V	|	|
16+ 0	5.4990	5.63	|	|Q | | V	|	|
16+ 5	5.5271	4.08	|	Q | | V	|	|
16+10	5.5409	2.01	|	Q | | V	|	|
16+15	5.5515	1.53	|	Q | | V	|	|
16+20	5.5606	1.33	|	Q | | V	|	|
16+25	5.5691	1.23	|	Q | | V	|	|
16+30	5.5773	1.19	|	Q | | V	|	|
16+35	5.5847	1.08	|	Q | | V	|	|
16+40	5.5912	0.94	|	Q | | V	|	|
16+45	5.5975	0.91	|	Q | | V	|	|
16+50	5.6037	0.90	|	Q | | V	|	|
16+55	5.6098	0.89	|	Q | | V	|	|
17+ 0	5.6160	0.89	|	Q | | V	|	|
17+ 5	5.6235	1.10	|	Q | | V	|	|
17+10	5.6330	1.37	|	Q | | V	|	|

17+15	5.6428	1.44	Q				V
17+20	5.6529	1.46	Q				V
17+25	5.6631	1.48	Q				V
17+30	5.6733	1.48	Q				V
17+35	5.6835	1.48	Q				V
17+40	5.6937	1.48	Q				V
17+45	5.7039	1.48	Q				V
17+50	5.7134	1.38	Q				V
17+55	5.7220	1.24	Q				V
18+ 0	5.7303	1.21	Q				V
18+ 5	5.7385	1.20	Q				V
18+10	5.7467	1.19	Q				V
18+15	5.7549	1.19	Q				V
18+20	5.7630	1.19	Q				V
18+25	5.7712	1.19	Q				V
18+30	5.7794	1.19	Q				V
18+35	5.7868	1.08	Q				V
18+40	5.7933	0.94	Q				V
18+45	5.7996	0.91	Q				V
18+50	5.8051	0.80	Q				V
18+55	5.8095	0.65	Q				V
19+ 0	5.8138	0.62	Q				V
19+ 5	5.8187	0.71	Q				V
19+10	5.8244	0.84	Q				V
19+15	5.8304	0.87	Q				V
19+20	5.8372	0.98	Q				V
19+25	5.8449	1.13	Q				V
19+30	5.8529	1.16	Q				V
19+35	5.8603	1.07	Q				V
19+40	5.8668	0.94	Q				V
19+45	5.8731	0.91	Q				V
19+50	5.8786	0.80	Q				V
19+55	5.8830	0.65	Q				V
20+ 0	5.8873	0.62	Q				V
20+ 5	5.8921	0.71	Q				V
20+10	5.8979	0.84	Q				V
20+15	5.9039	0.87	Q				V
20+20	5.9099	0.88	Q				V
20+25	5.9160	0.89	Q				V
20+30	5.9222	0.89	Q				V
20+35	5.9283	0.89	Q				V
20+40	5.9344	0.89	Q				V
20+45	5.9405	0.89	Q				V
20+50	5.9459	0.79	Q				V
20+55	5.9504	0.65	Q				V
21+ 0	5.9546	0.62	Q				V
21+ 5	5.9595	0.71	Q				V
21+10	5.9653	0.84	Q				V
21+15	5.9712	0.87	Q				V
21+20	5.9766	0.78	Q				V
21+25	5.9810	0.65	Q				V
21+30	5.9853	0.62	Q				V
21+35	5.9901	0.71	Q				V
21+40	5.9959	0.84	Q				V
21+45	6.0019	0.87	Q				V
21+50	6.0072	0.78	Q				V
21+55	6.0116	0.65	Q				V
22+ 0	6.0159	0.62	Q				V
22+ 5	6.0207	0.71	Q				V
22+10	6.0265	0.84	Q				V
22+15	6.0325	0.87	Q				V
22+20	6.0378	0.78	Q				V
22+25	6.0423	0.65	Q				V
22+30	6.0465	0.62	Q				V
22+35	6.0507	0.60	Q				V
22+40	6.0548	0.60	Q				V
22+45	6.0588	0.59	Q				V
22+50	6.0629	0.59	Q				V
22+55	6.0670	0.59	Q				V

```
   23+ 0       6.0711      0.59  |Q        |         |         |        V|
   23+ 5       6.0752      0.59  |Q        |         |         |        V|
   23+10       6.0792      0.59  |Q        |         |         |        V|
   23+15       6.0833      0.59  |Q        |         |         |        V|
   23+20       6.0874      0.59  |Q        |         |         |        V|
   23+25       6.0915      0.59  |Q        |         |         |        V|
   23+30       6.0956      0.59  |Q        |         |         |        V|
   23+35       6.0997      0.59  |Q        |         |         |        V|
   23+40       6.1037      0.59  |Q        |         |         |        V|
   23+45       6.1078      0.59  |Q        |         |         |        V|
   23+50       6.1119      0.59  |Q        |         |         |        V|
   23+55       6.1160      0.59  |Q        |         |         |        V|
   24+ 0       6.1201      0.59  |Q        |         |         |        V|
   24+ 5       6.1227      0.39  Q         |         |         |        V|
   24+10       6.1235      0.11  Q         |         |         |        V|
   24+15       6.1238      0.05  Q         |         |         |        V|
   24+20       6.1239      0.02  Q         |         |         |        V|
   24+25       6.1240      0.01  Q         |         |         |        V|
------------------------------------------------------------------------
```

ATTACHMENT 5

Basin Routing

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018
Study date: 03/03/23

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
BASIN ROUTING
2-YEAR, 24-HOUR STORM
BY: JTS DATE: 03-03-23

Program License Serial Number 6320

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

From study/file name: DEVHYD242.rte
*****************************HYDROGRAPH DATA*****************************
Number of intervals =   293
Time interval =   5.0 (Min.)
Maximum/Peak flow rate =   3.843 (CFS)
Total volume =   2.335 (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   13.000 to Point/Station   15.000
**** RETARDING BASIN ROUTING ****
_____

Program computation of outflow v. depth

CALCULATED OUTFLOW DATA AT DEPTH =   0.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   1.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   2.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   3.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   4.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   5.50(Ft.))
Total outflow at this depth =   0.00(CFS)

```
CALCULATED OUTFLOW DATA AT DEPTH =    6.50(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    6.95(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    7.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
Calculated individual pipe flow  =     1.508(CFS)
Normal flow depth in pipe =    2.57(In.)
Flow top width inside pipe =    8.74(In.)
Critical Depth =    0.55(Ft.)
Calculated flow rate through pipe(s) =      1.508(CFS)

Total outflow at this depth =      1.51(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    8.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      7.130(Ft.)
Pipe friction loss =      2.827(Ft.)
Minor friction loss =      4.307(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.417(CFS)

Total outflow at this depth =      7.42(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    9.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      8.130(Ft.)
Pipe friction loss =      3.223(Ft.)
Minor friction loss =      4.911(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.920(CFS)

Total outflow at this depth =      7.92(CFS)

----------------------------------------------------------------------
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  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
----------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.500      0.092      0.000      0.092        0.092
  1.500      0.363      0.000      0.363        0.363
  2.500      0.698      0.000      0.698        0.698
  3.500      1.060      0.000      1.060        1.060
```

4.500	1.436	0.000	1.436	1.436
5.500	1.812	0.000	1.812	1.812
6.500	2.083	0.000	2.083	2.083
6.950	2.247	0.000	2.247	2.247
7.500	2.509	1.508	2.504	2.514
8.500	2.780	7.417	2.754	2.806
9.500	2.964	7.920	2.937	2.991

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.0	1.92	2.88	3.84	Depth (Ft.)
0.083	0.08	0.00	0.000	O	|	|	|	|	0.00
0.167	0.18	0.00	0.001	OI	|	|	|	|	0.01
0.250	0.21	0.00	0.003	OI	|	|	|	|	0.01
0.333	0.26	0.00	0.004	O I	|	|	|	|	0.02
0.417	0.32	0.00	0.006	O I	|	|	|	|	0.03
0.500	0.33	0.00	0.008	O I	|	|	|	|	0.05
0.583	0.34	0.00	0.011	O I	|	|	|	|	0.06
0.667	0.34	0.00	0.013	O I	|	|	|	|	0.07
0.750	0.34	0.00	0.015	O I	|	|	|	|	0.08
0.833	0.38	0.00	0.018	O I	|	|	|	|	0.10
0.917	0.43	0.00	0.021	O I	|	|	|	|	0.11
1.000	0.44	0.00	0.024	O I	|	|	|	|	0.13
1.083	0.41	0.00	0.026	O I	|	|	|	|	0.14
1.167	0.36	0.00	0.029	O I	|	|	|	|	0.16
1.250	0.35	0.00	0.032	O I	|	|	|	|	0.17
1.333	0.34	0.00	0.034	O I	|	|	|	|	0.18
1.417	0.34	0.00	0.036	O I	|	|	|	|	0.20
1.500	0.34	0.00	0.039	O I	|	|	|	|	0.21
1.583	0.34	0.00	0.041	O I	|	|	|	|	0.22
1.667	0.34	0.00	0.043	O I	|	|	|	|	0.24
1.750	0.34	0.00	0.046	O I	|	|	|	|	0.25
1.833	0.38	0.00	0.048	O I	|	|	|	|	0.26
1.917	0.43	0.00	0.051	O I	|	|	|	|	0.28
2.000	0.44	0.00	0.054	O I	|	|	|	|	0.29
2.083	0.45	0.00	0.057	O I	|	|	|	|	0.31
2.167	0.45	0.00	0.060	O I	|	|	|	|	0.33
2.250	0.45	0.00	0.063	O I	|	|	|	|	0.34
2.333	0.45	0.00	0.066	O I	|	|	|	|	0.36
2.417	0.45	0.00	0.069	O I	|	|	|	|	0.38
2.500	0.45	0.00	0.073	O I	|	|	|	|	0.39
2.583	0.49	0.00	0.076	O I	|	|	|	|	0.41
2.667	0.54	0.00	0.079	O I	|	|	|	|	0.43
2.750	0.56	0.00	0.083	O I	|	|	|	|	0.45
2.833	0.56	0.00	0.087	O I	|	|	|	|	0.47
2.917	0.56	0.00	0.091	O I	|	|	|	|	0.49
3.000	0.57	0.00	0.095	O I	|	|	|	|	0.51
3.083	0.57	0.00	0.099	O I	|	|	|	|	0.52
3.167	0.57	0.00	0.103	O I	|	|	|	|	0.54
3.250	0.57	0.00	0.106	O I	|	|	|	|	0.55
3.333	0.57	0.00	0.110	O I	|	|	|	|	0.57
3.417	0.57	0.00	0.114	O I	|	|	|	|	0.58
3.500	0.57	0.00	0.118	O I	|	|	|	|	0.60
3.583	0.57	0.00	0.122	O I	|	|	|	|	0.61
3.667	0.57	0.00	0.126	O I	|	|	|	|	0.62
3.750	0.57	0.00	0.130	O I	|	|	|	|	0.64
3.833	0.60	0.00	0.134	O I	|	|	|	|	0.65
3.917	0.66	0.00	0.138	O I	|	|	|	|	0.67
4.000	0.67	0.00	0.143	O I	|	|	|	|	0.69
4.083	0.67	0.00	0.147	O I	|	|	|	|	0.70
4.167	0.68	0.00	0.152	O I	|	|	|	|	0.72
4.250	0.68	0.00	0.157	O I	|	|	|	|	0.74
4.333	0.72	0.00	0.161	O I	|	|	|	|	0.76
4.417	0.77	0.00	0.167	O I	|	|	|	|	0.78
4.500	0.78	0.00	0.172	O I	|	|	|	|	0.79

```
 4.583    0.79    0.00      0.177  O     I |       |       |       |     0.81
 4.667    0.79    0.00      0.183  O     I |       |       |       |     0.83
 4.750    0.79    0.00      0.188  O     I |       |       |       |     0.86
 4.833    0.83    0.00      0.194  O     I |       |       |       |     0.88
 4.917    0.88    0.00      0.200  O      I|       |       |       |     0.90
 5.000    0.90    0.00      0.206  O      I|       |       |       |     0.92
 5.083    0.82    0.00      0.212  O     I |       |       |       |     0.94
 5.167    0.72    0.00      0.217  O    I  |       |       |       |     0.96
 5.250    0.70    0.00      0.222  O    I  |       |       |       |     0.98
 5.333    0.72    0.00      0.227  O     I |       |       |       |     1.00
 5.417    0.77    0.00      0.232  O     I |       |       |       |     1.02
 5.500    0.78    0.00      0.237  O     I |       |       |       |     1.04
 5.583    0.83    0.00      0.243  O     I |       |       |       |     1.06
 5.667    0.88    0.00      0.249  O      I|       |       |       |     1.08
 5.750    0.90    0.00      0.255  O      I|       |       |       |     1.10
 5.833    0.90    0.00      0.261  O      I|       |       |       |     1.12
 5.917    0.90    0.00      0.267  O      I|       |       |       |     1.15
 6.000    0.90    0.00      0.273  O      I|       |       |       |     1.17
 6.083    0.94    0.00      0.280  O      I|       |       |       |     1.19
 6.167    1.00    0.00      0.287  O       I       |       |       |     1.22
 6.250    1.01    0.00      0.293  O       I       |       |       |     1.24
 6.333    1.01    0.00      0.300  O       I       |       |       |     1.27
 6.417    1.02    0.00      0.307  O       I       |       |       |     1.29
 6.500    1.02    0.00      0.314  O       I       |       |       |     1.32
 6.583    1.06    0.00      0.322  O       I       |       |       |     1.35
 6.667    1.11    0.00      0.329  O       |I      |       |       |     1.37
 6.750    1.12    0.00      0.337  O       |I      |       |       |     1.40
 6.833    1.13    0.00      0.344  O       |I      |       |       |     1.43
 6.917    1.13    0.00      0.352  O       |I      |       |       |     1.46
 7.000    1.13    0.00      0.360  O       |I      |       |       |     1.49
 7.083    1.13    0.00      0.368  O       |I      |       |       |     1.51
 7.167    1.13    0.00      0.376  O       |I      |       |       |     1.54
 7.250    1.13    0.00      0.383  O       |I      |       |       |     1.56
 7.333    1.17    0.00      0.391  O       |I      |       |       |     1.58
 7.417    1.22    0.00      0.399  O       | I     |       |       |     1.61
 7.500    1.23    0.00      0.408  O       | I     |       |       |     1.63
 7.583    1.28    0.00      0.417  O       | I     |       |       |     1.66
 7.667    1.33    0.00      0.426  O       |  I    |       |       |     1.69
 7.750    1.35    0.00      0.435  O       |  I    |       |       |     1.71
 7.833    1.39    0.00      0.444  O       |  I    |       |       |     1.74
 7.917    1.45    0.00      0.454  O       |   I   |       |       |     1.77
 8.000    1.46    0.00      0.464  O       |   I   |       |       |     1.80
 8.083    1.54    0.00      0.474  O       |   I   |       |       |     1.83
 8.167    1.65    0.00      0.485  O       |    I  |       |       |     1.87
 8.250    1.68    0.00      0.497  O       |    I  |       |       |     1.90
 8.333    1.69    0.00      0.508  O       |     I |       |       |     1.93
 8.417    1.69    0.00      0.520  O       |     I |       |       |     1.97
 8.500    1.70    0.00      0.532  O       |     I |       |       |     2.00
 8.583    1.73    0.00      0.544  O       |     I |       |       |     2.04
 8.667    1.79    0.00      0.556  O       |     I |       |       |     2.08
 8.750    1.80    0.00      0.568  O       |     I |       |       |     2.11
 8.833    1.84    0.00      0.581  O       |      I|       |       |     2.15
 8.917    1.90    0.00      0.593  O       |      I|       |       |     2.19
 9.000    1.91    0.00      0.607  O       |      I|       |       |     2.23
 9.083    2.00    0.00      0.620  O       |       I       |       |     2.27
 9.167    2.10    0.00      0.634  O       |       |I      |       |     2.31
 9.250    2.13    0.00      0.649  O       |       |I      |       |     2.35
 9.333    2.18    0.00      0.664  O       |       | I     |       |     2.40
 9.417    2.24    0.00      0.679  O       |       | I     |       |     2.44
 9.500    2.25    0.00      0.694  O       |       | I     |       |     2.49
 9.583    2.30    0.00      0.710  O       |       |  I    |       |     2.53
 9.667    2.35    0.00      0.726  O       |       |  I    |       |     2.58
 9.750    2.36    0.00      0.742  O       |       |  I    |       |     2.62
 9.833    2.41    0.00      0.759  O       |       |   I   |       |     2.67
 9.917    2.46    0.00      0.775  O       |       |   I   |       |     2.71
10.000    2.48    0.00      0.792  O       |       |   I   |       |     2.76
10.083    2.21    0.00      0.809  O       |       | I     |       |     2.81
10.167    1.84    0.00      0.822  O       |      I|       |       |     2.84
10.250    1.76    0.00      0.835  O       |     I |       |       |     2.88
```

10.333	1.72	0.00	0.847	O	|	I |	|	2.91
10.417	1.70	0.00	0.859	O	|	I |	|	2.94
10.500	1.70	0.00	0.870	O	|	I |	|	2.98
10.583	1.89	0.00	0.883	O	|	I|	|	3.01
10.667	2.16	0.00	0.897	O	|	|I	|	3.05
10.750	2.22	0.00	0.912	O	|	| I	|	3.09
10.833	2.24	0.00	0.927	O	|	| I	|	3.13
10.917	2.26	0.00	0.943	O	|	| I	|	3.18
11.000	2.26	0.00	0.958	O	|	| I	|	3.22
11.083	2.22	0.00	0.973	O	|	| I	|	3.26
11.167	2.17	0.00	0.989	O	|	| I	|	3.30
11.250	2.16	0.00	1.003	O	|	|I	|	3.34
11.333	2.15	0.00	1.018	O	|	|I	|	3.38
11.417	2.15	0.00	1.033	O	|	|I	|	3.43
11.500	2.15	0.00	1.048	O	|	|I	|	3.47
11.583	2.07	0.00	1.062	O	|	|I	|	3.51
11.667	1.96	0.00	1.076	O	|	I	|	3.54
11.750	1.94	0.00	1.090	O	|	I	|	3.58
11.833	1.97	0.00	1.103	O	|	I	|	3.61
11.917	2.02	0.00	1.117	O	|	I	|	3.65
12.000	2.03	0.00	1.131	O	|	I	|	3.69
12.083	2.31	0.00	1.146	O	|	| I	|	3.73
12.167	2.68	0.00	1.163	O	|	| I |	|	3.77
12.250	2.76	0.00	1.182	O	|	| I|	|	3.82
12.333	2.84	0.00	1.201	O	|	| I|	|	3.87
12.417	2.91	0.00	1.221	O	|	| I	|	3.93
12.500	2.93	0.00	1.241	O	|	| I	|	3.98
12.583	3.01	0.00	1.261	O	|	| |I	|	4.04
12.667	3.12	0.00	1.282	O	|	| |I	|	4.09
12.750	3.15	0.00	1.304	O	|	| | I	|	4.15
12.833	3.20	0.00	1.326	O	|	| | I	|	4.21
12.917	3.25	0.00	1.348	O	|	| | I	|	4.27
13.000	3.27	0.00	1.371	O	|	| | I	|	4.33
13.083	3.47	0.00	1.394	O	|	| | I	|	4.39
13.167	3.74	0.00	1.419	O	|	| | | I|	4.45
13.250	3.80	0.00	1.445	O	|	| | | I|	4.52
13.333	3.82	0.00	1.471	O	|	| | | I|	4.59
13.417	3.84	0.00	1.497	O	|	| | | I|	4.66
13.500	3.84	0.00	1.524	O	|	| | | I|	4.73
13.583	3.41	0.00	1.549	O	|	| | I |	4.80
13.667	2.83	0.00	1.570	O	|	| I|	|	4.86
13.750	2.70	0.00	1.589	O	|	| I |	|	4.91
13.833	2.64	0.00	1.607	O	|	| I |	|	4.96
13.917	2.61	0.00	1.626	O	|	| I |	|	5.00
14.000	2.60	0.00	1.643	O	|	| I |	|	5.05
14.083	2.76	0.00	1.662	O	|	| I |	|	5.10
14.167	2.97	0.00	1.682	O	|	| I	|	5.15
14.250	3.02	0.00	1.702	O	|	| |I	|	5.21
14.333	3.00	0.00	1.723	O	|	| I	|	5.26
14.417	2.96	0.00	1.743	O	|	| I	|	5.32
14.500	2.95	0.00	1.764	O	|	| I	|	5.37
14.583	2.94	0.00	1.784	O	|	| I	|	5.43
14.667	2.94	0.00	1.804	O	|	| I	|	5.48
14.750	2.94	0.00	1.825	O	|	| I	|	5.55
14.833	2.90	0.00	1.845	O	|	| I	|	5.62
14.917	2.85	0.00	1.864	O	|	| I|	|	5.69
15.000	2.83	0.00	1.884	O	|	| I|	|	5.77
15.083	2.79	0.00	1.903	O	|	| I|	|	5.84
15.167	2.73	0.00	1.922	O	|	| I |	|	5.91
15.250	2.72	0.00	1.941	O	|	| I |	|	5.98
15.333	2.68	0.00	1.960	O	|	| I |	|	6.05
15.417	2.62	0.00	1.978	O	|	| I |	|	6.11
15.500	2.61	0.00	1.996	O	|	| I |	|	6.18
15.583	2.45	0.00	2.013	O	|	| I |	|	6.24
15.667	2.23	0.00	2.030	O	|	| I |	|	6.30
15.750	2.18	0.00	2.045	O	|	| I |	|	6.36
15.833	2.16	0.00	2.060	O	|	| I |	|	6.41
15.917	2.15	0.00	2.075	O	|	|I |	|	6.47
16.000	2.15	0.00	2.089	O	|	|I |	|	6.52

16.083	1.56	0.00	2.102	O	I			6.55
16.167	0.77	0.00	2.110	O I				6.57
16.250	0.59	0.00	2.115	O I				6.59
16.333	0.51	0.00	2.119	O I				6.60
16.417	0.47	0.00	2.122	O I				6.61
16.500	0.45	0.00	2.125	O I				6.62
16.583	0.41	0.00	2.128	O I				6.62
16.667	0.36	0.00	2.131	O I				6.63
16.750	0.35	0.00	2.133	O I				6.64
16.833	0.34	0.00	2.135	O I				6.64
16.917	0.34	0.00	2.138	O I				6.65
17.000	0.34	0.00	2.140	O I				6.66
17.083	0.42	0.00	2.143	O I				6.66
17.167	0.52	0.00	2.146	O I				6.67
17.250	0.55	0.00	2.150	O I				6.68
17.333	0.56	0.00	2.154	O I				6.69
17.417	0.56	0.00	2.157	O I				6.70
17.500	0.57	0.00	2.161	O I				6.71
17.583	0.57	0.00	2.165	O I				6.73
17.667	0.57	0.00	2.169	O I				6.74
17.750	0.57	0.00	2.173	O I				6.75
17.833	0.53	0.00	2.177	O I				6.76
17.917	0.47	0.00	2.180	O I				6.77
18.000	0.46	0.00	2.183	O I				6.78
18.083	0.46	0.00	2.186	O I				6.78
18.167	0.45	0.00	2.190	O I				6.79
18.250	0.45	0.00	2.193	O I				6.80
18.333	0.45	0.00	2.196	O I				6.81
18.417	0.45	0.00	2.199	O I				6.82
18.500	0.45	0.00	2.202	O I				6.83
18.583	0.41	0.00	2.205	O I				6.83
18.667	0.36	0.00	2.208	O I				6.84
18.750	0.35	0.00	2.210	O I				6.85
18.833	0.30	0.00	2.212	O I				6.86
18.917	0.25	0.00	2.214	O I				6.86
19.000	0.23	0.00	2.216	OI				6.86
19.083	0.27	0.00	2.218	O I				6.87
19.167	0.32	0.00	2.220	O I				6.88
19.250	0.33	0.00	2.222	O I				6.88
19.333	0.37	0.00	2.224	O I				6.89
19.417	0.43	0.00	2.227	O I				6.90
19.500	0.44	0.00	2.230	O I				6.90
19.583	0.41	0.00	2.233	O I				6.91
19.667	0.36	0.00	2.236	O I				6.92
19.750	0.35	0.00	2.238	O I				6.93
19.833	0.30	0.00	2.240	O I				6.93
19.917	0.25	0.00	2.242	O I				6.94
20.000	0.23	0.00	2.244	OI				6.94
20.083	0.27	0.00	2.246	O I				6.95
20.167	0.32	0.00	2.248	O I				6.95
20.250	0.33	0.02	2.250	O I				6.96
20.333	0.34	0.03	2.252	O I				6.96
20.417	0.34	0.04	2.254	O I				6.96
20.500	0.34	0.05	2.256	O I				6.97
20.583	0.34	0.06	2.258	O I				6.97
20.667	0.34	0.07	2.260	O I				6.98
20.750	0.34	0.08	2.262	O I				6.98
20.833	0.30	0.09	2.263	O I				6.98
20.917	0.25	0.10	2.264	O I				6.99
21.000	0.23	0.11	2.265	OI				6.99
21.083	0.27	0.11	2.266	O I				6.99
21.167	0.32	0.12	2.268	O I				6.99
21.250	0.33	0.13	2.269	|OI				7.00
21.333	0.30	0.13	2.270	|OI				7.00
21.417	0.25	0.14	2.271	|OI				7.00
21.500	0.23	0.14	2.272	|O				7.00
21.583	0.27	0.15	2.273	|OI				7.00
21.667	0.32	0.15	2.274	|OI				7.01
21.750	0.33	0.16	2.275	|OI				7.01

21.833	0.30	0.17	2.276	OI					7.01
21.917	0.25	0.17	2.277	OI					7.01
22.000	0.23	0.17	2.277	O					7.01
22.083	0.27	0.18	2.278	OI					7.01
22.167	0.32	0.18	2.278	OI					7.02
22.250	0.33	0.19	2.279	OI					7.02
22.333	0.30	0.19	2.280	OI					7.02
22.417	0.25	0.19	2.281	OI					7.02
22.500	0.23	0.20	2.281	O					7.02
22.583	0.23	0.20	2.281	O					7.02
22.667	0.23	0.20	2.281	O					7.02
22.750	0.23	0.20	2.282	O					7.02
22.833	0.23	0.20	2.282	O					7.02
22.917	0.23	0.20	2.282	O					7.02
23.000	0.23	0.20	2.282	O					7.02
23.083	0.23	0.20	2.282	O					7.02
23.167	0.23	0.20	2.282	O					7.02
23.250	0.23	0.21	2.283	O					7.02
23.333	0.23	0.21	2.283	O					7.03
23.417	0.23	0.21	2.283	O					7.03
23.500	0.23	0.21	2.283	O					7.03
23.583	0.23	0.21	2.283	O					7.03
23.667	0.23	0.21	2.283	O					7.03
23.750	0.23	0.21	2.283	O					7.03
23.833	0.23	0.21	2.284	O					7.03
23.917	0.23	0.21	2.284	O					7.03
24.000	0.23	0.21	2.284	O					7.03
24.083	0.15	0.21	2.284	O					7.03
24.167	0.04	0.21	2.283	IO					7.03
24.250	0.02	0.20	2.282	IO					7.02
24.333	0.01	0.19	2.280	IO					7.02
24.417	0.00	0.18	2.279	IO					7.02
24.500	0.00	0.18	2.278	IO					7.01
24.583	0.00	0.17	2.277	IO					7.01
24.667	0.00	0.16	2.275	IO					7.01
24.750	0.00	0.16	2.274	IO					7.01
24.833	0.00	0.15	2.273	IO					7.01
24.917	0.00	0.15	2.272	IO					7.00
25.000	0.00	0.14	2.271	IO					7.00
25.083	0.00	0.13	2.270	IO					7.00
25.167	0.00	0.13	2.269	IO					7.00
25.250	0.00	0.12	2.269	IO					7.00
25.333	0.00	0.12	2.268	O					6.99
25.417	0.00	0.11	2.267	O					6.99
25.500	0.00	0.11	2.266	O					6.99
25.583	0.00	0.11	2.265	O					6.99
25.667	0.00	0.10	2.265	O					6.99
25.750	0.00	0.10	2.264	O					6.99
25.833	0.00	0.09	2.263	O					6.98
25.917	0.00	0.09	2.263	O					6.98
26.000	0.00	0.09	2.262	O					6.98
26.083	0.00	0.08	2.262	O					6.98
26.167	0.00	0.08	2.261	O					6.98
26.250	0.00	0.08	2.260	O					6.98
26.333	0.00	0.07	2.260	O					6.98
26.417	0.00	0.07	2.259	O					6.98
26.500	0.00	0.07	2.259	O					6.97
26.583	0.00	0.07	2.258	O					6.97
26.667	0.00	0.06	2.258	O					6.97
26.750	0.00	0.06	2.258	O					6.97
26.833	0.00	0.06	2.257	O					6.97
26.917	0.00	0.06	2.257	O					6.97
27.000	0.00	0.05	2.256	O					6.97
27.083	0.00	0.05	2.256	O					6.97
27.167	0.00	0.05	2.256	O					6.97
27.250	0.00	0.05	2.255	O					6.97
27.333	0.00	0.05	2.255	O					6.97
27.417	0.00	0.04	2.255	O					6.97
27.500	0.00	0.04	2.254	O					6.97

27.583	0.00	0.04	2.254	O					6.96
27.667	0.00	0.04	2.254	O					6.96
27.750	0.00	0.04	2.254	O					6.96
27.833	0.00	0.04	2.253	O					6.96
27.917	0.00	0.03	2.253	O					6.96
28.000	0.00	0.03	2.253	O					6.96
28.083	0.00	0.03	2.253	O					6.96
28.167	0.00	0.03	2.252	O					6.96
28.250	0.00	0.03	2.252	O					6.96
28.333	0.00	0.03	2.252	O					6.96
28.417	0.00	0.03	2.252	O					6.96
28.500	0.00	0.03	2.252	O					6.96
28.583	0.00	0.03	2.251	O					6.96
28.667	0.00	0.02	2.251	O					6.96
28.750	0.00	0.02	2.251	O					6.96
28.833	0.00	0.02	2.251	O					6.96
28.917	0.00	0.02	2.251	O					6.96
29.000	0.00	0.02	2.251	O					6.96
29.083	0.00	0.02	2.250	O					6.96
29.167	0.00	0.02	2.250	O					6.96
29.250	0.00	0.02	2.250	O					6.96
29.333	0.00	0.02	2.250	O					6.96
29.417	0.00	0.02	2.250	O					6.96
29.500	0.00	0.02	2.250	O					6.96
29.583	0.00	0.02	2.250	O					6.96
29.667	0.00	0.02	2.250	O					6.96
29.750	0.00	0.01	2.250	O					6.96
29.833	0.00	0.01	2.249	O					6.96
29.917	0.00	0.01	2.249	O					6.95
30.000	0.00	0.01	2.249	O					6.95
30.083	0.00	0.01	2.249	O					6.95
30.167	0.00	0.01	2.249	O					6.95
30.250	0.00	0.01	2.249	O					6.95
30.333	0.00	0.01	2.249	O					6.95
30.417	0.00	0.01	2.249	O					6.95
30.500	0.00	0.01	2.249	O					6.95
30.583	0.00	0.01	2.249	O					6.95
30.667	0.00	0.01	2.249	O					6.95
30.750	0.00	0.01	2.249	O					6.95
30.833	0.00	0.01	2.249	O					6.95
30.917	0.00	0.01	2.248	O					6.95
31.000	0.00	0.01	2.248	O					6.95
31.083	0.00	0.01	2.248	O					6.95
31.167	0.00	0.01	2.248	O					6.95
31.250	0.00	0.01	2.248	O					6.95
31.333	0.00	0.01	2.248	O					6.95
31.417	0.00	0.01	2.248	O					6.95
31.500	0.00	0.01	2.248	O					6.95
31.583	0.00	0.01	2.248	O					6.95
31.667	0.00	0.01	2.248	O					6.95
31.750	0.00	0.01	2.248	O					6.95
31.833	0.00	0.01	2.248	O					6.95
31.917	0.00	0.01	2.248	O					6.95
32.000	0.00	0.01	2.248	O					6.95
32.083	0.00	0.00	2.248	O					6.95
32.167	0.00	0.00	2.248	O					6.95
32.250	0.00	0.00	2.248	O					6.95
32.333	0.00	0.00	2.248	O					6.95
32.417	0.00	0.00	2.248	O					6.95
32.500	0.00	0.00	2.248	O					6.95
32.583	0.00	0.00	2.248	O					6.95
32.667	0.00	0.00	2.248	O					6.95
32.750	0.00	0.00	2.248	O					6.95
32.833	0.00	0.00	2.248	O					6.95
32.917	0.00	0.00	2.248	O					6.95
33.000	0.00	0.00	2.248	O					6.95
33.083	0.00	0.00	2.248	O					6.95
33.167	0.00	0.00	2.247	O					6.95
33.250	0.00	0.00	2.247	O					6.95

33.333	0.00	0.00	2.247	O	|	|	|	|	6.95
33.417	0.00	0.00	2.247	O	|	|	|	|	6.95
33.500	0.00	0.00	2.247	O	|	|	|	|	6.95
33.583	0.00	0.00	2.247	O	|	|	|	|	6.95
33.667	0.00	0.00	2.247	O	|	|	|	|	6.95
33.750	0.00	0.00	2.247	O	|	|	|	|	6.95
33.833	0.00	0.00	2.247	O	|	|	|	|	6.95
33.917	0.00	0.00	2.247	O	|	|	|	|	6.95
34.000	0.00	0.00	2.247	O	|	|	|	|	6.95
34.083	0.00	0.00	2.247	O	|	|	|	|	6.95
34.167	0.00	0.00	2.247	O	|	|	|	|	6.95
34.250	0.00	0.00	2.247	O	|	|	|	|	6.95
34.333	0.00	0.00	2.247	O	|	|	|	|	6.95
34.417	0.00	0.00	2.247	O	|	|	|	|	6.95
34.500	0.00	0.00	2.247	O	|	|	|	|	6.95
34.583	0.00	0.00	2.247	O	|	|	|	|	6.95
34.667	0.00	0.00	2.247	O	|	|	|	|	6.95
34.750	0.00	0.00	2.247	O	|	|	|	|	6.95
34.833	0.00	0.00	2.247	O	|	|	|	|	6.95
34.917	0.00	0.00	2.247	O	|	|	|	|	6.95
35.000	0.00	0.00	2.247	O	|	|	|	|	6.95
35.083	0.00	0.00	2.247	O	|	|	|	|	6.95
35.167	0.00	0.00	2.247	O	|	|	|	|	6.95
35.250	0.00	0.00	2.247	O	|	|	|	|	6.95
35.333	0.00	0.00	2.247	O	|	|	|	|	6.95
35.417	0.00	0.00	2.247	O	|	|	|	|	6.95

Remaining water in basin = 2.25 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 425
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.211 (CFS)
Total volume = 0.088 (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

****

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018
Study date: 03/03/23

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
BASIN ROUTING
5-YEAR, 24-HOUR STORM
BY: JTS DATE: 03-03-23

Program License Serial Number 6320

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

From study/file name: devhyd245.rte
****************************HYDROGRAPH DATA****************************
Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 5.303 (CFS)
Total volume = 3.223 (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 13.000 to Point/Station 15.000
**** RETARDING BASIN ROUTING ****
_____

Program computation of outflow v. depth

CALCULATED OUTFLOW DATA AT DEPTH = 0.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 1.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 2.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 3.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 4.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 5.50(Ft.))
Total outflow at this depth = 0.00(CFS)

```
CALCULATED OUTFLOW DATA AT DEPTH =    6.50(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    6.95(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    7.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
Calculated individual pipe flow  =     1.508(CFS)
Normal flow depth in pipe =    2.57(In.)
Flow top width inside pipe =    8.74(In.)
Critical Depth =    0.55(Ft.)
Calculated flow rate through pipe(s) =      1.508(CFS)

Total outflow at this depth =      1.51(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    8.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      7.130(Ft.)
Pipe friction loss =      2.827(Ft.)
Minor friction loss =      4.307(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.417(CFS)

Total outflow at this depth =      7.42(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    9.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      8.130(Ft.)
Pipe friction loss =      3.223(Ft.)
Minor friction loss =      4.911(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.920(CFS)

Total outflow at this depth =      7.92(CFS)

----------------------------------------------------------------------
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  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
----------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.500      0.092      0.000      0.092        0.092
  1.500      0.363      0.000      0.363        0.363
  2.500      0.698      0.000      0.698        0.698
  3.500      1.060      0.000      1.060        1.060
```

4.500	1.436	0.000	1.436	1.436
5.500	1.812	0.000	1.812	1.812
6.500	2.083	0.000	2.083	2.083
6.950	2.247	0.000	2.247	2.247
7.500	2.509	1.508	2.504	2.514
8.500	2.780	7.417	2.754	2.806
9.500	2.964	7.920	2.937	2.991

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 1.3 2.65 3.98 5.30	Depth (Ft.)
0.083	0.11	0.00	0.000	O | | | |	0.00
0.167	0.25	0.00	0.002	OI | | | |	0.01
0.250	0.29	0.00	0.003	OI | | | |	0.02
0.333	0.36	0.00	0.006	O I | | | |	0.03
0.417	0.44	0.00	0.008	O I | | | |	0.05
0.500	0.46	0.00	0.012	O I | | | |	0.06
0.583	0.46	0.00	0.015	O I | | | |	0.08
0.667	0.47	0.00	0.018	O I | | | |	0.10
0.750	0.47	0.00	0.021	O I | | | |	0.11
0.833	0.52	0.00	0.024	O I | | | |	0.13
0.917	0.59	0.00	0.028	O I | | | |	0.15
1.000	0.61	0.00	0.032	O I | | | |	0.18
1.083	0.56	0.00	0.037	O I | | | |	0.20
1.167	0.50	0.00	0.040	O I | | | |	0.22
1.250	0.48	0.00	0.044	O I | | | |	0.24
1.333	0.47	0.00	0.047	O I | | | |	0.25
1.417	0.47	0.00	0.050	O I | | | |	0.27
1.500	0.47	0.00	0.053	O I | | | |	0.29
1.583	0.47	0.00	0.057	O I | | | |	0.31
1.667	0.47	0.00	0.060	O I | | | |	0.32
1.750	0.47	0.00	0.063	O I | | | |	0.34
1.833	0.52	0.00	0.066	O I | | | |	0.36
1.917	0.59	0.00	0.070	O I | | | |	0.38
2.000	0.61	0.00	0.074	O I | | | |	0.40
2.083	0.62	0.00	0.079	O I | | | |	0.43
2.167	0.62	0.00	0.083	O I | | | |	0.45
2.250	0.62	0.00	0.087	O I | | | |	0.47
2.333	0.62	0.00	0.091	O I | | | |	0.50
2.417	0.62	0.00	0.096	O I | | | |	0.51
2.500	0.62	0.00	0.100	O I | | | |	0.53
2.583	0.68	0.00	0.105	O I | | | |	0.55
2.667	0.75	0.00	0.109	O I | | | |	0.56
2.750	0.77	0.00	0.115	O I | | | |	0.58
2.833	0.77	0.00	0.120	O I | | | |	0.60
2.917	0.78	0.00	0.125	O I | | | |	0.62
3.000	0.78	0.00	0.131	O I | | | |	0.64
3.083	0.78	0.00	0.136	O I | | | |	0.66
3.167	0.78	0.00	0.141	O I | | | |	0.68
3.250	0.78	0.00	0.147	O I | | | |	0.70
3.333	0.78	0.00	0.152	O I | | | |	0.72
3.417	0.78	0.00	0.158	O I | | | |	0.74
3.500	0.78	0.00	0.163	O I | | | |	0.76
3.583	0.78	0.00	0.168	O I | | | |	0.78
3.667	0.78	0.00	0.174	O I | | | |	0.80
3.750	0.78	0.00	0.179	O I | | | |	0.82
3.833	0.83	0.00	0.185	O I | | | |	0.84
3.917	0.91	0.00	0.191	O I | | | |	0.86
4.000	0.92	0.00	0.197	O I | | | |	0.89
4.083	0.93	0.00	0.203	O I | | | |	0.91
4.167	0.93	0.00	0.210	O I | | | |	0.93
4.250	0.94	0.00	0.216	O I | | | |	0.96
4.333	0.99	0.00	0.223	O I | | | |	0.98
4.417	1.06	0.00	0.230	O I | | | |	1.01
4.500	1.08	0.00	0.237	O I | | | |	1.04

4.583	1.09	0.00	0.245	O	I	|	|	|	1.06
4.667	1.09	0.00	0.252	O	I	|	|	|	1.09
4.750	1.09	0.00	0.260	O	I	|	|	|	1.12
4.833	1.15	0.00	0.267	O	I	|	|	|	1.15
4.917	1.22	0.00	0.276	O	I	|	|	|	1.18
5.000	1.24	0.00	0.284	O	I	|	|	|	1.21
5.083	1.13	0.00	0.292	O	I	|	|	|	1.24
5.167	0.99	0.00	0.300	O	I	|	|	|	1.27
5.250	0.96	0.00	0.306	O	I	|	|	|	1.29
5.333	1.00	0.00	0.313	O	I	|	|	|	1.32
5.417	1.07	0.00	0.320	O	I	|	|	|	1.34
5.500	1.08	0.00	0.328	O	I	|	|	|	1.37
5.583	1.14	0.00	0.335	O	I	|	|	|	1.40
5.667	1.22	0.00	0.343	O	I	|	|	|	1.43
5.750	1.24	0.00	0.352	O	I	|	|	|	1.46
5.833	1.24	0.00	0.360	O	I	|	|	|	1.49
5.917	1.25	0.00	0.369	O	I	|	|	|	1.52
6.000	1.25	0.00	0.377	O	I	|	|	|	1.54
6.083	1.30	0.00	0.386	O	I	|	|	|	1.57
6.167	1.37	0.00	0.395	O	I	|	|	|	1.60
6.250	1.39	0.00	0.405	O	I	|	|	|	1.63
6.333	1.40	0.00	0.415	O	I	|	|	|	1.65
6.417	1.40	0.00	0.424	O	I	|	|	|	1.68
6.500	1.40	0.00	0.434	O	I	|	|	|	1.71
6.583	1.46	0.00	0.444	O	I	|	|	|	1.74
6.667	1.53	0.00	0.454	O	I	|	|	|	1.77
6.750	1.55	0.00	0.465	O	I	|	|	|	1.80
6.833	1.55	0.00	0.475	O	I	|	|	|	1.84
6.917	1.56	0.00	0.486	O	I	|	|	|	1.87
7.000	1.56	0.00	0.497	O	I	|	|	|	1.90
7.083	1.56	0.00	0.507	O	I	|	|	|	1.93
7.167	1.56	0.00	0.518	O	I	|	|	|	1.96
7.250	1.56	0.00	0.529	O	I	|	|	|	2.00
7.333	1.61	0.00	0.540	O	I	|	|	|	2.03
7.417	1.69	0.00	0.551	O	I	|	|	|	2.06
7.500	1.70	0.00	0.563	O	I	|	|	|	2.10
7.583	1.77	0.00	0.575	O	I	|	|	|	2.13
7.667	1.84	0.00	0.587	O	I	|	|	|	2.17
7.750	1.86	0.00	0.600	O	I	|	|	|	2.21
7.833	1.92	0.00	0.613	O	I	|	|	|	2.25
7.917	2.00	0.00	0.627	O	I	|	|	|	2.29
8.000	2.02	0.00	0.640	O	I	|	|	|	2.33
8.083	2.13	0.00	0.655	O	I	|	|	|	2.37
8.167	2.28	0.00	0.670	O	I	|	|	|	2.42
8.250	2.32	0.00	0.686	O	I	|	|	|	2.46
8.333	2.33	0.00	0.702	O	I	|	|	|	2.51
8.417	2.34	0.00	0.718	O	I	|	|	|	2.55
8.500	2.34	0.00	0.734	O	I	|	|	|	2.60
8.583	2.39	0.00	0.750	O	I	|	|	|	2.64
8.667	2.47	0.00	0.767	O	I	|	|	|	2.69
8.750	2.48	0.00	0.784	O	I	|	|	|	2.74
8.833	2.55	0.00	0.801	O	I	|	|	|	2.79
8.917	2.62	0.00	0.819	O	I	|	|	|	2.83
9.000	2.64	0.00	0.837	O	I	|	|	|	2.88
9.083	2.76	0.00	0.856	O	I	|	|	|	2.94
9.167	2.90	0.00	0.875	O	I	|	|	|	2.99
9.250	2.94	0.00	0.895	O	I	|	|	|	3.05
9.333	3.01	0.00	0.916	O	I	|	|	|	3.10
9.417	3.09	0.00	0.937	O	I	|	|	|	3.16
9.500	3.11	0.00	0.958	O	I	|	|	|	3.22
9.583	3.17	0.00	0.980	O	I	|	|	|	3.28
9.667	3.24	0.00	1.002	O	I	|	|	|	3.34
9.750	3.26	0.00	1.024	O	I	|	|	|	3.40
9.833	3.32	0.00	1.047	O	I	|	|	|	3.46
9.917	3.40	0.00	1.070	O	I	|	|	|	3.53
10.000	3.42	0.00	1.094	O	I	|	|	|	3.59
10.083	3.04	0.00	1.116	O	I	|	|	|	3.65
10.167	2.54	0.00	1.135	O	I	|	|	|	3.70
10.250	2.43	0.00	1.152	O	I	|	|	|	3.75

10.333	2.37	0.00	1.169	O	|	I |	|	|	3.79
10.417	2.35	0.00	1.185	O	|	I |	|	|	3.83
10.500	2.34	0.00	1.201	O	|	I |	|	|	3.88
10.583	2.61	0.00	1.218	O	|	I|	|	|	3.92
10.667	2.97	0.00	1.237	O	|	|I	|	|	3.97
10.750	3.06	0.00	1.258	O	|	| I	|	|	4.03
10.833	3.09	0.00	1.279	O	|	| I	|	|	4.08
10.917	3.11	0.00	1.301	O	|	| I	|	|	4.14
11.000	3.12	0.00	1.322	O	|	| I	|	|	4.20
11.083	3.06	0.00	1.343	O	|	| I	|	|	4.25
11.167	2.99	0.00	1.364	O	|	| I	|	|	4.31
11.250	2.98	0.00	1.385	O	|	|I	|	|	4.36
11.333	2.97	0.00	1.405	O	|	|I	|	|	4.42
11.417	2.96	0.00	1.426	O	|	|I	|	|	4.47
11.500	2.96	0.00	1.446	O	|	|I	|	|	4.53
11.583	2.85	0.00	1.466	O	|	|I	|	|	4.58
11.667	2.71	0.00	1.485	O	|	I	|	|	4.63
11.750	2.68	0.00	1.504	O	|	I	|	|	4.68
11.833	2.72	0.00	1.522	O	|	I	|	|	4.73
11.917	2.78	0.00	1.541	O	|	I	|	|	4.78
12.000	2.80	0.00	1.561	O	|	I	|	|	4.83
12.083	3.18	0.00	1.581	O	|	| I	|	|	4.89
12.167	3.69	0.00	1.605	O	|	| I |	|	4.95
12.250	3.81	0.00	1.631	O	|	| I|	|	5.02
12.333	3.92	0.00	1.657	O	|	| I|	|	5.09
12.417	4.02	0.00	1.685	O	|	| I	|	5.16
12.500	4.04	0.00	1.712	O	|	| I	|	5.24
12.583	4.16	0.00	1.741	O	|	| |I	|	5.31
12.667	4.31	0.00	1.770	O	|	| |I	|	5.39
12.750	4.34	0.00	1.800	O	|	| | I	|	5.47
12.833	4.41	0.00	1.830	O	|	| | I	|	5.57
12.917	4.49	0.00	1.860	O	|	| | I	|	5.68
13.000	4.51	0.00	1.891	O	|	| | I	|	5.79
13.083	4.79	0.00	1.923	O	|	| | I	|	5.91
13.167	5.16	0.00	1.958	O	|	| | | I|	6.04
13.250	5.24	0.00	1.994	O	|	| | | I|	6.17
13.333	5.28	0.00	2.030	O	|	| | | I|	6.30
13.417	5.30	0.00	2.066	O	|	| | | I|	6.44
13.500	5.30	0.00	2.103	O	|	| | | I|	6.55
13.583	4.70	0.00	2.137	O	|	| | I	|	6.65
13.667	3.91	0.00	2.167	O	|	| I|	|	6.73
13.750	3.72	0.00	2.193	O	|	| I |	|	6.80
13.833	3.64	0.00	2.218	O	|	| I |	|	6.87
13.917	3.60	0.00	2.243	O	|	| I |	|	6.94
14.000	3.59	0.12	2.268	O	|	| I |	|	6.99
14.083	3.81	0.26	2.292	|O	|	| I |	|	7.04
14.167	4.10	0.40	2.317	| O	|	| I	|	7.10
14.250	4.16	0.55	2.342	| O	|	| |I	|	7.15
14.333	4.14	0.69	2.366	| O	|	| I	|	7.20
14.417	4.08	0.82	2.389	| O	|	| I	|	7.25
14.500	4.07	0.95	2.411	| O	|	| I	|	7.30
14.583	4.06	1.07	2.432	| O	|	| I	|	7.34
14.667	4.06	1.18	2.453	| O|	|	| I	|	7.38
14.750	4.06	1.30	2.472	| O|	|	| I	|	7.42
14.833	4.00	1.40	2.490	| O	|	| I	|	7.46
14.917	3.93	1.50	2.508	| |O	|	| I|	|	7.50
15.000	3.91	1.82	2.523	| | O	|	| I|	|	7.55
15.083	3.85	2.11	2.537	| | O	|	| I|	|	7.60
15.167	3.77	2.35	2.547	| | O |	| I |	|	7.64
15.250	3.76	2.54	2.557	| | O|	| I |	|	7.68
15.333	3.69	2.71	2.564	| | O	| I |	|	7.70
15.417	3.62	2.84	2.570	| | |O	I |	|	7.73
15.500	3.60	2.95	2.575	| | |O	I |	|	7.74
15.583	3.37	3.02	2.579	| | | O I	|	|	7.76
15.667	3.08	3.05	2.580	| | | O	|	|	7.76
15.750	3.01	3.05	2.580	| | | O	|	|	7.76
15.833	2.98	3.04	2.579	| | | O	|	|	7.76
15.917	2.97	3.03	2.579	| | |IO	|	|	7.76
16.000	2.96	3.02	2.579	| | |IO	|	|	7.76

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16.083    2.15    2.96      2.576  |        |   I   |O      |        |     7.75
16.167    1.06    2.77      2.567  |     I  |       O       |        |     7.71
16.250    0.81    2.51      2.555  |   I    |      O|       |        |     7.67
16.333    0.70    2.27      2.544  |   I    |    O  |       |        |     7.63
16.417    0.65    2.04      2.534  |  I     |   O   |       |        |     7.59
16.500    0.62    1.85      2.525  |  I     |  O    |       |        |     7.56
16.583    0.57    1.67      2.517  |  I     | O     |       |        |     7.53
16.667    0.50    1.51      2.509  | I      |O      |       |        |     7.50
16.750    0.48    1.47      2.502  | I     O       |       |        |     7.49
16.833    0.47    1.43      2.496  | I     O       |       |        |     7.47
16.917    0.47    1.39      2.489  | I     O       |       |        |     7.46
17.000    0.47    1.36      2.483  | I     O       |       |        |     7.45
17.083    0.58    1.33      2.477  |  I   O|       |       |        |     7.43
17.167    0.72    1.30      2.473  |   I  O|       |       |        |     7.42
17.250    0.76    1.28      2.469  |   I  O|       |       |        |     7.42
17.333    0.77    1.26      2.465  |   I  O|       |       |        |     7.41
17.417    0.78    1.24      2.462  |   I  O|       |       |        |     7.40
17.500    0.78    1.22      2.459  |   I  O|       |       |        |     7.40
17.583    0.78    1.20      2.456  |   I  O|       |       |        |     7.39
17.667    0.78    1.19      2.453  |   I  O|       |       |        |     7.38
17.750    0.78    1.17      2.450  |   I  O|       |       |        |     7.38
17.833    0.73    1.16      2.448  |   I O |       |       |        |     7.37
17.917    0.65    1.14      2.444  |  I  O |       |       |        |     7.36
18.000    0.64    1.12      2.441  |  I  O |       |       |        |     7.36
18.083    0.63    1.10      2.438  |  I  O |       |       |        |     7.35
18.167    0.63    1.08      2.435  |  I  O |       |       |        |     7.34
18.250    0.62    1.06      2.432  |  I  O |       |       |        |     7.34
18.333    0.62    1.05      2.429  |  I  O |       |       |        |     7.33
18.417    0.62    1.03      2.426  |  I  O |       |       |        |     7.33
18.500    0.62    1.01      2.423  |  I  O |       |       |        |     7.32
18.583    0.57    1.00      2.420  |  I  O |       |       |        |     7.31
18.667    0.50    0.98      2.417  | I  O  |       |       |        |     7.31
18.750    0.48    0.96      2.414  | I  O  |       |       |        |     7.30
18.833    0.42    0.94      2.410  | I  O  |       |       |        |     7.29
18.917    0.34    0.92      2.407  | I  O  |       |       |        |     7.28
19.000    0.32    0.90      2.403  |I   O  |       |       |        |     7.28
19.083    0.37    0.87      2.399  | I  O  |       |       |        |     7.27
19.167    0.44    0.86      2.396  | I  O  |       |       |        |     7.26
19.250    0.46    0.84      2.393  | I  O  |       |       |        |     7.26
19.333    0.52    0.83      2.391  |  IO   |       |       |        |     7.25
19.417    0.59    0.82      2.389  |  IO   |       |       |        |     7.25
19.500    0.61    0.81      2.387  |  IO   |       |       |        |     7.24
19.583    0.56    0.80      2.386  |  IO   |       |       |        |     7.24
19.667    0.50    0.79      2.384  | I O   |       |       |        |     7.24
19.750    0.48    0.78      2.382  | I O   |       |       |        |     7.23
19.833    0.42    0.76      2.380  | I O   |       |       |        |     7.23
19.917    0.34    0.75      2.377  | I O   |       |       |        |     7.22
20.000    0.32    0.73      2.374  |I  O   |       |       |        |     7.22
20.083    0.37    0.72      2.372  | I O   |       |       |        |     7.21
20.167    0.44    0.71      2.370  | I O   |       |       |        |     7.21
20.250    0.46    0.70      2.368  | I O   |       |       |        |     7.20
20.333    0.46    0.69      2.366  | I O   |       |       |        |     7.20
20.417    0.47    0.68      2.365  | I O   |       |       |        |     7.20
20.500    0.47    0.67      2.363  | I O   |       |       |        |     7.19
20.583    0.47    0.66      2.362  | IO    |       |       |        |     7.19
20.667    0.47    0.65      2.361  | IO    |       |       |        |     7.19
20.750    0.47    0.65      2.359  | IO    |       |       |        |     7.19
20.833    0.41    0.64      2.358  | IO    |       |       |        |     7.18
20.917    0.34    0.63      2.356  | IO    |       |       |        |     7.18
21.000    0.32    0.62      2.354  |I O    |       |       |        |     7.18
21.083    0.37    0.61      2.352  | IO    |       |       |        |     7.17
21.167    0.44    0.60      2.351  | IO    |       |       |        |     7.17
21.250    0.46    0.59      2.350  | IO    |       |       |        |     7.17
21.333    0.41    0.59      2.349  | IO    |       |       |        |     7.16
21.417    0.34    0.58      2.348  | IO    |       |       |        |     7.16
21.500    0.32    0.57      2.346  |I O    |       |       |        |     7.16
21.583    0.37    0.56      2.344  | IO    |       |       |        |     7.15
21.667    0.44    0.55      2.343  | IO    |       |       |        |     7.15
21.750    0.46    0.55      2.343  | IO    |       |       |        |     7.15
```

21.833	0.41	0.55	2.342	| IO	|	|	|	7.15
21.917	0.34	0.54	2.341	| IO	|	|	|	7.15
22.000	0.32	0.53	2.339	|I O	|	|	|	7.14
22.083	0.37	0.52	2.338	| IO	|	|	|	7.14
22.167	0.44	0.52	2.337	| IO	|	|	|	7.14
22.250	0.46	0.52	2.337	| IO	|	|	|	7.14
22.333	0.41	0.51	2.336	| IO	|	|	|	7.14
22.417	0.34	0.51	2.335	| IO	|	|	|	7.14
22.500	0.32	0.50	2.334	|I O	|	|	|	7.13
22.583	0.32	0.49	2.333	|IO	|	|	|	7.13
22.667	0.31	0.49	2.332	|IO	|	|	|	7.13
22.750	0.31	0.48	2.330	|IO	|	|	|	7.13
22.833	0.31	0.47	2.329	|IO	|	|	|	7.12
22.917	0.31	0.47	2.328	|IO	|	|	|	7.12
23.000	0.31	0.46	2.327	|IO	|	|	|	7.12
23.083	0.31	0.46	2.326	|IO	|	|	|	7.12
23.167	0.31	0.45	2.325	|IO	|	|	|	7.11
23.250	0.31	0.44	2.324	|IO	|	|	|	7.11
23.333	0.31	0.44	2.323	|IO	|	|	|	7.11
23.417	0.31	0.43	2.322	|IO	|	|	|	7.11
23.500	0.31	0.43	2.322	|IO	|	|	|	7.11
23.583	0.31	0.43	2.321	|IO	|	|	|	7.11
23.667	0.31	0.42	2.320	|IO	|	|	|	7.10
23.750	0.31	0.42	2.319	|IO	|	|	|	7.10
23.833	0.31	0.41	2.319	|IO	|	|	|	7.10
23.917	0.31	0.41	2.318	|IO	|	|	|	7.10
24.000	0.31	0.40	2.317	|IO	|	|	|	7.10
24.083	0.20	0.40	2.316	|IO	|	|	|	7.10
24.167	0.06	0.39	2.315	I O	|	|	|	7.09
24.250	0.02	0.38	2.312	I O	|	|	|	7.09
24.333	0.01	0.36	2.310	I O	|	|	|	7.08
24.417	0.00	0.35	2.307	I O	|	|	|	7.08
24.500	0.00	0.33	2.305	I O	|	|	|	7.07
24.583	0.00	0.32	2.303	IO	|	|	|	7.07
24.667	0.00	0.31	2.301	IO	|	|	|	7.06
24.750	0.00	0.30	2.298	IO	|	|	|	7.06
24.833	0.00	0.28	2.296	IO	|	|	|	7.05
24.917	0.00	0.27	2.295	IO	|	|	|	7.05
25.000	0.00	0.26	2.293	IO	|	|	|	7.05
25.083	0.00	0.25	2.291	IO	|	|	|	7.04
25.167	0.00	0.24	2.289	IO	|	|	|	7.04
25.250	0.00	0.23	2.288	IO	|	|	|	7.04
25.333	0.00	0.22	2.286	IO	|	|	|	7.03
25.417	0.00	0.22	2.284	IO	|	|	|	7.03
25.500	0.00	0.21	2.283	IO	|	|	|	7.03
25.583	0.00	0.20	2.282	IO	|	|	|	7.02
25.667	0.00	0.19	2.280	IO	|	|	|	7.02
25.750	0.00	0.18	2.279	IO	|	|	|	7.02
25.833	0.00	0.18	2.278	IO	|	|	|	7.01
25.917	0.00	0.17	2.277	IO	|	|	|	7.01
26.000	0.00	0.16	2.275	O	|	|	|	7.01
26.083	0.00	0.16	2.274	O	|	|	|	7.01
26.167	0.00	0.15	2.273	O	|	|	|	7.01
26.250	0.00	0.15	2.272	O	|	|	|	7.00
26.333	0.00	0.14	2.271	O	|	|	|	7.00
26.417	0.00	0.13	2.270	O	|	|	|	7.00
26.500	0.00	0.13	2.269	O	|	|	|	7.00
26.583	0.00	0.12	2.269	O	|	|	|	7.00
26.667	0.00	0.12	2.268	O	|	|	|	6.99
26.750	0.00	0.11	2.267	O	|	|	|	6.99
26.833	0.00	0.11	2.266	O	|	|	|	6.99
26.917	0.00	0.11	2.265	O	|	|	|	6.99
27.000	0.00	0.10	2.265	O	|	|	|	6.99
27.083	0.00	0.10	2.264	O	|	|	|	6.99
27.167	0.00	0.09	2.263	O	|	|	|	6.98
27.250	0.00	0.09	2.263	O	|	|	|	6.98
27.333	0.00	0.09	2.262	O	|	|	|	6.98
27.417	0.00	0.08	2.261	O	|	|	|	6.98
27.500	0.00	0.08	2.261	O	|	|	|	6.98

27.583	0.00	0.08	2.260	O					6.98
27.667	0.00	0.07	2.260	O					6.98
27.750	0.00	0.07	2.259	O					6.98
27.833	0.00	0.07	2.259	O					6.97
27.917	0.00	0.07	2.258	O					6.97
28.000	0.00	0.06	2.258	O					6.97
28.083	0.00	0.06	2.258	O					6.97
28.167	0.00	0.06	2.257	O					6.97
28.250	0.00	0.06	2.257	O					6.97
28.333	0.00	0.05	2.256	O					6.97
28.417	0.00	0.05	2.256	O					6.97
28.500	0.00	0.05	2.256	O					6.97
28.583	0.00	0.05	2.255	O					6.97
28.667	0.00	0.05	2.255	O					6.97
28.750	0.00	0.04	2.255	O					6.97
28.833	0.00	0.04	2.254	O					6.97
28.917	0.00	0.04	2.254	O					6.96
29.000	0.00	0.04	2.254	O					6.96
29.083	0.00	0.04	2.254	O					6.96
29.167	0.00	0.04	2.253	O					6.96
29.250	0.00	0.03	2.253	O					6.96
29.333	0.00	0.03	2.253	O					6.96
29.417	0.00	0.03	2.253	O					6.96
29.500	0.00	0.03	2.252	O					6.96
29.583	0.00	0.03	2.252	O					6.96
29.667	0.00	0.03	2.252	O					6.96
29.750	0.00	0.03	2.252	O					6.96
29.833	0.00	0.03	2.252	O					6.96
29.917	0.00	0.03	2.251	O					6.96
30.000	0.00	0.02	2.251	O					6.96
30.083	0.00	0.02	2.251	O					6.96
30.167	0.00	0.02	2.251	O					6.96
30.250	0.00	0.02	2.251	O					6.96
30.333	0.00	0.02	2.251	O					6.96
30.417	0.00	0.02	2.250	O					6.96
30.500	0.00	0.02	2.250	O					6.96
30.583	0.00	0.02	2.250	O					6.96
30.667	0.00	0.02	2.250	O					6.96
30.750	0.00	0.02	2.250	O					6.96
30.833	0.00	0.02	2.250	O					6.96
30.917	0.00	0.02	2.250	O					6.96
31.000	0.00	0.02	2.250	O					6.96
31.083	0.00	0.01	2.250	O					6.96
31.167	0.00	0.01	2.249	O					6.96
31.250	0.00	0.01	2.249	O					6.95
31.333	0.00	0.01	2.249	O					6.95
31.417	0.00	0.01	2.249	O					6.95
31.500	0.00	0.01	2.249	O					6.95
31.583	0.00	0.01	2.249	O					6.95
31.667	0.00	0.01	2.249	O					6.95
31.750	0.00	0.01	2.249	O					6.95
31.833	0.00	0.01	2.249	O					6.95
31.917	0.00	0.01	2.249	O					6.95
32.000	0.00	0.01	2.249	O					6.95
32.083	0.00	0.01	2.249	O					6.95
32.167	0.00	0.01	2.249	O					6.95
32.250	0.00	0.01	2.248	O					6.95
32.333	0.00	0.01	2.248	O					6.95
32.417	0.00	0.01	2.248	O					6.95
32.500	0.00	0.01	2.248	O					6.95
32.583	0.00	0.01	2.248	O					6.95
32.667	0.00	0.01	2.248	O					6.95
32.750	0.00	0.01	2.248	O					6.95
32.833	0.00	0.01	2.248	O					6.95
32.917	0.00	0.01	2.248	O					6.95
33.000	0.00	0.01	2.248	O					6.95
33.083	0.00	0.01	2.248	O					6.95
33.167	0.00	0.01	2.248	O					6.95
33.250	0.00	0.01	2.248	O					6.95

33.333	0.00	0.00	2.248	O	|	|	|	|	6.95
33.417	0.00	0.00	2.248	O	|	|	|	|	6.95
33.500	0.00	0.00	2.248	O	|	|	|	|	6.95
33.583	0.00	0.00	2.248	O	|	|	|	|	6.95
33.667	0.00	0.00	2.248	O	|	|	|	|	6.95
33.750	0.00	0.00	2.248	O	|	|	|	|	6.95
33.833	0.00	0.00	2.248	O	|	|	|	|	6.95
33.917	0.00	0.00	2.248	O	|	|	|	|	6.95
34.000	0.00	0.00	2.248	O	|	|	|	|	6.95
34.083	0.00	0.00	2.248	O	|	|	|	|	6.95
34.167	0.00	0.00	2.248	O	|	|	|	|	6.95
34.250	0.00	0.00	2.248	O	|	|	|	|	6.95
34.333	0.00	0.00	2.248	O	|	|	|	|	6.95
34.417	0.00	0.00	2.248	O	|	|	|	|	6.95
34.500	0.00	0.00	2.247	O	|	|	|	|	6.95
34.583	0.00	0.00	2.247	O	|	|	|	|	6.95
34.667	0.00	0.00	2.247	O	|	|	|	|	6.95
34.750	0.00	0.00	2.247	O	|	|	|	|	6.95
34.833	0.00	0.00	2.247	O	|	|	|	|	6.95
34.917	0.00	0.00	2.247	O	|	|	|	|	6.95
35.000	0.00	0.00	2.247	O	|	|	|	|	6.95
35.083	0.00	0.00	2.247	O	|	|	|	|	6.95
35.167	0.00	0.00	2.247	O	|	|	|	|	6.95
35.250	0.00	0.00	2.247	O	|	|	|	|	6.95
35.333	0.00	0.00	2.247	O	|	|	|	|	6.95
35.417	0.00	0.00	2.247	O	|	|	|	|	6.95
35.500	0.00	0.00	2.247	O	|	|	|	|	6.95
35.583	0.00	0.00	2.247	O	|	|	|	|	6.95
35.667	0.00	0.00	2.247	O	|	|	|	|	6.95
35.750	0.00	0.00	2.247	O	|	|	|	|	6.95
35.833	0.00	0.00	2.247	O	|	|	|	|	6.95
35.917	0.00	0.00	2.247	O	|	|	|	|	6.95
36.000	0.00	0.00	2.247	O	|	|	|	|	6.95
36.083	0.00	0.00	2.247	O	|	|	|	|	6.95
36.167	0.00	0.00	2.247	O	|	|	|	|	6.95
36.250	0.00	0.00	2.247	O	|	|	|	|	6.95
36.333	0.00	0.00	2.247	O	|	|	|	|	6.95
36.417	0.00	0.00	2.247	O	|	|	|	|	6.95
36.500	0.00	0.00	2.247	O	|	|	|	|	6.95
36.583	0.00	0.00	2.247	O	|	|	|	|	6.95
36.667	0.00	0.00	2.247	O	|	|	|	|	6.95
36.750	0.00	0.00	2.247	O	|	|	|	|	6.95

Remaining water in basin = 2.25 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 441
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 3.052 (CFS)
Total volume = 0.975 (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

****

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018
Study date: 03/03/23

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
BASIN ROUTING
10-YEAR, 24-HOUR STORM
BY: JTS DATE: 03-03-23

Program License Serial Number 6320

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

From study/file name: devhyd2410.rte
****************************HYDROGRAPH DATA****************************
Number of intervals =   293
Time interval =   5.0 (Min.)
Maximum/Peak flow rate =   6.408 (CFS)
Total volume =   3.894 (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   13.000 to Point/Station   15.000
**** RETARDING BASIN ROUTING ****
_____

Program computation of outflow v. depth

CALCULATED OUTFLOW DATA AT DEPTH =   0.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   1.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   2.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   3.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   4.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   5.50(Ft.))
Total outflow at this depth =   0.00(CFS)

```
CALCULATED OUTFLOW DATA AT DEPTH =    6.50(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    6.95(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    7.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
Calculated individual pipe flow  =     1.508(CFS)
Normal flow depth in pipe =    2.57(In.)
Flow top width inside pipe =    8.74(In.)
Critical Depth =    0.55(Ft.)
Calculated flow rate through pipe(s) =      1.508(CFS)

Total outflow at this depth =      1.51(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    8.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      7.130(Ft.)
Pipe friction loss =      2.827(Ft.)
Minor friction loss =      4.307(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.417(CFS)

Total outflow at this depth =      7.42(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    9.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      8.130(Ft.)
Pipe friction loss =      3.223(Ft.)
Minor friction loss =      4.911(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.920(CFS)

Total outflow at this depth =      7.92(CFS)

----------------------------------------------------------------------
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  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
----------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.500      0.092      0.000      0.092        0.092
  1.500      0.363      0.000      0.363        0.363
  2.500      0.698      0.000      0.698        0.698
  3.500      1.060      0.000      1.060        1.060
```

4.500	1.436	0.000	1.436	1.436
5.500	1.812	0.000	1.812	1.812
6.500	2.083	0.000	2.083	2.083
6.950	2.247	0.000	2.247	2.247
7.500	2.509	1.508	2.504	2.514
8.500	2.780	7.417	2.754	2.806
9.500	2.964	7.920	2.937	2.991

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.6	3.20	4.81	6.41	Depth (Ft.)
0.083	0.13	0.00	0.000	O	|	|	|	|	0.00
0.167	0.31	0.00	0.002	OI	|	|	|	|	0.01
0.250	0.35	0.00	0.004	OI	|	|	|	|	0.02
0.333	0.43	0.00	0.007	O I	|	|	|	|	0.04
0.417	0.53	0.00	0.010	O I	|	|	|	|	0.06
0.500	0.55	0.00	0.014	O I	|	|	|	|	0.08
0.583	0.56	0.00	0.018	O I	|	|	|	|	0.10
0.667	0.56	0.00	0.022	O I	|	|	|	|	0.12
0.750	0.57	0.00	0.025	O I	|	|	|	|	0.14
0.833	0.63	0.00	0.030	O I	|	|	|	|	0.16
0.917	0.72	0.00	0.034	O I	|	|	|	|	0.19
1.000	0.74	0.00	0.039	O I	|	|	|	|	0.21
1.083	0.68	0.00	0.044	O I	|	|	|	|	0.24
1.167	0.60	0.00	0.049	O I	|	|	|	|	0.26
1.250	0.58	0.00	0.053	O I	|	|	|	|	0.29
1.333	0.57	0.00	0.057	O I	|	|	|	|	0.31
1.417	0.57	0.00	0.061	O I	|	|	|	|	0.33
1.500	0.57	0.00	0.064	O I	|	|	|	|	0.35
1.583	0.57	0.00	0.068	O I	|	|	|	|	0.37
1.667	0.57	0.00	0.072	O I	|	|	|	|	0.39
1.750	0.57	0.00	0.076	O I	|	|	|	|	0.41
1.833	0.63	0.00	0.080	O I	|	|	|	|	0.44
1.917	0.72	0.00	0.085	O I	|	|	|	|	0.46
2.000	0.74	0.00	0.090	O I	|	|	|	|	0.49
2.083	0.75	0.00	0.095	O I	|	|	|	|	0.51
2.167	0.75	0.00	0.100	O I	|	|	|	|	0.53
2.250	0.75	0.00	0.105	O I	|	|	|	|	0.55
2.333	0.75	0.00	0.111	O I	|	|	|	|	0.57
2.417	0.75	0.00	0.116	O I	|	|	|	|	0.59
2.500	0.75	0.00	0.121	O I	|	|	|	|	0.61
2.583	0.82	0.00	0.126	O I	|	|	|	|	0.63
2.667	0.91	0.00	0.132	O I	|	|	|	|	0.65
2.750	0.93	0.00	0.139	O I	|	|	|	|	0.67
2.833	0.94	0.00	0.145	O I	|	|	|	|	0.70
2.917	0.94	0.00	0.152	O I	|	|	|	|	0.72
3.000	0.94	0.00	0.158	O I	|	|	|	|	0.74
3.083	0.94	0.00	0.164	O I	|	|	|	|	0.77
3.167	0.94	0.00	0.171	O I	|	|	|	|	0.79
3.250	0.94	0.00	0.177	O I	|	|	|	|	0.82
3.333	0.94	0.00	0.184	O I	|	|	|	|	0.84
3.417	0.94	0.00	0.190	O I	|	|	|	|	0.86
3.500	0.94	0.00	0.197	O I	|	|	|	|	0.89
3.583	0.94	0.00	0.203	O I	|	|	|	|	0.91
3.667	0.94	0.00	0.210	O I	|	|	|	|	0.94
3.750	0.94	0.00	0.216	O I	|	|	|	|	0.96
3.833	1.01	0.00	0.223	O I	|	|	|	|	0.98
3.917	1.10	0.00	0.230	O I	|	|	|	|	1.01
4.000	1.12	0.00	0.238	O I	|	|	|	|	1.04
4.083	1.12	0.00	0.246	O I	|	|	|	|	1.07
4.167	1.13	0.00	0.253	O I	|	|	|	|	1.10
4.250	1.13	0.00	0.261	O I	|	|	|	|	1.12
4.333	1.20	0.00	0.269	O I	|	|	|	|	1.15
4.417	1.28	0.00	0.278	O I	|	|	|	|	1.19
4.500	1.30	0.00	0.287	O I	|	|	|	|	1.22

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 4.583    1.31    0.00      0.296  O     I |       |       |       |     1.25
 4.667    1.32    0.00      0.305  O     I |       |       |       |     1.29
 4.750    1.32    0.00      0.314  O     I |       |       |       |     1.32
 4.833    1.39    0.00      0.323  O     I |       |       |       |     1.35
 4.917    1.47    0.00      0.333  O      I|       |       |       |     1.39
 5.000    1.49    0.00      0.343  O      I|       |       |       |     1.43
 5.083    1.37    0.00      0.353  O     I |       |       |       |     1.46
 5.167    1.20    0.00      0.362  O    I  |       |       |       |     1.50
 5.250    1.16    0.00      0.370  O    I  |       |       |       |     1.52
 5.333    1.21    0.00      0.378  O     I |       |       |       |     1.55
 5.417    1.29    0.00      0.387  O     I |       |       |       |     1.57
 5.500    1.30    0.00      0.396  O     I |       |       |       |     1.60
 5.583    1.38    0.00      0.405  O     I |       |       |       |     1.63
 5.667    1.47    0.00      0.415  O      I|       |       |       |     1.65
 5.750    1.49    0.00      0.425  O      I|       |       |       |     1.69
 5.833    1.50    0.00      0.435  O      I|       |       |       |     1.72
 5.917    1.51    0.00      0.446  O      I|       |       |       |     1.75
 6.000    1.51    0.00      0.456  O      I|       |       |       |     1.78
 6.083    1.57    0.00      0.467  O      I|       |       |       |     1.81
 6.167    1.66    0.00      0.478  O       I       |       |       |     1.84
 6.250    1.68    0.00      0.489  O       I       |       |       |     1.88
 6.333    1.69    0.00      0.501  O       I       |       |       |     1.91
 6.417    1.69    0.00      0.513  O       I       |       |       |     1.95
 6.500    1.70    0.00      0.524  O       I       |       |       |     1.98
 6.583    1.76    0.00      0.536  O       I       |       |       |     2.02
 6.667    1.85    0.00      0.549  O       |I      |       |       |     2.05
 6.750    1.87    0.00      0.561  O       |I      |       |       |     2.09
 6.833    1.88    0.00      0.574  O       |I      |       |       |     2.13
 6.917    1.88    0.00      0.587  O       |I      |       |       |     2.17
 7.000    1.88    0.00      0.600  O       |I      |       |       |     2.21
 7.083    1.88    0.00      0.613  O       |I      |       |       |     2.25
 7.167    1.88    0.00      0.626  O       |I      |       |       |     2.29
 7.250    1.88    0.00      0.639  O       |I      |       |       |     2.32
 7.333    1.95    0.00      0.652  O       |I      |       |       |     2.36
 7.417    2.04    0.00      0.666  O       | I     |       |       |     2.40
 7.500    2.06    0.00      0.680  O       | I     |       |       |     2.45
 7.583    2.13    0.00      0.695  O       | I     |       |       |     2.49
 7.667    2.22    0.00      0.710  O       |  I    |       |       |     2.53
 7.750    2.25    0.00      0.725  O       |  I    |       |       |     2.57
 7.833    2.32    0.00      0.741  O       |  I    |       |       |     2.62
 7.917    2.41    0.00      0.757  O       |   I   |       |       |     2.66
 8.000    2.44    0.00      0.774  O       |   I   |       |       |     2.71
 8.083    2.58    0.00      0.791  O       |   I   |       |       |     2.76
 8.167    2.76    0.00      0.809  O       |    I  |       |       |     2.81
 8.250    2.80    0.00      0.829  O       |    I  |       |       |     2.86
 8.333    2.81    0.00      0.848  O       |     I |       |       |     2.91
 8.417    2.82    0.00      0.867  O       |     I |       |       |     2.97
 8.500    2.83    0.00      0.887  O       |     I |       |       |     3.02
 8.583    2.89    0.00      0.906  O       |     I |       |       |     3.08
 8.667    2.98    0.00      0.927  O       |     I |       |       |     3.13
 8.750    3.00    0.00      0.947  O       |     I |       |       |     3.19
 8.833    3.08    0.00      0.968  O       |      I|       |       |     3.25
 8.917    3.17    0.00      0.990  O       |      I|       |       |     3.31
 9.000    3.19    0.00      1.012  O       |      I|       |       |     3.37
 9.083    3.33    0.00      1.034  O       |       I       |       |     3.43
 9.167    3.51    0.00      1.058  O       |       |I      |       |     3.49
 9.250    3.55    0.00      1.082  O       |       |I      |       |     3.56
 9.333    3.63    0.00      1.107  O       |       | I     |       |     3.62
 9.417    3.73    0.00      1.132  O       |       | I     |       |     3.69
 9.500    3.75    0.00      1.158  O       |       | I     |       |     3.76
 9.583    3.83    0.00      1.184  O       |       |  I    |       |     3.83
 9.667    3.92    0.00      1.211  O       |       |  I    |       |     3.90
 9.750    3.94    0.00      1.238  O       |       |  I    |       |     3.97
 9.833    4.02    0.00      1.265  O       |       |   I   |       |     4.05
 9.917    4.11    0.00      1.293  O       |       |   I   |       |     4.12
10.000    4.13    0.00      1.321  O       |       |   I   |       |     4.20
10.083    3.68    0.00      1.348  O       |       | I     |       |     4.27
10.167    3.07    0.00      1.372  O       |      I|       |       |     4.33
10.250    2.93    0.00      1.392  O       |     I |       |       |     4.38
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10.333	2.87	0.00	1.412	O	|	I |	|	|	4.44
10.417	2.84	0.00	1.432	O	|	I |	|	|	4.49
10.500	2.83	0.00	1.451	O	|	I |	|	|	4.54
10.583	3.16	0.00	1.472	O	|	I|	|	|	4.60
10.667	3.59	0.00	1.495	O	|	|I	|	|	4.66
10.750	3.70	0.00	1.520	O	|	| I	|	|	4.72
10.833	3.74	0.00	1.546	O	|	| I	|	|	4.79
10.917	3.76	0.00	1.572	O	|	| I	|	|	4.86
11.000	3.77	0.00	1.598	O	|	| I	|	|	4.93
11.083	3.70	0.00	1.623	O	|	| I	|	|	5.00
11.167	3.62	0.00	1.649	O	|	| I	|	|	5.07
11.250	3.60	0.00	1.673	O	|	|I	|	|	5.13
11.333	3.59	0.00	1.698	O	|	|I	|	|	5.20
11.417	3.58	0.00	1.723	O	|	|I	|	|	5.26
11.500	3.58	0.00	1.747	O	|	|I	|	|	5.33
11.583	3.45	0.00	1.772	O	|	|I	|	|	5.39
11.667	3.27	0.00	1.795	O	|	I	|	|	5.45
11.750	3.23	0.00	1.817	O	|	I	|	|	5.52
11.833	3.28	0.00	1.840	O	|	I	|	|	5.60
11.917	3.36	0.00	1.863	O	|	I	|	|	5.69
12.000	3.38	0.00	1.886	O	|	I	|	|	5.77
12.083	3.85	0.00	1.911	O	|	| I	|	|	5.86
12.167	4.46	0.00	1.939	O	|	| I |	|	5.97
12.250	4.61	0.00	1.970	O	|	| I|	|	6.08
12.333	4.74	0.00	2.003	O	|	| I|	|	6.20
12.417	4.85	0.00	2.036	O	|	| I	|	6.33
12.500	4.89	0.00	2.069	O	|	| I	|	6.45
12.583	5.03	0.00	2.103	O	|	| |I	|	6.56
12.667	5.21	0.00	2.139	O	|	| |I	|	6.65
12.750	5.25	0.00	2.175	O	|	| I |	|	6.75
12.833	5.33	0.00	2.211	O	|	| I |	|	6.85
12.917	5.43	0.01	2.248	O	|	| | I	|	6.95
13.000	5.45	0.22	2.285	|O	|	| | I	|	7.03
13.083	5.79	0.43	2.321	| O	|	| | I	|	7.11
13.167	6.23	0.64	2.359	| O	|	| | | I|	7.18
13.250	6.33	0.86	2.397	| O	|	| | | I|	7.26
13.333	6.38	1.08	2.434	| O	|	| | | I|	7.34
13.417	6.40	1.28	2.470	| O	|	| | | I|	7.42
13.500	6.41	1.48	2.504	| O|	|	| | I	7.49
13.583	5.68	2.05	2.534	| | O	|	| I	|	7.59
13.667	4.72	2.49	2.554	| | O	|	I|	|	7.67
13.750	4.50	2.79	2.568	| | O	|	I |	|	7.72
13.833	4.40	3.02	2.578	| | O|	I |	|	7.76
13.917	4.35	3.21	2.587	| | O	I |	|	7.79
14.000	4.33	3.37	2.594	| | O	I |	|	7.81
14.083	4.60	3.52	2.601	| | |O	I |	|	7.84
14.167	4.95	3.70	2.609	| | | O	I |	|	7.87
14.250	5.03	3.88	2.618	| | | O	|I |	|	7.90
14.333	5.00	4.04	2.625	| | | O	I |	|	7.93
14.417	4.93	4.17	2.631	| | | O	I |	|	7.95
14.500	4.91	4.27	2.636	| | | O	I |	|	7.97
14.583	4.91	4.36	2.640	| | | O	I |	|	7.98
14.667	4.90	4.44	2.643	| | | O	I |	|	8.00
14.750	4.90	4.50	2.646	| | | O	I |	|	8.01
14.833	4.83	4.55	2.649	| | | O	I |	|	8.02
14.917	4.75	4.59	2.650	| | | O	I|	|	8.02
15.000	4.73	4.61	2.651	| | | O	|	|	8.02
15.083	4.65	4.62	2.652	| | | O	|	|	8.03
15.167	4.56	4.62	2.652	| | | I	O|	|	8.03
15.250	4.54	4.61	2.651	| | | I	O|	|	8.02
15.333	4.46	4.59	2.650	| | | O	|	|	8.02
15.417	4.37	4.57	2.649	| | | I	O |	|	8.02
15.500	4.35	4.54	2.648	| | | I	O |	|	8.01
15.583	4.08	4.49	2.646	| | | | I O |	|	8.01
15.667	3.72	4.41	2.642	| | | I	O |	|	7.99
15.750	3.64	4.31	2.637	| | | I	O |	|	7.97
15.833	3.60	4.21	2.633	| | | I	O |	|	7.96
15.917	3.59	4.13	2.629	| | |I	O |	|	7.94
16.000	3.58	4.05	2.626	| | |I	O |	|	7.93

16.083	2.59	3.92	2.619		I	O		7.91
16.167	1.28	3.64	2.607	I		O		7.86
16.250	0.98	3.29	2.591	I	O			7.80
16.333	0.84	2.96	2.575	I	O			7.75
16.417	0.78	2.66	2.562	I	O			7.69
16.500	0.75	2.39	2.550	I	O			7.65
16.583	0.69	2.16	2.539	I	O			7.61
16.667	0.60	1.95	2.529	I	O			7.57
16.750	0.58	1.76	2.520	I	O			7.54
16.833	0.57	1.59	2.513	I	O			7.51
16.917	0.57	1.49	2.506	I	O			7.49
17.000	0.57	1.46	2.500	I	O			7.48
17.083	0.70	1.42	2.494	I	O			7.47
17.167	0.87	1.40	2.490	I	O			7.46
17.250	0.91	1.38	2.487	I	O			7.45
17.333	0.93	1.36	2.484	I	O			7.45
17.417	0.94	1.35	2.481	I	O			7.44
17.500	0.94	1.33	2.478	I	O			7.43
17.583	0.94	1.31	2.475	I	O			7.43
17.667	0.94	1.30	2.473	I	O			7.42
17.750	0.94	1.29	2.470	I	O			7.42
17.833	0.88	1.27	2.468	I	O			7.41
17.917	0.79	1.25	2.465	I	O			7.41
18.000	0.77	1.24	2.462	I	O			7.40
18.083	0.76	1.22	2.458	I	O			7.39
18.167	0.76	1.20	2.455	I	O			7.39
18.250	0.75	1.18	2.452	I	O			7.38
18.333	0.75	1.17	2.449	I	O			7.38
18.417	0.75	1.15	2.447	I	O			7.37
18.500	0.75	1.13	2.444	I	O			7.36
18.583	0.69	1.12	2.441	I	O			7.36
18.667	0.60	1.10	2.438	I	O			7.35
18.750	0.58	1.08	2.435	I	O			7.34
18.833	0.51	1.06	2.431	I	O			7.34
18.917	0.41	1.04	2.427	I	O			7.33
19.000	0.39	1.01	2.423	I	O			7.32
19.083	0.45	0.99	2.419	I	O			7.31
19.167	0.53	0.97	2.415	I	O			7.30
19.250	0.55	0.95	2.412	I	O			7.30
19.333	0.63	0.94	2.410	I	O			7.29
19.417	0.72	0.93	2.408	I	O			7.29
19.500	0.74	0.92	2.407	I	O			7.29
19.583	0.68	0.91	2.405	I	O			7.28
19.667	0.60	0.90	2.404	I	O			7.28
19.750	0.58	0.89	2.401	I	O			7.27
19.833	0.51	0.88	2.399	I	O			7.27
19.917	0.41	0.86	2.396	I	O			7.26
20.000	0.39	0.84	2.393	I	O			7.26
20.083	0.45	0.83	2.390	I	O			7.25
20.167	0.53	0.81	2.388	I	O			7.25
20.250	0.55	0.80	2.386	I	O			7.24
20.333	0.56	0.79	2.385	I	O			7.24
20.417	0.56	0.78	2.383	I	O			7.24
20.500	0.57	0.77	2.382	I	O			7.23
20.583	0.57	0.77	2.380	I	O			7.23
20.667	0.57	0.76	2.379	I	O			7.23
20.750	0.57	0.75	2.377	I	O			7.22
20.833	0.50	0.74	2.376	I	O			7.22
20.917	0.41	0.73	2.374	I	O			7.22
21.000	0.39	0.72	2.372	I	O			7.21
21.083	0.45	0.71	2.370	I	O			7.21
21.167	0.53	0.70	2.368	I	O			7.20
21.250	0.55	0.69	2.367	I	O			7.20
21.333	0.49	0.69	2.366	I	O			7.20
21.417	0.41	0.68	2.365	I	O			7.20
21.500	0.39	0.67	2.363	I	O			7.19
21.583	0.45	0.66	2.361	I	O			7.19
21.667	0.53	0.65	2.360	I	O			7.19
21.750	0.55	0.65	2.359	I	O			7.19

21.833	0.49	0.64	2.358	| IO	|	|	|	| 7.18
21.917	0.41	0.63	2.357	| IO	|	|	|	| 7.18
22.000	0.39	0.62	2.355	|I O	|	|	|	| 7.18
22.083	0.45	0.62	2.354	| IO	|	|	|	| 7.17
22.167	0.53	0.61	2.353	| IO	|	|	|	| 7.17
22.250	0.55	0.61	2.353	| IO	|	|	|	| 7.17
22.333	0.49	0.61	2.352	| IO	|	|	|	| 7.17
22.417	0.41	0.60	2.351	| O	|	|	|	| 7.17
22.500	0.39	0.59	2.350	|IO	|	|	|	| 7.17
22.583	0.38	0.58	2.348	|IO	|	|	|	| 7.16
22.667	0.38	0.58	2.347	|IO	|	|	|	| 7.16
22.750	0.38	0.57	2.346	|IO	|	|	|	| 7.16
22.833	0.38	0.56	2.344	|IO	|	|	|	| 7.15
22.917	0.38	0.55	2.343	|IO	|	|	|	| 7.15
23.000	0.38	0.55	2.342	|IO	|	|	|	| 7.15
23.083	0.38	0.54	2.341	|IO	|	|	|	| 7.15
23.167	0.38	0.53	2.340	|IO	|	|	|	| 7.14
23.250	0.38	0.53	2.339	|IO	|	|	|	| 7.14
23.333	0.38	0.52	2.338	|IO	|	|	|	| 7.14
23.417	0.38	0.52	2.337	|IO	|	|	|	| 7.14
23.500	0.38	0.51	2.336	|IO	|	|	|	| 7.14
23.583	0.38	0.51	2.335	|IO	|	|	|	| 7.13
23.667	0.38	0.50	2.334	|IO	|	|	|	| 7.13
23.750	0.38	0.50	2.333	|IO	|	|	|	| 7.13
23.833	0.38	0.49	2.332	|IO	|	|	|	| 7.13
23.917	0.38	0.49	2.332	|IO	|	|	|	| 7.13
24.000	0.38	0.48	2.331	|IO	|	|	|	| 7.13
24.083	0.25	0.48	2.330	|IO	|	|	|	| 7.12
24.167	0.07	0.46	2.328	I O	|	|	|	| 7.12
24.250	0.03	0.45	2.325	I O	|	|	|	| 7.11
24.333	0.01	0.43	2.322	I O	|	|	|	| 7.11
24.417	0.00	0.41	2.319	I O	|	|	|	| 7.10
24.500	0.00	0.40	2.316	IO	|	|	|	| 7.10
24.583	0.00	0.38	2.313	IO	|	|	|	| 7.09
24.667	0.00	0.37	2.311	IO	|	|	|	| 7.08
24.750	0.00	0.35	2.308	IO	|	|	|	| 7.08
24.833	0.00	0.34	2.306	IO	|	|	|	| 7.07
24.917	0.00	0.33	2.304	IO	|	|	|	| 7.07
25.000	0.00	0.31	2.302	IO	|	|	|	| 7.06
25.083	0.00	0.30	2.299	IO	|	|	|	| 7.06
25.167	0.00	0.29	2.297	IO	|	|	|	| 7.06
25.250	0.00	0.28	2.295	IO	|	|	|	| 7.05
25.333	0.00	0.27	2.294	IO	|	|	|	| 7.05
25.417	0.00	0.26	2.292	IO	|	|	|	| 7.04
25.500	0.00	0.25	2.290	IO	|	|	|	| 7.04
25.583	0.00	0.24	2.288	IO	|	|	|	| 7.04
25.667	0.00	0.23	2.287	IO	|	|	|	| 7.03
25.750	0.00	0.22	2.285	IO	|	|	|	| 7.03
25.833	0.00	0.21	2.284	IO	|	|	|	| 7.03
25.917	0.00	0.20	2.282	IO	|	|	|	| 7.02
26.000	0.00	0.20	2.281	O	|	|	|	| 7.02
26.083	0.00	0.19	2.280	O	|	|	|	| 7.02
26.167	0.00	0.18	2.278	O	|	|	|	| 7.02
26.250	0.00	0.17	2.277	O	|	|	|	| 7.01
26.333	0.00	0.17	2.276	O	|	|	|	| 7.01
26.417	0.00	0.16	2.275	O	|	|	|	| 7.01
26.500	0.00	0.15	2.274	O	|	|	|	| 7.01
26.583	0.00	0.15	2.273	O	|	|	|	| 7.00
26.667	0.00	0.14	2.272	O	|	|	|	| 7.00
26.750	0.00	0.14	2.271	O	|	|	|	| 7.00
26.833	0.00	0.13	2.270	O	|	|	|	| 7.00
26.917	0.00	0.13	2.269	O	|	|	|	| 7.00
27.000	0.00	0.12	2.268	O	|	|	|	| 6.99
27.083	0.00	0.12	2.267	O	|	|	|	| 6.99
27.167	0.00	0.11	2.266	O	|	|	|	| 6.99
27.250	0.00	0.11	2.266	O	|	|	|	| 6.99
27.333	0.00	0.10	2.265	O	|	|	|	| 6.99
27.417	0.00	0.10	2.264	O	|	|	|	| 6.99
27.500	0.00	0.10	2.264	O	|	|	|	| 6.98

27.583	0.00	0.09	2.263	O					6.98
27.667	0.00	0.09	2.262	O					6.98
27.750	0.00	0.08	2.262	O					6.98
27.833	0.00	0.08	2.261	O					6.98
27.917	0.00	0.08	2.261	O					6.98
28.000	0.00	0.08	2.260	O					6.98
28.083	0.00	0.07	2.260	O					6.98
28.167	0.00	0.07	2.259	O					6.98
28.250	0.00	0.07	2.259	O					6.97
28.333	0.00	0.06	2.258	O					6.97
28.417	0.00	0.06	2.258	O					6.97
28.500	0.00	0.06	2.257	O					6.97
28.583	0.00	0.06	2.257	O					6.97
28.667	0.00	0.05	2.257	O					6.97
28.750	0.00	0.05	2.256	O					6.97
28.833	0.00	0.05	2.256	O					6.97
28.917	0.00	0.05	2.255	O					6.97
29.000	0.00	0.05	2.255	O					6.97
29.083	0.00	0.04	2.255	O					6.97
29.167	0.00	0.04	2.255	O					6.97
29.250	0.00	0.04	2.254	O					6.97
29.333	0.00	0.04	2.254	O					6.96
29.417	0.00	0.04	2.254	O					6.96
29.500	0.00	0.04	2.253	O					6.96
29.583	0.00	0.04	2.253	O					6.96
29.667	0.00	0.03	2.253	O					6.96
29.750	0.00	0.03	2.253	O					6.96
29.833	0.00	0.03	2.252	O					6.96
29.917	0.00	0.03	2.252	O					6.96
30.000	0.00	0.03	2.252	O					6.96
30.083	0.00	0.03	2.252	O					6.96
30.167	0.00	0.03	2.252	O					6.96
30.250	0.00	0.03	2.251	O					6.96
30.333	0.00	0.02	2.251	O					6.96
30.417	0.00	0.02	2.251	O					6.96
30.500	0.00	0.02	2.251	O					6.96
30.583	0.00	0.02	2.251	O					6.96
30.667	0.00	0.02	2.251	O					6.96
30.750	0.00	0.02	2.251	O					6.96
30.833	0.00	0.02	2.250	O					6.96
30.917	0.00	0.02	2.250	O					6.96
31.000	0.00	0.02	2.250	O					6.96
31.083	0.00	0.02	2.250	O					6.96
31.167	0.00	0.02	2.250	O					6.96
31.250	0.00	0.02	2.250	O					6.96
31.333	0.00	0.02	2.250	O					6.96
31.417	0.00	0.01	2.250	O					6.96
31.500	0.00	0.01	2.249	O					6.96
31.583	0.00	0.01	2.249	O					6.95
31.667	0.00	0.01	2.249	O					6.95
31.750	0.00	0.01	2.249	O					6.95
31.833	0.00	0.01	2.249	O					6.95
31.917	0.00	0.01	2.249	O					6.95
32.000	0.00	0.01	2.249	O					6.95
32.083	0.00	0.01	2.249	O					6.95
32.167	0.00	0.01	2.249	O					6.95
32.250	0.00	0.01	2.249	O					6.95
32.333	0.00	0.01	2.249	O					6.95
32.417	0.00	0.01	2.249	O					6.95
32.500	0.00	0.01	2.249	O					6.95
32.583	0.00	0.01	2.248	O					6.95
32.667	0.00	0.01	2.248	O					6.95
32.750	0.00	0.01	2.248	O					6.95
32.833	0.00	0.01	2.248	O					6.95
32.917	0.00	0.01	2.248	O					6.95
33.000	0.00	0.01	2.248	O					6.95
33.083	0.00	0.01	2.248	O					6.95
33.167	0.00	0.01	2.248	O					6.95
33.250	0.00	0.01	2.248	O					6.95

33.333	0.00	0.01	2.248	O	|	|	|	6.95
33.417	0.00	0.01	2.248	O	|	|	|	6.95
33.500	0.00	0.01	2.248	O	|	|	|	6.95
33.583	0.00	0.01	2.248	O	|	|	|	6.95
33.667	0.00	0.01	2.248	O	|	|	|	6.95
33.750	0.00	0.00	2.248	O	|	|	|	6.95
33.833	0.00	0.00	2.248	O	|	|	|	6.95
33.917	0.00	0.00	2.248	O	|	|	|	6.95
34.000	0.00	0.00	2.248	O	|	|	|	6.95
34.083	0.00	0.00	2.248	O	|	|	|	6.95
34.167	0.00	0.00	2.248	O	|	|	|	6.95
34.250	0.00	0.00	2.248	O	|	|	|	6.95
34.333	0.00	0.00	2.248	O	|	|	|	6.95
34.417	0.00	0.00	2.248	O	|	|	|	6.95
34.500	0.00	0.00	2.248	O	|	|	|	6.95
34.583	0.00	0.00	2.248	O	|	|	|	6.95
34.667	0.00	0.00	2.248	O	|	|	|	6.95
34.750	0.00	0.00	2.248	O	|	|	|	6.95
34.833	0.00	0.00	2.248	O	|	|	|	6.95
34.917	0.00	0.00	2.247	O	|	|	|	6.95
35.000	0.00	0.00	2.247	O	|	|	|	6.95
35.083	0.00	0.00	2.247	O	|	|	|	6.95
35.167	0.00	0.00	2.247	O	|	|	|	6.95
35.250	0.00	0.00	2.247	O	|	|	|	6.95
35.333	0.00	0.00	2.247	O	|	|	|	6.95
35.417	0.00	0.00	2.247	O	|	|	|	6.95
35.500	0.00	0.00	2.247	O	|	|	|	6.95
35.583	0.00	0.00	2.247	O	|	|	|	6.95
35.667	0.00	0.00	2.247	O	|	|	|	6.95
35.750	0.00	0.00	2.247	O	|	|	|	6.95
35.833	0.00	0.00	2.247	O	|	|	|	6.95
35.917	0.00	0.00	2.247	O	|	|	|	6.95
36.000	0.00	0.00	2.247	O	|	|	|	6.95
36.083	0.00	0.00	2.247	O	|	|	|	6.95
36.167	0.00	0.00	2.247	O	|	|	|	6.95
36.250	0.00	0.00	2.247	O	|	|	|	6.95
36.333	0.00	0.00	2.247	O	|	|	|	6.95
36.417	0.00	0.00	2.247	O	|	|	|	6.95
36.500	0.00	0.00	2.247	O	|	|	|	6.95
36.583	0.00	0.00	2.247	O	|	|	|	6.95
36.667	0.00	0.00	2.247	O	|	|	|	6.95
36.750	0.00	0.00	2.247	O	|	|	|	6.95
36.833	0.00	0.00	2.247	O	|	|	|	6.95
36.917	0.00	0.00	2.247	O	|	|	|	6.95
37.000	0.00	0.00	2.247	O	|	|	|	6.95
37.083	0.00	0.00	2.247	O	|	|	|	6.95

Remaining water in basin = 2.25 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 445
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 4.618 (CFS)
Total volume = 1.647 (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

****

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018
Study date: 03/03/23

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
BASIN ROUTING
100-YEAR, 6-HOUR STORM
BY: JTS DATE: 03-03-23

Program License Serial Number 6320

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

From study/file name: devhyd6100.rte
****************************HYDROGRAPH DATA****************************
Number of intervals = 77
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 19.830 (CFS)
Total volume = 2.778 (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 13.000 to Point/Station 15.000
**** RETARDING BASIN ROUTING ****
_____

Program computation of outflow v. depth

CALCULATED OUTFLOW DATA AT DEPTH = 0.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 1.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 2.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 3.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 4.50(Ft.))
Total outflow at this depth = 0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH = 5.50(Ft.))
Total outflow at this depth = 0.00(CFS)

```
CALCULATED OUTFLOW DATA AT DEPTH =    6.50(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    6.95(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    7.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
Calculated individual pipe flow  =     1.508(CFS)
Normal flow depth in pipe =    2.57(In.)
Flow top width inside pipe =    8.74(In.)
Critical Depth =    0.55(Ft.)
Calculated flow rate through pipe(s) =      1.508(CFS)

Total outflow at this depth =      1.51(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    8.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      7.130(Ft.)
Pipe friction loss =      2.827(Ft.)
Minor friction loss =      4.307(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.417(CFS)

Total outflow at this depth =      7.42(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    9.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      8.130(Ft.)
Pipe friction loss =      3.223(Ft.)
Minor friction loss =      4.911(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.920(CFS)

Total outflow at this depth =      7.92(CFS)

----------------------------------------------------------------------
Total number of inflow hydrograph intervals = 77
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  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
----------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.500      0.092      0.000      0.092        0.092
  1.500      0.363      0.000      0.363        0.363
  2.500      0.698      0.000      0.698        0.698
  3.500      1.060      0.000      1.060        1.060
```

4.500	1.436	0.000	1.436	1.436
5.500	1.812	0.000	1.812	1.812
6.500	2.083	0.000	2.083	2.083
6.950	2.247	0.000	2.247	2.247
7.500	2.509	1.508	2.504	2.514
8.500	2.780	7.417	2.754	2.806
9.500	2.964	7.920	2.937	2.991

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 5.0 9.92 14.87 19.83	Depth (Ft.)
0.083	0.70	0.00	0.002	OI	0.01
0.167	1.78	0.00	0.011	O I	0.06
0.250	2.19	0.00	0.025	O I	0.13
0.333	2.32	0.00	0.040	O I	0.22
0.417	2.39	0.00	0.056	O I	0.31
0.500	2.56	0.00	0.073	O I	0.40
0.583	2.75	0.00	0.092	O I	0.50
0.667	2.79	0.00	0.111	O I	0.57
0.750	2.81	0.00	0.130	O I	0.64
0.833	2.82	0.00	0.149	O I	0.71
0.917	2.82	0.00	0.169	O I	0.78
1.000	2.96	0.00	0.189	O I	0.86
1.083	3.15	0.00	0.210	O I	0.93
1.167	3.19	0.00	0.232	O I	1.02
1.250	3.21	0.00	0.254	O I	1.10
1.333	3.22	0.00	0.276	O I	1.18
1.417	3.22	0.00	0.298	O I	1.26
1.500	3.22	0.00	0.320	O I	1.34
1.583	3.22	0.00	0.342	O I	1.42
1.667	3.22	0.00	0.365	O I	1.50
1.750	3.22	0.00	0.387	O I	1.57
1.833	3.22	0.00	0.409	O I	1.64
1.917	3.22	0.00	0.431	O I	1.70
2.000	3.36	0.00	0.454	O I	1.77
2.083	3.41	0.00	0.477	O I	1.84
2.167	3.41	0.00	0.501	O I	1.91
2.250	3.57	0.00	0.525	O I	1.98
2.333	3.60	0.00	0.549	O I	2.06
2.417	3.62	0.00	0.574	O I	2.13
2.500	3.62	0.00	0.599	O I	2.21
2.583	3.63	0.00	0.624	O I	2.28
2.667	3.63	0.00	0.649	O I	2.35
2.750	3.77	0.00	0.675	O I	2.43
2.833	3.96	0.00	0.701	O I	2.51
2.917	4.00	0.00	0.729	O I	2.58
3.000	4.02	0.00	0.756	O I	2.66
3.083	4.03	0.00	0.784	O I	2.74
3.167	4.17	0.00	0.812	O I	2.82
3.250	4.36	0.00	0.842	O I	2.90
3.333	4.40	0.00	0.872	O I	2.98
3.417	4.56	0.00	0.903	O I	3.07
3.500	4.90	0.00	0.935	O I	3.16
3.583	5.27	0.00	0.970	O I	3.25
3.667	5.52	0.00	1.007	O I	3.35
3.750	5.73	0.00	1.046	O I	3.46
3.833	5.95	0.00	1.086	O I	3.57
3.917	6.15	0.00	1.128	O I	3.68
4.000	6.36	0.00	1.171	O I	3.80
4.083	6.55	0.00	1.216	O I	3.91
4.167	6.90	0.00	1.262	O I	4.04
4.250	7.28	0.00	1.311	O I	4.17
4.333	7.68	0.00	1.362	O I	4.30
4.417	8.08	0.00	1.417	O I	4.45
4.500	8.34	0.00	1.473	O I	4.60

4.583	8.56	0.00	1.531	O	|	I |	|	|	4.75
4.667	8.92	0.00	1.591	O	|	I |	|	|	4.91
4.750	9.30	0.00	1.654	O	|	I|	|	|	5.08
4.833	9.55	0.00	1.719	O	|	I|	|	|	5.25
4.917	9.76	0.00	1.786	O	|	I|	|	|	5.43
5.000	10.12	0.00	1.854	O	|	I |	|	|	5.66
5.083	11.07	0.00	1.927	O	|	|I |	|	|	5.92
5.167	12.78	0.00	2.009	O	|	| I |	|	|	6.23
5.250	14.38	0.00	2.103	O	|	| I|	|	|	6.55
5.333	15.69	0.00	2.206	O	|	| |I |	|	6.84
5.417	17.23	0.41	2.318	O	|	| | I |	|	7.10
5.500	19.83	1.11	2.441	|O	|	| | I	|	7.36
5.583	16.67	2.49	2.554	| O |	|	| I |	|	7.67
5.667	8.71	3.91	2.619	| O |	I |	|	|	|	7.91
5.750	5.01	4.32	2.638	| O I	|	|	|	|	7.98
5.833	3.27	4.30	2.637	| IO |	|	|	|	|	7.97
5.917	2.17	4.08	2.627	| I O |	|	|	|	|	7.93
6.000	1.33	3.75	2.612	| I O |	|	|	|	|	7.88
6.083	0.69	3.37	2.594	|I O |	|	|	|	|	7.81
6.167	0.21	2.96	2.576	I O |	|	|	|	|	7.75
6.250	0.08	2.57	2.558	I O |	|	|	|	|	7.68
6.333	0.03	2.22	2.542	I O |	|	|	|	|	7.62
6.417	0.01	1.91	2.527	I O |	|	|	|	|	7.57
6.500	0.00	1.64	2.515	I O |	|	|	|	|	7.52
6.583	0.00	1.48	2.504	I O |	|	|	|	|	7.49
6.667	0.00	1.42	2.494	I O |	|	|	|	|	7.47
6.750	0.00	1.37	2.485	I O |	|	|	|	|	7.45
6.833	0.00	1.32	2.476	I O |	|	|	|	|	7.43
6.917	0.00	1.26	2.467	I O |	|	|	|	|	7.41
7.000	0.00	1.22	2.458	IO |	|	|	|	|	7.39
7.083	0.00	1.17	2.450	IO |	|	|	|	|	7.38
7.167	0.00	1.12	2.442	IO |	|	|	|	|	7.36
7.250	0.00	1.08	2.434	IO |	|	|	|	|	7.34
7.333	0.00	1.04	2.427	IO |	|	|	|	|	7.33
7.417	0.00	1.00	2.420	IO |	|	|	|	|	7.31
7.500	0.00	0.96	2.413	IO |	|	|	|	|	7.30
7.583	0.00	0.92	2.407	IO |	|	|	|	|	7.29
7.667	0.00	0.89	2.401	IO |	|	|	|	|	7.27
7.750	0.00	0.85	2.395	IO |	|	|	|	|	7.26
7.833	0.00	0.82	2.389	IO |	|	|	|	|	7.25
7.917	0.00	0.79	2.383	IO |	|	|	|	|	7.24
8.000	0.00	0.76	2.378	IO |	|	|	|	|	7.23
8.083	0.00	0.73	2.373	IO |	|	|	|	|	7.21
8.167	0.00	0.70	2.368	IO |	|	|	|	|	7.20
8.250	0.00	0.67	2.363	IO |	|	|	|	|	7.19
8.333	0.00	0.64	2.359	IO |	|	|	|	|	7.19
8.417	0.00	0.62	2.355	O |	|	|	|	|	7.18
8.500	0.00	0.60	2.350	O |	|	|	|	|	7.17
8.583	0.00	0.57	2.346	O |	|	|	|	|	7.16
8.667	0.00	0.55	2.343	O |	|	|	|	|	7.15
8.750	0.00	0.53	2.339	O |	|	|	|	|	7.14
8.833	0.00	0.51	2.335	O |	|	|	|	|	7.14
8.917	0.00	0.49	2.332	O |	|	|	|	|	7.13
9.000	0.00	0.47	2.329	O |	|	|	|	|	7.12
9.083	0.00	0.45	2.325	O |	|	|	|	|	7.11
9.167	0.00	0.43	2.322	O |	|	|	|	|	7.11
9.250	0.00	0.42	2.319	O |	|	|	|	|	7.10
9.333	0.00	0.40	2.317	O |	|	|	|	|	7.10
9.417	0.00	0.38	2.314	O |	|	|	|	|	7.09
9.500	0.00	0.37	2.311	O |	|	|	|	|	7.08
9.583	0.00	0.36	2.309	O |	|	|	|	|	7.08
9.667	0.00	0.34	2.306	O |	|	|	|	|	7.07
9.750	0.00	0.33	2.304	O |	|	|	|	|	7.07
9.833	0.00	0.32	2.302	O |	|	|	|	|	7.07
9.917	0.00	0.30	2.300	O |	|	|	|	|	7.06
10.000	0.00	0.29	2.298	O |	|	|	|	|	7.06
10.083	0.00	0.28	2.296	O |	|	|	|	|	7.05
10.167	0.00	0.27	2.294	O |	|	|	|	|	7.05
10.250	0.00	0.26	2.292	O |	|	|	|	|	7.04

10.333	0.00	0.25	2.290	O	|	|	|	|	7.04
10.417	0.00	0.24	2.289	O	|	|	|	|	7.04
10.500	0.00	0.23	2.287	O	|	|	|	|	7.03
10.583	0.00	0.22	2.285	O	|	|	|	|	7.03
10.667	0.00	0.21	2.284	O	|	|	|	|	7.03
10.750	0.00	0.20	2.282	O	|	|	|	|	7.02
10.833	0.00	0.20	2.281	O	|	|	|	|	7.02
10.917	0.00	0.19	2.280	O	|	|	|	|	7.02
11.000	0.00	0.18	2.278	O	|	|	|	|	7.02
11.083	0.00	0.17	2.277	O	|	|	|	|	7.01
11.167	0.00	0.17	2.276	O	|	|	|	|	7.01
11.250	0.00	0.16	2.275	O	|	|	|	|	7.01
11.333	0.00	0.15	2.274	O	|	|	|	|	7.01
11.417	0.00	0.15	2.273	O	|	|	|	|	7.00
11.500	0.00	0.14	2.272	O	|	|	|	|	7.00
11.583	0.00	0.14	2.271	O	|	|	|	|	7.00
11.667	0.00	0.13	2.270	O	|	|	|	|	7.00
11.750	0.00	0.13	2.269	O	|	|	|	|	7.00
11.833	0.00	0.12	2.268	O	|	|	|	|	6.99
11.917	0.00	0.12	2.267	O	|	|	|	|	6.99
12.000	0.00	0.11	2.267	O	|	|	|	|	6.99
12.083	0.00	0.11	2.266	O	|	|	|	|	6.99
12.167	0.00	0.10	2.265	O	|	|	|	|	6.99
12.250	0.00	0.10	2.264	O	|	|	|	|	6.99
12.333	0.00	0.10	2.264	O	|	|	|	|	6.99
12.417	0.00	0.09	2.263	O	|	|	|	|	6.98
12.500	0.00	0.09	2.262	O	|	|	|	|	6.98
12.583	0.00	0.09	2.262	O	|	|	|	|	6.98
12.667	0.00	0.08	2.261	O	|	|	|	|	6.98
12.750	0.00	0.08	2.261	O	|	|	|	|	6.98
12.833	0.00	0.08	2.260	O	|	|	|	|	6.98
12.917	0.00	0.07	2.260	O	|	|	|	|	6.98
13.000	0.00	0.07	2.259	O	|	|	|	|	6.98
13.083	0.00	0.07	2.259	O	|	|	|	|	6.97
13.167	0.00	0.06	2.258	O	|	|	|	|	6.97
13.250	0.00	0.06	2.258	O	|	|	|	|	6.97
13.333	0.00	0.06	2.257	O	|	|	|	|	6.97
13.417	0.00	0.06	2.257	O	|	|	|	|	6.97
13.500	0.00	0.06	2.257	O	|	|	|	|	6.97
13.583	0.00	0.05	2.256	O	|	|	|	|	6.97
13.667	0.00	0.05	2.256	O	|	|	|	|	6.97
13.750	0.00	0.05	2.256	O	|	|	|	|	6.97
13.833	0.00	0.05	2.255	O	|	|	|	|	6.97
13.917	0.00	0.05	2.255	O	|	|	|	|	6.97
14.000	0.00	0.04	2.255	O	|	|	|	|	6.97
14.083	0.00	0.04	2.254	O	|	|	|	|	6.97
14.167	0.00	0.04	2.254	O	|	|	|	|	6.96
14.250	0.00	0.04	2.254	O	|	|	|	|	6.96
14.333	0.00	0.04	2.253	O	|	|	|	|	6.96
14.417	0.00	0.04	2.253	O	|	|	|	|	6.96
14.500	0.00	0.03	2.253	O	|	|	|	|	6.96
14.583	0.00	0.03	2.253	O	|	|	|	|	6.96
14.667	0.00	0.03	2.252	O	|	|	|	|	6.96
14.750	0.00	0.03	2.252	O	|	|	|	|	6.96
14.833	0.00	0.03	2.252	O	|	|	|	|	6.96
14.917	0.00	0.03	2.252	O	|	|	|	|	6.96
15.000	0.00	0.03	2.252	O	|	|	|	|	6.96
15.083	0.00	0.03	2.252	O	|	|	|	|	6.96
15.167	0.00	0.02	2.251	O	|	|	|	|	6.96
15.250	0.00	0.02	2.251	O	|	|	|	|	6.96
15.333	0.00	0.02	2.251	O	|	|	|	|	6.96
15.417	0.00	0.02	2.251	O	|	|	|	|	6.96
15.500	0.00	0.02	2.251	O	|	|	|	|	6.96
15.583	0.00	0.02	2.251	O	|	|	|	|	6.96
15.667	0.00	0.02	2.250	O	|	|	|	|	6.96
15.750	0.00	0.02	2.250	O	|	|	|	|	6.96
15.833	0.00	0.02	2.250	O	|	|	|	|	6.96
15.917	0.00	0.02	2.250	O	|	|	|	|	6.96
16.000	0.00	0.02	2.250	O	|	|	|	|	6.96

16.083	0.00	0.02	2.250	O					6.96
16.167	0.00	0.02	2.250	O					6.96
16.250	0.00	0.01	2.250	O					6.96
16.333	0.00	0.01	2.249	O					6.96
16.417	0.00	0.01	2.249	O					6.96
16.500	0.00	0.01	2.249	O					6.95
16.583	0.00	0.01	2.249	O					6.95
16.667	0.00	0.01	2.249	O					6.95
16.750	0.00	0.01	2.249	O					6.95
16.833	0.00	0.01	2.249	O					6.95
16.917	0.00	0.01	2.249	O					6.95
17.000	0.00	0.01	2.249	O					6.95
17.083	0.00	0.01	2.249	O					6.95
17.167	0.00	0.01	2.249	O					6.95
17.250	0.00	0.01	2.249	O					6.95
17.333	0.00	0.01	2.249	O					6.95
17.417	0.00	0.01	2.248	O					6.95
17.500	0.00	0.01	2.248	O					6.95
17.583	0.00	0.01	2.248	O					6.95
17.667	0.00	0.01	2.248	O					6.95
17.750	0.00	0.01	2.248	O					6.95
17.833	0.00	0.01	2.248	O					6.95
17.917	0.00	0.01	2.248	O					6.95
18.000	0.00	0.01	2.248	O					6.95
18.083	0.00	0.01	2.248	O					6.95
18.167	0.00	0.01	2.248	O					6.95
18.250	0.00	0.01	2.248	O					6.95
18.333	0.00	0.01	2.248	O					6.95
18.417	0.00	0.01	2.248	O					6.95
18.500	0.00	0.01	2.248	O					6.95
18.583	0.00	0.00	2.248	O					6.95
18.667	0.00	0.00	2.248	O					6.95
18.750	0.00	0.00	2.248	O					6.95
18.833	0.00	0.00	2.248	O					6.95
18.917	0.00	0.00	2.248	O					6.95
19.000	0.00	0.00	2.248	O					6.95
19.083	0.00	0.00	2.248	O					6.95
19.167	0.00	0.00	2.248	O					6.95
19.250	0.00	0.00	2.248	O					6.95
19.333	0.00	0.00	2.248	O					6.95
19.417	0.00	0.00	2.248	O					6.95
19.500	0.00	0.00	2.248	O					6.95
19.583	0.00	0.00	2.248	O					6.95
19.667	0.00	0.00	2.248	O					6.95
19.750	0.00	0.00	2.247	O					6.95
19.833	0.00	0.00	2.247	O					6.95
19.917	0.00	0.00	2.247	O					6.95
20.000	0.00	0.00	2.247	O					6.95
20.083	0.00	0.00	2.247	O					6.95
20.167	0.00	0.00	2.247	O					6.95
20.250	0.00	0.00	2.247	O					6.95
20.333	0.00	0.00	2.247	O					6.95
20.417	0.00	0.00	2.247	O					6.95
20.500	0.00	0.00	2.247	O					6.95
20.583	0.00	0.00	2.247	O					6.95
20.667	0.00	0.00	2.247	O					6.95
20.750	0.00	0.00	2.247	O					6.95
20.833	0.00	0.00	2.247	O					6.95
20.917	0.00	0.00	2.247	O					6.95
21.000	0.00	0.00	2.247	O					6.95
21.083	0.00	0.00	2.247	O					6.95
21.167	0.00	0.00	2.247	O					6.95
21.250	0.00	0.00	2.247	O					6.95
21.333	0.00	0.00	2.247	O					6.95
21.417	0.00	0.00	2.247	O					6.95
21.500	0.00	0.00	2.247	O					6.95
21.583	0.00	0.00	2.247	O					6.95
21.667	0.00	0.00	2.247	O					6.95
21.750	0.00	0.00	2.247	O					6.95

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21.833    0.00    0.00      2.247  O       |       |       |       |     6.95
21.917    0.00    0.00      2.247  O       |       |       |       |     6.95
22.000    0.00    0.00      2.247  O       |       |       |       |     6.95

        Remaining water in basin =    2.25 (Ac.Ft)


        ****************************HYDROGRAPH DATA****************************
                       Number of intervals =   264
                       Time interval =    5.0 (Min.)
                       Maximum/Peak flow rate =        4.324 (CFS)
                       Total volume =       0.531 (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
        ************************************************************************

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FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018
Study date: 03/03/23

225047 BREMCO CONSTRUCTION BROWN STRAUSS STEEL BANNING
BASIN ROUTING
100-YEAR, 24-HOUR STORM
BY: JTS DATE: 03-03-23

Program License Serial Number 6320

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

From study/file name: devhyd24100.rte
****************************HYDROGRAPH DATA****************************
Number of intervals =   293
Time interval =   5.0 (Min.)
Maximum/Peak flow rate =   10.078 (CFS)
Total volume =   6.124 (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   13.000 to Point/Station   15.000
**** RETARDING BASIN ROUTING ****
_____

Program computation of outflow v. depth

CALCULATED OUTFLOW DATA AT DEPTH =   0.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   1.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   2.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   3.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   4.50(Ft.))
Total outflow at this depth =   0.00(CFS)

CALCULATED OUTFLOW DATA AT DEPTH =   5.50(Ft.))
Total outflow at this depth =   0.00(CFS)

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CALCULATED OUTFLOW DATA AT DEPTH =    6.50(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    6.95(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    7.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
Calculated individual pipe flow  =     1.508(CFS)
Normal flow depth in pipe =    2.57(In.)
Flow top width inside pipe =    8.74(In.)
Critical Depth =    0.55(Ft.)
Calculated flow rate through pipe(s) =      1.508(CFS)

Total outflow at this depth =      1.51(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    8.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      7.130(Ft.)
Pipe friction loss =      2.827(Ft.)
Minor friction loss =      4.307(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.417(CFS)

Total outflow at this depth =      7.42(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    9.50(Ft.))
Pipe length  =    24.67(Ft.)   Elevation difference =   5.58(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     10.00(In.)
 NOTE: Assuming free outlet flow.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      8.130(Ft.)
Pipe friction loss =      3.223(Ft.)
Minor friction loss =      4.911(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      7.920(CFS)

Total outflow at this depth =      7.92(CFS)

----------------------------------------------------------------------
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  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
----------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.500      0.092      0.000      0.092        0.092
  1.500      0.363      0.000      0.363        0.363
  2.500      0.698      0.000      0.698        0.698
  3.500      1.060      0.000      1.060        1.060
```

4.500	1.436	0.000	1.436	1.436
5.500	1.812	0.000	1.812	1.812
6.500	2.083	0.000	2.083	2.083
6.950	2.247	0.000	2.247	2.247
7.500	2.509	1.508	2.504	2.514
8.500	2.780	7.417	2.754	2.806
9.500	2.964	7.920	2.937	2.991

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 2.5 5.04 7.56 10.08	Depth (Ft.)
0.083	0.21	0.00	0.001	O	0.00
0.167	0.48	0.00	0.003	OI	0.02
0.250	0.55	0.00	0.007	OI	0.04
0.333	0.68	0.00	0.011	O I	0.06
0.417	0.83	0.00	0.016	O I	0.09
0.500	0.87	0.00	0.022	O I	0.12
0.583	0.88	0.00	0.028	O I	0.15
0.667	0.89	0.00	0.034	O I	0.18
0.750	0.89	0.00	0.040	O I	0.22
0.833	0.99	0.00	0.047	O I	0.25
0.917	1.13	0.00	0.054	O I	0.29
1.000	1.16	0.00	0.062	O I	0.34
1.083	1.07	0.00	0.069	O I	0.38
1.167	0.94	0.00	0.076	O I	0.42
1.250	0.91	0.00	0.083	O I	0.45
1.333	0.90	0.00	0.089	O I	0.48
1.417	0.89	0.00	0.095	O I	0.51
1.500	0.89	0.00	0.101	O I	0.53
1.583	0.89	0.00	0.107	O I	0.56
1.667	0.89	0.00	0.114	O I	0.58
1.750	0.89	0.00	0.120	O I	0.60
1.833	0.99	0.00	0.126	O I	0.63
1.917	1.13	0.00	0.133	O I	0.65
2.000	1.16	0.00	0.141	O I	0.68
2.083	1.18	0.00	0.149	O I	0.71
2.167	1.18	0.00	0.158	O I	0.74
2.250	1.19	0.00	0.166	O I	0.77
2.333	1.19	0.00	0.174	O I	0.80
2.417	1.19	0.00	0.182	O I	0.83
2.500	1.19	0.00	0.190	O I	0.86
2.583	1.29	0.00	0.199	O I	0.89
2.667	1.43	0.00	0.208	O I	0.93
2.750	1.46	0.00	0.218	O I	0.96
2.833	1.47	0.00	0.228	O I	1.00
2.917	1.48	0.00	0.238	O I	1.04
3.000	1.48	0.00	0.248	O I	1.08
3.083	1.48	0.00	0.259	O I	1.12
3.167	1.48	0.00	0.269	O I	1.15
3.250	1.48	0.00	0.279	O I	1.19
3.333	1.48	0.00	0.289	O I	1.23
3.417	1.48	0.00	0.300	O I	1.27
3.500	1.48	0.00	0.310	O I	1.30
3.583	1.48	0.00	0.320	O I	1.34
3.667	1.48	0.00	0.330	O I	1.38
3.750	1.48	0.00	0.340	O I	1.42
3.833	1.59	0.00	0.351	O I	1.46
3.917	1.72	0.00	0.362	O I	1.50
4.000	1.76	0.00	0.374	O I	1.53
4.083	1.77	0.00	0.386	O I	1.57
4.167	1.78	0.00	0.399	O I	1.61
4.250	1.78	0.00	0.411	O I	1.64
4.333	1.88	0.00	0.423	O I	1.68
4.417	2.02	0.00	0.437	O I	1.72
4.500	2.05	0.00	0.451	O I	1.76

4.583	2.07	0.00	0.465	O	I	|	|	|	|	1.80
4.667	2.07	0.00	0.479	O	I	|	|	|	|	1.85
4.750	2.07	0.00	0.494	O	I	|	|	|	|	1.89
4.833	2.18	0.00	0.508	O	I	|	|	|	|	1.93
4.917	2.32	0.00	0.524	O	I	|	|	|	|	1.98
5.000	2.35	0.00	0.540	O	I	|	|	|	|	2.03
5.083	2.15	0.00	0.555	O	I	|	|	|	|	2.07
5.167	1.89	0.00	0.569	O	I	|	|	|	|	2.12
5.250	1.82	0.00	0.582	O	I	|	|	|	|	2.15
5.333	1.90	0.00	0.595	O	I	|	|	|	|	2.19
5.417	2.03	0.00	0.608	O	I	|	|	|	|	2.23
5.500	2.05	0.00	0.622	O	I	|	|	|	|	2.27
5.583	2.17	0.00	0.637	O	I	|	|	|	|	2.32
5.667	2.31	0.00	0.652	O	I	|	|	|	|	2.36
5.750	2.35	0.00	0.668	O	I	|	|	|	|	2.41
5.833	2.36	0.00	0.685	O	I	|	|	|	|	2.46
5.917	2.37	0.00	0.701	O	I	|	|	|	|	2.51
6.000	2.37	0.00	0.717	O	I	|	|	|	|	2.55
6.083	2.47	0.00	0.734	O	I	|	|	|	|	2.60
6.167	2.61	0.00	0.751	O	I	|	|	|	|	2.65
6.250	2.64	0.00	0.770	O	I	|	|	|	|	2.70
6.333	2.66	0.00	0.788	O	I	|	|	|	|	2.75
6.417	2.66	0.00	0.806	O	I	|	|	|	|	2.80
6.500	2.67	0.00	0.824	O	I	|	|	|	|	2.85
6.583	2.77	0.00	0.843	O	I	|	|	|	|	2.90
6.667	2.91	0.00	0.863	O	I	|	|	|	|	2.96
6.750	2.94	0.00	0.883	O	I	|	|	|	|	3.01
6.833	2.95	0.00	0.903	O	I	|	|	|	|	3.07
6.917	2.96	0.00	0.924	O	I	|	|	|	|	3.12
7.000	2.96	0.00	0.944	O	I	|	|	|	|	3.18
7.083	2.96	0.00	0.964	O	I	|	|	|	|	3.24
7.167	2.96	0.00	0.985	O	I	|	|	|	|	3.29
7.250	2.96	0.00	1.005	O	I	|	|	|	|	3.35
7.333	3.07	0.00	1.026	O	I	|	|	|	|	3.41
7.417	3.21	0.00	1.048	O	I	|	|	|	|	3.47
7.500	3.24	0.00	1.070	O	I	|	|	|	|	3.53
7.583	3.35	0.00	1.092	O	I	|	|	|	|	3.59
7.667	3.50	0.00	1.116	O	I	|	|	|	|	3.65
7.750	3.53	0.00	1.140	O	I	|	|	|	|	3.71
7.833	3.65	0.00	1.165	O	I	|	|	|	|	3.78
7.917	3.80	0.00	1.191	O	I	|	|	|	|	3.85
8.000	3.83	0.00	1.217	O	I	|	|	|	|	3.92
8.083	4.05	0.00	1.244	O	I	|	|	|	|	3.99
8.167	4.33	0.00	1.273	O	I	|	|	|	|	4.07
8.250	4.40	0.00	1.303	O	I	|	|	|	|	4.15
8.333	4.43	0.00	1.333	O	I	|	|	|	|	4.23
8.417	4.44	0.00	1.364	O	I	|	|	|	|	4.31
8.500	4.45	0.00	1.395	O	I	|	|	|	|	4.39
8.583	4.55	0.00	1.426	O	I	|	|	|	|	4.47
8.667	4.69	0.00	1.457	O	I	|	|	|	|	4.56
8.750	4.72	0.00	1.490	O	I	|	|	|	|	4.64
8.833	4.84	0.00	1.523	O	I	|	|	|	|	4.73
8.917	4.98	0.00	1.556	O	I	|	|	|	|	4.82
9.000	5.02	0.00	1.591	O	I	|	|	|	|	4.91
9.083	5.24	0.00	1.626	O	I	|	|	|	|	5.01
9.167	5.52	0.00	1.663	O	I	|	|	|	|	5.10
9.250	5.59	0.00	1.701	O	I	|	|	|	|	5.21
9.333	5.72	0.00	1.740	O	I	|	|	|	|	5.31
9.417	5.87	0.00	1.780	O	I	|	|	|	|	5.42
9.500	5.90	0.00	1.821	O	I	|	|	|	|	5.53
9.583	6.02	0.00	1.862	O	I	|	|	|	|	5.68
9.667	6.17	0.00	1.904	O	I	|	|	|	|	5.84
9.750	6.20	0.00	1.946	O	I	|	|	|	|	6.00
9.833	6.32	0.00	1.990	O	I	|	|	|	|	6.16
9.917	6.46	0.00	2.034	O	I	|	|	|	|	6.32
10.000	6.50	0.00	2.078	O	I	|	|	|	|	6.48
10.083	5.79	0.00	2.120	O	I	|	|	|	|	6.60
10.167	4.83	0.00	2.157	O	I	|	|	|	|	6.70
10.250	4.61	0.00	2.190	O	I	|	|	|	|	6.79

10.333	4.51	0.00	2.221	O	|	I |	|	6.88
10.417	4.47	0.03	2.252	O	|	I |	|	6.96
10.500	4.45	0.20	2.282	O	|	I |	|	7.02
10.583	4.96	0.37	2.312	|O	|	I|	|	7.09
10.667	5.65	0.57	2.345	|O	|	|I	|	7.16
10.750	5.81	0.77	2.380	| O	|	| I	|	7.23
10.833	5.88	0.96	2.415	| O	|	| I	|	7.30
10.917	5.91	1.16	2.448	| O	|	| I	|	7.37
11.000	5.93	1.34	2.480	| O	|	| I	|	7.44
11.083	5.82	1.54	2.511	| O	|	| I	|	7.51
11.167	5.69	2.13	2.538	| O |		| I	|	7.61
11.250	5.65	2.63	2.560	| O	|	|I	|	7.69
11.333	5.64	3.05	2.580	| |O	|	|I	|	7.76
11.417	5.63	3.41	2.596	| | O	|	|I	|	7.82
11.500	5.63	3.72	2.610	| | O	|	|I	|	7.87
11.583	5.42	3.97	2.622	| | O	|	|I	|	7.92
11.667	5.15	4.16	2.630	| | O	I	|	|	7.95
11.750	5.09	4.29	2.637	| | O	I	|	|	7.97
11.833	5.16	4.41	2.642	| | O	I	|	|	7.99
11.917	5.29	4.52	2.647	| | O	I	|	|	8.01
12.000	5.31	4.63	2.652	| | O	I	|	|	8.03
12.083	6.05	4.78	2.659	| | O|	I	|	|	8.05
12.167	7.02	5.02	2.670	| | O|	I |	|	8.09
12.250	7.25	5.32	2.684	| | O	I|	|	8.14
12.333	7.45	5.60	2.697	| | |O	I|	|	8.19
12.417	7.63	5.87	2.709	| | | O	I	|	8.24
12.500	7.68	6.12	2.721	| | | O	I	|	8.28
12.583	7.90	6.35	2.731	| | | O	|I	|	8.32
12.667	8.19	6.59	2.742	| | | O	|I	|	8.36
12.750	8.25	6.82	2.753	| | | O	I	|	8.40
12.833	8.38	7.03	2.762	| | | O	I	|	8.43
12.917	8.54	7.23	2.771	| | | O	I	|	8.47
13.000	8.57	7.41	2.780	| | | O	I	|	8.50
13.083	9.10	7.44	2.790	| | | O	I	|	8.55
13.167	9.80	7.48	2.803	| | | O	I|	8.63
13.250	9.96	7.53	2.820	| | | O	I|	8.72
13.333	10.03	7.57	2.836	| | | O	I|	8.81
13.417	10.06	7.62	2.853	| | | O	I|	8.90
13.500	10.08	7.66	2.870	| | | O	I	8.99
13.583	8.94	7.70	2.883	| | | O	I	|	9.06
13.667	7.42	7.71	2.886	| | | IO	|	9.08
13.750	7.07	7.70	2.883	| | | I O	|	9.06
13.833	6.92	7.68	2.878	| | | I O	|	9.03
13.917	6.85	7.67	2.873	| | | I O	|	9.00
14.000	6.82	7.65	2.867	| | | I O	|	8.97
14.083	7.23	7.64	2.863	| | | I O	|	8.95
14.167	7.78	7.64	2.862	| | | O	|	8.94
14.250	7.91	7.64	2.863	| | | OI	|	8.95
14.333	7.86	7.65	2.865	| | | O	|	8.96
14.417	7.75	7.65	2.866	| | | O	|	8.97
14.500	7.73	7.65	2.866	| | | O	|	8.97
14.583	7.72	7.65	2.867	| | | O	|	8.97
14.667	7.71	7.66	2.867	| | | O	|	8.97
14.750	7.71	7.66	2.868	| | | O	|	8.98
14.833	7.60	7.66	2.868	| | | O	|	8.98
14.917	7.47	7.65	2.867	| | | IO	|	8.97
15.000	7.43	7.65	2.865	| | | IO	|	8.96
15.083	7.32	7.65	2.864	| | | IO	|	8.95
15.167	7.17	7.64	2.861	| | | I O	|	8.94
15.250	7.14	7.63	2.857	| | | I O	|	8.92
15.333	7.02	7.62	2.854	| | | I O	|	8.90
15.417	6.88	7.61	2.849	| | | I O	|	8.88
15.500	6.84	7.59	2.844	| | | I O	|	8.85
15.583	6.41	7.57	2.837	| | | I O	|	8.81
15.667	5.85	7.55	2.828	| | | I O|	|	8.76
15.750	5.72	7.51	2.816	| | | I O|	|	8.69
15.833	5.67	7.48	2.803	| | | I O|	|	8.63
15.917	5.64	7.45	2.791	| | |I O|	|	8.56
16.000	5.63	7.39	2.779	| | |I O|	|	8.49

16.083	4.08	7.03	2.762		I	O		8.43
16.167	2.01	6.47	2.737	I		O		8.34
16.250	1.53	5.82	2.707	I		O		8.23
16.333	1.33	5.21	2.679	I		O		8.13
16.417	1.23	4.66	2.653	I	O			8.03
16.500	1.19	4.17	2.631	I	O			7.95
16.583	1.08	3.75	2.612	I	O			7.88
16.667	0.94	3.37	2.594	I	O			7.81
16.750	0.91	3.03	2.579	I	O			7.76
16.833	0.90	2.73	2.565	I	O			7.71
16.917	0.89	2.47	2.553	I	O			7.66
17.000	0.89	2.25	2.543	I	O			7.63
17.083	1.10	2.08	2.535	I	O			7.60
17.167	1.37	1.96	2.530	I	O			7.58
17.250	1.44	1.88	2.526	IO				7.56
17.333	1.46	1.82	2.523	IO				7.55
17.417	1.48	1.77	2.521	IO				7.54
17.500	1.48	1.73	2.519	IO				7.54
17.583	1.48	1.70	2.518	IO				7.53
17.667	1.48	1.67	2.516	IO				7.53
17.750	1.48	1.64	2.515	IO				7.52
17.833	1.38	1.61	2.514	IO				7.52
17.917	1.24	1.57	2.512	IO				7.51
18.000	1.21	1.52	2.510	IO				7.50
18.083	1.20	1.50	2.507	IO				7.50
18.167	1.19	1.49	2.505	IO				7.49
18.250	1.19	1.48	2.503	IO				7.49
18.333	1.19	1.46	2.501	IO				7.48
18.417	1.19	1.45	2.500	IO				7.48
18.500	1.19	1.44	2.498	IO				7.48
18.583	1.08	1.43	2.496	IO				7.47
18.667	0.94	1.42	2.493	I O				7.47
18.750	0.91	1.40	2.489	I O				7.46
18.833	0.80	1.38	2.486	I O				7.45
18.917	0.65	1.35	2.481	I O				7.44
19.000	0.62	1.32	2.477	I O				7.43
19.083	0.71	1.30	2.472	I O				7.42
19.167	0.84	1.28	2.469	I O				7.42
19.250	0.87	1.26	2.466	IO				7.41
19.333	0.98	1.25	2.463	O				7.40
19.417	1.13	1.24	2.462	O				7.40
19.500	1.16	1.24	2.462	O				7.40
19.583	1.07	1.23	2.461	O				7.40
19.667	0.94	1.22	2.459	IO				7.40
19.750	0.91	1.21	2.457	IO				7.39
19.833	0.80	1.20	2.455	IO				7.39
19.917	0.65	1.18	2.452	IO				7.38
20.000	0.62	1.16	2.448	I O				7.37
20.083	0.71	1.14	2.445	IO				7.36
20.167	0.84	1.12	2.442	IO				7.36
20.250	0.87	1.11	2.440	IO				7.36
20.333	0.88	1.10	2.439	IO				7.35
20.417	0.89	1.09	2.437	IO				7.35
20.500	0.89	1.09	2.436	IO				7.35
20.583	0.89	1.08	2.434	IO				7.34
20.667	0.89	1.07	2.433	IO				7.34
20.750	0.89	1.06	2.432	IO				7.34
20.833	0.79	1.06	2.430	IO				7.33
20.917	0.65	1.04	2.428	IO				7.33
21.000	0.62	1.03	2.425	I O				7.32
21.083	0.71	1.01	2.423	IO				7.32
21.167	0.84	1.00	2.421	IO				7.32
21.250	0.87	1.00	2.420	IO				7.31
21.333	0.78	0.99	2.419	IO				7.31
21.417	0.65	0.98	2.417	IO				7.31
21.500	0.62	0.97	2.415	I O				7.30
21.583	0.71	0.95	2.413	IO				7.30
21.667	0.84	0.95	2.411	IO				7.30
21.750	0.87	0.94	2.411	O				7.29

21.833	0.78	0.94	2.410	| O	|	|	|	7.29
21.917	0.65	0.93	2.408	| O	|	|	|	7.29
22.000	0.62	0.92	2.406	|IO	|	|	|	7.28
22.083	0.71	0.91	2.405	| O	|	|	|	7.28
22.167	0.84	0.90	2.404	| O	|	|	|	7.28
22.250	0.87	0.90	2.403	| O	|	|	|	7.28
22.333	0.78	0.90	2.403	| O	|	|	|	7.28
22.417	0.65	0.89	2.402	| O	|	|	|	7.27
22.500	0.62	0.88	2.400	|IO	|	|	|	7.27
22.583	0.60	0.87	2.398	|IO	|	|	|	7.27
22.667	0.60	0.86	2.396	|IO	|	|	|	7.26
22.750	0.59	0.85	2.394	|IO	|	|	|	7.26
22.833	0.59	0.84	2.393	|IO	|	|	|	7.26
22.917	0.59	0.83	2.391	|IO	|	|	|	7.25
23.000	0.59	0.82	2.389	|IO	|	|	|	7.25
23.083	0.59	0.81	2.388	|IO	|	|	|	7.25
23.167	0.59	0.80	2.386	|IO	|	|	|	7.24
23.250	0.59	0.79	2.385	|IO	|	|	|	7.24
23.333	0.59	0.79	2.384	|IO	|	|	|	7.24
23.417	0.59	0.78	2.382	|IO	|	|	|	7.23
23.500	0.59	0.77	2.381	|IO	|	|	|	7.23
23.583	0.59	0.77	2.380	|IO	|	|	|	7.23
23.667	0.59	0.76	2.379	|IO	|	|	|	7.23
23.750	0.59	0.75	2.378	|IO	|	|	|	7.22
23.833	0.59	0.75	2.377	|IO	|	|	|	7.22
23.917	0.59	0.74	2.375	|IO	|	|	|	7.22
24.000	0.59	0.73	2.374	|IO	|	|	|	7.22
24.083	0.39	0.72	2.373	|IO	|	|	|	7.21
24.167	0.11	0.71	2.370	I O	|	|	|	7.21
24.250	0.05	0.68	2.365	I O	|	|	|	7.20
24.333	0.02	0.66	2.361	I O	|	|	|	7.19
24.417	0.01	0.63	2.357	I O	|	|	|	7.18
24.500	0.00	0.61	2.352	IO	|	|	|	7.17
24.583	0.00	0.58	2.348	IO	|	|	|	7.16
24.667	0.00	0.56	2.344	IO	|	|	|	7.15
24.750	0.00	0.54	2.341	IO	|	|	|	7.15
24.833	0.00	0.52	2.337	IO	|	|	|	7.14
24.917	0.00	0.50	2.333	IO	|	|	|	7.13
25.000	0.00	0.48	2.330	IO	|	|	|	7.12
25.083	0.00	0.46	2.327	IO	|	|	|	7.12
25.167	0.00	0.44	2.324	IO	|	|	|	7.11
25.250	0.00	0.42	2.321	IO	|	|	|	7.10
25.333	0.00	0.41	2.318	IO	|	|	|	7.10
25.417	0.00	0.39	2.315	IO	|	|	|	7.09
25.500	0.00	0.38	2.312	IO	|	|	|	7.09
25.583	0.00	0.36	2.310	IO	|	|	|	7.08
25.667	0.00	0.35	2.307	IO	|	|	|	7.08
25.750	0.00	0.33	2.305	IO	|	|	|	7.07
25.833	0.00	0.32	2.303	IO	|	|	|	7.07
25.917	0.00	0.31	2.301	O	|	|	|	7.06
26.000	0.00	0.30	2.299	O	|	|	|	7.06
26.083	0.00	0.29	2.297	O	|	|	|	7.05
26.167	0.00	0.27	2.295	O	|	|	|	7.05
26.250	0.00	0.26	2.293	O	|	|	|	7.05
26.333	0.00	0.25	2.291	O	|	|	|	7.04
26.417	0.00	0.24	2.289	O	|	|	|	7.04
26.500	0.00	0.23	2.288	O	|	|	|	7.04
26.583	0.00	0.23	2.286	O	|	|	|	7.03
26.667	0.00	0.22	2.285	O	|	|	|	7.03
26.750	0.00	0.21	2.283	O	|	|	|	7.03
26.833	0.00	0.20	2.282	O	|	|	|	7.02
26.917	0.00	0.19	2.280	O	|	|	|	7.02
27.000	0.00	0.18	2.279	O	|	|	|	7.02
27.083	0.00	0.18	2.278	O	|	|	|	7.01
27.167	0.00	0.17	2.277	O	|	|	|	7.01
27.250	0.00	0.16	2.275	O	|	|	|	7.01
27.333	0.00	0.16	2.274	O	|	|	|	7.01
27.417	0.00	0.15	2.273	O	|	|	|	7.01
27.500	0.00	0.15	2.272	O	|	|	|	7.00

27.583	0.00	0.14	2.271	O					7.00
27.667	0.00	0.13	2.270	O					7.00
27.750	0.00	0.13	2.269	O					7.00
27.833	0.00	0.12	2.269	O					7.00
27.917	0.00	0.12	2.268	O					6.99
28.000	0.00	0.11	2.267	O					6.99
28.083	0.00	0.11	2.266	O					6.99
28.167	0.00	0.11	2.265	O					6.99
28.250	0.00	0.10	2.265	O					6.99
28.333	0.00	0.10	2.264	O					6.99
28.417	0.00	0.09	2.263	O					6.98
28.500	0.00	0.09	2.263	O					6.98
28.583	0.00	0.09	2.262	O					6.98
28.667	0.00	0.08	2.262	O					6.98
28.750	0.00	0.08	2.261	O					6.98
28.833	0.00	0.08	2.260	O					6.98
28.917	0.00	0.07	2.260	O					6.98
29.000	0.00	0.07	2.259	O					6.98
29.083	0.00	0.07	2.259	O					6.97
29.167	0.00	0.07	2.258	O					6.97
29.250	0.00	0.06	2.258	O					6.97
29.333	0.00	0.06	2.258	O					6.97
29.417	0.00	0.06	2.257	O					6.97
29.500	0.00	0.06	2.257	O					6.97
29.583	0.00	0.05	2.256	O					6.97
29.667	0.00	0.05	2.256	O					6.97
29.750	0.00	0.05	2.256	O					6.97
29.833	0.00	0.05	2.255	O					6.97
29.917	0.00	0.05	2.255	O					6.97
30.000	0.00	0.04	2.255	O					6.97
30.083	0.00	0.04	2.254	O					6.97
30.167	0.00	0.04	2.254	O					6.96
30.250	0.00	0.04	2.254	O					6.96
30.333	0.00	0.04	2.254	O					6.96
30.417	0.00	0.04	2.253	O					6.96
30.500	0.00	0.03	2.253	O					6.96
30.583	0.00	0.03	2.253	O					6.96
30.667	0.00	0.03	2.253	O					6.96
30.750	0.00	0.03	2.252	O					6.96
30.833	0.00	0.03	2.252	O					6.96
30.917	0.00	0.03	2.252	O					6.96
31.000	0.00	0.03	2.252	O					6.96
31.083	0.00	0.03	2.252	O					6.96
31.167	0.00	0.03	2.251	O					6.96
31.250	0.00	0.02	2.251	O					6.96
31.333	0.00	0.02	2.251	O					6.96
31.417	0.00	0.02	2.251	O					6.96
31.500	0.00	0.02	2.251	O					6.96
31.583	0.00	0.02	2.251	O					6.96
31.667	0.00	0.02	2.250	O					6.96
31.750	0.00	0.02	2.250	O					6.96
31.833	0.00	0.02	2.250	O					6.96
31.917	0.00	0.02	2.250	O					6.96
32.000	0.00	0.02	2.250	O					6.96
32.083	0.00	0.02	2.250	O					6.96
32.167	0.00	0.02	2.250	O					6.96
32.250	0.00	0.02	2.250	O					6.96
32.333	0.00	0.01	2.250	O					6.96
32.417	0.00	0.01	2.249	O					6.96
32.500	0.00	0.01	2.249	O					6.95
32.583	0.00	0.01	2.249	O					6.95
32.667	0.00	0.01	2.249	O					6.95
32.750	0.00	0.01	2.249	O					6.95
32.833	0.00	0.01	2.249	O					6.95
32.917	0.00	0.01	2.249	O					6.95
33.000	0.00	0.01	2.249	O					6.95
33.083	0.00	0.01	2.249	O					6.95
33.167	0.00	0.01	2.249	O					6.95
33.250	0.00	0.01	2.249	O					6.95

33.333	0.00	0.01	2.249	O	|	|	|	|	6.95
33.417	0.00	0.01	2.249	O	|	|	|	|	6.95
33.500	0.00	0.01	2.248	O	|	|	|	|	6.95
33.583	0.00	0.01	2.248	O	|	|	|	|	6.95
33.667	0.00	0.01	2.248	O	|	|	|	|	6.95
33.750	0.00	0.01	2.248	O	|	|	|	|	6.95
33.833	0.00	0.01	2.248	O	|	|	|	|	6.95
33.917	0.00	0.01	2.248	O	|	|	|	|	6.95
34.000	0.00	0.01	2.248	O	|	|	|	|	6.95
34.083	0.00	0.01	2.248	O	|	|	|	|	6.95
34.167	0.00	0.01	2.248	O	|	|	|	|	6.95
34.250	0.00	0.01	2.248	O	|	|	|	|	6.95
34.333	0.00	0.01	2.248	O	|	|	|	|	6.95
34.417	0.00	0.01	2.248	O	|	|	|	|	6.95
34.500	0.00	0.01	2.248	O	|	|	|	|	6.95
34.583	0.00	0.01	2.248	O	|	|	|	|	6.95
34.667	0.00	0.00	2.248	O	|	|	|	|	6.95
34.750	0.00	0.00	2.248	O	|	|	|	|	6.95
34.833	0.00	0.00	2.248	O	|	|	|	|	6.95
34.917	0.00	0.00	2.248	O	|	|	|	|	6.95
35.000	0.00	0.00	2.248	O	|	|	|	|	6.95
35.083	0.00	0.00	2.248	O	|	|	|	|	6.95
35.167	0.00	0.00	2.248	O	|	|	|	|	6.95
35.250	0.00	0.00	2.248	O	|	|	|	|	6.95
35.333	0.00	0.00	2.248	O	|	|	|	|	6.95
35.417	0.00	0.00	2.248	O	|	|	|	|	6.95
35.500	0.00	0.00	2.248	O	|	|	|	|	6.95
35.583	0.00	0.00	2.248	O	|	|	|	|	6.95
35.667	0.00	0.00	2.248	O	|	|	|	|	6.95
35.750	0.00	0.00	2.247	O	|	|	|	|	6.95
35.833	0.00	0.00	2.247	O	|	|	|	|	6.95
35.917	0.00	0.00	2.247	O	|	|	|	|	6.95
36.000	0.00	0.00	2.247	O	|	|	|	|	6.95
36.083	0.00	0.00	2.247	O	|	|	|	|	6.95
36.167	0.00	0.00	2.247	O	|	|	|	|	6.95
36.250	0.00	0.00	2.247	O	|	|	|	|	6.95
36.333	0.00	0.00	2.247	O	|	|	|	|	6.95
36.417	0.00	0.00	2.247	O	|	|	|	|	6.95
36.500	0.00	0.00	2.247	O	|	|	|	|	6.95
36.583	0.00	0.00	2.247	O	|	|	|	|	6.95
36.667	0.00	0.00	2.247	O	|	|	|	|	6.95
36.750	0.00	0.00	2.247	O	|	|	|	|	6.95
36.833	0.00	0.00	2.247	O	|	|	|	|	6.95
36.917	0.00	0.00	2.247	O	|	|	|	|	6.95
37.000	0.00	0.00	2.247	O	|	|	|	|	6.95
37.083	0.00	0.00	2.247	O	|	|	|	|	6.95
37.167	0.00	0.00	2.247	O	|	|	|	|	6.95
37.250	0.00	0.00	2.247	O	|	|	|	|	6.95
37.333	0.00	0.00	2.247	O	|	|	|	|	6.95
37.417	0.00	0.00	2.247	O	|	|	|	|	6.95
37.500	0.00	0.00	2.247	O	|	|	|	|	6.95
37.583	0.00	0.00	2.247	O	|	|	|	|	6.95
37.667	0.00	0.00	2.247	O	|	|	|	|	6.95
37.750	0.00	0.00	2.247	O	|	|	|	|	6.95
37.833	0.00	0.00	2.247	O	|	|	|	|	6.95
37.917	0.00	0.00	2.247	O	|	|	|	|	6.95
38.000	0.00	0.00	2.247	O	|	|	|	|	6.95

Remaining water in basin = 2.25 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 456
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 7.707 (CFS)
Total volume = 3.877 (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

****

ATTACHMENT 6

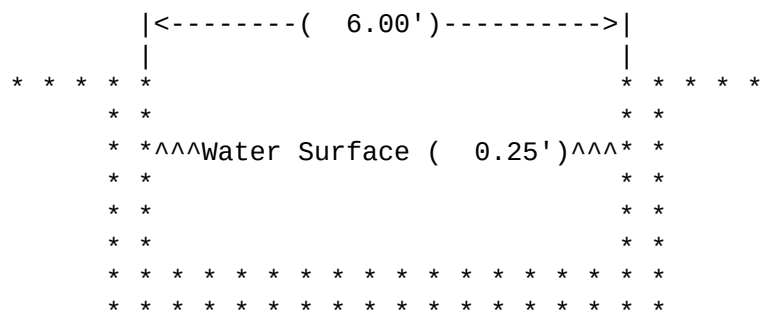
Parkway Culvert
Capacity Calculations

Underground Chamber
Sizing Calculations

Catch Basin
Capacity Charts

Joseph E. Bonadiman & Assoc., Inc.
Consulting Engineers
234 N. Arrowhead Ave.
San Bernardino, California 92408
(909)885-3806

6' PARKWAY CULVERT MAX. FLOW CAPACITY



Rectangular Open Channel

Flowrate	9.123	CFS
Velocity	6.082	fps
Depth of Flow	0.250	feet
Critical Depth	0.416	feet
Total Depth	0.250	feet
Base Width	6.000	feet
Slope of Channel	2.000	%
X-Sectional Area	1.500	sq. ft.
Wetted Perimeter	6.500	feet
AR^(2/3)	0.564	
Mannings 'n'	0.013	

Underground Chamber Sizing Calculations

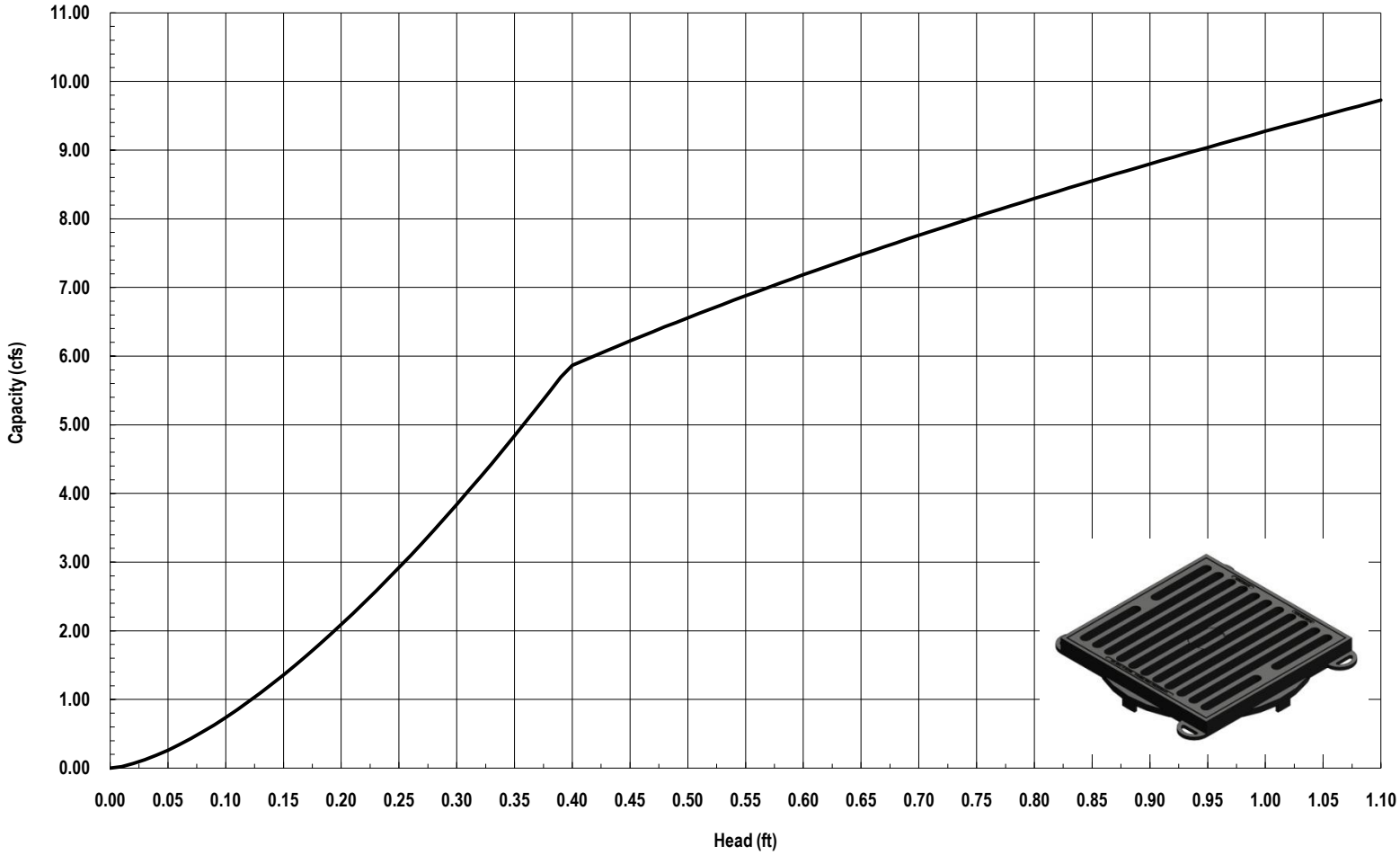
Calculator for Corrugated Steel Pipe Storage System

	Quantity	Units
Pipe Diameter:	8	ft
Total Linear Feet:	1762	ft
Gravel Depth on Bottom	0.5	ft
Gravel Depth on Top:	1	ft
Porosity of Gravel:	0.40	Decimal %
Depth vs Volume Increm	0.5	ft
Bed Length	588	ft
Bed width	34	ft

alculation Based on Depth

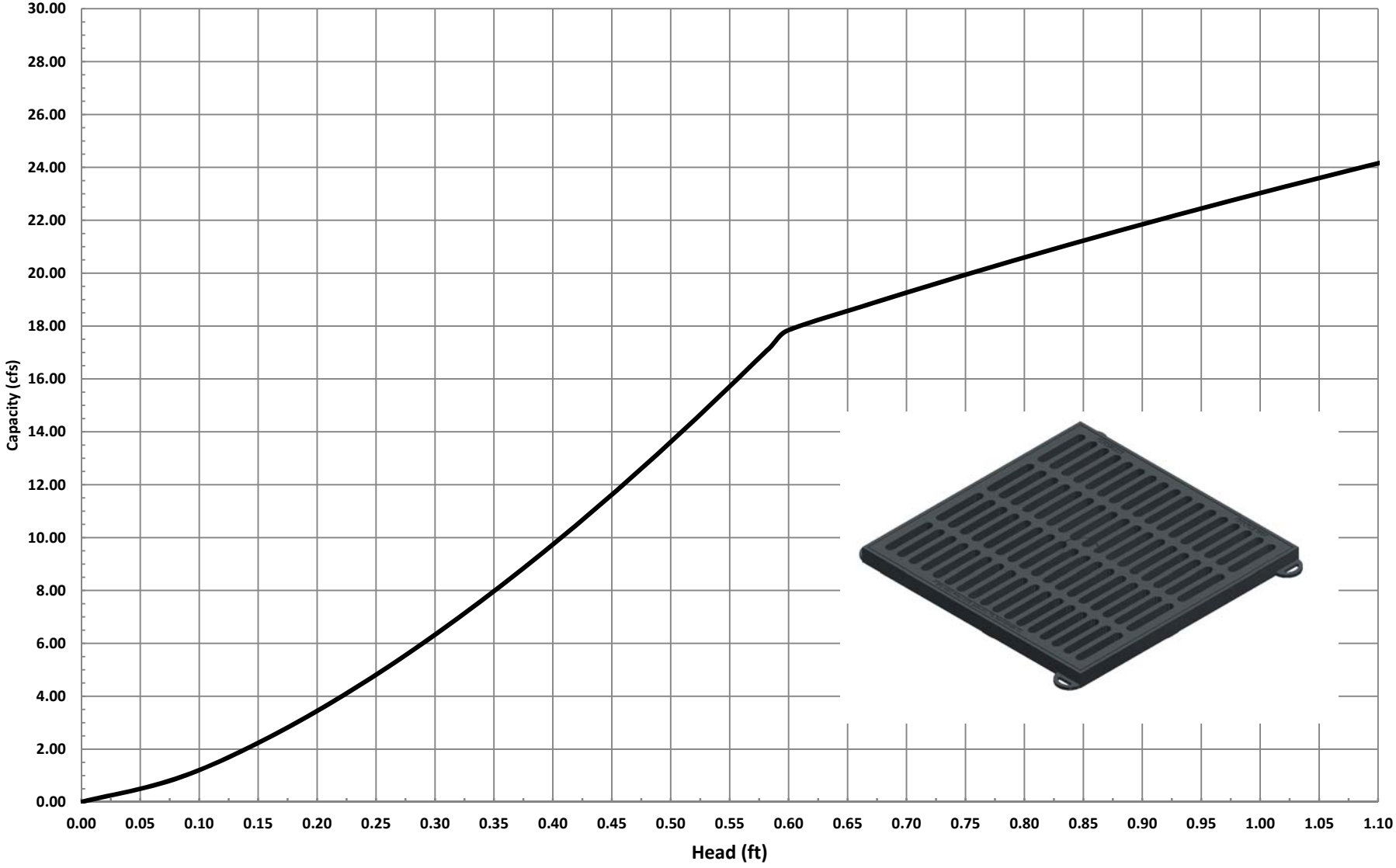
	System Depth (ft)	Water Depth in Pipe (ft)	Θ	X-Sect Area of Water in Pipe (ft^2)	Volume of Water in Pipe (ft^3)	Volume of Water in Gravel (ft^3)	Total Volume (ft^3)	Total Volume (ac-ft)			System Depth (ft)	Total Volume (ft^3)	Total Volume (ac-ft)
Depth 0	0	0	0.00	0.00	0.00	0.00	0.00	0.00					
Depth 1	0.5	0	0.00	0.00	0.00	3,998.40	3998	0.0918					
Depth 2	1	0.5	57.91	1.31	2,304.78	7,074.89	9380	0.2153					
Depth 3	1.5	1	82.82	3.63	6,389.88	9,439.25	15829	0.3634					
Depth 4	2	1.5	102.64	6.52	11,495.97	11,395.21	22891	0.5255					
Depth 5	2.5	2	120.00	9.83	17,315.10	13,065.96	30381	0.6975					
Depth 6	3	2.5	135.95	13.42	23,646.47	14,531.81	38178	0.8765	2361.50	1	0.00	0.00	0.0000
Depth 7	3.5	3	151.04	17.22	30,336.13	15,854.35	46190	1.0604	2362.00	2	0.50	3,998	0.0918
Depth 8	4	3.5	165.64	21.14	37,254.29	17,085.49	54340	1.2475	2363.00	3	1.50	15,829	0.3634
Depth 9	4.5	4	180.00	25.13	44,283.89	18,272.04	62556	1.4361	2364.00	4	2.50	30,381	0.6975
Depth 10	5	4.5	165.64	29.12	51,313.49	19,458.60	70772	1.6247	2365.00	5	3.50	46,190	1.0604
Depth 11	5.5	5	151.04	33.05	58,231.65	20,689.74	78921	1.8118	2366.00	6	4.50	62,556	1.4361
Depth 12	6	5.5	135.95	36.85	64,921.31	22,012.28	86934	1.9957	2367.00	7	5.50	78921	1.8118
Depth 13	6.5	6	120.00	40.44	71,252.68	19,479.73	90732	2.0829	2368.00	8	6.50	90,732	2.0829
Depth 14	6.95	6.45	104.46	43.43	76,518.13	21,371.95	97890	2.2472	2368.45	9	6.95	97,890	2.2472
Depth 15	7	6.5	102.64	43.74	77,071.81	25,148.88	102221	2.3467	2369.00	10	7.50	109,283	2.5088
Depth 16	7.5	7	82.82	46.64	82,177.90	27,104.84	109283	2.5088	2370.00	11	8.50	121,113	2.7804
Depth 17	8	7.5	57.91	48.96	86,263.00	29,469.20	115732	2.6568	2371.00	12	9.50	VOL	2.9640
Depth 18	8.5	8	0.00	50.27	88,567.78	32,545.69	121113	2.7804					
Depth 19	9	8	0.00	50.27	88,567.78	36,544.09	125112	2.8722					
Depth 20	9.5	8	0.00	50.27	88,567.78	40,542.49	129110	2.9640					

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



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



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