Preliminary
Hydrology Study & Drainage Analysis

Fisher Construction
GTS Cold Storage

Apple Valley, CA 92307
APN: 0463-231-06

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A. Introduction

1.1 Purpose and Scope

The following Hydrology and Hydraulics Report has been prepared for the development of the GTS Cold Storage project located at the intersection of Navajo Rd and Lafayette Street in the Town of Apple Valley. The site pertains to the San Bernardino County. This report has been prepared to satisfy the San Bernardino County Department of Public Works hydrology study requirements.

The scope of this report is as follows:

- Identification of tributary flow impacting the project site.
- Identification of existing conditions, on-site drainage areas, and calculation of peak flow for these areas.
- Identification of developed conditions, on-site drainage areas and calculation of peak flow for these areas.
- Comparison of existing vs. developed peak flow rates and discussion of mitigation measures used to attenuate increases (if any) in peak flows.
- Identification of floodplain(s) impacting the site.
- Summary of findings and conclusion.

1.2 Project Overview

The proposed project entails the development of a cold storage facility on approximately 18.75 acres. The site is currently vacant. The project site is about 1.41 miles north of the Apple Valley Airport and approximately 5 miles east of the 15-Freeway (Mojave).

Site Location

1.3 Existing Conditions Off-Site Areas

The site is impacted by a significant off-site tributary to the northeast of the project site. The general area surrounding the site consist of typical poorly covered desert terrain sloping to the southwest. Offsite flows originate in the hills to the northeast of the side flowing in a southwesterly direction across native desert with no clearly defined flow path.

1.4 Existing Conditions On-Site Areas

The existing on-site project area is generally flat, consist of typical poorly covered desert terrain, sloping to the southwest. The is aerial evidence of flows crossing the site in a southerly direction. However, it is hard to define on the ground, with no clearly defined flow paths.

1.5 References

Relevant portions of following documents have been made part of this study by reference:

1.) San Bernardino County Department of Public Works Hydrology Manual (August 1986).

2.) Topography by Aerotech Mapping, Inc dated May 25, 2022.

3.) Site plans by Joseph E. Bonadiman & Associated, Inc dated June 2022.

4.) County of San Bernardino Hydrology Manual Addendum for Arid Regions, April 6, 2010.

5.) The National Oceanic and Atmospheric Administration Atlas 14, Volume 6, Version 2, January 2014.

6.) United States Department of Agriculture – Natural Resources Conservation Service – Conservation Engineering Division Technical Release 55 Manual, June 1986

B. Methodology

1.1 General Methodology

The requirements and recommendations found in the San Bernardino County Hydrology Manual (August 1986) provided by the San Bernardino County Department of Public Works was used as the basis for the methodology and calculations found in this report. On-site calculations were performed using the rational and unit hydrograph methods per the county requirements.

The San Bernardino County-approved software applications provided by CivilDesign® Corporation were used for all study calculations.

1.2 Sources of Topography

1.) Mapping and topographic contours was provided by Aerotech Mapping, Inc dated May 25, 2022.

1.3 FEMA Floodplain Identification and Considerations

Per FEMA Flood Map Service, the site is in an unmapped panel.

Refer to Exhibit "C" for the FIRMette used in this report.

1.4 Watershed Precipitation

Precipitation values used in this report were obtained from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 included in the table below. The slope of intensity duration curve value of 0.70 (desert areas) was used per the County Hydrology Manual.

Table 1 – Watershed Precipitation

STORM	PRECIPITATION
10-YEAR, 1-HOUR	0.599
100-YEAR, 1-HOUR	1.07
2-YEAR, 6-HOUR	0.753
100-YEAR, 6-HOUR	1.99
2-YEAR, 24-HOUR	1.30
100-YEAR, 24-HOUR	3.39

Refer to Exhibit "D" for the NOAA Atlas 14 rainfall data.

1.5 Watershed Losses

Soil types and SCS Curve Number (AMC II) used in this report were obtained from the Runoff Curve Numbers Table 2-2, included in the Technical Release 55 manual, and are tabulated below.

Type "A", "B", "C" & "D" soils with some rock outcroppings is shown for the off-site area, per Custom Soil Resource Report Soil Map of United States Department of Agriculture Natural Resources Conservation Service. The existing conditions off-site are generally 100% undeveloped, consisting of typical poorly covered desert terrain. Per TR-55 Table 2-2d and NRCS report page 11 SCS numbers were proportions resulting in a combined SCS number of 81 for the off-site area.

Type "B" soils is shown for the on-site area, per Custom Soil Resource Report Soil Map of United States Department of Agriculture Natural Resources Conservation Service. The existing conditions on-site consist of 100% undeveloped land, consisting of typical poorly covered desert terrain. Per TR-55 Table 2-2d an SCS number of 77 ("Desert Shrub") was used for the on-site existing condition. An SCS number of 77 ("Western Desert Urban Areas") was also used for the on-site developed conditions. Per the San Bernardino County Hydrology Manual Figure C-3 & page C-5, an SCS Curve Number of 98 ("Impervious Areas") is used for the parking lots, roofs, driveways, etc.

Table 2 – Developed Condition Soil Loss Rates

COVER TYPE	SOIL TYPE	QUALITY OF COVER	SCS CURVE NO. (AMC II)
Desert Shrub	A	Poor	63
Desert Shrub	B	Poor	77
Desert Shrub	C	Poor	85
Desert Shrub	D	Poor	88
Rock & Impervious Area	~	~	98
Off-site Composite SCS	~	~	81
Western Desert Urban Areas	B	~	77

Refer to Exhibit "E" for the NRCS Custom Soil Resource Report, TR-55 Table 2-2d, the San Bernardino County Hydrology Manual Figure C-3 and page C-5 used in this report.

1.6 Rational and Unit Hydrology Method Calculations

The San Bernardino County Rational and Unit Hydrology Method (CIVILD) software application provided by CivilDesign® Corporation was used for the rational and unit method calculations included in this report.

C. Existing Off-site Conditions Hydrology Calculations

1.1. Existing Conditions Off-site Unit Hydrograph Method Calculations

Based on the output data from the Rational Method above the 100-year TC value was used. Input values for the developed conditions unit hydrograph method calculations prepared for this report are tabulated as follows:

Table 3 – Existing Off-site Conditions Unit Hydrograph Method Input Values

DRAINAGE AREA	SIZE (AC)	SCS	PERVIOUS RATIO	FLOW LENGTH (FT)	CENTRIOD LENGTH (FT)	Δ ELEV. (FT)	BASIN FACTOR
O	1,626	81	1.00	24,695	9,182	1026.8	0.40

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

Table 4 – Existing Off-site Conditions Unit Hydrograph Method Output Calculations

DRAINAGE AREA	SIZE (AC)	Q_{100} (CFS)	LAG_{100} (HR)
O	1,626	**1,313**	0.764

DRAINAGE AREA	SIZE (AC)	VOL_{100} (AF)	LAG_{100} (HR)
O	1,626	**253**	0.764

Refer to Attachment No. 1 for printouts of the Existing Conditions Unit Hydrograph Calculations.
Refer to Exhibit "F" for the Existing Off-Site Hydrologic Conditions Study Map.

D. Existing On-site Conditions Hydrology Calculations

1.1 Existing Conditions Rational Method Calculations

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

Table 5– Existing Conditions Rational Method Input Values

DRAINAGE AREA	SIZE (AC)	TYPE	COVER	SOIL	SCS (AMC II)	PERVIOUS FRACTION	U.S. ELEV. (FT)	D.S. ELEV. (FT)	LENGTH (FT)
A1 NODE 0-1	10.00	DESERT	POOR	B	77	1.00	3070.20	3059.00	703.34
A2 NODE 1-2	7.68	DESERT	POOR	B	77	1.00	3059.00	3052.50	464.12

Output for the existing conditions rational method calculations are tabulated as follows:

Table 6– Existing Conditions Rational Method Output Calculations

AREA	NODE	Q_{10} (CFS)	Q_{100} (CFS)
A NODE 0-2	0-2	**10.17**	**25.06**
TC_{100} (MIN)		**26.64**	

Refer to Attachment No. 2 for printouts of the Existing Conditions Rational Method Calculations.
Refer to Exhibit "G" for the Existing On-Site Hydrologic Conditions Study Map.

1.2. Existing Conditions Unit Hydrograph Method Calculations

Based on the output data from the Rational Method above the 100-year TC value was used. Input values for the developed conditions unit hydrograph method calculations prepared for this report are tabulated as follows:

Table 7 – Existing Conditions Unit Hydrograph Method Input Values

DRAINAGE AREA	SIZE (AC)	SCS	PERVIOUS FRACTION	T.C. (HOUR)
A NODE 0-2	17.68	77	1.00	0.444

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

Table 8 – Existing Conditions Unit Hydrograph Method Output Calculations

DRAINAGE AREA	SIZE (AC)	Q_2 (CFS)	Q_5 (CFS)	Q_{10} (CFS	Q_{25} (CFS)	Q_{100} (CFS)	LAG_{100} (HR)
A NODE 0-2	17.68	**3.10**	**7.06**	**12.86**	**18.14**	**26.36**	0.355

DRAINAGE AREA	SIZE (AC)	VOL_2 (AF)	VOL_5 (AF)	VOL_{10} (AF)	VOL_{25} (AF)	VOL_{100} (AF)	LAG_{100} (HR)
A NODE 0-2	17.68	**0.10**	**0.27**	**1.07**	**1.60**	**2.46**	0.355

Refer to Attachment No. 3 for printouts of the Existing Conditions Unit Hydrograph Calculations.
Refer to Exhibit "G" for the Existing On-Site Hydrologic Conditions Study Map.

E. Developed Conditions Hydrology Calculations

1.1 Developed Conditions Rational Method Calculations

Input values for the developed conditions rational method calculations were adjusted accordingly and are tabulated below:

Table 9 – Developed Conditions Rational Method Input Values

DRAINAGE AREA	SIZE (AC)	TYPE	COVER	SOIL	SCS (AMC II)	PERVIOUS FRACTION	U.S. ELEV. (FT)	D.S. ELEV. (FT)	LENGTH (FT)
A1 NODE 0-1	3.05	DESERT URBAN	GOOD	B	77	0.16	3068.49	3057.57	859.03
PIPE NODE 1-2	24"	~	~	~	~	~	3054.07	3052.13	326.00
A2 NODE 2	1.23	DESERT URBAN	GOOD	B	77	0.04	~	~	~
PIPE NODE 2-3	24"	~	~	~	~	~	3052.13	3050.85	254.00
A3 NODE 3	1.32	DESERT URBAN	GOOD	B	77	0.04	~	~	~
PIPE NODE 3-4	24"	~	~	~	~	~	3050.85	3049.62	244.00
A4 NODE 4	1.62	DESERT URBAN	GOOD	B	77	0.04	~	~	~
PIPE NODE 4-5	30"	~	~	~	~	~	3049.62	3049.08	175.82
A5 NODE 5	0.66	DESERT URBAN	GOOD	B	77	0.84	~	~	~
PIPE NODE 5-6	30"	~	~	~	~	~	3049.08	3047.60	495.62
CONFLUENCE MINOR STREAM 1 OF 4 AT NODE 6									
A6 NODE 7-8	0.65	DESERT URBAN	GOOD	B	77	0.25	3062.20	3056.31	144.77
PIPE NODE 8-6	12"	~	~	~	~	~	3052.31	3050.10	94.50
CONFLUENCE MINOR STREAM 2 OF 4 AT NODE 6									
A7 NODE 9-10	4.55	DESERT URBAN	GOOD	B	77	0.07	3058.60	3056.73	349.44
PIPE NODE 10-6	18"	~	~	~	~	~	3052.73	3050.25	24.48
CONFLUENCE MINOR STREAM 3 OF 4 AT NODE 6									
A8 NODE 11-12	4.60	DESERT URBAN	GOOD	B	77	0.07	3060.73	3057.05	362.80
PIPE NODE 12-6	18"	~	~	~	~	~	3053.05	3050.25	24.46
CONFLUENCE MINOR STREAM 4 OF 4 AT NODE 6									

Output for the developed conditions rational method calculations are tabulated as follows:

Table 10 – Developed Conditions Rational Method Output Calculations

AREA	Q_{10} (CFS)	Q_{100} (CFS)	TC_{100} (MIN)
A NODE 0-12	**29.75**	**54.07**	**7.74**

Refer to Attachment No. 4 for printouts of the Developed On-site Conditions Rational Method Calculations.
Refer to Exhibit "H" for the Developed On-Site Hydrologic Conditions Study Map.

1.2 Developed Conditions Unit Hydrograph Method Calculations

Based on the output data from the Rational Method above the 100-year TC value was used. Input values for the existing conditions unit hydrograph method calculations prepared for this report are tabulated as follows:

Table 11 – Developed Conditions Unit Hydrograph Method Input Values

DRAINAGE AREA	SIZE (AC)	SCS	PERVIOUS FRACTION	T.C. (HRS)
A NODE 0-12	17.68	77	0.11	0.129

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

Table 12 – Developed Conditions Unit Hydrograph Method Output Calculations

DRAINAGE AREA	SIZE (AC)	Q_2 (CFS)	Q_{10} (CFS	Q_{25} (CFS)	Q_{100} (CFS)	LAG (HR)
A NODE 0-12	17.68	**14.00**	**32.89**	**43.43**	**59.38**	0.103

DRAINAGE AREA	SIZE (AC)	VOL_2 (AF)	VOL_{10} (AF)	VOL_{25} (AF)	VOL_{100} (AF)	LAG (HR)
A NODE 0-12	17.68	**1.46**	**2.71**	**3.42**	**4.49**	0.103

Refer to Attachment No. 5 for printouts of the Developed On-site Conditions Unit Method Calculations.
Refer to Exhibit "H" for the Developed On-Site Hydrologic Conditions Study Map.

F. Underground Infiltration System Calculations

1.1 Underground Infiltration System Analysis

An underground infiltration system is proposed to attenuate storm flows and for WQMP volume retention and infiltration. Input values of the depth vs. volume for routing calculations prepared for this report are tabulated as follows:

Table 13 – Detention Basins A, System Depth vs. Volume

ELEVATION (FT)	DEPTH (FT)	TOTAL VOLUME (CF)	DETENTION VOLUME (AF)
3047.10	0	0	0
3047.60	0.5	5,040	0.1157
3048.60	1.5	20,149	0.4626
3049.60	2.5	38,595	0.8860
3050.60	3.5	58,233	1.3368
3051.10 15" PIPE	**4.0**	**68,121**	**1.5638**
3051.60	4.5	77,871	1.7877
3052.60	5.5	96,317	2.2111
3053.60	6.5	111,426	2.5580
3054.60	8.0	126,546	2.9051

Output for the detention basin routing calculations are tabulated as follows:

Table 14 – Detention Basins Output Calculations

BASIN AREA	STORM EVENT	OUTLET (IN)	OUTLET LENGTH (FT)	DIFFERENCE IN ELEVATION (FT)	OUTFLOW PEAK Q (CFS)	BASIN WATER DEPTH (FT)
A	2	15" PIPE OUTLET	20.0	0.2	0.00	3.18
	10				3.15	5.00
	25				6.54	5.99
	100				11.35	7.70

Refer to Attachment No. 6 for a printout of the routing calculations for the proposed basin system.

G. Summary and Conclusion

1.1 Summary

A summary of the results of the off-site unit hydrograph calculations are tabulated below:

Table 16–Off-Unit Hydrograph Calculations Summary

AREA	STORM EVENT	EXISTING CONDITIONS PEAK Q (CFS)
A	100	1,313

A summary of the results of the on-site rational and unit hydrograph calculations are tabulated below:

Table 15 –On-Site Rational Method Calculations Summary

AREA	STORM EVENT	EXISTING CONDITION PEAK Q (CFS)	PROPOSED CONDITION PEAK Q (CFS)	INCREASE (CFS)
A	10	10.17	**29.75**	**19.58**
	100	25.06	**54.07**	**29.01**

A summary of the results of the unit hydrograph calculations are tabulated below:

Table 16–Unit Hydrograph Calculations Summary

AREA	STORM EVENT	EXISTING CONDITIONS PEAK Q (CFS)	DEVELOPED CONDITIONS PEAK Q (CFS)	INCREASE (CFS)*	EXISTING CONDITIONS VOLUME (AF)	DEVELOPED CONDITIONS VOLUME (AF)	INCREASE (AF)*
A	2	3.10	14.00	**10.90**	0.10	1.46	**1.36**
	10	12.86	32.89	**20.03**	1.07	2.17	**1.10**
	25	18.14	43.43	**25.29**	1.60	3.42	**1.82**
	100	26.36	59.38	**33.02**	2.46	4.49	**2.03**

*** Above listed values are results prior to basin routing & WQMP storage and not reflective of actual site discharge.**

As indicated above, an increase in peak flow and runoff volume is expected from Area "A" as a result of the proposed development. The increase in flow rates shall be mitigated onsite as to reduce the discharge from Area "A" to 90% of the pre-development conditions per the San Bernardino County Hydrology Manual.

Per "San Bernardino County Detention Basin Design Criteria" post-development peak flow rates generated by the site shall be less than or equal to 90% of the pre-development peak flow rate based on shifting the rainfall values for the 10-year, 25-year and 100-years storms, providing a least a 50% confidence level that the detention basin outflow will not adversely impact downstream properties. A summary of the maximum allowable peak flow rates are tabulated below:

Table 17 – Area "A" Outlet Requirements

EXISTING AREA	STORM EVENT	EXISTING CONDITIONS PEAK Q (CFS)	ADJUSTED PEAK Q (CFS)	MAXIMUM ALLOWABLE DISCHARGE 90% OF ADJUSTED PEAK Q (CFS)
A	2	3.10	Q_2=3.10	**2.79**
	10	12.86	Q_5=7.06	**6.35**
	25	18.14	Q_{10}=12.86	**11.57**
	100	26.36	Q_{25}=18.14	**16.33**

A summary of the results of the routing calculations are tabulated below:

Table 18 – Routing Summary

AREA	STORM EVENT	MAXIMUM BASIN DISCHARGE 90% OF ADJUSTED PEAK Q (CFS)	AREA "A"" OUTFLOW PEAK Q (CFS)	TOTAL BASIN WATER DEPTH (ft)	INCREASED DISCHARGE VOLUME (AF)*
A	2	2.79	0.00	3.18	1.46
	10	6.35	3.15	5.00	2.17
	25	11.57	6.54	5.99	3.42
	100	16.33	11.35	7.70	4.49

*** Above listed values do not reflect WQMP storage volume.**

1.2 Conclusion

As indicated in Tables 15, development of the site results in an in increase in peak flow and runoff volume as a result of the proposed development and therefore requires mitigation.

Per the San Bernardino County Hydrology Manual, developed sites shall not increase flow rate exiting the site over the existing conditions. In order to meet mitigation requirements per "San Bernardino County Detention Basin Design Criteria" post-development peak flow rates generated by the site shall be less than or equal to 90% of the pre-development peak flow rate based on shifting the rainfall values for the 10-year, 25-year and 100-years storms, providing a least a 50% confidence level that the detention basin outflow will not adversely impact downstream properties. This can be achieved with the use of an underground storm water chamber system with a minimum capacity of 2.9051AF as shown in Table 13 This can be achieved with the use of 2706 linear feet of 6 ft diameter corrugated steel pipe in a gravel bed measuring 900 ft by 28 ft and 8 ft of depth. Pipe shall be placed on a bed of 6 "of gravel with 3 ft spacing between pipe side walls and 2 ft of gravel around the perimeter of the system. Out flow from the system shall be controlled with a 15" pipe and may be connected directly to the chamber system or any part of the on-site storm drain piping that is larger than 15", as long as the invert remains 4 ft above the bottom of the chamber system. Total water depth is estimated to be at 7.70 ft from the bottom of the chamber system. Resulting in a peak out flow of the 100-year storm event is estimated to be 11.35 cfs as shown in Table 18. Discharge from the site to the street shall be routed through a 6 ft wide parkway located along Lafayette Street near the southwest corner of the site.

With the above mitigation measure the development of the GTS Cold Storage project located at the intersection of Navajo Rd and Lafayette Street in the Town of Apple Valley will not have a negative impact on downstream properties or facilities. Refer to project specific WQMP for additional requirements.

(END)

EXHIBIT “A”

Project Watershed
Aerial Photo

AERIAL PHOTO EXHIBIT

FISHER CONSTRUCTION GTS COLD STORAGE

APN 0463-231-06

APPLE VALLEY, CA 92307

SAN BERNARDINO COUNTY

PREPARED BY:

BONADIMAN

TEL. (909) 605-3000

PREPARED FOR:

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	FISHER CONSTRUCTION
JOB NO:	224986
PREPARED BY:	CR
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.

AERIAL PHOTO EXHIBIT

APN 0463-231-06

APPLE VALLEY, CA 92307

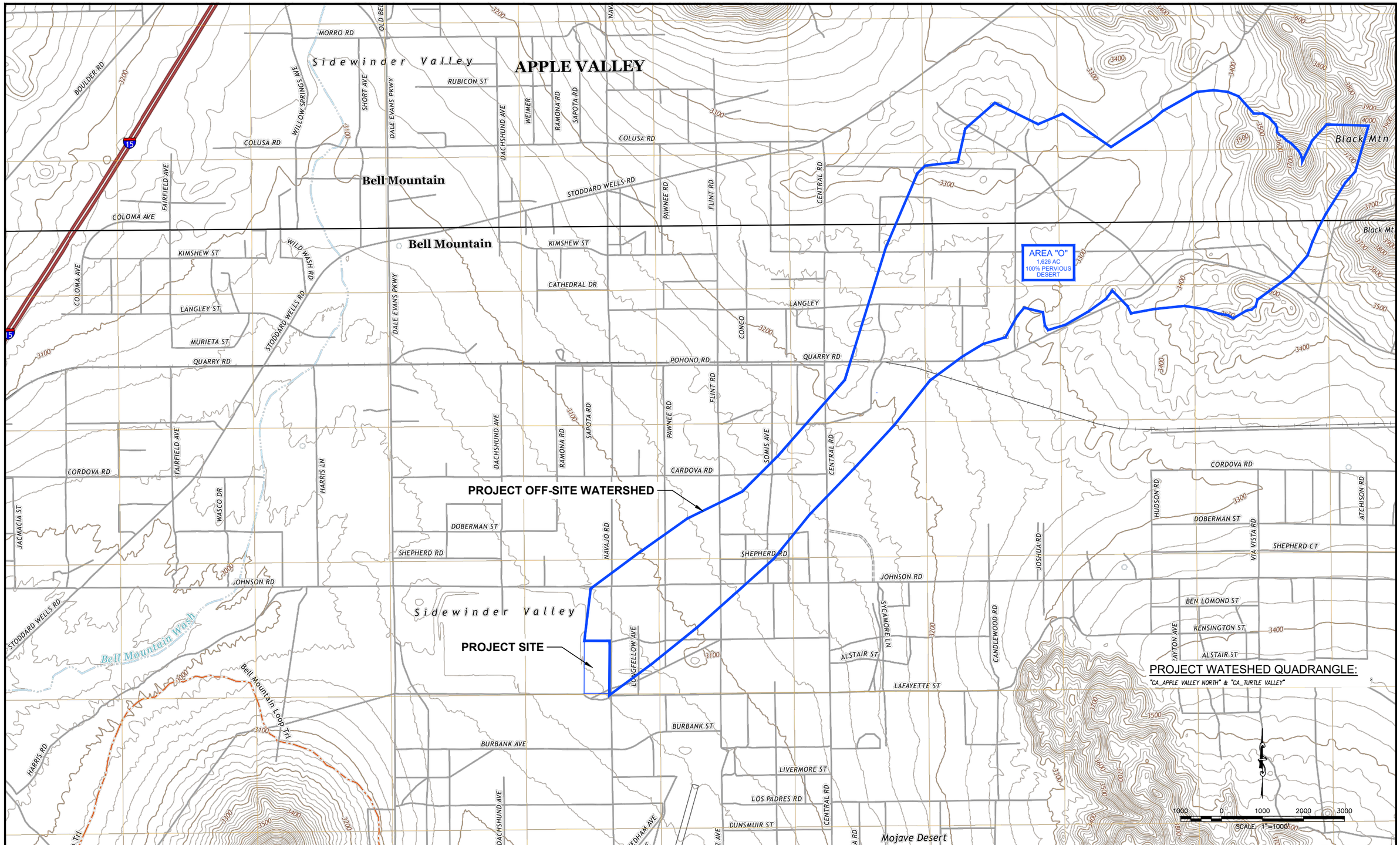
DISREGARD PRINTS BEARING EARLIER REVISION DATES → 06-23-22

A

SHEET 1 OF 1

EXHIBIT “B”

Project Watershed
USGS Quadrangle



USGS QUADRANGLE

FISHER CONSTRUCTION GTS COLD STORAGE
APN 0463-231-06
APPLE VALLEY, CA 92307
SAN BERNARDINO COUNTY

PREPARED BY:

BONADIMAN
CIVIL & PETROLEUM ENGINEERS, INC.
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[illegible]
[illegible]

PREPARED FOR:

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	FISHER CONSTRUCTION
JOB NO:	224986
PREPARED BY:	CR
CHECKED BY:	JTS

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APPLE VALLEY, CA 92307

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 06-23-22

B

SHEET 1 OF 1

EXHIBIT “C”

FEMA FIRMette

National Flood Hazard Layer FIRMette

FEMA

34°26'23.60"N

117°24'2.74"W

117°23'25.29"W

34°25'53.92"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/30/2020 at 2:39:31 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

EXHIBIT “D”

NOAA ATLA 14
Point Precipitation

NOAA Atlas 14, Volume 6, Version 2
Location name: Apple Valley, California, USA*
Latitude: 34.5952°, Longitude: -117.1903°
Elevation: 3062.59 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.082 (0.067-0.100)	0.115 (0.095-0.141)	0.162 (0.133-0.199)	0.203 (0.165-0.251)	0.261 (0.206-0.335)	0.309 (0.239-0.405)	0.361 (0.272-0.484)	0.417 (0.306-0.575)	0.498 (0.351-0.715)	0.565 (0.385-0.839)
10-min	0.117 (0.096-0.143)	0.165 (0.136-0.203)	0.232 (0.191-0.286)	0.290 (0.236-0.360)	0.374 (0.295-0.480)	0.443 (0.342-0.580)	0.517 (0.390-0.693)	0.598 (0.438-0.823)	0.714 (0.503-1.02)	0.810 (0.551-1.20)
15-min	0.141 (0.116-0.173)	0.200 (0.164-0.245)	0.281 (0.230-0.346)	0.351 (0.286-0.436)	0.453 (0.357-0.580)	0.536 (0.414-0.702)	0.626 (0.471-0.838)	0.723 (0.530-0.996)	0.864 (0.608-1.24)	0.980 (0.667-1.45)
30-min	0.193 (0.159-0.236)	0.272 (0.224-0.334)	0.383 (0.314-0.471)	0.479 (0.390-0.594)	0.618 (0.487-0.792)	0.731 (0.565-0.957)	0.853 (0.643-1.14)	0.986 (0.723-1.36)	1.18 (0.829-1.69)	1.34 (0.909-1.98)
60-min	0.241 (0.199-0.296)	0.341 (0.280-0.418)	0.480 (0.394-0.590)	0.599 (0.488-0.744)	0.773 (0.609-0.991)	0.916 (0.707-1.20)	1.07 (0.805-1.43)	1.24 (0.905-1.70)	1.48 (1.04-2.12)	1.67 (1.14-2.48)
2-hr	0.343 (0.283-0.421)	0.465 (0.383-0.571)	0.634 (0.521-0.781)	0.779 (0.634-0.966)	0.986 (0.777-1.26)	1.15 (0.891-1.51)	1.33 (1.00-1.79)	1.53 (1.12-2.10)	1.80 (1.27-2.58)	2.02 (1.38-3.01)
3-hr	0.417 (0.344-0.511)	0.558 (0.459-0.685)	0.751 (0.616-0.924)	0.915 (0.745-1.14)	1.15 (0.906-1.47)	1.34 (1.03-1.75)	1.54 (1.16-2.06)	1.75 (1.29-2.42)	2.06 (1.45-2.95)	2.30 (1.57-3.42)
6-hr	0.570 (0.470-0.699)	0.753 (0.620-0.924)	1.00 (0.822-1.23)	1.21 (0.987-1.50)	1.51 (1.19-1.93)	1.74 (1.35-2.28)	1.99 (1.50-2.67)	2.26 (1.65-3.11)	2.62 (1.85-3.77)	2.92 (1.99-4.34)
12-hr	0.735 (0.606-0.901)	0.974 (0.801-1.20)	1.30 (1.06-1.59)	1.56 (1.27-1.94)	1.94 (1.53-2.48)	2.23 (1.72-2.92)	2.54 (1.91-3.40)	2.86 (2.10-3.94)	3.31 (2.33-4.75)	3.66 (2.49-5.44)
24-hr	0.968 (0.858-1.11)	1.30 (1.15-1.49)	1.73 (1.53-2.00)	2.10 (1.84-2.44)	2.59 (2.20-3.12)	2.99 (2.48-3.67)	3.39 (2.74-4.26)	3.81 (3.00-4.93)	4.39 (3.32-5.92)	4.84 (3.54-6.76)
2-day	1.15 (1.02-1.32)	1.57 (1.39-1.81)	2.12 (1.87-2.45)	2.57 (2.26-3.00)	3.19 (2.71-3.84)	3.67 (3.05-4.51)	4.17 (3.38-5.25)	4.68 (3.69-6.06)	5.38 (4.06-7.26)	5.92 (4.33-8.27)
3-day	1.25 (1.11-1.44)	1.73 (1.53-1.99)	2.35 (2.07-2.71)	2.86 (2.50-3.33)	3.55 (3.01-4.28)	4.09 (3.40-5.03)	4.64 (3.76-5.84)	5.21 (4.10-6.74)	5.98 (4.52-8.08)	6.59 (4.81-9.21)
4-day	1.33 (1.18-1.53)	1.84 (1.63-2.11)	2.50 (2.21-2.89)	3.05 (2.67-3.55)	3.79 (3.22-4.57)	4.37 (3.62-5.37)	4.95 (4.01-6.24)	5.56 (4.38-7.20)	6.38 (4.83-8.62)	7.03 (5.13-9.82)
7-day	1.45 (1.28-1.66)	1.98 (1.76-2.28)	2.70 (2.38-3.11)	3.28 (2.87-3.82)	4.08 (3.46-4.91)	4.70 (3.90-5.78)	5.34 (4.32-6.72)	6.00 (4.72-7.77)	6.90 (5.22-9.31)	7.61 (5.56-10.6)
10-day	1.53 (1.36-1.76)	2.09 (1.85-2.40)	2.83 (2.50-3.27)	3.44 (3.02-4.01)	4.29 (3.64-5.17)	4.95 (4.11-6.08)	5.63 (4.56-7.09)	6.33 (4.99-8.20)	7.30 (5.52-9.86)	8.06 (5.89-11.3)
20-day	1.75 (1.55-2.01)	2.39 (2.12-2.76)	3.26 (2.88-3.77)	3.98 (3.49-4.64)	4.99 (4.23-6.01)	5.78 (4.80-7.11)	6.60 (5.35-8.31)	7.46 (5.88-9.66)	8.65 (6.54-11.7)	9.58 (7.00-13.4)
30-day	1.97 (1.75-2.27)	2.71 (2.40-3.12)	3.71 (3.28-4.28)	4.55 (3.99-5.30)	5.73 (4.85-6.89)	6.66 (5.53-8.18)	7.63 (6.18-9.60)	8.65 (6.81-11.2)	10.1 (7.61-13.6)	11.2 (8.17-15.6)
45-day	2.33 (2.06-2.68)	3.20 (2.84-3.69)	4.40 (3.89-5.09)	5.42 (4.75-6.31)	6.87 (5.82-8.26)	8.02 (6.66-9.86)	9.23 (7.48-11.6)	10.5 (8.28-13.6)	12.3 (9.30-16.6)	13.7 (10.0-19.2)
60-day	2.54 (2.26-2.93)	3.49 (3.09-4.02)	4.81 (4.24-5.55)	5.93 (5.19-6.90)	7.53 (6.38-9.06)	8.82 (7.32-10.8)	10.2 (8.25-12.8)	11.6 (9.17-15.1)	13.7 (10.4-18.5)	15.4 (11.2-21.5)

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

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

Please refer to NOAA Atlas 14 document for more information.

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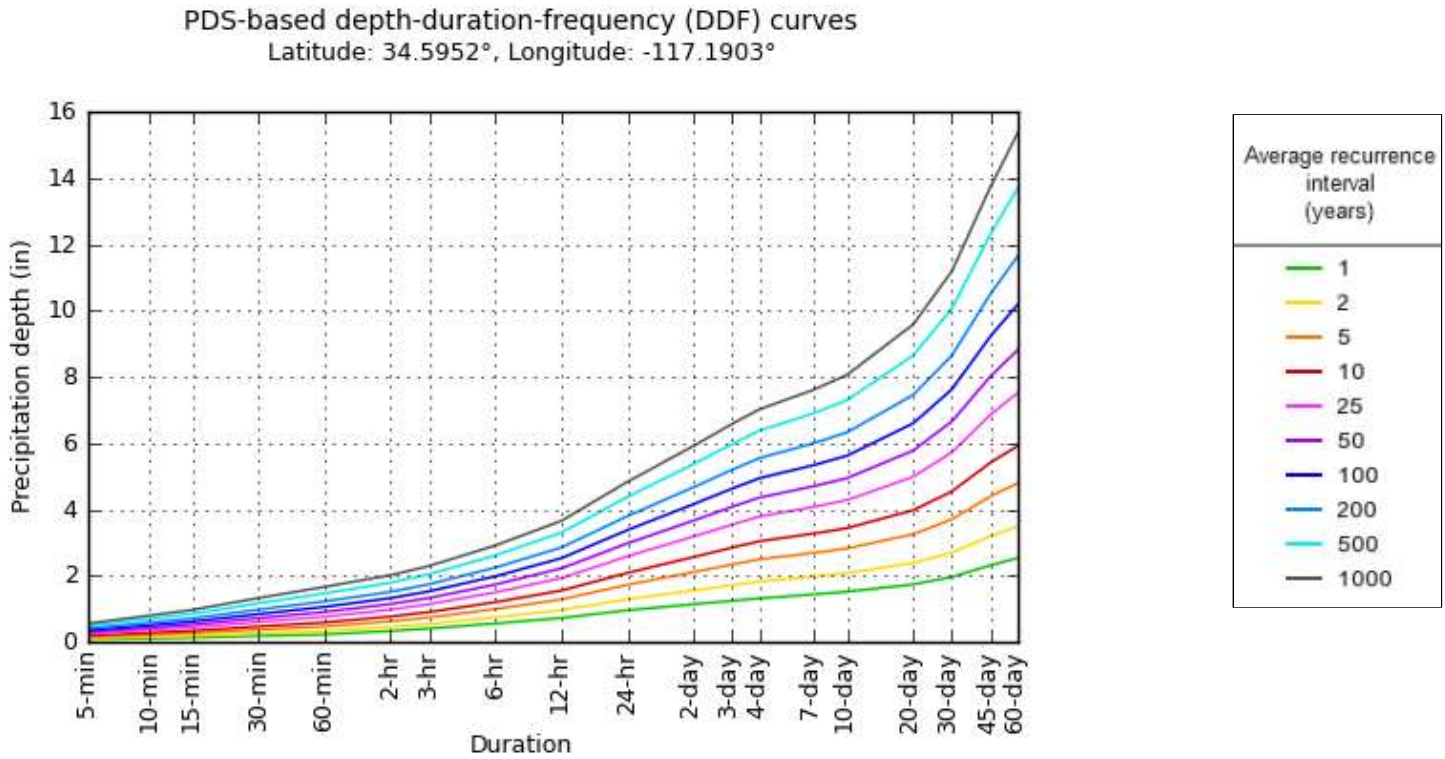
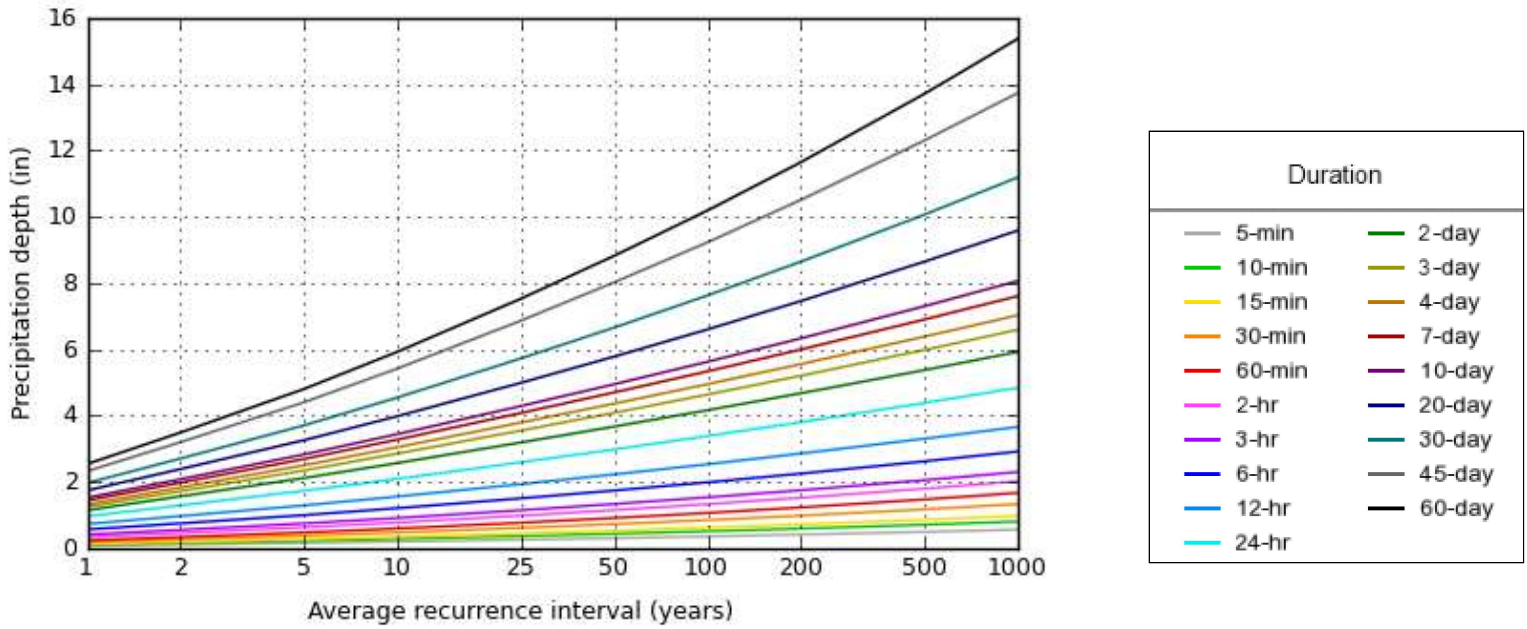
PF graphical





NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Fri Jun 17 19:24:21 2022

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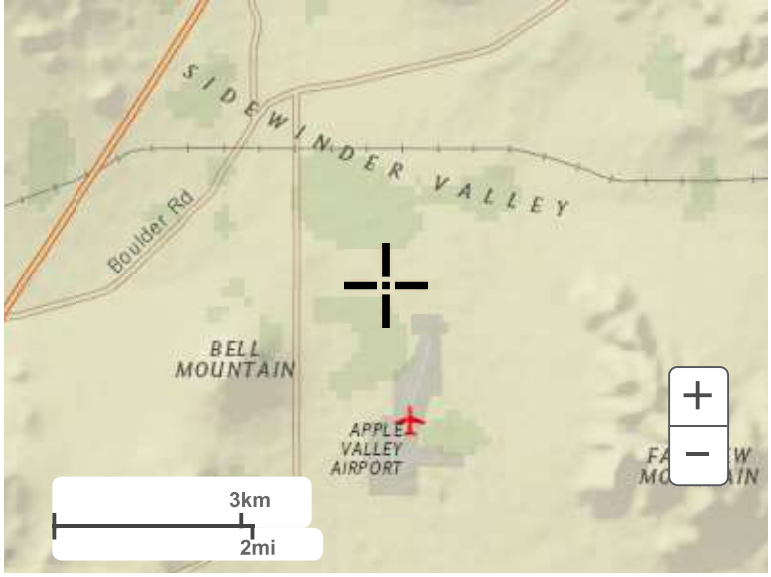
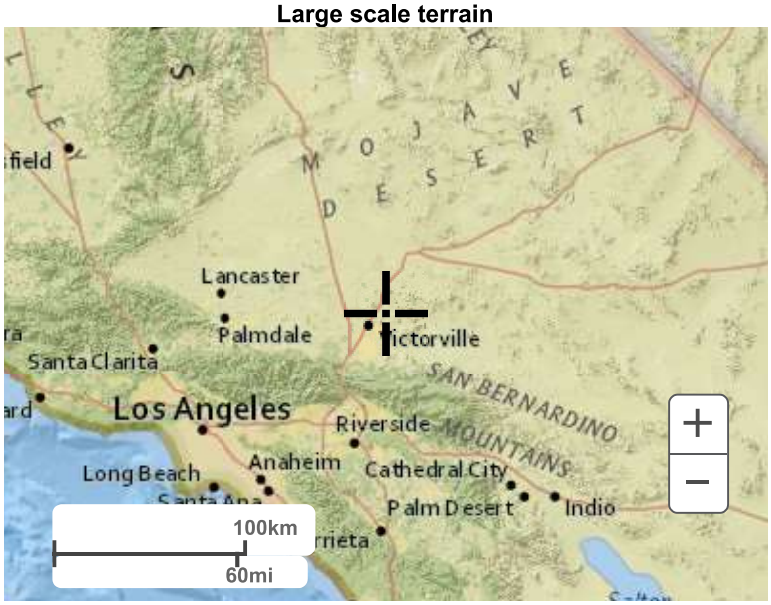
Maps & aerials

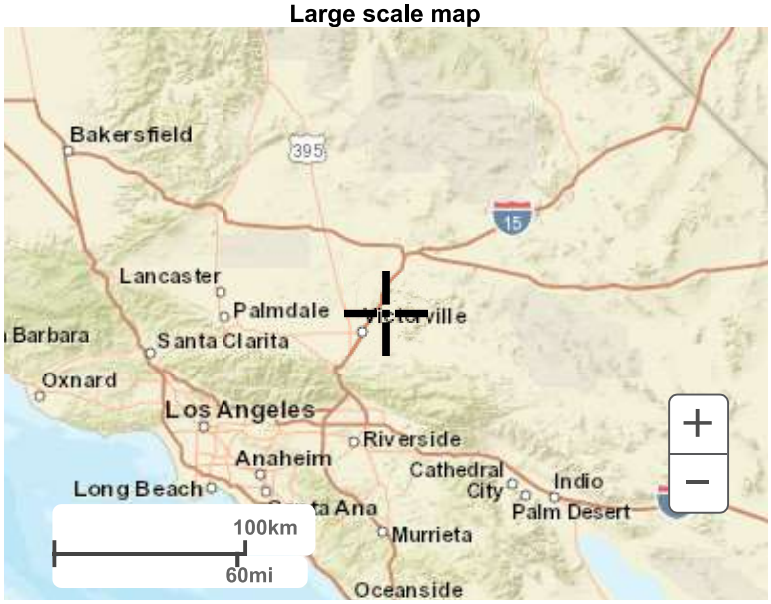
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

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

Disclaimer

EXHIBIT “E”

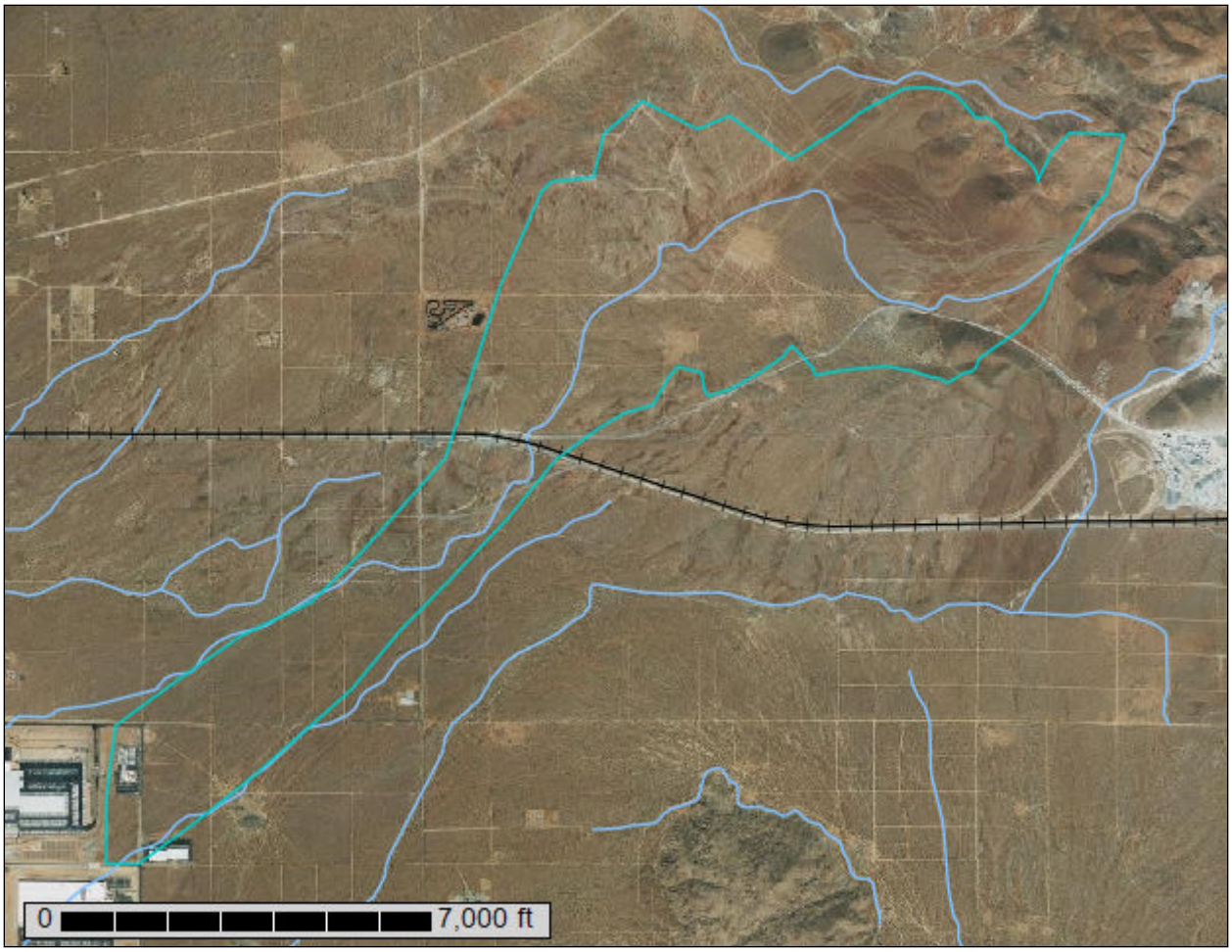
NRCS Soils Data

United States Department of Agriculture

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 San Bernardino County, California, Mojave River Area



June 22, 2022

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.

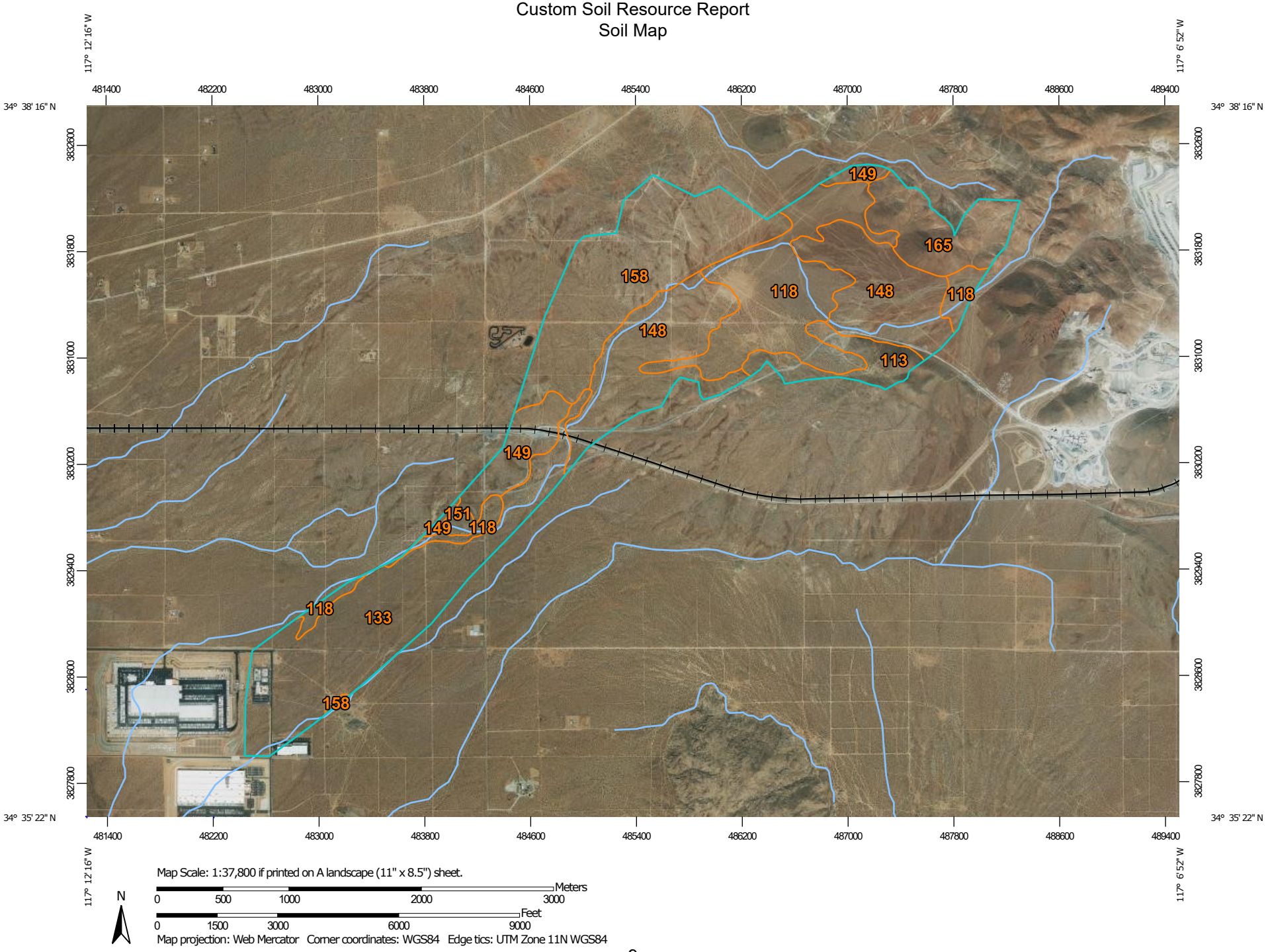
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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.

Custom Soil Resource Report
Soil Map



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 1:24,000.

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: San Bernardino County, California, Mojave River Area
Survey Area Data: Version 13, Sep 13, 2021

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

Date(s) aerial images were photographed: Mar 27, 2021—May 24, 2021

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
113	CAJON SAND, 2 TO 9 PERCENT SLOPES	67.6	4.1%
118	CAJON-ARIZO COMPLEX, 2 TO 15 PERCENT SLOPES*	302.8	18.4%
133	HELENDALE-BRYMAN LOAMY SANDS, 2 TO 5 PERCENT SLOPES*	360.1	21.9%
148	MIRAGE SANDY LOAM, 2 TO 5 PERCENT SLOPES*	360.5	21.9%
149	MIRAGE-JOSHUA COMPLEX, 2 TO 5 PERCENT SLOPES*	87.2	5.3%
151	NEBONA-CUDDEBACK COMPLEX, 2 TO 9 PERCENT SLOPES*	10.8	0.7%
158	ROCK OUTCROP-LITHIC TORRIORTHENTS COMPLEX, 15 TO 50 PERCENT SLOPES*	330.7	20.1%
165	TRIGGER-SPARKHULE-ROCK OUTCROP ASSOCIATION, STEEP*	125.1	7.6%
Totals for Area of Interest		**1,644.8**	**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.

San Bernardino County, California, Mojave River Area

113—CAJON SAND, 2 TO 9 PERCENT SLOPES

Map Unit Setting

National map unit symbol: hkrk
Elevation: 1,800 to 3,500 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 68 degrees F
Frost-free period: 180 to 290 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Cajon

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

A - 0 to 6 inches: sand
C1 - 6 to 25 inches: sand
C2 - 25 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 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: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R030XF012CA - Sandy
Hydric soil rating: No

Minor Components

Cajon, gravelly surface

Percent of map unit: 5 percent

Landform: Alluvial fans

Helendale

Percent of map unit: 5 percent
Landform: Alluvial fans
Hydric soil rating: No

Kimberlina

Percent of map unit: 5 percent
Landform: Alluvial fans
Hydric soil rating: No

118—CAJON-ARIZO COMPLEX, 2 TO 15 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hkrq
Elevation: 2,800 to 3,300 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 66 degrees F
Frost-free period: 180 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Cajon, gravelly surface, and similar soils: 55 percent
Arizo and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cajon, Gravelly Surface

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 6 inches: gravelly sand
H2 - 6 to 60 inches: gravelly sand

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None

Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R030XF028CA - COBBLY SANDY
Hydric soil rating: No

Description of Arizo

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 6 inches: gravelly loamy sand
H2 - 6 to 60 inches: extremely gravelly loamy coarse sand

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A
Ecological site: R030XF025CA - GRAVELLY COARSE LOAMY
Hydric soil rating: No

Minor Components

Helendale

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

Bryman

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

Joshua

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

Cajon, clayey substratum
Percent of map unit: 3 percent

133—HELENDALE-BRYMAN LOAMY SANDS, 2 TO 5 PERCENT SLOPES*

Map Unit Setting
National map unit symbol: hks6
Elevation: 2,500 to 4,000 feet
Mean annual precipitation: 3 to 6 inches
Mean annual air temperature: 59 to 63 degrees F
Frost-free period: 180 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Helendale and similar soils: 50 percent
Bryman and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Helendale

Setting
Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile
H1 - 0 to 6 inches: loamy sand
H2 - 6 to 30 inches: sandy loam
H3 - 30 to 66 inches: sandy loam
H4 - 66 to 99 inches: loamy sand

Properties and qualities
Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R030XF012CA - Sandy
Hydric soil rating: No

Description of Bryman

Setting

Landform: Fan remnants
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 8 inches: loamy sand
H2 - 8 to 12 inches: sandy loam
H3 - 12 to 44 inches: sandy clay loam
H4 - 44 to 60 inches: loamy sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XF012CA - Sandy
Hydric soil rating: No

Minor Components

Cajon

Percent of map unit: 5 percent
Hydric soil rating: No

Mohave variant

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed soils

Percent of map unit: 5 percent
Hydric soil rating: No

148—MIRAGE SANDY LOAM, 2 TO 5 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hksp
Elevation: 2,600 to 3,400 feet
Mean annual precipitation: 3 to 5 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 200 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Mirage

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 5 inches: sandy loam
H2 - 5 to 21 inches: gravelly sandy clay loam
H3 - 21 to 39 inches: gravelly sandy loam
H4 - 39 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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: 5 percent
Maximum salinity: Strongly saline (16.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XG024CA - DESERT PAVEMENT

Hydric soil rating: No

Minor Components

Nebona
Percent of map unit: 5 percent
Hydric soil rating: No

Cuddeback
Percent of map unit: 5 percent
Hydric soil rating: No

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

Unnamed soils
Percent of map unit: 1 percent
Hydric soil rating: No

149—MIRAGE-JOSHUA COMPLEX, 2 TO 5 PERCENT SLOPES*

Map Unit Setting
National map unit symbol: hksq
Elevation: 2,600 to 3,400 feet
Mean annual precipitation: 3 to 5 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 200 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition
Mirage and similar soils: 50 percent
Joshua and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mirage

Setting
Landform: Fan remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite sources

Typical profile
H1 - 0 to 5 inches: sandy loam
H2 - 5 to 21 inches: gravelly sandy clay loam
H3 - 21 to 39 inches: gravelly sandy loam
H4 - 39 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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: 5 percent
Maximum salinity: Strongly saline (16.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XG024CA - DESERT PAVEMENT
Hydric soil rating: No

Description of Joshua

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 3 inches: loam
H2 - 3 to 20 inches: gravelly sandy clay loam
H3 - 20 to 55 inches: very gravelly loamy coarse sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XG024CA - DESERT PAVEMENT
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 10 percent
Hydric soil rating: No

Nebona

Percent of map unit: 5 percent
Hydric soil rating: No

Cuddeback

Percent of map unit: 5 percent
Hydric soil rating: No

151—NEBONA-CUDDEBACK COMPLEX, 2 TO 9 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hkss
Elevation: 1,800 to 3,400 feet
Mean annual precipitation: 3 to 5 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 200 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Nebona and similar soils: 60 percent
Cuddeback and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nebona

Setting

Landform: Fan remnants
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 2 inches: sandy loam
H2 - 2 to 8 inches: fine sandy loam
H3 - 8 to 12 inches: indurated
H4 - 12 to 65 inches: stratified gravelly sand to loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 6 to 14 inches to duripan
Drainage class: Well drained

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
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 0.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R030XF030CA - DESERT PAVEMENT
Hydric soil rating: No

Description of Cuddeback

Setting

Landform: Inset fans
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed sources

Typical profile

H1 - 0 to 3 inches: sandy loam
H2 - 3 to 6 inches: sandy loam
H3 - 6 to 17 inches: gravelly sandy clay loam
H4 - 17 to 34 inches: gravelly sandy loam
H5 - 34 to 38 inches: indurated

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
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: 10 percent
Maximum salinity: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: R030XG024CA - DESERT PAVEMENT
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 19 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Landform: Playas
Hydric soil rating: Yes

158—ROCK OUTCROP-LITHIC TORRIORTHENTS COMPLEX, 15 TO 50 PERCENT SLOPES*

Map Unit Setting

National map unit symbol: hkt0
Elevation: 650 to 9,000 feet
Mean annual precipitation: 3 to 5 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 200 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 60 percent
Lithic torriorthents and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting

Landform: Mountains
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave

Typical profile

H1 - 0 to 10 inches: unweathered bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Lithic Torriorthents

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Residuum weathered from granite

Typical profile

H1 - 0 to 15 inches: variable
H2 - 15 to 29 inches: bedrock

Properties and qualities

Slope: 15 to 50 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Drainage class: Excessively drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydric soil rating: No

Minor Components

Sparkhule

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

Trigger

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

Rock outcrop

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

165—TRIGGER-SPARKHULE-ROCK OUTCROP ASSOCIATION, STEEP*

Map Unit Setting

National map unit symbol: hkt7
Elevation: 650 to 4,500 feet
Mean annual precipitation: 3 to 5 inches
Mean annual air temperature: 59 to 66 degrees F
Frost-free period: 180 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Trigger and similar soils: 40 percent
Sparkhule and similar soils: 30 percent
Rock outcrop: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Trigger

Setting

Landform: Hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from calcareous conglomerate

Typical profile

H1 - 0 to 12 inches: gravelly sandy loam
H2 - 12 to 22 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 40 percent
Depth to restrictive feature: 10 to 18 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R030XF033CA - GRAVELLY LOAM
Hydric soil rating: No

Description of Sparkhule

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium derived from and/or residuum weathered from dacite

Typical profile

H1 - 0 to 2 inches: gravelly sandy loam
H2 - 2 to 18 inches: gravelly sandy clay loam
H3 - 18 to 28 inches: unweathered bedrock

Properties and qualities

Slope: 20 to 30 percent
Depth to restrictive feature: 14 to 20 inches to lithic bedrock
Drainage class: Well drained
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
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R030XF033CA - GRAVELLY LOAM
Hydric soil rating: No

Description of Rock Outcrop

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave

Typical profile
H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities
Slope: 20 to 40 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

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Table 2-2a Runoff curve numbers for urban areas [1]

Cover description: Cover type and hydrologic condition	Average percent impervious area [2]	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

1 Average runoff condition, and $I_a = 0.2S$.
2 The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.
3 CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.
4 Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.
5 Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Table 2-2d Runoff curve numbers for arid and semiarid rangelands [1]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition [2]	A [3]	B	C	D
Herbaceous—mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen—mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush.	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper—pinyon, juniper, or both; grass understory.	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory.	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, bursage, palo verde, mesquite, and cactus.	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

1 Average runoff condition, and I_a, = 0.2S. For range in humid regions, use table 2-2c.
2 Poor: <30% ground cover (litter, grass, and brush overstory).
Fair: 30 to 70% ground cover.
Good: > 70% ground cover.
3 Curve numbers for group A have been developed only for desert shrub.

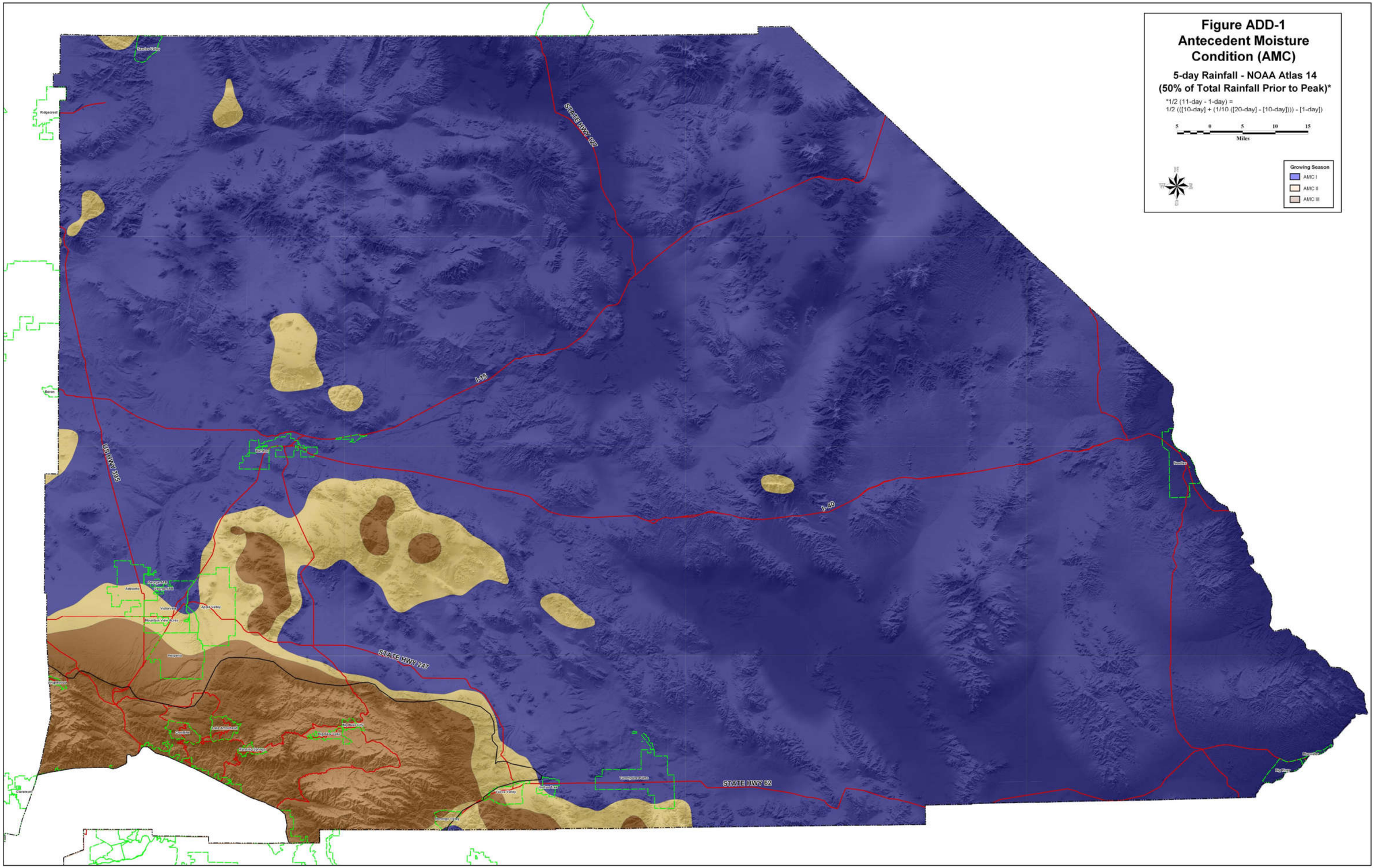


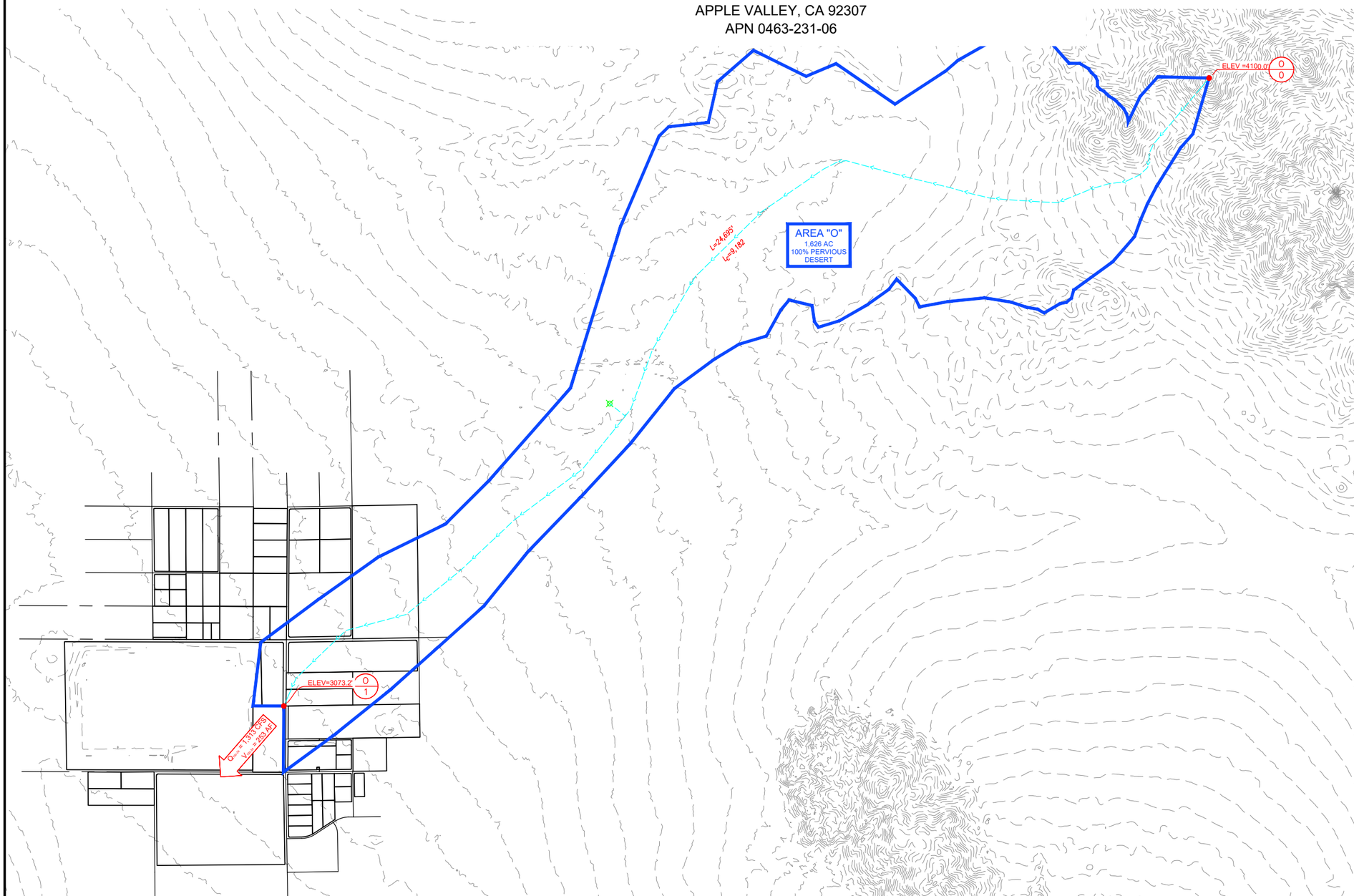
Figure ADD-1
Antecedent Moisture Condition (AMC)
5-day Rainfall - NOAA Atlas 14
(50% of Total Rainfall Prior to Peak)*
*1/2 (11-day - 1-day) =
1/2 (([10-day] + (1/10 ([20-day] - [10-day]))) - [1-day])
5 0 5 10 15
Miles
Growing Season
AMC I
AMC II
AMC III
STATE HWY 127
I-15
US HWY 395
I-40
STATE HWY 247
STATE HWY 62

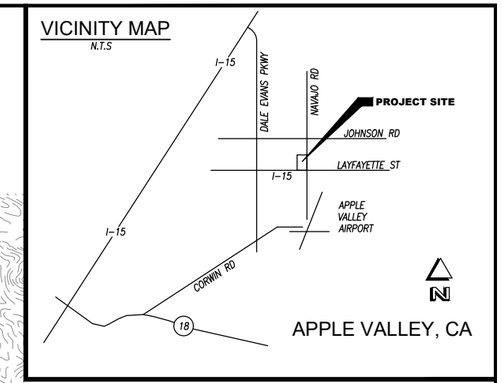
EXHIBIT “F”

Existing Off-Site
Hydrologic Conditions
Study Map

EXHIBIT "F"
EXISTING OFF-SITE
HYDROLOGIC CONDITIONS

FISHER CONSTRUCTION GTS COLD STORAGE
APPLE VALLEY, CA 92307
APN 0463-231-06





MAP LEGEND

DRAINAGE AREA LIMITS

FLOW PATHS

DRAINAGE AREA CENTROIDS

DRAINAGE AREA, SIZE, % IMPERVIOUS, & CLOSEST APPROXIMATED CLASSIFICATION → AREA "A" 1.00 AC 20% PERVIOUS 1 AC LOTS

RATIONAL METHOD NODE LOCATION, ELEVATION, & TOTAL PEAK Q_{100-1} → A 1.1 ELEV = 100.00 Q_{100} = 1.0CFS

UNIT HYDROGRAPH METHOD TOTAL PEAK Q_{100-24} → Q_{100-24} = 1 CFS, V_{100-24} = 1 AF, hourly

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

EXISTING ON-SITE HYDROLOGIC CONDITIONS
FISHER CONSTRUCTION GTS COLD STORAGE
APN 0463-231-06
APPLE VALLEY, CA 92307
SAN BERNARDINO COUNTY

PREPARED BY:
BONADIMAN
JOSEPH E. BONADIMAN & ASSOCIATES, INC.
CIVIL • STRUCTURAL • MANAGEMENT • SURVEYING
TEL. (760) 955-5050

PREPARED FOR:

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	FISHER CONSTRUCTION
JOB NO:	224986
PREPARED BY:	CR
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.

EXISTING OFF-SITE
APN 0463-231-06
APPLE VALLEY, CA 92307

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 06-23-22

F

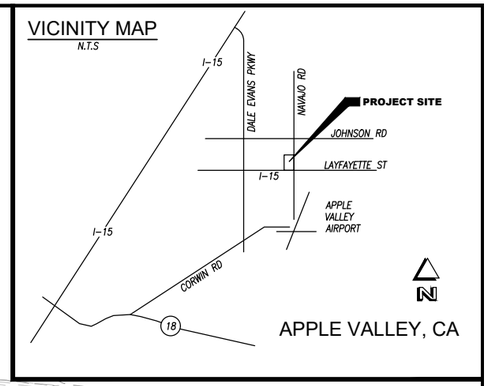
SHEET 1 OF 1

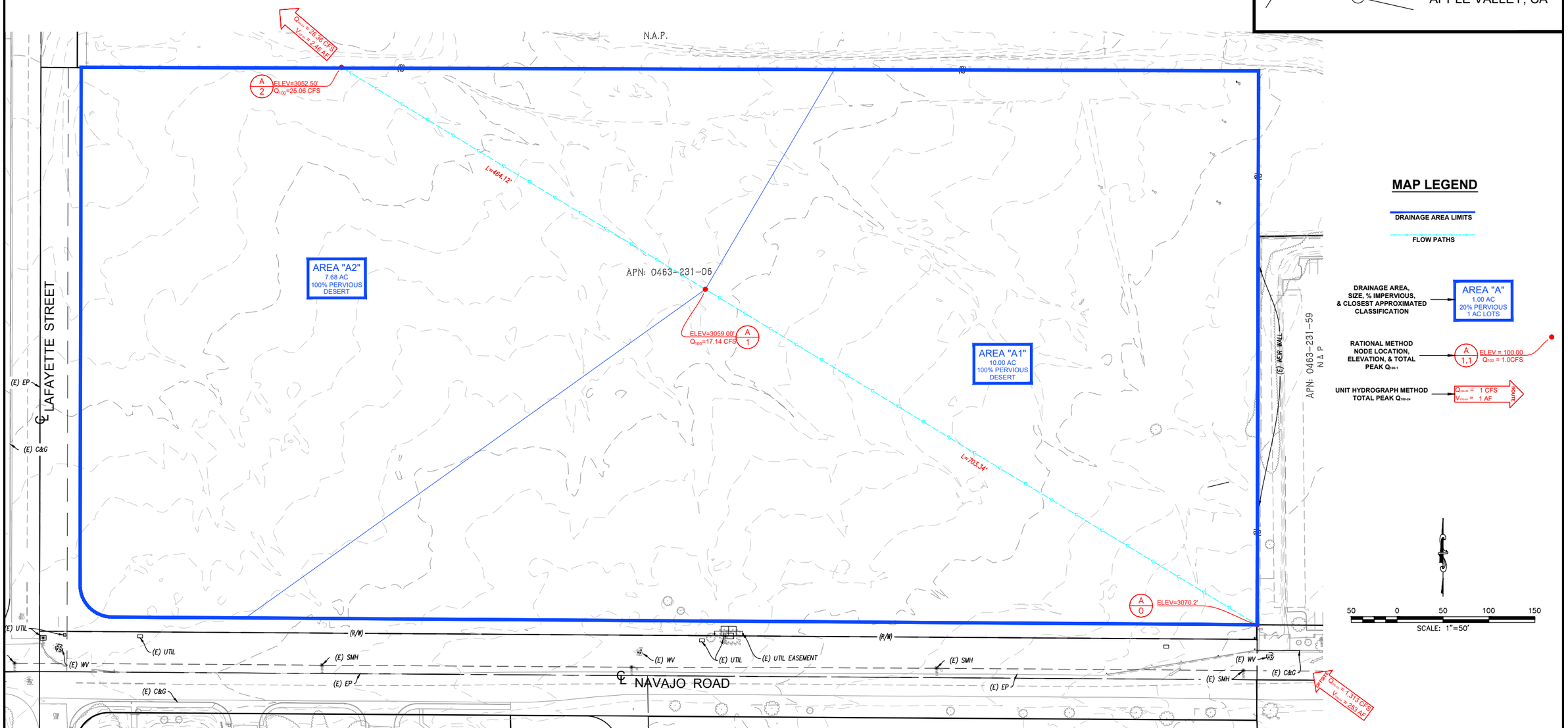
EXHIBIT “G”

Existing On-Site
Hydrologic Conditions
Study Map

EXHIBIT "G"
EXISTING ON-SITE
HYDROLOGIC CONDITIONS

FISHER CONSTRUCTION GTS COLD STORAGE
APPLE VALLEY, CA 92307
APN 0463-231-06





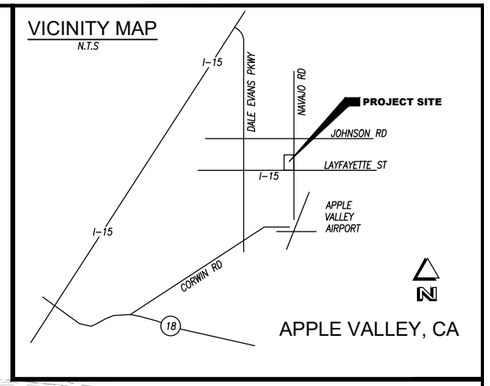
EXISTING ON-SITE HYDROLOGIC CONDITIONS FISHER CONSTRUCTION GTS COLD STORAGE APN 0463-231-06 APPLE VALLEY, CA 92307 SAN BERNARDINO COUNTY	PREPARED BY: BONADIMAN TEL. (909) 885-3000	PREPARED FOR:	BY / MARK / REVISION DESCRIPTION / DATE	PREPARED FOR: FISHER CONSTRUCTION JOB NO: 224986 PREPARED BY: CR CHECKED 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.	EXISTING ON-SITE APN 0463-231-06 APPLE VALLEY, CA 92307 DISREGARD PRINTS BEARING EARLIER REVISION DATES → 06-23-22	G SHEET 1 OF 1

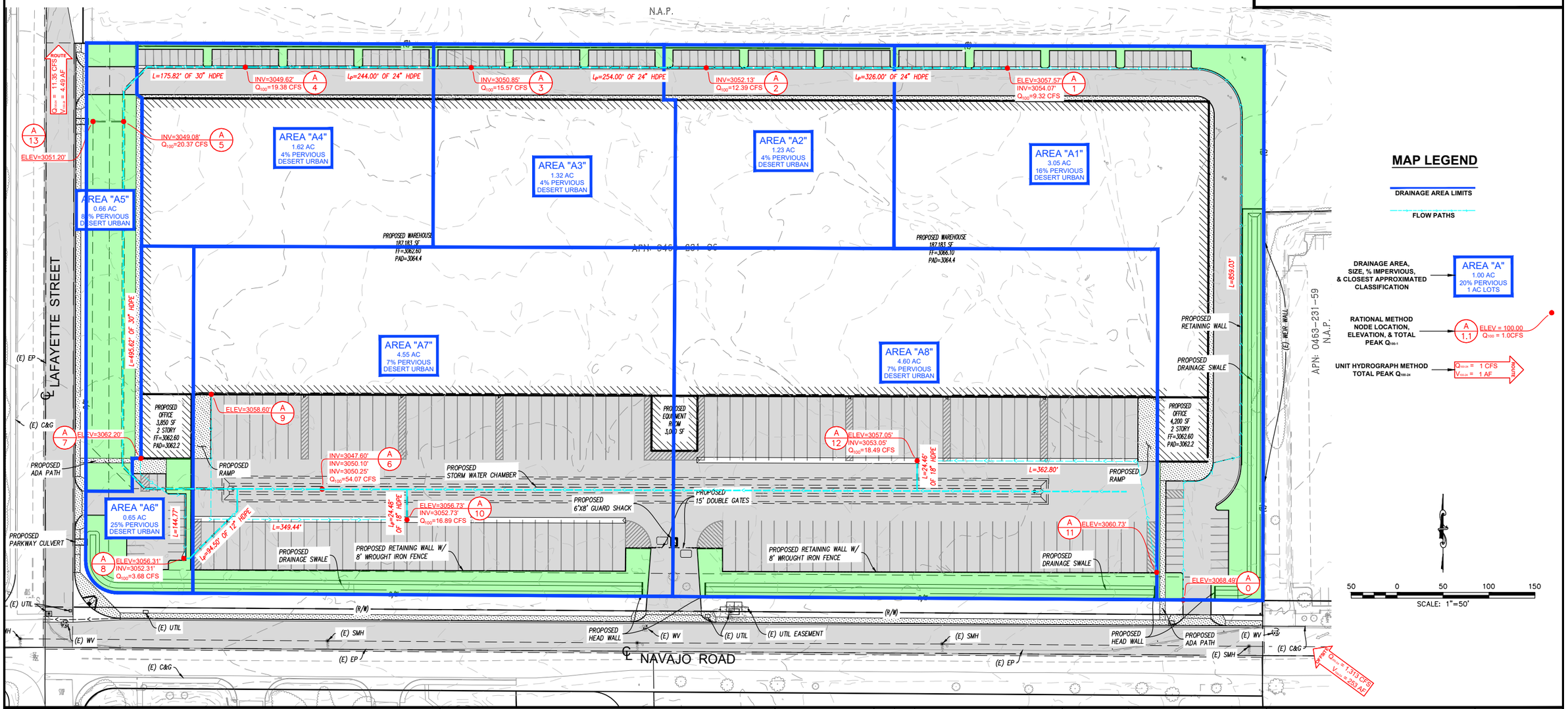
EXHIBIT “H”

Developed On-Site Hydrologic Conditions Study Map

EXHIBIT "H"
DEVELOPED ON-SITE
HYDROLOGIC CONDITIONS

FISHER CONSTRUCTION GTS COLD STORAGE
APPLE VALLEY, CA 92307
APN 0463-231-06





DEVELOPED ON-SITE HYDROLOGIC CONDITIONS FISHER CONSTRUCTION GTS COLD STORAGE APN 0463-231-06 APPLE VALLEY, CA 92307 SAN BERNARDINO COUNTY	PREPARED BY: BONADIMAN TEL. (760) 955-5555	PREPARED FOR:	BY / MARK / REVISION DESCRIPTION / DATE	PREPARED FOR: FISHER CONSTRUCTION JOB NO: 224986 PREPARED BY: CR 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.	DEVELOPED ON-SITE APN 0463-231-06 APPLE VALLEY, CA 92307	H
					DISREGARD PRINTS BEARING EARLIER REVISION DATES → 06-23-22	SHEET 1 OF 1

ATTACHMENT 1

Existing Off-site Conditions
Unit Method 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  06/22/22

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6320

-------------------------------------------------------------------
224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
EXISITNG CONDITION - OFFSITE
100-YEAR, 24-HOUR STORM
BY: JTS  DATE: 06-22-22
-------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
          1626.00           1           0.60
-------------------------------------------------------------------
Rainfall data for year 2
          1626.00           6           0.75
-------------------------------------------------------------------
Rainfall data for year 2
          1626.00          24           1.30
-------------------------------------------------------------------
Rainfall data for year 100
          1626.00           1           1.07
-------------------------------------------------------------------
Rainfall data for year 100
          1626.00           6           1.99
-------------------------------------------------------------------
Rainfall data for year 100
          1626.00          24           3.39
-------------------------------------------------------------------
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 81.0      81.0       1626.00      1.000     0.353    1.000    0.353

Area-averaged adjusted loss rate Fm (In/Hr) =  0.353

********* Area-Averaged low loss rate fraction, Yb **********

Area       Area          SCS CN    SCS CN      S     Pervious
 (Ac.)      Fract         (AMC2)    (AMC2)           Yield Fr
  1626.00   1.000         81.0      81.0       2.35     0.478

Area-averaged catchment yield fraction, Y =  0.478
Area-averaged low loss fraction, Yb =  0.522
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watercourse length =   24695.00(Ft.)
Length from concentration point to centroid =    9182.00(Ft.)
Elevation difference along watercourse =    1026.80(Ft.)
```

```
Mannings friction factor along watercourse =  0.040
Watershed area =    1626.00(Ac.)
Catchment Lag time =   0.764 hours
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 10.9026
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.353(In/Hr)
Average low loss rate fraction (Yb) = 0.522 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.508(In)
Computed peak 30-minute rainfall =  0.869(In)
Specified peak 1-hour rainfall =  1.070(In)
Computed peak 3-hour rainfall =  1.565(In)
Specified peak 6-hour rainfall =  1.990(In)
Specified peak 24-hour rainfall =  3.390(In)


Rainfall depth area reduction factors:
Using a total area of    1626.00(Ac.) (Ref: fig. E-4)

5-minute factor = 0.924     Adjusted rainfall =  0.469(In)
30-minute factor = 0.924    Adjusted rainfall =  0.803(In)
1-hour factor = 0.924       Adjusted rainfall =  0.988(In)
3-hour factor = 0.990       Adjusted rainfall =  1.550(In)
6-hour factor = 0.995       Adjusted rainfall =  1.980(In)
24-hour factor = 0.998      Adjusted rainfall =  3.383(In)
----------------------------------------------------------------------

                        U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
----------------------------------------------------------------------
                (K =     19664.44 (CFS))

  1                0.480                  94.333
  2                1.757                 251.134
  3                3.797                 401.200
  4                6.614                 553.960
  5               10.469                 757.967
  6               17.027                1289.614
  7               27.054                1971.829
  8               37.094                1974.384
  9               45.309                1615.377
 10               51.839                1284.108
 11               57.184                1050.979
 12               61.333                 815.998
 13               64.781                 677.850
 14               67.749                 583.747
 15               70.439                 528.945
 16               72.798                 463.885
 17               74.861                 405.629
 18               76.752                 371.880
 19               78.501                 343.924
 20               79.963                 287.573
 21               81.385                 279.615
 22               82.616                 241.995
 23               83.793                 231.482
 24               84.896                 216.952
 25               85.943                 205.817
 26               86.937                 195.473
 27               87.813                 172.370
 28               88.660                 166.501
 29               89.343                 134.354
 30               89.997                 128.480
 31               90.622                 122.870
 32               91.232                 120.060
 33               91.808                 113.153
 34               92.331                 102.999
 35               92.847                 101.342
 36               93.330                  95.004
 37               93.804                  93.293
 38               94.201                  77.977
 39               94.571                  72.894
 40               94.942                  72.894
 41               95.313                  72.894
 42               95.661                  68.382
 43               95.947                  56.389
 44               96.231                  55.742
 45               96.514                  55.742
 46               96.797                  55.576
```

47	97.025	44.945
48	97.222	38.591
49	97.418	38.591
50	97.614	38.591
51	97.797	35.967
52	97.915	23.152
53	98.024	21.439
54	98.133	21.439
55	98.242	21.439
56	98.361	23.444
57	98.492	25.725
58	98.623	25.727
59	98.754	25.727
60	98.884	25.727
61	99.015	25.727
62	99.146	25.727
63	99.277	25.727
64	99.408	25.727
65	99.519	21.832
66	99.588	13.659
67	99.656	13.400
68	99.725	13.400
69	99.793	13.400
70	99.861	13.400
71	99.929	13.400
72	100.000	6.700

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.4690	0.4690
2	0.5774	0.1084
3	0.6521	0.0747
4	0.7109	0.0588
5	0.7601	0.0492
6	0.8029	0.0427
7	0.8409	0.0380
8	0.8752	0.0344
9	0.9067	0.0315
10	0.9358	0.0291
11	0.9630	0.0271
12	0.9884	0.0255
13	1.0214	0.0329
14	1.0529	0.0315
15	1.0831	0.0302
16	1.1121	0.0290
17	1.1400	0.0280
18	1.1670	0.0270
19	1.1932	0.0261
20	1.2185	0.0253
21	1.2431	0.0246
22	1.2670	0.0239
23	1.2903	0.0233
24	1.3130	0.0227
25	1.3351	0.0221
26	1.3568	0.0216
27	1.3779	0.0211
28	1.3986	0.0207
29	1.4188	0.0202
30	1.4387	0.0198
31	1.4581	0.0195
32	1.4772	0.0191
33	1.4959	0.0187
34	1.5144	0.0184
35	1.5324	0.0181
36	1.5502	0.0178
37	1.5653	0.0151
38	1.5801	0.0148
39	1.5946	0.0146
40	1.6090	0.0143
41	1.6230	0.0141
42	1.6369	0.0139
43	1.6506	0.0137
44	1.6640	0.0134
45	1.6773	0.0133
46	1.6903	0.0131
47	1.7032	0.0129
48	1.7159	0.0127
49	1.7284	0.0125
50	1.7408	0.0124
51	1.7530	0.0122
52	1.7651	0.0121

53	1.7770	0.0119
54	1.7887	0.0118
55	1.8004	0.0116
56	1.8118	0.0115
57	1.8232	0.0114
58	1.8344	0.0112
59	1.8455	0.0111
60	1.8565	0.0110
61	1.8674	0.0109
62	1.8781	0.0107
63	1.8887	0.0106
64	1.8993	0.0105
65	1.9097	0.0104
66	1.9200	0.0103
67	1.9302	0.0102
68	1.9403	0.0101
69	1.9504	0.0100
70	1.9603	0.0099
71	1.9701	0.0098
72	1.9799	0.0097
73	1.9905	0.0106
74	2.0010	0.0105
75	2.0114	0.0104
76	2.0217	0.0103
77	2.0319	0.0102
78	2.0421	0.0102
79	2.0522	0.0101
80	2.0622	0.0100
81	2.0721	0.0099
82	2.0819	0.0098
83	2.0917	0.0098
84	2.1014	0.0097
85	2.1111	0.0096
86	2.1206	0.0096
87	2.1301	0.0095
88	2.1395	0.0094
89	2.1489	0.0094
90	2.1582	0.0093
91	2.1674	0.0092
92	2.1766	0.0092
93	2.1857	0.0091
94	2.1948	0.0091
95	2.2038	0.0090
96	2.2127	0.0089
97	2.2216	0.0089
98	2.2304	0.0088
99	2.2392	0.0088
100	2.2479	0.0087
101	2.2566	0.0087
102	2.2652	0.0086
103	2.2737	0.0086
104	2.2822	0.0085
105	2.2907	0.0085
106	2.2991	0.0084
107	2.3075	0.0084
108	2.3158	0.0083
109	2.3240	0.0083
110	2.3322	0.0082
111	2.3404	0.0082
112	2.3485	0.0081
113	2.3566	0.0081
114	2.3647	0.0080
115	2.3727	0.0080
116	2.3806	0.0080
117	2.3885	0.0079
118	2.3964	0.0079
119	2.4042	0.0078
120	2.4120	0.0078
121	2.4197	0.0077
122	2.4275	0.0077
123	2.4351	0.0077
124	2.4428	0.0076
125	2.4504	0.0076
126	2.4579	0.0076
127	2.4654	0.0075
128	2.4729	0.0075
129	2.4804	0.0074
130	2.4878	0.0074
131	2.4952	0.0074
132	2.5025	0.0073
133	2.5098	0.0073

134	2.5171	0.0073
135	2.5243	0.0072
136	2.5315	0.0072
137	2.5387	0.0072
138	2.5459	0.0071
139	2.5530	0.0071
140	2.5601	0.0071
141	2.5671	0.0071
142	2.5741	0.0070
143	2.5811	0.0070
144	2.5881	0.0070
145	2.5950	0.0069
146	2.6019	0.0069
147	2.6088	0.0069
148	2.6156	0.0068
149	2.6225	0.0068
150	2.6292	0.0068
151	2.6360	0.0068
152	2.6427	0.0067
153	2.6494	0.0067
154	2.6561	0.0067
155	2.6628	0.0067
156	2.6694	0.0066
157	2.6760	0.0066
158	2.6826	0.0066
159	2.6891	0.0065
160	2.6956	0.0065
161	2.7021	0.0065
162	2.7086	0.0065
163	2.7151	0.0064
164	2.7215	0.0064
165	2.7279	0.0064
166	2.7343	0.0064
167	2.7406	0.0064
168	2.7470	0.0063
169	2.7533	0.0063
170	2.7595	0.0063
171	2.7658	0.0063
172	2.7720	0.0062
173	2.7783	0.0062
174	2.7845	0.0062
175	2.7906	0.0062
176	2.7968	0.0062
177	2.8029	0.0061
178	2.8090	0.0061
179	2.8151	0.0061
180	2.8212	0.0061
181	2.8272	0.0060
182	2.8333	0.0060
183	2.8393	0.0060
184	2.8452	0.0060
185	2.8512	0.0060
186	2.8572	0.0059
187	2.8631	0.0059
188	2.8690	0.0059
189	2.8749	0.0059
190	2.8807	0.0059
191	2.8866	0.0059
192	2.8924	0.0058
193	2.8982	0.0058
194	2.9040	0.0058
195	2.9098	0.0058
196	2.9156	0.0058
197	2.9213	0.0057
198	2.9270	0.0057
199	2.9327	0.0057
200	2.9384	0.0057
201	2.9441	0.0057
202	2.9497	0.0057
203	2.9554	0.0056
204	2.9610	0.0056
205	2.9666	0.0056
206	2.9722	0.0056
207	2.9778	0.0056
208	2.9833	0.0056
209	2.9888	0.0055
210	2.9944	0.0055
211	2.9999	0.0055
212	3.0053	0.0055
213	3.0108	0.0055
214	3.0163	0.0055

215	3.0217	0.0054
216	3.0271	0.0054
217	3.0325	0.0054
218	3.0379	0.0054
219	3.0433	0.0054
220	3.0487	0.0054
221	3.0540	0.0053
222	3.0594	0.0053
223	3.0647	0.0053
224	3.0700	0.0053
225	3.0753	0.0053
226	3.0805	0.0053
227	3.0858	0.0053
228	3.0911	0.0052
229	3.0963	0.0052
230	3.1015	0.0052
231	3.1067	0.0052
232	3.1119	0.0052
233	3.1171	0.0052
234	3.1222	0.0052
235	3.1274	0.0051
236	3.1325	0.0051
237	3.1376	0.0051
238	3.1428	0.0051
239	3.1479	0.0051
240	3.1529	0.0051
241	3.1580	0.0051
242	3.1631	0.0051
243	3.1681	0.0050
244	3.1731	0.0050
245	3.1782	0.0050
246	3.1832	0.0050
247	3.1882	0.0050
248	3.1931	0.0050
249	3.1981	0.0050
250	3.2031	0.0050
251	3.2080	0.0049
252	3.2130	0.0049
253	3.2179	0.0049
254	3.2228	0.0049
255	3.2277	0.0049
256	3.2326	0.0049
257	3.2374	0.0049
258	3.2423	0.0049
259	3.2472	0.0049
260	3.2520	0.0048
261	3.2568	0.0048
262	3.2616	0.0048
263	3.2664	0.0048
264	3.2712	0.0048
265	3.2760	0.0048
266	3.2808	0.0048
267	3.2856	0.0048
268	3.2903	0.0048
269	3.2950	0.0047
270	3.2998	0.0047
271	3.3045	0.0047
272	3.3092	0.0047
273	3.3139	0.0047
274	3.3186	0.0047
275	3.3233	0.0047
276	3.3279	0.0047
277	3.3326	0.0047
278	3.3372	0.0046
279	3.3419	0.0046
280	3.3465	0.0046
281	3.3511	0.0046
282	3.3557	0.0046
283	3.3603	0.0046
284	3.3649	0.0046
285	3.3694	0.0046
286	3.3740	0.0046
287	3.3786	0.0046
288	3.3831	0.0045

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0045	0.0024	0.0022
2	0.0046	0.0024	0.0022

3	0.0046	0.0024	0.0022
4	0.0046	0.0024	0.0022
5	0.0046	0.0024	0.0022
6	0.0046	0.0024	0.0022
7	0.0046	0.0024	0.0022
8	0.0046	0.0024	0.0022
9	0.0047	0.0024	0.0022
10	0.0047	0.0024	0.0022
11	0.0047	0.0025	0.0022
12	0.0047	0.0025	0.0022
13	0.0047	0.0025	0.0023
14	0.0047	0.0025	0.0023
15	0.0048	0.0025	0.0023
16	0.0048	0.0025	0.0023
17	0.0048	0.0025	0.0023
18	0.0048	0.0025	0.0023
19	0.0048	0.0025	0.0023
20	0.0048	0.0025	0.0023
21	0.0049	0.0025	0.0023
22	0.0049	0.0025	0.0023
23	0.0049	0.0026	0.0023
24	0.0049	0.0026	0.0023
25	0.0049	0.0026	0.0024
26	0.0049	0.0026	0.0024
27	0.0050	0.0026	0.0024
28	0.0050	0.0026	0.0024
29	0.0050	0.0026	0.0024
30	0.0050	0.0026	0.0024
31	0.0050	0.0026	0.0024
32	0.0051	0.0026	0.0024
33	0.0051	0.0027	0.0024
34	0.0051	0.0027	0.0024
35	0.0051	0.0027	0.0024
36	0.0051	0.0027	0.0025
37	0.0052	0.0027	0.0025
38	0.0052	0.0027	0.0025
39	0.0052	0.0027	0.0025
40	0.0052	0.0027	0.0025
41	0.0052	0.0027	0.0025
42	0.0053	0.0027	0.0025
43	0.0053	0.0028	0.0025
44	0.0053	0.0028	0.0025
45	0.0053	0.0028	0.0025
46	0.0053	0.0028	0.0026
47	0.0054	0.0028	0.0026
48	0.0054	0.0028	0.0026
49	0.0054	0.0028	0.0026
50	0.0054	0.0028	0.0026
51	0.0055	0.0029	0.0026
52	0.0055	0.0029	0.0026
53	0.0055	0.0029	0.0026
54	0.0055	0.0029	0.0026
55	0.0056	0.0029	0.0027
56	0.0056	0.0029	0.0027
57	0.0056	0.0029	0.0027
58	0.0056	0.0029	0.0027
59	0.0057	0.0030	0.0027
60	0.0057	0.0030	0.0027
61	0.0057	0.0030	0.0027
62	0.0057	0.0030	0.0027
63	0.0058	0.0030	0.0028
64	0.0058	0.0030	0.0028
65	0.0058	0.0030	0.0028
66	0.0059	0.0031	0.0028
67	0.0059	0.0031	0.0028
68	0.0059	0.0031	0.0028
69	0.0059	0.0031	0.0028
70	0.0060	0.0031	0.0029
71	0.0060	0.0031	0.0029
72	0.0060	0.0031	0.0029
73	0.0061	0.0032	0.0029
74	0.0061	0.0032	0.0029
75	0.0061	0.0032	0.0029
76	0.0062	0.0032	0.0029
77	0.0062	0.0032	0.0030
78	0.0062	0.0032	0.0030
79	0.0063	0.0033	0.0030
80	0.0063	0.0033	0.0030
81	0.0063	0.0033	0.0030
82	0.0064	0.0033	0.0030
83	0.0064	0.0033	0.0031

84	0.0064	0.0034	0.0031
85	0.0065	0.0034	0.0031
86	0.0065	0.0034	0.0031
87	0.0065	0.0034	0.0031
88	0.0066	0.0034	0.0031
89	0.0066	0.0035	0.0032
90	0.0067	0.0035	0.0032
91	0.0067	0.0035	0.0032
92	0.0067	0.0035	0.0032
93	0.0068	0.0035	0.0032
94	0.0068	0.0036	0.0033
95	0.0069	0.0036	0.0033
96	0.0069	0.0036	0.0033
97	0.0070	0.0036	0.0033
98	0.0070	0.0037	0.0033
99	0.0071	0.0037	0.0034
100	0.0071	0.0037	0.0034
101	0.0071	0.0037	0.0034
102	0.0072	0.0037	0.0034
103	0.0072	0.0038	0.0035
104	0.0073	0.0038	0.0035
105	0.0073	0.0038	0.0035
106	0.0074	0.0039	0.0035
107	0.0074	0.0039	0.0036
108	0.0075	0.0039	0.0036
109	0.0076	0.0039	0.0036
110	0.0076	0.0040	0.0036
111	0.0077	0.0040	0.0037
112	0.0077	0.0040	0.0037
113	0.0078	0.0041	0.0037
114	0.0078	0.0041	0.0037
115	0.0079	0.0041	0.0038
116	0.0080	0.0042	0.0038
117	0.0080	0.0042	0.0038
118	0.0081	0.0042	0.0039
119	0.0082	0.0043	0.0039
120	0.0082	0.0043	0.0039
121	0.0083	0.0043	0.0040
122	0.0084	0.0044	0.0040
123	0.0085	0.0044	0.0040
124	0.0085	0.0044	0.0041
125	0.0086	0.0045	0.0041
126	0.0087	0.0045	0.0041
127	0.0088	0.0046	0.0042
128	0.0088	0.0046	0.0042
129	0.0089	0.0047	0.0043
130	0.0090	0.0047	0.0043
131	0.0091	0.0048	0.0044
132	0.0092	0.0048	0.0044
133	0.0093	0.0049	0.0044
134	0.0094	0.0049	0.0045
135	0.0095	0.0050	0.0045
136	0.0096	0.0050	0.0046
137	0.0097	0.0051	0.0046
138	0.0098	0.0051	0.0047
139	0.0099	0.0052	0.0047
140	0.0100	0.0052	0.0048
141	0.0102	0.0053	0.0049
142	0.0102	0.0053	0.0049
143	0.0104	0.0054	0.0050
144	0.0105	0.0055	0.0050
145	0.0097	0.0051	0.0047
146	0.0098	0.0051	0.0047
147	0.0100	0.0052	0.0048
148	0.0101	0.0053	0.0048
149	0.0103	0.0054	0.0049
150	0.0104	0.0054	0.0050
151	0.0106	0.0056	0.0051
152	0.0107	0.0056	0.0051
153	0.0110	0.0057	0.0052
154	0.0111	0.0058	0.0053
155	0.0114	0.0059	0.0054
156	0.0115	0.0060	0.0055
157	0.0118	0.0061	0.0056
158	0.0119	0.0062	0.0057
159	0.0122	0.0064	0.0058
160	0.0124	0.0065	0.0059
161	0.0127	0.0066	0.0061
162	0.0129	0.0067	0.0062
163	0.0133	0.0069	0.0063
164	0.0134	0.0070	0.0064

165	0.0139	0.0072	0.0066
166	0.0141	0.0074	0.0067
167	0.0146	0.0076	0.0070
168	0.0148	0.0077	0.0071
169	0.0178	0.0093	0.0085
170	0.0181	0.0094	0.0086
171	0.0187	0.0098	0.0090
172	0.0191	0.0100	0.0091
173	0.0198	0.0104	0.0095
174	0.0202	0.0106	0.0097
175	0.0211	0.0110	0.0101
176	0.0216	0.0113	0.0103
177	0.0227	0.0118	0.0108
178	0.0233	0.0122	0.0111
179	0.0246	0.0128	0.0118
180	0.0253	0.0132	0.0121
181	0.0270	0.0141	0.0129
182	0.0280	0.0146	0.0134
183	0.0302	0.0158	0.0144
184	0.0315	0.0164	0.0150
185	0.0255	0.0133	0.0122
186	0.0271	0.0142	0.0130
187	0.0315	0.0164	0.0150
188	0.0344	0.0179	0.0164
189	0.0427	0.0223	0.0204
190	0.0492	0.0257	0.0235
191	0.0747	0.0294	0.0453
192	0.1084	0.0294	0.0790
193	0.4690	0.0294	0.4396
194	0.0588	0.0294	0.0294
195	0.0380	0.0198	0.0182
196	0.0291	0.0152	0.0139
197	0.0329	0.0172	0.0157
198	0.0290	0.0151	0.0139
199	0.0261	0.0136	0.0125
200	0.0239	0.0125	0.0114
201	0.0221	0.0116	0.0106
202	0.0207	0.0108	0.0099
203	0.0195	0.0102	0.0093
204	0.0184	0.0096	0.0088
205	0.0151	0.0079	0.0072
206	0.0143	0.0075	0.0068
207	0.0137	0.0071	0.0065
208	0.0131	0.0068	0.0062
209	0.0125	0.0065	0.0060
210	0.0121	0.0063	0.0058
211	0.0116	0.0061	0.0056
212	0.0112	0.0059	0.0054
213	0.0109	0.0057	0.0052
214	0.0105	0.0055	0.0050
215	0.0102	0.0053	0.0049
216	0.0099	0.0052	0.0047
217	0.0106	0.0055	0.0051
218	0.0103	0.0054	0.0049
219	0.0101	0.0053	0.0048
220	0.0098	0.0051	0.0047
221	0.0096	0.0050	0.0046
222	0.0094	0.0049	0.0045
223	0.0092	0.0048	0.0044
224	0.0091	0.0047	0.0043
225	0.0089	0.0046	0.0042
226	0.0087	0.0046	0.0042
227	0.0086	0.0045	0.0041
228	0.0084	0.0044	0.0040
229	0.0083	0.0043	0.0039
230	0.0081	0.0042	0.0039
231	0.0080	0.0042	0.0038
232	0.0079	0.0041	0.0038
233	0.0077	0.0040	0.0037
234	0.0076	0.0040	0.0036
235	0.0075	0.0039	0.0036
236	0.0074	0.0039	0.0035
237	0.0073	0.0038	0.0035
238	0.0072	0.0038	0.0034
239	0.0071	0.0037	0.0034
240	0.0070	0.0037	0.0034
241	0.0069	0.0036	0.0033
242	0.0068	0.0036	0.0033
243	0.0068	0.0035	0.0032
244	0.0067	0.0035	0.0032
245	0.0066	0.0034	0.0032

246	0.0065	0.0034	0.0031
247	0.0064	0.0034	0.0031
248	0.0064	0.0033	0.0030
249	0.0063	0.0033	0.0030
250	0.0062	0.0033	0.0030
251	0.0062	0.0032	0.0030
252	0.0061	0.0032	0.0029
253	0.0060	0.0032	0.0029
254	0.0060	0.0031	0.0029
255	0.0059	0.0031	0.0028
256	0.0059	0.0031	0.0028
257	0.0058	0.0030	0.0028
258	0.0058	0.0030	0.0028
259	0.0057	0.0030	0.0027
260	0.0057	0.0030	0.0027
261	0.0056	0.0029	0.0027
262	0.0056	0.0029	0.0027
263	0.0055	0.0029	0.0026
264	0.0055	0.0028	0.0026
265	0.0054	0.0028	0.0026
266	0.0054	0.0028	0.0026
267	0.0053	0.0028	0.0025
268	0.0053	0.0028	0.0025
269	0.0052	0.0027	0.0025
270	0.0052	0.0027	0.0025
271	0.0051	0.0027	0.0025
272	0.0051	0.0027	0.0024
273	0.0051	0.0026	0.0024
274	0.0050	0.0026	0.0024
275	0.0050	0.0026	0.0024
276	0.0050	0.0026	0.0024
277	0.0049	0.0026	0.0024
278	0.0049	0.0026	0.0023
279	0.0049	0.0025	0.0023
280	0.0048	0.0025	0.0023
281	0.0048	0.0025	0.0023
282	0.0048	0.0025	0.0023
283	0.0047	0.0025	0.0023
284	0.0047	0.0024	0.0022
285	0.0047	0.0024	0.0022
286	0.0046	0.0024	0.0022
287	0.0046	0.0024	0.0022
288	0.0046	0.0024	0.0022

Total soil rain loss = 1.51(In)
Total effective rainfall = 1.87(In)
Peak flow rate in flood hydrograph = 1313.21(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)	0 350.0 700.0 1050.0 1400.0
0+ 5	0.0014	0.20	Q | | | |
0+10	0.0066	0.75	Q | | | |
0+15	0.0178	1.62	Q | | | |
0+20	0.0373	2.83	Q | | | |
0+25	0.0682	4.49	Q | | | |
0+30	0.1184	7.30	Q | | | |
0+35	0.1984	11.60	Q | | | |
0+40	0.3080	15.93	Q | | | |
0+45	0.4422	19.48	Q | | | |
0+50	0.5961	22.33	Q | | | |
0+55	0.7661	24.69	Q | | | |
1+ 0	0.9489	26.54	Q | | | |
1+ 5	1.1424	28.10	Q | | | |
1+10	1.3453	29.46	Q | | | |
1+15	1.5567	30.70	Q | | | |
1+20	1.7758	31.81	Q | | | |
1+25	2.0017	32.80	Q | | | |
1+30	2.2339	33.72	Q | | | |
1+35	2.4721	34.58	Q | | | |
1+40	2.7153	35.32	VQ | | | |
1+45	2.9636	36.05	VQ | | | |
1+50	3.2163	36.69	VQ | | | |
1+55	3.4733	37.32	VQ | | | |

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2+ 0       3.7345     37.92  VQ        |          |          |          |
2+ 5       3.9996     38.50  VQ        |          |          |          |
2+10       4.2686     39.06  VQ        |          |          |          |
2+15       4.5411     39.57  VQ        |          |          |          |
2+20       4.8171     40.07  VQ        |          |          |          |
2+25       5.0960     40.50  VQ        |          |          |          |
2+30       5.3778     40.92  VQ        |          |          |          |
2+35       5.6625     41.34  VQ        |          |          |          |
2+40       5.9500     41.75  VQ        |          |          |          |
2+45       6.2403     42.14  VQ        |          |          |          |
2+50       6.5331     42.52  |Q        |          |          |          |
2+55       6.8285     42.89  |Q        |          |          |          |
3+ 0       7.1264     43.26  |Q        |          |          |          |
3+ 5       7.4268     43.62  |Q        |          |          |          |
3+10       7.7295     43.95  |Q        |          |          |          |
3+15       8.0343     44.27  |Q        |          |          |          |
3+20       8.3415     44.59  |Q        |          |          |          |
3+25       8.6508     44.92  |Q        |          |          |          |
3+30       8.9624     45.24  |Q        |          |          |          |
3+35       9.2760     45.53  |Q        |          |          |          |
3+40       9.5916     45.83  |Q        |          |          |          |
3+45       9.9093     46.13  |Q        |          |          |          |
3+50      10.2290     46.42  |Q        |          |          |          |
3+55      10.5506     46.70  |Q        |          |          |          |
4+ 0      10.8741     46.97  |Q        |          |          |          |
4+ 5      11.1995     47.24  |Q        |          |          |          |
4+10      11.5267     47.51  |Q        |          |          |          |
4+15      11.8557     47.78  |Q        |          |          |          |
4+20      12.1864     48.02  |Q        |          |          |          |
4+25      12.5188     48.26  |Q        |          |          |          |
4+30      12.8528     48.50  |QV       |          |          |          |
4+35      13.1886     48.75  |QV       |          |          |          |
4+40      13.5261     49.00  |QV       |          |          |          |
4+45      13.8653     49.26  |QV       |          |          |          |
4+50      14.2064     49.52  |QV       |          |          |          |
4+55      14.5493     49.79  |QV       |          |          |          |
5+ 0      14.8940     50.05  |QV       |          |          |          |
5+ 5      15.2405     50.32  |QV       |          |          |          |
5+10      15.5890     50.59  |QV       |          |          |          |
5+15      15.9393     50.87  |QV       |          |          |          |
5+20      16.2915     51.14  |QV       |          |          |          |
5+25      16.6456     51.42  |QV       |          |          |          |
5+30      17.0015     51.67  |QV       |          |          |          |
5+35      17.3592     51.93  |QV       |          |          |          |
5+40      17.7186     52.19  |QV       |          |          |          |
5+45      18.0799     52.46  |QV       |          |          |          |
5+50      18.4430     52.72  |QV       |          |          |          |
5+55      18.8080     52.99  |QV       |          |          |          |
6+ 0      19.1747     53.25  |Q V      |          |          |          |
6+ 5      19.5432     53.50  |Q V      |          |          |          |
6+10      19.9134     53.75  |Q V      |          |          |          |
6+15      20.2853     54.00  |Q V      |          |          |          |
6+20      20.6590     54.26  |Q V      |          |          |          |
6+25      21.0345     54.52  |Q V      |          |          |          |
6+30      21.4118     54.78  |Q V      |          |          |          |
6+35      21.7909     55.05  |Q V      |          |          |          |
6+40      22.1719     55.32  |Q V      |          |          |          |
6+45      22.5547     55.59  |Q V      |          |          |          |
6+50      22.9395     55.87  |Q V      |          |          |          |
6+55      23.3262     56.15  |Q V      |          |          |          |
7+ 0      23.7149     56.43  |Q V      |          |          |          |
7+ 5      24.1055     56.72  |Q V      |          |          |          |
7+10      24.4982     57.01  |Q V      |          |          |          |
7+15      24.8929     57.31  |Q V      |          |          |          |
7+20      25.2897     57.61  |Q V      |          |          |          |
7+25      25.6885     57.92  |Q  V     |          |          |          |
7+30      26.0895     58.22  |Q  V     |          |          |          |
7+35      26.4927     58.54  |Q  V     |          |          |          |
7+40      26.8980     58.86  |Q  V     |          |          |          |
7+45      27.3056     59.18  |Q  V     |          |          |          |
7+50      27.7154     59.50  |Q  V     |          |          |          |
7+55      28.1275     59.84  |Q  V     |          |          |          |
8+ 0      28.5419     60.17  |Q  V     |          |          |          |
8+ 5      28.9587     60.52  |Q  V     |          |          |          |
8+10      29.3779     60.86  |Q  V     |          |          |          |
8+15      29.7995     61.22  |Q  V     |          |          |          |
8+20      30.2235     61.57  |Q  V     |          |          |          |
8+25      30.6501     61.94  |Q  V     |          |          |          |
8+30      31.0792     62.31  |Q  V     |          |          |          |
8+35      31.5109     62.68  |Q  V     |          |          |          |
8+40      31.9452     63.06  |Q   V    |          |          |          |
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  8+45      32.3822     63.45  |Q   V    |          |          |          |
  8+50      32.8219     63.84  |Q   V    |          |          |          |
  8+55      33.2643     64.24  |Q   V    |          |          |          |
  9+ 0      33.7096     64.65  |Q   V    |          |          |          |
  9+ 5      34.1577     65.07  |Q   V    |          |          |          |
  9+10      34.6087     65.49  |Q   V    |          |          |          |
  9+15      35.0627     65.92  |Q   V    |          |          |          |
  9+20      35.5196     66.35  |Q   V    |          |          |          |
  9+25      35.9797     66.79  |Q   V    |          |          |          |
  9+30      36.4428     67.25  |Q   V    |          |          |          |
  9+35      36.9091     67.71  |Q   V    |          |          |          |
  9+40      37.3786     68.17  |Q   V    |          |          |          |
  9+45      37.8514     68.65  |Q   V    |          |          |          |
  9+50      38.3275     69.14  |Q    V   |          |          |          |
  9+55      38.8071     69.63  |Q    V   |          |          |          |
 10+ 0      39.2901     70.14  | Q   V   |          |          |          |
 10+ 5      39.7767     70.65  | Q   V   |          |          |          |
 10+10      40.2669     71.18  | Q   V   |          |          |          |
 10+15      40.7608     71.71  | Q   V   |          |          |          |
 10+20      41.2585     72.26  | Q   V   |          |          |          |
 10+25      41.7599     72.82  | Q   V   |          |          |          |
 10+30      42.2653     73.38  | Q   V   |          |          |          |
 10+35      42.7747     73.97  | Q   V   |          |          |          |
 10+40      43.2882     74.56  | Q   V   |          |          |          |
 10+45      43.8059     75.17  | Q   V   |          |          |          |
 10+50      44.3278     75.78  | Q    V  |          |          |          |
 10+55      44.8541     76.42  | Q    V  |          |          |          |
 11+ 0      45.3849     77.06  | Q    V  |          |          |          |
 11+ 5      45.9202     77.73  | Q    V  |          |          |          |
 11+10      46.4601     78.40  | Q    V  |          |          |          |
 11+15      47.0049     79.10  | Q    V  |          |          |          |
 11+20      47.5546     79.81  | Q    V  |          |          |          |
 11+25      48.1092     80.54  | Q    V  |          |          |          |
 11+30      48.6690     81.28  | Q    V  |          |          |          |
 11+35      49.2341     82.05  | Q    V  |          |          |          |
 11+40      49.8046     82.83  | Q    V  |          |          |          |
 11+45      50.3806     83.64  | Q    V  |          |          |          |
 11+50      50.9623     84.46  | Q     V |          |          |          |
 11+55      51.5498     85.31  | Q     V |          |          |          |
 12+ 0      52.1433     86.18  | Q     V |          |          |          |
 12+ 5      52.7427     87.04  | Q     V |          |          |          |
 12+10      53.3477     87.84  | Q     V |          |          |          |
 12+15      53.9580     88.61  | Q     V |          |          |          |
 12+20      54.5733     89.34  | Q     V |          |          |          |
 12+25      55.1932     90.01  | Q     V |          |          |          |
 12+30      55.8163     90.47  | Q     V |          |          |          |
 12+35      56.4407     90.66  | Q     V |          |          |          |
 12+40      57.0665     90.88  | Q      V|          |          |          |
 12+45      57.6952     91.28  | Q      V|          |          |          |
 12+50      58.3279     91.87  | Q      V|          |          |          |
 12+55      58.9656     92.60  | Q      V|          |          |          |
 13+ 0      59.6093     93.46  | Q      V|          |          |          |
 13+ 5      60.2597     94.44  | Q      V|          |          |          |
 13+10      60.9174     95.49  | Q      V|          |          |          |
 13+15      61.5828     96.63  | Q      V|          |          |          |
 13+20      62.2566     97.83  | Q      V|          |          |          |
 13+25      62.9393     99.13  | Q      V|          |          |          |
 13+30      63.6314    100.49  | Q       V          |          |          |
 13+35      64.3334    101.93  | Q       V          |          |          |
 13+40      65.0460    103.46  | Q       V          |          |          |
 13+45      65.7697    105.08  |  Q      V          |          |          |
 13+50      66.5051    106.78  |  Q      V          |          |          |
 13+55      67.2529    108.58  |  Q      V          |          |          |
 14+ 0      68.0137    110.47  |  Q      V          |          |          |
 14+ 5      68.7890    112.58  |  Q      V          |          |          |
 14+10      69.5809    114.98  |  Q      V          |          |          |
 14+15      70.3916    117.70  |  Q      |V         |          |          |
 14+20      71.2230    120.72  |  Q      |V         |          |          |
 14+25      72.0780    124.16  |  Q      |V         |          |          |
 14+30      72.9621    128.37  |  Q      |V         |          |          |
 14+35      73.8821    133.58  |  Q      |V         |          |          |
 14+40      74.8393    138.99  |  Q      |V         |          |          |
 14+45      75.8328    144.25  |   Q     |V         |          |          |
 14+50      76.8614    149.36  |   Q     | V        |          |          |
 14+55      77.9255    154.51  |   Q     | V        |          |          |
 15+ 0      79.0253    159.68  |   Q     | V        |          |          |
 15+ 5      80.1622    165.08  |   Q     | V        |          |          |
 15+10      81.3383    170.77  |   Q     | V        |          |          |
 15+15      82.5565    176.89  |    Q    |  V       |          |          |
 15+20      83.8201    183.47  |    Q    |  V       |          |          |
 15+25      85.1305    190.26  |    Q    |  V       |          |          |
```

15+30	86.4878	197.08	
15+35	87.8941	204.20	
15+40	89.3520	211.69	
15+45	90.8661	219.85	
15+50	92.4336	227.60	
15+55	94.0626	236.54	
16+ 0	95.8116	253.95	
16+ 5	97.9984	317.52	
16+10	100.8288	410.99	
16+15	104.3155	506.26	
16+20	108.5331	612.40	
16+25	113.7504	757.55	
16+30	120.8316	1028.19	
16+35	129.8758	1313.21	
16+40	138.7647	1290.68	
16+45	146.4062	1109.54	
16+50	152.8745	939.19	
16+55	158.4701	812.49	
17+ 0	163.2363	692.06	
17+ 5	167.4680	614.44	
17+10	171.3094	557.76	
17+15	174.8756	517.82	
17+20	178.1467	474.97	
17+25	181.1546	436.74	
17+30	183.9682	408.53	
17+35	186.6017	382.39	
17+40	188.9925	347.14	
17+45	191.2778	331.82	
17+50	193.3914	306.90	
17+55	195.4138	293.64	
18+ 0	197.3398	279.66	
18+ 5	199.1817	267.45	
18+10	200.9425	255.66	
18+15	202.5913	239.42	
18+20	204.1739	229.78	
18+25	205.6288	211.25	
18+30	207.0345	204.12	
18+35	208.3977	197.93	
18+40	209.7266	192.95	
18+45	211.0092	186.23	
18+50	212.2389	178.55	
18+55	213.4394	174.31	
19+ 0	214.5979	168.23	
19+ 5	215.7246	163.59	
19+10	216.7856	154.06	
19+15	217.8127	149.12	
19+20	218.8208	146.38	
19+25	219.8086	143.43	
19+30	220.7622	138.46	
19+35	221.6646	131.03	
19+40	222.5489	128.40	
19+45	223.4167	126.01	
19+50	224.2648	123.15	
19+55	225.0660	116.33	
20+ 0	225.8346	111.60	
20+ 5	226.5890	109.54	
20+10	227.3281	107.31	
20+15	228.0424	103.72	
20+20	228.7076	96.59	
20+25	229.3564	94.20	
20+30	229.9953	92.77	
20+35	230.6259	91.57	
20+40	231.2541	91.20	
20+45	231.8801	90.90	
20+50	232.4979	89.71	
20+55	233.1077	88.54	
21+ 0	233.7095	87.38	
21+ 5	234.3033	86.22	
21+10	234.8889	85.04	
21+15	235.4658	83.76	
21+20	236.0322	82.24	
21+25	236.5767	79.06	
21+30	237.0901	74.54	
21+35	237.5950	73.31	
21+40	238.0927	72.28	
21+45	238.5834	71.25	
21+50	239.0660	70.07	
21+55	239.5381	68.54	
22+ 0	239.9817	64.41	
22+ 5	240.3993	60.64	
22+10	240.8106	59.72	

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22+15     241.2164     58.92  |Q         |          |          |        V |
22+20     241.6169     58.16  |Q         |          |          |        V |
22+25     242.0123     57.41  |Q         |          |          |        V |
22+30     242.4029     56.72  |Q         |          |          |        V |
22+35     242.7891     56.06  |Q         |          |          |        V |
22+40     243.1708     55.43  |Q         |          |          |        V |
22+45     243.5485     54.83  |Q         |          |          |        V |
22+50     243.9221     54.25  |Q         |          |          |        V |
22+55     244.2918     53.69  |Q         |          |          |        V |
23+ 0     244.6579     53.15  |Q         |          |          |        V |
23+ 5     245.0205     52.65  |Q         |          |          |        V |
23+10     245.3797     52.15  |Q         |          |          |        V |
23+15     245.7355     51.67  |Q         |          |          |        V |
23+20     246.0882     51.21  |Q         |          |          |        V |
23+25     246.4377     50.75  |Q         |          |          |        V |
23+30     246.7842     50.31  |Q         |          |          |        V |
23+35     247.1277     49.87  |Q         |          |          |         V|
23+40     247.4683     49.45  |Q         |          |          |         V|
23+45     247.8060     49.04  |Q         |          |          |         V|
23+50     248.1410     48.64  |Q         |          |          |         V|
23+55     248.4733     48.25  |Q         |          |          |         V|
24+ 0     248.8029     47.86  |Q         |          |          |         V|
24+ 5     249.1285     47.27  |Q         |          |          |         V|
24+10     249.4478     46.36  |Q         |          |          |         V|
24+15     249.7586     45.13  |Q         |          |          |         V|
24+20     250.0588     43.59  |Q         |          |          |         V|
24+25     250.3453     41.61  |Q         |          |          |         V|
24+30     250.6105     38.50  |Q         |          |          |         V|
24+35     250.8443     33.94  Q          |          |          |         V|
24+40     251.0468     29.41  Q          |          |          |         V|
24+45     251.2237     25.68  Q          |          |          |         V|
24+50     251.3800     22.70  Q          |          |          |         V|
24+55     251.5195     20.25  Q          |          |          |         V|
25+ 0     251.6457     18.32  Q          |          |          |         V|
25+ 5     251.7608     16.71  Q          |          |          |         V|
25+10     251.8663     15.32  Q          |          |          |         V|
25+15     251.9631     14.05  Q          |          |          |         V|
25+20     252.0522     12.94  Q          |          |          |         V|
25+25     252.1346     11.96  Q          |          |          |         V|
25+30     252.2107     11.06  Q          |          |          |         V|
25+35     252.2812     10.23  Q          |          |          |         V|
25+40     252.3467      9.52  Q          |          |          |         V|
25+45     252.4077      8.84  Q          |          |          |         V|
25+50     252.4645      8.25  Q          |          |          |         V|
25+55     252.5174      7.69  Q          |          |          |         V|
26+ 0     252.5667      7.16  Q          |          |          |         V|
26+ 5     252.6125      6.66  Q          |          |          |         V|
26+10     252.6551      6.18  Q          |          |          |         V|
26+15     252.6948      5.76  Q          |          |          |         V|
26+20     252.7316      5.35  Q          |          |          |         V|
26+25     252.7662      5.02  Q          |          |          |         V|
26+30     252.7986      4.71  Q          |          |          |         V|
26+35     252.8290      4.40  Q          |          |          |         V|
26+40     252.8573      4.11  Q          |          |          |         V|
26+45     252.8837      3.83  Q          |          |          |         V|
26+50     252.9083      3.58  Q          |          |          |         V|
26+55     252.9313      3.34  Q          |          |          |         V|
27+ 0     252.9527      3.10  Q          |          |          |         V|
27+ 5     252.9725      2.88  Q          |          |          |         V|
27+10     252.9910      2.69  Q          |          |          |         V|
27+15     253.0083      2.51  Q          |          |          |         V|
27+20     253.0244      2.33  Q          |          |          |         V|
27+25     253.0393      2.16  Q          |          |          |         V|
27+30     253.0530      2.00  Q          |          |          |         V|
27+35     253.0658      1.86  Q          |          |          |         V|
27+40     253.0777      1.72  Q          |          |          |         V|
27+45     253.0886      1.59  Q          |          |          |         V|
27+50     253.0987      1.46  Q          |          |          |         V|
27+55     253.1080      1.35  Q          |          |          |         V|
28+ 0     253.1167      1.26  Q          |          |          |         V|
28+ 5     253.1247      1.16  Q          |          |          |         V|
28+10     253.1321      1.07  Q          |          |          |         V|
28+15     253.1389      0.99  Q          |          |          |         V|
28+20     253.1453      0.93  Q          |          |          |         V|
28+25     253.1513      0.88  Q          |          |          |         V|
28+30     253.1570      0.82  Q          |          |          |         V|
28+35     253.1623      0.77  Q          |          |          |         V|
28+40     253.1673      0.72  Q          |          |          |         V|
28+45     253.1718      0.66  Q          |          |          |         V|
28+50     253.1759      0.60  Q          |          |          |         V|
28+55     253.1796      0.54  Q          |          |          |         V|
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   29+ 0     253.1828      0.48  Q          |          |          |         v|
   29+ 5     253.1857      0.42  Q          |          |          |         v|
   29+10     253.1882      0.36  Q          |          |          |         v|
   29+15     253.1903      0.30  Q          |          |          |         v|
   29+20     253.1919      0.24  Q          |          |          |         v|
   29+25     253.1933      0.19  Q          |          |          |         v|
   29+30     253.1944      0.16  Q          |          |          |         v|
   29+35     253.1953      0.13  Q          |          |          |         v|
   29+40     253.1960      0.10  Q          |          |          |         v|
   29+45     253.1965      0.07  Q          |          |          |         v|
   29+50     253.1968      0.04  Q          |          |          |         v|
   29+55     253.1969      0.01  Q          |          |          |          v
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ATTACHMENT 2

Existing On-site Conditions
Rational Method Calculations

```
                 San Bernardino County Rational Hydrology Program

                     (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2019 Version 9.1
        Rational Hydrology Study        Date: 06/23/22
----------------------------------------------------------------------
224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
EXISITNG CONDITION - ON-SITE
10-YEAR, 1-HOUR STORM
BY: JTS  DATE: 06-23-22
----------------------------------------------------------------------


Program License Serial Number 6320

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

----------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     0.599 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        0.000 to Point/Station        1.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.420(In/Hr)
Initial subarea data:
Initial area flow distance =   703.340(Ft.)
Top (of initial area) elevation =  3070.200(Ft.)
Bottom (of initial area) elevation =  3059.000(Ft.)
Difference in elevation =    11.200(Ft.)
Slope =    0.01592  s(%)=       1.59
TC = k(0.628)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   19.801 min.
Rainfall intensity =      1.302(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.609
Subarea runoff =      7.933(CFS)
Total initial stream area =       10.000(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.420(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** IMPROVED CHANNEL TRAVEL TIME ****
______________________________________________________________________
Upstream point elevation =  3059.000(Ft.)
Downstream point elevation =  3052.500(Ft.)
Channel length thru subarea  =   464.120(Ft.)
Channel base width      =   60.000(Ft.)
Slope or 'Z' of left channel bank =   0.000
Slope or 'Z' of right channel bank =   0.000
Estimated mean flow rate at midpoint of channel =      9.091(CFS)
Manning's 'N'    = 0.040
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =      9.091(CFS)
Depth of flow =   0.133(Ft.), Average velocity =   1.141(Ft/s)
Channel flow top width =   60.000(Ft.)
Flow Velocity =    1.14(Ft/s)
Travel time  =    6.78 min.
Time of concentration =   26.58 min.
Critical depth =      0.090(Ft.)
 Adding area flow to channel
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.420(In/Hr)
Rainfall intensity =      1.059(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.543
Subarea runoff =      2.235(CFS) for    7.680(Ac.)
```

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Total runoff =     10.167(CFS)
Effective area this stream =       17.68(Ac.)
Total Study Area (Main Stream No. 1) =       17.68(Ac.)
Area averaged Fm value =    0.420(In/Hr)
Depth of flow =   0.142(Ft.), Average velocity =   1.193(Ft/s)
Critical depth =      0.096(Ft.)
End of computations, Total Study Area =           17.68 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  77.0
```

```
                 San Bernardino County Rational Hydrology Program

                     (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2019 Version 9.1
        Rational Hydrology Study        Date: 06/23/22
----------------------------------------------------------------------
224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
EXISITNG CONDITION - ON-SITE
100-YEAR, 1-HOUR STORM
BY: JTS  DATE: 06-23-22
----------------------------------------------------------------------


Program License Serial Number 6320

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

----------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
   10 Year storm 1 hour rainfall  =      0.599(In.)
  100 Year storm 1 hour rainfall  =      1.070(In.)
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.070 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        0.000 to Point/Station        1.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.420(In/Hr)
Initial subarea data:
Initial area flow distance =   703.340(Ft.)
Top (of initial area) elevation =  3070.200(Ft.)
Bottom (of initial area) elevation =  3059.000(Ft.)
Difference in elevation =    11.200(Ft.)
Slope =    0.01592  s(%)=       1.59
TC = k(0.628)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   19.801 min.
Rainfall intensity =      2.325(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.737
Subarea runoff =     17.143(CFS)
Total initial stream area =       10.000(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.420(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** IMPROVED CHANNEL TRAVEL TIME ****
______________________________________________________________________
Upstream point elevation =  3059.000(Ft.)
Downstream point elevation =  3052.500(Ft.)
Channel length thru subarea  =   464.120(Ft.)
Channel base width      =   60.000(Ft.)
Slope or 'Z' of left channel bank =   0.000
Slope or 'Z' of right channel bank =   0.000
Estimated mean flow rate at midpoint of channel =     21.150(CFS)
Manning's 'N'    = 0.040
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =     21.150(CFS)
Depth of flow =   0.221(Ft.), Average velocity =   1.598(Ft/s)
Channel flow top width =   60.000(Ft.)
Flow Velocity =    1.60(Ft/s)
Travel time  =    4.84 min.
Time of concentration =   24.64 min.
Critical depth =      0.156(Ft.)
 Adding area flow to channel
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.420(In/Hr)
Rainfall intensity =      1.995(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.710
Subarea runoff =      7.913(CFS) for    7.680(Ac.)
Total runoff =     25.056(CFS)
Effective area this stream =       17.68(Ac.)
Total Study Area (Main Stream No. 1) =       17.68(Ac.)
Area averaged Fm value =    0.420(In/Hr)
Depth of flow =   0.244(Ft.), Average velocity =   1.709(Ft/s)
```

```
Critical depth =      0.176(Ft.)
End of computations, Total Study Area =           17.68 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  77.0
```

ATTACHMENT 3

Existing On-site Conditions
Unit Method 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 06/23/22

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
EXISITNG CONDITION - ON-SITE
2-YEAR, 24-HOUR STORM
BY: JTS DATE: 06-23-22

Storm Event Year = 2

Antecedent Moisture Condition = 1

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
17.68	1	0.60
Rainfall data for year 2		
17.68	6	0.75
Rainfall data for year 2		
17.68	24	1.30
Rainfall data for year 100		
17.68	1	1.07
Rainfall data for year 100		
17.68	6	1.99
Rainfall data for year 100		
17.68	24	3.39

++

******** Area-averaged max loss rate, Fm ********

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
77.0	59.4	17.68	1.000	0.688	1.000	0.688

Area-averaged adjusted loss rate Fm (In/Hr) = 0.688

********* Area-Averaged low loss rate fraction, Yb **********

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
17.68	1.000	77.0	59.4	6.50	0.000

Area-averaged catchment yield fraction, Y = 0.000
Area-averaged low loss fraction, Yb = 1.000
User entry of time of concentration = 0.444 (hours)
++
Watershed area = 17.68(Ac.)
Catchment Lag time = 0.355 hours

```
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 23.4610
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.688(In/Hr)
Average low loss rate fraction (Yb) = 1.000 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.128(In)
Computed peak 30-minute rainfall =  0.219(In)
Specified peak 1-hour rainfall =  0.270(In)
Computed peak 3-hour rainfall =  0.506(In)
Specified peak 6-hour rainfall =  0.753(In)
Specified peak 24-hour rainfall =  1.300(In)


Rainfall depth area reduction factors:
Using a total area of      17.68(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999     Adjusted rainfall =  0.128(In)
30-minute factor = 0.999    Adjusted rainfall =  0.219(In)
1-hour factor = 0.999       Adjusted rainfall =  0.270(In)
3-hour factor = 1.000       Adjusted rainfall =  0.506(In)
6-hour factor = 1.000       Adjusted rainfall =  0.753(In)
24-hour factor = 1.000      Adjusted rainfall =  1.300(In)
----------------------------------------------------------------------

                        U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
----------------------------------------------------------------------
                 (K =       213.82 (CFS))

  1                1.237                   2.645
  2                5.898                   9.966
  3               16.607                  22.899
  4               37.127                  43.875
  5               52.735                  33.371
  6               62.457                  20.788
  7               69.053                  14.103
  8               74.109                  10.811
  9               78.107                   8.548
 10               81.273                   6.769
 11               83.888                   5.592
 12               86.186                   4.914
 13               88.150                   4.199
 14               89.702                   3.319
 15               91.050                   2.881
 16               92.255                   2.577
 17               93.333                   2.304
 18               94.259                   1.981
 19               95.057                   1.706
 20               95.792                   1.571
 21               96.405                   1.311
 22               96.970                   1.209
 23               97.402                   0.922
 24               97.795                   0.841
 25               98.048                   0.541
 26               98.287                   0.511
 27               98.561                   0.585
 28               98.842                   0.602
 29               99.124                   0.602
 30               99.403                   0.598
 31               99.597                   0.415
 32               99.744                   0.314
 33               99.891                   0.314
 34              100.000                   0.234
----------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                (In)
  1             0.1279              0.1279
  2             0.1575              0.0296
  3             0.1778              0.0204
  4             0.1939              0.0160
  5             0.2073              0.0134
  6             0.2190              0.0117
  7             0.2293              0.0104
  8             0.2387              0.0094
  9             0.2473              0.0086
 10             0.2552              0.0079
 11             0.2626              0.0074
 12             0.2696              0.0069
```

13	0.2822	0.0127
14	0.2945	0.0123
15	0.3064	0.0119
16	0.3179	0.0116
17	0.3292	0.0112
18	0.3401	0.0110
19	0.3508	0.0107
20	0.3613	0.0105
21	0.3716	0.0103
22	0.3816	0.0100
23	0.3915	0.0099
24	0.4011	0.0097
25	0.4107	0.0095
26	0.4200	0.0093
27	0.4292	0.0092
28	0.4382	0.0090
29	0.4471	0.0089
30	0.4559	0.0088
31	0.4646	0.0087
32	0.4731	0.0085
33	0.4815	0.0084
34	0.4898	0.0083
35	0.4981	0.0082
36	0.5062	0.0081
37	0.5142	0.0080
38	0.5221	0.0079
39	0.5299	0.0078
40	0.5377	0.0077
41	0.5453	0.0077
42	0.5529	0.0076
43	0.5604	0.0075
44	0.5678	0.0074
45	0.5752	0.0074
46	0.5825	0.0073
47	0.5897	0.0072
48	0.5969	0.0072
49	0.6040	0.0071
50	0.6110	0.0070
51	0.6180	0.0070
52	0.6249	0.0069
53	0.6317	0.0069
54	0.6385	0.0068
55	0.6453	0.0067
56	0.6520	0.0067
57	0.6586	0.0066
58	0.6652	0.0066
59	0.6718	0.0065
60	0.6783	0.0065
61	0.6847	0.0065
62	0.6911	0.0064
63	0.6975	0.0064
64	0.7038	0.0063
65	0.7101	0.0063
66	0.7163	0.0062
67	0.7225	0.0062
68	0.7287	0.0062
69	0.7348	0.0061
70	0.7409	0.0061
71	0.7469	0.0060
72	0.7530	0.0060
73	0.7571	0.0041
74	0.7611	0.0041
75	0.7652	0.0040
76	0.7692	0.0040
77	0.7731	0.0040
78	0.7771	0.0039
79	0.7810	0.0039
80	0.7849	0.0039
81	0.7887	0.0039
82	0.7925	0.0038
83	0.7963	0.0038
84	0.8001	0.0038
85	0.8038	0.0037
86	0.8075	0.0037
87	0.8112	0.0037
88	0.8149	0.0037
89	0.8185	0.0036
90	0.8221	0.0036
91	0.8257	0.0036
92	0.8293	0.0036
93	0.8328	0.0035

94	0.8363	0.0035
95	0.8398	0.0035
96	0.8433	0.0035
97	0.8468	0.0034
98	0.8502	0.0034
99	0.8536	0.0034
100	0.8570	0.0034
101	0.8603	0.0034
102	0.8637	0.0033
103	0.8670	0.0033
104	0.8703	0.0033
105	0.8736	0.0033
106	0.8769	0.0033
107	0.8801	0.0032
108	0.8834	0.0032
109	0.8866	0.0032
110	0.8898	0.0032
111	0.8929	0.0032
112	0.8961	0.0032
113	0.8992	0.0031
114	0.9024	0.0031
115	0.9055	0.0031
116	0.9086	0.0031
117	0.9117	0.0031
118	0.9147	0.0031
119	0.9178	0.0030
120	0.9208	0.0030
121	0.9238	0.0030
122	0.9268	0.0030
123	0.9298	0.0030
124	0.9328	0.0030
125	0.9357	0.0030
126	0.9387	0.0029
127	0.9416	0.0029
128	0.9445	0.0029
129	0.9474	0.0029
130	0.9503	0.0029
131	0.9532	0.0029
132	0.9560	0.0029
133	0.9589	0.0028
134	0.9617	0.0028
135	0.9645	0.0028
136	0.9673	0.0028
137	0.9701	0.0028
138	0.9729	0.0028
139	0.9757	0.0028
140	0.9784	0.0028
141	0.9812	0.0027
142	0.9839	0.0027
143	0.9866	0.0027
144	0.9894	0.0027
145	0.9921	0.0027
146	0.9947	0.0027
147	0.9974	0.0027
148	1.0001	0.0027
149	1.0027	0.0027
150	1.0054	0.0026
151	1.0080	0.0026
152	1.0107	0.0026
153	1.0133	0.0026
154	1.0159	0.0026
155	1.0185	0.0026
156	1.0210	0.0026
157	1.0236	0.0026
158	1.0262	0.0026
159	1.0287	0.0026
160	1.0313	0.0025
161	1.0338	0.0025
162	1.0363	0.0025
163	1.0389	0.0025
164	1.0414	0.0025
165	1.0439	0.0025
166	1.0463	0.0025
167	1.0488	0.0025
168	1.0513	0.0025
169	1.0538	0.0025
170	1.0562	0.0025
171	1.0586	0.0024
172	1.0611	0.0024
173	1.0635	0.0024
174	1.0659	0.0024

175	1.0683	0.0024
176	1.0707	0.0024
177	1.0731	0.0024
178	1.0755	0.0024
179	1.0779	0.0024
180	1.0803	0.0024
181	1.0826	0.0024
182	1.0850	0.0024
183	1.0873	0.0023
184	1.0897	0.0023
185	1.0920	0.0023
186	1.0943	0.0023
187	1.0966	0.0023
188	1.0989	0.0023
189	1.1012	0.0023
190	1.1035	0.0023
191	1.1058	0.0023
192	1.1081	0.0023
193	1.1103	0.0023
194	1.1126	0.0023
195	1.1149	0.0023
196	1.1171	0.0022
197	1.1194	0.0022
198	1.1216	0.0022
199	1.1238	0.0022
200	1.1260	0.0022
201	1.1282	0.0022
202	1.1305	0.0022
203	1.1327	0.0022
204	1.1349	0.0022
205	1.1370	0.0022
206	1.1392	0.0022
207	1.1414	0.0022
208	1.1436	0.0022
209	1.1457	0.0022
210	1.1479	0.0022
211	1.1500	0.0022
212	1.1522	0.0021
213	1.1543	0.0021
214	1.1564	0.0021
215	1.1586	0.0021
216	1.1607	0.0021
217	1.1628	0.0021
218	1.1649	0.0021
219	1.1670	0.0021
220	1.1691	0.0021
221	1.1712	0.0021
222	1.1733	0.0021
223	1.1754	0.0021
224	1.1774	0.0021
225	1.1795	0.0021
226	1.1816	0.0021
227	1.1836	0.0021
228	1.1857	0.0021
229	1.1877	0.0020
230	1.1898	0.0020
231	1.1918	0.0020
232	1.1938	0.0020
233	1.1959	0.0020
234	1.1979	0.0020
235	1.1999	0.0020
236	1.2019	0.0020
237	1.2039	0.0020
238	1.2059	0.0020
239	1.2079	0.0020
240	1.2099	0.0020
241	1.2119	0.0020
242	1.2138	0.0020
243	1.2158	0.0020
244	1.2178	0.0020
245	1.2197	0.0020
246	1.2217	0.0020
247	1.2237	0.0020
248	1.2256	0.0019
249	1.2276	0.0019
250	1.2295	0.0019
251	1.2314	0.0019
252	1.2334	0.0019
253	1.2353	0.0019
254	1.2372	0.0019
255	1.2391	0.0019

256	1.2410	0.0019
257	1.2429	0.0019
258	1.2448	0.0019
259	1.2467	0.0019
260	1.2486	0.0019
261	1.2505	0.0019
262	1.2524	0.0019
263	1.2543	0.0019
264	1.2562	0.0019
265	1.2580	0.0019
266	1.2599	0.0019
267	1.2618	0.0019
268	1.2636	0.0019
269	1.2655	0.0019
270	1.2673	0.0019
271	1.2692	0.0018
272	1.2710	0.0018
273	1.2729	0.0018
274	1.2747	0.0018
275	1.2765	0.0018
276	1.2784	0.0018
277	1.2802	0.0018
278	1.2820	0.0018
279	1.2838	0.0018
280	1.2856	0.0018
281	1.2874	0.0018
282	1.2892	0.0018
283	1.2910	0.0018
284	1.2928	0.0018
285	1.2946	0.0018
286	1.2964	0.0018
287	1.2982	0.0018
288	1.3000	0.0018

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0018	0.0018	0.0000
2	0.0018	0.0018	0.0000
3	0.0018	0.0018	0.0000
4	0.0018	0.0018	0.0000
5	0.0018	0.0018	0.0000
6	0.0018	0.0018	0.0000
7	0.0018	0.0018	0.0000
8	0.0018	0.0018	0.0000
9	0.0018	0.0018	0.0000
10	0.0018	0.0018	0.0000
11	0.0018	0.0018	0.0000
12	0.0018	0.0018	0.0000
13	0.0019	0.0019	0.0000
14	0.0019	0.0019	0.0000
15	0.0019	0.0019	0.0000
16	0.0019	0.0019	0.0000
17	0.0019	0.0019	0.0000
18	0.0019	0.0019	0.0000
19	0.0019	0.0019	0.0000
20	0.0019	0.0019	0.0000
21	0.0019	0.0019	0.0000
22	0.0019	0.0019	0.0000
23	0.0019	0.0019	0.0000
24	0.0019	0.0019	0.0000
25	0.0019	0.0019	0.0000
26	0.0019	0.0019	0.0000
27	0.0019	0.0019	0.0000
28	0.0019	0.0019	0.0000
29	0.0020	0.0020	0.0000
30	0.0020	0.0020	0.0000
31	0.0020	0.0020	0.0000
32	0.0020	0.0020	0.0000
33	0.0020	0.0020	0.0000
34	0.0020	0.0020	0.0000
35	0.0020	0.0020	0.0000
36	0.0020	0.0020	0.0000
37	0.0020	0.0020	0.0000
38	0.0020	0.0020	0.0000
39	0.0020	0.0020	0.0000
40	0.0020	0.0020	0.0000
41	0.0021	0.0021	0.0000
42	0.0021	0.0021	0.0000
43	0.0021	0.0021	0.0000

44	0.0021	0.0021	0.0000
45	0.0021	0.0021	0.0000
46	0.0021	0.0021	0.0000
47	0.0021	0.0021	0.0000
48	0.0021	0.0021	0.0000
49	0.0021	0.0021	0.0000
50	0.0021	0.0021	0.0000
51	0.0021	0.0021	0.0000
52	0.0021	0.0021	0.0000
53	0.0022	0.0022	0.0000
54	0.0022	0.0022	0.0000
55	0.0022	0.0022	0.0000
56	0.0022	0.0022	0.0000
57	0.0022	0.0022	0.0000
58	0.0022	0.0022	0.0000
59	0.0022	0.0022	0.0000
60	0.0022	0.0022	0.0000
61	0.0022	0.0022	0.0000
62	0.0022	0.0022	0.0000
63	0.0023	0.0023	0.0000
64	0.0023	0.0023	0.0000
65	0.0023	0.0023	0.0000
66	0.0023	0.0023	0.0000
67	0.0023	0.0023	0.0000
68	0.0023	0.0023	0.0000
69	0.0023	0.0023	0.0000
70	0.0023	0.0023	0.0000
71	0.0023	0.0023	0.0000
72	0.0024	0.0024	0.0000
73	0.0024	0.0024	0.0000
74	0.0024	0.0024	0.0000
75	0.0024	0.0024	0.0000
76	0.0024	0.0024	0.0000
77	0.0024	0.0024	0.0000
78	0.0024	0.0024	0.0000
79	0.0024	0.0024	0.0000
80	0.0025	0.0025	0.0000
81	0.0025	0.0025	0.0000
82	0.0025	0.0025	0.0000
83	0.0025	0.0025	0.0000
84	0.0025	0.0025	0.0000
85	0.0025	0.0025	0.0000
86	0.0025	0.0025	0.0000
87	0.0026	0.0026	0.0000
88	0.0026	0.0026	0.0000
89	0.0026	0.0026	0.0000
90	0.0026	0.0026	0.0000
91	0.0026	0.0026	0.0000
92	0.0026	0.0026	0.0000
93	0.0026	0.0026	0.0000
94	0.0027	0.0027	0.0000
95	0.0027	0.0027	0.0000
96	0.0027	0.0027	0.0000
97	0.0027	0.0027	0.0000
98	0.0027	0.0027	0.0000
99	0.0027	0.0027	0.0000
100	0.0028	0.0028	0.0000
101	0.0028	0.0028	0.0000
102	0.0028	0.0028	0.0000
103	0.0028	0.0028	0.0000
104	0.0028	0.0028	0.0000
105	0.0029	0.0029	0.0000
106	0.0029	0.0029	0.0000
107	0.0029	0.0029	0.0000
108	0.0029	0.0029	0.0000
109	0.0029	0.0029	0.0000
110	0.0030	0.0030	0.0000
111	0.0030	0.0030	0.0000
112	0.0030	0.0030	0.0000
113	0.0030	0.0030	0.0000
114	0.0030	0.0030	0.0000
115	0.0031	0.0031	0.0000
116	0.0031	0.0031	0.0000
117	0.0031	0.0031	0.0000
118	0.0031	0.0031	0.0000
119	0.0032	0.0032	0.0000
120	0.0032	0.0032	0.0000
121	0.0032	0.0032	0.0000
122	0.0032	0.0032	0.0000
123	0.0033	0.0033	0.0000
124	0.0033	0.0033	0.0000

125	0.0033	0.0033	0.0000
126	0.0034	0.0034	0.0000
127	0.0034	0.0034	0.0000
128	0.0034	0.0034	0.0000
129	0.0035	0.0035	0.0000
130	0.0035	0.0035	0.0000
131	0.0035	0.0035	0.0000
132	0.0036	0.0036	0.0000
133	0.0036	0.0036	0.0000
134	0.0036	0.0036	0.0000
135	0.0037	0.0037	0.0000
136	0.0037	0.0037	0.0000
137	0.0038	0.0038	0.0000
138	0.0038	0.0038	0.0000
139	0.0039	0.0039	0.0000
140	0.0039	0.0039	0.0000
141	0.0039	0.0039	0.0000
142	0.0040	0.0040	0.0000
143	0.0040	0.0040	0.0000
144	0.0041	0.0041	0.0000
145	0.0060	0.0060	0.0000
146	0.0060	0.0060	0.0000
147	0.0061	0.0061	0.0000
148	0.0062	0.0062	0.0000
149	0.0062	0.0062	0.0000
150	0.0063	0.0063	0.0000
151	0.0064	0.0064	0.0000
152	0.0064	0.0064	0.0000
153	0.0065	0.0065	0.0000
154	0.0065	0.0065	0.0000
155	0.0066	0.0066	0.0000
156	0.0067	0.0067	0.0000
157	0.0068	0.0068	0.0000
158	0.0069	0.0069	0.0000
159	0.0070	0.0070	0.0000
160	0.0070	0.0070	0.0000
161	0.0072	0.0072	0.0000
162	0.0072	0.0072	0.0000
163	0.0074	0.0074	0.0000
164	0.0074	0.0074	0.0000
165	0.0076	0.0076	0.0000
166	0.0077	0.0077	0.0000
167	0.0078	0.0078	0.0000
168	0.0079	0.0079	0.0000
169	0.0081	0.0081	0.0000
170	0.0082	0.0082	0.0000
171	0.0084	0.0084	0.0000
172	0.0085	0.0085	0.0000
173	0.0088	0.0088	0.0000
174	0.0089	0.0089	0.0000
175	0.0092	0.0092	0.0000
176	0.0093	0.0093	0.0000
177	0.0097	0.0097	0.0000
178	0.0099	0.0099	0.0000
179	0.0103	0.0103	0.0000
180	0.0105	0.0105	0.0000
181	0.0110	0.0110	0.0000
182	0.0112	0.0112	0.0000
183	0.0119	0.0119	0.0000
184	0.0123	0.0123	0.0000
185	0.0069	0.0069	0.0000
186	0.0074	0.0074	0.0000
187	0.0086	0.0086	0.0000
188	0.0094	0.0094	0.0000
189	0.0117	0.0117	0.0000
190	0.0134	0.0134	0.0000
191	0.0204	0.0204	0.0000
192	0.0296	0.0296	0.0000
193	0.1279	0.0573	0.0706
194	0.0160	0.0160	0.0000
195	0.0104	0.0104	0.0000
196	0.0079	0.0079	0.0000
197	0.0127	0.0127	0.0000
198	0.0116	0.0116	0.0000
199	0.0107	0.0107	0.0000
200	0.0100	0.0100	0.0000
201	0.0095	0.0095	0.0000
202	0.0090	0.0090	0.0000
203	0.0087	0.0087	0.0000
204	0.0083	0.0083	0.0000
205	0.0080	0.0080	0.0000

206	0.0077	0.0077	0.0000
207	0.0075	0.0075	0.0000
208	0.0073	0.0073	0.0000
209	0.0071	0.0071	0.0000
210	0.0069	0.0069	0.0000
211	0.0067	0.0067	0.0000
212	0.0066	0.0066	0.0000
213	0.0065	0.0065	0.0000
214	0.0063	0.0063	0.0000
215	0.0062	0.0062	0.0000
216	0.0061	0.0061	0.0000
217	0.0041	0.0041	0.0000
218	0.0040	0.0040	0.0000
219	0.0039	0.0039	0.0000
220	0.0038	0.0038	0.0000
221	0.0037	0.0037	0.0000
222	0.0037	0.0037	0.0000
223	0.0036	0.0036	0.0000
224	0.0035	0.0035	0.0000
225	0.0034	0.0034	0.0000
226	0.0034	0.0034	0.0000
227	0.0033	0.0033	0.0000
228	0.0033	0.0033	0.0000
229	0.0032	0.0032	0.0000
230	0.0032	0.0032	0.0000
231	0.0031	0.0031	0.0000
232	0.0031	0.0031	0.0000
233	0.0030	0.0030	0.0000
234	0.0030	0.0030	0.0000
235	0.0029	0.0029	0.0000
236	0.0029	0.0029	0.0000
237	0.0028	0.0028	0.0000
238	0.0028	0.0028	0.0000
239	0.0028	0.0028	0.0000
240	0.0027	0.0027	0.0000
241	0.0027	0.0027	0.0000
242	0.0027	0.0027	0.0000
243	0.0026	0.0026	0.0000
244	0.0026	0.0026	0.0000
245	0.0026	0.0026	0.0000
246	0.0025	0.0025	0.0000
247	0.0025	0.0025	0.0000
248	0.0025	0.0025	0.0000
249	0.0025	0.0025	0.0000
250	0.0024	0.0024	0.0000
251	0.0024	0.0024	0.0000
252	0.0024	0.0024	0.0000
253	0.0024	0.0024	0.0000
254	0.0023	0.0023	0.0000
255	0.0023	0.0023	0.0000
256	0.0023	0.0023	0.0000
257	0.0023	0.0023	0.0000
258	0.0022	0.0022	0.0000
259	0.0022	0.0022	0.0000
260	0.0022	0.0022	0.0000
261	0.0022	0.0022	0.0000
262	0.0022	0.0022	0.0000
263	0.0022	0.0022	0.0000
264	0.0021	0.0021	0.0000
265	0.0021	0.0021	0.0000
266	0.0021	0.0021	0.0000
267	0.0021	0.0021	0.0000
268	0.0021	0.0021	0.0000
269	0.0020	0.0020	0.0000
270	0.0020	0.0020	0.0000
271	0.0020	0.0020	0.0000
272	0.0020	0.0020	0.0000
273	0.0020	0.0020	0.0000
274	0.0020	0.0020	0.0000
275	0.0020	0.0020	0.0000
276	0.0019	0.0019	0.0000
277	0.0019	0.0019	0.0000
278	0.0019	0.0019	0.0000
279	0.0019	0.0019	0.0000
280	0.0019	0.0019	0.0000
281	0.0019	0.0019	0.0000
282	0.0019	0.0019	0.0000
283	0.0018	0.0018	0.0000
284	0.0018	0.0018	0.0000
285	0.0018	0.0018	0.0000
286	0.0018	0.0018	0.0000

```
287              0.0018           0.0018              0.0000
288              0.0018           0.0018              0.0000
-----------------------------------------------------------------
-----------------------------------------------------------------
Total soil rain loss =      1.23(In)
Total effective rainfall =      0.07(In)
Peak flow rate in flood hydrograph =      3.10(CFS)
-------------------------------------------------------------------
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    24 - H O U R    S T O R M
               R u n o f f      H y d r o g r a p h
-----------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

-----------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q          |         |         |         |
  0+10       0.0000      0.00  Q          |         |         |         |
  0+15       0.0000      0.00  Q          |         |         |         |
  0+20       0.0000      0.00  Q          |         |         |         |
  0+25       0.0000      0.00  Q          |         |         |         |
  0+30       0.0000      0.00  Q          |         |         |         |
  0+35       0.0000      0.00  Q          |         |         |         |
  0+40       0.0000      0.00  Q          |         |         |         |
  0+45       0.0000      0.00  Q          |         |         |         |
  0+50       0.0000      0.00  Q          |         |         |         |
  0+55       0.0000      0.00  Q          |         |         |         |
  1+ 0       0.0000      0.00  Q          |         |         |         |
  1+ 5       0.0000      0.00  Q          |         |         |         |
  1+10       0.0000      0.00  Q          |         |         |         |
  1+15       0.0000      0.00  Q          |         |         |         |
  1+20       0.0000      0.00  Q          |         |         |         |
  1+25       0.0000      0.00  Q          |         |         |         |
  1+30       0.0000      0.00  Q          |         |         |         |
  1+35       0.0000      0.00  Q          |         |         |         |
  1+40       0.0000      0.00  Q          |         |         |         |
  1+45       0.0000      0.00  Q          |         |         |         |
  1+50       0.0000      0.00  Q          |         |         |         |
  1+55       0.0000      0.00  Q          |         |         |         |
  2+ 0       0.0000      0.00  Q          |         |         |         |
  2+ 5       0.0000      0.00  Q          |         |         |         |
  2+10       0.0000      0.00  Q          |         |         |         |
  2+15       0.0000      0.00  Q          |         |         |         |
  2+20       0.0000      0.00  Q          |         |         |         |
  2+25       0.0000      0.00  Q          |         |         |         |
  2+30       0.0000      0.00  Q          |         |         |         |
  2+35       0.0000      0.00  Q          |         |         |         |
  2+40       0.0000      0.00  Q          |         |         |         |
  2+45       0.0000      0.00  Q          |         |         |         |
  2+50       0.0000      0.00  Q          |         |         |         |
  2+55       0.0000      0.00  Q          |         |         |         |
  3+ 0       0.0000      0.00  Q          |         |         |         |
  3+ 5       0.0000      0.00  Q          |         |         |         |
  3+10       0.0000      0.00  Q          |         |         |         |
  3+15       0.0000      0.00  Q          |         |         |         |
  3+20       0.0000      0.00  Q          |         |         |         |
  3+25       0.0000      0.00  Q          |         |         |         |
  3+30       0.0000      0.00  Q          |         |         |         |
  3+35       0.0000      0.00  Q          |         |         |         |
  3+40       0.0000      0.00  Q          |         |         |         |
  3+45       0.0000      0.00  Q          |         |         |         |
  3+50       0.0000      0.00  Q          |         |         |         |
  3+55       0.0000      0.00  Q          |         |         |         |
  4+ 0       0.0000      0.00  Q          |         |         |         |
  4+ 5       0.0000      0.00  Q          |         |         |         |
  4+10       0.0000      0.00  Q          |         |         |         |
  4+15       0.0000      0.00  Q          |         |         |         |
  4+20       0.0000      0.00  Q          |         |         |         |
  4+25       0.0000      0.00  Q          |         |         |         |
  4+30       0.0000      0.00  Q          |         |         |         |
  4+35       0.0000      0.00  Q          |         |         |         |
  4+40       0.0000      0.00  Q          |         |         |         |
  4+45       0.0000      0.00  Q          |         |         |         |
  4+50       0.0000      0.00  Q          |         |         |         |
  4+55       0.0000      0.00  Q          |         |         |         |
  5+ 0       0.0000      0.00  Q          |         |         |         |
  5+ 5       0.0000      0.00  Q          |         |         |         |
  5+10       0.0000      0.00  Q          |         |         |         |
  5+15       0.0000      0.00  Q          |         |         |         |
  5+20       0.0000      0.00  Q          |         |         |         |
```

5+25	0.0000	0.00	Q				
5+30	0.0000	0.00	Q				
5+35	0.0000	0.00	Q				
5+40	0.0000	0.00	Q				
5+45	0.0000	0.00	Q				
5+50	0.0000	0.00	Q				
5+55	0.0000	0.00	Q				
6+ 0	0.0000	0.00	Q				
6+ 5	0.0000	0.00	Q				
6+10	0.0000	0.00	Q				
6+15	0.0000	0.00	Q				
6+20	0.0000	0.00	Q				
6+25	0.0000	0.00	Q				
6+30	0.0000	0.00	Q				
6+35	0.0000	0.00	Q				
6+40	0.0000	0.00	Q				
6+45	0.0000	0.00	Q				
6+50	0.0000	0.00	Q				
6+55	0.0000	0.00	Q				
7+ 0	0.0000	0.00	Q				
7+ 5	0.0000	0.00	Q				
7+10	0.0000	0.00	Q				
7+15	0.0000	0.00	Q				
7+20	0.0000	0.00	Q				
7+25	0.0000	0.00	Q				
7+30	0.0000	0.00	Q				
7+35	0.0000	0.00	Q				
7+40	0.0000	0.00	Q				
7+45	0.0000	0.00	Q				
7+50	0.0000	0.00	Q				
7+55	0.0000	0.00	Q				
8+ 0	0.0000	0.00	Q				
8+ 5	0.0000	0.00	Q				
8+10	0.0000	0.00	Q				
8+15	0.0000	0.00	Q				
8+20	0.0000	0.00	Q				
8+25	0.0000	0.00	Q				
8+30	0.0000	0.00	Q				
8+35	0.0000	0.00	Q				
8+40	0.0000	0.00	Q				
8+45	0.0000	0.00	Q				
8+50	0.0000	0.00	Q				
8+55	0.0000	0.00	Q				
9+ 0	0.0000	0.00	Q				
9+ 5	0.0000	0.00	Q				
9+10	0.0000	0.00	Q				
9+15	0.0000	0.00	Q				
9+20	0.0000	0.00	Q				
9+25	0.0000	0.00	Q				
9+30	0.0000	0.00	Q				
9+35	0.0000	0.00	Q				
9+40	0.0000	0.00	Q				
9+45	0.0000	0.00	Q				
9+50	0.0000	0.00	Q				
9+55	0.0000	0.00	Q				
10+ 0	0.0000	0.00	Q				
10+ 5	0.0000	0.00	Q				
10+10	0.0000	0.00	Q				
10+15	0.0000	0.00	Q				
10+20	0.0000	0.00	Q				
10+25	0.0000	0.00	Q				
10+30	0.0000	0.00	Q				
10+35	0.0000	0.00	Q				
10+40	0.0000	0.00	Q				
10+45	0.0000	0.00	Q				
10+50	0.0000	0.00	Q				
10+55	0.0000	0.00	Q				
11+ 0	0.0000	0.00	Q				
11+ 5	0.0000	0.00	Q				
11+10	0.0000	0.00	Q				
11+15	0.0000	0.00	Q				
11+20	0.0000	0.00	Q				
11+25	0.0000	0.00	Q				
11+30	0.0000	0.00	Q				
11+35	0.0000	0.00	Q				
11+40	0.0000	0.00	Q				
11+45	0.0000	0.00	Q				
11+50	0.0000	0.00	Q				
11+55	0.0000	0.00	Q				
12+ 0	0.0000	0.00	Q				
12+ 5	0.0000	0.00	Q				

```
12+10       0.0000      0.00  Q          |          |          |          |
12+15       0.0000      0.00  Q          |          |          |          |
12+20       0.0000      0.00  Q          |          |          |          |
12+25       0.0000      0.00  Q          |          |          |          |
12+30       0.0000      0.00  Q          |          |          |          |
12+35       0.0000      0.00  Q          |          |          |          |
12+40       0.0000      0.00  Q          |          |          |          |
12+45       0.0000      0.00  Q          |          |          |          |
12+50       0.0000      0.00  Q          |          |          |          |
12+55       0.0000      0.00  Q          |          |          |          |
13+ 0       0.0000      0.00  Q          |          |          |          |
13+ 5       0.0000      0.00  Q          |          |          |          |
13+10       0.0000      0.00  Q          |          |          |          |
13+15       0.0000      0.00  Q          |          |          |          |
13+20       0.0000      0.00  Q          |          |          |          |
13+25       0.0000      0.00  Q          |          |          |          |
13+30       0.0000      0.00  Q          |          |          |          |
13+35       0.0000      0.00  Q          |          |          |          |
13+40       0.0000      0.00  Q          |          |          |          |
13+45       0.0000      0.00  Q          |          |          |          |
13+50       0.0000      0.00  Q          |          |          |          |
13+55       0.0000      0.00  Q          |          |          |          |
14+ 0       0.0000      0.00  Q          |          |          |          |
14+ 5       0.0000      0.00  Q          |          |          |          |
14+10       0.0000      0.00  Q          |          |          |          |
14+15       0.0000      0.00  Q          |          |          |          |
14+20       0.0000      0.00  Q          |          |          |          |
14+25       0.0000      0.00  Q          |          |          |          |
14+30       0.0000      0.00  Q          |          |          |          |
14+35       0.0000      0.00  Q          |          |          |          |
14+40       0.0000      0.00  Q          |          |          |          |
14+45       0.0000      0.00  Q          |          |          |          |
14+50       0.0000      0.00  Q          |          |          |          |
14+55       0.0000      0.00  Q          |          |          |          |
15+ 0       0.0000      0.00  Q          |          |          |          |
15+ 5       0.0000      0.00  Q          |          |          |          |
15+10       0.0000      0.00  Q          |          |          |          |
15+15       0.0000      0.00  Q          |          |          |          |
15+20       0.0000      0.00  Q          |          |          |          |
15+25       0.0000      0.00  Q          |          |          |          |
15+30       0.0000      0.00  Q          |          |          |          |
15+35       0.0000      0.00  Q          |          |          |          |
15+40       0.0000      0.00  Q          |          |          |          |
15+45       0.0000      0.00  Q          |          |          |          |
15+50       0.0000      0.00  Q          |          |          |          |
15+55       0.0000      0.00  Q          |          |          |          |
16+ 0       0.0000      0.00  Q          |          |          |          |
16+ 5       0.0013      0.19  Q          |          |          |          |
16+10       0.0061      0.70  | Q        |          |          |          |
16+15       0.0173      1.62  |     Q    |          |          |          |
16+20       0.0386      3.10  |          | Q V      |          |          |
16+25       0.0548      2.36  |        Q|          |V         |          |
16+30       0.0649      1.47  |    Q     |          |   V      |          |
16+35       0.0718      1.00  |  Q       |          |      V   |          |
16+40       0.0770      0.76  |  Q       |          |        V|          |
16+45       0.0812      0.60  | Q        |          |         V|         |
16+50       0.0845      0.48  |Q         |          |          V         |
16+55       0.0872      0.39  |Q         |          |           V        |
17+ 0       0.0896      0.35  |Q         |          |            V       |
17+ 5       0.0916      0.30  |Q         |          |             V      |
17+10       0.0932      0.23  Q          |          |             V      |
17+15       0.0946      0.20  Q          |          |              V     |
17+20       0.0959      0.18  Q          |          |              V     |
17+25       0.0970      0.16  Q          |          |               V    |
17+30       0.0980      0.14  Q          |          |               V    |
17+35       0.0988      0.12  Q          |          |                V   |
17+40       0.0995      0.11  Q          |          |                V   |
17+45       0.1002      0.09  Q          |          |                V   |
17+50       0.1008      0.09  Q          |          |                V   |
17+55       0.1012      0.07  Q          |          |                V   |
18+ 0       0.1016      0.06  Q          |          |                 V|
18+ 5       0.1019      0.04  Q          |          |                 V|
18+10       0.1021      0.04  Q          |          |                 V|
18+15       0.1024      0.04  Q          |          |                 V|
18+20       0.1027      0.04  Q          |          |                 V|
18+25       0.1030      0.04  Q          |          |                 V|
18+30       0.1033      0.04  Q          |          |                 V|
18+35       0.1035      0.03  Q          |          |                 V|
18+40       0.1037      0.02  Q          |          |                 V|
18+45       0.1038      0.02  Q          |          |                 V|
18+50       0.1039      0.02  Q          |          |                  V
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18+55	0.1039	0.00	Q	|	|	|	V
19+ 0	0.1039	0.00	Q	|	|	|	V
19+ 5	0.1039	0.00	Q	|	|	|	V
19+10	0.1039	0.00	Q	|	|	|	V
19+15	0.1039	0.00	Q	|	|	|	V
19+20	0.1039	0.00	Q	|	|	|	V
19+25	0.1039	0.00	Q	|	|	|	V
19+30	0.1039	0.00	Q	|	|	|	V
19+35	0.1039	0.00	Q	|	|	|	V
19+40	0.1039	0.00	Q	|	|	|	V
19+45	0.1039	0.00	Q	|	|	|	V
19+50	0.1039	0.00	Q	|	|	|	V
19+55	0.1039	0.00	Q	|	|	|	V
20+ 0	0.1039	0.00	Q	|	|	|	V
20+ 5	0.1039	0.00	Q	|	|	|	V
20+10	0.1039	0.00	Q	|	|	|	V
20+15	0.1039	0.00	Q	|	|	|	V
20+20	0.1039	0.00	Q	|	|	|	V
20+25	0.1039	0.00	Q	|	|	|	V
20+30	0.1039	0.00	Q	|	|	|	V
20+35	0.1039	0.00	Q	|	|	|	V
20+40	0.1039	0.00	Q	|	|	|	V
20+45	0.1039	0.00	Q	|	|	|	V
20+50	0.1039	0.00	Q	|	|	|	V
20+55	0.1039	0.00	Q	|	|	|	V
21+ 0	0.1039	0.00	Q	|	|	|	V
21+ 5	0.1039	0.00	Q	|	|	|	V
21+10	0.1039	0.00	Q	|	|	|	V
21+15	0.1039	0.00	Q	|	|	|	V
21+20	0.1039	0.00	Q	|	|	|	V
21+25	0.1039	0.00	Q	|	|	|	V
21+30	0.1039	0.00	Q	|	|	|	V
21+35	0.1039	0.00	Q	|	|	|	V
21+40	0.1039	0.00	Q	|	|	|	V
21+45	0.1039	0.00	Q	|	|	|	V
21+50	0.1039	0.00	Q	|	|	|	V
21+55	0.1039	0.00	Q	|	|	|	V
22+ 0	0.1039	0.00	Q	|	|	|	V
22+ 5	0.1039	0.00	Q	|	|	|	V
22+10	0.1039	0.00	Q	|	|	|	V
22+15	0.1039	0.00	Q	|	|	|	V
22+20	0.1039	0.00	Q	|	|	|	V
22+25	0.1039	0.00	Q	|	|	|	V
22+30	0.1039	0.00	Q	|	|	|	V
22+35	0.1039	0.00	Q	|	|	|	V
22+40	0.1039	0.00	Q	|	|	|	V
22+45	0.1039	0.00	Q	|	|	|	V
22+50	0.1039	0.00	Q	|	|	|	V
22+55	0.1039	0.00	Q	|	|	|	V
23+ 0	0.1039	0.00	Q	|	|	|	V
23+ 5	0.1039	0.00	Q	|	|	|	V
23+10	0.1039	0.00	Q	|	|	|	V
23+15	0.1039	0.00	Q	|	|	|	V
23+20	0.1039	0.00	Q	|	|	|	V
23+25	0.1039	0.00	Q	|	|	|	V
23+30	0.1039	0.00	Q	|	|	|	V
23+35	0.1039	0.00	Q	|	|	|	V
23+40	0.1039	0.00	Q	|	|	|	V
23+45	0.1039	0.00	Q	|	|	|	V
23+50	0.1039	0.00	Q	|	|	|	V
23+55	0.1039	0.00	Q	|	|	|	V
24+ 0	0.1039	0.00	Q	|	|	|	V
24+ 5	0.1039	0.00	Q	|	|	|	V
24+10	0.1039	0.00	Q	|	|	|	V
24+15	0.1039	0.00	Q	|	|	|	V
24+20	0.1039	0.00	Q	|	|	|	V
24+25	0.1039	0.00	Q	|	|	|	V
24+30	0.1039	0.00	Q	|	|	|	V
24+35	0.1039	0.00	Q	|	|	|	V
24+40	0.1039	0.00	Q	|	|	|	V
24+45	0.1039	0.00	Q	|	|	|	V
24+50	0.1039	0.00	Q	|	|	|	V
24+55	0.1039	0.00	Q	|	|	|	V
25+ 0	0.1039	0.00	Q	|	|	|	V
25+ 5	0.1039	0.00	Q	|	|	|	V
25+10	0.1039	0.00	Q	|	|	|	V
25+15	0.1039	0.00	Q	|	|	|	V
25+20	0.1039	0.00	Q	|	|	|	V
25+25	0.1039	0.00	Q	|	|	|	V
25+30	0.1039	0.00	Q	|	|	|	V
25+35	0.1039	0.00	Q	|	|	|	V

```
   25+40       0.1039      0.00  Q          |          |          |          V
   25+45       0.1039      0.00  Q          |          |          |          V
   25+50       0.1039      0.00  Q          |          |          |          V
   25+55       0.1039      0.00  Q          |          |          |          V
   26+ 0       0.1039      0.00  Q          |          |          |          V
   26+ 5       0.1039      0.00  Q          |          |          |          V
   26+10       0.1039      0.00  Q          |          |          |          V
   26+15       0.1039      0.00  Q          |          |          |          V
   26+20       0.1039      0.00  Q          |          |          |          V
   26+25       0.1039      0.00  Q          |          |          |          V
   26+30       0.1039      0.00  Q          |          |          |          V
   26+35       0.1039      0.00  Q          |          |          |          V
   26+40       0.1039      0.00  Q          |          |          |          V
   26+45       0.1039      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 06/23/22

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
EXISITNG CONDITION - ON-SITE
5-YEAR, 24-HOUR STORM
BY: JTS DATE: 06-23-22

Storm Event Year = 5

Antecedent Moisture Condition = 1

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
17.68	1	0.60
Rainfall data for year 2		
17.68	6	0.75
Rainfall data for year 2		
17.68	24	1.30
Rainfall data for year 100		
17.68	1	1.07
Rainfall data for year 100		
17.68	6	1.99
Rainfall data for year 100		
17.68	24	3.39

++

******** Area-averaged max loss rate, Fm ********

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
77.0	59.4	17.68	1.000	0.688	1.000	0.688

Area-averaged adjusted loss rate Fm (In/Hr) = 0.688

********* Area-Averaged low loss rate fraction, Yb **********

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
17.68	1.000	77.0	59.4	6.84	0.014

Area-averaged catchment yield fraction, Y = 0.014
Area-averaged low loss fraction, Yb = 0.986
User entry of time of concentration = 0.444 (hours)
++
Watershed area = 17.68(Ac.)
Catchment Lag time = 0.355 hours

```
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 23.4610
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.688(In/Hr)
Average low loss rate fraction (Yb) = 0.986 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.217(In)
Computed peak 30-minute rainfall =  0.371(In)
Specified peak 1-hour rainfall =  0.457(In)
Computed peak 3-hour rainfall =  0.758(In)
Specified peak 6-hour rainfall =  1.043(In)
Specified peak 24-hour rainfall =  1.790(In)


Rainfall depth area reduction factors:
Using a total area of      17.68(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999     Adjusted rainfall =  0.217(In)
30-minute factor = 0.999    Adjusted rainfall =  0.371(In)
1-hour factor = 0.999       Adjusted rainfall =  0.457(In)
3-hour factor = 1.000       Adjusted rainfall =  0.758(In)
6-hour factor = 1.000       Adjusted rainfall =  1.043(In)
24-hour factor = 1.000      Adjusted rainfall =  1.789(In)
----------------------------------------------------------------------

                       U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
----------------------------------------------------------------------
                 (K =       213.82 (CFS))

  1                1.237                   2.645
  2                5.898                   9.966
  3               16.607                  22.899
  4               37.127                  43.875
  5               52.735                  33.371
  6               62.457                  20.788
  7               69.053                  14.103
  8               74.109                  10.811
  9               78.107                   8.548
 10               81.273                   6.769
 11               83.888                   5.592
 12               86.186                   4.914
 13               88.150                   4.199
 14               89.702                   3.319
 15               91.050                   2.881
 16               92.255                   2.577
 17               93.333                   2.304
 18               94.259                   1.981
 19               95.057                   1.706
 20               95.792                   1.571
 21               96.405                   1.311
 22               96.970                   1.209
 23               97.402                   0.922
 24               97.795                   0.841
 25               98.048                   0.541
 26               98.287                   0.511
 27               98.561                   0.585
 28               98.842                   0.602
 29               99.124                   0.602
 30               99.403                   0.598
 31               99.597                   0.415
 32               99.744                   0.314
 33               99.891                   0.314
 34              100.000                   0.234
----------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                (In)
  1              0.2168              0.2168
  2              0.2669              0.0501
  3              0.3014              0.0345
  4              0.3286              0.0272
  5              0.3513              0.0227
  6              0.3711              0.0198
  7              0.3886              0.0176
  8              0.4045              0.0159
  9              0.4191              0.0145
 10              0.4325              0.0135
 11              0.4451              0.0125
 12              0.4568              0.0118
```

13	0.4740	0.0172
14	0.4905	0.0165
15	0.5063	0.0158
16	0.5216	0.0153
17	0.5364	0.0148
18	0.5507	0.0143
19	0.5646	0.0139
20	0.5781	0.0135
21	0.5912	0.0131
22	0.6040	0.0128
23	0.6165	0.0125
24	0.6287	0.0122
25	0.6407	0.0119
26	0.6524	0.0117
27	0.6638	0.0114
28	0.6750	0.0112
29	0.6860	0.0110
30	0.6968	0.0108
31	0.7074	0.0106
32	0.7179	0.0104
33	0.7281	0.0103
34	0.7382	0.0101
35	0.7481	0.0099
36	0.7579	0.0098
37	0.7675	0.0096
38	0.7770	0.0095
39	0.7863	0.0093
40	0.7956	0.0092
41	0.8047	0.0091
42	0.8136	0.0090
43	0.8225	0.0089
44	0.8312	0.0087
45	0.8399	0.0086
46	0.8484	0.0085
47	0.8568	0.0084
48	0.8652	0.0083
49	0.8734	0.0082
50	0.8816	0.0082
51	0.8897	0.0081
52	0.8977	0.0080
53	0.9056	0.0079
54	0.9134	0.0078
55	0.9211	0.0077
56	0.9288	0.0077
57	0.9364	0.0076
58	0.9439	0.0075
59	0.9514	0.0075
60	0.9588	0.0074
61	0.9661	0.0073
62	0.9733	0.0073
63	0.9805	0.0072
64	0.9877	0.0071
65	0.9947	0.0071
66	1.0018	0.0070
67	1.0087	0.0070
68	1.0156	0.0069
69	1.0225	0.0068
70	1.0292	0.0068
71	1.0360	0.0067
72	1.0427	0.0067
73	1.0483	0.0056
74	1.0539	0.0056
75	1.0594	0.0055
76	1.0649	0.0055
77	1.0703	0.0054
78	1.0757	0.0054
79	1.0811	0.0054
80	1.0864	0.0053
81	1.0916	0.0053
82	1.0969	0.0052
83	1.1021	0.0052
84	1.1072	0.0052
85	1.1123	0.0051
86	1.1174	0.0051
87	1.1225	0.0050
88	1.1275	0.0050
89	1.1324	0.0050
90	1.1374	0.0049
91	1.1423	0.0049
92	1.1472	0.0049
93	1.1520	0.0048

94	1.1568	0.0048
95	1.1616	0.0048
96	1.1664	0.0047
97	1.1711	0.0047
98	1.1758	0.0047
99	1.1804	0.0047
100	1.1851	0.0046
101	1.1897	0.0046
102	1.1942	0.0046
103	1.1988	0.0045
104	1.2033	0.0045
105	1.2078	0.0045
106	1.2123	0.0045
107	1.2167	0.0044
108	1.2211	0.0044
109	1.2255	0.0044
110	1.2299	0.0044
111	1.2342	0.0043
112	1.2386	0.0043
113	1.2428	0.0043
114	1.2471	0.0043
115	1.2514	0.0043
116	1.2556	0.0042
117	1.2598	0.0042
118	1.2640	0.0042
119	1.2682	0.0042
120	1.2723	0.0041
121	1.2764	0.0041
122	1.2805	0.0041
123	1.2846	0.0041
124	1.2887	0.0041
125	1.2927	0.0040
126	1.2967	0.0040
127	1.3007	0.0040
128	1.3047	0.0040
129	1.3087	0.0040
130	1.3126	0.0039
131	1.3165	0.0039
132	1.3204	0.0039
133	1.3243	0.0039
134	1.3282	0.0039
135	1.3320	0.0039
136	1.3359	0.0038
137	1.3397	0.0038
138	1.3435	0.0038
139	1.3473	0.0038
140	1.3511	0.0038
141	1.3548	0.0038
142	1.3585	0.0037
143	1.3623	0.0037
144	1.3660	0.0037
145	1.3697	0.0037
146	1.3733	0.0037
147	1.3770	0.0037
148	1.3806	0.0036
149	1.3843	0.0036
150	1.3879	0.0036
151	1.3915	0.0036
152	1.3950	0.0036
153	1.3986	0.0036
154	1.4022	0.0036
155	1.4057	0.0035
156	1.4092	0.0035
157	1.4127	0.0035
158	1.4162	0.0035
159	1.4197	0.0035
160	1.4232	0.0035
161	1.4267	0.0035
162	1.4301	0.0034
163	1.4335	0.0034
164	1.4370	0.0034
165	1.4404	0.0034
166	1.4438	0.0034
167	1.4472	0.0034
168	1.4505	0.0034
169	1.4539	0.0034
170	1.4572	0.0033
171	1.4606	0.0033
172	1.4639	0.0033
173	1.4672	0.0033
174	1.4705	0.0033

175	1.4738	0.0033
176	1.4771	0.0033
177	1.4803	0.0033
178	1.4836	0.0033
179	1.4868	0.0032
180	1.4900	0.0032
181	1.4933	0.0032
182	1.4965	0.0032
183	1.4997	0.0032
184	1.5029	0.0032
185	1.5060	0.0032
186	1.5092	0.0032
187	1.5124	0.0032
188	1.5155	0.0031
189	1.5186	0.0031
190	1.5218	0.0031
191	1.5249	0.0031
192	1.5280	0.0031
193	1.5311	0.0031
194	1.5342	0.0031
195	1.5372	0.0031
196	1.5403	0.0031
197	1.5434	0.0031
198	1.5464	0.0030
199	1.5495	0.0030
200	1.5525	0.0030
201	1.5555	0.0030
202	1.5585	0.0030
203	1.5615	0.0030
204	1.5645	0.0030
205	1.5675	0.0030
206	1.5705	0.0030
207	1.5734	0.0030
208	1.5764	0.0030
209	1.5793	0.0029
210	1.5823	0.0029
211	1.5852	0.0029
212	1.5881	0.0029
213	1.5910	0.0029
214	1.5940	0.0029
215	1.5969	0.0029
216	1.5997	0.0029
217	1.6026	0.0029
218	1.6055	0.0029
219	1.6084	0.0029
220	1.6112	0.0029
221	1.6141	0.0028
222	1.6169	0.0028
223	1.6197	0.0028
224	1.6226	0.0028
225	1.6254	0.0028
226	1.6282	0.0028
227	1.6310	0.0028
228	1.6338	0.0028
229	1.6366	0.0028
230	1.6394	0.0028
231	1.6421	0.0028
232	1.6449	0.0028
233	1.6477	0.0028
234	1.6504	0.0028
235	1.6532	0.0027
236	1.6559	0.0027
237	1.6586	0.0027
238	1.6614	0.0027
239	1.6641	0.0027
240	1.6668	0.0027
241	1.6695	0.0027
242	1.6722	0.0027
243	1.6749	0.0027
244	1.6775	0.0027
245	1.6802	0.0027
246	1.6829	0.0027
247	1.6856	0.0027
248	1.6882	0.0027
249	1.6909	0.0026
250	1.6935	0.0026
251	1.6961	0.0026
252	1.6988	0.0026
253	1.7014	0.0026
254	1.7040	0.0026
255	1.7066	0.0026

256	1.7092	0.0026
257	1.7118	0.0026
258	1.7144	0.0026
259	1.7170	0.0026
260	1.7196	0.0026
261	1.7222	0.0026
262	1.7247	0.0026
263	1.7273	0.0026
264	1.7298	0.0026
265	1.7324	0.0026
266	1.7349	0.0025
267	1.7375	0.0025
268	1.7400	0.0025
269	1.7425	0.0025
270	1.7451	0.0025
271	1.7476	0.0025
272	1.7501	0.0025
273	1.7526	0.0025
274	1.7551	0.0025
275	1.7576	0.0025
276	1.7601	0.0025
277	1.7625	0.0025
278	1.7650	0.0025
279	1.7675	0.0025
280	1.7700	0.0025
281	1.7724	0.0025
282	1.7749	0.0025
283	1.7773	0.0024
284	1.7798	0.0024
285	1.7822	0.0024
286	1.7846	0.0024
287	1.7871	0.0024
288	1.7895	0.0024

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0024	0.0024	0.0000
2	0.0024	0.0024	0.0000
3	0.0024	0.0024	0.0000
4	0.0024	0.0024	0.0000
5	0.0025	0.0024	0.0000
6	0.0025	0.0024	0.0000
7	0.0025	0.0024	0.0000
8	0.0025	0.0024	0.0000
9	0.0025	0.0025	0.0000
10	0.0025	0.0025	0.0000
11	0.0025	0.0025	0.0000
12	0.0025	0.0025	0.0000
13	0.0025	0.0025	0.0000
14	0.0025	0.0025	0.0000
15	0.0025	0.0025	0.0000
16	0.0025	0.0025	0.0000
17	0.0026	0.0025	0.0000
18	0.0026	0.0025	0.0000
19	0.0026	0.0025	0.0000
20	0.0026	0.0025	0.0000
21	0.0026	0.0026	0.0000
22	0.0026	0.0026	0.0000
23	0.0026	0.0026	0.0000
24	0.0026	0.0026	0.0000
25	0.0026	0.0026	0.0000
26	0.0026	0.0026	0.0000
27	0.0026	0.0026	0.0000
28	0.0027	0.0026	0.0000
29	0.0027	0.0026	0.0000
30	0.0027	0.0026	0.0000
31	0.0027	0.0027	0.0000
32	0.0027	0.0027	0.0000
33	0.0027	0.0027	0.0000
34	0.0027	0.0027	0.0000
35	0.0027	0.0027	0.0000
36	0.0027	0.0027	0.0000
37	0.0028	0.0027	0.0000
38	0.0028	0.0027	0.0000
39	0.0028	0.0027	0.0000
40	0.0028	0.0027	0.0000
41	0.0028	0.0028	0.0000
42	0.0028	0.0028	0.0000
43	0.0028	0.0028	0.0000

44	0.0028	0.0028	0.0000
45	0.0028	0.0028	0.0000
46	0.0028	0.0028	0.0000
47	0.0029	0.0028	0.0000
48	0.0029	0.0028	0.0000
49	0.0029	0.0029	0.0000
50	0.0029	0.0029	0.0000
51	0.0029	0.0029	0.0000
52	0.0029	0.0029	0.0000
53	0.0029	0.0029	0.0000
54	0.0029	0.0029	0.0000
55	0.0030	0.0029	0.0000
56	0.0030	0.0029	0.0000
57	0.0030	0.0030	0.0000
58	0.0030	0.0030	0.0000
59	0.0030	0.0030	0.0000
60	0.0030	0.0030	0.0000
61	0.0030	0.0030	0.0000
62	0.0031	0.0030	0.0000
63	0.0031	0.0030	0.0000
64	0.0031	0.0030	0.0000
65	0.0031	0.0031	0.0000
66	0.0031	0.0031	0.0000
67	0.0031	0.0031	0.0000
68	0.0031	0.0031	0.0000
69	0.0032	0.0031	0.0000
70	0.0032	0.0031	0.0000
71	0.0032	0.0032	0.0000
72	0.0032	0.0032	0.0000
73	0.0032	0.0032	0.0000
74	0.0032	0.0032	0.0000
75	0.0033	0.0032	0.0000
76	0.0033	0.0032	0.0000
77	0.0033	0.0033	0.0000
78	0.0033	0.0033	0.0000
79	0.0033	0.0033	0.0000
80	0.0033	0.0033	0.0000
81	0.0034	0.0033	0.0000
82	0.0034	0.0033	0.0000
83	0.0034	0.0034	0.0000
84	0.0034	0.0034	0.0000
85	0.0034	0.0034	0.0000
86	0.0035	0.0034	0.0000
87	0.0035	0.0034	0.0000
88	0.0035	0.0035	0.0000
89	0.0035	0.0035	0.0000
90	0.0035	0.0035	0.0000
91	0.0036	0.0035	0.0000
92	0.0036	0.0035	0.0000
93	0.0036	0.0036	0.0000
94	0.0036	0.0036	0.0000
95	0.0037	0.0036	0.0001
96	0.0037	0.0036	0.0001
97	0.0037	0.0037	0.0001
98	0.0037	0.0037	0.0001
99	0.0038	0.0037	0.0001
100	0.0038	0.0037	0.0001
101	0.0038	0.0037	0.0001
102	0.0038	0.0038	0.0001
103	0.0039	0.0038	0.0001
104	0.0039	0.0038	0.0001
105	0.0039	0.0039	0.0001
106	0.0039	0.0039	0.0001
107	0.0040	0.0039	0.0001
108	0.0040	0.0039	0.0001
109	0.0040	0.0040	0.0001
110	0.0040	0.0040	0.0001
111	0.0041	0.0040	0.0001
112	0.0041	0.0040	0.0001
113	0.0041	0.0041	0.0001
114	0.0042	0.0041	0.0001
115	0.0042	0.0041	0.0001
116	0.0042	0.0042	0.0001
117	0.0043	0.0042	0.0001
118	0.0043	0.0042	0.0001
119	0.0043	0.0043	0.0001
120	0.0044	0.0043	0.0001
121	0.0044	0.0044	0.0001
122	0.0044	0.0044	0.0001
123	0.0045	0.0044	0.0001
124	0.0045	0.0045	0.0001

125	0.0046	0.0045	0.0001
126	0.0046	0.0045	0.0001
127	0.0047	0.0046	0.0001
128	0.0047	0.0046	0.0001
129	0.0047	0.0047	0.0001
130	0.0048	0.0047	0.0001
131	0.0048	0.0048	0.0001
132	0.0049	0.0048	0.0001
133	0.0049	0.0049	0.0001
134	0.0050	0.0049	0.0001
135	0.0050	0.0050	0.0001
136	0.0051	0.0050	0.0001
137	0.0052	0.0051	0.0001
138	0.0052	0.0051	0.0001
139	0.0053	0.0052	0.0001
140	0.0053	0.0052	0.0001
141	0.0054	0.0053	0.0001
142	0.0054	0.0054	0.0001
143	0.0055	0.0055	0.0001
144	0.0056	0.0055	0.0001
145	0.0067	0.0066	0.0001
146	0.0067	0.0066	0.0001
147	0.0068	0.0068	0.0001
148	0.0069	0.0068	0.0001
149	0.0070	0.0069	0.0001
150	0.0071	0.0070	0.0001
151	0.0072	0.0071	0.0001
152	0.0073	0.0072	0.0001
153	0.0074	0.0073	0.0001
154	0.0075	0.0074	0.0001
155	0.0076	0.0075	0.0001
156	0.0077	0.0076	0.0001
157	0.0078	0.0077	0.0001
158	0.0079	0.0078	0.0001
159	0.0081	0.0080	0.0001
160	0.0082	0.0080	0.0001
161	0.0083	0.0082	0.0001
162	0.0084	0.0083	0.0001
163	0.0086	0.0085	0.0001
164	0.0087	0.0086	0.0001
165	0.0090	0.0088	0.0001
166	0.0091	0.0090	0.0001
167	0.0093	0.0092	0.0001
168	0.0095	0.0093	0.0001
169	0.0098	0.0096	0.0001
170	0.0099	0.0098	0.0001
171	0.0103	0.0101	0.0001
172	0.0104	0.0103	0.0001
173	0.0108	0.0107	0.0001
174	0.0110	0.0109	0.0002
175	0.0114	0.0113	0.0002
176	0.0117	0.0115	0.0002
177	0.0122	0.0120	0.0002
178	0.0125	0.0123	0.0002
179	0.0131	0.0130	0.0002
180	0.0135	0.0133	0.0002
181	0.0143	0.0141	0.0002
182	0.0148	0.0146	0.0002
183	0.0158	0.0156	0.0002
184	0.0165	0.0162	0.0002
185	0.0118	0.0116	0.0002
186	0.0125	0.0124	0.0002
187	0.0145	0.0143	0.0002
188	0.0159	0.0157	0.0002
189	0.0198	0.0195	0.0003
190	0.0227	0.0224	0.0003
191	0.0345	0.0340	0.0005
192	0.0501	0.0494	0.0007
193	0.2168	0.0573	0.1594
194	0.0272	0.0268	0.0004
195	0.0176	0.0173	0.0002
196	0.0135	0.0133	0.0002
197	0.0172	0.0169	0.0002
198	0.0153	0.0151	0.0002
199	0.0139	0.0137	0.0002
200	0.0128	0.0126	0.0002
201	0.0119	0.0118	0.0002
202	0.0112	0.0111	0.0002
203	0.0106	0.0105	0.0001
204	0.0101	0.0099	0.0001
205	0.0096	0.0095	0.0001

206	0.0092	0.0091	0.0001
207	0.0089	0.0087	0.0001
208	0.0085	0.0084	0.0001
209	0.0082	0.0081	0.0001
210	0.0080	0.0079	0.0001
211	0.0077	0.0076	0.0001
212	0.0075	0.0074	0.0001
213	0.0073	0.0072	0.0001
214	0.0071	0.0070	0.0001
215	0.0070	0.0069	0.0001
216	0.0068	0.0067	0.0001
217	0.0056	0.0055	0.0001
218	0.0055	0.0054	0.0001
219	0.0054	0.0053	0.0001
220	0.0052	0.0052	0.0001
221	0.0051	0.0050	0.0001
222	0.0050	0.0049	0.0001
223	0.0049	0.0048	0.0001
224	0.0048	0.0047	0.0001
225	0.0047	0.0047	0.0001
226	0.0046	0.0046	0.0001
227	0.0045	0.0045	0.0001
228	0.0045	0.0044	0.0001
229	0.0044	0.0043	0.0001
230	0.0043	0.0043	0.0001
231	0.0043	0.0042	0.0001
232	0.0042	0.0041	0.0001
233	0.0041	0.0041	0.0001
234	0.0041	0.0040	0.0001
235	0.0040	0.0039	0.0001
236	0.0039	0.0039	0.0001
237	0.0039	0.0038	0.0001
238	0.0038	0.0038	0.0001
239	0.0038	0.0037	0.0001
240	0.0037	0.0037	0.0001
241	0.0037	0.0036	0.0001
242	0.0036	0.0036	0.0001
243	0.0036	0.0035	0.0000
244	0.0036	0.0035	0.0000
245	0.0035	0.0035	0.0000
246	0.0035	0.0034	0.0000
247	0.0034	0.0034	0.0000
248	0.0034	0.0033	0.0000
249	0.0034	0.0033	0.0000
250	0.0033	0.0033	0.0000
251	0.0033	0.0032	0.0000
252	0.0033	0.0032	0.0000
253	0.0032	0.0032	0.0000
254	0.0032	0.0031	0.0000
255	0.0032	0.0031	0.0000
256	0.0031	0.0031	0.0000
257	0.0031	0.0031	0.0000
258	0.0031	0.0030	0.0000
259	0.0030	0.0030	0.0000
260	0.0030	0.0030	0.0000
261	0.0030	0.0029	0.0000
262	0.0030	0.0029	0.0000
263	0.0029	0.0029	0.0000
264	0.0029	0.0029	0.0000
265	0.0029	0.0028	0.0000
266	0.0029	0.0028	0.0000
267	0.0028	0.0028	0.0000
268	0.0028	0.0028	0.0000
269	0.0028	0.0027	0.0000
270	0.0028	0.0027	0.0000
271	0.0027	0.0027	0.0000
272	0.0027	0.0027	0.0000
273	0.0027	0.0027	0.0000
274	0.0027	0.0026	0.0000
275	0.0027	0.0026	0.0000
276	0.0026	0.0026	0.0000
277	0.0026	0.0026	0.0000
278	0.0026	0.0026	0.0000
279	0.0026	0.0026	0.0000
280	0.0026	0.0025	0.0000
281	0.0026	0.0025	0.0000
282	0.0025	0.0025	0.0000
283	0.0025	0.0025	0.0000
284	0.0025	0.0025	0.0000
285	0.0025	0.0024	0.0000
286	0.0025	0.0024	0.0000

287	0.0024	0.0024	0.0000
288	0.0024	0.0024	0.0000

Total soil rain loss = 1.61(In)
Total effective rainfall = 0.18(In)
Peak flow rate in flood hydrograph = 7.06(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	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0000	0.00	Q	|	|	|	|
0+25	0.0001	0.00	Q	|	|	|	|
0+30	0.0001	0.00	Q	|	|	|	|
0+35	0.0001	0.00	Q	|	|	|	|
0+40	0.0002	0.01	Q	|	|	|	|
0+45	0.0002	0.01	Q	|	|	|	|
0+50	0.0002	0.01	Q	|	|	|	|
0+55	0.0003	0.01	Q	|	|	|	|
1+ 0	0.0003	0.01	Q	|	|	|	|
1+ 5	0.0004	0.01	Q	|	|	|	|
1+10	0.0004	0.01	Q	|	|	|	|
1+15	0.0005	0.01	Q	|	|	|	|
1+20	0.0005	0.01	Q	|	|	|	|
1+25	0.0006	0.01	Q	|	|	|	|
1+30	0.0006	0.01	Q	|	|	|	|
1+35	0.0006	0.01	Q	|	|	|	|
1+40	0.0007	0.01	Q	|	|	|	|
1+45	0.0007	0.01	Q	|	|	|	|
1+50	0.0008	0.01	Q	|	|	|	|
1+55	0.0008	0.01	Q	|	|	|	|
2+ 0	0.0009	0.01	Q	|	|	|	|
2+ 5	0.0009	0.01	Q	|	|	|	|
2+10	0.0010	0.01	Q	|	|	|	|
2+15	0.0011	0.01	Q	|	|	|	|
2+20	0.0011	0.01	Q	|	|	|	|
2+25	0.0012	0.01	Q	|	|	|	|
2+30	0.0012	0.01	Q	|	|	|	|
2+35	0.0013	0.01	Q	|	|	|	|
2+40	0.0013	0.01	Q	|	|	|	|
2+45	0.0014	0.01	Q	|	|	|	|
2+50	0.0014	0.01	Q	|	|	|	|
2+55	0.0015	0.01	Q	|	|	|	|
3+ 0	0.0015	0.01	Q	|	|	|	|
3+ 5	0.0016	0.01	Q	|	|	|	|
3+10	0.0016	0.01	Q	|	|	|	|
3+15	0.0017	0.01	Q	|	|	|	|
3+20	0.0017	0.01	Q	|	|	|	|
3+25	0.0018	0.01	Q	|	|	|	|
3+30	0.0019	0.01	Q	|	|	|	|
3+35	0.0019	0.01	Q	|	|	|	|
3+40	0.0020	0.01	Q	|	|	|	|
3+45	0.0020	0.01	Q	|	|	|	|
3+50	0.0021	0.01	Q	|	|	|	|
3+55	0.0021	0.01	Q	|	|	|	|
4+ 0	0.0022	0.01	Q	|	|	|	|
4+ 5	0.0023	0.01	Q	|	|	|	|
4+10	0.0023	0.01	Q	|	|	|	|
4+15	0.0024	0.01	Q	|	|	|	|
4+20	0.0024	0.01	Q	|	|	|	|
4+25	0.0025	0.01	Q	|	|	|	|
4+30	0.0025	0.01	Q	|	|	|	|
4+35	0.0026	0.01	Q	|	|	|	|
4+40	0.0027	0.01	Q	|	|	|	|
4+45	0.0027	0.01	Q	|	|	|	|
4+50	0.0028	0.01	Q	|	|	|	|
4+55	0.0028	0.01	Q	|	|	|	|
5+ 0	0.0029	0.01	Q	|	|	|	|
5+ 5	0.0030	0.01	Q	|	|	|	|
5+10	0.0030	0.01	Q	|	|	|	|
5+15	0.0031	0.01	Q	|	|	|	|
5+20	0.0031	0.01	Q	|	|	|	|

5+25	0.0032	0.01	Q				
5+30	0.0033	0.01	Q				
5+35	0.0033	0.01	Q				
5+40	0.0034	0.01	Q				
5+45	0.0034	0.01	Q				
5+50	0.0035	0.01	Q				
5+55	0.0036	0.01	Q				
6+ 0	0.0036	0.01	Q				
6+ 5	0.0037	0.01	Q				
6+10	0.0038	0.01	Q				
6+15	0.0038	0.01	Q				
6+20	0.0039	0.01	Q				
6+25	0.0040	0.01	Q				
6+30	0.0040	0.01	Q				
6+35	0.0041	0.01	Q				
6+40	0.0042	0.01	Q				
6+45	0.0042	0.01	Q				
6+50	0.0043	0.01	Q				
6+55	0.0043	0.01	Q				
7+ 0	0.0044	0.01	Q				
7+ 5	0.0045	0.01	Q				
7+10	0.0046	0.01	Q				
7+15	0.0046	0.01	Q				
7+20	0.0047	0.01	Q				
7+25	0.0048	0.01	Q				
7+30	0.0048	0.01	Q				
7+35	0.0049	0.01	Q				
7+40	0.0050	0.01	Q				
7+45	0.0050	0.01	Q				
7+50	0.0051	0.01	Q				
7+55	0.0052	0.01	Q				
8+ 0	0.0053	0.01	Q				
8+ 5	0.0053	0.01	Q				
8+10	0.0054	0.01	Q				
8+15	0.0055	0.01	Q				
8+20	0.0055	0.01	Q				
8+25	0.0056	0.01	Q				
8+30	0.0057	0.01	Q				
8+35	0.0058	0.01	Q				
8+40	0.0058	0.01	Q				
8+45	0.0059	0.01	Q				
8+50	0.0060	0.01	Q				
8+55	0.0061	0.01	Q				
9+ 0	0.0061	0.01	Q				
9+ 5	0.0062	0.01	Q				
9+10	0.0063	0.01	Q				
9+15	0.0064	0.01	Q				
9+20	0.0065	0.01	Q				
9+25	0.0065	0.01	Q				
9+30	0.0066	0.01	Q				
9+35	0.0067	0.01	QV				
9+40	0.0068	0.01	QV				
9+45	0.0069	0.01	QV				
9+50	0.0070	0.01	QV				
9+55	0.0070	0.01	QV				
10+ 0	0.0071	0.01	QV				
10+ 5	0.0072	0.01	QV				
10+10	0.0073	0.01	QV				
10+15	0.0074	0.01	QV				
10+20	0.0075	0.01	QV				
10+25	0.0076	0.01	QV				
10+30	0.0076	0.01	QV				
10+35	0.0077	0.01	QV				
10+40	0.0078	0.01	QV				
10+45	0.0079	0.01	QV				
10+50	0.0080	0.01	QV				
10+55	0.0081	0.01	QV				
11+ 0	0.0082	0.01	QV				
11+ 5	0.0083	0.01	QV				
11+10	0.0084	0.01	QV				
11+15	0.0085	0.01	QV				
11+20	0.0086	0.01	QV				
11+25	0.0087	0.01	QV				
11+30	0.0088	0.01	QV				
11+35	0.0089	0.01	QV				
11+40	0.0090	0.01	QV				
11+45	0.0091	0.01	QV				
11+50	0.0092	0.01	QV				
11+55	0.0093	0.02	QV				
12+ 0	0.0094	0.02	QV				
12+ 5	0.0095	0.02	QV				

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12+10       0.0096      0.02  QV        |          |          |          |
12+15       0.0097      0.02  QV        |          |          |          |
12+20       0.0098      0.02  QV        |          |          |          |
12+25       0.0100      0.02  QV        |          |          |          |
12+30       0.0101      0.02  QV        |          |          |          |
12+35       0.0102      0.02  QV        |          |          |          |
12+40       0.0103      0.02  QV        |          |          |          |
12+45       0.0105      0.02  QV        |          |          |          |
12+50       0.0106      0.02  QV        |          |          |          |
12+55       0.0107      0.02  QV        |          |          |          |
13+ 0       0.0109      0.02  QV        |          |          |          |
13+ 5       0.0110      0.02  QV        |          |          |          |
13+10       0.0112      0.02  QV        |          |          |          |
13+15       0.0113      0.02  QV        |          |          |          |
13+20       0.0115      0.02  QV        |          |          |          |
13+25       0.0116      0.02  QV        |          |          |          |
13+30       0.0118      0.02  QV        |          |          |          |
13+35       0.0119      0.02  QV        |          |          |          |
13+40       0.0121      0.02  QV        |          |          |          |
13+45       0.0123      0.02  QV        |          |          |          |
13+50       0.0124      0.02  QV        |          |          |          |
13+55       0.0126      0.02  QV        |          |          |          |
14+ 0       0.0128      0.02  QV        |          |          |          |
14+ 5       0.0129      0.03  QV        |          |          |          |
14+10       0.0131      0.03  QV        |          |          |          |
14+15       0.0133      0.03  QV        |          |          |          |
14+20       0.0135      0.03  Q V       |          |          |          |
14+25       0.0137      0.03  Q V       |          |          |          |
14+30       0.0139      0.03  Q V       |          |          |          |
14+35       0.0141      0.03  Q V       |          |          |          |
14+40       0.0143      0.03  Q V       |          |          |          |
14+45       0.0145      0.03  Q V       |          |          |          |
14+50       0.0147      0.03  Q V       |          |          |          |
14+55       0.0149      0.03  Q V       |          |          |          |
15+ 0       0.0151      0.03  Q V       |          |          |          |
15+ 5       0.0154      0.03  Q V       |          |          |          |
15+10       0.0156      0.04  Q V       |          |          |          |
15+15       0.0159      0.04  Q V       |          |          |          |
15+20       0.0161      0.04  Q V       |          |          |          |
15+25       0.0164      0.04  Q V       |          |          |          |
15+30       0.0167      0.04  Q V       |          |          |          |
15+35       0.0170      0.04  Q V       |          |          |          |
15+40       0.0172      0.04  Q V       |          |          |          |
15+45       0.0175      0.04  Q V       |          |          |          |
15+50       0.0178      0.04  Q V       |          |          |          |
15+55       0.0181      0.04  Q V       |          |          |          |
16+ 0       0.0185      0.05  Q V       |          |          |          |
16+ 5       0.0218      0.48  |Q V      |          |          |          |
16+10       0.0332      1.66  |   V Q   |          |          |          |
16+15       0.0588      3.72  |       V |    Q     |          |          |
16+20       0.1074      7.06  |         |      V   |        Q |          |
16+25       0.1445      5.38  |         |          |Q         |          |
16+30       0.1677      3.37  |         |  Q       |    V     |          |
16+35       0.1836      2.30  |        Q|          |      V   |          |
16+40       0.1958      1.78  |      Q  |          |        V|          |
16+45       0.2055      1.41  |    Q    |          |         V          |
16+50       0.2133      1.13  |   Q     |          |         |V         |
16+55       0.2197      0.94  |  Q      |          |         | V        |
17+ 0       0.2254      0.83  |  Q      |          |         |  V       |
17+ 5       0.2303      0.71  | Q       |          |         |   V      |
17+10       0.2342      0.57  | Q       |          |         |    V     |
17+15       0.2376      0.50  |Q        |          |         |    V     |
17+20       0.2407      0.45  |Q        |          |         |     V    |
17+25       0.2435      0.40  |Q        |          |         |     V    |
17+30       0.2459      0.35  |Q        |          |         |     V    |
17+35       0.2479      0.30  |Q        |          |         |      V   |
17+40       0.2499      0.28  |Q        |          |         |      V   |
17+45       0.2515      0.24  Q         |          |         |      V   |
17+50       0.2530      0.22  Q         |          |         |      V   |
17+55       0.2542      0.17  Q         |          |         |       V  |
18+ 0       0.2553      0.16  Q         |          |         |       V  |
18+ 5       0.2561      0.11  Q         |          |         |       V  |
18+10       0.2568      0.11  Q         |          |         |       V  |
18+15       0.2576      0.12  Q         |          |         |       V  |
18+20       0.2584      0.12  Q         |          |         |       V  |
18+25       0.2592      0.12  Q         |          |         |       V  |
18+30       0.2600      0.11  Q         |          |         |        V|
18+35       0.2606      0.08  Q         |          |         |        V|
18+40       0.2610      0.07  Q         |          |         |        V|
18+45       0.2615      0.07  Q         |          |         |        V|
18+50       0.2619      0.05  Q         |          |         |        V|
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18+55	0.2620	0.02	Q	|	|	|	V|
19+ 0	0.2621	0.02	Q	|	|	|	V|
19+ 5	0.2622	0.02	Q	|	|	|	V|
19+10	0.2623	0.01	Q	|	|	|	V|
19+15	0.2624	0.01	Q	|	|	|	V|
19+20	0.2625	0.01	Q	|	|	|	V|
19+25	0.2626	0.01	Q	|	|	|	V|
19+30	0.2627	0.01	Q	|	|	|	V|
19+35	0.2628	0.01	Q	|	|	|	V|
19+40	0.2629	0.01	Q	|	|	|	V|
19+45	0.2630	0.01	Q	|	|	|	V|
19+50	0.2631	0.01	Q	|	|	|	V|
19+55	0.2631	0.01	Q	|	|	|	V|
20+ 0	0.2632	0.01	Q	|	|	|	V|
20+ 5	0.2633	0.01	Q	|	|	|	V|
20+10	0.2634	0.01	Q	|	|	|	V|
20+15	0.2635	0.01	Q	|	|	|	V|
20+20	0.2636	0.01	Q	|	|	|	V|
20+25	0.2636	0.01	Q	|	|	|	V|
20+30	0.2637	0.01	Q	|	|	|	V|
20+35	0.2638	0.01	Q	|	|	|	V|
20+40	0.2639	0.01	Q	|	|	|	V|
20+45	0.2639	0.01	Q	|	|	|	V|
20+50	0.2640	0.01	Q	|	|	|	V|
20+55	0.2641	0.01	Q	|	|	|	V|
21+ 0	0.2641	0.01	Q	|	|	|	V|
21+ 5	0.2642	0.01	Q	|	|	|	V|
21+10	0.2643	0.01	Q	|	|	|	V|
21+15	0.2644	0.01	Q	|	|	|	V|
21+20	0.2644	0.01	Q	|	|	|	V|
21+25	0.2645	0.01	Q	|	|	|	V|
21+30	0.2646	0.01	Q	|	|	|	V|
21+35	0.2646	0.01	Q	|	|	|	V|
21+40	0.2647	0.01	Q	|	|	|	V|
21+45	0.2648	0.01	Q	|	|	|	V|
21+50	0.2648	0.01	Q	|	|	|	V|
21+55	0.2649	0.01	Q	|	|	|	V|
22+ 0	0.2649	0.01	Q	|	|	|	V|
22+ 5	0.2650	0.01	Q	|	|	|	V|
22+10	0.2651	0.01	Q	|	|	|	V|
22+15	0.2651	0.01	Q	|	|	|	V|
22+20	0.2652	0.01	Q	|	|	|	V|
22+25	0.2652	0.01	Q	|	|	|	V|
22+30	0.2653	0.01	Q	|	|	|	V|
22+35	0.2654	0.01	Q	|	|	|	V|
22+40	0.2654	0.01	Q	|	|	|	V|
22+45	0.2655	0.01	Q	|	|	|	V|
22+50	0.2655	0.01	Q	|	|	|	V|
22+55	0.2656	0.01	Q	|	|	|	V|
23+ 0	0.2657	0.01	Q	|	|	|	V|
23+ 5	0.2657	0.01	Q	|	|	|	V|
23+10	0.2658	0.01	Q	|	|	|	V|
23+15	0.2658	0.01	Q	|	|	|	V|
23+20	0.2659	0.01	Q	|	|	|	V|
23+25	0.2659	0.01	Q	|	|	|	V|
23+30	0.2660	0.01	Q	|	|	|	V|
23+35	0.2660	0.01	Q	|	|	|	V|
23+40	0.2661	0.01	Q	|	|	|	V|
23+45	0.2661	0.01	Q	|	|	|	V|
23+50	0.2662	0.01	Q	|	|	|	V|
23+55	0.2662	0.01	Q	|	|	|	V|
24+ 0	0.2663	0.01	Q	|	|	|	V|
24+ 5	0.2663	0.01	Q	|	|	|	V|
24+10	0.2664	0.01	Q	|	|	|	V|
24+15	0.2664	0.01	Q	|	|	|	V|
24+20	0.2665	0.00	Q	|	|	|	V|
24+25	0.2665	0.00	Q	|	|	|	V|
24+30	0.2665	0.00	Q	|	|	|	V|
24+35	0.2665	0.00	Q	|	|	|	V|
24+40	0.2665	0.00	Q	|	|	|	V|
24+45	0.2665	0.00	Q	|	|	|	V|
24+50	0.2666	0.00	Q	|	|	|	V|
24+55	0.2666	0.00	Q	|	|	|	V|
25+ 0	0.2666	0.00	Q	|	|	|	V|
25+ 5	0.2666	0.00	Q	|	|	|	V|
25+10	0.2666	0.00	Q	|	|	|	V|
25+15	0.2666	0.00	Q	|	|	|	V|
25+20	0.2666	0.00	Q	|	|	|	V|
25+25	0.2666	0.00	Q	|	|	|	V|
25+30	0.2666	0.00	Q	|	|	|	V|
25+35	0.2666	0.00	Q	|	|	|	V|

```
   25+40       0.2666      0.00  Q          |          |          |         v|
   25+45       0.2666      0.00  Q          |          |          |         v|
   25+50       0.2666      0.00  Q          |          |          |         v|
   25+55       0.2666      0.00  Q          |          |          |         v|
   26+ 0       0.2666      0.00  Q          |          |          |         v|
   26+ 5       0.2666      0.00  Q          |          |          |         v|
   26+10       0.2666      0.00  Q          |          |          |         v|
   26+15       0.2666      0.00  Q          |          |          |         v|
   26+20       0.2666      0.00  Q          |          |          |         v|
   26+25       0.2666      0.00  Q          |          |          |         v|
   26+30       0.2666      0.00  Q          |          |          |         v|
   26+35       0.2666      0.00  Q          |          |          |         v|
   26+40       0.2666      0.00  Q          |          |          |         v|
   26+45       0.2666      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  06/23/22

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6320

-------------------------------------------------------------------
224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
EXISITNG CONDITION - ON-SITE
10-YEAR, 24-HOUR STORM
BY: JTS  DATE: 06-23-22
-------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            17.68            1           0.60
-------------------------------------------------------------------
Rainfall data for year 2
            17.68            6           0.75
-------------------------------------------------------------------
Rainfall data for year 2
            17.68           24           1.30
-------------------------------------------------------------------
Rainfall data for year 100
            17.68            1           1.07
-------------------------------------------------------------------
Rainfall data for year 100
            17.68            6           1.99
-------------------------------------------------------------------
Rainfall data for year 100
            17.68           24           3.39
-------------------------------------------------------------------
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 77.0      77.0         17.68      1.000     0.420    1.000    0.420

Area-averaged adjusted loss rate Fm (In/Hr) =  0.420

********* Area-Averaged low loss rate fraction, Yb **********

Area       Area          SCS CN    SCS CN      S     Pervious
 (Ac.)      Fract         (AMC2)    (AMC2)           Yield Fr
    17.68   1.000         77.0      77.0       2.99     0.248

Area-averaged catchment yield fraction, Y =  0.248
Area-averaged low loss fraction, Yb =  0.752
User entry of time of concentration  =   0.444 (hours)
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area =      17.68(Ac.)
Catchment Lag time =   0.355 hours
```

```
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 23.4610
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.420(In/Hr)
Average low loss rate fraction (Yb) = 0.752 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.284(In)
Computed peak 30-minute rainfall =  0.487(In)
Specified peak 1-hour rainfall =  0.599(In)
Computed peak 3-hour rainfall =  0.946(In)
Specified peak 6-hour rainfall =  1.262(In)
Specified peak 24-hour rainfall =  2.160(In)


Rainfall depth area reduction factors:
Using a total area of      17.68(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999     Adjusted rainfall =  0.284(In)
30-minute factor = 0.999    Adjusted rainfall =  0.486(In)
1-hour factor = 0.999       Adjusted rainfall =  0.599(In)
3-hour factor = 1.000       Adjusted rainfall =  0.946(In)
6-hour factor = 1.000       Adjusted rainfall =  1.262(In)
24-hour factor = 1.000      Adjusted rainfall =  2.160(In)
----------------------------------------------------------------------

                        U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
----------------------------------------------------------------------
                 (K =       213.82 (CFS))

  1                1.237                   2.645
  2                5.898                   9.966
  3               16.607                  22.899
  4               37.127                  43.875
  5               52.735                  33.371
  6               62.457                  20.788
  7               69.053                  14.103
  8               74.109                  10.811
  9               78.107                   8.548
 10               81.273                   6.769
 11               83.888                   5.592
 12               86.186                   4.914
 13               88.150                   4.199
 14               89.702                   3.319
 15               91.050                   2.881
 16               92.255                   2.577
 17               93.333                   2.304
 18               94.259                   1.981
 19               95.057                   1.706
 20               95.792                   1.571
 21               96.405                   1.311
 22               96.970                   1.209
 23               97.402                   0.922
 24               97.795                   0.841
 25               98.048                   0.541
 26               98.287                   0.511
 27               98.561                   0.585
 28               98.842                   0.602
 29               99.124                   0.602
 30               99.403                   0.598
 31               99.597                   0.415
 32               99.744                   0.314
 33               99.891                   0.314
 34              100.000                   0.234
----------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                (In)
  1              0.2840              0.2840
  2              0.3496              0.0656
  3              0.3949              0.0452
  4              0.4305              0.0356
  5              0.4603              0.0298
  6              0.4861              0.0259
  7              0.5091              0.0230
  8              0.5300              0.0208
  9              0.5490              0.0191
 10              0.5666              0.0176
 11              0.5831              0.0164
 12              0.5985              0.0154
```

13	0.6188	0.0203
14	0.6382	0.0194
15	0.6568	0.0186
16	0.6747	0.0179
17	0.6919	0.0173
18	0.7086	0.0167
19	0.7248	0.0161
20	0.7404	0.0157
21	0.7556	0.0152
22	0.7704	0.0148
23	0.7848	0.0144
24	0.7988	0.0140
25	0.8125	0.0137
26	0.8259	0.0134
27	0.8390	0.0131
28	0.8518	0.0128
29	0.8643	0.0125
30	0.8766	0.0123
31	0.8887	0.0121
32	0.9005	0.0118
33	0.9121	0.0116
34	0.9235	0.0114
35	0.9348	0.0112
36	0.9458	0.0110
37	0.9566	0.0108
38	0.9673	0.0107
39	0.9778	0.0105
40	0.9882	0.0104
41	0.9984	0.0102
42	1.0084	0.0101
43	1.0183	0.0099
44	1.0281	0.0098
45	1.0378	0.0097
46	1.0473	0.0095
47	1.0567	0.0094
48	1.0660	0.0093
49	1.0752	0.0092
50	1.0843	0.0091
51	1.0932	0.0090
52	1.1021	0.0089
53	1.1109	0.0088
54	1.1195	0.0087
55	1.1281	0.0086
56	1.1366	0.0085
57	1.1450	0.0084
58	1.1533	0.0083
59	1.1615	0.0082
60	1.1697	0.0081
61	1.1778	0.0081
62	1.1858	0.0080
63	1.1937	0.0079
64	1.2015	0.0078
65	1.2093	0.0078
66	1.2170	0.0077
67	1.2246	0.0076
68	1.2322	0.0076
69	1.2397	0.0075
70	1.2471	0.0074
71	1.2545	0.0074
72	1.2618	0.0073
73	1.2686	0.0068
74	1.2753	0.0067
75	1.2820	0.0067
76	1.2886	0.0066
77	1.2951	0.0065
78	1.3016	0.0065
79	1.3081	0.0064
80	1.3145	0.0064
81	1.3208	0.0063
82	1.3271	0.0063
83	1.3333	0.0063
84	1.3396	0.0062
85	1.3457	0.0062
86	1.3518	0.0061
87	1.3579	0.0061
88	1.3639	0.0060
89	1.3699	0.0060
90	1.3759	0.0059
91	1.3818	0.0059
92	1.3876	0.0059
93	1.3935	0.0058

94	1.3993	0.0058
95	1.4050	0.0058
96	1.4107	0.0057
97	1.4164	0.0057
98	1.4220	0.0056
99	1.4277	0.0056
100	1.4332	0.0056
101	1.4388	0.0055
102	1.4443	0.0055
103	1.4497	0.0055
104	1.4552	0.0054
105	1.4606	0.0054
106	1.4660	0.0054
107	1.4713	0.0053
108	1.4766	0.0053
109	1.4819	0.0053
110	1.4872	0.0053
111	1.4924	0.0052
112	1.4976	0.0052
113	1.5028	0.0052
114	1.5079	0.0051
115	1.5130	0.0051
116	1.5181	0.0051
117	1.5232	0.0051
118	1.5282	0.0050
119	1.5332	0.0050
120	1.5382	0.0050
121	1.5432	0.0050
122	1.5481	0.0049
123	1.5530	0.0049
124	1.5579	0.0049
125	1.5627	0.0049
126	1.5676	0.0048
127	1.5724	0.0048
128	1.5772	0.0048
129	1.5819	0.0048
130	1.5867	0.0047
131	1.5914	0.0047
132	1.5961	0.0047
133	1.6008	0.0047
134	1.6054	0.0047
135	1.6101	0.0046
136	1.6147	0.0046
137	1.6193	0.0046
138	1.6238	0.0046
139	1.6284	0.0046
140	1.6329	0.0045
141	1.6374	0.0045
142	1.6419	0.0045
143	1.6464	0.0045
144	1.6509	0.0045
145	1.6553	0.0044
146	1.6597	0.0044
147	1.6641	0.0044
148	1.6685	0.0044
149	1.6728	0.0044
150	1.6772	0.0043
151	1.6815	0.0043
152	1.6858	0.0043
153	1.6901	0.0043
154	1.6944	0.0043
155	1.6986	0.0043
156	1.7029	0.0042
157	1.7071	0.0042
158	1.7113	0.0042
159	1.7155	0.0042
160	1.7197	0.0042
161	1.7238	0.0042
162	1.7280	0.0041
163	1.7321	0.0041
164	1.7362	0.0041
165	1.7403	0.0041
166	1.7444	0.0041
167	1.7485	0.0041
168	1.7525	0.0041
169	1.7566	0.0040
170	1.7606	0.0040
171	1.7646	0.0040
172	1.7686	0.0040
173	1.7726	0.0040
174	1.7765	0.0040

175	1.7805	0.0040
176	1.7844	0.0039
177	1.7883	0.0039
178	1.7922	0.0039
179	1.7961	0.0039
180	1.8000	0.0039
181	1.8039	0.0039
182	1.8078	0.0039
183	1.8116	0.0038
184	1.8154	0.0038
185	1.8192	0.0038
186	1.8231	0.0038
187	1.8268	0.0038
188	1.8306	0.0038
189	1.8344	0.0038
190	1.8382	0.0038
191	1.8419	0.0037
192	1.8456	0.0037
193	1.8494	0.0037
194	1.8531	0.0037
195	1.8568	0.0037
196	1.8604	0.0037
197	1.8641	0.0037
198	1.8678	0.0037
199	1.8714	0.0037
200	1.8751	0.0036
201	1.8787	0.0036
202	1.8823	0.0036
203	1.8859	0.0036
204	1.8895	0.0036
205	1.8931	0.0036
206	1.8967	0.0036
207	1.9002	0.0036
208	1.9038	0.0036
209	1.9073	0.0035
210	1.9109	0.0035
211	1.9144	0.0035
212	1.9179	0.0035
213	1.9214	0.0035
214	1.9249	0.0035
215	1.9284	0.0035
216	1.9319	0.0035
217	1.9353	0.0035
218	1.9388	0.0035
219	1.9422	0.0034
220	1.9457	0.0034
221	1.9491	0.0034
222	1.9525	0.0034
223	1.9559	0.0034
224	1.9593	0.0034
225	1.9627	0.0034
226	1.9661	0.0034
227	1.9694	0.0034
228	1.9728	0.0034
229	1.9761	0.0033
230	1.9795	0.0033
231	1.9828	0.0033
232	1.9861	0.0033
233	1.9894	0.0033
234	1.9927	0.0033
235	1.9960	0.0033
236	1.9993	0.0033
237	2.0026	0.0033
238	2.0059	0.0033
239	2.0092	0.0033
240	2.0124	0.0033
241	2.0157	0.0032
242	2.0189	0.0032
243	2.0221	0.0032
244	2.0253	0.0032
245	2.0286	0.0032
246	2.0318	0.0032
247	2.0350	0.0032
248	2.0382	0.0032
249	2.0413	0.0032
250	2.0445	0.0032
251	2.0477	0.0032
252	2.0508	0.0032
253	2.0540	0.0032
254	2.0571	0.0031
255	2.0603	0.0031

256	2.0634	0.0031
257	2.0665	0.0031
258	2.0696	0.0031
259	2.0727	0.0031
260	2.0758	0.0031
261	2.0789	0.0031
262	2.0820	0.0031
263	2.0851	0.0031
264	2.0882	0.0031
265	2.0912	0.0031
266	2.0943	0.0031
267	2.0973	0.0030
268	2.1004	0.0030
269	2.1034	0.0030
270	2.1064	0.0030
271	2.1094	0.0030
272	2.1125	0.0030
273	2.1155	0.0030
274	2.1185	0.0030
275	2.1215	0.0030
276	2.1245	0.0030
277	2.1274	0.0030
278	2.1304	0.0030
279	2.1334	0.0030
280	2.1363	0.0030
281	2.1393	0.0030
282	2.1422	0.0029
283	2.1452	0.0029
284	2.1481	0.0029
285	2.1510	0.0029
286	2.1540	0.0029
287	2.1569	0.0029
288	2.1598	0.0029

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0029	0.0022	0.0007
2	0.0029	0.0022	0.0007
3	0.0029	0.0022	0.0007
4	0.0029	0.0022	0.0007
5	0.0029	0.0022	0.0007
6	0.0030	0.0022	0.0007
7	0.0030	0.0022	0.0007
8	0.0030	0.0022	0.0007
9	0.0030	0.0022	0.0007
10	0.0030	0.0023	0.0007
11	0.0030	0.0023	0.0007
12	0.0030	0.0023	0.0007
13	0.0030	0.0023	0.0008
14	0.0030	0.0023	0.0008
15	0.0030	0.0023	0.0008
16	0.0031	0.0023	0.0008
17	0.0031	0.0023	0.0008
18	0.0031	0.0023	0.0008
19	0.0031	0.0023	0.0008
20	0.0031	0.0023	0.0008
21	0.0031	0.0023	0.0008
22	0.0031	0.0023	0.0008
23	0.0031	0.0024	0.0008
24	0.0031	0.0024	0.0008
25	0.0032	0.0024	0.0008
26	0.0032	0.0024	0.0008
27	0.0032	0.0024	0.0008
28	0.0032	0.0024	0.0008
29	0.0032	0.0024	0.0008
30	0.0032	0.0024	0.0008
31	0.0032	0.0024	0.0008
32	0.0032	0.0024	0.0008
33	0.0033	0.0024	0.0008
34	0.0033	0.0025	0.0008
35	0.0033	0.0025	0.0008
36	0.0033	0.0025	0.0008
37	0.0033	0.0025	0.0008
38	0.0033	0.0025	0.0008
39	0.0033	0.0025	0.0008
40	0.0033	0.0025	0.0008
41	0.0034	0.0025	0.0008
42	0.0034	0.0025	0.0008
43	0.0034	0.0025	0.0008

44	0.0034	0.0026	0.0008
45	0.0034	0.0026	0.0008
46	0.0034	0.0026	0.0009
47	0.0034	0.0026	0.0009
48	0.0035	0.0026	0.0009
49	0.0035	0.0026	0.0009
50	0.0035	0.0026	0.0009
51	0.0035	0.0026	0.0009
52	0.0035	0.0026	0.0009
53	0.0035	0.0027	0.0009
54	0.0035	0.0027	0.0009
55	0.0036	0.0027	0.0009
56	0.0036	0.0027	0.0009
57	0.0036	0.0027	0.0009
58	0.0036	0.0027	0.0009
59	0.0036	0.0027	0.0009
60	0.0036	0.0027	0.0009
61	0.0037	0.0028	0.0009
62	0.0037	0.0028	0.0009
63	0.0037	0.0028	0.0009
64	0.0037	0.0028	0.0009
65	0.0037	0.0028	0.0009
66	0.0037	0.0028	0.0009
67	0.0038	0.0028	0.0009
68	0.0038	0.0028	0.0009
69	0.0038	0.0029	0.0009
70	0.0038	0.0029	0.0009
71	0.0038	0.0029	0.0010
72	0.0039	0.0029	0.0010
73	0.0039	0.0029	0.0010
74	0.0039	0.0029	0.0010
75	0.0039	0.0029	0.0010
76	0.0039	0.0030	0.0010
77	0.0040	0.0030	0.0010
78	0.0040	0.0030	0.0010
79	0.0040	0.0030	0.0010
80	0.0040	0.0030	0.0010
81	0.0041	0.0030	0.0010
82	0.0041	0.0031	0.0010
83	0.0041	0.0031	0.0010
84	0.0041	0.0031	0.0010
85	0.0041	0.0031	0.0010
86	0.0042	0.0031	0.0010
87	0.0042	0.0031	0.0010
88	0.0042	0.0032	0.0010
89	0.0042	0.0032	0.0011
90	0.0043	0.0032	0.0011
91	0.0043	0.0032	0.0011
92	0.0043	0.0032	0.0011
93	0.0043	0.0033	0.0011
94	0.0044	0.0033	0.0011
95	0.0044	0.0033	0.0011
96	0.0044	0.0033	0.0011
97	0.0045	0.0033	0.0011
98	0.0045	0.0034	0.0011
99	0.0045	0.0034	0.0011
100	0.0045	0.0034	0.0011
101	0.0046	0.0034	0.0011
102	0.0046	0.0035	0.0011
103	0.0046	0.0035	0.0012
104	0.0047	0.0035	0.0012
105	0.0047	0.0035	0.0012
106	0.0047	0.0035	0.0012
107	0.0048	0.0036	0.0012
108	0.0048	0.0036	0.0012
109	0.0048	0.0036	0.0012
110	0.0049	0.0037	0.0012
111	0.0049	0.0037	0.0012
112	0.0049	0.0037	0.0012
113	0.0050	0.0037	0.0012
114	0.0050	0.0038	0.0012
115	0.0051	0.0038	0.0013
116	0.0051	0.0038	0.0013
117	0.0051	0.0039	0.0013
118	0.0052	0.0039	0.0013
119	0.0052	0.0039	0.0013
120	0.0053	0.0040	0.0013
121	0.0053	0.0040	0.0013
122	0.0053	0.0040	0.0013
123	0.0054	0.0041	0.0013
124	0.0054	0.0041	0.0014

125	0.0055	0.0041	0.0014
126	0.0055	0.0042	0.0014
127	0.0056	0.0042	0.0014
128	0.0056	0.0042	0.0014
129	0.0057	0.0043	0.0014
130	0.0058	0.0043	0.0014
131	0.0058	0.0044	0.0014
132	0.0059	0.0044	0.0015
133	0.0059	0.0045	0.0015
134	0.0060	0.0045	0.0015
135	0.0061	0.0046	0.0015
136	0.0061	0.0046	0.0015
137	0.0062	0.0047	0.0015
138	0.0063	0.0047	0.0016
139	0.0063	0.0048	0.0016
140	0.0064	0.0048	0.0016
141	0.0065	0.0049	0.0016
142	0.0065	0.0049	0.0016
143	0.0067	0.0050	0.0017
144	0.0067	0.0050	0.0017
145	0.0073	0.0055	0.0018
146	0.0074	0.0055	0.0018
147	0.0075	0.0056	0.0019
148	0.0076	0.0057	0.0019
149	0.0077	0.0058	0.0019
150	0.0078	0.0058	0.0019
151	0.0079	0.0060	0.0020
152	0.0080	0.0060	0.0020
153	0.0081	0.0061	0.0020
154	0.0082	0.0062	0.0020
155	0.0084	0.0063	0.0021
156	0.0085	0.0064	0.0021
157	0.0087	0.0065	0.0022
158	0.0088	0.0066	0.0022
159	0.0090	0.0067	0.0022
160	0.0091	0.0068	0.0023
161	0.0093	0.0070	0.0023
162	0.0094	0.0071	0.0023
163	0.0097	0.0073	0.0024
164	0.0098	0.0074	0.0024
165	0.0101	0.0076	0.0025
166	0.0102	0.0077	0.0025
167	0.0105	0.0079	0.0026
168	0.0107	0.0080	0.0027
169	0.0110	0.0083	0.0027
170	0.0112	0.0084	0.0028
171	0.0116	0.0087	0.0029
172	0.0118	0.0089	0.0029
173	0.0123	0.0092	0.0031
174	0.0125	0.0094	0.0031
175	0.0131	0.0098	0.0033
176	0.0134	0.0101	0.0033
177	0.0140	0.0105	0.0035
178	0.0144	0.0108	0.0036
179	0.0152	0.0114	0.0038
180	0.0157	0.0118	0.0039
181	0.0167	0.0125	0.0041
182	0.0173	0.0130	0.0043
183	0.0186	0.0140	0.0046
184	0.0194	0.0146	0.0048
185	0.0154	0.0116	0.0038
186	0.0164	0.0124	0.0041
187	0.0191	0.0143	0.0047
188	0.0208	0.0156	0.0052
189	0.0259	0.0194	0.0064
190	0.0298	0.0224	0.0074
191	0.0452	0.0340	0.0112
192	0.0656	0.0350	0.0306
193	0.2840	0.0350	0.2490
194	0.0356	0.0267	0.0088
195	0.0230	0.0173	0.0057
196	0.0176	0.0133	0.0044
197	0.0203	0.0152	0.0050
198	0.0179	0.0134	0.0044
199	0.0161	0.0121	0.0040
200	0.0148	0.0111	0.0037
201	0.0137	0.0103	0.0034
202	0.0128	0.0096	0.0032
203	0.0121	0.0091	0.0030
204	0.0114	0.0086	0.0028
205	0.0108	0.0081	0.0027

206	0.0104	0.0078	0.0026
207	0.0099	0.0075	0.0025
208	0.0095	0.0072	0.0024
209	0.0092	0.0069	0.0023
210	0.0089	0.0067	0.0022
211	0.0086	0.0064	0.0021
212	0.0083	0.0062	0.0021
213	0.0081	0.0061	0.0020
214	0.0078	0.0059	0.0019
215	0.0076	0.0057	0.0019
216	0.0074	0.0056	0.0018
217	0.0068	0.0051	0.0017
218	0.0066	0.0050	0.0016
219	0.0064	0.0048	0.0016
220	0.0063	0.0047	0.0016
221	0.0062	0.0046	0.0015
222	0.0060	0.0045	0.0015
223	0.0059	0.0044	0.0015
224	0.0058	0.0044	0.0014
225	0.0057	0.0043	0.0014
226	0.0056	0.0042	0.0014
227	0.0055	0.0041	0.0014
228	0.0054	0.0040	0.0013
229	0.0053	0.0040	0.0013
230	0.0052	0.0039	0.0013
231	0.0051	0.0038	0.0013
232	0.0050	0.0038	0.0013
233	0.0050	0.0037	0.0012
234	0.0049	0.0037	0.0012
235	0.0048	0.0036	0.0012
236	0.0047	0.0036	0.0012
237	0.0047	0.0035	0.0012
238	0.0046	0.0035	0.0011
239	0.0046	0.0034	0.0011
240	0.0045	0.0034	0.0011
241	0.0044	0.0033	0.0011
242	0.0044	0.0033	0.0011
243	0.0043	0.0033	0.0011
244	0.0043	0.0032	0.0011
245	0.0042	0.0032	0.0010
246	0.0042	0.0031	0.0010
247	0.0041	0.0031	0.0010
248	0.0041	0.0031	0.0010
249	0.0040	0.0030	0.0010
250	0.0040	0.0030	0.0010
251	0.0040	0.0030	0.0010
252	0.0039	0.0029	0.0010
253	0.0039	0.0029	0.0010
254	0.0038	0.0029	0.0010
255	0.0038	0.0029	0.0009
256	0.0038	0.0028	0.0009
257	0.0037	0.0028	0.0009
258	0.0037	0.0028	0.0009
259	0.0037	0.0027	0.0009
260	0.0036	0.0027	0.0009
261	0.0036	0.0027	0.0009
262	0.0036	0.0027	0.0009
263	0.0035	0.0026	0.0009
264	0.0035	0.0026	0.0009
265	0.0035	0.0026	0.0009
266	0.0034	0.0026	0.0009
267	0.0034	0.0026	0.0008
268	0.0034	0.0025	0.0008
269	0.0033	0.0025	0.0008
270	0.0033	0.0025	0.0008
271	0.0033	0.0025	0.0008
272	0.0033	0.0025	0.0008
273	0.0032	0.0024	0.0008
274	0.0032	0.0024	0.0008
275	0.0032	0.0024	0.0008
276	0.0032	0.0024	0.0008
277	0.0032	0.0024	0.0008
278	0.0031	0.0024	0.0008
279	0.0031	0.0023	0.0008
280	0.0031	0.0023	0.0008
281	0.0031	0.0023	0.0008
282	0.0030	0.0023	0.0008
283	0.0030	0.0023	0.0008
284	0.0030	0.0023	0.0007
285	0.0030	0.0022	0.0007
286	0.0030	0.0022	0.0007

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287              0.0029           0.0022              0.0007
288              0.0029           0.0022              0.0007
-----------------------------------------------------------------
-----------------------------------------------------------------
Total soil rain loss =      1.43(In)
Total effective rainfall =      0.73(In)
Peak flow rate in flood hydrograph =     12.86(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
-----------------------------------------------------------------
  0+ 5       0.0000      0.00  Q          |          |          |          |
  0+10       0.0001      0.01  Q          |          |          |          |
  0+15       0.0003      0.03  Q          |          |          |          |
  0+20       0.0006      0.06  Q          |          |          |          |
  0+25       0.0012      0.08  Q          |          |          |          |
  0+30       0.0019      0.10  Q          |          |          |          |
  0+35       0.0026      0.11  Q          |          |          |          |
  0+40       0.0034      0.12  Q          |          |          |          |
  0+45       0.0043      0.12  Q          |          |          |          |
  0+50       0.0051      0.13  Q          |          |          |          |
  0+55       0.0060      0.13  Q          |          |          |          |
  1+ 0       0.0070      0.14  Q          |          |          |          |
  1+ 5       0.0079      0.14  Q          |          |          |          |
  1+10       0.0089      0.14  Q          |          |          |          |
  1+15       0.0099      0.14  Q          |          |          |          |
  1+20       0.0109      0.15  Q          |          |          |          |
  1+25       0.0120      0.15  Q          |          |          |          |
  1+30       0.0130      0.15  Q          |          |          |          |
  1+35       0.0141      0.15  Q          |          |          |          |
  1+40       0.0151      0.15  Q          |          |          |          |
  1+45       0.0162      0.16  Q          |          |          |          |
  1+50       0.0173      0.16  Q          |          |          |          |
  1+55       0.0184      0.16  Q          |          |          |          |
  2+ 0       0.0195      0.16  Q          |          |          |          |
  2+ 5       0.0206      0.16  Q          |          |          |          |
  2+10       0.0217      0.16  Q          |          |          |          |
  2+15       0.0228      0.16  Q          |          |          |          |
  2+20       0.0240      0.16  Q          |          |          |          |
  2+25       0.0251      0.17  Q          |          |          |          |
  2+30       0.0263      0.17  Q          |          |          |          |
  2+35       0.0274      0.17  QV         |          |          |          |
  2+40       0.0286      0.17  QV         |          |          |          |
  2+45       0.0297      0.17  QV         |          |          |          |
  2+50       0.0309      0.17  QV         |          |          |          |
  2+55       0.0321      0.17  QV         |          |          |          |
  3+ 0       0.0332      0.17  QV         |          |          |          |
  3+ 5       0.0344      0.17  QV         |          |          |          |
  3+10       0.0356      0.17  QV         |          |          |          |
  3+15       0.0368      0.17  QV         |          |          |          |
  3+20       0.0380      0.17  QV         |          |          |          |
  3+25       0.0392      0.17  QV         |          |          |          |
  3+30       0.0404      0.17  QV         |          |          |          |
  3+35       0.0416      0.18  QV         |          |          |          |
  3+40       0.0428      0.18  QV         |          |          |          |
  3+45       0.0440      0.18  QV         |          |          |          |
  3+50       0.0452      0.18  QV         |          |          |          |
  3+55       0.0465      0.18  QV         |          |          |          |
  4+ 0       0.0477      0.18  QV         |          |          |          |
  4+ 5       0.0489      0.18  QV         |          |          |          |
  4+10       0.0502      0.18  QV         |          |          |          |
  4+15       0.0514      0.18  QV         |          |          |          |
  4+20       0.0527      0.18  QV         |          |          |          |
  4+25       0.0539      0.18  Q V        |          |          |          |
  4+30       0.0552      0.18  Q V        |          |          |          |
  4+35       0.0565      0.18  Q V        |          |          |          |
  4+40       0.0577      0.18  Q V        |          |          |          |
  4+45       0.0590      0.19  Q V        |          |          |          |
  4+50       0.0603      0.19  Q V        |          |          |          |
  4+55       0.0616      0.19  Q V        |          |          |          |
  5+ 0       0.0629      0.19  Q V        |          |          |          |
  5+ 5       0.0642      0.19  Q V        |          |          |          |
  5+10       0.0655      0.19  Q V        |          |          |          |
  5+15       0.0668      0.19  Q V        |          |          |          |
  5+20       0.0681      0.19  Q V        |          |          |          |
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 5+25       0.0695      0.19  Q V        |          |          |          |
 5+30       0.0708      0.19  Q V        |          |          |          |
 5+35       0.0721      0.19  Q V        |          |          |          |
 5+40       0.0735      0.20  Q V        |          |          |          |
 5+45       0.0748      0.20  Q V        |          |          |          |
 5+50       0.0762      0.20  Q V        |          |          |          |
 5+55       0.0776      0.20  Q V        |          |          |          |
 6+ 0       0.0789      0.20  Q V        |          |          |          |
 6+ 5       0.0803      0.20  Q V        |          |          |          |
 6+10       0.0817      0.20  Q  V       |          |          |          |
 6+15       0.0831      0.20  Q  V       |          |          |          |
 6+20       0.0845      0.20  Q  V       |          |          |          |
 6+25       0.0859      0.20  Q  V       |          |          |          |
 6+30       0.0873      0.20  Q  V       |          |          |          |
 6+35       0.0887      0.21  Q  V       |          |          |          |
 6+40       0.0901      0.21  Q  V       |          |          |          |
 6+45       0.0916      0.21  Q  V       |          |          |          |
 6+50       0.0930      0.21  Q  V       |          |          |          |
 6+55       0.0945      0.21  Q  V       |          |          |          |
 7+ 0       0.0959      0.21  Q  V       |          |          |          |
 7+ 5       0.0974      0.21  Q  V       |          |          |          |
 7+10       0.0988      0.21  Q  V       |          |          |          |
 7+15       0.1003      0.21  Q  V       |          |          |          |
 7+20       0.1018      0.22  Q  V       |          |          |          |
 7+25       0.1033      0.22  Q  V       |          |          |          |
 7+30       0.1048      0.22  Q  V       |          |          |          |
 7+35       0.1063      0.22  Q  V       |          |          |          |
 7+40       0.1079      0.22  Q   V      |          |          |          |
 7+45       0.1094      0.22  Q   V      |          |          |          |
 7+50       0.1109      0.22  Q   V      |          |          |          |
 7+55       0.1125      0.22  Q   V      |          |          |          |
 8+ 0       0.1140      0.23  Q   V      |          |          |          |
 8+ 5       0.1156      0.23  Q   V      |          |          |          |
 8+10       0.1172      0.23  Q   V      |          |          |          |
 8+15       0.1188      0.23  Q   V      |          |          |          |
 8+20       0.1204      0.23  Q   V      |          |          |          |
 8+25       0.1220      0.23  Q   V      |          |          |          |
 8+30       0.1236      0.23  Q   V      |          |          |          |
 8+35       0.1252      0.24  Q   V      |          |          |          |
 8+40       0.1268      0.24  Q   V      |          |          |          |
 8+45       0.1285      0.24  Q   V      |          |          |          |
 8+50       0.1301      0.24  Q   V      |          |          |          |
 8+55       0.1318      0.24  Q   V      |          |          |          |
 9+ 0       0.1335      0.24  Q   V      |          |          |          |
 9+ 5       0.1352      0.25  Q    V     |          |          |          |
 9+10       0.1369      0.25  Q    V     |          |          |          |
 9+15       0.1386      0.25  Q    V     |          |          |          |
 9+20       0.1403      0.25  Q    V     |          |          |          |
 9+25       0.1421      0.25  Q    V     |          |          |          |
 9+30       0.1438      0.25  Q    V     |          |          |          |
 9+35       0.1456      0.26  Q    V     |          |          |          |
 9+40       0.1474      0.26  Q    V     |          |          |          |
 9+45       0.1492      0.26  Q    V     |          |          |          |
 9+50       0.1510      0.26  Q    V     |          |          |          |
 9+55       0.1528      0.26  Q    V     |          |          |          |
10+ 0       0.1546      0.27  Q    V     |          |          |          |
10+ 5       0.1565      0.27  Q    V     |          |          |          |
10+10       0.1583      0.27  Q    V     |          |          |          |
10+15       0.1602      0.27  Q    V     |          |          |          |
10+20       0.1621      0.27  Q     V    |          |          |          |
10+25       0.1640      0.28  Q     V    |          |          |          |
10+30       0.1660      0.28  Q     V    |          |          |          |
10+35       0.1679      0.28  Q     V    |          |          |          |
10+40       0.1699      0.28  Q     V    |          |          |          |
10+45       0.1718      0.29  Q     V    |          |          |          |
10+50       0.1738      0.29  Q     V    |          |          |          |
10+55       0.1758      0.29  Q     V    |          |          |          |
11+ 0       0.1779      0.29  Q     V    |          |          |          |
11+ 5       0.1799      0.30  Q     V    |          |          |          |
11+10       0.1820      0.30  Q     V    |          |          |          |
11+15       0.1841      0.30  Q     V    |          |          |          |
11+20       0.1862      0.31  Q     V    |          |          |          |
11+25       0.1883      0.31  Q      V   |          |          |          |
11+30       0.1905      0.31  Q      V   |          |          |          |
11+35       0.1926      0.32  Q      V   |          |          |          |
11+40       0.1948      0.32  Q      V   |          |          |          |
11+45       0.1970      0.32  Q      V   |          |          |          |
11+50       0.1993      0.33  Q      V   |          |          |          |
11+55       0.2016      0.33  Q      V   |          |          |          |
12+ 0       0.2038      0.33  Q      V   |          |          |          |
12+ 5       0.2062      0.34  Q      V   |          |          |          |
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12+10       0.2085      0.34  Q      V  |          |          |          |
12+15       0.2109      0.35  Q      V  |          |          |          |
12+20       0.2134      0.36  Q      V  |          |          |          |
12+25       0.2159      0.37  Q       V |          |          |          |
12+30       0.2185      0.37  Q       V |          |          |          |
12+35       0.2211      0.38  Q       V |          |          |          |
12+40       0.2238      0.39  Q       V |          |          |          |
12+45       0.2265      0.39  Q       V |          |          |          |
12+50       0.2292      0.40  Q       V |          |          |          |
12+55       0.2320      0.40  Q       V |          |          |          |
13+ 0       0.2349      0.41  Q       V |          |          |          |
13+ 5       0.2377      0.42  Q       V |          |          |          |
13+10       0.2407      0.42  Q       V |          |          |          |
13+15       0.2436      0.43  Q        V|          |          |          |
13+20       0.2466      0.44  Q        V|          |          |          |
13+25       0.2497      0.44  Q        V|          |          |          |
13+30       0.2528      0.45  Q        V|          |          |          |
13+35       0.2560      0.46  Q        V|          |          |          |
13+40       0.2592      0.47  Q        V|          |          |          |
13+45       0.2625      0.48  Q        V|          |          |          |
13+50       0.2658      0.49  Q        V|          |          |          |
13+55       0.2692      0.49  Q         V          |          |          |
14+ 0       0.2727      0.50  |Q        V          |          |          |
14+ 5       0.2762      0.51  |Q        V          |          |          |
14+10       0.2798      0.52  |Q        V          |          |          |
14+15       0.2835      0.54  |Q        V          |          |          |
14+20       0.2873      0.55  |Q        V          |          |          |
14+25       0.2912      0.56  |Q        V          |          |          |
14+30       0.2951      0.58  |Q        V          |          |          |
14+35       0.2992      0.59  |Q        |V         |          |          |
14+40       0.3034      0.61  |Q        |V         |          |          |
14+45       0.3077      0.62  |Q        |V         |          |          |
14+50       0.3121      0.64  |Q        |V         |          |          |
14+55       0.3166      0.66  |Q        |V         |          |          |
15+ 0       0.3213      0.68  |Q        |V         |          |          |
15+ 5       0.3262      0.71  |Q        | V        |          |          |
15+10       0.3312      0.73  |Q        | V        |          |          |
15+15       0.3365      0.76  |Q        | V        |          |          |
15+20       0.3419      0.79  |Q        | V        |          |          |
15+25       0.3476      0.83  |Q        | V        |          |          |
15+30       0.3535      0.86  |Q        |  V       |          |          |
15+35       0.3595      0.87  |Q        |  V       |          |          |
15+40       0.3655      0.87  |Q        |  V       |          |          |
15+45       0.3716      0.88  |Q        |  V       |          |          |
15+50       0.3781      0.94  |Q        |   V      |          |          |
15+55       0.3852      1.03  | Q       |   V      |          |          |
16+ 0       0.3936      1.23  | Q       |   V      |          |          |
16+ 5       0.4087      2.19  |   Q     |    V     |          |          |
16+10       0.4391      4.42  |       Q |     V    |          |          |
16+15       0.4945      8.05  |         |     Q V  |          |          |
16+20       0.5831     12.86  |         |         |V   Q     |          |
16+25       0.6520     10.01  |         |         Q   V      |          |
16+30       0.6982      6.71  |         |  Q      |     V    |          |
16+35       0.7320      4.91  |         Q|        |      V   |          |
16+40       0.7595      3.99  |       Q |         |       V  |          |
16+45       0.7824      3.34  |      Q  |         |        V|          |
16+50       0.8018      2.81  |     Q   |         |        V|          |
16+55       0.8186      2.45  |   Q     |         |         V          |
17+ 0       0.8338      2.21  |   Q     |         |          |V        |
17+ 5       0.8473      1.96  |  Q      |         |          |V        |
17+10       0.8590      1.69  |  Q      |         |          |V        |
17+15       0.8695      1.53  |  Q      |         |          | V       |
17+20       0.8792      1.41  | Q       |         |          | V       |
17+25       0.8882      1.30  | Q       |         |          |  V      |
17+30       0.8964      1.19  | Q       |         |          |  V      |
17+35       0.9039      1.09  | Q       |         |          |  V      |
17+40       0.9109      1.02  | Q       |         |          |  V      |
17+45       0.9173      0.93  |Q        |         |          |   V     |
17+50       0.9233      0.87  |Q        |         |          |   V     |
17+55       0.9287      0.78  |Q        |         |          |   V     |
18+ 0       0.9338      0.73  |Q        |         |          |   V     |
18+ 5       0.9382      0.64  |Q        |         |          |   V     |
18+10       0.9425      0.62  |Q        |         |          |    V    |
18+15       0.9467      0.62  |Q        |         |          |    V    |
18+20       0.9509      0.60  |Q        |         |          |    V    |
18+25       0.9549      0.59  |Q        |         |          |    V    |
18+30       0.9588      0.56  |Q        |         |          |    V    |
18+35       0.9623      0.50  |Q        |         |          |    V    |
18+40       0.9655      0.47  Q         |         |          |    V    |
18+45       0.9686      0.45  Q         |         |          |     V   |
18+50       0.9715      0.42  Q         |         |          |     V   |
```

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18+55       0.9739      0.35  Q          |          |          |     V    |
19+ 0       0.9762      0.34  Q          |          |          |     V    |
19+ 5       0.9785      0.33  Q          |          |          |     V    |
19+10       0.9807      0.32  Q          |          |          |     V    |
19+15       0.9828      0.31  Q          |          |          |     V    |
19+20       0.9849      0.31  Q          |          |          |     V    |
19+25       0.9870      0.30  Q          |          |          |     V    |
19+30       0.9890      0.29  Q          |          |          |     V    |
19+35       0.9910      0.29  Q          |          |          |     V    |
19+40       0.9930      0.28  Q          |          |          |     V    |
19+45       0.9949      0.28  Q          |          |          |      V   |
19+50       0.9968      0.27  Q          |          |          |      V   |
19+55       0.9986      0.27  Q          |          |          |      V   |
20+ 0       1.0005      0.26  Q          |          |          |      V   |
20+ 5       1.0023      0.26  Q          |          |          |      V   |
20+10       1.0040      0.26  Q          |          |          |      V   |
20+15       1.0058      0.25  Q          |          |          |      V   |
20+20       1.0075      0.25  Q          |          |          |      V   |
20+25       1.0092      0.25  Q          |          |          |      V   |
20+30       1.0108      0.24  Q          |          |          |      V   |
20+35       1.0125      0.24  Q          |          |          |      V   |
20+40       1.0141      0.24  Q          |          |          |      V   |
20+45       1.0157      0.23  Q          |          |          |      V   |
20+50       1.0173      0.23  Q          |          |          |      V   |
20+55       1.0189      0.23  Q          |          |          |      V   |
21+ 0       1.0204      0.22  Q          |          |          |       V  |
21+ 5       1.0219      0.22  Q          |          |          |       V  |
21+10       1.0234      0.22  Q          |          |          |       V  |
21+15       1.0249      0.22  Q          |          |          |       V  |
21+20       1.0264      0.21  Q          |          |          |       V  |
21+25       1.0279      0.21  Q          |          |          |       V  |
21+30       1.0293      0.21  Q          |          |          |       V  |
21+35       1.0307      0.21  Q          |          |          |       V  |
21+40       1.0321      0.21  Q          |          |          |       V  |
21+45       1.0335      0.20  Q          |          |          |       V  |
21+50       1.0349      0.20  Q          |          |          |       V  |
21+55       1.0363      0.20  Q          |          |          |       V  |
22+ 0       1.0377      0.20  Q          |          |          |       V  |
22+ 5       1.0390      0.20  Q          |          |          |       V  |
22+10       1.0403      0.19  Q          |          |          |       V  |
22+15       1.0417      0.19  Q          |          |          |       V  |
22+20       1.0430      0.19  Q          |          |          |       V  |
22+25       1.0443      0.19  Q          |          |          |       V  |
22+30       1.0455      0.19  Q          |          |          |       V  |
22+35       1.0468      0.19  Q          |          |          |       V  |
22+40       1.0481      0.18  Q          |          |          |        V|
22+45       1.0493      0.18  Q          |          |          |        V|
22+50       1.0506      0.18  Q          |          |          |        V|
22+55       1.0518      0.18  Q          |          |          |        V|
23+ 0       1.0530      0.18  Q          |          |          |        V|
23+ 5       1.0542      0.18  Q          |          |          |        V|
23+10       1.0554      0.17  Q          |          |          |        V|
23+15       1.0566      0.17  Q          |          |          |        V|
23+20       1.0578      0.17  Q          |          |          |        V|
23+25       1.0590      0.17  Q          |          |          |        V|
23+30       1.0602      0.17  Q          |          |          |        V|
23+35       1.0613      0.17  Q          |          |          |        V|
23+40       1.0625      0.17  Q          |          |          |        V|
23+45       1.0636      0.17  Q          |          |          |        V|
23+50       1.0648      0.16  Q          |          |          |        V|
23+55       1.0659      0.16  Q          |          |          |        V|
24+ 0       1.0670      0.16  Q          |          |          |        V|
24+ 5       1.0681      0.16  Q          |          |          |        V|
24+10       1.0691      0.15  Q          |          |          |        V|
24+15       1.0701      0.13  Q          |          |          |        V|
24+20       1.0707      0.10  Q          |          |          |        V|
24+25       1.0713      0.08  Q          |          |          |        V|
24+30       1.0717      0.06  Q          |          |          |        V|
24+35       1.0720      0.05  Q          |          |          |        V|
24+40       1.0723      0.04  Q          |          |          |        V|
24+45       1.0726      0.04  Q          |          |          |        V|
24+50       1.0728      0.03  Q          |          |          |        V|
24+55       1.0730      0.03  Q          |          |          |        V|
25+ 0       1.0731      0.02  Q          |          |          |        V|
25+ 5       1.0732      0.02  Q          |          |          |        V|
25+10       1.0734      0.02  Q          |          |          |        V|
25+15       1.0735      0.01  Q          |          |          |        V|
25+20       1.0735      0.01  Q          |          |          |        V|
25+25       1.0736      0.01  Q          |          |          |        V|
25+30       1.0737      0.01  Q          |          |          |        V|
25+35       1.0737      0.01  Q          |          |          |        V|
```

```
   25+40       1.0738      0.01  Q          |          |          |         v|
   25+45       1.0738      0.01  Q          |          |          |         v|
   25+50       1.0739      0.00  Q          |          |          |         v|
   25+55       1.0739      0.00  Q          |          |          |         v|
   26+ 0       1.0739      0.00  Q          |          |          |         v|
   26+ 5       1.0739      0.00  Q          |          |          |         v|
   26+10       1.0739      0.00  Q          |          |          |         v|
   26+15       1.0740      0.00  Q          |          |          |         v|
   26+20       1.0740      0.00  Q          |          |          |         v|
   26+25       1.0740      0.00  Q          |          |          |         v|
   26+30       1.0740      0.00  Q          |          |          |         v|
   26+35       1.0740      0.00  Q          |          |          |         v|
   26+40       1.0740      0.00  Q          |          |          |         v|
   26+45       1.0740      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  06/23/22

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6320

-------------------------------------------------------------------
224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
EXISITNG CONDITION - ON-SITE
25-YEAR, 24-HOUR STORM
BY: JTS  DATE: 06-23-22
-------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            17.68            1           0.60
-------------------------------------------------------------------
Rainfall data for year 2
            17.68            6           0.75
-------------------------------------------------------------------
Rainfall data for year 2
            17.68           24           1.30
-------------------------------------------------------------------
Rainfall data for year 100
            17.68            1           1.07
-------------------------------------------------------------------
Rainfall data for year 100
            17.68            6           1.99
-------------------------------------------------------------------
Rainfall data for year 100
            17.68           24           3.39
-------------------------------------------------------------------
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 77.0      77.0         17.68      1.000     0.420    1.000    0.420

Area-averaged adjusted loss rate Fm (In/Hr) =  0.420

********* Area-Averaged low loss rate fraction, Yb **********

Area       Area          SCS CN    SCS CN      S     Pervious
 (Ac.)      Fract         (AMC2)    (AMC2)           Yield Fr
    17.68   1.000         77.0      77.0       2.99     0.315

Area-averaged catchment yield fraction, Y =  0.315
Area-averaged low loss fraction, Yb =  0.685
User entry of time of concentration  =   0.444 (hours)
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area =      17.68(Ac.)
Catchment Lag time =   0.355 hours
```

```
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 23.4610
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.420(In/Hr)
Average low loss rate fraction (Yb) = 0.685 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.373(In)
Computed peak 30-minute rainfall =  0.639(In)
Specified peak 1-hour rainfall =  0.786(In)
Computed peak 3-hour rainfall =  1.193(In)
Specified peak 6-hour rainfall =  1.552(In)
Specified peak 24-hour rainfall =  2.649(In)


Rainfall depth area reduction factors:
Using a total area of      17.68(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999     Adjusted rainfall =  0.373(In)
30-minute factor = 0.999    Adjusted rainfall =  0.638(In)
1-hour factor = 0.999       Adjusted rainfall =  0.786(In)
3-hour factor = 1.000       Adjusted rainfall =  1.193(In)
6-hour factor = 1.000       Adjusted rainfall =  1.552(In)
24-hour factor = 1.000      Adjusted rainfall =  2.649(In)
----------------------------------------------------------------------

                        U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
----------------------------------------------------------------------
                 (K =       213.82 (CFS))

  1                1.237                   2.645
  2                5.898                   9.966
  3               16.607                  22.899
  4               37.127                  43.875
  5               52.735                  33.371
  6               62.457                  20.788
  7               69.053                  14.103
  8               74.109                  10.811
  9               78.107                   8.548
 10               81.273                   6.769
 11               83.888                   5.592
 12               86.186                   4.914
 13               88.150                   4.199
 14               89.702                   3.319
 15               91.050                   2.881
 16               92.255                   2.577
 17               93.333                   2.304
 18               94.259                   1.981
 19               95.057                   1.706
 20               95.792                   1.571
 21               96.405                   1.311
 22               96.970                   1.209
 23               97.402                   0.922
 24               97.795                   0.841
 25               98.048                   0.541
 26               98.287                   0.511
 27               98.561                   0.585
 28               98.842                   0.602
 29               99.124                   0.602
 30               99.403                   0.598
 31               99.597                   0.415
 32               99.744                   0.314
 33               99.891                   0.314
 34              100.000                   0.234
----------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                (In)
  1              0.3729              0.3729
  2              0.4590              0.0862
  3              0.5184              0.0594
  4              0.5651              0.0467
  5              0.6043              0.0391
  6              0.6383              0.0340
  7              0.6685              0.0302
  8              0.6958              0.0273
  9              0.7208              0.0250
 10              0.7440              0.0231
 11              0.7655              0.0216
 12              0.7858              0.0202
```

13	0.8100	0.0243
14	0.8332	0.0231
15	0.8553	0.0221
16	0.8765	0.0212
17	0.8970	0.0204
18	0.9166	0.0197
19	0.9357	0.0190
20	0.9541	0.0184
21	0.9719	0.0179
22	0.9893	0.0173
23	1.0061	0.0168
24	1.0225	0.0164
25	1.0385	0.0160
26	1.0541	0.0156
27	1.0693	0.0152
28	1.0842	0.0149
29	1.0987	0.0146
30	1.1130	0.0142
31	1.1269	0.0140
32	1.1406	0.0137
33	1.1540	0.0134
34	1.1672	0.0132
35	1.1801	0.0129
36	1.1928	0.0127
37	1.2053	0.0125
38	1.2175	0.0123
39	1.2296	0.0121
40	1.2415	0.0119
41	1.2531	0.0117
42	1.2647	0.0115
43	1.2760	0.0113
44	1.2872	0.0112
45	1.2982	0.0110
46	1.3091	0.0109
47	1.3198	0.0107
48	1.3304	0.0106
49	1.3408	0.0104
50	1.3511	0.0103
51	1.3613	0.0102
52	1.3714	0.0101
53	1.3813	0.0099
54	1.3911	0.0098
55	1.4009	0.0097
56	1.4105	0.0096
57	1.4200	0.0095
58	1.4294	0.0094
59	1.4387	0.0093
60	1.4479	0.0092
61	1.4570	0.0091
62	1.4660	0.0090
63	1.4749	0.0089
64	1.4838	0.0088
65	1.4925	0.0088
66	1.5012	0.0087
67	1.5098	0.0086
68	1.5183	0.0085
69	1.5267	0.0084
70	1.5351	0.0084
71	1.5434	0.0083
72	1.5516	0.0082
73	1.5598	0.0083
74	1.5681	0.0082
75	1.5762	0.0081
76	1.5843	0.0081
77	1.5923	0.0080
78	1.6002	0.0079
79	1.6081	0.0079
80	1.6160	0.0078
81	1.6237	0.0078
82	1.6314	0.0077
83	1.6391	0.0077
84	1.6467	0.0076
85	1.6542	0.0075
86	1.6617	0.0075
87	1.6691	0.0074
88	1.6765	0.0074
89	1.6838	0.0073
90	1.6911	0.0073
91	1.6983	0.0072
92	1.7055	0.0072
93	1.7126	0.0071

94	1.7197	0.0071
95	1.7268	0.0070
96	1.7338	0.0070
97	1.7407	0.0069
98	1.7476	0.0069
99	1.7545	0.0069
100	1.7613	0.0068
101	1.7681	0.0068
102	1.7748	0.0067
103	1.7815	0.0067
104	1.7882	0.0067
105	1.7948	0.0066
106	1.8013	0.0066
107	1.8079	0.0065
108	1.8144	0.0065
109	1.8209	0.0065
110	1.8273	0.0064
111	1.8337	0.0064
112	1.8400	0.0064
113	1.8464	0.0063
114	1.8527	0.0063
115	1.8589	0.0063
116	1.8651	0.0062
117	1.8713	0.0062
118	1.8775	0.0062
119	1.8836	0.0061
120	1.8897	0.0061
121	1.8958	0.0061
122	1.9018	0.0060
123	1.9078	0.0060
124	1.9138	0.0060
125	1.9197	0.0059
126	1.9256	0.0059
127	1.9315	0.0059
128	1.9374	0.0059
129	1.9432	0.0058
130	1.9490	0.0058
131	1.9548	0.0058
132	1.9605	0.0057
133	1.9662	0.0057
134	1.9719	0.0057
135	1.9776	0.0057
136	1.9832	0.0056
137	1.9888	0.0056
138	1.9944	0.0056
139	2.0000	0.0056
140	2.0055	0.0055
141	2.0110	0.0055
142	2.0165	0.0055
143	2.0220	0.0055
144	2.0275	0.0054
145	2.0329	0.0054
146	2.0383	0.0054
147	2.0437	0.0054
148	2.0490	0.0054
149	2.0543	0.0053
150	2.0597	0.0053
151	2.0649	0.0053
152	2.0702	0.0053
153	2.0755	0.0052
154	2.0807	0.0052
155	2.0859	0.0052
156	2.0911	0.0052
157	2.0962	0.0052
158	2.1014	0.0051
159	2.1065	0.0051
160	2.1116	0.0051
161	2.1167	0.0051
162	2.1217	0.0051
163	2.1268	0.0050
164	2.1318	0.0050
165	2.1368	0.0050
166	2.1418	0.0050
167	2.1468	0.0050
168	2.1517	0.0050
169	2.1567	0.0049
170	2.1616	0.0049
171	2.1665	0.0049
172	2.1714	0.0049
173	2.1762	0.0049
174	2.1811	0.0048

175	2.1859	0.0048
176	2.1907	0.0048
177	2.1955	0.0048
178	2.2003	0.0048
179	2.2051	0.0048
180	2.2098	0.0047
181	2.2145	0.0047
182	2.2192	0.0047
183	2.2239	0.0047
184	2.2286	0.0047
185	2.2333	0.0047
186	2.2379	0.0047
187	2.2426	0.0046
188	2.2472	0.0046
189	2.2518	0.0046
190	2.2564	0.0046
191	2.2610	0.0046
192	2.2655	0.0046
193	2.2701	0.0045
194	2.2746	0.0045
195	2.2791	0.0045
196	2.2836	0.0045
197	2.2881	0.0045
198	2.2926	0.0045
199	2.2971	0.0045
200	2.3015	0.0044
201	2.3059	0.0044
202	2.3104	0.0044
203	2.3148	0.0044
204	2.3192	0.0044
205	2.3236	0.0044
206	2.3279	0.0044
207	2.3323	0.0044
208	2.3366	0.0043
209	2.3409	0.0043
210	2.3453	0.0043
211	2.3496	0.0043
212	2.3539	0.0043
213	2.3581	0.0043
214	2.3624	0.0043
215	2.3667	0.0043
216	2.3709	0.0042
217	2.3751	0.0042
218	2.3793	0.0042
219	2.3836	0.0042
220	2.3878	0.0042
221	2.3919	0.0042
222	2.3961	0.0042
223	2.4003	0.0042
224	2.4044	0.0041
225	2.4086	0.0041
226	2.4127	0.0041
227	2.4168	0.0041
228	2.4209	0.0041
229	2.4250	0.0041
230	2.4291	0.0041
231	2.4331	0.0041
232	2.4372	0.0041
233	2.4412	0.0040
234	2.4453	0.0040
235	2.4493	0.0040
236	2.4533	0.0040
237	2.4573	0.0040
238	2.4613	0.0040
239	2.4653	0.0040
240	2.4693	0.0040
241	2.4733	0.0040
242	2.4772	0.0040
243	2.4812	0.0039
244	2.4851	0.0039
245	2.4890	0.0039
246	2.4929	0.0039
247	2.4968	0.0039
248	2.5007	0.0039
249	2.5046	0.0039
250	2.5085	0.0039
251	2.5124	0.0039
252	2.5162	0.0039
253	2.5201	0.0038
254	2.5239	0.0038
255	2.5278	0.0038

256	2.5316	0.0038
257	2.5354	0.0038
258	2.5392	0.0038
259	2.5430	0.0038
260	2.5468	0.0038
261	2.5505	0.0038
262	2.5543	0.0038
263	2.5581	0.0038
264	2.5618	0.0037
265	2.5656	0.0037
266	2.5693	0.0037
267	2.5730	0.0037
268	2.5767	0.0037
269	2.5804	0.0037
270	2.5841	0.0037
271	2.5878	0.0037
272	2.5915	0.0037
273	2.5952	0.0037
274	2.5988	0.0037
275	2.6025	0.0037
276	2.6062	0.0036
277	2.6098	0.0036
278	2.6134	0.0036
279	2.6170	0.0036
280	2.6207	0.0036
281	2.6243	0.0036
282	2.6279	0.0036
283	2.6315	0.0036
284	2.6351	0.0036
285	2.6386	0.0036
286	2.6422	0.0036
287	2.6458	0.0036
288	2.6493	0.0036

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0036	0.0024	0.0011
2	0.0036	0.0024	0.0011
3	0.0036	0.0024	0.0011
4	0.0036	0.0025	0.0011
5	0.0036	0.0025	0.0011
6	0.0036	0.0025	0.0011
7	0.0036	0.0025	0.0011
8	0.0036	0.0025	0.0011
9	0.0036	0.0025	0.0012
10	0.0037	0.0025	0.0012
11	0.0037	0.0025	0.0012
12	0.0037	0.0025	0.0012
13	0.0037	0.0025	0.0012
14	0.0037	0.0025	0.0012
15	0.0037	0.0025	0.0012
16	0.0037	0.0026	0.0012
17	0.0037	0.0026	0.0012
18	0.0038	0.0026	0.0012
19	0.0038	0.0026	0.0012
20	0.0038	0.0026	0.0012
21	0.0038	0.0026	0.0012
22	0.0038	0.0026	0.0012
23	0.0038	0.0026	0.0012
24	0.0038	0.0026	0.0012
25	0.0039	0.0026	0.0012
26	0.0039	0.0026	0.0012
27	0.0039	0.0027	0.0012
28	0.0039	0.0027	0.0012
29	0.0039	0.0027	0.0012
30	0.0039	0.0027	0.0012
31	0.0039	0.0027	0.0012
32	0.0040	0.0027	0.0012
33	0.0040	0.0027	0.0013
34	0.0040	0.0027	0.0013
35	0.0040	0.0027	0.0013
36	0.0040	0.0028	0.0013
37	0.0040	0.0028	0.0013
38	0.0040	0.0028	0.0013
39	0.0041	0.0028	0.0013
40	0.0041	0.0028	0.0013
41	0.0041	0.0028	0.0013
42	0.0041	0.0028	0.0013
43	0.0041	0.0028	0.0013

44	0.0041	0.0028	0.0013
45	0.0042	0.0029	0.0013
46	0.0042	0.0029	0.0013
47	0.0042	0.0029	0.0013
48	0.0042	0.0029	0.0013
49	0.0042	0.0029	0.0013
50	0.0043	0.0029	0.0013
51	0.0043	0.0029	0.0013
52	0.0043	0.0029	0.0014
53	0.0043	0.0030	0.0014
54	0.0043	0.0030	0.0014
55	0.0044	0.0030	0.0014
56	0.0044	0.0030	0.0014
57	0.0044	0.0030	0.0014
58	0.0044	0.0030	0.0014
59	0.0044	0.0030	0.0014
60	0.0044	0.0030	0.0014
61	0.0045	0.0031	0.0014
62	0.0045	0.0031	0.0014
63	0.0045	0.0031	0.0014
64	0.0045	0.0031	0.0014
65	0.0046	0.0031	0.0014
66	0.0046	0.0031	0.0014
67	0.0046	0.0032	0.0015
68	0.0046	0.0032	0.0015
69	0.0047	0.0032	0.0015
70	0.0047	0.0032	0.0015
71	0.0047	0.0032	0.0015
72	0.0047	0.0032	0.0015
73	0.0047	0.0032	0.0015
74	0.0048	0.0033	0.0015
75	0.0048	0.0033	0.0015
76	0.0048	0.0033	0.0015
77	0.0048	0.0033	0.0015
78	0.0049	0.0033	0.0015
79	0.0049	0.0034	0.0015
80	0.0049	0.0034	0.0016
81	0.0050	0.0034	0.0016
82	0.0050	0.0034	0.0016
83	0.0050	0.0034	0.0016
84	0.0050	0.0034	0.0016
85	0.0051	0.0035	0.0016
86	0.0051	0.0035	0.0016
87	0.0051	0.0035	0.0016
88	0.0051	0.0035	0.0016
89	0.0052	0.0035	0.0016
90	0.0052	0.0036	0.0016
91	0.0052	0.0036	0.0017
92	0.0053	0.0036	0.0017
93	0.0053	0.0036	0.0017
94	0.0053	0.0037	0.0017
95	0.0054	0.0037	0.0017
96	0.0054	0.0037	0.0017
97	0.0054	0.0037	0.0017
98	0.0055	0.0037	0.0017
99	0.0055	0.0038	0.0017
100	0.0055	0.0038	0.0017
101	0.0056	0.0038	0.0018
102	0.0056	0.0038	0.0018
103	0.0057	0.0039	0.0018
104	0.0057	0.0039	0.0018
105	0.0057	0.0039	0.0018
106	0.0058	0.0040	0.0018
107	0.0058	0.0040	0.0018
108	0.0059	0.0040	0.0018
109	0.0059	0.0040	0.0019
110	0.0059	0.0041	0.0019
111	0.0060	0.0041	0.0019
112	0.0060	0.0041	0.0019
113	0.0061	0.0042	0.0019
114	0.0061	0.0042	0.0019
115	0.0062	0.0042	0.0020
116	0.0062	0.0043	0.0020
117	0.0063	0.0043	0.0020
118	0.0063	0.0043	0.0020
119	0.0064	0.0044	0.0020
120	0.0064	0.0044	0.0020
121	0.0065	0.0045	0.0021
122	0.0065	0.0045	0.0021
123	0.0066	0.0045	0.0021
124	0.0067	0.0046	0.0021

125	0.0067	0.0046	0.0021
126	0.0068	0.0046	0.0021
127	0.0069	0.0047	0.0022
128	0.0069	0.0047	0.0022
129	0.0070	0.0048	0.0022
130	0.0070	0.0048	0.0022
131	0.0071	0.0049	0.0022
132	0.0072	0.0049	0.0023
133	0.0073	0.0050	0.0023
134	0.0073	0.0050	0.0023
135	0.0074	0.0051	0.0023
136	0.0075	0.0051	0.0024
137	0.0076	0.0052	0.0024
138	0.0077	0.0052	0.0024
139	0.0078	0.0053	0.0024
140	0.0078	0.0054	0.0025
141	0.0079	0.0054	0.0025
142	0.0080	0.0055	0.0025
143	0.0081	0.0056	0.0026
144	0.0082	0.0056	0.0026
145	0.0082	0.0056	0.0026
146	0.0083	0.0057	0.0026
147	0.0084	0.0058	0.0027
148	0.0085	0.0058	0.0027
149	0.0087	0.0059	0.0027
150	0.0088	0.0060	0.0028
151	0.0089	0.0061	0.0028
152	0.0090	0.0062	0.0028
153	0.0092	0.0063	0.0029
154	0.0093	0.0064	0.0029
155	0.0095	0.0065	0.0030
156	0.0096	0.0066	0.0030
157	0.0098	0.0067	0.0031
158	0.0099	0.0068	0.0031
159	0.0102	0.0070	0.0032
160	0.0103	0.0071	0.0033
161	0.0106	0.0072	0.0033
162	0.0107	0.0073	0.0034
163	0.0110	0.0075	0.0035
164	0.0112	0.0077	0.0035
165	0.0115	0.0079	0.0036
166	0.0117	0.0080	0.0037
167	0.0121	0.0083	0.0038
168	0.0123	0.0084	0.0039
169	0.0127	0.0087	0.0040
170	0.0129	0.0088	0.0041
171	0.0134	0.0092	0.0042
172	0.0137	0.0094	0.0043
173	0.0142	0.0098	0.0045
174	0.0146	0.0100	0.0046
175	0.0152	0.0104	0.0048
176	0.0156	0.0107	0.0049
177	0.0164	0.0112	0.0052
178	0.0168	0.0115	0.0053
179	0.0179	0.0122	0.0056
180	0.0184	0.0126	0.0058
181	0.0197	0.0135	0.0062
182	0.0204	0.0140	0.0064
183	0.0221	0.0151	0.0070
184	0.0231	0.0158	0.0073
185	0.0202	0.0139	0.0064
186	0.0216	0.0148	0.0068
187	0.0250	0.0171	0.0079
188	0.0273	0.0187	0.0086
189	0.0340	0.0233	0.0107
190	0.0391	0.0268	0.0123
191	0.0594	0.0350	0.0244
192	0.0862	0.0350	0.0512
193	0.3729	0.0350	0.3378
194	0.0467	0.0320	0.0147
195	0.0302	0.0207	0.0095
196	0.0231	0.0158	0.0073
197	0.0243	0.0166	0.0077
198	0.0212	0.0145	0.0067
199	0.0190	0.0130	0.0060
200	0.0173	0.0119	0.0055
201	0.0160	0.0109	0.0050
202	0.0149	0.0102	0.0047
203	0.0140	0.0096	0.0044
204	0.0132	0.0090	0.0042
205	0.0125	0.0085	0.0039

206	0.0119	0.0081	0.0037
207	0.0113	0.0078	0.0036
208	0.0109	0.0074	0.0034
209	0.0104	0.0072	0.0033
210	0.0101	0.0069	0.0032
211	0.0097	0.0067	0.0031
212	0.0094	0.0064	0.0030
213	0.0091	0.0062	0.0029
214	0.0088	0.0061	0.0028
215	0.0086	0.0059	0.0027
216	0.0084	0.0057	0.0026
217	0.0083	0.0057	0.0026
218	0.0081	0.0055	0.0025
219	0.0079	0.0054	0.0025
220	0.0077	0.0053	0.0024
221	0.0075	0.0052	0.0024
222	0.0074	0.0051	0.0023
223	0.0072	0.0049	0.0023
224	0.0071	0.0048	0.0022
225	0.0069	0.0048	0.0022
226	0.0068	0.0047	0.0022
227	0.0067	0.0046	0.0021
228	0.0066	0.0045	0.0021
229	0.0065	0.0044	0.0020
230	0.0064	0.0044	0.0020
231	0.0063	0.0043	0.0020
232	0.0062	0.0042	0.0019
233	0.0061	0.0042	0.0019
234	0.0060	0.0041	0.0019
235	0.0059	0.0040	0.0019
236	0.0058	0.0040	0.0018
237	0.0057	0.0039	0.0018
238	0.0056	0.0039	0.0018
239	0.0056	0.0038	0.0018
240	0.0055	0.0038	0.0017
241	0.0054	0.0037	0.0017
242	0.0054	0.0037	0.0017
243	0.0053	0.0036	0.0017
244	0.0052	0.0036	0.0016
245	0.0052	0.0035	0.0016
246	0.0051	0.0035	0.0016
247	0.0050	0.0035	0.0016
248	0.0050	0.0034	0.0016
249	0.0049	0.0034	0.0016
250	0.0049	0.0033	0.0015
251	0.0048	0.0033	0.0015
252	0.0048	0.0033	0.0015
253	0.0047	0.0032	0.0015
254	0.0047	0.0032	0.0015
255	0.0046	0.0032	0.0015
256	0.0046	0.0031	0.0014
257	0.0045	0.0031	0.0014
258	0.0045	0.0031	0.0014
259	0.0045	0.0031	0.0014
260	0.0044	0.0030	0.0014
261	0.0044	0.0030	0.0014
262	0.0043	0.0030	0.0014
263	0.0043	0.0029	0.0014
264	0.0043	0.0029	0.0013
265	0.0042	0.0029	0.0013
266	0.0042	0.0029	0.0013
267	0.0042	0.0028	0.0013
268	0.0041	0.0028	0.0013
269	0.0041	0.0028	0.0013
270	0.0041	0.0028	0.0013
271	0.0040	0.0028	0.0013
272	0.0040	0.0027	0.0013
273	0.0040	0.0027	0.0013
274	0.0039	0.0027	0.0012
275	0.0039	0.0027	0.0012
276	0.0039	0.0027	0.0012
277	0.0038	0.0026	0.0012
278	0.0038	0.0026	0.0012
279	0.0038	0.0026	0.0012
280	0.0038	0.0026	0.0012
281	0.0037	0.0026	0.0012
282	0.0037	0.0025	0.0012
283	0.0037	0.0025	0.0012
284	0.0037	0.0025	0.0012
285	0.0036	0.0025	0.0011
286	0.0036	0.0025	0.0011

287	0.0036	0.0025	0.0011
288	0.0036	0.0024	0.0011

Total soil rain loss = 1.56(In)
Total effective rainfall = 1.09(In)
Peak flow rate in flood hydrograph = 18.14(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	5.0	10.0	15.0	20.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0001	0.01	Q	|	|	|	|
0+15	0.0004	0.04	Q	|	|	|	|
0+20	0.0010	0.09	Q	|	|	|	|
0+25	0.0019	0.13	Q	|	|	|	|
0+30	0.0029	0.15	Q	|	|	|	|
0+35	0.0041	0.17	Q	|	|	|	|
0+40	0.0053	0.18	Q	|	|	|	|
0+45	0.0066	0.19	Q	|	|	|	|
0+50	0.0080	0.20	Q	|	|	|	|
0+55	0.0094	0.20	Q	|	|	|	|
1+ 0	0.0108	0.21	Q	|	|	|	|
1+ 5	0.0123	0.22	Q	|	|	|	|
1+10	0.0138	0.22	Q	|	|	|	|
1+15	0.0154	0.22	Q	|	|	|	|
1+20	0.0170	0.23	Q	|	|	|	|
1+25	0.0186	0.23	Q	|	|	|	|
1+30	0.0202	0.23	Q	|	|	|	|
1+35	0.0218	0.24	Q	|	|	|	|
1+40	0.0235	0.24	Q	|	|	|	|
1+45	0.0251	0.24	Q	|	|	|	|
1+50	0.0268	0.24	Q	|	|	|	|
1+55	0.0285	0.25	Q	|	|	|	|
2+ 0	0.0302	0.25	Q	|	|	|	|
2+ 5	0.0319	0.25	Q	|	|	|	|
2+10	0.0337	0.25	Q	|	|	|	|
2+15	0.0354	0.25	Q	|	|	|	|
2+20	0.0372	0.25	Q	|	|	|	|
2+25	0.0389	0.26	Q	|	|	|	|
2+30	0.0407	0.26	QV	|	|	|	|
2+35	0.0425	0.26	QV	|	|	|	|
2+40	0.0443	0.26	QV	|	|	|	|
2+45	0.0461	0.26	QV	|	|	|	|
2+50	0.0479	0.26	QV	|	|	|	|
2+55	0.0497	0.26	QV	|	|	|	|
3+ 0	0.0515	0.26	QV	|	|	|	|
3+ 5	0.0534	0.27	QV	|	|	|	|
3+10	0.0552	0.27	QV	|	|	|	|
3+15	0.0570	0.27	QV	|	|	|	|
3+20	0.0589	0.27	QV	|	|	|	|
3+25	0.0607	0.27	QV	|	|	|	|
3+30	0.0626	0.27	QV	|	|	|	|
3+35	0.0645	0.27	QV	|	|	|	|
3+40	0.0664	0.27	QV	|	|	|	|
3+45	0.0683	0.27	QV	|	|	|	|
3+50	0.0702	0.28	QV	|	|	|	|
3+55	0.0721	0.28	QV	|	|	|	|
4+ 0	0.0740	0.28	QV	|	|	|	|
4+ 5	0.0759	0.28	QV	|	|	|	|
4+10	0.0778	0.28	QV	|	|	|	|
4+15	0.0797	0.28	QV	|	|	|	|
4+20	0.0817	0.28	Q V	|	|	|	|
4+25	0.0836	0.28	Q V	|	|	|	|
4+30	0.0856	0.28	Q V	|	|	|	|
4+35	0.0876	0.29	Q V	|	|	|	|
4+40	0.0895	0.29	Q V	|	|	|	|
4+45	0.0915	0.29	Q V	|	|	|	|
4+50	0.0935	0.29	Q V	|	|	|	|
4+55	0.0955	0.29	Q V	|	|	|	|
5+ 0	0.0975	0.29	Q V	|	|	|	|
5+ 5	0.0996	0.29	Q V	|	|	|	|
5+10	0.1016	0.29	Q V	|	|	|	|
5+15	0.1036	0.30	Q V	|	|	|	|
5+20	0.1057	0.30	Q V	|	|	|	|

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 5+25       0.1077      0.30  Q V        |          |          |          |
 5+30       0.1098      0.30  Q V        |          |          |          |
 5+35       0.1119      0.30  Q V        |          |          |          |
 5+40       0.1140      0.30  Q V        |          |          |          |
 5+45       0.1160      0.30  Q V        |          |          |          |
 5+50       0.1182      0.31  Q V        |          |          |          |
 5+55       0.1203      0.31  Q  V       |          |          |          |
 6+ 0       0.1224      0.31  Q  V       |          |          |          |
 6+ 5       0.1245      0.31  Q  V       |          |          |          |
 6+10       0.1267      0.31  Q  V       |          |          |          |
 6+15       0.1288      0.31  Q  V       |          |          |          |
 6+20       0.1310      0.31  Q  V       |          |          |          |
 6+25       0.1332      0.32  Q  V       |          |          |          |
 6+30       0.1354      0.32  Q  V       |          |          |          |
 6+35       0.1376      0.32  Q  V       |          |          |          |
 6+40       0.1398      0.32  Q  V       |          |          |          |
 6+45       0.1420      0.32  Q  V       |          |          |          |
 6+50       0.1442      0.32  Q  V       |          |          |          |
 6+55       0.1465      0.33  Q  V       |          |          |          |
 7+ 0       0.1488      0.33  Q  V       |          |          |          |
 7+ 5       0.1510      0.33  Q  V       |          |          |          |
 7+10       0.1533      0.33  Q  V       |          |          |          |
 7+15       0.1556      0.33  Q  V       |          |          |          |
 7+20       0.1579      0.34  Q  V       |          |          |          |
 7+25       0.1602      0.34  Q   V      |          |          |          |
 7+30       0.1626      0.34  Q   V      |          |          |          |
 7+35       0.1649      0.34  Q   V      |          |          |          |
 7+40       0.1673      0.34  Q   V      |          |          |          |
 7+45       0.1697      0.34  Q   V      |          |          |          |
 7+50       0.1720      0.35  Q   V      |          |          |          |
 7+55       0.1744      0.35  Q   V      |          |          |          |
 8+ 0       0.1769      0.35  Q   V      |          |          |          |
 8+ 5       0.1793      0.35  Q   V      |          |          |          |
 8+10       0.1817      0.36  Q   V      |          |          |          |
 8+15       0.1842      0.36  Q   V      |          |          |          |
 8+20       0.1867      0.36  Q   V      |          |          |          |
 8+25       0.1892      0.36  Q   V      |          |          |          |
 8+30       0.1917      0.36  Q   V      |          |          |          |
 8+35       0.1942      0.37  Q   V      |          |          |          |
 8+40       0.1968      0.37  Q   V      |          |          |          |
 8+45       0.1993      0.37  Q   V      |          |          |          |
 8+50       0.2019      0.37  Q    V     |          |          |          |
 8+55       0.2045      0.38  Q    V     |          |          |          |
 9+ 0       0.2071      0.38  Q    V     |          |          |          |
 9+ 5       0.2097      0.38  Q    V     |          |          |          |
 9+10       0.2124      0.38  Q    V     |          |          |          |
 9+15       0.2150      0.39  Q    V     |          |          |          |
 9+20       0.2177      0.39  Q    V     |          |          |          |
 9+25       0.2204      0.39  Q    V     |          |          |          |
 9+30       0.2231      0.40  Q    V     |          |          |          |
 9+35       0.2259      0.40  Q    V     |          |          |          |
 9+40       0.2286      0.40  Q    V     |          |          |          |
 9+45       0.2314      0.40  Q    V     |          |          |          |
 9+50       0.2342      0.41  Q    V     |          |          |          |
 9+55       0.2371      0.41  Q    V     |          |          |          |
10+ 0       0.2399      0.41  Q     V    |          |          |          |
10+ 5       0.2428      0.42  Q     V    |          |          |          |
10+10       0.2457      0.42  Q     V    |          |          |          |
10+15       0.2486      0.42  Q     V    |          |          |          |
10+20       0.2515      0.43  Q     V    |          |          |          |
10+25       0.2545      0.43  Q     V    |          |          |          |
10+30       0.2575      0.43  Q     V    |          |          |          |
10+35       0.2605      0.44  Q     V    |          |          |          |
10+40       0.2635      0.44  Q     V    |          |          |          |
10+45       0.2666      0.45  Q     V    |          |          |          |
10+50       0.2697      0.45  Q     V    |          |          |          |
10+55       0.2728      0.45  Q     V    |          |          |          |
11+ 0       0.2760      0.46  Q     V    |          |          |          |
11+ 5       0.2792      0.46  Q     V    |          |          |          |
11+10       0.2824      0.47  Q      V   |          |          |          |
11+15       0.2856      0.47  Q      V   |          |          |          |
11+20       0.2889      0.48  Q      V   |          |          |          |
11+25       0.2922      0.48  Q      V   |          |          |          |
11+30       0.2955      0.49  Q      V   |          |          |          |
11+35       0.2989      0.49  Q      V   |          |          |          |
11+40       0.3023      0.50  Q      V   |          |          |          |
11+45       0.3058      0.50  |Q     V   |          |          |          |
11+50       0.3092      0.51  |Q     V   |          |          |          |
11+55       0.3128      0.51  |Q     V   |          |          |          |
12+ 0       0.3163      0.52  |Q     V   |          |          |          |
12+ 5       0.3199      0.52  |Q      V  |          |          |          |
```

```
12+10       0.3236      0.53  |Q      V |         |         |         |
12+15       0.3273      0.53  |Q      V |         |         |         |
12+20       0.3310      0.54  |Q      V |         |         |         |
12+25       0.3347      0.54  |Q      V |         |         |         |
12+30       0.3385      0.55  |Q      V |         |         |         |
12+35       0.3423      0.56  |Q      V |         |         |         |
12+40       0.3462      0.56  |Q      V |         |         |         |
12+45       0.3501      0.57  |Q      V |         |         |         |
12+50       0.3541      0.58  |Q      V |         |         |         |
12+55       0.3581      0.59  |Q      V |         |         |         |
13+ 0       0.3622      0.59  |Q       V|         |         |         |
13+ 5       0.3664      0.60  |Q       V|         |         |         |
13+10       0.3706      0.61  |Q       V|         |         |         |
13+15       0.3749      0.62  |Q       V|         |         |         |
13+20       0.3792      0.63  |Q       V|         |         |         |
13+25       0.3837      0.64  |Q       V|         |         |         |
13+30       0.3882      0.65  |Q       V|         |         |         |
13+35       0.3927      0.66  |Q       V|         |         |         |
13+40       0.3974      0.68  |Q       V|         |         |         |
13+45       0.4021      0.69  |Q        V         |         |         |
13+50       0.4070      0.70  |Q        V         |         |         |
13+55       0.4119      0.72  |Q        V         |         |         |
14+ 0       0.4169      0.73  |Q        V         |         |         |
14+ 5       0.4221      0.75  |Q        V         |         |         |
14+10       0.4273      0.76  |Q        V         |         |         |
14+15       0.4327      0.78  |Q        V         |         |         |
14+20       0.4382      0.80  |Q        V         |         |         |
14+25       0.4438      0.82  |Q        |V        |         |         |
14+30       0.4496      0.84  |Q        |V        |         |         |
14+35       0.4555      0.86  |Q        |V        |         |         |
14+40       0.4617      0.89  |Q        |V        |         |         |
14+45       0.4679      0.91  |Q        |V        |         |         |
14+50       0.4744      0.94  |Q        |V        |         |         |
14+55       0.4811      0.97  |Q        | V       |         |         |
15+ 0       0.4881      1.01  | Q       | V       |         |         |
15+ 5       0.4953      1.04  | Q       | V       |         |         |
15+10       0.5027      1.09  | Q       | V       |         |         |
15+15       0.5105      1.13  | Q       | V       |         |         |
15+20       0.5187      1.18  | Q       | V       |         |         |
15+25       0.5272      1.24  | Q       |  V      |         |         |
15+30       0.5361      1.29  | Q       |  V      |         |         |
15+35       0.5453      1.33  | Q       |  V      |         |         |
15+40       0.5546      1.35  | Q       |  V      |         |         |
15+45       0.5643      1.40  | Q       |   V     |         |         |
15+50       0.5747      1.51  |  Q      |   V     |         |         |
15+55       0.5863      1.69  |  Q      |   V     |         |         |
16+ 0       0.6005      2.07  |   Q     |    V    |         |         |
16+ 5       0.6250      3.55  |      Q  |    V    |         |         |
16+10       0.6719      6.82  |         |  Q  V   |         |         |
16+15       0.7533     11.81  |         |       V |  Q      |         |
16+20       0.8782     18.14  |         |         |V        |      Q  |
16+25       0.9758     14.17  |         |         |   V  Q  |         |
16+30       1.0421      9.62  |         |       Q|     V   |         |
16+35       1.0910      7.10  |         |   Q     |      V  |         |
16+40       1.1308      5.78  |         |Q        |       V |         |
16+45       1.1642      4.84  |        Q|         |        V|         |
16+50       1.1923      4.09  |       Q |         |        V|         |
16+55       1.2169      3.56  |      Q  |         |         V         |
17+ 0       1.2390      3.21  |     Q   |         |         |V        |
17+ 5       1.2586      2.85  |    Q    |         |         |V        |
17+10       1.2755      2.46  |   Q     |         |         |V        |
17+15       1.2909      2.23  |   Q     |         |         | V       |
17+20       1.3051      2.06  |   Q     |         |         | V       |
17+25       1.3181      1.90  |  Q      |         |         | V       |
17+30       1.3300      1.73  |  Q      |         |         |  V      |
17+35       1.3409      1.58  |  Q      |         |         |  V      |
17+40       1.3511      1.48  | Q       |         |         |  V      |
17+45       1.3603      1.35  | Q       |         |         |   V     |
17+50       1.3690      1.26  | Q       |         |         |   V     |
17+55       1.3768      1.13  | Q       |         |         |   V     |
18+ 0       1.3841      1.06  | Q       |         |         |   V     |
18+ 5       1.3905      0.93  |Q        |         |         |   V     |
18+10       1.3967      0.90  |Q        |         |         |   V     |
18+15       1.4029      0.90  |Q        |         |         |    V    |
18+20       1.4090      0.89  |Q        |         |         |    V    |
18+25       1.4150      0.86  |Q        |         |         |    V    |
18+30       1.4207      0.84  |Q        |         |         |    V    |
18+35       1.4259      0.75  |Q        |         |         |    V    |
18+40       1.4307      0.70  |Q        |         |         |    V    |
18+45       1.4354      0.68  |Q        |         |         |    V    |
18+50       1.4397      0.62  |Q        |         |         |     V   |
```

```
18+55       1.4433      0.53  |Q        |         |         |     V   |
19+ 0       1.4469      0.52  |Q        |         |         |     V   |
19+ 5       1.4504      0.51  |Q        |         |         |     V   |
19+10       1.4538      0.49  Q         |         |         |     V   |
19+15       1.4571      0.48  Q         |         |         |     V   |
19+20       1.4604      0.47  Q         |         |         |     V   |
19+25       1.4636      0.46  Q         |         |         |     V   |
19+30       1.4667      0.45  Q         |         |         |     V   |
19+35       1.4698      0.45  Q         |         |         |     V   |
19+40       1.4728      0.44  Q         |         |         |     V   |
19+45       1.4758      0.43  Q         |         |         |     V   |
19+50       1.4787      0.42  Q         |         |         |      V  |
19+55       1.4816      0.42  Q         |         |         |      V  |
20+ 0       1.4844      0.41  Q         |         |         |      V  |
20+ 5       1.4872      0.40  Q         |         |         |      V  |
20+10       1.4899      0.40  Q         |         |         |      V  |
20+15       1.4926      0.39  Q         |         |         |      V  |
20+20       1.4952      0.39  Q         |         |         |      V  |
20+25       1.4979      0.38  Q         |         |         |      V  |
20+30       1.5004      0.38  Q         |         |         |      V  |
20+35       1.5030      0.37  Q         |         |         |      V  |
20+40       1.5055      0.37  Q         |         |         |      V  |
20+45       1.5080      0.36  Q         |         |         |      V  |
20+50       1.5105      0.36  Q         |         |         |      V  |
20+55       1.5129      0.35  Q         |         |         |      V  |
21+ 0       1.5153      0.35  Q         |         |         |      V  |
21+ 5       1.5176      0.34  Q         |         |         |      V  |
21+10       1.5200      0.34  Q         |         |         |       V |
21+15       1.5223      0.34  Q         |         |         |       V |
21+20       1.5246      0.33  Q         |         |         |       V |
21+25       1.5268      0.33  Q         |         |         |       V |
21+30       1.5291      0.33  Q         |         |         |       V |
21+35       1.5313      0.32  Q         |         |         |       V |
21+40       1.5335      0.32  Q         |         |         |       V |
21+45       1.5357      0.32  Q         |         |         |       V |
21+50       1.5378      0.31  Q         |         |         |       V |
21+55       1.5399      0.31  Q         |         |         |       V |
22+ 0       1.5421      0.31  Q         |         |         |       V |
22+ 5       1.5441      0.30  Q         |         |         |       V |
22+10       1.5462      0.30  Q         |         |         |       V |
22+15       1.5483      0.30  Q         |         |         |       V |
22+20       1.5503      0.29  Q         |         |         |       V |
22+25       1.5523      0.29  Q         |         |         |       V |
22+30       1.5543      0.29  Q         |         |         |       V |
22+35       1.5563      0.29  Q         |         |         |       V |
22+40       1.5582      0.28  Q         |         |         |       V |
22+45       1.5602      0.28  Q         |         |         |        V|
22+50       1.5621      0.28  Q         |         |         |        V|
22+55       1.5640      0.28  Q         |         |         |        V|
23+ 0       1.5659      0.28  Q         |         |         |        V|
23+ 5       1.5678      0.27  Q         |         |         |        V|
23+10       1.5697      0.27  Q         |         |         |        V|
23+15       1.5715      0.27  Q         |         |         |        V|
23+20       1.5733      0.27  Q         |         |         |        V|
23+25       1.5752      0.26  Q         |         |         |        V|
23+30       1.5770      0.26  Q         |         |         |        V|
23+35       1.5788      0.26  Q         |         |         |        V|
23+40       1.5806      0.26  Q         |         |         |        V|
23+45       1.5823      0.26  Q         |         |         |        V|
23+50       1.5841      0.26  Q         |         |         |        V|
23+55       1.5858      0.25  Q         |         |         |        V|
24+ 0       1.5876      0.25  Q         |         |         |        V|
24+ 5       1.5893      0.25  Q         |         |         |        V|
24+10       1.5909      0.23  Q         |         |         |        V|
24+15       1.5923      0.21  Q         |         |         |        V|
24+20       1.5934      0.16  Q         |         |         |        V|
24+25       1.5942      0.12  Q         |         |         |        V|
24+30       1.5948      0.09  Q         |         |         |        V|
24+35       1.5954      0.08  Q         |         |         |        V|
24+40       1.5958      0.06  Q         |         |         |        V|
24+45       1.5962      0.05  Q         |         |         |        V|
24+50       1.5965      0.05  Q         |         |         |        V|
24+55       1.5968      0.04  Q         |         |         |        V|
25+ 0       1.5970      0.03  Q         |         |         |        V|
25+ 5       1.5972      0.03  Q         |         |         |        V|
25+10       1.5974      0.03  Q         |         |         |        V|
25+15       1.5976      0.02  Q         |         |         |        V|
25+20       1.5977      0.02  Q         |         |         |        V|
25+25       1.5978      0.02  Q         |         |         |        V|
25+30       1.5979      0.01  Q         |         |         |        V|
25+35       1.5980      0.01  Q         |         |         |        V|
```

```
   25+40       1.5981      0.01  Q          |          |          |         v|
   25+45       1.5981      0.01  Q          |          |          |         v|
   25+50       1.5982      0.01  Q          |          |          |         v|
   25+55       1.5982      0.01  Q          |          |          |         v|
   26+ 0       1.5983      0.01  Q          |          |          |         v|
   26+ 5       1.5983      0.00  Q          |          |          |         v|
   26+10       1.5983      0.00  Q          |          |          |         v|
   26+15       1.5984      0.00  Q          |          |          |         v|
   26+20       1.5984      0.00  Q          |          |          |         v|
   26+25       1.5984      0.00  Q          |          |          |         v|
   26+30       1.5984      0.00  Q          |          |          |         v|
   26+35       1.5984      0.00  Q          |          |          |         v|
   26+40       1.5984      0.00  Q          |          |          |         v|
   26+45       1.5984      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  06/23/22

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6320

-------------------------------------------------------------------
224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
EXISITNG CONDITION - ON-SITE
100-YEAR, 24-HOUR STORM
BY: JTS  DATE: 06-23-22
-------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            17.68            1           0.60
-------------------------------------------------------------------
Rainfall data for year 2
            17.68            6           0.75
-------------------------------------------------------------------
Rainfall data for year 2
            17.68           24           1.30
-------------------------------------------------------------------
Rainfall data for year 100
            17.68            1           1.07
-------------------------------------------------------------------
Rainfall data for year 100
            17.68            6           1.99
-------------------------------------------------------------------
Rainfall data for year 100
            17.68           24           3.39
-------------------------------------------------------------------
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 77.0      77.0         17.68      1.000     0.420    1.000    0.420

Area-averaged adjusted loss rate Fm (In/Hr) =  0.420

********* Area-Averaged low loss rate fraction, Yb **********

Area       Area          SCS CN    SCS CN      S     Pervious
 (Ac.)      Fract         (AMC2)    (AMC2)           Yield Fr
    17.68   1.000         77.0      77.0       2.99     0.398

Area-averaged catchment yield fraction, Y =  0.398
Area-averaged low loss fraction, Yb =  0.602
User entry of time of concentration  =   0.444 (hours)
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area =      17.68(Ac.)
Catchment Lag time =   0.355 hours
```

```
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 23.4610
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.420(In/Hr)
Average low loss rate fraction (Yb) = 0.602 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.508(In)
Computed peak 30-minute rainfall =  0.869(In)
Specified peak 1-hour rainfall =  1.070(In)
Computed peak 3-hour rainfall =  1.565(In)
Specified peak 6-hour rainfall =  1.990(In)
Specified peak 24-hour rainfall =  3.390(In)


Rainfall depth area reduction factors:
Using a total area of      17.68(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999     Adjusted rainfall =  0.507(In)
30-minute factor = 0.999    Adjusted rainfall =  0.868(In)
1-hour factor = 0.999       Adjusted rainfall =  1.069(In)
3-hour factor = 1.000       Adjusted rainfall =  1.565(In)
6-hour factor = 1.000       Adjusted rainfall =  1.990(In)
24-hour factor = 1.000      Adjusted rainfall =  3.390(In)
----------------------------------------------------------------------

                       U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
----------------------------------------------------------------------
                 (K =       213.82 (CFS))

  1                1.237                   2.645
  2                5.898                   9.966
  3               16.607                  22.899
  4               37.127                  43.875
  5               52.735                  33.371
  6               62.457                  20.788
  7               69.053                  14.103
  8               74.109                  10.811
  9               78.107                   8.548
 10               81.273                   6.769
 11               83.888                   5.592
 12               86.186                   4.914
 13               88.150                   4.199
 14               89.702                   3.319
 15               91.050                   2.881
 16               92.255                   2.577
 17               93.333                   2.304
 18               94.259                   1.981
 19               95.057                   1.706
 20               95.792                   1.571
 21               96.405                   1.311
 22               96.970                   1.209
 23               97.402                   0.922
 24               97.795                   0.841
 25               98.048                   0.541
 26               98.287                   0.511
 27               98.561                   0.585
 28               98.842                   0.602
 29               99.124                   0.602
 30               99.403                   0.598
 31               99.597                   0.415
 32               99.744                   0.314
 33               99.891                   0.314
 34              100.000                   0.234
----------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                (In)
  1              0.5073              0.5073
  2              0.6246              0.1173
  3              0.7054              0.0808
  4              0.7689              0.0636
  5              0.8222              0.0532
  6              0.8684              0.0462
  7              0.9095              0.0411
  8              0.9467              0.0372
  9              0.9807              0.0340
 10              1.0122              0.0315
 11              1.0416              0.0294
 12              1.0691              0.0275
```

13	1.0992	0.0301
14	1.1278	0.0286
15	1.1552	0.0273
16	1.1813	0.0262
17	1.2064	0.0251
18	1.2306	0.0242
19	1.2539	0.0233
20	1.2764	0.0225
21	1.2982	0.0218
22	1.3193	0.0211
23	1.3398	0.0205
24	1.3598	0.0199
25	1.3792	0.0194
26	1.3981	0.0189
27	1.4165	0.0184
28	1.4345	0.0180
29	1.4521	0.0176
30	1.4692	0.0172
31	1.4860	0.0168
32	1.5025	0.0165
33	1.5186	0.0161
34	1.5344	0.0158
35	1.5500	0.0155
36	1.5652	0.0152
37	1.5801	0.0149
38	1.5948	0.0147
39	1.6092	0.0144
40	1.6233	0.0142
41	1.6373	0.0139
42	1.6510	0.0137
43	1.6645	0.0135
44	1.6778	0.0133
45	1.6909	0.0131
46	1.7039	0.0129
47	1.7166	0.0127
48	1.7292	0.0126
49	1.7416	0.0124
50	1.7538	0.0122
51	1.7659	0.0121
52	1.7778	0.0119
53	1.7895	0.0118
54	1.8012	0.0116
55	1.8127	0.0115
56	1.8240	0.0113
57	1.8352	0.0112
58	1.8463	0.0111
59	1.8573	0.0110
60	1.8681	0.0108
61	1.8788	0.0107
62	1.8895	0.0106
63	1.9000	0.0105
64	1.9103	0.0104
65	1.9206	0.0103
66	1.9308	0.0102
67	1.9409	0.0101
68	1.9509	0.0100
69	1.9608	0.0099
70	1.9706	0.0098
71	1.9803	0.0097
72	1.9899	0.0096
73	2.0005	0.0106
74	2.0110	0.0105
75	2.0214	0.0104
76	2.0317	0.0103
77	2.0419	0.0102
78	2.0520	0.0101
79	2.0621	0.0101
80	2.0721	0.0100
81	2.0820	0.0099
82	2.0919	0.0098
83	2.1016	0.0098
84	2.1113	0.0097
85	2.1210	0.0096
86	2.1305	0.0096
87	2.1400	0.0095
88	2.1494	0.0094
89	2.1588	0.0094
90	2.1681	0.0093
91	2.1773	0.0092
92	2.1864	0.0092
93	2.1955	0.0091

94	2.2046	0.0090
95	2.2136	0.0090
96	2.2225	0.0089
97	2.2314	0.0089
98	2.2402	0.0088
99	2.2489	0.0088
100	2.2576	0.0087
101	2.2663	0.0086
102	2.2749	0.0086
103	2.2834	0.0085
104	2.2919	0.0085
105	2.3004	0.0084
106	2.3088	0.0084
107	2.3171	0.0083
108	2.3254	0.0083
109	2.3337	0.0083
110	2.3419	0.0082
111	2.3500	0.0082
112	2.3581	0.0081
113	2.3662	0.0081
114	2.3742	0.0080
115	2.3822	0.0080
116	2.3901	0.0079
117	2.3980	0.0079
118	2.4059	0.0079
119	2.4137	0.0078
120	2.4215	0.0078
121	2.4292	0.0077
122	2.4369	0.0077
123	2.4446	0.0077
124	2.4522	0.0076
125	2.4598	0.0076
126	2.4673	0.0075
127	2.4748	0.0075
128	2.4823	0.0075
129	2.4897	0.0074
130	2.4971	0.0074
131	2.5045	0.0074
132	2.5118	0.0073
133	2.5191	0.0073
134	2.5264	0.0073
135	2.5336	0.0072
136	2.5408	0.0072
137	2.5480	0.0072
138	2.5551	0.0071
139	2.5622	0.0071
140	2.5693	0.0071
141	2.5763	0.0070
142	2.5833	0.0070
143	2.5903	0.0070
144	2.5972	0.0069
145	2.6041	0.0069
146	2.6110	0.0069
147	2.6179	0.0069
148	2.6247	0.0068
149	2.6315	0.0068
150	2.6383	0.0068
151	2.6450	0.0067
152	2.6518	0.0067
153	2.6584	0.0067
154	2.6651	0.0067
155	2.6717	0.0066
156	2.6784	0.0066
157	2.6849	0.0066
158	2.6915	0.0066
159	2.6980	0.0065
160	2.7045	0.0065
161	2.7110	0.0065
162	2.7175	0.0065
163	2.7239	0.0064
164	2.7303	0.0064
165	2.7367	0.0064
166	2.7431	0.0064
167	2.7494	0.0063
168	2.7557	0.0063
169	2.7620	0.0063
170	2.7683	0.0063
171	2.7745	0.0062
172	2.7808	0.0062
173	2.7870	0.0062
174	2.7931	0.0062

175	2.7993	0.0062
176	2.8054	0.0061
177	2.8115	0.0061
178	2.8176	0.0061
179	2.8237	0.0061
180	2.8298	0.0061
181	2.8358	0.0060
182	2.8418	0.0060
183	2.8478	0.0060
184	2.8538	0.0060
185	2.8597	0.0060
186	2.8656	0.0059
187	2.8716	0.0059
188	2.8774	0.0059
189	2.8833	0.0059
190	2.8892	0.0059
191	2.8950	0.0058
192	2.9008	0.0058
193	2.9066	0.0058
194	2.9124	0.0058
195	2.9182	0.0058
196	2.9239	0.0057
197	2.9296	0.0057
198	2.9353	0.0057
199	2.9410	0.0057
200	2.9467	0.0057
201	2.9523	0.0057
202	2.9580	0.0056
203	2.9636	0.0056
204	2.9692	0.0056
205	2.9748	0.0056
206	2.9804	0.0056
207	2.9859	0.0056
208	2.9914	0.0055
209	2.9970	0.0055
210	3.0025	0.0055
211	3.0079	0.0055
212	3.0134	0.0055
213	3.0189	0.0055
214	3.0243	0.0054
215	3.0297	0.0054
216	3.0351	0.0054
217	3.0405	0.0054
218	3.0459	0.0054
219	3.0513	0.0054
220	3.0566	0.0053
221	3.0619	0.0053
222	3.0673	0.0053
223	3.0726	0.0053
224	3.0779	0.0053
225	3.0831	0.0053
226	3.0884	0.0053
227	3.0936	0.0052
228	3.0989	0.0052
229	3.1041	0.0052
230	3.1093	0.0052
231	3.1145	0.0052
232	3.1196	0.0052
233	3.1248	0.0052
234	3.1299	0.0051
235	3.1351	0.0051
236	3.1402	0.0051
237	3.1453	0.0051
238	3.1504	0.0051
239	3.1555	0.0051
240	3.1605	0.0051
241	3.1656	0.0051
242	3.1706	0.0050
243	3.1757	0.0050
244	3.1807	0.0050
245	3.1857	0.0050
246	3.1907	0.0050
247	3.1957	0.0050
248	3.2006	0.0050
249	3.2056	0.0050
250	3.2105	0.0049
251	3.2154	0.0049
252	3.2204	0.0049
253	3.2253	0.0049
254	3.2302	0.0049
255	3.2350	0.0049

256	3.2399	0.0049
257	3.2448	0.0049
258	3.2496	0.0048
259	3.2544	0.0048
260	3.2593	0.0048
261	3.2641	0.0048
262	3.2689	0.0048
263	3.2737	0.0048
264	3.2785	0.0048
265	3.2832	0.0048
266	3.2880	0.0048
267	3.2927	0.0047
268	3.2975	0.0047
269	3.3022	0.0047
270	3.3069	0.0047
271	3.3116	0.0047
272	3.3163	0.0047
273	3.3210	0.0047
274	3.3256	0.0047
275	3.3303	0.0047
276	3.3349	0.0046
277	3.3396	0.0046
278	3.3442	0.0046
279	3.3488	0.0046
280	3.3534	0.0046
281	3.3580	0.0046
282	3.3626	0.0046
283	3.3672	0.0046
284	3.3718	0.0046
285	3.3763	0.0046
286	3.3809	0.0045
287	3.3854	0.0045
288	3.3899	0.0045

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0045	0.0027	0.0018
2	0.0045	0.0027	0.0018
3	0.0046	0.0027	0.0018
4	0.0046	0.0027	0.0018
5	0.0046	0.0028	0.0018
6	0.0046	0.0028	0.0018
7	0.0046	0.0028	0.0018
8	0.0046	0.0028	0.0018
9	0.0046	0.0028	0.0019
10	0.0047	0.0028	0.0019
11	0.0047	0.0028	0.0019
12	0.0047	0.0028	0.0019
13	0.0047	0.0028	0.0019
14	0.0047	0.0028	0.0019
15	0.0047	0.0029	0.0019
16	0.0048	0.0029	0.0019
17	0.0048	0.0029	0.0019
18	0.0048	0.0029	0.0019
19	0.0048	0.0029	0.0019
20	0.0048	0.0029	0.0019
21	0.0048	0.0029	0.0019
22	0.0049	0.0029	0.0019
23	0.0049	0.0029	0.0019
24	0.0049	0.0029	0.0019
25	0.0049	0.0030	0.0020
26	0.0049	0.0030	0.0020
27	0.0050	0.0030	0.0020
28	0.0050	0.0030	0.0020
29	0.0050	0.0030	0.0020
30	0.0050	0.0030	0.0020
31	0.0050	0.0030	0.0020
32	0.0050	0.0030	0.0020
33	0.0051	0.0031	0.0020
34	0.0051	0.0031	0.0020
35	0.0051	0.0031	0.0020
36	0.0051	0.0031	0.0020
37	0.0051	0.0031	0.0020
38	0.0052	0.0031	0.0021
39	0.0052	0.0031	0.0021
40	0.0052	0.0031	0.0021
41	0.0052	0.0031	0.0021
42	0.0052	0.0032	0.0021
43	0.0053	0.0032	0.0021

44	0.0053	0.0032	0.0021
45	0.0053	0.0032	0.0021
46	0.0053	0.0032	0.0021
47	0.0054	0.0032	0.0021
48	0.0054	0.0032	0.0021
49	0.0054	0.0033	0.0022
50	0.0054	0.0033	0.0022
51	0.0055	0.0033	0.0022
52	0.0055	0.0033	0.0022
53	0.0055	0.0033	0.0022
54	0.0055	0.0033	0.0022
55	0.0056	0.0033	0.0022
56	0.0056	0.0034	0.0022
57	0.0056	0.0034	0.0022
58	0.0056	0.0034	0.0022
59	0.0057	0.0034	0.0023
60	0.0057	0.0034	0.0023
61	0.0057	0.0034	0.0023
62	0.0057	0.0034	0.0023
63	0.0058	0.0035	0.0023
64	0.0058	0.0035	0.0023
65	0.0058	0.0035	0.0023
66	0.0058	0.0035	0.0023
67	0.0059	0.0035	0.0023
68	0.0059	0.0035	0.0023
69	0.0059	0.0036	0.0024
70	0.0060	0.0036	0.0024
71	0.0060	0.0036	0.0024
72	0.0060	0.0036	0.0024
73	0.0061	0.0036	0.0024
74	0.0061	0.0037	0.0024
75	0.0061	0.0037	0.0024
76	0.0061	0.0037	0.0024
77	0.0062	0.0037	0.0025
78	0.0062	0.0037	0.0025
79	0.0062	0.0038	0.0025
80	0.0063	0.0038	0.0025
81	0.0063	0.0038	0.0025
82	0.0063	0.0038	0.0025
83	0.0064	0.0038	0.0025
84	0.0064	0.0039	0.0026
85	0.0065	0.0039	0.0026
86	0.0065	0.0039	0.0026
87	0.0065	0.0039	0.0026
88	0.0066	0.0039	0.0026
89	0.0066	0.0040	0.0026
90	0.0066	0.0040	0.0026
91	0.0067	0.0040	0.0027
92	0.0067	0.0040	0.0027
93	0.0068	0.0041	0.0027
94	0.0068	0.0041	0.0027
95	0.0069	0.0041	0.0027
96	0.0069	0.0041	0.0027
97	0.0069	0.0042	0.0028
98	0.0070	0.0042	0.0028
99	0.0070	0.0042	0.0028
100	0.0071	0.0043	0.0028
101	0.0071	0.0043	0.0028
102	0.0072	0.0043	0.0029
103	0.0072	0.0044	0.0029
104	0.0073	0.0044	0.0029
105	0.0073	0.0044	0.0029
106	0.0074	0.0044	0.0029
107	0.0074	0.0045	0.0030
108	0.0075	0.0045	0.0030
109	0.0075	0.0045	0.0030
110	0.0076	0.0046	0.0030
111	0.0077	0.0046	0.0030
112	0.0077	0.0046	0.0031
113	0.0078	0.0047	0.0031
114	0.0078	0.0047	0.0031
115	0.0079	0.0048	0.0031
116	0.0079	0.0048	0.0032
117	0.0080	0.0048	0.0032
118	0.0081	0.0049	0.0032
119	0.0082	0.0049	0.0032
120	0.0082	0.0049	0.0033
121	0.0083	0.0050	0.0033
122	0.0083	0.0050	0.0033
123	0.0084	0.0051	0.0034
124	0.0085	0.0051	0.0034

125	0.0086	0.0052	0.0034
126	0.0086	0.0052	0.0034
127	0.0088	0.0053	0.0035
128	0.0088	0.0053	0.0035
129	0.0089	0.0054	0.0036
130	0.0090	0.0054	0.0036
131	0.0091	0.0055	0.0036
132	0.0092	0.0055	0.0036
133	0.0093	0.0056	0.0037
134	0.0094	0.0056	0.0037
135	0.0095	0.0057	0.0038
136	0.0096	0.0058	0.0038
137	0.0097	0.0058	0.0039
138	0.0098	0.0059	0.0039
139	0.0099	0.0060	0.0039
140	0.0100	0.0060	0.0040
141	0.0101	0.0061	0.0040
142	0.0102	0.0062	0.0041
143	0.0104	0.0063	0.0041
144	0.0105	0.0063	0.0042
145	0.0096	0.0058	0.0038
146	0.0097	0.0058	0.0039
147	0.0099	0.0060	0.0039
148	0.0100	0.0060	0.0040
149	0.0102	0.0061	0.0041
150	0.0103	0.0062	0.0041
151	0.0105	0.0063	0.0042
152	0.0106	0.0064	0.0042
153	0.0108	0.0065	0.0043
154	0.0110	0.0066	0.0044
155	0.0112	0.0068	0.0045
156	0.0113	0.0068	0.0045
157	0.0116	0.0070	0.0046
158	0.0118	0.0071	0.0047
159	0.0121	0.0073	0.0048
160	0.0122	0.0074	0.0049
161	0.0126	0.0076	0.0050
162	0.0127	0.0077	0.0051
163	0.0131	0.0079	0.0052
164	0.0133	0.0080	0.0053
165	0.0137	0.0083	0.0055
166	0.0139	0.0084	0.0055
167	0.0144	0.0087	0.0057
168	0.0147	0.0088	0.0058
169	0.0152	0.0092	0.0061
170	0.0155	0.0093	0.0062
171	0.0161	0.0097	0.0064
172	0.0165	0.0099	0.0066
173	0.0172	0.0103	0.0068
174	0.0176	0.0106	0.0070
175	0.0184	0.0111	0.0073
176	0.0189	0.0114	0.0075
177	0.0199	0.0120	0.0079
178	0.0205	0.0123	0.0082
179	0.0218	0.0131	0.0087
180	0.0225	0.0136	0.0090
181	0.0242	0.0145	0.0096
182	0.0251	0.0151	0.0100
183	0.0273	0.0164	0.0109
184	0.0286	0.0172	0.0114
185	0.0275	0.0166	0.0110
186	0.0294	0.0177	0.0117
187	0.0340	0.0205	0.0136
188	0.0372	0.0224	0.0148
189	0.0462	0.0278	0.0184
190	0.0532	0.0320	0.0212
191	0.0808	0.0350	0.0458
192	0.1173	0.0350	0.0822
193	0.5073	0.0350	0.4723
194	0.0636	0.0350	0.0286
195	0.0411	0.0247	0.0164
196	0.0315	0.0190	0.0125
197	0.0301	0.0181	0.0120
198	0.0262	0.0157	0.0104
199	0.0233	0.0140	0.0093
200	0.0211	0.0127	0.0084
201	0.0194	0.0117	0.0077
202	0.0180	0.0108	0.0072
203	0.0168	0.0101	0.0067
204	0.0158	0.0095	0.0063
205	0.0149	0.0090	0.0059

206	0.0142	0.0085	0.0056
207	0.0135	0.0081	0.0054
208	0.0129	0.0078	0.0051
209	0.0124	0.0075	0.0049
210	0.0119	0.0072	0.0047
211	0.0115	0.0069	0.0046
212	0.0111	0.0067	0.0044
213	0.0107	0.0065	0.0043
214	0.0104	0.0063	0.0041
215	0.0101	0.0061	0.0040
216	0.0098	0.0059	0.0039
217	0.0106	0.0064	0.0042
218	0.0103	0.0062	0.0041
219	0.0101	0.0061	0.0040
220	0.0098	0.0059	0.0039
221	0.0096	0.0058	0.0038
222	0.0094	0.0057	0.0037
223	0.0092	0.0056	0.0037
224	0.0090	0.0054	0.0036
225	0.0089	0.0053	0.0035
226	0.0087	0.0052	0.0035
227	0.0085	0.0051	0.0034
228	0.0084	0.0051	0.0033
229	0.0083	0.0050	0.0033
230	0.0081	0.0049	0.0032
231	0.0080	0.0048	0.0032
232	0.0079	0.0047	0.0031
233	0.0077	0.0047	0.0031
234	0.0076	0.0046	0.0030
235	0.0075	0.0045	0.0030
236	0.0074	0.0045	0.0029
237	0.0073	0.0044	0.0029
238	0.0072	0.0043	0.0029
239	0.0071	0.0043	0.0028
240	0.0070	0.0042	0.0028
241	0.0069	0.0042	0.0028
242	0.0068	0.0041	0.0027
243	0.0067	0.0041	0.0027
244	0.0067	0.0040	0.0027
245	0.0066	0.0040	0.0026
246	0.0065	0.0039	0.0026
247	0.0064	0.0039	0.0026
248	0.0064	0.0038	0.0025
249	0.0063	0.0038	0.0025
250	0.0062	0.0037	0.0025
251	0.0062	0.0037	0.0025
252	0.0061	0.0037	0.0024
253	0.0060	0.0036	0.0024
254	0.0060	0.0036	0.0024
255	0.0059	0.0036	0.0024
256	0.0059	0.0035	0.0023
257	0.0058	0.0035	0.0023
258	0.0057	0.0035	0.0023
259	0.0057	0.0034	0.0023
260	0.0056	0.0034	0.0022
261	0.0056	0.0034	0.0022
262	0.0055	0.0033	0.0022
263	0.0055	0.0033	0.0022
264	0.0054	0.0033	0.0022
265	0.0054	0.0032	0.0021
266	0.0053	0.0032	0.0021
267	0.0053	0.0032	0.0021
268	0.0053	0.0032	0.0021
269	0.0052	0.0031	0.0021
270	0.0052	0.0031	0.0021
271	0.0051	0.0031	0.0020
272	0.0051	0.0031	0.0020
273	0.0051	0.0030	0.0020
274	0.0050	0.0030	0.0020
275	0.0050	0.0030	0.0020
276	0.0049	0.0030	0.0020
277	0.0049	0.0030	0.0020
278	0.0049	0.0029	0.0019
279	0.0048	0.0029	0.0019
280	0.0048	0.0029	0.0019
281	0.0048	0.0029	0.0019
282	0.0047	0.0028	0.0019
283	0.0047	0.0028	0.0019
284	0.0047	0.0028	0.0019
285	0.0046	0.0028	0.0018
286	0.0046	0.0028	0.0018

```
287              0.0046           0.0028              0.0018
288              0.0045           0.0027              0.0018
-------------------------------------------------------------------
-------------------------------------------------------------------
Total soil rain loss =      1.72(In)
Total effective rainfall =      1.67(In)
Peak flow rate in flood hydrograph =     26.36(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        7.5      15.0      22.5      30.0
-------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q          |          |          |          |
  0+10       0.0002      0.02  Q          |          |          |          |
  0+15       0.0006      0.06  Q          |          |          |          |
  0+20       0.0016      0.14  Q          |          |          |          |
  0+25       0.0030      0.20  Q          |          |          |          |
  0+30       0.0047      0.24  Q          |          |          |          |
  0+35       0.0065      0.27  Q          |          |          |          |
  0+40       0.0085      0.29  Q          |          |          |          |
  0+45       0.0106      0.30  Q          |          |          |          |
  0+50       0.0128      0.32  Q          |          |          |          |
  0+55       0.0151      0.33  Q          |          |          |          |
  1+ 0       0.0174      0.34  Q          |          |          |          |
  1+ 5       0.0198      0.35  Q          |          |          |          |
  1+10       0.0223      0.35  Q          |          |          |          |
  1+15       0.0247      0.36  Q          |          |          |          |
  1+20       0.0273      0.37  Q          |          |          |          |
  1+25       0.0298      0.37  Q          |          |          |          |
  1+30       0.0324      0.38  Q          |          |          |          |
  1+35       0.0351      0.38  Q          |          |          |          |
  1+40       0.0377      0.39  Q          |          |          |          |
  1+45       0.0404      0.39  Q          |          |          |          |
  1+50       0.0431      0.39  Q          |          |          |          |
  1+55       0.0458      0.40  Q          |          |          |          |
  2+ 0       0.0486      0.40  Q          |          |          |          |
  2+ 5       0.0514      0.40  Q          |          |          |          |
  2+10       0.0541      0.40  Q          |          |          |          |
  2+15       0.0569      0.41  Q          |          |          |          |
  2+20       0.0598      0.41  Q          |          |          |          |
  2+25       0.0626      0.41  QV         |          |          |          |
  2+30       0.0654      0.41  QV         |          |          |          |
  2+35       0.0683      0.42  QV         |          |          |          |
  2+40       0.0712      0.42  QV         |          |          |          |
  2+45       0.0741      0.42  QV         |          |          |          |
  2+50       0.0770      0.42  QV         |          |          |          |
  2+55       0.0799      0.42  QV         |          |          |          |
  3+ 0       0.0829      0.43  QV         |          |          |          |
  3+ 5       0.0858      0.43  QV         |          |          |          |
  3+10       0.0888      0.43  QV         |          |          |          |
  3+15       0.0917      0.43  QV         |          |          |          |
  3+20       0.0947      0.43  QV         |          |          |          |
  3+25       0.0977      0.43  QV         |          |          |          |
  3+30       0.1007      0.44  QV         |          |          |          |
  3+35       0.1037      0.44  QV         |          |          |          |
  3+40       0.1067      0.44  QV         |          |          |          |
  3+45       0.1098      0.44  QV         |          |          |          |
  3+50       0.1128      0.44  QV         |          |          |          |
  3+55       0.1159      0.44  QV         |          |          |          |
  4+ 0       0.1189      0.45  QV         |          |          |          |
  4+ 5       0.1220      0.45  QV         |          |          |          |
  4+10       0.1251      0.45  Q V        |          |          |          |
  4+15       0.1282      0.45  Q V        |          |          |          |
  4+20       0.1314      0.45  Q V        |          |          |          |
  4+25       0.1345      0.46  Q V        |          |          |          |
  4+30       0.1377      0.46  Q V        |          |          |          |
  4+35       0.1408      0.46  Q V        |          |          |          |
  4+40       0.1440      0.46  Q V        |          |          |          |
  4+45       0.1472      0.46  Q V        |          |          |          |
  4+50       0.1504      0.47  Q V        |          |          |          |
  4+55       0.1536      0.47  Q V        |          |          |          |
  5+ 0       0.1569      0.47  Q V        |          |          |          |
  5+ 5       0.1601      0.47  Q V        |          |          |          |
  5+10       0.1634      0.47  Q V        |          |          |          |
  5+15       0.1667      0.48  Q V        |          |          |          |
  5+20       0.1699      0.48  Q V        |          |          |          |
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 5+25       0.1733      0.48  Q V        |          |          |          |
 5+30       0.1766      0.48  Q V        |          |          |          |
 5+35       0.1799      0.48  Q V        |          |          |          |
 5+40       0.1833      0.49  Q V        |          |          |          |
 5+45       0.1866      0.49  Q  V       |          |          |          |
 5+50       0.1900      0.49  Q  V       |          |          |          |
 5+55       0.1934      0.49  Q  V       |          |          |          |
 6+ 0       0.1969      0.50  Q  V       |          |          |          |
 6+ 5       0.2003      0.50  Q  V       |          |          |          |
 6+10       0.2037      0.50  Q  V       |          |          |          |
 6+15       0.2072      0.50  Q  V       |          |          |          |
 6+20       0.2107      0.51  Q  V       |          |          |          |
 6+25       0.2142      0.51  Q  V       |          |          |          |
 6+30       0.2177      0.51  Q  V       |          |          |          |
 6+35       0.2213      0.51  Q  V       |          |          |          |
 6+40       0.2248      0.52  Q  V       |          |          |          |
 6+45       0.2284      0.52  Q  V       |          |          |          |
 6+50       0.2320      0.52  Q  V       |          |          |          |
 6+55       0.2356      0.53  Q  V       |          |          |          |
 7+ 0       0.2393      0.53  Q  V       |          |          |          |
 7+ 5       0.2429      0.53  Q  V       |          |          |          |
 7+10       0.2466      0.53  Q   V      |          |          |          |
 7+15       0.2503      0.54  Q   V      |          |          |          |
 7+20       0.2540      0.54  Q   V      |          |          |          |
 7+25       0.2577      0.54  Q   V      |          |          |          |
 7+30       0.2615      0.55  Q   V      |          |          |          |
 7+35       0.2653      0.55  Q   V      |          |          |          |
 7+40       0.2691      0.55  Q   V      |          |          |          |
 7+45       0.2729      0.56  Q   V      |          |          |          |
 7+50       0.2768      0.56  Q   V      |          |          |          |
 7+55       0.2806      0.56  Q   V      |          |          |          |
 8+ 0       0.2845      0.57  Q   V      |          |          |          |
 8+ 5       0.2884      0.57  Q   V      |          |          |          |
 8+10       0.2924      0.57  Q   V      |          |          |          |
 8+15       0.2963      0.58  Q   V      |          |          |          |
 8+20       0.3003      0.58  Q   V      |          |          |          |
 8+25       0.3043      0.58  Q   V      |          |          |          |
 8+30       0.3084      0.59  Q    V     |          |          |          |
 8+35       0.3124      0.59  Q    V     |          |          |          |
 8+40       0.3165      0.59  Q    V     |          |          |          |
 8+45       0.3206      0.60  Q    V     |          |          |          |
 8+50       0.3248      0.60  Q    V     |          |          |          |
 8+55       0.3290      0.61  Q    V     |          |          |          |
 9+ 0       0.3332      0.61  Q    V     |          |          |          |
 9+ 5       0.3374      0.61  Q    V     |          |          |          |
 9+10       0.3417      0.62  Q    V     |          |          |          |
 9+15       0.3459      0.62  Q    V     |          |          |          |
 9+20       0.3503      0.63  Q    V     |          |          |          |
 9+25       0.3546      0.63  Q    V     |          |          |          |
 9+30       0.3590      0.64  Q    V     |          |          |          |
 9+35       0.3634      0.64  Q    V     |          |          |          |
 9+40       0.3679      0.65  Q    V     |          |          |          |
 9+45       0.3723      0.65  Q     V    |          |          |          |
 9+50       0.3769      0.66  Q     V    |          |          |          |
 9+55       0.3814      0.66  Q     V    |          |          |          |
10+ 0       0.3860      0.67  Q     V    |          |          |          |
10+ 5       0.3906      0.67  Q     V    |          |          |          |
10+10       0.3953      0.68  Q     V    |          |          |          |
10+15       0.4000      0.68  Q     V    |          |          |          |
10+20       0.4047      0.69  Q     V    |          |          |          |
10+25       0.4095      0.69  Q     V    |          |          |          |
10+30       0.4143      0.70  Q     V    |          |          |          |
10+35       0.4191      0.71  Q     V    |          |          |          |
10+40       0.4240      0.71  Q     V    |          |          |          |
10+45       0.4290      0.72  Q     V    |          |          |          |
10+50       0.4340      0.72  Q      V   |          |          |          |
10+55       0.4390      0.73  Q      V   |          |          |          |
11+ 0       0.4441      0.74  Q      V   |          |          |          |
11+ 5       0.4492      0.74  Q      V   |          |          |          |
11+10       0.4544      0.75  |Q     V   |          |          |          |
11+15       0.4596      0.76  |Q     V   |          |          |          |
11+20       0.4649      0.77  |Q     V   |          |          |          |
11+25       0.4702      0.77  |Q     V   |          |          |          |
11+30       0.4756      0.78  |Q     V   |          |          |          |
11+35       0.4810      0.79  |Q     V   |          |          |          |
11+40       0.4865      0.80  |Q     V   |          |          |          |
11+45       0.4921      0.81  |Q     V   |          |          |          |
11+50       0.4977      0.82  |Q      V  |          |          |          |
11+55       0.5034      0.82  |Q      V  |          |          |          |
12+ 0       0.5091      0.83  |Q      V  |          |          |          |
12+ 5       0.5149      0.84  |Q      V  |          |          |          |
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12+10       0.5207      0.85  |Q      V |         |         |         |
12+15       0.5266      0.85  |Q      V |         |         |         |
12+20       0.5324      0.84  |Q      V |         |         |         |
12+25       0.5381      0.84  |Q      V |         |         |         |
12+30       0.5439      0.84  |Q      V |         |         |         |
12+35       0.5497      0.84  |Q      V |         |         |         |
12+40       0.5556      0.85  |Q       V|         |         |         |
12+45       0.5615      0.86  |Q       V|         |         |         |
12+50       0.5675      0.87  |Q       V|         |         |         |
12+55       0.5736      0.88  |Q       V|         |         |         |
13+ 0       0.5797      0.89  |Q       V|         |         |         |
13+ 5       0.5859      0.90  |Q       V|         |         |         |
13+10       0.5923      0.92  |Q       V|         |         |         |
13+15       0.5987      0.93  |Q       V|         |         |         |
13+20       0.6052      0.95  |Q       V|         |         |         |
13+25       0.6118      0.96  |Q       V|         |         |         |
13+30       0.6185      0.98  |Q        V         |         |         |
13+35       0.6254      0.99  |Q        V         |         |         |
13+40       0.6324      1.01  |Q        V         |         |         |
13+45       0.6395      1.03  |Q        V         |         |         |
13+50       0.6467      1.05  |Q        V         |         |         |
13+55       0.6541      1.07  |Q        V         |         |         |
14+ 0       0.6617      1.10  |Q        V         |         |         |
14+ 5       0.6694      1.12  |Q        V         |         |         |
14+10       0.6773      1.15  |Q        |V        |         |         |
14+15       0.6854      1.18  |Q        |V        |         |         |
14+20       0.6937      1.21  |Q        |V        |         |         |
14+25       0.7022      1.24  |Q        |V        |         |         |
14+30       0.7110      1.27  |Q        |V        |         |         |
14+35       0.7200      1.31  |Q        |V        |         |         |
14+40       0.7292      1.35  |Q        |V        |         |         |
14+45       0.7388      1.39  |Q        | V       |         |         |
14+50       0.7487      1.43  |Q        | V       |         |         |
14+55       0.7589      1.48  |Q        | V       |         |         |
15+ 0       0.7695      1.54  | Q       | V       |         |         |
15+ 5       0.7805      1.60  | Q       | V       |         |         |
15+10       0.7919      1.67  | Q       | V       |         |         |
15+15       0.8039      1.74  | Q       |  V      |         |         |
15+20       0.8165      1.82  | Q       |  V      |         |         |
15+25       0.8297      1.92  | Q       |  V      |         |         |
15+30       0.8435      2.01  | Q       |  V      |         |         |
15+35       0.8580      2.10  | Q       |  V      |         |         |
15+40       0.8730      2.18  | Q       |   V     |         |         |
15+45       0.8890      2.31  |  Q      |   V     |         |         |
15+50       0.9063      2.51  |  Q      |   V     |         |         |
15+55       0.9259      2.84  |  Q      |    V    |         |         |
16+ 0       0.9501      3.52  |   Q     |    V    |         |         |
16+ 5       0.9900      5.79  |     Q   |     V   |         |         |
16+10       1.0633     10.65  |         |  Q  V   |         |         |
16+15       1.1852     17.70  |         |       V|  Q      |         |
16+20       1.3668     26.36  |         |         V       |     Q   |
16+25       1.5099     20.79  |         |          V  Q   |         |
16+30       1.6085     14.31  |         |       Q|     V  |         |
16+35       1.6819     10.65  |         |  Q      |      V  |         |
16+40       1.7417      8.68  |        |Q        |       V |         |
16+45       1.7918      7.28  |       Q|         |        V|         |
16+50       1.8342      6.16  |      Q |         |        V|         |
16+55       1.8712      5.37  |     Q  |         |         V         |
17+ 0       1.9044      4.82  |    Q   |         |         V         |
17+ 5       1.9338      4.28  |   Q    |         |         |V        |
17+10       1.9594      3.71  |  Q     |         |         |V        |
17+15       1.9826      3.36  |  Q     |         |         | V       |
17+20       2.0039      3.09  |  Q     |         |         | V       |
17+25       2.0235      2.85  |  Q     |         |         | V       |
17+30       2.0413      2.59  |  Q     |         |         |  V      |
17+35       2.0577      2.37  |  Q     |         |         |  V      |
17+40       2.0729      2.22  | Q      |         |         |  V      |
17+45       2.0869      2.02  | Q      |         |         |  V      |
17+50       2.0999      1.89  | Q      |         |         |   V     |
17+55       2.1115      1.69  | Q      |         |         |   V     |
18+ 0       2.1224      1.58  | Q      |         |         |   V     |
18+ 5       2.1321      1.40  |Q       |         |         |   V     |
18+10       2.1414      1.35  |Q       |         |         |   V     |
18+15       2.1507      1.36  |Q       |         |         |   V     |
18+20       2.1600      1.35  |Q       |         |         |    V    |
18+25       2.1691      1.32  |Q       |         |         |    V    |
18+30       2.1779      1.28  |Q       |         |         |    V    |
18+35       2.1859      1.17  |Q       |         |         |    V    |
18+40       2.1934      1.09  |Q       |         |         |    V    |
18+45       2.2007      1.05  |Q       |         |         |    V    |
18+50       2.2074      0.98  |Q       |         |         |    V    |
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```
18+55       2.2133      0.85  |Q         |          |          |    V    |
19+ 0       2.2189      0.83  |Q         |          |          |     V   |
19+ 5       2.2245      0.81  |Q         |          |          |     V   |
19+10       2.2299      0.79  |Q         |          |          |     V   |
19+15       2.2352      0.77  |Q         |          |          |     V   |
19+20       2.2404      0.76  |Q         |          |          |     V   |
19+25       2.2455      0.74  Q          |          |          |     V   |
19+30       2.2506      0.73  Q          |          |          |     V   |
19+35       2.2555      0.71  Q          |          |          |     V   |
19+40       2.2603      0.70  Q          |          |          |     V   |
19+45       2.2651      0.69  Q          |          |          |     V   |
19+50       2.2697      0.68  Q          |          |          |     V   |
19+55       2.2743      0.67  Q          |          |          |     V   |
20+ 0       2.2789      0.66  Q          |          |          |      V  |
20+ 5       2.2833      0.65  Q          |          |          |      V  |
20+10       2.2877      0.64  Q          |          |          |      V  |
20+15       2.2921      0.63  Q          |          |          |      V  |
20+20       2.2963      0.62  Q          |          |          |      V  |
20+25       2.3006      0.61  Q          |          |          |      V  |
20+30       2.3047      0.60  Q          |          |          |      V  |
20+35       2.3088      0.60  Q          |          |          |      V  |
20+40       2.3129      0.59  Q          |          |          |      V  |
20+45       2.3169      0.58  Q          |          |          |      V  |
20+50       2.3208      0.57  Q          |          |          |      V  |
20+55       2.3247      0.57  Q          |          |          |      V  |
21+ 0       2.3286      0.56  Q          |          |          |      V  |
21+ 5       2.3324      0.55  Q          |          |          |      V  |
21+10       2.3362      0.55  Q          |          |          |      V  |
21+15       2.3399      0.54  Q          |          |          |       V |
21+20       2.3436      0.53  Q          |          |          |       V |
21+25       2.3472      0.53  Q          |          |          |       V |
21+30       2.3508      0.52  Q          |          |          |       V |
21+35       2.3544      0.52  Q          |          |          |       V |
21+40       2.3579      0.51  Q          |          |          |       V |
21+45       2.3614      0.51  Q          |          |          |       V |
21+50       2.3649      0.50  Q          |          |          |       V |
21+55       2.3683      0.50  Q          |          |          |       V |
22+ 0       2.3717      0.49  Q          |          |          |       V |
22+ 5       2.3750      0.49  Q          |          |          |       V |
22+10       2.3784      0.48  Q          |          |          |       V |
22+15       2.3816      0.48  Q          |          |          |       V |
22+20       2.3849      0.47  Q          |          |          |       V |
22+25       2.3882      0.47  Q          |          |          |       V |
22+30       2.3914      0.47  Q          |          |          |       V |
22+35       2.3945      0.46  Q          |          |          |       V |
22+40       2.3977      0.46  Q          |          |          |       V |
22+45       2.4008      0.45  Q          |          |          |        V|
22+50       2.4039      0.45  Q          |          |          |        V|
22+55       2.4070      0.45  Q          |          |          |        V|
23+ 0       2.4100      0.44  Q          |          |          |        V|
23+ 5       2.4131      0.44  Q          |          |          |        V|
23+10       2.4161      0.44  Q          |          |          |        V|
23+15       2.4190      0.43  Q          |          |          |        V|
23+20       2.4220      0.43  Q          |          |          |        V|
23+25       2.4249      0.43  Q          |          |          |        V|
23+30       2.4278      0.42  Q          |          |          |        V|
23+35       2.4307      0.42  Q          |          |          |        V|
23+40       2.4336      0.42  Q          |          |          |        V|
23+45       2.4364      0.41  Q          |          |          |        V|
23+50       2.4393      0.41  Q          |          |          |        V|
23+55       2.4421      0.41  Q          |          |          |        V|
24+ 0       2.4449      0.40  Q          |          |          |        V|
24+ 5       2.4476      0.40  Q          |          |          |        V|
24+10       2.4502      0.38  Q          |          |          |        V|
24+15       2.4525      0.33  Q          |          |          |        V|
24+20       2.4542      0.25  Q          |          |          |        V|
24+25       2.4555      0.19  Q          |          |          |        V|
24+30       2.4566      0.15  Q          |          |          |        V|
24+35       2.4574      0.12  Q          |          |          |        V|
24+40       2.4581      0.10  Q          |          |          |        V|
24+45       2.4588      0.09  Q          |          |          |        V|
24+50       2.4593      0.08  Q          |          |          |        V|
24+55       2.4597      0.06  Q          |          |          |        V|
25+ 0       2.4601      0.06  Q          |          |          |        V|
25+ 5       2.4604      0.05  Q          |          |          |        V|
25+10       2.4607      0.04  Q          |          |          |        V|
25+15       2.4610      0.04  Q          |          |          |        V|
25+20       2.4612      0.03  Q          |          |          |        V|
25+25       2.4614      0.03  Q          |          |          |        V|
25+30       2.4615      0.02  Q          |          |          |        V|
25+35       2.4617      0.02  Q          |          |          |        V|
```

```
   25+40       2.4618      0.02  Q          |          |          |         v|
   25+45       2.4619      0.01  Q          |          |          |         v|
   25+50       2.4620      0.01  Q          |          |          |         v|
   25+55       2.4620      0.01  Q          |          |          |         v|
   26+ 0       2.4621      0.01  Q          |          |          |         v|
   26+ 5       2.4621      0.01  Q          |          |          |         v|
   26+10       2.4622      0.01  Q          |          |          |         v|
   26+15       2.4622      0.01  Q          |          |          |         v|
   26+20       2.4623      0.00  Q          |          |          |         v|
   26+25       2.4623      0.00  Q          |          |          |         v|
   26+30       2.4623      0.00  Q          |          |          |         v|
   26+35       2.4623      0.00  Q          |          |          |         v|
   26+40       2.4623      0.00  Q          |          |          |         v|
   26+45       2.4623      0.00  Q          |          |          |         v|
-----------------------------------------------------------------------
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ATTACHMENT 4

Developed On-Site Conditions
Rational Method Calculations

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                 San Bernardino County Rational Hydrology Program

                     (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2019 Version 9.1
        Rational Hydrology Study        Date: 06/23/22
----------------------------------------------------------------------
224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
DEVELOPED CONDITION - ON-SITE
10-YEAR, 1-HOUR STORM
BY: JTS  DATE: 06-23-22
----------------------------------------------------------------------


Program License Serial Number 6320

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

----------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     0.599 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        0.000 to Point/Station        1.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.1600     Max loss rate(Fm)=     0.067(In/Hr)
Initial subarea data:
Initial area flow distance =   859.030(Ft.)
Top (of initial area) elevation =  3068.490(Ft.)
Bottom (of initial area) elevation =  3057.570(Ft.)
Difference in elevation =    10.920(Ft.)
Slope =    0.01271  s(%)=       1.27
TC = k(0.314)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.211 min.
Rainfall intensity =      1.938(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.869
Subarea runoff =      5.136(CFS)
Total initial stream area =        3.050(Ac.)
Pervious area fraction = 0.160
Initial area Fm value =    0.067(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3054.070(Ft.)
Downstream point/station elevation =  3052.130(Ft.)
Pipe length  =   326.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     5.136(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =     5.136(CFS)
Normal flow depth in pipe =    8.92(In.)
Flow top width inside pipe =   23.19(In.)
Critical Depth =    9.58(In.)
Pipe flow velocity =      4.83(Ft/s)
Travel time through pipe =    1.13 min.
Time of concentration (TC) =    12.34 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        2.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0400     Max loss rate(Fm)=     0.017(In/Hr)
Time of concentration =    12.34 min.
Rainfall intensity =      1.813(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
```

```
rational method)(Q=KCIA) is C = 0.874
Subarea runoff =      1.644(CFS) for    1.230(Ac.)
Total runoff =      6.779(CFS)
Effective area this stream =        4.28(Ac.)
Total Study Area (Main Stream No. 1) =        4.28(Ac.)
Area averaged Fm value =    0.053(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3052.130(Ft.)
Downstream point/station elevation =  3050.850(Ft.)
Pipe length  =   254.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     6.779(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =     6.779(CFS)
Normal flow depth in pipe =   10.89(In.)
Flow top width inside pipe =   23.90(In.)
Critical Depth =   11.08(In.)
Pipe flow velocity =      4.90(Ft/s)
Travel time through pipe =    0.86 min.
Time of concentration (TC) =    13.20 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        3.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0400     Max loss rate(Fm)=     0.017(In/Hr)
Time of concentration =    13.20 min.
Rainfall intensity =      1.729(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.877
Subarea runoff =      1.710(CFS) for    1.320(Ac.)
Total runoff =      8.490(CFS)
Effective area this stream =        5.60(Ac.)
Total Study Area (Main Stream No. 1) =        5.60(Ac.)
Area averaged Fm value =    0.044(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3050.850(Ft.)
Downstream point/station elevation =  3049.620(Ft.)
Pipe length  =   244.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     8.490(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =     8.490(CFS)
Normal flow depth in pipe =   12.40(In.)
Flow top width inside pipe =   23.99(In.)
Critical Depth =   12.47(In.)
Pipe flow velocity =      5.18(Ft/s)
Travel time through pipe =    0.78 min.
Time of concentration (TC) =    13.98 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        4.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0400     Max loss rate(Fm)=     0.017(In/Hr)
Time of concentration =    13.98 min.
Rainfall intensity =      1.660(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.879
Subarea runoff =      2.051(CFS) for    1.620(Ac.)
Total runoff =     10.541(CFS)
Effective area this stream =        7.22(Ac.)
Total Study Area (Main Stream No. 1) =        7.22(Ac.)
Area averaged Fm value =    0.038(In/Hr)
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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3049.620(Ft.)
Downstream point/station elevation =  3049.080(Ft.)
Pipe length  =   175.82(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    10.541(CFS)
Given pipe size =     30.00(In.)
Calculated individual pipe flow  =    10.541(CFS)
Normal flow depth in pipe =   14.36(In.)
Flow top width inside pipe =   29.97(In.)
Critical Depth =   13.03(In.)
Pipe flow velocity =      4.54(Ft/s)
Travel time through pipe =    0.64 min.
Time of concentration (TC) =    14.63 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        5.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.8400     Max loss rate(Fm)=     0.353(In/Hr)
Time of concentration =    14.63 min.
Rainfall intensity =      1.609(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.864
Subarea runoff =      0.411(CFS) for    0.660(Ac.)
Total runoff =     10.951(CFS)
Effective area this stream =        7.88(Ac.)
Total Study Area (Main Stream No. 1) =        7.88(Ac.)
Area averaged Fm value =    0.064(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3049.080(Ft.)
Downstream point/station elevation =  3047.600(Ft.)
Pipe length  =   495.62(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    10.951(CFS)
Given pipe size =     30.00(In.)
Calculated individual pipe flow  =    10.951(CFS)
Normal flow depth in pipe =   14.80(In.)
Flow top width inside pipe =   30.00(In.)
Critical Depth =   13.29(In.)
Pipe flow velocity =      4.54(Ft/s)
Travel time through pipe =    1.82 min.
Time of concentration (TC) =    16.45 min.


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Process from Point/Station        5.000 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      7.880(Ac.)
Runoff from this stream =     10.951(CFS)
Time of concentration =   16.45 min.
Rainfall intensity =     1.482(In/Hr)
Area averaged loss rate (Fm) =    0.0645(In/Hr)
Area averaged Pervious ratio (Ap) = 0.1535


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Process from Point/Station        7.000 to Point/Station        8.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.2500     Max loss rate(Fm)=     0.105(In/Hr)
Initial subarea data:
Initial area flow distance =   144.770(Ft.)
Top (of initial area) elevation =  3062.200(Ft.)
Bottom (of initial area) elevation =  3056.310(Ft.)
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```
Difference in elevation =     5.890(Ft.)
Slope =    0.04069  s(%)=       4.07
TC = k(0.336)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    4.666 min.
Rainfall intensity =      3.580(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.874
Subarea runoff =      2.033(CFS)
Total initial stream area =        0.650(Ac.)
Pervious area fraction = 0.250
Initial area Fm value =    0.105(In/Hr)


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Process from Point/Station        8.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3052.310(Ft.)
Downstream point/station elevation =  3050.100(Ft.)
Pipe length  =    94.50(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     2.033(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     2.033(CFS)
Normal flow depth in pipe =    5.07(In.)
Flow top width inside pipe =   11.86(In.)
Critical Depth =    7.30(In.)
Pipe flow velocity =      6.43(Ft/s)
Travel time through pipe =    0.24 min.
Time of concentration (TC) =     4.91 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        8.000 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.650(Ac.)
Runoff from this stream =      2.033(CFS)
Time of concentration =    4.91 min.
Rainfall intensity =     3.454(In/Hr)
Area averaged loss rate (Fm) =    0.1050(In/Hr)
Area averaged Pervious ratio (Ap) = 0.2500


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        9.000 to Point/Station       10.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0700     Max loss rate(Fm)=     0.029(In/Hr)
Initial subarea data:
Initial area flow distance =   349.440(Ft.)
Top (of initial area) elevation =  3058.600(Ft.)
Bottom (of initial area) elevation =  3056.730(Ft.)
Difference in elevation =     1.870(Ft.)
Slope =    0.00535  s(%)=       0.54
TC = k(0.292)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.643 min.
Rainfall intensity =      2.325(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.889
Subarea runoff =      9.401(CFS)
Total initial stream area =        4.550(Ac.)
Pervious area fraction = 0.070
Initial area Fm value =    0.029(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3052.730(Ft.)
Downstream point/station elevation =  3050.250(Ft.)
Pipe length  =    24.48(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     9.401(CFS)
Given pipe size =     18.00(In.)
Calculated individual pipe flow  =     9.401(CFS)
Normal flow depth in pipe =    6.53(In.)
Flow top width inside pipe =   17.31(In.)
Critical Depth =   14.22(In.)
Pipe flow velocity =     16.24(Ft/s)
```

```
Travel time through pipe =    0.03 min.
Time of concentration (TC) =     8.67 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.000 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      4.550(Ac.)
Runoff from this stream =      9.401(CFS)
Time of concentration =    8.67 min.
Rainfall intensity =     2.320(In/Hr)
Area averaged loss rate (Fm) =    0.0294(In/Hr)
Area averaged Pervious ratio (Ap) = 0.0700


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       12.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0700     Max loss rate(Fm)=     0.029(In/Hr)
Initial subarea data:
Initial area flow distance =   362.800(Ft.)
Top (of initial area) elevation =  3060.730(Ft.)
Bottom (of initial area) elevation =  3057.050(Ft.)
Difference in elevation =     3.680(Ft.)
Slope =    0.01014  s(%)=       1.01
TC = k(0.292)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.721 min.
Rainfall intensity =      2.516(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.889
Subarea runoff =     10.296(CFS)
Total initial stream area =        4.600(Ac.)
Pervious area fraction = 0.070
Initial area Fm value =    0.029(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3053.050(Ft.)
Downstream point/station elevation =  3050.250(Ft.)
Pipe length  =    24.46(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    10.296(CFS)
Given pipe size =     18.00(In.)
Calculated individual pipe flow  =    10.296(CFS)
Normal flow depth in pipe =    6.63(In.)
Flow top width inside pipe =   17.37(In.)
Critical Depth =   14.81(In.)
Pipe flow velocity =     17.41(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =     7.74 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 4
Stream flow area =      4.600(Ac.)
Runoff from this stream =     10.296(CFS)
Time of concentration =    7.74 min.
Rainfall intensity =     2.511(In/Hr)
Area averaged loss rate (Fm) =    0.0294(In/Hr)
Area averaged Pervious ratio (Ap) = 0.0700
Summary of stream data:

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


1     10.95     7.880     16.45    0.064      1.482
2      2.03     0.650      4.91    0.105      3.454
3      9.40     4.550      8.67    0.029      2.320
4     10.30     4.600      7.74    0.029      2.511
Qmax(1) =
```

```
            1.000 *    1.000 *    10.951) +
            0.411 *    1.000 *     2.033) +
            0.634 *    1.000 *     9.401) +
            0.585 *    1.000 *    10.296) + =      23.774
Qmax(2) =
            2.391 *    0.299 *    10.951) +
            1.000 *    1.000 *     2.033) +
            1.495 *    0.566 *     9.401) +
            1.380 *    0.634 *    10.296) + =      26.822
Qmax(3) =
            1.592 *    0.527 *    10.951) +
            0.662 *    1.000 *     2.033) +
            1.000 *    1.000 *     9.401) +
            0.923 *    1.000 *    10.296) + =      29.436
Qmax(4) =
            1.726 *    0.471 *    10.951) +
            0.718 *    1.000 *     2.033) +
            1.083 *    0.893 *     9.401) +
            1.000 *    1.000 *    10.296) + =      29.753

Total of 4 streams to confluence:
Flow rates before confluence point:
      10.951       2.033       9.401      10.296
Maximum flow rates at confluence using above data:
       23.774       26.822       29.436       29.753
Area of streams before confluence:
        7.880        0.650        4.550        4.600
Effective area values after confluence:
       17.680        8.497       13.953       13.025
Results of confluence:
Total flow rate =     29.753(CFS)
Time of concentration =     7.744 min.
Effective stream area after confluence =     13.025(Ac.)
Study area average Pervious fraction(Ap) =  0.114
Study area average soil loss rate(Fm) =    0.048(In/Hr)
Study area total (this main stream) =      17.68(Ac.)
End of computations, Total Study Area =           17.68 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 0.114
Area averaged SCS curve number =  77.0
```

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                 San Bernardino County Rational Hydrology Program

                     (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2019 Version 9.1
        Rational Hydrology Study        Date: 06/23/22
----------------------------------------------------------------------
224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
DEVELOPED CONDITION - ON-SITE
100-YEAR, 1-HOUR STORM
BY: JTS  DATE: 06-23-22
----------------------------------------------------------------------


Program License Serial Number 6320

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

----------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
   10 Year storm 1 hour rainfall  =      0.599(In.)
  100 Year storm 1 hour rainfall  =      1.070(In.)
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.070 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        0.000 to Point/Station        1.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.1600     Max loss rate(Fm)=     0.067(In/Hr)
Initial subarea data:
Initial area flow distance =   859.030(Ft.)
Top (of initial area) elevation =  3068.490(Ft.)
Bottom (of initial area) elevation =  3057.570(Ft.)
Difference in elevation =    10.920(Ft.)
Slope =    0.01271  s(%)=       1.27
TC = k(0.314)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.211 min.
Rainfall intensity =      3.462(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.883
Subarea runoff =      9.319(CFS)
Total initial stream area =        3.050(Ac.)
Pervious area fraction = 0.160
Initial area Fm value =    0.067(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3054.070(Ft.)
Downstream point/station elevation =  3052.130(Ft.)
Pipe length  =   326.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     9.319(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =     9.319(CFS)
Normal flow depth in pipe =   12.48(In.)
Flow top width inside pipe =   23.98(In.)
Critical Depth =   13.09(In.)
Pipe flow velocity =      5.65(Ft/s)
Travel time through pipe =    0.96 min.
Time of concentration (TC) =    12.17 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        2.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0400     Max loss rate(Fm)=     0.017(In/Hr)
Time of concentration =    12.17 min.
```

```
Rainfall intensity =      3.268(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.885
Subarea runoff =      3.067(CFS) for    1.230(Ac.)
Total runoff =     12.386(CFS)
Effective area this stream =        4.28(Ac.)
Total Study Area (Main Stream No. 1) =        4.28(Ac.)
Area averaged Fm value =    0.053(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3052.130(Ft.)
Downstream point/station elevation =  3050.850(Ft.)
Pipe length  =   254.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    12.386(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =    12.386(CFS)
Normal flow depth in pipe =   15.82(In.)
Flow top width inside pipe =   22.75(In.)
Critical Depth =   15.17(In.)
Pipe flow velocity =      5.64(Ft/s)
Travel time through pipe =    0.75 min.
Time of concentration (TC) =    12.92 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        3.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0400     Max loss rate(Fm)=     0.017(In/Hr)
Time of concentration =    12.92 min.
Rainfall intensity =      3.134(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.887
Subarea runoff =      3.187(CFS) for    1.320(Ac.)
Total runoff =     15.573(CFS)
Effective area this stream =        5.60(Ac.)
Total Study Area (Main Stream No. 1) =        5.60(Ac.)
Area averaged Fm value =    0.044(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3050.850(Ft.)
Downstream point/station elevation =  3049.620(Ft.)
Pipe length  =   244.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    15.573(CFS)
Given pipe size =     24.00(In.)
Calculated individual pipe flow  =    15.573(CFS)
Normal flow depth in pipe =   19.03(In.)
Flow top width inside pipe =   19.45(In.)
Critical Depth =   17.08(In.)
Pipe flow velocity =      5.83(Ft/s)
Travel time through pipe =    0.70 min.
Time of concentration (TC) =    13.62 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        4.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0400     Max loss rate(Fm)=     0.017(In/Hr)
Time of concentration =    13.62 min.
Rainfall intensity =      3.021(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.889
Subarea runoff =      3.809(CFS) for    1.620(Ac.)
Total runoff =     19.382(CFS)
Effective area this stream =        7.22(Ac.)
Total Study Area (Main Stream No. 1) =        7.22(Ac.)
```

```
Area averaged Fm value =    0.038(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3049.620(Ft.)
Downstream point/station elevation =  3049.080(Ft.)
Pipe length  =   175.82(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    19.382(CFS)
Given pipe size =     30.00(In.)
Calculated individual pipe flow  =    19.382(CFS)
Normal flow depth in pipe =   21.30(In.)
Flow top width inside pipe =   27.22(In.)
Critical Depth =   17.93(In.)
Pipe flow velocity =      5.20(Ft/s)
Travel time through pipe =    0.56 min.
Time of concentration (TC) =    14.18 min.

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        5.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.8400     Max loss rate(Fm)=     0.353(In/Hr)
Time of concentration =    14.18 min.
Rainfall intensity =      2.936(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.880
Subarea runoff =      0.985(CFS) for    0.660(Ac.)
Total runoff =     20.368(CFS)
Effective area this stream =        7.88(Ac.)
Total Study Area (Main Stream No. 1) =        7.88(Ac.)
Area averaged Fm value =    0.064(In/Hr)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3049.080(Ft.)
Downstream point/station elevation =  3047.600(Ft.)
Pipe length  =   495.62(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    20.368(CFS)
Given pipe size =     30.00(In.)
Calculated individual pipe flow  =    20.368(CFS)
Normal flow depth in pipe =   22.43(In.)
Flow top width inside pipe =   26.06(In.)
Critical Depth =   18.40(In.)
Pipe flow velocity =      5.17(Ft/s)
Travel time through pipe =    1.60 min.
Time of concentration (TC) =    15.78 min.

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      7.880(Ac.)
Runoff from this stream =     20.368(CFS)
Time of concentration =   15.78 min.
Rainfall intensity =     2.725(In/Hr)
Area averaged loss rate (Fm) =    0.0645(In/Hr)
Area averaged Pervious ratio (Ap) = 0.1535

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        7.000 to Point/Station        8.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.2500     Max loss rate(Fm)=     0.105(In/Hr)
Initial subarea data:
Initial area flow distance =   144.770(Ft.)
```

```
Top (of initial area) elevation =  3062.200(Ft.)
Bottom (of initial area) elevation =  3056.310(Ft.)
Difference in elevation =     5.890(Ft.)
Slope =    0.04069  s(%)=       4.07
TC = k(0.336)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    4.666 min.
Rainfall intensity =      6.395(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.885
Subarea runoff =      3.680(CFS)
Total initial stream area =        0.650(Ac.)
Pervious area fraction = 0.250
Initial area Fm value =    0.105(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        8.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3052.310(Ft.)
Downstream point/station elevation =  3050.100(Ft.)
Pipe length  =    94.50(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     3.680(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     3.680(CFS)
Normal flow depth in pipe =    7.22(In.)
Flow top width inside pipe =   11.75(In.)
Critical Depth =    9.82(In.)
Pipe flow velocity =      7.45(Ft/s)
Travel time through pipe =    0.21 min.
Time of concentration (TC) =     4.88 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        8.000 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.650(Ac.)
Runoff from this stream =      3.680(CFS)
Time of concentration =    4.88 min.
Rainfall intensity =     6.200(In/Hr)
Area averaged loss rate (Fm) =    0.1050(In/Hr)
Area averaged Pervious ratio (Ap) = 0.2500


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        9.000 to Point/Station       10.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0700     Max loss rate(Fm)=     0.029(In/Hr)
Initial subarea data:
Initial area flow distance =   349.440(Ft.)
Top (of initial area) elevation =  3058.600(Ft.)
Bottom (of initial area) elevation =  3056.730(Ft.)
Difference in elevation =     1.870(Ft.)
Slope =    0.00535  s(%)=       0.54
TC = k(0.292)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.643 min.
Rainfall intensity =      4.153(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.894
Subarea runoff =     16.888(CFS)
Total initial stream area =        4.550(Ac.)
Pervious area fraction = 0.070
Initial area Fm value =    0.029(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3052.730(Ft.)
Downstream point/station elevation =  3050.250(Ft.)
Pipe length  =    24.48(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    16.888(CFS)
Given pipe size =     18.00(In.)
Calculated individual pipe flow  =    16.888(CFS)
Normal flow depth in pipe =    9.06(In.)
Flow top width inside pipe =   18.00(In.)
```

```
Critical depth could not be calculated.
Pipe flow velocity =     18.97(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =     8.66 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.000 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      4.550(Ac.)
Runoff from this stream =     16.888(CFS)
Time of concentration =    8.66 min.
Rainfall intensity =     4.146(In/Hr)
Area averaged loss rate (Fm) =    0.0294(In/Hr)
Area averaged Pervious ratio (Ap) = 0.0700


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       12.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________
Soil classification AP and SCS  values input by user
USER INPUT of soil data for subarea
SCS curve number for soil(AMC 2)  = 77.00
Pervious ratio(Ap) = 0.0700     Max loss rate(Fm)=     0.029(In/Hr)
Initial subarea data:
Initial area flow distance =   362.800(Ft.)
Top (of initial area) elevation =  3060.730(Ft.)
Bottom (of initial area) elevation =  3057.050(Ft.)
Difference in elevation =     3.680(Ft.)
Slope =    0.01014  s(%)=       1.01
TC = k(0.292)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.721 min.
Rainfall intensity =      4.495(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.894
Subarea runoff =     18.487(CFS)
Total initial stream area =        4.600(Ac.)
Pervious area fraction = 0.070
Initial area Fm value =    0.029(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station        6.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________
Upstream point/station elevation =  3053.050(Ft.)
Downstream point/station elevation =  3050.250(Ft.)
Pipe length  =    24.46(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    18.487(CFS)
Given pipe size =     18.00(In.)
Calculated individual pipe flow  =    18.487(CFS)
Normal flow depth in pipe =    9.21(In.)
Flow top width inside pipe =   18.00(In.)
Critical depth could not be calculated.
Pipe flow velocity =     20.31(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =     7.74 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 4
Stream flow area =      4.600(Ac.)
Runoff from this stream =     18.487(CFS)
Time of concentration =    7.74 min.
Rainfall intensity =     4.487(In/Hr)
Area averaged loss rate (Fm) =    0.0294(In/Hr)
Area averaged Pervious ratio (Ap) = 0.0700
Summary of stream data:

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


1     20.37     7.880     15.78    0.064      2.725
2      3.68     0.650      4.88    0.105      6.200
3     16.89     4.550      8.66    0.029      4.146
```

```
4     18.49     4.600      7.74    0.029      4.487
Qmax(1) =
           1.000 *    1.000 *    20.368) +
           0.430 *    1.000 *     3.680) +
           0.655 *    1.000 *    16.888) +
           0.605 *    1.000 *    18.487) + =      44.188
Qmax(2) =
           2.306 *    0.309 *    20.368) +
           1.000 *    1.000 *     3.680) +
           1.499 *    0.563 *    16.888) +
           1.384 *    0.630 *    18.487) + =      48.566
Qmax(3) =
           1.534 *    0.549 *    20.368) +
           0.663 *    1.000 *     3.680) +
           1.000 *    1.000 *    16.888) +
           0.924 *    1.000 *    18.487) + =      53.559
Qmax(4) =
           1.662 *    0.490 *    20.368) +
           0.719 *    1.000 *     3.680) +
           1.083 *    0.893 *    16.888) +
           1.000 *    1.000 *    18.487) + =      54.073

Total of 4 streams to confluence:
Flow rates before confluence point:
      20.368       3.680      16.888      18.487
Maximum flow rates at confluence using above data:
       44.188       48.566       53.559       54.073
Area of streams before confluence:
        7.880        0.650        4.550        4.600
Effective area values after confluence:
       17.680        8.545       14.127       13.180
Results of confluence:
Total flow rate =     54.073(CFS)
Time of concentration =     7.741 min.
Effective stream area after confluence =     13.180(Ac.)
Study area average Pervious fraction(Ap) =  0.114
Study area average soil loss rate(Fm) =    0.048(In/Hr)
Study area total (this main stream) =      17.68(Ac.)
End of computations, Total Study Area =           17.68 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 0.114
Area averaged SCS curve number =  77.0
```

ATTACHMENT 5

Developed On-site Conditions
Unit Method 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 06/23/22

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
DEVELOPED CONDITION - ON-SITE
2-YEAR, 24-HOUR STORM
BY: JTS DATE: 06-23-22

Storm Event Year = 2

Antecedent Moisture Condition = 1

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
17.68	1	0.60
Rainfall data for year 2		
17.68	6	0.75
Rainfall data for year 2		
17.68	24	1.30
Rainfall data for year 100		
17.68	1	1.07
Rainfall data for year 100		
17.68	6	1.99
Rainfall data for year 100		
17.68	24	3.39

++

******** Area-averaged max loss rate, Fm ********

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
77.0	59.4	17.68	1.000	0.688	0.110	0.076

Area-averaged adjusted loss rate Fm (In/Hr) = 0.076

********* Area-Averaged low loss rate fraction, Yb **********

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
1.94	0.110	77.0	59.4	6.50	0.000
15.74	0.890	98.0	98.0	0.20	0.834

Area-averaged catchment yield fraction, Y = 0.742
Area-averaged low loss fraction, Yb = 0.258
User entry of time of concentration = 0.129 (hours)
++
Watershed area = 17.68(Ac.)

Catchment Lag time = 0.103 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 80.7494
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.076(In/Hr)
Average low loss rate fraction (Yb) = 0.258 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.128(In)
Computed peak 30-minute rainfall = 0.219(In)
Specified peak 1-hour rainfall = 0.270(In)
Computed peak 3-hour rainfall = 0.506(In)
Specified peak 6-hour rainfall = 0.753(In)
Specified peak 24-hour rainfall = 1.300(In)

Rainfall depth area reduction factors:
Using a total area of 17.68(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.128(In)
30-minute factor = 0.999 Adjusted rainfall = 0.219(In)
1-hour factor = 0.999 Adjusted rainfall = 0.270(In)
3-hour factor = 1.000 Adjusted rainfall = 0.506(In)
6-hour factor = 1.000 Adjusted rainfall = 0.753(In)
24-hour factor = 1.000 Adjusted rainfall = 1.300(In)

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

Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 213.82 (CFS))	
1	10.956	23.427
2	57.842	100.249
3	78.112	43.341
4	87.134	19.290
5	92.184	10.799
6	95.341	6.750
7	97.324	4.240
8	98.382	2.263
9	99.311	1.985
10	100.000	1.473

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.1279	0.1279
2	0.1575	0.0296
3	0.1778	0.0204
4	0.1939	0.0160
5	0.2073	0.0134
6	0.2190	0.0117
7	0.2293	0.0104
8	0.2387	0.0094
9	0.2473	0.0086
10	0.2552	0.0079
11	0.2626	0.0074
12	0.2696	0.0069
13	0.2822	0.0127
14	0.2945	0.0123
15	0.3064	0.0119
16	0.3179	0.0116
17	0.3292	0.0112
18	0.3401	0.0110
19	0.3508	0.0107
20	0.3613	0.0105
21	0.3716	0.0103
22	0.3816	0.0100
23	0.3915	0.0099
24	0.4011	0.0097
25	0.4107	0.0095
26	0.4200	0.0093
27	0.4292	0.0092
28	0.4382	0.0090
29	0.4471	0.0089
30	0.4559	0.0088
31	0.4646	0.0087
32	0.4731	0.0085
33	0.4815	0.0084
34	0.4898	0.0083
35	0.4981	0.0082

36	0.5062	0.0081
37	0.5142	0.0080
38	0.5221	0.0079
39	0.5299	0.0078
40	0.5377	0.0077
41	0.5453	0.0077
42	0.5529	0.0076
43	0.5604	0.0075
44	0.5678	0.0074
45	0.5752	0.0074
46	0.5825	0.0073
47	0.5897	0.0072
48	0.5969	0.0072
49	0.6040	0.0071
50	0.6110	0.0070
51	0.6180	0.0070
52	0.6249	0.0069
53	0.6317	0.0069
54	0.6385	0.0068
55	0.6453	0.0067
56	0.6520	0.0067
57	0.6586	0.0066
58	0.6652	0.0066
59	0.6718	0.0065
60	0.6783	0.0065
61	0.6847	0.0065
62	0.6911	0.0064
63	0.6975	0.0064
64	0.7038	0.0063
65	0.7101	0.0063
66	0.7163	0.0062
67	0.7225	0.0062
68	0.7287	0.0062
69	0.7348	0.0061
70	0.7409	0.0061
71	0.7469	0.0060
72	0.7530	0.0060
73	0.7571	0.0041
74	0.7611	0.0041
75	0.7652	0.0040
76	0.7692	0.0040
77	0.7731	0.0040
78	0.7771	0.0039
79	0.7810	0.0039
80	0.7849	0.0039
81	0.7887	0.0039
82	0.7925	0.0038
83	0.7963	0.0038
84	0.8001	0.0038
85	0.8038	0.0037
86	0.8075	0.0037
87	0.8112	0.0037
88	0.8149	0.0037
89	0.8185	0.0036
90	0.8221	0.0036
91	0.8257	0.0036
92	0.8293	0.0036
93	0.8328	0.0035
94	0.8363	0.0035
95	0.8398	0.0035
96	0.8433	0.0035
97	0.8468	0.0034
98	0.8502	0.0034
99	0.8536	0.0034
100	0.8570	0.0034
101	0.8603	0.0034
102	0.8637	0.0033
103	0.8670	0.0033
104	0.8703	0.0033
105	0.8736	0.0033
106	0.8769	0.0033
107	0.8801	0.0032
108	0.8834	0.0032
109	0.8866	0.0032
110	0.8898	0.0032
111	0.8929	0.0032
112	0.8961	0.0032
113	0.8992	0.0031
114	0.9024	0.0031
115	0.9055	0.0031
116	0.9086	0.0031

117	0.9117	0.0031
118	0.9147	0.0031
119	0.9178	0.0030
120	0.9208	0.0030
121	0.9238	0.0030
122	0.9268	0.0030
123	0.9298	0.0030
124	0.9328	0.0030
125	0.9357	0.0030
126	0.9387	0.0029
127	0.9416	0.0029
128	0.9445	0.0029
129	0.9474	0.0029
130	0.9503	0.0029
131	0.9532	0.0029
132	0.9560	0.0029
133	0.9589	0.0028
134	0.9617	0.0028
135	0.9645	0.0028
136	0.9673	0.0028
137	0.9701	0.0028
138	0.9729	0.0028
139	0.9757	0.0028
140	0.9784	0.0028
141	0.9812	0.0027
142	0.9839	0.0027
143	0.9866	0.0027
144	0.9894	0.0027
145	0.9921	0.0027
146	0.9947	0.0027
147	0.9974	0.0027
148	1.0001	0.0027
149	1.0027	0.0027
150	1.0054	0.0026
151	1.0080	0.0026
152	1.0107	0.0026
153	1.0133	0.0026
154	1.0159	0.0026
155	1.0185	0.0026
156	1.0210	0.0026
157	1.0236	0.0026
158	1.0262	0.0026
159	1.0287	0.0026
160	1.0313	0.0025
161	1.0338	0.0025
162	1.0363	0.0025
163	1.0389	0.0025
164	1.0414	0.0025
165	1.0439	0.0025
166	1.0463	0.0025
167	1.0488	0.0025
168	1.0513	0.0025
169	1.0538	0.0025
170	1.0562	0.0025
171	1.0586	0.0024
172	1.0611	0.0024
173	1.0635	0.0024
174	1.0659	0.0024
175	1.0683	0.0024
176	1.0707	0.0024
177	1.0731	0.0024
178	1.0755	0.0024
179	1.0779	0.0024
180	1.0803	0.0024
181	1.0826	0.0024
182	1.0850	0.0024
183	1.0873	0.0023
184	1.0897	0.0023
185	1.0920	0.0023
186	1.0943	0.0023
187	1.0966	0.0023
188	1.0989	0.0023
189	1.1012	0.0023
190	1.1035	0.0023
191	1.1058	0.0023
192	1.1081	0.0023
193	1.1103	0.0023
194	1.1126	0.0023
195	1.1149	0.0023
196	1.1171	0.0022
197	1.1194	0.0022

198	1.1216	0.0022
199	1.1238	0.0022
200	1.1260	0.0022
201	1.1282	0.0022
202	1.1305	0.0022
203	1.1327	0.0022
204	1.1349	0.0022
205	1.1370	0.0022
206	1.1392	0.0022
207	1.1414	0.0022
208	1.1436	0.0022
209	1.1457	0.0022
210	1.1479	0.0022
211	1.1500	0.0022
212	1.1522	0.0021
213	1.1543	0.0021
214	1.1564	0.0021
215	1.1586	0.0021
216	1.1607	0.0021
217	1.1628	0.0021
218	1.1649	0.0021
219	1.1670	0.0021
220	1.1691	0.0021
221	1.1712	0.0021
222	1.1733	0.0021
223	1.1754	0.0021
224	1.1774	0.0021
225	1.1795	0.0021
226	1.1816	0.0021
227	1.1836	0.0021
228	1.1857	0.0021
229	1.1877	0.0020
230	1.1898	0.0020
231	1.1918	0.0020
232	1.1938	0.0020
233	1.1959	0.0020
234	1.1979	0.0020
235	1.1999	0.0020
236	1.2019	0.0020
237	1.2039	0.0020
238	1.2059	0.0020
239	1.2079	0.0020
240	1.2099	0.0020
241	1.2119	0.0020
242	1.2138	0.0020
243	1.2158	0.0020
244	1.2178	0.0020
245	1.2197	0.0020
246	1.2217	0.0020
247	1.2237	0.0020
248	1.2256	0.0019
249	1.2276	0.0019
250	1.2295	0.0019
251	1.2314	0.0019
252	1.2334	0.0019
253	1.2353	0.0019
254	1.2372	0.0019
255	1.2391	0.0019
256	1.2410	0.0019
257	1.2429	0.0019
258	1.2448	0.0019
259	1.2467	0.0019
260	1.2486	0.0019
261	1.2505	0.0019
262	1.2524	0.0019
263	1.2543	0.0019
264	1.2562	0.0019
265	1.2580	0.0019
266	1.2599	0.0019
267	1.2618	0.0019
268	1.2636	0.0019
269	1.2655	0.0019
270	1.2673	0.0019
271	1.2692	0.0018
272	1.2710	0.0018
273	1.2729	0.0018
274	1.2747	0.0018
275	1.2765	0.0018
276	1.2784	0.0018
277	1.2802	0.0018
278	1.2820	0.0018

279	1.2838	0.0018
280	1.2856	0.0018
281	1.2874	0.0018
282	1.2892	0.0018
283	1.2910	0.0018
284	1.2928	0.0018
285	1.2946	0.0018
286	1.2964	0.0018
287	1.2982	0.0018
288	1.3000	0.0018

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0018	0.0005	0.0013
2	0.0018	0.0005	0.0013
3	0.0018	0.0005	0.0013
4	0.0018	0.0005	0.0013
5	0.0018	0.0005	0.0013
6	0.0018	0.0005	0.0013
7	0.0018	0.0005	0.0013
8	0.0018	0.0005	0.0013
9	0.0018	0.0005	0.0014
10	0.0018	0.0005	0.0014
11	0.0018	0.0005	0.0014
12	0.0018	0.0005	0.0014
13	0.0019	0.0005	0.0014
14	0.0019	0.0005	0.0014
15	0.0019	0.0005	0.0014
16	0.0019	0.0005	0.0014
17	0.0019	0.0005	0.0014
18	0.0019	0.0005	0.0014
19	0.0019	0.0005	0.0014
20	0.0019	0.0005	0.0014
21	0.0019	0.0005	0.0014
22	0.0019	0.0005	0.0014
23	0.0019	0.0005	0.0014
24	0.0019	0.0005	0.0014
25	0.0019	0.0005	0.0014
26	0.0019	0.0005	0.0014
27	0.0019	0.0005	0.0014
28	0.0019	0.0005	0.0014
29	0.0020	0.0005	0.0015
30	0.0020	0.0005	0.0015
31	0.0020	0.0005	0.0015
32	0.0020	0.0005	0.0015
33	0.0020	0.0005	0.0015
34	0.0020	0.0005	0.0015
35	0.0020	0.0005	0.0015
36	0.0020	0.0005	0.0015
37	0.0020	0.0005	0.0015
38	0.0020	0.0005	0.0015
39	0.0020	0.0005	0.0015
40	0.0020	0.0005	0.0015
41	0.0021	0.0005	0.0015
42	0.0021	0.0005	0.0015
43	0.0021	0.0005	0.0015
44	0.0021	0.0005	0.0015
45	0.0021	0.0005	0.0015
46	0.0021	0.0005	0.0016
47	0.0021	0.0005	0.0016
48	0.0021	0.0005	0.0016
49	0.0021	0.0005	0.0016
50	0.0021	0.0005	0.0016
51	0.0021	0.0006	0.0016
52	0.0021	0.0006	0.0016
53	0.0022	0.0006	0.0016
54	0.0022	0.0006	0.0016
55	0.0022	0.0006	0.0016
56	0.0022	0.0006	0.0016
57	0.0022	0.0006	0.0016
58	0.0022	0.0006	0.0016
59	0.0022	0.0006	0.0016
60	0.0022	0.0006	0.0016
61	0.0022	0.0006	0.0017
62	0.0022	0.0006	0.0017
63	0.0023	0.0006	0.0017
64	0.0023	0.0006	0.0017
65	0.0023	0.0006	0.0017
66	0.0023	0.0006	0.0017

67	0.0023	0.0006	0.0017
68	0.0023	0.0006	0.0017
69	0.0023	0.0006	0.0017
70	0.0023	0.0006	0.0017
71	0.0023	0.0006	0.0017
72	0.0024	0.0006	0.0017
73	0.0024	0.0006	0.0018
74	0.0024	0.0006	0.0018
75	0.0024	0.0006	0.0018
76	0.0024	0.0006	0.0018
77	0.0024	0.0006	0.0018
78	0.0024	0.0006	0.0018
79	0.0024	0.0006	0.0018
80	0.0025	0.0006	0.0018
81	0.0025	0.0006	0.0018
82	0.0025	0.0006	0.0018
83	0.0025	0.0006	0.0019
84	0.0025	0.0006	0.0019
85	0.0025	0.0007	0.0019
86	0.0025	0.0007	0.0019
87	0.0026	0.0007	0.0019
88	0.0026	0.0007	0.0019
89	0.0026	0.0007	0.0019
90	0.0026	0.0007	0.0019
91	0.0026	0.0007	0.0019
92	0.0026	0.0007	0.0019
93	0.0026	0.0007	0.0020
94	0.0027	0.0007	0.0020
95	0.0027	0.0007	0.0020
96	0.0027	0.0007	0.0020
97	0.0027	0.0007	0.0020
98	0.0027	0.0007	0.0020
99	0.0027	0.0007	0.0020
100	0.0028	0.0007	0.0020
101	0.0028	0.0007	0.0021
102	0.0028	0.0007	0.0021
103	0.0028	0.0007	0.0021
104	0.0028	0.0007	0.0021
105	0.0029	0.0007	0.0021
106	0.0029	0.0007	0.0021
107	0.0029	0.0007	0.0022
108	0.0029	0.0008	0.0022
109	0.0029	0.0008	0.0022
110	0.0030	0.0008	0.0022
111	0.0030	0.0008	0.0022
112	0.0030	0.0008	0.0022
113	0.0030	0.0008	0.0022
114	0.0030	0.0008	0.0023
115	0.0031	0.0008	0.0023
116	0.0031	0.0008	0.0023
117	0.0031	0.0008	0.0023
118	0.0031	0.0008	0.0023
119	0.0032	0.0008	0.0024
120	0.0032	0.0008	0.0024
121	0.0032	0.0008	0.0024
122	0.0032	0.0008	0.0024
123	0.0033	0.0008	0.0024
124	0.0033	0.0009	0.0025
125	0.0033	0.0009	0.0025
126	0.0034	0.0009	0.0025
127	0.0034	0.0009	0.0025
128	0.0034	0.0009	0.0025
129	0.0035	0.0009	0.0026
130	0.0035	0.0009	0.0026
131	0.0035	0.0009	0.0026
132	0.0036	0.0009	0.0026
133	0.0036	0.0009	0.0027
134	0.0036	0.0009	0.0027
135	0.0037	0.0010	0.0027
136	0.0037	0.0010	0.0028
137	0.0038	0.0010	0.0028
138	0.0038	0.0010	0.0028
139	0.0039	0.0010	0.0029
140	0.0039	0.0010	0.0029
141	0.0039	0.0010	0.0029
142	0.0040	0.0010	0.0029
143	0.0040	0.0010	0.0030
144	0.0041	0.0011	0.0030
145	0.0060	0.0016	0.0045
146	0.0060	0.0016	0.0045
147	0.0061	0.0016	0.0045

148	0.0062	0.0016	0.0046
149	0.0062	0.0016	0.0046
150	0.0063	0.0016	0.0047
151	0.0064	0.0016	0.0047
152	0.0064	0.0017	0.0048
153	0.0065	0.0017	0.0048
154	0.0065	0.0017	0.0049
155	0.0066	0.0017	0.0049
156	0.0067	0.0017	0.0050
157	0.0068	0.0018	0.0050
158	0.0069	0.0018	0.0051
159	0.0070	0.0018	0.0052
160	0.0070	0.0018	0.0052
161	0.0072	0.0018	0.0053
162	0.0072	0.0019	0.0054
163	0.0074	0.0019	0.0055
164	0.0074	0.0019	0.0055
165	0.0076	0.0020	0.0056
166	0.0077	0.0020	0.0057
167	0.0078	0.0020	0.0058
168	0.0079	0.0020	0.0059
169	0.0081	0.0021	0.0060
170	0.0082	0.0021	0.0061
171	0.0084	0.0022	0.0062
172	0.0085	0.0022	0.0063
173	0.0088	0.0023	0.0065
174	0.0089	0.0023	0.0066
175	0.0092	0.0024	0.0068
176	0.0093	0.0024	0.0069
177	0.0097	0.0025	0.0072
178	0.0099	0.0025	0.0073
179	0.0103	0.0026	0.0076
180	0.0105	0.0027	0.0078
181	0.0110	0.0028	0.0081
182	0.0112	0.0029	0.0083
183	0.0119	0.0031	0.0088
184	0.0123	0.0032	0.0091
185	0.0069	0.0018	0.0052
186	0.0074	0.0019	0.0055
187	0.0086	0.0022	0.0064
188	0.0094	0.0024	0.0070
189	0.0117	0.0030	0.0086
190	0.0134	0.0035	0.0100
191	0.0204	0.0053	0.0151
192	0.0296	0.0063	0.0233
193	0.1279	0.0063	0.1216
194	0.0160	0.0041	0.0119
195	0.0104	0.0027	0.0077
196	0.0079	0.0021	0.0059
197	0.0127	0.0033	0.0094
198	0.0116	0.0030	0.0086
199	0.0107	0.0028	0.0079
200	0.0100	0.0026	0.0075
201	0.0095	0.0025	0.0070
202	0.0090	0.0023	0.0067
203	0.0087	0.0022	0.0064
204	0.0083	0.0021	0.0062
205	0.0080	0.0021	0.0059
206	0.0077	0.0020	0.0057
207	0.0075	0.0019	0.0056
208	0.0073	0.0019	0.0054
209	0.0071	0.0018	0.0053
210	0.0069	0.0018	0.0051
211	0.0067	0.0017	0.0050
212	0.0066	0.0017	0.0049
213	0.0065	0.0017	0.0048
214	0.0063	0.0016	0.0047
215	0.0062	0.0016	0.0046
216	0.0061	0.0016	0.0045
217	0.0041	0.0011	0.0030
218	0.0040	0.0010	0.0030
219	0.0039	0.0010	0.0029
220	0.0038	0.0010	0.0028
221	0.0037	0.0010	0.0028
222	0.0037	0.0009	0.0027
223	0.0036	0.0009	0.0027
224	0.0035	0.0009	0.0026
225	0.0034	0.0009	0.0026
226	0.0034	0.0009	0.0025
227	0.0033	0.0009	0.0025
228	0.0033	0.0008	0.0024

229	0.0032	0.0008	0.0024
230	0.0032	0.0008	0.0023
231	0.0031	0.0008	0.0023
232	0.0031	0.0008	0.0023
233	0.0030	0.0008	0.0022
234	0.0030	0.0008	0.0022
235	0.0029	0.0008	0.0022
236	0.0029	0.0007	0.0021
237	0.0028	0.0007	0.0021
238	0.0028	0.0007	0.0021
239	0.0028	0.0007	0.0021
240	0.0027	0.0007	0.0020
241	0.0027	0.0007	0.0020
242	0.0027	0.0007	0.0020
243	0.0026	0.0007	0.0020
244	0.0026	0.0007	0.0019
245	0.0026	0.0007	0.0019
246	0.0025	0.0007	0.0019
247	0.0025	0.0006	0.0019
248	0.0025	0.0006	0.0018
249	0.0025	0.0006	0.0018
250	0.0024	0.0006	0.0018
251	0.0024	0.0006	0.0018
252	0.0024	0.0006	0.0018
253	0.0024	0.0006	0.0018
254	0.0023	0.0006	0.0017
255	0.0023	0.0006	0.0017
256	0.0023	0.0006	0.0017
257	0.0023	0.0006	0.0017
258	0.0022	0.0006	0.0017
259	0.0022	0.0006	0.0017
260	0.0022	0.0006	0.0016
261	0.0022	0.0006	0.0016
262	0.0022	0.0006	0.0016
263	0.0022	0.0006	0.0016
264	0.0021	0.0006	0.0016
265	0.0021	0.0005	0.0016
266	0.0021	0.0005	0.0016
267	0.0021	0.0005	0.0015
268	0.0021	0.0005	0.0015
269	0.0020	0.0005	0.0015
270	0.0020	0.0005	0.0015
271	0.0020	0.0005	0.0015
272	0.0020	0.0005	0.0015
273	0.0020	0.0005	0.0015
274	0.0020	0.0005	0.0015
275	0.0020	0.0005	0.0014
276	0.0019	0.0005	0.0014
277	0.0019	0.0005	0.0014
278	0.0019	0.0005	0.0014
279	0.0019	0.0005	0.0014
280	0.0019	0.0005	0.0014
281	0.0019	0.0005	0.0014
282	0.0019	0.0005	0.0014
283	0.0018	0.0005	0.0014
284	0.0018	0.0005	0.0014
285	0.0018	0.0005	0.0014
286	0.0018	0.0005	0.0013
287	0.0018	0.0005	0.0013
288	0.0018	0.0005	0.0013

Total soil rain loss = 0.31(In)
Total effective rainfall = 0.99(In)
Peak flow rate in flood hydrograph = 14.00(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	5.0	10.0	15.0	20.0
0+ 5	0.0002	0.03	Q	|	|	|	|
0+10	0.0013	0.16	Q	|	|	|	|
0+15	0.0029	0.22	Q	|	|	|	|
0+20	0.0046	0.25	Q	|	|	|	|
0+25	0.0064	0.26	Q	|	|	|	|
0+30	0.0082	0.27	Q	|	|	|	|

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0+35      0.0102      0.28  Q          |          |          |          |
0+40      0.0121      0.28  Q          |          |          |          |
0+45      0.0141      0.29  Q          |          |          |          |
0+50      0.0161      0.29  Q          |          |          |          |
0+55      0.0181      0.29  Q          |          |          |          |
1+ 0      0.0201      0.29  Q          |          |          |          |
1+ 5      0.0221      0.29  Q          |          |          |          |
1+10      0.0241      0.29  Q          |          |          |          |
1+15      0.0261      0.29  Q          |          |          |          |
1+20      0.0281      0.29  Q          |          |          |          |
1+25      0.0302      0.30  Q          |          |          |          |
1+30      0.0322      0.30  Q          |          |          |          |
1+35      0.0343      0.30  Q          |          |          |          |
1+40      0.0363      0.30  Q          |          |          |          |
1+45      0.0384      0.30  QV         |          |          |          |
1+50      0.0405      0.30  QV         |          |          |          |
1+55      0.0425      0.30  QV         |          |          |          |
2+ 0      0.0446      0.30  QV         |          |          |          |
2+ 5      0.0467      0.30  QV         |          |          |          |
2+10      0.0488      0.31  QV         |          |          |          |
2+15      0.0509      0.31  QV         |          |          |          |
2+20      0.0530      0.31  QV         |          |          |          |
2+25      0.0552      0.31  QV         |          |          |          |
2+30      0.0573      0.31  QV         |          |          |          |
2+35      0.0594      0.31  QV         |          |          |          |
2+40      0.0616      0.31  QV         |          |          |          |
2+45      0.0637      0.31  QV         |          |          |          |
2+50      0.0659      0.31  QV         |          |          |          |
2+55      0.0681      0.32  QV         |          |          |          |
3+ 0      0.0703      0.32  QV         |          |          |          |
3+ 5      0.0724      0.32  QV         |          |          |          |
3+10      0.0746      0.32  Q V        |          |          |          |
3+15      0.0768      0.32  Q V        |          |          |          |
3+20      0.0791      0.32  Q V        |          |          |          |
3+25      0.0813      0.32  Q V        |          |          |          |
3+30      0.0835      0.32  Q V        |          |          |          |
3+35      0.0858      0.33  Q V        |          |          |          |
3+40      0.0880      0.33  Q V        |          |          |          |
3+45      0.0903      0.33  Q V        |          |          |          |
3+50      0.0925      0.33  Q V        |          |          |          |
3+55      0.0948      0.33  Q V        |          |          |          |
4+ 0      0.0971      0.33  Q V        |          |          |          |
4+ 5      0.0994      0.33  Q V        |          |          |          |
4+10      0.1017      0.33  Q V        |          |          |          |
4+15      0.1040      0.34  Q V        |          |          |          |
4+20      0.1063      0.34  Q V        |          |          |          |
4+25      0.1087      0.34  Q V        |          |          |          |
4+30      0.1110      0.34  Q  V       |          |          |          |
4+35      0.1134      0.34  Q  V       |          |          |          |
4+40      0.1157      0.34  Q  V       |          |          |          |
4+45      0.1181      0.34  Q  V       |          |          |          |
4+50      0.1205      0.35  Q  V       |          |          |          |
4+55      0.1229      0.35  Q  V       |          |          |          |
5+ 0      0.1253      0.35  Q  V       |          |          |          |
5+ 5      0.1277      0.35  Q  V       |          |          |          |
5+10      0.1302      0.35  Q  V       |          |          |          |
5+15      0.1326      0.35  Q  V       |          |          |          |
5+20      0.1351      0.36  Q  V       |          |          |          |
5+25      0.1375      0.36  Q  V       |          |          |          |
5+30      0.1400      0.36  Q  V       |          |          |          |
5+35      0.1425      0.36  Q  V       |          |          |          |
5+40      0.1450      0.36  Q  V       |          |          |          |
5+45      0.1475      0.36  Q   V      |          |          |          |
5+50      0.1500      0.37  Q   V      |          |          |          |
5+55      0.1526      0.37  Q   V      |          |          |          |
6+ 0      0.1551      0.37  Q   V      |          |          |          |
6+ 5      0.1577      0.37  Q   V      |          |          |          |
6+10      0.1602      0.37  Q   V      |          |          |          |
6+15      0.1628      0.38  Q   V      |          |          |          |
6+20      0.1654      0.38  Q   V      |          |          |          |
6+25      0.1680      0.38  Q   V      |          |          |          |
6+30      0.1707      0.38  Q   V      |          |          |          |
6+35      0.1733      0.38  Q   V      |          |          |          |
6+40      0.1760      0.39  Q   V      |          |          |          |
6+45      0.1786      0.39  Q   V      |          |          |          |
6+50      0.1813      0.39  Q   V      |          |          |          |
6+55      0.1840      0.39  Q    V     |          |          |          |
7+ 0      0.1867      0.39  Q    V     |          |          |          |
7+ 5      0.1895      0.40  Q    V     |          |          |          |
7+10      0.1922      0.40  Q    V     |          |          |          |
7+15      0.1950      0.40  Q    V     |          |          |          |
```

```
 7+20       0.1977      0.40  Q    V    |          |          |          |
 7+25       0.2005      0.40  Q    V    |          |          |          |
 7+30       0.2033      0.41  Q    V    |          |          |          |
 7+35       0.2061      0.41  Q    V    |          |          |          |
 7+40       0.2090      0.41  Q    V    |          |          |          |
 7+45       0.2118      0.41  Q    V    |          |          |          |
 7+50       0.2147      0.42  Q    V    |          |          |          |
 7+55       0.2176      0.42  Q    V    |          |          |          |
 8+ 0       0.2205      0.42  Q     V   |          |          |          |
 8+ 5       0.2234      0.42  Q     V   |          |          |          |
 8+10       0.2264      0.43  Q     V   |          |          |          |
 8+15       0.2293      0.43  Q     V   |          |          |          |
 8+20       0.2323      0.43  Q     V   |          |          |          |
 8+25       0.2353      0.44  Q     V   |          |          |          |
 8+30       0.2384      0.44  Q     V   |          |          |          |
 8+35       0.2414      0.44  Q     V   |          |          |          |
 8+40       0.2445      0.44  Q     V   |          |          |          |
 8+45       0.2475      0.45  Q     V   |          |          |          |
 8+50       0.2506      0.45  Q     V   |          |          |          |
 8+55       0.2538      0.45  Q     V   |          |          |          |
 9+ 0       0.2569      0.46  Q      V  |          |          |          |
 9+ 5       0.2601      0.46  Q      V  |          |          |          |
 9+10       0.2633      0.46  Q      V  |          |          |          |
 9+15       0.2665      0.47  Q      V  |          |          |          |
 9+20       0.2697      0.47  Q      V  |          |          |          |
 9+25       0.2730      0.47  Q      V  |          |          |          |
 9+30       0.2763      0.48  Q      V  |          |          |          |
 9+35       0.2796      0.48  Q      V  |          |          |          |
 9+40       0.2829      0.48  Q      V  |          |          |          |
 9+45       0.2863      0.49  Q      V  |          |          |          |
 9+50       0.2897      0.49  Q      V  |          |          |          |
 9+55       0.2931      0.50  Q       V |          |          |          |
10+ 0       0.2965      0.50  |Q      V |          |          |          |
10+ 5       0.3000      0.50  |Q      V |          |          |          |
10+10       0.3035      0.51  |Q      V |          |          |          |
10+15       0.3070      0.51  |Q      V |          |          |          |
10+20       0.3106      0.52  |Q      V |          |          |          |
10+25       0.3142      0.52  |Q      V |          |          |          |
10+30       0.3178      0.53  |Q      V |          |          |          |
10+35       0.3215      0.53  |Q      V |          |          |          |
10+40       0.3252      0.54  |Q      V |          |          |          |
10+45       0.3289      0.54  |Q       V|          |          |          |
10+50       0.3326      0.55  |Q       V|          |          |          |
10+55       0.3364      0.55  |Q       V|          |          |          |
11+ 0       0.3403      0.56  |Q       V|          |          |          |
11+ 5       0.3441      0.56  |Q       V|          |          |          |
11+10       0.3480      0.57  |Q       V|          |          |          |
11+15       0.3520      0.57  |Q       V|          |          |          |
11+20       0.3560      0.58  |Q       V|          |          |          |
11+25       0.3600      0.58  |Q       V|          |          |          |
11+30       0.3641      0.59  |Q       V|          |          |          |
11+35       0.3682      0.60  |Q        V          |          |          |
11+40       0.3723      0.60  |Q        V          |          |          |
11+45       0.3765      0.61  |Q        V          |          |          |
11+50       0.3808      0.62  |Q        V          |          |          |
11+55       0.3851      0.62  |Q        V          |          |          |
12+ 0       0.3895      0.63  |Q        V          |          |          |
12+ 5       0.3941      0.67  |Q        V          |          |          |
12+10       0.3997      0.82  |Q        V          |          |          |
12+15       0.4059      0.89  |Q        |V         |          |          |
12+20       0.4122      0.92  |Q        |V         |          |          |
12+25       0.4188      0.95  |Q        |V         |          |          |
12+30       0.4254      0.97  |Q        |V         |          |          |
12+35       0.4322      0.98  |Q        |V         |          |          |
12+40       0.4390      1.00  |Q        | V        |          |          |
12+45       0.4460      1.01  | Q       | V        |          |          |
12+50       0.4530      1.02  | Q       | V        |          |          |
12+55       0.4601      1.03  | Q       | V        |          |          |
13+ 0       0.4673      1.04  | Q       | V        |          |          |
13+ 5       0.4745      1.05  | Q       | V        |          |          |
13+10       0.4819      1.07  | Q       |  V       |          |          |
13+15       0.4893      1.08  | Q       |  V       |          |          |
13+20       0.4969      1.09  | Q       |  V       |          |          |
13+25       0.5045      1.11  | Q       |  V       |          |          |
13+30       0.5122      1.12  | Q       |   V      |          |          |
13+35       0.5200      1.14  | Q       |   V      |          |          |
13+40       0.5280      1.15  | Q       |   V      |          |          |
13+45       0.5360      1.17  | Q       |   V      |          |          |
13+50       0.5442      1.19  | Q       |   V      |          |          |
13+55       0.5525      1.20  | Q       |    V     |          |          |
14+ 0       0.5609      1.22  | Q       |    V     |          |          |
```

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14+ 5        0.5694      1.24  | Q        |    V    |         |         |
14+10        0.5782      1.27  | Q        |    V    |         |         |
14+15        0.5870      1.29  | Q        |     V   |         |         |
14+20        0.5961      1.31  | Q        |     V   |         |         |
14+25        0.6053      1.34  | Q        |     V   |         |         |
14+30        0.6147      1.37  | Q        |     V   |         |         |
14+35        0.6243      1.39  | Q        |      V  |         |         |
14+40        0.6341      1.43  | Q        |      V  |         |         |
14+45        0.6442      1.46  | Q        |      V  |         |         |
14+50        0.6545      1.50  | Q        |      V  |         |         |
14+55        0.6651      1.54  |  Q       |       V |         |         |
15+ 0        0.6760      1.59  |  Q       |       V |         |         |
15+ 5        0.6872      1.63  |  Q       |       V |         |         |
15+10        0.6989      1.69  |  Q       |        V|         |         |
15+15        0.7109      1.75  |  Q       |        V|         |         |
15+20        0.7235      1.82  |  Q       |        V|         |         |
15+25        0.7358      1.79  |  Q       |         V         |         |
15+30        0.7456      1.43  | Q        |         V         |         |
15+35        0.7548      1.33  | Q        |         V         |         |
15+40        0.7642      1.38  | Q        |         V         |         |
15+45        0.7745      1.48  | Q        |         |V        |         |
15+50        0.7862      1.71  |  Q       |         |V        |         |
15+55        0.8002      2.04  |   Q      |         |V        |         |
16+ 0        0.8198      2.84  |    Q     |         | V       |         |
16+ 5        0.8627      6.23  |          | Q       |  V      |         |
16+10        0.9591     14.00  |          |         |    VQ   |         |
16+15        1.0101      7.39  |          |   Q     |     V   |         |
16+20        1.0390      4.21  |       Q  |         |      V  |         |
16+25        1.0594      2.96  |    Q     |         |      V  |         |
16+30        1.0777      2.66  |    Q     |         |       V|         |
16+35        1.0939      2.34  |   Q      |         |       V|         |
16+40        1.1079      2.03  |   Q      |         |        V        |
16+45        1.1209      1.90  |  Q       |         |        V        |
16+50        1.1329      1.74  |  Q       |         |        |V       |
16+55        1.1433      1.50  |  Q       |         |        |V       |
17+ 0        1.1531      1.43  | Q        |         |        |V       |
17+ 5        1.1626      1.37  | Q        |         |        |V       |
17+10        1.1717      1.32  | Q        |         |        | V      |
17+15        1.1804      1.27  | Q        |         |        | V      |
17+20        1.1889      1.23  | Q        |         |        | V      |
17+25        1.1971      1.19  | Q        |         |        | V      |
17+30        1.2051      1.16  | Q        |         |        | V      |
17+35        1.2128      1.12  | Q        |         |        |  V     |
17+40        1.2204      1.10  | Q        |         |        |  V     |
17+45        1.2277      1.07  | Q        |         |        |  V     |
17+50        1.2349      1.05  | Q        |         |        |  V     |
17+55        1.2420      1.02  | Q        |         |        |  V     |
18+ 0        1.2489      1.00  | Q        |         |        |   V    |
18+ 5        1.2554      0.95  |Q         |         |        |   V    |
18+10        1.2608      0.79  |Q         |         |        |   V    |
18+15        1.2658      0.71  |Q         |         |        |   V    |
18+20        1.2704      0.67  |Q         |         |        |   V    |
18+25        1.2748      0.64  |Q         |         |        |   V    |
18+30        1.2791      0.62  |Q         |         |        |    V   |
18+35        1.2832      0.60  |Q         |         |        |    V   |
18+40        1.2872      0.58  |Q         |         |        |    V   |
18+45        1.2912      0.57  |Q         |         |        |    V   |
18+50        1.2950      0.56  |Q         |         |        |    V   |
18+55        1.2988      0.55  |Q         |         |        |    V   |
19+ 0        1.3025      0.54  |Q         |         |        |    V   |
19+ 5        1.3061      0.53  |Q         |         |        |    V   |
19+10        1.3096      0.52  |Q         |         |        |    V   |
19+15        1.3131      0.51  |Q         |         |        |    V   |
19+20        1.3166      0.50  |Q         |         |        |     V  |
19+25        1.3200      0.49  Q          |         |        |     V  |
19+30        1.3233      0.48  Q          |         |        |     V  |
19+35        1.3266      0.48  Q          |         |        |     V  |
19+40        1.3299      0.47  Q          |         |        |     V  |
19+45        1.3330      0.46  Q          |         |        |     V  |
19+50        1.3362      0.46  Q          |         |        |     V  |
19+55        1.3393      0.45  Q          |         |        |     V  |
20+ 0        1.3424      0.44  Q          |         |        |     V  |
20+ 5        1.3454      0.44  Q          |         |        |     V  |
20+10        1.3484      0.43  Q          |         |        |     V  |
20+15        1.3513      0.43  Q          |         |        |     V  |
20+20        1.3542      0.42  Q          |         |        |      V |
20+25        1.3571      0.42  Q          |         |        |      V |
20+30        1.3599      0.41  Q          |         |        |      V |
20+35        1.3627      0.41  Q          |         |        |      V |
20+40        1.3655      0.40  Q          |         |        |      V |
20+45        1.3683      0.40  Q          |         |        |      V |
```

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   20+50       1.3710      0.39  Q          |          |          |       V  |
   20+55       1.3737      0.39  Q          |          |          |       V  |
   21+ 0       1.3763      0.39  Q          |          |          |       V  |
   21+ 5       1.3789      0.38  Q          |          |          |       V  |
   21+10       1.3815      0.38  Q          |          |          |       V  |
   21+15       1.3841      0.37  Q          |          |          |       V  |
   21+20       1.3867      0.37  Q          |          |          |       V  |
   21+25       1.3892      0.37  Q          |          |          |        V |
   21+30       1.3917      0.36  Q          |          |          |        V |
   21+35       1.3942      0.36  Q          |          |          |        V |
   21+40       1.3966      0.36  Q          |          |          |        V |
   21+45       1.3991      0.35  Q          |          |          |        V |
   21+50       1.4015      0.35  Q          |          |          |        V |
   21+55       1.4039      0.35  Q          |          |          |        V |
   22+ 0       1.4062      0.34  Q          |          |          |        V |
   22+ 5       1.4086      0.34  Q          |          |          |        V |
   22+10       1.4109      0.34  Q          |          |          |        V |
   22+15       1.4132      0.33  Q          |          |          |        V |
   22+20       1.4155      0.33  Q          |          |          |        V |
   22+25       1.4178      0.33  Q          |          |          |        V |
   22+30       1.4200      0.33  Q          |          |          |        V |
   22+35       1.4222      0.32  Q          |          |          |        V |
   22+40       1.4245      0.32  Q          |          |          |        V |
   22+45       1.4266      0.32  Q          |          |          |         V|
   22+50       1.4288      0.32  Q          |          |          |         V|
   22+55       1.4310      0.31  Q          |          |          |         V|
   23+ 0       1.4331      0.31  Q          |          |          |         V|
   23+ 5       1.4353      0.31  Q          |          |          |         V|
   23+10       1.4374      0.31  Q          |          |          |         V|
   23+15       1.4395      0.31  Q          |          |          |         V|
   23+20       1.4416      0.30  Q          |          |          |         V|
   23+25       1.4436      0.30  Q          |          |          |         V|
   23+30       1.4457      0.30  Q          |          |          |         V|
   23+35       1.4478      0.30  Q          |          |          |         V|
   23+40       1.4498      0.29  Q          |          |          |         V|
   23+45       1.4518      0.29  Q          |          |          |         V|
   23+50       1.4538      0.29  Q          |          |          |         V|
   23+55       1.4558      0.29  Q          |          |          |         V|
   24+ 0       1.4578      0.29  Q          |          |          |         V|
   24+ 5       1.4595      0.25  Q          |          |          |         V|
   24+10       1.4603      0.12  Q          |          |          |         V|
   24+15       1.4608      0.06  Q          |          |          |         V|
   24+20       1.4610      0.04  Q          |          |          |         V|
   24+25       1.4612      0.02  Q          |          |          |         V|
   24+30       1.4613      0.01  Q          |          |          |         V|
   24+35       1.4613      0.01  Q          |          |          |         V|
   24+40       1.4614      0.00  Q          |          |          |         V|
   24+45       1.4614      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  06/23/22

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6320

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224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
DEVELOPED CONDITION - ON-SITE
10-YEAR, 24-HOUR STORM
BY: JTS  DATE: 06-23-22
-------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            17.68            1           0.60
-------------------------------------------------------------------
Rainfall data for year 2
            17.68            6           0.75
-------------------------------------------------------------------
Rainfall data for year 2
            17.68           24           1.30
-------------------------------------------------------------------
Rainfall data for year 100
            17.68            1           1.07
-------------------------------------------------------------------
Rainfall data for year 100
            17.68            6           1.99
-------------------------------------------------------------------
Rainfall data for year 100
            17.68           24           3.39
-------------------------------------------------------------------
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 77.0      77.0         17.68      1.000     0.420    0.110    0.046

Area-averaged adjusted loss rate Fm (In/Hr) =  0.046

********* Area-Averaged low loss rate fraction, Yb **********

Area       Area          SCS CN    SCS CN      S     Pervious
 (Ac.)      Fract         (AMC2)    (AMC2)           Yield Fr
     1.94   0.110         77.0      77.0       2.99     0.248
    15.74   0.890         98.0      98.0       0.20     0.895

Area-averaged catchment yield fraction, Y =  0.824
Area-averaged low loss fraction, Yb =  0.176
User entry of time of concentration  =   0.129 (hours)
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area =      17.68(Ac.)
```

Catchment Lag time = 0.103 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 80.7494
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.046(In/Hr)
Average low loss rate fraction (Yb) = 0.176 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.284(In)
Computed peak 30-minute rainfall = 0.487(In)
Specified peak 1-hour rainfall = 0.599(In)
Computed peak 3-hour rainfall = 0.946(In)
Specified peak 6-hour rainfall = 1.262(In)
Specified peak 24-hour rainfall = 2.160(In)

Rainfall depth area reduction factors:
Using a total area of 17.68(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.284(In)
30-minute factor = 0.999 Adjusted rainfall = 0.486(In)
1-hour factor = 0.999 Adjusted rainfall = 0.599(In)
3-hour factor = 1.000 Adjusted rainfall = 0.946(In)
6-hour factor = 1.000 Adjusted rainfall = 1.262(In)
24-hour factor = 1.000 Adjusted rainfall = 2.160(In)

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

Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 213.82 (CFS))	
1	10.956	23.427
2	57.842	100.249
3	78.112	43.341
4	87.134	19.290
5	92.184	10.799
6	95.341	6.750
7	97.324	4.240
8	98.382	2.263
9	99.311	1.985
10	100.000	1.473

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2840	0.2840
2	0.3496	0.0656
3	0.3949	0.0452
4	0.4305	0.0356
5	0.4603	0.0298
6	0.4861	0.0259
7	0.5091	0.0230
8	0.5300	0.0208
9	0.5490	0.0191
10	0.5666	0.0176
11	0.5831	0.0164
12	0.5985	0.0154
13	0.6188	0.0203
14	0.6382	0.0194
15	0.6568	0.0186
16	0.6747	0.0179
17	0.6919	0.0173
18	0.7086	0.0167
19	0.7248	0.0161
20	0.7404	0.0157
21	0.7556	0.0152
22	0.7704	0.0148
23	0.7848	0.0144
24	0.7988	0.0140
25	0.8125	0.0137
26	0.8259	0.0134
27	0.8390	0.0131
28	0.8518	0.0128
29	0.8643	0.0125
30	0.8766	0.0123
31	0.8887	0.0121
32	0.9005	0.0118
33	0.9121	0.0116
34	0.9235	0.0114
35	0.9348	0.0112

36	0.9458	0.0110
37	0.9566	0.0108
38	0.9673	0.0107
39	0.9778	0.0105
40	0.9882	0.0104
41	0.9984	0.0102
42	1.0084	0.0101
43	1.0183	0.0099
44	1.0281	0.0098
45	1.0378	0.0097
46	1.0473	0.0095
47	1.0567	0.0094
48	1.0660	0.0093
49	1.0752	0.0092
50	1.0843	0.0091
51	1.0932	0.0090
52	1.1021	0.0089
53	1.1109	0.0088
54	1.1195	0.0087
55	1.1281	0.0086
56	1.1366	0.0085
57	1.1450	0.0084
58	1.1533	0.0083
59	1.1615	0.0082
60	1.1697	0.0081
61	1.1778	0.0081
62	1.1858	0.0080
63	1.1937	0.0079
64	1.2015	0.0078
65	1.2093	0.0078
66	1.2170	0.0077
67	1.2246	0.0076
68	1.2322	0.0076
69	1.2397	0.0075
70	1.2471	0.0074
71	1.2545	0.0074
72	1.2618	0.0073
73	1.2686	0.0068
74	1.2753	0.0067
75	1.2820	0.0067
76	1.2886	0.0066
77	1.2951	0.0065
78	1.3016	0.0065
79	1.3081	0.0064
80	1.3145	0.0064
81	1.3208	0.0063
82	1.3271	0.0063
83	1.3333	0.0063
84	1.3396	0.0062
85	1.3457	0.0062
86	1.3518	0.0061
87	1.3579	0.0061
88	1.3639	0.0060
89	1.3699	0.0060
90	1.3759	0.0059
91	1.3818	0.0059
92	1.3876	0.0059
93	1.3935	0.0058
94	1.3993	0.0058
95	1.4050	0.0058
96	1.4107	0.0057
97	1.4164	0.0057
98	1.4220	0.0056
99	1.4277	0.0056
100	1.4332	0.0056
101	1.4388	0.0055
102	1.4443	0.0055
103	1.4497	0.0055
104	1.4552	0.0054
105	1.4606	0.0054
106	1.4660	0.0054
107	1.4713	0.0053
108	1.4766	0.0053
109	1.4819	0.0053
110	1.4872	0.0053
111	1.4924	0.0052
112	1.4976	0.0052
113	1.5028	0.0052
114	1.5079	0.0051
115	1.5130	0.0051
116	1.5181	0.0051

117	1.5232	0.0051
118	1.5282	0.0050
119	1.5332	0.0050
120	1.5382	0.0050
121	1.5432	0.0050
122	1.5481	0.0049
123	1.5530	0.0049
124	1.5579	0.0049
125	1.5627	0.0049
126	1.5676	0.0048
127	1.5724	0.0048
128	1.5772	0.0048
129	1.5819	0.0048
130	1.5867	0.0047
131	1.5914	0.0047
132	1.5961	0.0047
133	1.6008	0.0047
134	1.6054	0.0047
135	1.6101	0.0046
136	1.6147	0.0046
137	1.6193	0.0046
138	1.6238	0.0046
139	1.6284	0.0046
140	1.6329	0.0045
141	1.6374	0.0045
142	1.6419	0.0045
143	1.6464	0.0045
144	1.6509	0.0045
145	1.6553	0.0044
146	1.6597	0.0044
147	1.6641	0.0044
148	1.6685	0.0044
149	1.6728	0.0044
150	1.6772	0.0043
151	1.6815	0.0043
152	1.6858	0.0043
153	1.6901	0.0043
154	1.6944	0.0043
155	1.6986	0.0043
156	1.7029	0.0042
157	1.7071	0.0042
158	1.7113	0.0042
159	1.7155	0.0042
160	1.7197	0.0042
161	1.7238	0.0042
162	1.7280	0.0041
163	1.7321	0.0041
164	1.7362	0.0041
165	1.7403	0.0041
166	1.7444	0.0041
167	1.7485	0.0041
168	1.7525	0.0041
169	1.7566	0.0040
170	1.7606	0.0040
171	1.7646	0.0040
172	1.7686	0.0040
173	1.7726	0.0040
174	1.7765	0.0040
175	1.7805	0.0040
176	1.7844	0.0039
177	1.7883	0.0039
178	1.7922	0.0039
179	1.7961	0.0039
180	1.8000	0.0039
181	1.8039	0.0039
182	1.8078	0.0039
183	1.8116	0.0038
184	1.8154	0.0038
185	1.8192	0.0038
186	1.8231	0.0038
187	1.8268	0.0038
188	1.8306	0.0038
189	1.8344	0.0038
190	1.8382	0.0038
191	1.8419	0.0037
192	1.8456	0.0037
193	1.8494	0.0037
194	1.8531	0.0037
195	1.8568	0.0037
196	1.8604	0.0037
197	1.8641	0.0037

198	1.8678	0.0037
199	1.8714	0.0037
200	1.8751	0.0036
201	1.8787	0.0036
202	1.8823	0.0036
203	1.8859	0.0036
204	1.8895	0.0036
205	1.8931	0.0036
206	1.8967	0.0036
207	1.9002	0.0036
208	1.9038	0.0036
209	1.9073	0.0035
210	1.9109	0.0035
211	1.9144	0.0035
212	1.9179	0.0035
213	1.9214	0.0035
214	1.9249	0.0035
215	1.9284	0.0035
216	1.9319	0.0035
217	1.9353	0.0035
218	1.9388	0.0035
219	1.9422	0.0034
220	1.9457	0.0034
221	1.9491	0.0034
222	1.9525	0.0034
223	1.9559	0.0034
224	1.9593	0.0034
225	1.9627	0.0034
226	1.9661	0.0034
227	1.9694	0.0034
228	1.9728	0.0034
229	1.9761	0.0033
230	1.9795	0.0033
231	1.9828	0.0033
232	1.9861	0.0033
233	1.9894	0.0033
234	1.9927	0.0033
235	1.9960	0.0033
236	1.9993	0.0033
237	2.0026	0.0033
238	2.0059	0.0033
239	2.0092	0.0033
240	2.0124	0.0033
241	2.0157	0.0032
242	2.0189	0.0032
243	2.0221	0.0032
244	2.0253	0.0032
245	2.0286	0.0032
246	2.0318	0.0032
247	2.0350	0.0032
248	2.0382	0.0032
249	2.0413	0.0032
250	2.0445	0.0032
251	2.0477	0.0032
252	2.0508	0.0032
253	2.0540	0.0032
254	2.0571	0.0031
255	2.0603	0.0031
256	2.0634	0.0031
257	2.0665	0.0031
258	2.0696	0.0031
259	2.0727	0.0031
260	2.0758	0.0031
261	2.0789	0.0031
262	2.0820	0.0031
263	2.0851	0.0031
264	2.0882	0.0031
265	2.0912	0.0031
266	2.0943	0.0031
267	2.0973	0.0030
268	2.1004	0.0030
269	2.1034	0.0030
270	2.1064	0.0030
271	2.1094	0.0030
272	2.1125	0.0030
273	2.1155	0.0030
274	2.1185	0.0030
275	2.1215	0.0030
276	2.1245	0.0030
277	2.1274	0.0030
278	2.1304	0.0030

279	2.1334	0.0030
280	2.1363	0.0030
281	2.1393	0.0030
282	2.1422	0.0029
283	2.1452	0.0029
284	2.1481	0.0029
285	2.1510	0.0029
286	2.1540	0.0029
287	2.1569	0.0029
288	2.1598	0.0029

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0029	0.0005	0.0024
2	0.0029	0.0005	0.0024
3	0.0029	0.0005	0.0024
4	0.0029	0.0005	0.0024
5	0.0029	0.0005	0.0024
6	0.0030	0.0005	0.0024
7	0.0030	0.0005	0.0024
8	0.0030	0.0005	0.0025
9	0.0030	0.0005	0.0025
10	0.0030	0.0005	0.0025
11	0.0030	0.0005	0.0025
12	0.0030	0.0005	0.0025
13	0.0030	0.0005	0.0025
14	0.0030	0.0005	0.0025
15	0.0030	0.0005	0.0025
16	0.0031	0.0005	0.0025
17	0.0031	0.0005	0.0025
18	0.0031	0.0005	0.0025
19	0.0031	0.0005	0.0025
20	0.0031	0.0005	0.0026
21	0.0031	0.0005	0.0026
22	0.0031	0.0005	0.0026
23	0.0031	0.0006	0.0026
24	0.0031	0.0006	0.0026
25	0.0032	0.0006	0.0026
26	0.0032	0.0006	0.0026
27	0.0032	0.0006	0.0026
28	0.0032	0.0006	0.0026
29	0.0032	0.0006	0.0026
30	0.0032	0.0006	0.0026
31	0.0032	0.0006	0.0027
32	0.0032	0.0006	0.0027
33	0.0033	0.0006	0.0027
34	0.0033	0.0006	0.0027
35	0.0033	0.0006	0.0027
36	0.0033	0.0006	0.0027
37	0.0033	0.0006	0.0027
38	0.0033	0.0006	0.0027
39	0.0033	0.0006	0.0027
40	0.0033	0.0006	0.0028
41	0.0034	0.0006	0.0028
42	0.0034	0.0006	0.0028
43	0.0034	0.0006	0.0028
44	0.0034	0.0006	0.0028
45	0.0034	0.0006	0.0028
46	0.0034	0.0006	0.0028
47	0.0034	0.0006	0.0028
48	0.0035	0.0006	0.0028
49	0.0035	0.0006	0.0029
50	0.0035	0.0006	0.0029
51	0.0035	0.0006	0.0029
52	0.0035	0.0006	0.0029
53	0.0035	0.0006	0.0029
54	0.0035	0.0006	0.0029
55	0.0036	0.0006	0.0029
56	0.0036	0.0006	0.0029
57	0.0036	0.0006	0.0030
58	0.0036	0.0006	0.0030
59	0.0036	0.0006	0.0030
60	0.0036	0.0006	0.0030
61	0.0037	0.0006	0.0030
62	0.0037	0.0006	0.0030
63	0.0037	0.0007	0.0030
64	0.0037	0.0007	0.0031
65	0.0037	0.0007	0.0031
66	0.0037	0.0007	0.0031

67	0.0038	0.0007	0.0031
68	0.0038	0.0007	0.0031
69	0.0038	0.0007	0.0031
70	0.0038	0.0007	0.0031
71	0.0038	0.0007	0.0032
72	0.0039	0.0007	0.0032
73	0.0039	0.0007	0.0032
74	0.0039	0.0007	0.0032
75	0.0039	0.0007	0.0032
76	0.0039	0.0007	0.0032
77	0.0040	0.0007	0.0033
78	0.0040	0.0007	0.0033
79	0.0040	0.0007	0.0033
80	0.0040	0.0007	0.0033
81	0.0041	0.0007	0.0033
82	0.0041	0.0007	0.0033
83	0.0041	0.0007	0.0034
84	0.0041	0.0007	0.0034
85	0.0041	0.0007	0.0034
86	0.0042	0.0007	0.0034
87	0.0042	0.0007	0.0035
88	0.0042	0.0007	0.0035
89	0.0042	0.0007	0.0035
90	0.0043	0.0008	0.0035
91	0.0043	0.0008	0.0035
92	0.0043	0.0008	0.0035
93	0.0043	0.0008	0.0036
94	0.0044	0.0008	0.0036
95	0.0044	0.0008	0.0036
96	0.0044	0.0008	0.0036
97	0.0045	0.0008	0.0037
98	0.0045	0.0008	0.0037
99	0.0045	0.0008	0.0037
100	0.0045	0.0008	0.0037
101	0.0046	0.0008	0.0038
102	0.0046	0.0008	0.0038
103	0.0046	0.0008	0.0038
104	0.0047	0.0008	0.0038
105	0.0047	0.0008	0.0039
106	0.0047	0.0008	0.0039
107	0.0048	0.0008	0.0039
108	0.0048	0.0008	0.0039
109	0.0048	0.0009	0.0040
110	0.0049	0.0009	0.0040
111	0.0049	0.0009	0.0040
112	0.0049	0.0009	0.0041
113	0.0050	0.0009	0.0041
114	0.0050	0.0009	0.0041
115	0.0051	0.0009	0.0042
116	0.0051	0.0009	0.0042
117	0.0051	0.0009	0.0042
118	0.0052	0.0009	0.0043
119	0.0052	0.0009	0.0043
120	0.0053	0.0009	0.0043
121	0.0053	0.0009	0.0044
122	0.0053	0.0009	0.0044
123	0.0054	0.0010	0.0045
124	0.0054	0.0010	0.0045
125	0.0055	0.0010	0.0045
126	0.0055	0.0010	0.0046
127	0.0056	0.0010	0.0046
128	0.0056	0.0010	0.0046
129	0.0057	0.0010	0.0047
130	0.0058	0.0010	0.0047
131	0.0058	0.0010	0.0048
132	0.0059	0.0010	0.0048
133	0.0059	0.0010	0.0049
134	0.0060	0.0011	0.0049
135	0.0061	0.0011	0.0050
136	0.0061	0.0011	0.0050
137	0.0062	0.0011	0.0051
138	0.0063	0.0011	0.0051
139	0.0063	0.0011	0.0052
140	0.0064	0.0011	0.0053
141	0.0065	0.0011	0.0054
142	0.0065	0.0012	0.0054
143	0.0067	0.0012	0.0055
144	0.0067	0.0012	0.0055
145	0.0073	0.0013	0.0060
146	0.0074	0.0013	0.0061
147	0.0075	0.0013	0.0062

148	0.0076	0.0013	0.0062
149	0.0077	0.0014	0.0063
150	0.0078	0.0014	0.0064
151	0.0079	0.0014	0.0065
152	0.0080	0.0014	0.0066
153	0.0081	0.0014	0.0067
154	0.0082	0.0015	0.0068
155	0.0084	0.0015	0.0069
156	0.0085	0.0015	0.0070
157	0.0087	0.0015	0.0071
158	0.0088	0.0015	0.0072
159	0.0090	0.0016	0.0074
160	0.0091	0.0016	0.0075
161	0.0093	0.0016	0.0077
162	0.0094	0.0017	0.0078
163	0.0097	0.0017	0.0080
164	0.0098	0.0017	0.0081
165	0.0101	0.0018	0.0083
166	0.0102	0.0018	0.0084
167	0.0105	0.0019	0.0087
168	0.0107	0.0019	0.0088
169	0.0110	0.0019	0.0091
170	0.0112	0.0020	0.0092
171	0.0116	0.0020	0.0096
172	0.0118	0.0021	0.0097
173	0.0123	0.0022	0.0101
174	0.0125	0.0022	0.0103
175	0.0131	0.0023	0.0108
176	0.0134	0.0024	0.0110
177	0.0140	0.0025	0.0116
178	0.0144	0.0025	0.0119
179	0.0152	0.0027	0.0125
180	0.0157	0.0028	0.0129
181	0.0167	0.0029	0.0137
182	0.0173	0.0030	0.0142
183	0.0186	0.0033	0.0153
184	0.0194	0.0034	0.0160
185	0.0154	0.0027	0.0127
186	0.0164	0.0029	0.0135
187	0.0191	0.0034	0.0157
188	0.0208	0.0037	0.0171
189	0.0259	0.0039	0.0220
190	0.0298	0.0039	0.0260
191	0.0452	0.0039	0.0414
192	0.0656	0.0039	0.0618
193	0.2840	0.0039	0.2801
194	0.0356	0.0039	0.0317
195	0.0230	0.0039	0.0192
196	0.0176	0.0031	0.0145
197	0.0203	0.0036	0.0167
198	0.0179	0.0032	0.0147
199	0.0161	0.0028	0.0133
200	0.0148	0.0026	0.0122
201	0.0137	0.0024	0.0113
202	0.0128	0.0023	0.0105
203	0.0121	0.0021	0.0099
204	0.0114	0.0020	0.0094
205	0.0108	0.0019	0.0089
206	0.0104	0.0018	0.0085
207	0.0099	0.0017	0.0082
208	0.0095	0.0017	0.0079
209	0.0092	0.0016	0.0076
210	0.0089	0.0016	0.0073
211	0.0086	0.0015	0.0071
212	0.0083	0.0015	0.0068
213	0.0081	0.0014	0.0066
214	0.0078	0.0014	0.0065
215	0.0076	0.0013	0.0063
216	0.0074	0.0013	0.0061
217	0.0068	0.0012	0.0056
218	0.0066	0.0012	0.0054
219	0.0064	0.0011	0.0053
220	0.0063	0.0011	0.0052
221	0.0062	0.0011	0.0051
222	0.0060	0.0011	0.0050
223	0.0059	0.0010	0.0049
224	0.0058	0.0010	0.0048
225	0.0057	0.0010	0.0047
226	0.0056	0.0010	0.0046
227	0.0055	0.0010	0.0045
228	0.0054	0.0009	0.0044

229	0.0053	0.0009	0.0044
230	0.0052	0.0009	0.0043
231	0.0051	0.0009	0.0042
232	0.0050	0.0009	0.0041
233	0.0050	0.0009	0.0041
234	0.0049	0.0009	0.0040
235	0.0048	0.0008	0.0040
236	0.0047	0.0008	0.0039
237	0.0047	0.0008	0.0039
238	0.0046	0.0008	0.0038
239	0.0046	0.0008	0.0037
240	0.0045	0.0008	0.0037
241	0.0044	0.0008	0.0037
242	0.0044	0.0008	0.0036
243	0.0043	0.0008	0.0036
244	0.0043	0.0008	0.0035
245	0.0042	0.0007	0.0035
246	0.0042	0.0007	0.0034
247	0.0041	0.0007	0.0034
248	0.0041	0.0007	0.0034
249	0.0040	0.0007	0.0033
250	0.0040	0.0007	0.0033
251	0.0040	0.0007	0.0033
252	0.0039	0.0007	0.0032
253	0.0039	0.0007	0.0032
254	0.0038	0.0007	0.0032
255	0.0038	0.0007	0.0031
256	0.0038	0.0007	0.0031
257	0.0037	0.0007	0.0031
258	0.0037	0.0006	0.0030
259	0.0037	0.0006	0.0030
260	0.0036	0.0006	0.0030
261	0.0036	0.0006	0.0030
262	0.0036	0.0006	0.0029
263	0.0035	0.0006	0.0029
264	0.0035	0.0006	0.0029
265	0.0035	0.0006	0.0029
266	0.0034	0.0006	0.0028
267	0.0034	0.0006	0.0028
268	0.0034	0.0006	0.0028
269	0.0033	0.0006	0.0028
270	0.0033	0.0006	0.0027
271	0.0033	0.0006	0.0027
272	0.0033	0.0006	0.0027
273	0.0032	0.0006	0.0027
274	0.0032	0.0006	0.0027
275	0.0032	0.0006	0.0026
276	0.0032	0.0006	0.0026
277	0.0032	0.0006	0.0026
278	0.0031	0.0006	0.0026
279	0.0031	0.0005	0.0026
280	0.0031	0.0005	0.0025
281	0.0031	0.0005	0.0025
282	0.0030	0.0005	0.0025
283	0.0030	0.0005	0.0025
284	0.0030	0.0005	0.0025
285	0.0030	0.0005	0.0025
286	0.0030	0.0005	0.0024
287	0.0029	0.0005	0.0024
288	0.0029	0.0005	0.0024

Total soil rain loss = 0.32(In)
Total effective rainfall = 1.84(In)
Peak flow rate in flood hydrograph = 32.89(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       10.0      20.0      30.0      40.0
-----------------------------------------------------------------------------
  0+ 5       0.0004      0.06  Q         |         |         |         |
  0+10       0.0024      0.30  Q         |         |         |         |
  0+15       0.0052      0.40  Q         |         |         |         |
  0+20       0.0083      0.45  Q         |         |         |         |
  0+25       0.0116      0.48  Q         |         |         |         |
  0+30       0.0150      0.49  Q         |         |         |         |
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0+35      0.0184      0.51  Q          |          |          |          |
0+40      0.0220      0.51  Q          |          |          |          |
0+45      0.0256      0.52  Q          |          |          |          |
0+50      0.0292      0.52  Q          |          |          |          |
0+55      0.0328      0.53  Q          |          |          |          |
1+ 0      0.0364      0.53  Q          |          |          |          |
1+ 5      0.0401      0.53  Q          |          |          |          |
1+10      0.0437      0.53  Q          |          |          |          |
1+15      0.0474      0.53  Q          |          |          |          |
1+20      0.0511      0.54  Q          |          |          |          |
1+25      0.0548      0.54  Q          |          |          |          |
1+30      0.0585      0.54  Q          |          |          |          |
1+35      0.0622      0.54  Q          |          |          |          |
1+40      0.0660      0.54  Q          |          |          |          |
1+45      0.0697      0.54  QV         |          |          |          |
1+50      0.0735      0.55  QV         |          |          |          |
1+55      0.0773      0.55  QV         |          |          |          |
2+ 0      0.0811      0.55  QV         |          |          |          |
2+ 5      0.0849      0.55  QV         |          |          |          |
2+10      0.0887      0.55  QV         |          |          |          |
2+15      0.0925      0.56  QV         |          |          |          |
2+20      0.0964      0.56  QV         |          |          |          |
2+25      0.1002      0.56  QV         |          |          |          |
2+30      0.1041      0.56  QV         |          |          |          |
2+35      0.1080      0.56  QV         |          |          |          |
2+40      0.1119      0.57  QV         |          |          |          |
2+45      0.1158      0.57  QV         |          |          |          |
2+50      0.1197      0.57  QV         |          |          |          |
2+55      0.1237      0.57  QV         |          |          |          |
3+ 0      0.1276      0.58  QV         |          |          |          |
3+ 5      0.1316      0.58  QV         |          |          |          |
3+10      0.1356      0.58  QV         |          |          |          |
3+15      0.1396      0.58  Q V        |          |          |          |
3+20      0.1437      0.58  Q V        |          |          |          |
3+25      0.1477      0.59  Q V        |          |          |          |
3+30      0.1518      0.59  Q V        |          |          |          |
3+35      0.1558      0.59  Q V        |          |          |          |
3+40      0.1599      0.59  Q V        |          |          |          |
3+45      0.1640      0.60  Q V        |          |          |          |
3+50      0.1682      0.60  Q V        |          |          |          |
3+55      0.1723      0.60  Q V        |          |          |          |
4+ 0      0.1765      0.60  Q V        |          |          |          |
4+ 5      0.1806      0.61  Q V        |          |          |          |
4+10      0.1848      0.61  Q V        |          |          |          |
4+15      0.1890      0.61  Q V        |          |          |          |
4+20      0.1933      0.61  Q V        |          |          |          |
4+25      0.1975      0.62  Q V        |          |          |          |
4+30      0.2018      0.62  Q V        |          |          |          |
4+35      0.2061      0.62  Q  V       |          |          |          |
4+40      0.2104      0.63  Q  V       |          |          |          |
4+45      0.2147      0.63  Q  V       |          |          |          |
4+50      0.2191      0.63  Q  V       |          |          |          |
4+55      0.2234      0.63  Q  V       |          |          |          |
5+ 0      0.2278      0.64  Q  V       |          |          |          |
5+ 5      0.2322      0.64  Q  V       |          |          |          |
5+10      0.2366      0.64  Q  V       |          |          |          |
5+15      0.2411      0.65  Q  V       |          |          |          |
5+20      0.2455      0.65  Q  V       |          |          |          |
5+25      0.2500      0.65  Q  V       |          |          |          |
5+30      0.2545      0.65  Q  V       |          |          |          |
5+35      0.2591      0.66  Q  V       |          |          |          |
5+40      0.2636      0.66  Q  V       |          |          |          |
5+45      0.2682      0.66  Q  V       |          |          |          |
5+50      0.2728      0.67  Q   V      |          |          |          |
5+55      0.2774      0.67  Q   V      |          |          |          |
6+ 0      0.2820      0.67  Q   V      |          |          |          |
6+ 5      0.2867      0.68  Q   V      |          |          |          |
6+10      0.2914      0.68  Q   V      |          |          |          |
6+15      0.2961      0.68  Q   V      |          |          |          |
6+20      0.3008      0.69  Q   V      |          |          |          |
6+25      0.3056      0.69  Q   V      |          |          |          |
6+30      0.3104      0.69  Q   V      |          |          |          |
6+35      0.3152      0.70  Q   V      |          |          |          |
6+40      0.3200      0.70  Q   V      |          |          |          |
6+45      0.3249      0.71  Q   V      |          |          |          |
6+50      0.3298      0.71  Q   V      |          |          |          |
6+55      0.3347      0.71  Q   V      |          |          |          |
7+ 0      0.3396      0.72  Q    V     |          |          |          |
7+ 5      0.3446      0.72  Q    V     |          |          |          |
7+10      0.3496      0.73  Q    V     |          |          |          |
7+15      0.3546      0.73  Q    V     |          |          |          |
```

```
 7+20       0.3597      0.73  Q    V    |          |          |          |
 7+25       0.3648      0.74  Q    V    |          |          |          |
 7+30       0.3699      0.74  Q    V    |          |          |          |
 7+35       0.3750      0.75  Q    V    |          |          |          |
 7+40       0.3802      0.75  Q    V    |          |          |          |
 7+45       0.3854      0.76  Q    V    |          |          |          |
 7+50       0.3906      0.76  Q    V    |          |          |          |
 7+55       0.3959      0.77  Q    V    |          |          |          |
 8+ 0       0.4012      0.77  Q    V    |          |          |          |
 8+ 5       0.4065      0.77  Q    V    |          |          |          |
 8+10       0.4119      0.78  Q     V   |          |          |          |
 8+15       0.4173      0.78  Q     V   |          |          |          |
 8+20       0.4228      0.79  Q     V   |          |          |          |
 8+25       0.4282      0.79  Q     V   |          |          |          |
 8+30       0.4337      0.80  Q     V   |          |          |          |
 8+35       0.4393      0.81  Q     V   |          |          |          |
 8+40       0.4449      0.81  Q     V   |          |          |          |
 8+45       0.4505      0.82  Q     V   |          |          |          |
 8+50       0.4562      0.82  Q     V   |          |          |          |
 8+55       0.4619      0.83  Q     V   |          |          |          |
 9+ 0       0.4676      0.83  Q     V   |          |          |          |
 9+ 5       0.4734      0.84  Q     V   |          |          |          |
 9+10       0.4792      0.85  Q      V  |          |          |          |
 9+15       0.4851      0.85  Q      V  |          |          |          |
 9+20       0.4910      0.86  Q      V  |          |          |          |
 9+25       0.4969      0.86  Q      V  |          |          |          |
 9+30       0.5029      0.87  Q      V  |          |          |          |
 9+35       0.5090      0.88  Q      V  |          |          |          |
 9+40       0.5151      0.88  Q      V  |          |          |          |
 9+45       0.5212      0.89  Q      V  |          |          |          |
 9+50       0.5274      0.90  Q      V  |          |          |          |
 9+55       0.5336      0.91  Q      V  |          |          |          |
10+ 0       0.5399      0.91  Q      V  |          |          |          |
10+ 5       0.5463      0.92  Q       V |          |          |          |
10+10       0.5527      0.93  Q       V |          |          |          |
10+15       0.5591      0.94  Q       V |          |          |          |
10+20       0.5656      0.94  Q       V |          |          |          |
10+25       0.5722      0.95  Q       V |          |          |          |
10+30       0.5788      0.96  Q       V |          |          |          |
10+35       0.5855      0.97  Q       V |          |          |          |
10+40       0.5922      0.98  Q       V |          |          |          |
10+45       0.5990      0.99  Q       V |          |          |          |
10+50       0.6059      1.00  Q       V |          |          |          |
10+55       0.6128      1.01  |Q       V|          |          |          |
11+ 0       0.6199      1.02  |Q       V|          |          |          |
11+ 5       0.6269      1.03  |Q       V|          |          |          |
11+10       0.6341      1.04  |Q       V|          |          |          |
11+15       0.6413      1.05  |Q       V|          |          |          |
11+20       0.6486      1.06  |Q       V|          |          |          |
11+25       0.6559      1.07  |Q       V|          |          |          |
11+30       0.6634      1.08  |Q       V|          |          |          |
11+35       0.6709      1.09  |Q       V|          |          |          |
11+40       0.6785      1.11  |Q        V          |          |          |
11+45       0.6862      1.12  |Q        V          |          |          |
11+50       0.6940      1.13  |Q        V          |          |          |
11+55       0.7019      1.14  |Q        V          |          |          |
12+ 0       0.7099      1.16  |Q        V          |          |          |
12+ 5       0.7180      1.18  |Q        V          |          |          |
12+10       0.7266      1.24  |Q        V          |          |          |
12+15       0.7353      1.27  |Q        V          |          |          |
12+20       0.7442      1.30  |Q        V          |          |          |
12+25       0.7533      1.32  |Q         |V         |          |          |
12+30       0.7625      1.34  |Q         |V         |          |          |
12+35       0.7718      1.35  |Q         |V         |          |          |
12+40       0.7813      1.38  |Q         |V         |          |          |
12+45       0.7909      1.39  |Q         |V         |          |          |
12+50       0.8007      1.42  |Q         |V         |          |          |
12+55       0.8105      1.44  |Q         |V         |          |          |
13+ 0       0.8206      1.46  |Q         | V        |          |          |
13+ 5       0.8308      1.48  |Q         | V        |          |          |
13+10       0.8411      1.50  |Q         | V        |          |          |
13+15       0.8517      1.53  |Q         | V        |          |          |
13+20       0.8624      1.56  |Q         | V        |          |          |
13+25       0.8733      1.58  |Q         | V        |          |          |
13+30       0.8843      1.61  |Q         |  V       |          |          |
13+35       0.8956      1.64  |Q         |  V       |          |          |
13+40       0.9071      1.67  |Q         |  V       |          |          |
13+45       0.9189      1.70  |Q         |  V       |          |          |
13+50       0.9308      1.74  |Q         |  V       |          |          |
13+55       0.9430      1.77  |Q         |  V       |          |          |
14+ 0       0.9555      1.81  |Q         |   V      |          |          |
```

```
14+ 5       0.9683      1.85  |Q         |   V     |         |         |
14+10       0.9814      1.90  |Q         |   V     |         |         |
14+15       0.9948      1.94  |Q         |   V     |         |         |
14+20       1.0086      2.00  |Q         |   V     |         |         |
14+25       1.0227      2.05  | Q        |    V    |         |         |
14+30       1.0372      2.11  | Q        |    V    |         |         |
14+35       1.0521      2.17  | Q        |    V    |         |         |
14+40       1.0676      2.24  | Q        |    V    |         |         |
14+45       1.0835      2.31  | Q        |    V    |         |         |
14+50       1.1000      2.40  | Q        |     V   |         |         |
14+55       1.1171      2.48  | Q        |     V   |         |         |
15+ 0       1.1349      2.59  | Q        |     V   |         |         |
15+ 5       1.1534      2.69  | Q        |      V  |         |         |
15+10       1.1729      2.82  | Q        |      V  |         |         |
15+15       1.1932      2.95  | Q        |      V  |         |         |
15+20       1.2147      3.13  |  Q       |      V  |         |         |
15+25       1.2367      3.19  |  Q       |       V |         |         |
15+30       1.2570      2.95  | Q        |       V |         |         |
15+35       1.2775      2.98  | Q        |       V |         |         |
15+40       1.2997      3.22  |  Q       |        V|         |         |
15+45       1.3243      3.56  |  Q       |        V|         |         |
15+50       1.3535      4.24  |   Q      |        V|         |         |
15+55       1.3897      5.26  |    Q     |         V         |         |
16+ 0       1.4419      7.58  |      Q   |         |V        |         |
16+ 5       1.5490     15.55  |          |    Q    | V       |         |
16+10       1.7755     32.89  |          |         |    V    | Q       |
16+15       1.8979     17.77  |          |      Q  |      V  |         |
16+20       1.9681     10.20  |         Q        |         V|         |
16+25       2.0166      7.04  |      Q   |         |         V|         |
16+30       2.0558      5.69  |    Q     |         |          V        |
16+35       2.0879      4.66  |   Q      |         |          V        |
16+40       2.1142      3.82  |  Q       |         |          |V       |
16+45       2.1378      3.42  |  Q       |         |          |V       |
16+50       2.1586      3.02  |  Q       |         |          |V       |
16+55       2.1754      2.45  | Q        |         |          | V      |
17+ 0       2.1910      2.27  | Q        |         |          | V      |
17+ 5       2.2057      2.13  | Q        |         |          | V      |
17+10       2.2196      2.02  | Q        |         |          | V      |
17+15       2.2328      1.92  |Q         |         |          | V      |
17+20       2.2454      1.83  |Q         |         |          |  V     |
17+25       2.2575      1.75  |Q         |         |          |  V     |
17+30       2.2690      1.68  |Q         |         |          |  V     |
17+35       2.2802      1.62  |Q         |         |          |  V     |
17+40       2.2909      1.56  |Q         |         |          |  V     |
17+45       2.3013      1.51  |Q         |         |          |  V     |
17+50       2.3114      1.46  |Q         |         |          |   V    |
17+55       2.3212      1.42  |Q         |         |          |   V    |
18+ 0       2.3307      1.38  |Q         |         |          |   V    |
18+ 5       2.3399      1.33  |Q         |         |          |   V    |
18+10       2.3485      1.26  |Q         |         |          |   V    |
18+15       2.3569      1.21  |Q         |         |          |   V    |
18+20       2.3649      1.17  |Q         |         |          |   V    |
18+25       2.3728      1.14  |Q         |         |          |   V    |
18+30       2.3804      1.11  |Q         |         |          |    V   |
18+35       2.3879      1.09  |Q         |         |          |    V   |
18+40       2.3952      1.06  |Q         |         |          |    V   |
18+45       2.4024      1.04  |Q         |         |          |    V   |
18+50       2.4094      1.02  |Q         |         |          |    V   |
18+55       2.4163      1.00  Q          |         |          |    V   |
19+ 0       2.4230      0.98  Q          |         |          |    V   |
19+ 5       2.4297      0.96  Q          |         |          |    V   |
19+10       2.4362      0.95  Q          |         |          |    V   |
19+15       2.4426      0.93  Q          |         |          |     V  |
19+20       2.4489      0.91  Q          |         |          |     V  |
19+25       2.4551      0.90  Q          |         |          |     V  |
19+30       2.4612      0.89  Q          |         |          |     V  |
19+35       2.4672      0.87  Q          |         |          |     V  |
19+40       2.4731      0.86  Q          |         |          |     V  |
19+45       2.4789      0.85  Q          |         |          |     V  |
19+50       2.4846      0.83  Q          |         |          |     V  |
19+55       2.4903      0.82  Q          |         |          |     V  |
20+ 0       2.4959      0.81  Q          |         |          |     V  |
20+ 5       2.5014      0.80  Q          |         |          |     V  |
20+10       2.5068      0.79  Q          |         |          |     V  |
20+15       2.5122      0.78  Q          |         |          |      V |
20+20       2.5175      0.77  Q          |         |          |      V |
20+25       2.5228      0.76  Q          |         |          |      V |
20+30       2.5279      0.75  Q          |         |          |      V |
20+35       2.5331      0.74  Q          |         |          |      V |
20+40       2.5381      0.73  Q          |         |          |      V |
20+45       2.5431      0.73  Q          |         |          |      V |
```

```
   20+50       2.5481      0.72  Q          |          |          |       V  |
   20+55       2.5530      0.71  Q          |          |          |       V  |
   21+ 0       2.5578      0.70  Q          |          |          |       V  |
   21+ 5       2.5626      0.70  Q          |          |          |       V  |
   21+10       2.5673      0.69  Q          |          |          |       V  |
   21+15       2.5720      0.68  Q          |          |          |       V  |
   21+20       2.5766      0.67  Q          |          |          |       V  |
   21+25       2.5812      0.67  Q          |          |          |        V |
   21+30       2.5858      0.66  Q          |          |          |        V |
   21+35       2.5903      0.65  Q          |          |          |        V |
   21+40       2.5948      0.65  Q          |          |          |        V |
   21+45       2.5992      0.64  Q          |          |          |        V |
   21+50       2.6036      0.64  Q          |          |          |        V |
   21+55       2.6079      0.63  Q          |          |          |        V |
   22+ 0       2.6122      0.63  Q          |          |          |        V |
   22+ 5       2.6165      0.62  Q          |          |          |        V |
   22+10       2.6207      0.61  Q          |          |          |        V |
   22+15       2.6249      0.61  Q          |          |          |        V |
   22+20       2.6291      0.60  Q          |          |          |        V |
   22+25       2.6332      0.60  Q          |          |          |        V |
   22+30       2.6373      0.59  Q          |          |          |        V |
   22+35       2.6414      0.59  Q          |          |          |        V |
   22+40       2.6454      0.58  Q          |          |          |         V|
   22+45       2.6494      0.58  Q          |          |          |         V|
   22+50       2.6533      0.58  Q          |          |          |         V|
   22+55       2.6573      0.57  Q          |          |          |         V|
   23+ 0       2.6612      0.57  Q          |          |          |         V|
   23+ 5       2.6651      0.56  Q          |          |          |         V|
   23+10       2.6689      0.56  Q          |          |          |         V|
   23+15       2.6727      0.55  Q          |          |          |         V|
   23+20       2.6765      0.55  Q          |          |          |         V|
   23+25       2.6803      0.55  Q          |          |          |         V|
   23+30       2.6840      0.54  Q          |          |          |         V|
   23+35       2.6877      0.54  Q          |          |          |         V|
   23+40       2.6914      0.54  Q          |          |          |         V|
   23+45       2.6951      0.53  Q          |          |          |         V|
   23+50       2.6987      0.53  Q          |          |          |         V|
   23+55       2.7023      0.52  Q          |          |          |         V|
   24+ 0       2.7059      0.52  Q          |          |          |         V|
   24+ 5       2.7091      0.46  Q          |          |          |         V|
   24+10       2.7106      0.22  Q          |          |          |         V|
   24+15       2.7114      0.11  Q          |          |          |         V|
   24+20       2.7118      0.07  Q          |          |          |         V|
   24+25       2.7121      0.04  Q          |          |          |         V|
   24+30       2.7123      0.02  Q          |          |          |         V|
   24+35       2.7124      0.01  Q          |          |          |         V|
   24+40       2.7124      0.01  Q          |          |          |         V|
   24+45       2.7125      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 06/23/22

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
DEVELOPED CONDITION - ON-SITE
25-YEAR, 24-HOUR STORM
BY: JTS DATE: 06-23-22

Storm Event Year = 25

Antecedent Moisture Condition = 2

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
17.68	1	0.60
Rainfall data for year 2		
17.68	6	0.75
Rainfall data for year 2		
17.68	24	1.30
Rainfall data for year 100		
17.68	1	1.07
Rainfall data for year 100		
17.68	6	1.99
Rainfall data for year 100		
17.68	24	3.39

++

******** Area-averaged max loss rate, Fm ********

SCS curve No.(AMCII)	SCS curve NO.(AMC 2)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
77.0	77.0	17.68	1.000	0.420	0.110	0.046

Area-averaged adjusted loss rate Fm (In/Hr) = 0.046

********* Area-Averaged low loss rate fraction, Yb **********

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC2)	S	Pervious Yield Fr
1.94	0.110	77.0	77.0	2.99	0.315
15.74	0.890	98.0	98.0	0.20	0.913

Area-averaged catchment yield fraction, Y = 0.847
Area-averaged low loss fraction, Yb = 0.153
User entry of time of concentration = 0.129 (hours)
++
Watershed area = 17.68(Ac.)

```
Catchment Lag time =   0.103 hours
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 80.7494
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.046(In/Hr)
Average low loss rate fraction (Yb) = 0.153 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.373(In)
Computed peak 30-minute rainfall =  0.639(In)
Specified peak 1-hour rainfall =  0.786(In)
Computed peak 3-hour rainfall =  1.193(In)
Specified peak 6-hour rainfall =  1.552(In)
Specified peak 24-hour rainfall =  2.649(In)


Rainfall depth area reduction factors:
Using a total area of      17.68(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999     Adjusted rainfall =  0.373(In)
30-minute factor = 0.999    Adjusted rainfall =  0.638(In)
1-hour factor = 0.999       Adjusted rainfall =  0.786(In)
3-hour factor = 1.000       Adjusted rainfall =  1.193(In)
6-hour factor = 1.000       Adjusted rainfall =  1.552(In)
24-hour factor = 1.000      Adjusted rainfall =  2.649(In)
----------------------------------------------------------------------

                        U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
----------------------------------------------------------------------
                (K =       213.82 (CFS))

  1               10.956                  23.427
  2               57.842                 100.249
  3               78.112                  43.341
  4               87.134                  19.290
  5               92.184                  10.799
  6               95.341                   6.750
  7               97.324                   4.240
  8               98.382                   2.263
  9               99.311                   1.985
 10              100.000                   1.473
----------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                 (In)
  1              0.3729               0.3729
  2              0.4590               0.0862
  3              0.5184               0.0594
  4              0.5651               0.0467
  5              0.6043               0.0391
  6              0.6383               0.0340
  7              0.6685               0.0302
  8              0.6958               0.0273
  9              0.7208               0.0250
 10              0.7440               0.0231
 11              0.7655               0.0216
 12              0.7858               0.0202
 13              0.8100               0.0243
 14              0.8332               0.0231
 15              0.8553               0.0221
 16              0.8765               0.0212
 17              0.8970               0.0204
 18              0.9166               0.0197
 19              0.9357               0.0190
 20              0.9541               0.0184
 21              0.9719               0.0179
 22              0.9893               0.0173
 23              1.0061               0.0168
 24              1.0225               0.0164
 25              1.0385               0.0160
 26              1.0541               0.0156
 27              1.0693               0.0152
 28              1.0842               0.0149
 29              1.0987               0.0146
 30              1.1130               0.0142
 31              1.1269               0.0140
 32              1.1406               0.0137
 33              1.1540               0.0134
 34              1.1672               0.0132
 35              1.1801               0.0129
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36	1.1928	0.0127
37	1.2053	0.0125
38	1.2175	0.0123
39	1.2296	0.0121
40	1.2415	0.0119
41	1.2531	0.0117
42	1.2647	0.0115
43	1.2760	0.0113
44	1.2872	0.0112
45	1.2982	0.0110
46	1.3091	0.0109
47	1.3198	0.0107
48	1.3304	0.0106
49	1.3408	0.0104
50	1.3511	0.0103
51	1.3613	0.0102
52	1.3714	0.0101
53	1.3813	0.0099
54	1.3911	0.0098
55	1.4009	0.0097
56	1.4105	0.0096
57	1.4200	0.0095
58	1.4294	0.0094
59	1.4387	0.0093
60	1.4479	0.0092
61	1.4570	0.0091
62	1.4660	0.0090
63	1.4749	0.0089
64	1.4838	0.0088
65	1.4925	0.0088
66	1.5012	0.0087
67	1.5098	0.0086
68	1.5183	0.0085
69	1.5267	0.0084
70	1.5351	0.0084
71	1.5434	0.0083
72	1.5516	0.0082
73	1.5598	0.0083
74	1.5681	0.0082
75	1.5762	0.0081
76	1.5843	0.0081
77	1.5923	0.0080
78	1.6002	0.0079
79	1.6081	0.0079
80	1.6160	0.0078
81	1.6237	0.0078
82	1.6314	0.0077
83	1.6391	0.0077
84	1.6467	0.0076
85	1.6542	0.0075
86	1.6617	0.0075
87	1.6691	0.0074
88	1.6765	0.0074
89	1.6838	0.0073
90	1.6911	0.0073
91	1.6983	0.0072
92	1.7055	0.0072
93	1.7126	0.0071
94	1.7197	0.0071
95	1.7268	0.0070
96	1.7338	0.0070
97	1.7407	0.0069
98	1.7476	0.0069
99	1.7545	0.0069
100	1.7613	0.0068
101	1.7681	0.0068
102	1.7748	0.0067
103	1.7815	0.0067
104	1.7882	0.0067
105	1.7948	0.0066
106	1.8013	0.0066
107	1.8079	0.0065
108	1.8144	0.0065
109	1.8209	0.0065
110	1.8273	0.0064
111	1.8337	0.0064
112	1.8400	0.0064
113	1.8464	0.0063
114	1.8527	0.0063
115	1.8589	0.0063
116	1.8651	0.0062

117	1.8713	0.0062
118	1.8775	0.0062
119	1.8836	0.0061
120	1.8897	0.0061
121	1.8958	0.0061
122	1.9018	0.0060
123	1.9078	0.0060
124	1.9138	0.0060
125	1.9197	0.0059
126	1.9256	0.0059
127	1.9315	0.0059
128	1.9374	0.0059
129	1.9432	0.0058
130	1.9490	0.0058
131	1.9548	0.0058
132	1.9605	0.0057
133	1.9662	0.0057
134	1.9719	0.0057
135	1.9776	0.0057
136	1.9832	0.0056
137	1.9888	0.0056
138	1.9944	0.0056
139	2.0000	0.0056
140	2.0055	0.0055
141	2.0110	0.0055
142	2.0165	0.0055
143	2.0220	0.0055
144	2.0275	0.0054
145	2.0329	0.0054
146	2.0383	0.0054
147	2.0437	0.0054
148	2.0490	0.0054
149	2.0543	0.0053
150	2.0597	0.0053
151	2.0649	0.0053
152	2.0702	0.0053
153	2.0755	0.0052
154	2.0807	0.0052
155	2.0859	0.0052
156	2.0911	0.0052
157	2.0962	0.0052
158	2.1014	0.0051
159	2.1065	0.0051
160	2.1116	0.0051
161	2.1167	0.0051
162	2.1217	0.0051
163	2.1268	0.0050
164	2.1318	0.0050
165	2.1368	0.0050
166	2.1418	0.0050
167	2.1468	0.0050
168	2.1517	0.0050
169	2.1567	0.0049
170	2.1616	0.0049
171	2.1665	0.0049
172	2.1714	0.0049
173	2.1762	0.0049
174	2.1811	0.0048
175	2.1859	0.0048
176	2.1907	0.0048
177	2.1955	0.0048
178	2.2003	0.0048
179	2.2051	0.0048
180	2.2098	0.0047
181	2.2145	0.0047
182	2.2192	0.0047
183	2.2239	0.0047
184	2.2286	0.0047
185	2.2333	0.0047
186	2.2379	0.0047
187	2.2426	0.0046
188	2.2472	0.0046
189	2.2518	0.0046
190	2.2564	0.0046
191	2.2610	0.0046
192	2.2655	0.0046
193	2.2701	0.0045
194	2.2746	0.0045
195	2.2791	0.0045
196	2.2836	0.0045
197	2.2881	0.0045

198	2.2926	0.0045
199	2.2971	0.0045
200	2.3015	0.0044
201	2.3059	0.0044
202	2.3104	0.0044
203	2.3148	0.0044
204	2.3192	0.0044
205	2.3236	0.0044
206	2.3279	0.0044
207	2.3323	0.0044
208	2.3366	0.0043
209	2.3409	0.0043
210	2.3453	0.0043
211	2.3496	0.0043
212	2.3539	0.0043
213	2.3581	0.0043
214	2.3624	0.0043
215	2.3667	0.0043
216	2.3709	0.0042
217	2.3751	0.0042
218	2.3793	0.0042
219	2.3836	0.0042
220	2.3878	0.0042
221	2.3919	0.0042
222	2.3961	0.0042
223	2.4003	0.0042
224	2.4044	0.0041
225	2.4086	0.0041
226	2.4127	0.0041
227	2.4168	0.0041
228	2.4209	0.0041
229	2.4250	0.0041
230	2.4291	0.0041
231	2.4331	0.0041
232	2.4372	0.0041
233	2.4412	0.0040
234	2.4453	0.0040
235	2.4493	0.0040
236	2.4533	0.0040
237	2.4573	0.0040
238	2.4613	0.0040
239	2.4653	0.0040
240	2.4693	0.0040
241	2.4733	0.0040
242	2.4772	0.0040
243	2.4812	0.0039
244	2.4851	0.0039
245	2.4890	0.0039
246	2.4929	0.0039
247	2.4968	0.0039
248	2.5007	0.0039
249	2.5046	0.0039
250	2.5085	0.0039
251	2.5124	0.0039
252	2.5162	0.0039
253	2.5201	0.0038
254	2.5239	0.0038
255	2.5278	0.0038
256	2.5316	0.0038
257	2.5354	0.0038
258	2.5392	0.0038
259	2.5430	0.0038
260	2.5468	0.0038
261	2.5505	0.0038
262	2.5543	0.0038
263	2.5581	0.0038
264	2.5618	0.0037
265	2.5656	0.0037
266	2.5693	0.0037
267	2.5730	0.0037
268	2.5767	0.0037
269	2.5804	0.0037
270	2.5841	0.0037
271	2.5878	0.0037
272	2.5915	0.0037
273	2.5952	0.0037
274	2.5988	0.0037
275	2.6025	0.0037
276	2.6062	0.0036
277	2.6098	0.0036
278	2.6134	0.0036

279	2.6170	0.0036
280	2.6207	0.0036
281	2.6243	0.0036
282	2.6279	0.0036
283	2.6315	0.0036
284	2.6351	0.0036
285	2.6386	0.0036
286	2.6422	0.0036
287	2.6458	0.0036
288	2.6493	0.0036

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0036	0.0005	0.0030
2	0.0036	0.0005	0.0030
3	0.0036	0.0005	0.0030
4	0.0036	0.0005	0.0030
5	0.0036	0.0005	0.0031
6	0.0036	0.0006	0.0031
7	0.0036	0.0006	0.0031
8	0.0036	0.0006	0.0031
9	0.0036	0.0006	0.0031
10	0.0037	0.0006	0.0031
11	0.0037	0.0006	0.0031
12	0.0037	0.0006	0.0031
13	0.0037	0.0006	0.0031
14	0.0037	0.0006	0.0031
15	0.0037	0.0006	0.0032
16	0.0037	0.0006	0.0032
17	0.0037	0.0006	0.0032
18	0.0038	0.0006	0.0032
19	0.0038	0.0006	0.0032
20	0.0038	0.0006	0.0032
21	0.0038	0.0006	0.0032
22	0.0038	0.0006	0.0032
23	0.0038	0.0006	0.0032
24	0.0038	0.0006	0.0033
25	0.0039	0.0006	0.0033
26	0.0039	0.0006	0.0033
27	0.0039	0.0006	0.0033
28	0.0039	0.0006	0.0033
29	0.0039	0.0006	0.0033
30	0.0039	0.0006	0.0033
31	0.0039	0.0006	0.0033
32	0.0040	0.0006	0.0034
33	0.0040	0.0006	0.0034
34	0.0040	0.0006	0.0034
35	0.0040	0.0006	0.0034
36	0.0040	0.0006	0.0034
37	0.0040	0.0006	0.0034
38	0.0040	0.0006	0.0034
39	0.0041	0.0006	0.0034
40	0.0041	0.0006	0.0035
41	0.0041	0.0006	0.0035
42	0.0041	0.0006	0.0035
43	0.0041	0.0006	0.0035
44	0.0041	0.0006	0.0035
45	0.0042	0.0006	0.0035
46	0.0042	0.0006	0.0035
47	0.0042	0.0006	0.0036
48	0.0042	0.0006	0.0036
49	0.0042	0.0006	0.0036
50	0.0043	0.0006	0.0036
51	0.0043	0.0007	0.0036
52	0.0043	0.0007	0.0036
53	0.0043	0.0007	0.0037
54	0.0043	0.0007	0.0037
55	0.0044	0.0007	0.0037
56	0.0044	0.0007	0.0037
57	0.0044	0.0007	0.0037
58	0.0044	0.0007	0.0037
59	0.0044	0.0007	0.0038
60	0.0044	0.0007	0.0038
61	0.0045	0.0007	0.0038
62	0.0045	0.0007	0.0038
63	0.0045	0.0007	0.0038
64	0.0045	0.0007	0.0038
65	0.0046	0.0007	0.0039
66	0.0046	0.0007	0.0039

67	0.0046	0.0007	0.0039
68	0.0046	0.0007	0.0039
69	0.0047	0.0007	0.0039
70	0.0047	0.0007	0.0040
71	0.0047	0.0007	0.0040
72	0.0047	0.0007	0.0040
73	0.0047	0.0007	0.0040
74	0.0048	0.0007	0.0040
75	0.0048	0.0007	0.0041
76	0.0048	0.0007	0.0041
77	0.0048	0.0007	0.0041
78	0.0049	0.0007	0.0041
79	0.0049	0.0007	0.0042
80	0.0049	0.0008	0.0042
81	0.0050	0.0008	0.0042
82	0.0050	0.0008	0.0042
83	0.0050	0.0008	0.0042
84	0.0050	0.0008	0.0043
85	0.0051	0.0008	0.0043
86	0.0051	0.0008	0.0043
87	0.0051	0.0008	0.0043
88	0.0051	0.0008	0.0044
89	0.0052	0.0008	0.0044
90	0.0052	0.0008	0.0044
91	0.0052	0.0008	0.0044
92	0.0053	0.0008	0.0045
93	0.0053	0.0008	0.0045
94	0.0053	0.0008	0.0045
95	0.0054	0.0008	0.0046
96	0.0054	0.0008	0.0046
97	0.0054	0.0008	0.0046
98	0.0055	0.0008	0.0046
99	0.0055	0.0008	0.0047
100	0.0055	0.0008	0.0047
101	0.0056	0.0009	0.0047
102	0.0056	0.0009	0.0048
103	0.0057	0.0009	0.0048
104	0.0057	0.0009	0.0048
105	0.0057	0.0009	0.0049
106	0.0058	0.0009	0.0049
107	0.0058	0.0009	0.0049
108	0.0059	0.0009	0.0050
109	0.0059	0.0009	0.0050
110	0.0059	0.0009	0.0050
111	0.0060	0.0009	0.0051
112	0.0060	0.0009	0.0051
113	0.0061	0.0009	0.0052
114	0.0061	0.0009	0.0052
115	0.0062	0.0009	0.0052
116	0.0062	0.0009	0.0053
117	0.0063	0.0010	0.0053
118	0.0063	0.0010	0.0054
119	0.0064	0.0010	0.0054
120	0.0064	0.0010	0.0054
121	0.0065	0.0010	0.0055
122	0.0065	0.0010	0.0055
123	0.0066	0.0010	0.0056
124	0.0067	0.0010	0.0056
125	0.0067	0.0010	0.0057
126	0.0068	0.0010	0.0057
127	0.0069	0.0010	0.0058
128	0.0069	0.0011	0.0059
129	0.0070	0.0011	0.0059
130	0.0070	0.0011	0.0060
131	0.0071	0.0011	0.0060
132	0.0072	0.0011	0.0061
133	0.0073	0.0011	0.0062
134	0.0073	0.0011	0.0062
135	0.0074	0.0011	0.0063
136	0.0075	0.0011	0.0063
137	0.0076	0.0012	0.0064
138	0.0077	0.0012	0.0065
139	0.0078	0.0012	0.0066
140	0.0078	0.0012	0.0066
141	0.0079	0.0012	0.0067
142	0.0080	0.0012	0.0068
143	0.0081	0.0012	0.0069
144	0.0082	0.0013	0.0070
145	0.0082	0.0013	0.0070
146	0.0083	0.0013	0.0070
147	0.0084	0.0013	0.0071

148	0.0085	0.0013	0.0072
149	0.0087	0.0013	0.0073
150	0.0088	0.0013	0.0074
151	0.0089	0.0014	0.0076
152	0.0090	0.0014	0.0076
153	0.0092	0.0014	0.0078
154	0.0093	0.0014	0.0079
155	0.0095	0.0015	0.0081
156	0.0096	0.0015	0.0081
157	0.0098	0.0015	0.0083
158	0.0099	0.0015	0.0084
159	0.0102	0.0016	0.0086
160	0.0103	0.0016	0.0087
161	0.0106	0.0016	0.0090
162	0.0107	0.0016	0.0091
163	0.0110	0.0017	0.0093
164	0.0112	0.0017	0.0095
165	0.0115	0.0018	0.0098
166	0.0117	0.0018	0.0099
167	0.0121	0.0018	0.0102
168	0.0123	0.0019	0.0104
169	0.0127	0.0019	0.0108
170	0.0129	0.0020	0.0110
171	0.0134	0.0020	0.0114
172	0.0137	0.0021	0.0116
173	0.0142	0.0022	0.0121
174	0.0146	0.0022	0.0123
175	0.0152	0.0023	0.0129
176	0.0156	0.0024	0.0132
177	0.0164	0.0025	0.0139
178	0.0168	0.0026	0.0143
179	0.0179	0.0027	0.0151
180	0.0184	0.0028	0.0156
181	0.0197	0.0030	0.0167
182	0.0204	0.0031	0.0173
183	0.0221	0.0034	0.0188
184	0.0231	0.0035	0.0196
185	0.0202	0.0031	0.0172
186	0.0216	0.0033	0.0183
187	0.0250	0.0038	0.0212
188	0.0273	0.0039	0.0235
189	0.0340	0.0039	0.0301
190	0.0391	0.0039	0.0353
191	0.0594	0.0039	0.0555
192	0.0862	0.0039	0.0823
193	0.3729	0.0039	0.3690
194	0.0467	0.0039	0.0429
195	0.0302	0.0039	0.0264
196	0.0231	0.0035	0.0196
197	0.0243	0.0037	0.0206
198	0.0212	0.0032	0.0180
199	0.0190	0.0029	0.0161
200	0.0173	0.0026	0.0147
201	0.0160	0.0024	0.0135
202	0.0149	0.0023	0.0126
203	0.0140	0.0021	0.0118
204	0.0132	0.0020	0.0112
205	0.0125	0.0019	0.0106
206	0.0119	0.0018	0.0101
207	0.0113	0.0017	0.0096
208	0.0109	0.0017	0.0092
209	0.0104	0.0016	0.0089
210	0.0101	0.0015	0.0085
211	0.0097	0.0015	0.0082
212	0.0094	0.0014	0.0080
213	0.0091	0.0014	0.0077
214	0.0088	0.0013	0.0075
215	0.0086	0.0013	0.0073
216	0.0084	0.0013	0.0071
217	0.0083	0.0013	0.0070
218	0.0081	0.0012	0.0068
219	0.0079	0.0012	0.0067
220	0.0077	0.0012	0.0065
221	0.0075	0.0012	0.0064
222	0.0074	0.0011	0.0063
223	0.0072	0.0011	0.0061
224	0.0071	0.0011	0.0060
225	0.0069	0.0011	0.0059
226	0.0068	0.0010	0.0058
227	0.0067	0.0010	0.0057
228	0.0066	0.0010	0.0056

229	0.0065	0.0010	0.0055
230	0.0064	0.0010	0.0054
231	0.0063	0.0010	0.0053
232	0.0062	0.0009	0.0052
233	0.0061	0.0009	0.0051
234	0.0060	0.0009	0.0051
235	0.0059	0.0009	0.0050
236	0.0058	0.0009	0.0049
237	0.0057	0.0009	0.0048
238	0.0056	0.0009	0.0048
239	0.0056	0.0008	0.0047
240	0.0055	0.0008	0.0047
241	0.0054	0.0008	0.0046
242	0.0054	0.0008	0.0045
243	0.0053	0.0008	0.0045
244	0.0052	0.0008	0.0044
245	0.0052	0.0008	0.0044
246	0.0051	0.0008	0.0043
247	0.0050	0.0008	0.0043
248	0.0050	0.0008	0.0042
249	0.0049	0.0008	0.0042
250	0.0049	0.0007	0.0041
251	0.0048	0.0007	0.0041
252	0.0048	0.0007	0.0040
253	0.0047	0.0007	0.0040
254	0.0047	0.0007	0.0040
255	0.0046	0.0007	0.0039
256	0.0046	0.0007	0.0039
257	0.0045	0.0007	0.0039
258	0.0045	0.0007	0.0038
259	0.0045	0.0007	0.0038
260	0.0044	0.0007	0.0037
261	0.0044	0.0007	0.0037
262	0.0043	0.0007	0.0037
263	0.0043	0.0007	0.0036
264	0.0043	0.0007	0.0036
265	0.0042	0.0006	0.0036
266	0.0042	0.0006	0.0036
267	0.0042	0.0006	0.0035
268	0.0041	0.0006	0.0035
269	0.0041	0.0006	0.0035
270	0.0041	0.0006	0.0034
271	0.0040	0.0006	0.0034
272	0.0040	0.0006	0.0034
273	0.0040	0.0006	0.0034
274	0.0039	0.0006	0.0033
275	0.0039	0.0006	0.0033
276	0.0039	0.0006	0.0033
277	0.0038	0.0006	0.0033
278	0.0038	0.0006	0.0032
279	0.0038	0.0006	0.0032
280	0.0038	0.0006	0.0032
281	0.0037	0.0006	0.0032
282	0.0037	0.0006	0.0031
283	0.0037	0.0006	0.0031
284	0.0037	0.0006	0.0031
285	0.0036	0.0006	0.0031
286	0.0036	0.0006	0.0031
287	0.0036	0.0005	0.0030
288	0.0036	0.0005	0.0030

Total soil rain loss = 0.33(In)
Total effective rainfall = 2.32(In)
Peak flow rate in flood hydrograph = 43.43(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	12.5	25.0	37.5	50.0
0+ 5	0.0005	0.07	Q	|	|	|	|
0+10	0.0031	0.37	Q	|	|	|	|
0+15	0.0065	0.50	Q	|	|	|	|
0+20	0.0104	0.56	Q	|	|	|	|
0+25	0.0145	0.60	Q	|	|	|	|
0+30	0.0188	0.62	Q	|	|	|	|

```
0+35       0.0232      0.64  Q          |          |          |          |
0+40       0.0276      0.64  Q          |          |          |          |
0+45       0.0321      0.65  Q          |          |          |          |
0+50       0.0366      0.66  Q          |          |          |          |
0+55       0.0412      0.66  Q          |          |          |          |
1+ 0       0.0458      0.66  Q          |          |          |          |
1+ 5       0.0503      0.67  Q          |          |          |          |
1+10       0.0549      0.67  Q          |          |          |          |
1+15       0.0596      0.67  Q          |          |          |          |
1+20       0.0642      0.67  Q          |          |          |          |
1+25       0.0688      0.67  Q          |          |          |          |
1+30       0.0735      0.68  Q          |          |          |          |
1+35       0.0782      0.68  Q          |          |          |          |
1+40       0.0829      0.68  Q          |          |          |          |
1+45       0.0876      0.68  QV         |          |          |          |
1+50       0.0923      0.69  QV         |          |          |          |
1+55       0.0971      0.69  QV         |          |          |          |
2+ 0       0.1018      0.69  QV         |          |          |          |
2+ 5       0.1066      0.69  QV         |          |          |          |
2+10       0.1114      0.70  QV         |          |          |          |
2+15       0.1162      0.70  QV         |          |          |          |
2+20       0.1211      0.70  QV         |          |          |          |
2+25       0.1259      0.70  QV         |          |          |          |
2+30       0.1308      0.71  QV         |          |          |          |
2+35       0.1357      0.71  QV         |          |          |          |
2+40       0.1406      0.71  QV         |          |          |          |
2+45       0.1455      0.71  QV         |          |          |          |
2+50       0.1504      0.72  QV         |          |          |          |
2+55       0.1554      0.72  QV         |          |          |          |
3+ 0       0.1604      0.72  QV         |          |          |          |
3+ 5       0.1654      0.73  QV         |          |          |          |
3+10       0.1704      0.73  QV         |          |          |          |
3+15       0.1754      0.73  Q V        |          |          |          |
3+20       0.1805      0.73  Q V        |          |          |          |
3+25       0.1856      0.74  Q V        |          |          |          |
3+30       0.1907      0.74  Q V        |          |          |          |
3+35       0.1958      0.74  Q V        |          |          |          |
3+40       0.2009      0.75  Q V        |          |          |          |
3+45       0.2061      0.75  Q V        |          |          |          |
3+50       0.2113      0.75  Q V        |          |          |          |
3+55       0.2165      0.76  Q V        |          |          |          |
4+ 0       0.2217      0.76  Q V        |          |          |          |
4+ 5       0.2270      0.76  Q V        |          |          |          |
4+10       0.2322      0.77  Q V        |          |          |          |
4+15       0.2375      0.77  Q V        |          |          |          |
4+20       0.2428      0.77  Q V        |          |          |          |
4+25       0.2482      0.78  Q V        |          |          |          |
4+30       0.2535      0.78  Q V        |          |          |          |
4+35       0.2589      0.78  Q  V       |          |          |          |
4+40       0.2643      0.79  Q  V       |          |          |          |
4+45       0.2698      0.79  Q  V       |          |          |          |
4+50       0.2752      0.79  Q  V       |          |          |          |
4+55       0.2807      0.80  Q  V       |          |          |          |
5+ 0       0.2862      0.80  Q  V       |          |          |          |
5+ 5       0.2918      0.80  Q  V       |          |          |          |
5+10       0.2973      0.81  Q  V       |          |          |          |
5+15       0.3029      0.81  Q  V       |          |          |          |
5+20       0.3085      0.81  Q  V       |          |          |          |
5+25       0.3142      0.82  Q  V       |          |          |          |
5+30       0.3198      0.82  Q  V       |          |          |          |
5+35       0.3255      0.83  Q  V       |          |          |          |
5+40       0.3312      0.83  Q  V       |          |          |          |
5+45       0.3370      0.83  Q  V       |          |          |          |
5+50       0.3428      0.84  Q   V      |          |          |          |
5+55       0.3486      0.84  Q   V      |          |          |          |
6+ 0       0.3544      0.85  Q   V      |          |          |          |
6+ 5       0.3603      0.85  Q   V      |          |          |          |
6+10       0.3662      0.86  Q   V      |          |          |          |
6+15       0.3721      0.86  Q   V      |          |          |          |
6+20       0.3780      0.86  Q   V      |          |          |          |
6+25       0.3840      0.87  Q   V      |          |          |          |
6+30       0.3900      0.87  Q   V      |          |          |          |
6+35       0.3961      0.88  Q   V      |          |          |          |
6+40       0.4022      0.88  Q   V      |          |          |          |
6+45       0.4083      0.89  Q   V      |          |          |          |
6+50       0.4144      0.89  Q   V      |          |          |          |
6+55       0.4206      0.90  Q   V      |          |          |          |
7+ 0       0.4268      0.90  Q   V      |          |          |          |
7+ 5       0.4331      0.91  Q    V     |          |          |          |
7+10       0.4394      0.91  Q    V     |          |          |          |
7+15       0.4457      0.92  Q    V     |          |          |          |
```

```
 7+20       0.4520      0.92  Q    V    |          |          |          |
 7+25       0.4584      0.93  Q    V    |          |          |          |
 7+30       0.4649      0.93  Q    V    |          |          |          |
 7+35       0.4713      0.94  Q    V    |          |          |          |
 7+40       0.4778      0.95  Q    V    |          |          |          |
 7+45       0.4844      0.95  Q    V    |          |          |          |
 7+50       0.4910      0.96  Q    V    |          |          |          |
 7+55       0.4976      0.96  Q    V    |          |          |          |
 8+ 0       0.5043      0.97  Q    V    |          |          |          |
 8+ 5       0.5110      0.97  Q    V    |          |          |          |
 8+10       0.5177      0.98  Q     V   |          |          |          |
 8+15       0.5245      0.99  Q     V   |          |          |          |
 8+20       0.5314      0.99  Q     V   |          |          |          |
 8+25       0.5382      1.00  Q     V   |          |          |          |
 8+30       0.5452      1.01  Q     V   |          |          |          |
 8+35       0.5522      1.01  Q     V   |          |          |          |
 8+40       0.5592      1.02  Q     V   |          |          |          |
 8+45       0.5663      1.03  Q     V   |          |          |          |
 8+50       0.5734      1.03  Q     V   |          |          |          |
 8+55       0.5805      1.04  Q     V   |          |          |          |
 9+ 0       0.5878      1.05  Q     V   |          |          |          |
 9+ 5       0.5950      1.06  Q     V   |          |          |          |
 9+10       0.6024      1.06  Q      V  |          |          |          |
 9+15       0.6097      1.07  Q      V  |          |          |          |
 9+20       0.6172      1.08  Q      V  |          |          |          |
 9+25       0.6247      1.09  Q      V  |          |          |          |
 9+30       0.6322      1.10  Q      V  |          |          |          |
 9+35       0.6398      1.10  Q      V  |          |          |          |
 9+40       0.6475      1.11  Q      V  |          |          |          |
 9+45       0.6552      1.12  Q      V  |          |          |          |
 9+50       0.6630      1.13  Q      V  |          |          |          |
 9+55       0.6708      1.14  Q      V  |          |          |          |
10+ 0       0.6788      1.15  Q      V  |          |          |          |
10+ 5       0.6867      1.16  Q       V |          |          |          |
10+10       0.6948      1.17  Q       V |          |          |          |
10+15       0.7029      1.18  Q       V |          |          |          |
10+20       0.7111      1.19  Q       V |          |          |          |
10+25       0.7193      1.20  Q       V |          |          |          |
10+30       0.7277      1.21  Q       V |          |          |          |
10+35       0.7361      1.22  Q       V |          |          |          |
10+40       0.7446      1.23  Q       V |          |          |          |
10+45       0.7531      1.24  Q       V |          |          |          |
10+50       0.7618      1.26  |Q      V |          |          |          |
10+55       0.7705      1.27  |Q       V|          |          |          |
11+ 0       0.7793      1.28  |Q       V|          |          |          |
11+ 5       0.7882      1.29  |Q       V|          |          |          |
11+10       0.7972      1.31  |Q       V|          |          |          |
11+15       0.8063      1.32  |Q       V|          |          |          |
11+20       0.8155      1.33  |Q       V|          |          |          |
11+25       0.8248      1.35  |Q       V|          |          |          |
11+30       0.8341      1.36  |Q       V|          |          |          |
11+35       0.8436      1.38  |Q       V|          |          |          |
11+40       0.8532      1.39  |Q       V|          |          |          |
11+45       0.8629      1.41  |Q        V          |          |          |
11+50       0.8727      1.42  |Q        V          |          |          |
11+55       0.8826      1.44  |Q        V          |          |          |
12+ 0       0.8927      1.46  |Q        V          |          |          |
12+ 5       0.9028      1.47  |Q        V          |          |          |
12+10       0.9130      1.48  |Q        V          |          |          |
12+15       0.9233      1.49  |Q        V          |          |          |
12+20       0.9337      1.51  |Q        V          |          |          |
12+25       0.9443      1.53  |Q         |V         |          |          |
12+30       0.9549      1.55  |Q         |V         |          |          |
12+35       0.9658      1.57  |Q         |V         |          |          |
12+40       0.9768      1.60  |Q         |V         |          |          |
12+45       0.9879      1.62  |Q         |V         |          |          |
12+50       0.9992      1.64  |Q         |V         |          |          |
12+55       1.0107      1.67  |Q         |V         |          |          |
13+ 0       1.0224      1.70  |Q         |V         |          |          |
13+ 5       1.0342      1.72  |Q         | V        |          |          |
13+10       1.0463      1.75  |Q         | V        |          |          |
13+15       1.0586      1.78  |Q         | V        |          |          |
13+20       1.0711      1.82  |Q         | V        |          |          |
13+25       1.0838      1.85  |Q         | V        |          |          |
13+30       1.0968      1.88  |Q         | V        |          |          |
13+35       1.1100      1.92  |Q         | V        |          |          |
13+40       1.1235      1.96  |Q         |  V       |          |          |
13+45       1.1373      2.00  |Q         |  V       |          |          |
13+50       1.1513      2.04  |Q         |  V       |          |          |
13+55       1.1657      2.09  |Q         |  V       |          |          |
14+ 0       1.1805      2.14  |Q         |  V       |          |          |
```

```
14+ 5       1.1955      2.19  |Q         |  V       |          |          |
14+10       1.2110      2.25  |Q         |   V      |          |          |
14+15       1.2269      2.30  |Q         |   V      |          |          |
14+20       1.2432      2.37  |Q         |   V      |          |          |
14+25       1.2599      2.43  |Q         |   V      |          |          |
14+30       1.2772      2.51  | Q        |   V      |          |          |
14+35       1.2951      2.59  | Q        |    V     |          |          |
14+40       1.3135      2.68  | Q        |    V     |          |          |
14+45       1.3325      2.77  | Q        |    V     |          |          |
14+50       1.3524      2.88  | Q        |    V     |          |          |
14+55       1.3729      2.98  | Q        |     V    |          |          |
15+ 0       1.3944      3.12  | Q        |     V    |          |          |
15+ 5       1.4167      3.25  | Q        |     V    |          |          |
15+10       1.4403      3.42  | Q        |     V    |          |          |
15+15       1.4650      3.59  | Q        |      V   |          |          |
15+20       1.4913      3.82  |  Q       |      V   |          |          |
15+25       1.5185      3.94  |  Q       |      V   |          |          |
15+30       1.5447      3.81  |  Q       |       V  |          |          |
15+35       1.5718      3.93  |  Q       |       V  |          |          |
15+40       1.6014      4.30  |  Q       |       V  |          |          |
15+45       1.6346      4.82  |  Q       |        V|          |          |
15+50       1.6744      5.77  |   Q      |        V|          |          |
15+55       1.7234      7.13  |    Q     |         V          |          |
16+ 0       1.7936     10.18  |       Q  |         V          |          |
16+ 5       1.9359     20.66  |          |     Q    | V       |          |
16+10       2.2350     43.43  |          |          |     V   |    Q     |
16+15       2.3974     23.59  |          |       Q  |       V |          |
16+20       2.4914     13.64  |         Q          |        V|          |
16+25       2.5559      9.37  |       Q  |          |        V|          |
16+30       2.6067      7.38  |     Q    |          |         V          |
16+35       2.6476      5.94  |   Q      |          |         V          |
16+40       2.6806      4.79  |  Q       |          |          |V        |
16+45       2.7099      4.25  |  Q       |          |          |V        |
16+50       2.7354      3.71  | Q        |          |          | V       |
16+55       2.7557      2.95  | Q        |          |          | V       |
17+ 0       2.7745      2.72  | Q        |          |          | V       |
17+ 5       2.7920      2.55  | Q        |          |          | V       |
17+10       2.8085      2.40  |Q         |          |          | V       |
17+15       2.8242      2.27  |Q         |          |          |  V      |
17+20       2.8390      2.16  |Q         |          |          |  V      |
17+25       2.8532      2.06  |Q         |          |          |  V      |
17+30       2.8668      1.97  |Q         |          |          |  V      |
17+35       2.8798      1.89  |Q         |          |          |  V      |
17+40       2.8923      1.82  |Q         |          |          |  V      |
17+45       2.9045      1.76  |Q         |          |          |   V     |
17+50       2.9162      1.70  |Q         |          |          |   V     |
17+55       2.9275      1.65  |Q         |          |          |   V     |
18+ 0       2.9385      1.60  |Q         |          |          |   V     |
18+ 5       2.9493      1.56  |Q         |          |          |   V     |
18+10       2.9598      1.53  |Q         |          |          |   V     |
18+15       2.9701      1.49  |Q         |          |          |   V     |
18+20       2.9801      1.46  |Q         |          |          |   V     |
18+25       2.9899      1.42  |Q         |          |          |    V    |
18+30       2.9995      1.39  |Q         |          |          |    V    |
18+35       3.0089      1.36  |Q         |          |          |    V    |
18+40       3.0181      1.33  |Q         |          |          |    V    |
18+45       3.0271      1.31  |Q         |          |          |    V    |
18+50       3.0359      1.28  |Q         |          |          |    V    |
18+55       3.0446      1.26  |Q         |          |          |    V    |
19+ 0       3.0531      1.23  Q          |          |          |    V    |
19+ 5       3.0614      1.21  Q          |          |          |    V    |
19+10       3.0696      1.19  Q          |          |          |    V    |
19+15       3.0776      1.17  Q          |          |          |     V   |
19+20       3.0856      1.15  Q          |          |          |     V   |
19+25       3.0934      1.13  Q          |          |          |     V   |
19+30       3.1010      1.11  Q          |          |          |     V   |
19+35       3.1086      1.10  Q          |          |          |     V   |
19+40       3.1160      1.08  Q          |          |          |     V   |
19+45       3.1233      1.06  Q          |          |          |     V   |
19+50       3.1306      1.05  Q          |          |          |     V   |
19+55       3.1377      1.03  Q          |          |          |     V   |
20+ 0       3.1447      1.02  Q          |          |          |     V   |
20+ 5       3.1517      1.01  Q          |          |          |     V   |
20+10       3.1585      0.99  Q          |          |          |     V   |
20+15       3.1653      0.98  Q          |          |          |      V  |
20+20       3.1719      0.97  Q          |          |          |      V  |
20+25       3.1785      0.96  Q          |          |          |      V  |
20+30       3.1850      0.95  Q          |          |          |      V  |
20+35       3.1915      0.93  Q          |          |          |      V  |
20+40       3.1978      0.92  Q          |          |          |      V  |
20+45       3.2041      0.91  Q          |          |          |      V  |
```

```
   20+50       3.2103      0.90  Q          |          |          |       V  |
   20+55       3.2165      0.89  Q          |          |          |       V  |
   21+ 0       3.2226      0.88  Q          |          |          |       V  |
   21+ 5       3.2286      0.87  Q          |          |          |       V  |
   21+10       3.2345      0.86  Q          |          |          |       V  |
   21+15       3.2404      0.86  Q          |          |          |       V  |
   21+20       3.2463      0.85  Q          |          |          |        V |
   21+25       3.2520      0.84  Q          |          |          |        V |
   21+30       3.2578      0.83  Q          |          |          |        V |
   21+35       3.2634      0.82  Q          |          |          |        V |
   21+40       3.2690      0.82  Q          |          |          |        V |
   21+45       3.2746      0.81  Q          |          |          |        V |
   21+50       3.2801      0.80  Q          |          |          |        V |
   21+55       3.2856      0.79  Q          |          |          |        V |
   22+ 0       3.2910      0.79  Q          |          |          |        V |
   22+ 5       3.2964      0.78  Q          |          |          |        V |
   22+10       3.3017      0.77  Q          |          |          |        V |
   22+15       3.3069      0.77  Q          |          |          |        V |
   22+20       3.3122      0.76  Q          |          |          |        V |
   22+25       3.3174      0.75  Q          |          |          |        V |
   22+30       3.3225      0.75  Q          |          |          |        V |
   22+35       3.3276      0.74  Q          |          |          |        V |
   22+40       3.3327      0.73  Q          |          |          |         V|
   22+45       3.3377      0.73  Q          |          |          |         V|
   22+50       3.3427      0.72  Q          |          |          |         V|
   22+55       3.3476      0.72  Q          |          |          |         V|
   23+ 0       3.3525      0.71  Q          |          |          |         V|
   23+ 5       3.3574      0.71  Q          |          |          |         V|
   23+10       3.3622      0.70  Q          |          |          |         V|
   23+15       3.3670      0.70  Q          |          |          |         V|
   23+20       3.3718      0.69  Q          |          |          |         V|
   23+25       3.3765      0.69  Q          |          |          |         V|
   23+30       3.3812      0.68  Q          |          |          |         V|
   23+35       3.3859      0.68  Q          |          |          |         V|
   23+40       3.3905      0.67  Q          |          |          |         V|
   23+45       3.3951      0.67  Q          |          |          |         V|
   23+50       3.3997      0.66  Q          |          |          |         V|
   23+55       3.4042      0.66  Q          |          |          |         V|
   24+ 0       3.4087      0.65  Q          |          |          |         V|
   24+ 5       3.4127      0.58  Q          |          |          |         V|
   24+10       3.4146      0.27  Q          |          |          |         V|
   24+15       3.4156      0.14  Q          |          |          |         V|
   24+20       3.4162      0.08  Q          |          |          |         V|
   24+25       3.4165      0.05  Q          |          |          |         V|
   24+30       3.4167      0.03  Q          |          |          |         V|
   24+35       3.4168      0.02  Q          |          |          |         V|
   24+40       3.4169      0.01  Q          |          |          |         V|
   24+45       3.4169      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 06/23/22

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San Bernardino County Synthetic Unit Hydrology Method
Manual date - August 1986

Program License Serial Number 6320

Storm Event Year = 100

Antecedent Moisture Condition = 2

English (in-lb) Input Units Used

English Rainfall Data (Inches) Input Values Used

English Units used in output format

Area averaged rainfall intensity isohyetal data:

Sub-Area (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
17.68	1	0.60
Rainfall data for year 2		
17.68	6	0.75
Rainfall data for year 2		
17.68	24	1.30
Rainfall data for year 100		
17.68	1	1.07
Rainfall data for year 100		
17.68	6	1.99
Rainfall data for year 100		
17.68	24	3.39

++

******** Area-averaged max loss rate, Fm ********

SCS curve No.(AMCII)	SCS curve NO.(AMC 2)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
77.0	77.0	17.68	1.000	0.420	0.110	0.046

Area-averaged adjusted loss rate Fm (In/Hr) = 0.046

********* Area-Averaged low loss rate fraction, Yb **********

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC2)	S	Pervious Yield Fr
1.94	0.110	77.0	77.0	2.99	0.398
15.74	0.890	98.0	98.0	0.20	0.931

Area-averaged catchment yield fraction, Y = 0.873
Area-averaged low loss fraction, Yb = 0.127
User entry of time of concentration = 0.129 (hours)
++
Watershed area = 17.68(Ac.)

Catchment Lag time = 0.103 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 80.7494
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.046(In/Hr)
Average low loss rate fraction (Yb) = 0.127 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall = 0.508(In)
Computed peak 30-minute rainfall = 0.869(In)
Specified peak 1-hour rainfall = 1.070(In)
Computed peak 3-hour rainfall = 1.565(In)
Specified peak 6-hour rainfall = 1.990(In)
Specified peak 24-hour rainfall = 3.390(In)

Rainfall depth area reduction factors:
Using a total area of 17.68(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.507(In)
30-minute factor = 0.999 Adjusted rainfall = 0.868(In)
1-hour factor = 0.999 Adjusted rainfall = 1.069(In)
3-hour factor = 1.000 Adjusted rainfall = 1.565(In)
6-hour factor = 1.000 Adjusted rainfall = 1.990(In)
24-hour factor = 1.000 Adjusted rainfall = 3.390(In)

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

Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 213.82 (CFS))	
1	10.956	23.427
2	57.842	100.249
3	78.112	43.341
4	87.134	19.290
5	92.184	10.799
6	95.341	6.750
7	97.324	4.240
8	98.382	2.263
9	99.311	1.985
10	100.000	1.473

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.5073	0.5073
2	0.6246	0.1173
3	0.7054	0.0808
4	0.7689	0.0636
5	0.8222	0.0532
6	0.8684	0.0462
7	0.9095	0.0411
8	0.9467	0.0372
9	0.9807	0.0340
10	1.0122	0.0315
11	1.0416	0.0294
12	1.0691	0.0275
13	1.0992	0.0301
14	1.1278	0.0286
15	1.1552	0.0273
16	1.1813	0.0262
17	1.2064	0.0251
18	1.2306	0.0242
19	1.2539	0.0233
20	1.2764	0.0225
21	1.2982	0.0218
22	1.3193	0.0211
23	1.3398	0.0205
24	1.3598	0.0199
25	1.3792	0.0194
26	1.3981	0.0189
27	1.4165	0.0184
28	1.4345	0.0180
29	1.4521	0.0176
30	1.4692	0.0172
31	1.4860	0.0168
32	1.5025	0.0165
33	1.5186	0.0161
34	1.5344	0.0158
35	1.5500	0.0155

36	1.5652	0.0152
37	1.5801	0.0149
38	1.5948	0.0147
39	1.6092	0.0144
40	1.6233	0.0142
41	1.6373	0.0139
42	1.6510	0.0137
43	1.6645	0.0135
44	1.6778	0.0133
45	1.6909	0.0131
46	1.7039	0.0129
47	1.7166	0.0127
48	1.7292	0.0126
49	1.7416	0.0124
50	1.7538	0.0122
51	1.7659	0.0121
52	1.7778	0.0119
53	1.7895	0.0118
54	1.8012	0.0116
55	1.8127	0.0115
56	1.8240	0.0113
57	1.8352	0.0112
58	1.8463	0.0111
59	1.8573	0.0110
60	1.8681	0.0108
61	1.8788	0.0107
62	1.8895	0.0106
63	1.9000	0.0105
64	1.9103	0.0104
65	1.9206	0.0103
66	1.9308	0.0102
67	1.9409	0.0101
68	1.9509	0.0100
69	1.9608	0.0099
70	1.9706	0.0098
71	1.9803	0.0097
72	1.9899	0.0096
73	2.0005	0.0106
74	2.0110	0.0105
75	2.0214	0.0104
76	2.0317	0.0103
77	2.0419	0.0102
78	2.0520	0.0101
79	2.0621	0.0101
80	2.0721	0.0100
81	2.0820	0.0099
82	2.0919	0.0098
83	2.1016	0.0098
84	2.1113	0.0097
85	2.1210	0.0096
86	2.1305	0.0096
87	2.1400	0.0095
88	2.1494	0.0094
89	2.1588	0.0094
90	2.1681	0.0093
91	2.1773	0.0092
92	2.1864	0.0092
93	2.1955	0.0091
94	2.2046	0.0090
95	2.2136	0.0090
96	2.2225	0.0089
97	2.2314	0.0089
98	2.2402	0.0088
99	2.2489	0.0088
100	2.2576	0.0087
101	2.2663	0.0086
102	2.2749	0.0086
103	2.2834	0.0085
104	2.2919	0.0085
105	2.3004	0.0084
106	2.3088	0.0084
107	2.3171	0.0083
108	2.3254	0.0083
109	2.3337	0.0083
110	2.3419	0.0082
111	2.3500	0.0082
112	2.3581	0.0081
113	2.3662	0.0081
114	2.3742	0.0080
115	2.3822	0.0080
116	2.3901	0.0079

117	2.3980	0.0079
118	2.4059	0.0079
119	2.4137	0.0078
120	2.4215	0.0078
121	2.4292	0.0077
122	2.4369	0.0077
123	2.4446	0.0077
124	2.4522	0.0076
125	2.4598	0.0076
126	2.4673	0.0075
127	2.4748	0.0075
128	2.4823	0.0075
129	2.4897	0.0074
130	2.4971	0.0074
131	2.5045	0.0074
132	2.5118	0.0073
133	2.5191	0.0073
134	2.5264	0.0073
135	2.5336	0.0072
136	2.5408	0.0072
137	2.5480	0.0072
138	2.5551	0.0071
139	2.5622	0.0071
140	2.5693	0.0071
141	2.5763	0.0070
142	2.5833	0.0070
143	2.5903	0.0070
144	2.5972	0.0069
145	2.6041	0.0069
146	2.6110	0.0069
147	2.6179	0.0069
148	2.6247	0.0068
149	2.6315	0.0068
150	2.6383	0.0068
151	2.6450	0.0067
152	2.6518	0.0067
153	2.6584	0.0067
154	2.6651	0.0067
155	2.6717	0.0066
156	2.6784	0.0066
157	2.6849	0.0066
158	2.6915	0.0066
159	2.6980	0.0065
160	2.7045	0.0065
161	2.7110	0.0065
162	2.7175	0.0065
163	2.7239	0.0064
164	2.7303	0.0064
165	2.7367	0.0064
166	2.7431	0.0064
167	2.7494	0.0063
168	2.7557	0.0063
169	2.7620	0.0063
170	2.7683	0.0063
171	2.7745	0.0062
172	2.7808	0.0062
173	2.7870	0.0062
174	2.7931	0.0062
175	2.7993	0.0062
176	2.8054	0.0061
177	2.8115	0.0061
178	2.8176	0.0061
179	2.8237	0.0061
180	2.8298	0.0061
181	2.8358	0.0060
182	2.8418	0.0060
183	2.8478	0.0060
184	2.8538	0.0060
185	2.8597	0.0060
186	2.8656	0.0059
187	2.8716	0.0059
188	2.8774	0.0059
189	2.8833	0.0059
190	2.8892	0.0059
191	2.8950	0.0058
192	2.9008	0.0058
193	2.9066	0.0058
194	2.9124	0.0058
195	2.9182	0.0058
196	2.9239	0.0057
197	2.9296	0.0057

198	2.9353	0.0057
199	2.9410	0.0057
200	2.9467	0.0057
201	2.9523	0.0057
202	2.9580	0.0056
203	2.9636	0.0056
204	2.9692	0.0056
205	2.9748	0.0056
206	2.9804	0.0056
207	2.9859	0.0056
208	2.9914	0.0055
209	2.9970	0.0055
210	3.0025	0.0055
211	3.0079	0.0055
212	3.0134	0.0055
213	3.0189	0.0055
214	3.0243	0.0054
215	3.0297	0.0054
216	3.0351	0.0054
217	3.0405	0.0054
218	3.0459	0.0054
219	3.0513	0.0054
220	3.0566	0.0053
221	3.0619	0.0053
222	3.0673	0.0053
223	3.0726	0.0053
224	3.0779	0.0053
225	3.0831	0.0053
226	3.0884	0.0053
227	3.0936	0.0052
228	3.0989	0.0052
229	3.1041	0.0052
230	3.1093	0.0052
231	3.1145	0.0052
232	3.1196	0.0052
233	3.1248	0.0052
234	3.1299	0.0051
235	3.1351	0.0051
236	3.1402	0.0051
237	3.1453	0.0051
238	3.1504	0.0051
239	3.1555	0.0051
240	3.1605	0.0051
241	3.1656	0.0051
242	3.1706	0.0050
243	3.1757	0.0050
244	3.1807	0.0050
245	3.1857	0.0050
246	3.1907	0.0050
247	3.1957	0.0050
248	3.2006	0.0050
249	3.2056	0.0050
250	3.2105	0.0049
251	3.2154	0.0049
252	3.2204	0.0049
253	3.2253	0.0049
254	3.2302	0.0049
255	3.2350	0.0049
256	3.2399	0.0049
257	3.2448	0.0049
258	3.2496	0.0048
259	3.2544	0.0048
260	3.2593	0.0048
261	3.2641	0.0048
262	3.2689	0.0048
263	3.2737	0.0048
264	3.2785	0.0048
265	3.2832	0.0048
266	3.2880	0.0048
267	3.2927	0.0047
268	3.2975	0.0047
269	3.3022	0.0047
270	3.3069	0.0047
271	3.3116	0.0047
272	3.3163	0.0047
273	3.3210	0.0047
274	3.3256	0.0047
275	3.3303	0.0047
276	3.3349	0.0046
277	3.3396	0.0046
278	3.3442	0.0046

279	3.3488	0.0046
280	3.3534	0.0046
281	3.3580	0.0046
282	3.3626	0.0046
283	3.3672	0.0046
284	3.3718	0.0046
285	3.3763	0.0046
286	3.3809	0.0045
287	3.3854	0.0045
288	3.3899	0.0045

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0045	0.0006	0.0040
2	0.0045	0.0006	0.0040
3	0.0046	0.0006	0.0040
4	0.0046	0.0006	0.0040
5	0.0046	0.0006	0.0040
6	0.0046	0.0006	0.0040
7	0.0046	0.0006	0.0040
8	0.0046	0.0006	0.0040
9	0.0046	0.0006	0.0041
10	0.0047	0.0006	0.0041
11	0.0047	0.0006	0.0041
12	0.0047	0.0006	0.0041
13	0.0047	0.0006	0.0041
14	0.0047	0.0006	0.0041
15	0.0047	0.0006	0.0041
16	0.0048	0.0006	0.0041
17	0.0048	0.0006	0.0042
18	0.0048	0.0006	0.0042
19	0.0048	0.0006	0.0042
20	0.0048	0.0006	0.0042
21	0.0048	0.0006	0.0042
22	0.0049	0.0006	0.0042
23	0.0049	0.0006	0.0043
24	0.0049	0.0006	0.0043
25	0.0049	0.0006	0.0043
26	0.0049	0.0006	0.0043
27	0.0050	0.0006	0.0043
28	0.0050	0.0006	0.0043
29	0.0050	0.0006	0.0044
30	0.0050	0.0006	0.0044
31	0.0050	0.0006	0.0044
32	0.0050	0.0006	0.0044
33	0.0051	0.0006	0.0044
34	0.0051	0.0006	0.0044
35	0.0051	0.0007	0.0045
36	0.0051	0.0007	0.0045
37	0.0051	0.0007	0.0045
38	0.0052	0.0007	0.0045
39	0.0052	0.0007	0.0045
40	0.0052	0.0007	0.0045
41	0.0052	0.0007	0.0046
42	0.0052	0.0007	0.0046
43	0.0053	0.0007	0.0046
44	0.0053	0.0007	0.0046
45	0.0053	0.0007	0.0046
46	0.0053	0.0007	0.0047
47	0.0054	0.0007	0.0047
48	0.0054	0.0007	0.0047
49	0.0054	0.0007	0.0047
50	0.0054	0.0007	0.0047
51	0.0055	0.0007	0.0048
52	0.0055	0.0007	0.0048
53	0.0055	0.0007	0.0048
54	0.0055	0.0007	0.0048
55	0.0056	0.0007	0.0048
56	0.0056	0.0007	0.0049
57	0.0056	0.0007	0.0049
58	0.0056	0.0007	0.0049
59	0.0057	0.0007	0.0049
60	0.0057	0.0007	0.0049
61	0.0057	0.0007	0.0050
62	0.0057	0.0007	0.0050
63	0.0058	0.0007	0.0050
64	0.0058	0.0007	0.0050
65	0.0058	0.0007	0.0051
66	0.0058	0.0007	0.0051

67	0.0059	0.0007	0.0051
68	0.0059	0.0008	0.0051
69	0.0059	0.0008	0.0052
70	0.0060	0.0008	0.0052
71	0.0060	0.0008	0.0052
72	0.0060	0.0008	0.0052
73	0.0061	0.0008	0.0053
74	0.0061	0.0008	0.0053
75	0.0061	0.0008	0.0053
76	0.0061	0.0008	0.0054
77	0.0062	0.0008	0.0054
78	0.0062	0.0008	0.0054
79	0.0062	0.0008	0.0055
80	0.0063	0.0008	0.0055
81	0.0063	0.0008	0.0055
82	0.0063	0.0008	0.0055
83	0.0064	0.0008	0.0056
84	0.0064	0.0008	0.0056
85	0.0065	0.0008	0.0056
86	0.0065	0.0008	0.0057
87	0.0065	0.0008	0.0057
88	0.0066	0.0008	0.0057
89	0.0066	0.0008	0.0058
90	0.0066	0.0008	0.0058
91	0.0067	0.0009	0.0058
92	0.0067	0.0009	0.0059
93	0.0068	0.0009	0.0059
94	0.0068	0.0009	0.0059
95	0.0069	0.0009	0.0060
96	0.0069	0.0009	0.0060
97	0.0069	0.0009	0.0061
98	0.0070	0.0009	0.0061
99	0.0070	0.0009	0.0061
100	0.0071	0.0009	0.0062
101	0.0071	0.0009	0.0062
102	0.0072	0.0009	0.0063
103	0.0072	0.0009	0.0063
104	0.0073	0.0009	0.0063
105	0.0073	0.0009	0.0064
106	0.0074	0.0009	0.0064
107	0.0074	0.0009	0.0065
108	0.0075	0.0010	0.0065
109	0.0075	0.0010	0.0066
110	0.0076	0.0010	0.0066
111	0.0077	0.0010	0.0067
112	0.0077	0.0010	0.0067
113	0.0078	0.0010	0.0068
114	0.0078	0.0010	0.0068
115	0.0079	0.0010	0.0069
116	0.0079	0.0010	0.0069
117	0.0080	0.0010	0.0070
118	0.0081	0.0010	0.0070
119	0.0082	0.0010	0.0071
120	0.0082	0.0010	0.0072
121	0.0083	0.0011	0.0072
122	0.0083	0.0011	0.0073
123	0.0084	0.0011	0.0074
124	0.0085	0.0011	0.0074
125	0.0086	0.0011	0.0075
126	0.0086	0.0011	0.0075
127	0.0088	0.0011	0.0076
128	0.0088	0.0011	0.0077
129	0.0089	0.0011	0.0078
130	0.0090	0.0011	0.0078
131	0.0091	0.0012	0.0079
132	0.0092	0.0012	0.0080
133	0.0093	0.0012	0.0081
134	0.0094	0.0012	0.0082
135	0.0095	0.0012	0.0083
136	0.0096	0.0012	0.0083
137	0.0097	0.0012	0.0085
138	0.0098	0.0012	0.0085
139	0.0099	0.0013	0.0087
140	0.0100	0.0013	0.0087
141	0.0101	0.0013	0.0089
142	0.0102	0.0013	0.0089
143	0.0104	0.0013	0.0091
144	0.0105	0.0013	0.0092
145	0.0096	0.0012	0.0084
146	0.0097	0.0012	0.0085
147	0.0099	0.0013	0.0086

148	0.0100	0.0013	0.0087
149	0.0102	0.0013	0.0089
150	0.0103	0.0013	0.0090
151	0.0105	0.0013	0.0092
152	0.0106	0.0014	0.0093
153	0.0108	0.0014	0.0095
154	0.0110	0.0014	0.0096
155	0.0112	0.0014	0.0098
156	0.0113	0.0014	0.0099
157	0.0116	0.0015	0.0101
158	0.0118	0.0015	0.0103
159	0.0121	0.0015	0.0105
160	0.0122	0.0016	0.0107
161	0.0126	0.0016	0.0110
162	0.0127	0.0016	0.0111
163	0.0131	0.0017	0.0114
164	0.0133	0.0017	0.0116
165	0.0137	0.0017	0.0120
166	0.0139	0.0018	0.0122
167	0.0144	0.0018	0.0126
168	0.0147	0.0019	0.0128
169	0.0152	0.0019	0.0133
170	0.0155	0.0020	0.0135
171	0.0161	0.0021	0.0141
172	0.0165	0.0021	0.0144
173	0.0172	0.0022	0.0150
174	0.0176	0.0022	0.0153
175	0.0184	0.0023	0.0161
176	0.0189	0.0024	0.0165
177	0.0199	0.0025	0.0174
178	0.0205	0.0026	0.0179
179	0.0218	0.0028	0.0190
180	0.0225	0.0029	0.0196
181	0.0242	0.0031	0.0211
182	0.0251	0.0032	0.0219
183	0.0273	0.0035	0.0238
184	0.0286	0.0036	0.0250
185	0.0275	0.0035	0.0240
186	0.0294	0.0037	0.0256
187	0.0340	0.0039	0.0302
188	0.0372	0.0039	0.0333
189	0.0462	0.0039	0.0424
190	0.0532	0.0039	0.0494
191	0.0808	0.0039	0.0769
192	0.1173	0.0039	0.1134
193	0.5073	0.0039	0.5035
194	0.0636	0.0039	0.0597
195	0.0411	0.0039	0.0373
196	0.0315	0.0039	0.0276
197	0.0301	0.0038	0.0263
198	0.0262	0.0033	0.0228
199	0.0233	0.0030	0.0203
200	0.0211	0.0027	0.0184
201	0.0194	0.0025	0.0169
202	0.0180	0.0023	0.0157
203	0.0168	0.0021	0.0147
204	0.0158	0.0020	0.0138
205	0.0149	0.0019	0.0130
206	0.0142	0.0018	0.0124
207	0.0135	0.0017	0.0118
208	0.0129	0.0016	0.0113
209	0.0124	0.0016	0.0108
210	0.0119	0.0015	0.0104
211	0.0115	0.0015	0.0100
212	0.0111	0.0014	0.0097
213	0.0107	0.0014	0.0094
214	0.0104	0.0013	0.0091
215	0.0101	0.0013	0.0088
216	0.0098	0.0012	0.0085
217	0.0106	0.0013	0.0092
218	0.0103	0.0013	0.0090
219	0.0101	0.0013	0.0088
220	0.0098	0.0013	0.0086
221	0.0096	0.0012	0.0084
222	0.0094	0.0012	0.0082
223	0.0092	0.0012	0.0081
224	0.0090	0.0012	0.0079
225	0.0089	0.0011	0.0077
226	0.0087	0.0011	0.0076
227	0.0085	0.0011	0.0075
228	0.0084	0.0011	0.0073

229	0.0083	0.0011	0.0072
230	0.0081	0.0010	0.0071
231	0.0080	0.0010	0.0070
232	0.0079	0.0010	0.0069
233	0.0077	0.0010	0.0067
234	0.0076	0.0010	0.0066
235	0.0075	0.0010	0.0066
236	0.0074	0.0009	0.0065
237	0.0073	0.0009	0.0064
238	0.0072	0.0009	0.0063
239	0.0071	0.0009	0.0062
240	0.0070	0.0009	0.0061
241	0.0069	0.0009	0.0060
242	0.0068	0.0009	0.0060
243	0.0067	0.0009	0.0059
244	0.0067	0.0008	0.0058
245	0.0066	0.0008	0.0057
246	0.0065	0.0008	0.0057
247	0.0064	0.0008	0.0056
248	0.0064	0.0008	0.0056
249	0.0063	0.0008	0.0055
250	0.0062	0.0008	0.0054
251	0.0062	0.0008	0.0054
252	0.0061	0.0008	0.0053
253	0.0060	0.0008	0.0053
254	0.0060	0.0008	0.0052
255	0.0059	0.0008	0.0052
256	0.0059	0.0007	0.0051
257	0.0058	0.0007	0.0051
258	0.0057	0.0007	0.0050
259	0.0057	0.0007	0.0050
260	0.0056	0.0007	0.0049
261	0.0056	0.0007	0.0049
262	0.0055	0.0007	0.0048
263	0.0055	0.0007	0.0048
264	0.0054	0.0007	0.0047
265	0.0054	0.0007	0.0047
266	0.0053	0.0007	0.0047
267	0.0053	0.0007	0.0046
268	0.0053	0.0007	0.0046
269	0.0052	0.0007	0.0046
270	0.0052	0.0007	0.0045
271	0.0051	0.0007	0.0045
272	0.0051	0.0006	0.0044
273	0.0051	0.0006	0.0044
274	0.0050	0.0006	0.0044
275	0.0050	0.0006	0.0043
276	0.0049	0.0006	0.0043
277	0.0049	0.0006	0.0043
278	0.0049	0.0006	0.0042
279	0.0048	0.0006	0.0042
280	0.0048	0.0006	0.0042
281	0.0048	0.0006	0.0042
282	0.0047	0.0006	0.0041
283	0.0047	0.0006	0.0041
284	0.0047	0.0006	0.0041
285	0.0046	0.0006	0.0040
286	0.0046	0.0006	0.0040
287	0.0046	0.0006	0.0040
288	0.0045	0.0006	0.0040

Total soil rain loss = 0.34(In)
Total effective rainfall = 3.05(In)
Peak flow rate in flood hydrograph = 59.38(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       15.0      30.0      45.0      60.0
-------------------------------------------------------------------------
  0+ 5       0.0006      0.09  Q         |         |         |         |
  0+10       0.0040      0.49  Q         |         |         |         |
  0+15       0.0086      0.66  Q         |         |         |         |
  0+20       0.0137      0.74  Q         |         |         |         |
  0+25       0.0191      0.78  Q         |         |         |         |
  0+30       0.0247      0.81  Q         |         |         |         |
```

```
0+35       0.0304      0.83  Q          |          |          |          |
0+40       0.0362      0.85  Q          |          |          |          |
0+45       0.0421      0.86  Q          |          |          |          |
0+50       0.0481      0.86  Q          |          |          |          |
0+55       0.0540      0.87  Q          |          |          |          |
1+ 0       0.0600      0.87  Q          |          |          |          |
1+ 5       0.0661      0.87  Q          |          |          |          |
1+10       0.0721      0.88  Q          |          |          |          |
1+15       0.0781      0.88  Q          |          |          |          |
1+20       0.0842      0.88  Q          |          |          |          |
1+25       0.0903      0.89  Q          |          |          |          |
1+30       0.0964      0.89  Q          |          |          |          |
1+35       0.1026      0.89  Q          |          |          |          |
1+40       0.1087      0.89  Q          |          |          |          |
1+45       0.1149      0.90  QV         |          |          |          |
1+50       0.1211      0.90  QV         |          |          |          |
1+55       0.1273      0.90  QV         |          |          |          |
2+ 0       0.1336      0.91  QV         |          |          |          |
2+ 5       0.1399      0.91  QV         |          |          |          |
2+10       0.1462      0.91  QV         |          |          |          |
2+15       0.1525      0.92  QV         |          |          |          |
2+20       0.1588      0.92  QV         |          |          |          |
2+25       0.1652      0.92  QV         |          |          |          |
2+30       0.1716      0.93  QV         |          |          |          |
2+35       0.1780      0.93  QV         |          |          |          |
2+40       0.1844      0.93  QV         |          |          |          |
2+45       0.1909      0.94  QV         |          |          |          |
2+50       0.1974      0.94  QV         |          |          |          |
2+55       0.2039      0.95  QV         |          |          |          |
3+ 0       0.2104      0.95  QV         |          |          |          |
3+ 5       0.2170      0.95  QV         |          |          |          |
3+10       0.2236      0.96  QV         |          |          |          |
3+15       0.2302      0.96  Q V        |          |          |          |
3+20       0.2368      0.96  Q V        |          |          |          |
3+25       0.2435      0.97  Q V        |          |          |          |
3+30       0.2502      0.97  Q V        |          |          |          |
3+35       0.2569      0.98  Q V        |          |          |          |
3+40       0.2637      0.98  Q V        |          |          |          |
3+45       0.2704      0.98  Q V        |          |          |          |
3+50       0.2772      0.99  Q V        |          |          |          |
3+55       0.2841      0.99  Q V        |          |          |          |
4+ 0       0.2909      1.00  Q V        |          |          |          |
4+ 5       0.2978      1.00  Q V        |          |          |          |
4+10       0.3047      1.00  Q V        |          |          |          |
4+15       0.3117      1.01  Q V        |          |          |          |
4+20       0.3187      1.01  Q V        |          |          |          |
4+25       0.3257      1.02  Q V        |          |          |          |
4+30       0.3327      1.02  Q V        |          |          |          |
4+35       0.3398      1.03  Q  V       |          |          |          |
4+40       0.3469      1.03  Q  V       |          |          |          |
4+45       0.3540      1.04  Q  V       |          |          |          |
4+50       0.3612      1.04  Q  V       |          |          |          |
4+55       0.3684      1.04  Q  V       |          |          |          |
5+ 0       0.3756      1.05  Q  V       |          |          |          |
5+ 5       0.3829      1.05  Q  V       |          |          |          |
5+10       0.3902      1.06  Q  V       |          |          |          |
5+15       0.3975      1.06  Q  V       |          |          |          |
5+20       0.4049      1.07  Q  V       |          |          |          |
5+25       0.4123      1.07  Q  V       |          |          |          |
5+30       0.4197      1.08  Q  V       |          |          |          |
5+35       0.4272      1.08  Q  V       |          |          |          |
5+40       0.4347      1.09  Q  V       |          |          |          |
5+45       0.4422      1.10  Q  V       |          |          |          |
5+50       0.4498      1.10  Q   V      |          |          |          |
5+55       0.4574      1.11  Q   V      |          |          |          |
6+ 0       0.4651      1.11  Q   V      |          |          |          |
6+ 5       0.4728      1.12  Q   V      |          |          |          |
6+10       0.4805      1.12  Q   V      |          |          |          |
6+15       0.4883      1.13  Q   V      |          |          |          |
6+20       0.4961      1.14  Q   V      |          |          |          |
6+25       0.5040      1.14  Q   V      |          |          |          |
6+30       0.5119      1.15  Q   V      |          |          |          |
6+35       0.5198      1.15  Q   V      |          |          |          |
6+40       0.5278      1.16  Q   V      |          |          |          |
6+45       0.5358      1.17  Q   V      |          |          |          |
6+50       0.5439      1.17  Q   V      |          |          |          |
6+55       0.5520      1.18  Q   V      |          |          |          |
7+ 0       0.5602      1.19  Q   V      |          |          |          |
7+ 5       0.5684      1.19  Q    V     |          |          |          |
7+10       0.5766      1.20  Q    V     |          |          |          |
7+15       0.5849      1.20  Q    V     |          |          |          |
```

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 7+20       0.5933      1.21  Q    V    |          |          |          |
 7+25       0.6017      1.22  Q    V    |          |          |          |
 7+30       0.6101      1.23  Q    V    |          |          |          |
 7+35       0.6186      1.23  Q    V    |          |          |          |
 7+40       0.6272      1.24  Q    V    |          |          |          |
 7+45       0.6358      1.25  Q    V    |          |          |          |
 7+50       0.6444      1.26  Q    V    |          |          |          |
 7+55       0.6531      1.26  Q    V    |          |          |          |
 8+ 0       0.6619      1.27  Q    V    |          |          |          |
 8+ 5       0.6707      1.28  Q    V    |          |          |          |
 8+10       0.6796      1.29  Q     V   |          |          |          |
 8+15       0.6885      1.30  Q     V   |          |          |          |
 8+20       0.6975      1.30  Q     V   |          |          |          |
 8+25       0.7065      1.31  Q     V   |          |          |          |
 8+30       0.7156      1.32  Q     V   |          |          |          |
 8+35       0.7248      1.33  Q     V   |          |          |          |
 8+40       0.7340      1.34  Q     V   |          |          |          |
 8+45       0.7433      1.35  Q     V   |          |          |          |
 8+50       0.7526      1.36  Q     V   |          |          |          |
 8+55       0.7621      1.37  Q     V   |          |          |          |
 9+ 0       0.7716      1.38  Q     V   |          |          |          |
 9+ 5       0.7811      1.39  Q     V   |          |          |          |
 9+10       0.7907      1.40  Q      V  |          |          |          |
 9+15       0.8004      1.41  Q      V  |          |          |          |
 9+20       0.8102      1.42  Q      V  |          |          |          |
 9+25       0.8200      1.43  Q      V  |          |          |          |
 9+30       0.8299      1.44  Q      V  |          |          |          |
 9+35       0.8399      1.45  Q      V  |          |          |          |
 9+40       0.8500      1.46  Q      V  |          |          |          |
 9+45       0.8602      1.47  Q      V  |          |          |          |
 9+50       0.8704      1.49  Q      V  |          |          |          |
 9+55       0.8807      1.50  Q      V  |          |          |          |
10+ 0       0.8911      1.51  |Q     V  |          |          |          |
10+ 5       0.9016      1.52  |Q      V |          |          |          |
10+10       0.9122      1.54  |Q      V |          |          |          |
10+15       0.9228      1.55  |Q      V |          |          |          |
10+20       0.9336      1.56  |Q      V |          |          |          |
10+25       0.9444      1.58  |Q      V |          |          |          |
10+30       0.9554      1.59  |Q      V |          |          |          |
10+35       0.9664      1.60  |Q      V |          |          |          |
10+40       0.9776      1.62  |Q      V |          |          |          |
10+45       0.9888      1.63  |Q      V |          |          |          |
10+50       1.0002      1.65  |Q      V |          |          |          |
10+55       1.0117      1.67  |Q       V|          |          |          |
11+ 0       1.0233      1.68  |Q       V|          |          |          |
11+ 5       1.0350      1.70  |Q       V|          |          |          |
11+10       1.0468      1.72  |Q       V|          |          |          |
11+15       1.0587      1.73  |Q       V|          |          |          |
11+20       1.0708      1.75  |Q       V|          |          |          |
11+25       1.0830      1.77  |Q       V|          |          |          |
11+30       1.0953      1.79  |Q       V|          |          |          |
11+35       1.1078      1.81  |Q       V|          |          |          |
11+40       1.1204      1.83  |Q       V|          |          |          |
11+45       1.1331      1.85  |Q        V          |          |          |
11+50       1.1460      1.87  |Q        V          |          |          |
11+55       1.1591      1.89  |Q        V          |          |          |
12+ 0       1.1723      1.92  |Q        V          |          |          |
12+ 5       1.1855      1.92  |Q        V          |          |          |
12+10       1.1982      1.85  |Q        V          |          |          |
12+15       1.2109      1.84  |Q        V          |          |          |
12+20       1.2236      1.85  |Q        V          |          |          |
12+25       1.2364      1.86  |Q         |V         |          |          |
12+30       1.2494      1.88  |Q         |V         |          |          |
12+35       1.2625      1.91  |Q         |V         |          |          |
12+40       1.2758      1.93  |Q         |V         |          |          |
12+45       1.2893      1.96  |Q         |V         |          |          |
12+50       1.3031      1.99  |Q         |V         |          |          |
12+55       1.3170      2.02  |Q         |V         |          |          |
13+ 0       1.3312      2.06  |Q         |V         |          |          |
13+ 5       1.3456      2.09  |Q         |V         |          |          |
13+10       1.3603      2.13  |Q         | V        |          |          |
13+15       1.3752      2.17  |Q         | V        |          |          |
13+20       1.3905      2.21  |Q         | V        |          |          |
13+25       1.4060      2.25  |Q         | V        |          |          |
13+30       1.4219      2.30  |Q         | V        |          |          |
13+35       1.4380      2.35  |Q         | V        |          |          |
13+40       1.4545      2.40  |Q         | V        |          |          |
13+45       1.4714      2.45  |Q         |  V       |          |          |
13+50       1.4887      2.51  |Q         |  V       |          |          |
13+55       1.5063      2.56  |Q         |  V       |          |          |
14+ 0       1.5244      2.63  |Q         |  V       |          |          |
```

14+ 5	1.5430	2.69		Q	V		
14+10	1.5620	2.77		Q	V		
14+15	1.5816	2.84		Q	V		
14+20	1.6018	2.93		Q	V		
14+25	1.6226	3.01		Q	V		
14+30	1.6440	3.12		Q	V		
14+35	1.6662	3.21		Q	V		
14+40	1.6891	3.33		Q	V		
14+45	1.7129	3.45		Q	V		
14+50	1.7376	3.59		Q	V		
14+55	1.7633	3.73		Q	V		
15+ 0	1.7902	3.91		Q	V		
15+ 5	1.8184	4.09		Q	V		
15+10	1.8481	4.31		Q	V		
15+15	1.8794	4.54		Q	V		
15+20	1.9127	4.84		Q	V		
15+25	1.9476	5.06		Q	V		
15+30	1.9829	5.12		Q	V		
15+35	2.0201	5.40		Q	V		
15+40	2.0615	6.02		Q	V		
15+45	2.1083	6.79		Q	V		
15+50	2.1641	8.10		Q	V		
15+55	2.2327	9.97		Q	V		
16+ 0	2.3301	14.14		Q	V		
16+ 5	2.5257	28.40			Q	V	
16+10	2.9347	59.38				V	Q
16+15	3.1577	32.39				Q V	
16+20	3.2875	18.84			Q	V	
16+25	3.3765	12.93		Q		V	
16+30	4.4450	9.94		Q		V	
16+35	4.4991	7.86		Q			V
16+40	3.5422	6.25		Q			V
16+45	3.5800	5.50		Q			V
16+50	3.6127	4.74		Q			V
16+55	3.6383	3.72		Q			V
17+ 0	3.6617	3.40		Q			V
17+ 5	3.6835	3.16		Q			V
17+10	3.7039	2.97		Q			V
17+15	3.7232	2.80		Q			V
17+20	3.7415	2.65		Q			V
17+25	3.7589	2.53		Q			V
17+30	3.7755	2.41		Q			V
17+35	3.7914	2.31		Q			V
17+40	3.8067	2.22		Q			V
17+45	3.8215	2.14		Q			V
17+50	3.8357	2.07		Q			V
17+55	3.8495	2.00		Q			V
18+ 0	3.8628	1.94		Q			V
18+ 5	3.8759	1.90		Q			V
18+10	3.8892	1.94		Q			V
18+15	3.9025	1.93		Q			V
18+20	3.9155	1.90		Q			V
18+25	3.9283	1.86		Q			V
18+30	3.9409	1.82		Q			V
18+35	3.9532	1.79		Q			V
18+40	3.9653	1.75		Q			V
18+45	3.9771	1.72		Q			V
18+50	3.9887	1.68		Q			V
18+55	4.0001	1.65		Q			V
19+ 0	4.0112	1.62		Q			V
19+ 5	4.0222	1.59		Q			V
19+10	4.0330	1.56		Q			V
19+15	4.0435	1.54		Q			V
19+20	4.0540	1.51		Q			V
19+25	4.0642	1.49	Q				V
19+30	4.0743	1.46	Q				V
19+35	4.0842	1.44	Q				V
19+40	4.0940	1.42	Q				V
19+45	4.1036	1.40	Q				V
19+50	4.1131	1.38	Q				V
19+55	4.1224	1.36	Q				V
20+ 0	4.1317	1.34	Q				V
20+ 5	4.1408	1.32	Q				V
20+10	4.1498	1.31	Q				V
20+15	4.1586	1.29	Q				V
20+20	4.1674	1.27	Q				V
20+25	4.1761	1.26	Q				V
20+30	4.1846	1.24	Q				V
20+35	4.1931	1.23	Q				V
20+40	4.2014	1.21	Q				V
20+45	4.2097	1.20	Q				V

```
   20+50       4.2178      1.19  Q          |          |          |       V  |
   20+55       4.2259      1.17  Q          |          |          |       V  |
   21+ 0       4.2339      1.16  Q          |          |          |       V  |
   21+ 5       4.2418      1.15  Q          |          |          |       V  |
   21+10       4.2496      1.14  Q          |          |          |       V  |
   21+15       4.2574      1.12  Q          |          |          |       V  |
   21+20       4.2650      1.11  Q          |          |          |        V |
   21+25       4.2726      1.10  Q          |          |          |        V |
   21+30       4.2801      1.09  Q          |          |          |        V |
   21+35       4.2875      1.08  Q          |          |          |        V |
   21+40       4.2949      1.07  Q          |          |          |        V |
   21+45       4.3022      1.06  Q          |          |          |        V |
   21+50       4.3094      1.05  Q          |          |          |        V |
   21+55       4.3166      1.04  Q          |          |          |        V |
   22+ 0       4.3237      1.03  Q          |          |          |        V |
   22+ 5       4.3308      1.02  Q          |          |          |        V |
   22+10       4.3377      1.01  Q          |          |          |        V |
   22+15       4.3447      1.00  Q          |          |          |        V |
   22+20       4.3515      1.00  Q          |          |          |        V |
   22+25       4.3583      0.99  Q          |          |          |        V |
   22+30       4.3651      0.98  Q          |          |          |        V |
   22+35       4.3718      0.97  Q          |          |          |        V |
   22+40       4.3784      0.96  Q          |          |          |         V|
   22+45       4.3850      0.96  Q          |          |          |         V|
   22+50       4.3915      0.95  Q          |          |          |         V|
   22+55       4.3980      0.94  Q          |          |          |         V|
   23+ 0       4.4045      0.93  Q          |          |          |         V|
   23+ 5       4.4109      0.93  Q          |          |          |         V|
   23+10       4.4172      0.92  Q          |          |          |         V|
   23+15       4.4235      0.91  Q          |          |          |         V|
   23+20       4.4297      0.91  Q          |          |          |         V|
   23+25       4.4359      0.90  Q          |          |          |         V|
   23+30       4.4421      0.89  Q          |          |          |         V|
   23+35       4.4482      0.89  Q          |          |          |         V|
   23+40       4.4543      0.88  Q          |          |          |         V|
   23+45       4.4603      0.88  Q          |          |          |         V|
   23+50       4.4663      0.87  Q          |          |          |         V|
   23+55       4.4723      0.86  Q          |          |          |         V|
   24+ 0       4.4782      0.86  Q          |          |          |         V|
   24+ 5       4.4834      0.76  Q          |          |          |         V|
   24+10       4.4859      0.36  Q          |          |          |         V|
   24+15       4.4872      0.19  Q          |          |          |         V|
   24+20       4.4880      0.11  Q          |          |          |         V|
   24+25       4.4884      0.07  Q          |          |          |         V|
   24+30       4.4887      0.04  Q          |          |          |         V|
   24+35       4.4889      0.02  Q          |          |          |         V|
   24+40       4.4890      0.01  Q          |          |          |         V|
   24+45       4.4890      0.01  Q          |          |          |          V
----------------------------------------------------------------------
```

ATTACHMENT 6

Routing Calculations

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                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018
                         Study date: 06/23/22

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


224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
DEVELOPED CONDITION - ROUTE
2-YEAR, 24-HOUR STORM
BY: JTS  DATE: 06-23-22
---------------------------------------------------------------------


Program License Serial Number 6320

---------------------------------------------------------------------
******************** HYDROGRAPH INFORMATION **********************

                From study/file name: DEVHYD2.rte
****************************HYDROGRAPH DATA****************************
                Number of intervals =   297
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       13.997 (CFS)
                Total volume =       1.461 (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        6.000 to Point/Station       13.000
**** 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 =    4.00(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    4.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
Calculated individual pipe flow  =     1.593(CFS)
Normal flow depth in pipe =    5.07(In.)
Flow top width inside pipe =   14.19(In.)
Critical Depth =    0.50(Ft.)
Calculated flow rate through pipe(s) =      1.593(CFS)

Total outflow at this depth =      1.59(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    5.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
```

```
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      0.450(Ft.)
Pipe friction loss =      0.106(Ft.)
Minor friction loss =      0.344(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      4.713(CFS)

Total outflow at this depth =      4.71(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    6.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      1.450(Ft.)
Pipe friction loss =      0.343(Ft.)
Minor friction loss =      1.107(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      8.460(CFS)

Total outflow at this depth =      8.46(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    8.00(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      2.950(Ft.)
Pipe friction loss =      0.698(Ft.)
Minor friction loss =      2.252(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =     12.067(CFS)

Total outflow at this depth =     12.07(CFS)

--------------------------------------------------------------------
Total number of inflow hydrograph intervals = 297
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      0.116      0.000      0.116        0.116
  1.500      0.463      0.000      0.463        0.463
  2.500      0.886      0.000      0.886        0.886
  3.500      1.337      0.000      1.337        1.337
  4.000      1.564      0.000      1.564        1.564
  4.500      1.788      1.593      1.783        1.793
  5.500      2.211      4.713      2.195        2.227
  6.500      2.558      8.460      2.529        2.587
  8.000      2.905     12.067      2.863        2.947
--------------------------------------------------------------------
                 Hydrograph Detention Basin Routing
-----------------------------------------------------------------------

Graph values: 'I'= unit inflow; 'O'=outflow at time shown
-----------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                   Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       3.5    7.00   10.50   14.00 (Ft.)
 0.083    0.03    0.00      0.000  O       |       |       |       |     0.00
 0.167    0.16    0.00      0.001  O       |       |       |       |     0.00
 0.250    0.22    0.00      0.002  O       |       |       |       |     0.01
 0.333    0.25    0.00      0.004  O       |       |       |       |     0.02
 0.417    0.26    0.00      0.005  O       |       |       |       |     0.02
 0.500    0.27    0.00      0.007  O       |       |       |       |     0.03
 0.583    0.28    0.00      0.009  O       |       |       |       |     0.04
 0.667    0.28    0.00      0.011  O       |       |       |       |     0.05
 0.750    0.29    0.00      0.013  O       |       |       |       |     0.06
```

0.833	0.29	0.00	0.015	o	|	|	|	|	0.06
0.917	0.29	0.00	0.017	o	|	|	|	|	0.07
1.000	0.29	0.00	0.019	o	|	|	|	|	0.08
1.083	0.29	0.00	0.021	o	|	|	|	|	0.09
1.167	0.29	0.00	0.023	o	|	|	|	|	0.10
1.250	0.29	0.00	0.025	o	|	|	|	|	0.11
1.333	0.29	0.00	0.027	o	|	|	|	|	0.12
1.417	0.30	0.00	0.029	o	|	|	|	|	0.13
1.500	0.30	0.00	0.031	o	|	|	|	|	0.13
1.583	0.30	0.00	0.033	o	|	|	|	|	0.14
1.667	0.30	0.00	0.035	o	|	|	|	|	0.15
1.750	0.30	0.00	0.037	o	|	|	|	|	0.16
1.833	0.30	0.00	0.039	o	|	|	|	|	0.17
1.917	0.30	0.00	0.041	o	|	|	|	|	0.18
2.000	0.30	0.00	0.044	o	|	|	|	|	0.19
2.083	0.30	0.00	0.046	o	|	|	|	|	0.20
2.167	0.31	0.00	0.048	o	|	|	|	|	0.21
2.250	0.31	0.00	0.050	o	|	|	|	|	0.21
2.333	0.31	0.00	0.052	o	|	|	|	|	0.22
2.417	0.31	0.00	0.054	o	|	|	|	|	0.23
2.500	0.31	0.00	0.056	o	|	|	|	|	0.24
2.583	0.31	0.00	0.058	o	|	|	|	|	0.25
2.667	0.31	0.00	0.061	o	|	|	|	|	0.26
2.750	0.31	0.00	0.063	o	|	|	|	|	0.27
2.833	0.31	0.00	0.065	o	|	|	|	|	0.28
2.917	0.32	0.00	0.067	o	|	|	|	|	0.29
3.000	0.32	0.00	0.069	o	|	|	|	|	0.30
3.083	0.32	0.00	0.071	o	|	|	|	|	0.31
3.167	0.32	0.00	0.074	o	|	|	|	|	0.32
3.250	0.32	0.00	0.076	o	|	|	|	|	0.33
3.333	0.32	0.00	0.078	o	|	|	|	|	0.34
3.417	0.32	0.00	0.080	o	|	|	|	|	0.35
3.500	0.32	0.00	0.082	o	|	|	|	|	0.36
3.583	0.33	0.00	0.085	o	|	|	|	|	0.36
3.667	0.33	0.00	0.087	o	|	|	|	|	0.37
3.750	0.33	0.00	0.089	o	|	|	|	|	0.38
3.833	0.33	0.00	0.091	o	|	|	|	|	0.39
3.917	0.33	0.00	0.094	o	|	|	|	|	0.40
4.000	0.33	0.00	0.096	o	|	|	|	|	0.41
4.083	0.33	0.00	0.098	o	|	|	|	|	0.42
4.167	0.33	0.00	0.101	o	|	|	|	|	0.43
4.250	0.34	0.00	0.103	o	|	|	|	|	0.44
4.333	0.34	0.00	0.105	o	|	|	|	|	0.45
4.417	0.34	0.00	0.108	o	|	|	|	|	0.46
4.500	0.34	0.00	0.110	o	|	|	|	|	0.47
4.583	0.34	0.00	0.112	o	|	|	|	|	0.48
4.667	0.34	0.00	0.115	o	|	|	|	|	0.49
4.750	0.34	0.00	0.117	o	|	|	|	|	0.50
4.833	0.35	0.00	0.119	o	|	|	|	|	0.51
4.917	0.35	0.00	0.122	o	|	|	|	|	0.52
5.000	0.35	0.00	0.124	o	|	|	|	|	0.52
5.083	0.35	0.00	0.127	o	|	|	|	|	0.53
5.167	0.35	0.00	0.129	o	|	|	|	|	0.54
5.250	0.35	0.00	0.131	o	|	|	|	|	0.54
5.333	0.36	0.00	0.134	o	|	|	|	|	0.55
5.417	0.36	0.00	0.136	o	|	|	|	|	0.56
5.500	0.36	0.00	0.139	o	|	|	|	|	0.57
5.583	0.36	0.00	0.141	o	|	|	|	|	0.57
5.667	0.36	0.00	0.144	o	|	|	|	|	0.58
5.750	0.36	0.00	0.146	o	|	|	|	|	0.59
5.833	0.37	0.00	0.149	o	|	|	|	|	0.59
5.917	0.37	0.00	0.151	o	|	|	|	|	0.60
6.000	0.37	0.00	0.154	o	|	|	|	|	0.61
6.083	0.37	0.00	0.156	o	|	|	|	|	0.62
6.167	0.37	0.00	0.159	o	|	|	|	|	0.62
6.250	0.38	0.00	0.162	o	|	|	|	|	0.63
6.333	0.38	0.00	0.164	o	|	|	|	|	0.64
6.417	0.38	0.00	0.167	o	|	|	|	|	0.65
6.500	0.38	0.00	0.169	o	|	|	|	|	0.65
6.583	0.38	0.00	0.172	o	|	|	|	|	0.66
6.667	0.39	0.00	0.175	o	|	|	|	|	0.67
6.750	0.39	0.00	0.177	o	|	|	|	|	0.68
6.833	0.39	0.00	0.180	o	|	|	|	|	0.68
6.917	0.39	0.00	0.183	o	|	|	|	|	0.69
7.000	0.39	0.00	0.185	o	|	|	|	|	0.70
7.083	0.40	0.00	0.188	o	|	|	|	|	0.71
7.167	0.40	0.00	0.191	o	|	|	|	|	0.72
7.250	0.40	0.00	0.194	o	|	|	|	|	0.72
7.333	0.40	0.00	0.196	o	|	|	|	|	0.73
7.417	0.40	0.00	0.199	o	|	|	|	|	0.74
7.500	0.41	0.00	0.202	o	|	|	|	|	0.75

7.583	0.41	0.00	0.205	O	|	|	|	|	0.76
7.667	0.41	0.00	0.208	O	|	|	|	|	0.76
7.750	0.41	0.00	0.210	O	|	|	|	|	0.77
7.833	0.42	0.00	0.213	O	|	|	|	|	0.78
7.917	0.42	0.00	0.216	O	|	|	|	|	0.79
8.000	0.42	0.00	0.219	O	|	|	|	|	0.80
8.083	0.42	0.00	0.222	O	|	|	|	|	0.81
8.167	0.43	0.00	0.225	O	|	|	|	|	0.81
8.250	0.43	0.00	0.228	O	|	|	|	|	0.82
8.333	0.43	0.00	0.231	O	|	|	|	|	0.83
8.417	0.44	0.00	0.234	O	|	|	|	|	0.84
8.500	0.44	0.00	0.237	OI	|	|	|	|	0.85
8.583	0.44	0.00	0.240	OI	|	|	|	|	0.86
8.667	0.44	0.00	0.243	OI	|	|	|	|	0.87
8.750	0.45	0.00	0.246	OI	|	|	|	|	0.87
8.833	0.45	0.00	0.249	OI	|	|	|	|	0.88
8.917	0.45	0.00	0.252	OI	|	|	|	|	0.89
9.000	0.46	0.00	0.255	OI	|	|	|	|	0.90
9.083	0.46	0.00	0.258	OI	|	|	|	|	0.91
9.167	0.46	0.00	0.262	OI	|	|	|	|	0.92
9.250	0.47	0.00	0.265	OI	|	|	|	|	0.93
9.333	0.47	0.00	0.268	OI	|	|	|	|	0.94
9.417	0.47	0.00	0.271	OI	|	|	|	|	0.95
9.500	0.48	0.00	0.275	OI	|	|	|	|	0.96
9.583	0.48	0.00	0.278	OI	|	|	|	|	0.97
9.667	0.48	0.00	0.281	OI	|	|	|	|	0.98
9.750	0.49	0.00	0.285	OI	|	|	|	|	0.99
9.833	0.49	0.00	0.288	OI	|	|	|	|	1.00
9.917	0.50	0.00	0.291	OI	|	|	|	|	1.01
10.000	0.50	0.00	0.295	OI	|	|	|	|	1.02
10.083	0.50	0.00	0.298	OI	|	|	|	|	1.03
10.167	0.51	0.00	0.302	OI	|	|	|	|	1.04
10.250	0.51	0.00	0.305	OI	|	|	|	|	1.05
10.333	0.52	0.00	0.309	OI	|	|	|	|	1.06
10.417	0.52	0.00	0.312	OI	|	|	|	|	1.07
10.500	0.53	0.00	0.316	OI	|	|	|	|	1.08
10.583	0.53	0.00	0.320	OI	|	|	|	|	1.09
10.667	0.54	0.00	0.323	OI	|	|	|	|	1.10
10.750	0.54	0.00	0.327	OI	|	|	|	|	1.11
10.833	0.55	0.00	0.331	OI	|	|	|	|	1.12
10.917	0.55	0.00	0.335	OI	|	|	|	|	1.13
11.000	0.56	0.00	0.338	OI	|	|	|	|	1.14
11.083	0.56	0.00	0.342	OI	|	|	|	|	1.15
11.167	0.57	0.00	0.346	OI	|	|	|	|	1.16
11.250	0.57	0.00	0.350	OI	|	|	|	|	1.17
11.333	0.58	0.00	0.354	OI	|	|	|	|	1.19
11.417	0.58	0.00	0.358	OI	|	|	|	|	1.20
11.500	0.59	0.00	0.362	OI	|	|	|	|	1.21
11.583	0.60	0.00	0.366	OI	|	|	|	|	1.22
11.667	0.60	0.00	0.370	OI	|	|	|	|	1.23
11.750	0.61	0.00	0.374	OI	|	|	|	|	1.24
11.833	0.62	0.00	0.379	OI	|	|	|	|	1.26
11.917	0.62	0.00	0.383	OI	|	|	|	|	1.27
12.000	0.63	0.00	0.387	OI	|	|	|	|	1.28
12.083	0.67	0.00	0.392	OI	|	|	|	|	1.29
12.167	0.82	0.00	0.397	OI	|	|	|	|	1.31
12.250	0.89	0.00	0.403	O I	|	|	|	|	1.33
12.333	0.92	0.00	0.409	O I	|	|	|	|	1.34
12.417	0.95	0.00	0.415	O I	|	|	|	|	1.36
12.500	0.97	0.00	0.422	O I	|	|	|	|	1.38
12.583	0.98	0.00	0.429	O I	|	|	|	|	1.40
12.667	1.00	0.00	0.436	O I	|	|	|	|	1.42
12.750	1.01	0.00	0.443	O I	|	|	|	|	1.44
12.833	1.02	0.00	0.449	O I	|	|	|	|	1.46
12.917	1.03	0.00	0.457	O I	|	|	|	|	1.48
13.000	1.04	0.00	0.464	O I	|	|	|	|	1.50
13.083	1.05	0.00	0.471	O I	|	|	|	|	1.52
13.167	1.07	0.00	0.478	O I	|	|	|	|	1.54
13.250	1.08	0.00	0.486	O I	|	|	|	|	1.55
13.333	1.09	0.00	0.493	O I	|	|	|	|	1.57
13.417	1.11	0.00	0.501	O I	|	|	|	|	1.59
13.500	1.12	0.00	0.508	O I	|	|	|	|	1.61
13.583	1.14	0.00	0.516	O I	|	|	|	|	1.63
13.667	1.15	0.00	0.524	O I	|	|	|	|	1.64
13.750	1.17	0.00	0.532	O I	|	|	|	|	1.66
13.833	1.19	0.00	0.540	O I	|	|	|	|	1.68
13.917	1.20	0.00	0.548	O I	|	|	|	|	1.70
14.000	1.22	0.00	0.557	O I	|	|	|	|	1.72
14.083	1.24	0.00	0.565	O I	|	|	|	|	1.74
14.167	1.27	0.00	0.574	O I	|	|	|	|	1.76
14.250	1.29	0.00	0.583	O I	|	|	|	|	1.78

14.333	1.31	0.00	0.592	O	I				1.80
14.417	1.34	0.00	0.601	O	I				1.83
14.500	1.37	0.00	0.610	O	I				1.85
14.583	1.39	0.00	0.619	O	I				1.87
14.667	1.43	0.00	0.629	O	I				1.89
14.750	1.46	0.00	0.639	O	I				1.92
14.833	1.50	0.00	0.649	O	I				1.94
14.917	1.54	0.00	0.660	O	I				1.97
15.000	1.59	0.00	0.671	O	I				1.99
15.083	1.63	0.00	0.682	O	I				2.02
15.167	1.69	0.00	0.693	O	I				2.04
15.250	1.75	0.00	0.705	O	I				2.07
15.333	1.82	0.00	0.717	O	I				2.10
15.417	1.79	0.00	0.730	O	I				2.13
15.500	1.43	0.00	0.741	O	I				2.16
15.583	1.33	0.00	0.750	O	I				2.18
15.667	1.38	0.00	0.760	O	I				2.20
15.750	1.48	0.00	0.769	O	I				2.22
15.833	1.71	0.00	0.780	O	I				2.25
15.917	2.04	0.00	0.793	O	I				2.28
16.000	2.84	0.00	0.810	O	I				2.32
16.083	6.23	0.00	0.841	O		I			2.39
16.167	14.00	0.00	0.911	O				I	2.56
16.250	7.39	0.00	0.985	O			I		2.72
16.333	4.21	0.00	1.025	O	I				2.81
16.417	2.96	0.00	1.049	O	I				2.86
16.500	2.66	0.00	1.069	O	I				2.90
16.583	2.34	0.00	1.086	O	I				2.94
16.667	2.03	0.00	1.101	O	I				2.98
16.750	1.90	0.00	1.114	O	I				3.01
16.833	1.74	0.00	1.127	O	I				3.03
16.917	1.50	0.00	1.138	O	I				3.06
17.000	1.43	0.00	1.148	O	I				3.08
17.083	1.37	0.00	1.158	O	I				3.10
17.167	1.32	0.00	1.167	O	I				3.12
17.250	1.27	0.00	1.176	O	I				3.14
17.333	1.23	0.00	1.185	O	I				3.16
17.417	1.19	0.00	1.193	O	I				3.18
17.500	1.16	0.00	1.201	O	I				3.20
17.583	1.12	0.00	1.209	O	I				3.22
17.667	1.10	0.00	1.217	O	I				3.23
17.750	1.07	0.00	1.224	O	I				3.25
17.833	1.05	0.00	1.231	O	I				3.27
17.917	1.02	0.00	1.238	O	I				3.28
18.000	1.00	0.00	1.245	O	I				3.30
18.083	0.95	0.00	1.252	O	I				3.31
18.167	0.79	0.00	1.258	O	I				3.33
18.250	0.71	0.00	1.263	O	I				3.34
18.333	0.67	0.00	1.268	O	I				3.35
18.417	0.64	0.00	1.273	O	I				3.36
18.500	0.62	0.00	1.277	O	I				3.37
18.583	0.60	0.00	1.281	O	I				3.38
18.667	0.58	0.00	1.285	O	I				3.39
18.750	0.57	0.00	1.289	O	I				3.39
18.833	0.56	0.00	1.293	O	I				3.40
18.917	0.55	0.00	1.297	O	I				3.41
19.000	0.54	0.00	1.301	O	I				3.42
19.083	0.53	0.00	1.304	O	I				3.43
19.167	0.52	0.00	1.308	O	I				3.44
19.250	0.51	0.00	1.311	O	I				3.44
19.333	0.50	0.00	1.315	O	I				3.45
19.417	0.49	0.00	1.318	O	I				3.46
19.500	0.48	0.00	1.322	O	I				3.47
19.583	0.48	0.00	1.325	O	I				3.47
19.667	0.47	0.00	1.328	O	I				3.48
19.750	0.46	0.00	1.331	O	I				3.49
19.833	0.46	0.00	1.335	O	I				3.49
19.917	0.45	0.00	1.338	O	I				3.50
20.000	0.44	0.00	1.341	O	I				3.51
20.083	0.44	0.00	1.344	O	I				3.52
20.167	0.43	0.00	1.347	O					3.52
20.250	0.43	0.00	1.350	O					3.53
20.333	0.42	0.00	1.353	O					3.53
20.417	0.42	0.00	1.356	O					3.54
20.500	0.41	0.00	1.359	O					3.55
20.583	0.41	0.00	1.361	O					3.55
20.667	0.40	0.00	1.364	O					3.56
20.750	0.40	0.00	1.367	O					3.57
20.833	0.39	0.00	1.370	O					3.57
20.917	0.39	0.00	1.372	O					3.58
21.000	0.39	0.00	1.375	O					3.58

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21.083    0.38    0.00      1.378  o       |       |       |       |      3.59
21.167    0.38    0.00      1.380  o       |       |       |       |      3.60
21.250    0.37    0.00      1.383  o       |       |       |       |      3.60
21.333    0.37    0.00      1.385  o       |       |       |       |      3.61
21.417    0.37    0.00      1.388  o       |       |       |       |      3.61
21.500    0.36    0.00      1.390  o       |       |       |       |      3.62
21.583    0.36    0.00      1.393  o       |       |       |       |      3.62
21.667    0.36    0.00      1.395  o       |       |       |       |      3.63
21.750    0.35    0.00      1.398  o       |       |       |       |      3.63
21.833    0.35    0.00      1.400  o       |       |       |       |      3.64
21.917    0.35    0.00      1.403  o       |       |       |       |      3.64
22.000    0.34    0.00      1.405  o       |       |       |       |      3.65
22.083    0.34    0.00      1.407  o       |       |       |       |      3.66
22.167    0.34    0.00      1.410  o       |       |       |       |      3.66
22.250    0.33    0.00      1.412  o       |       |       |       |      3.67
22.333    0.33    0.00      1.414  o       |       |       |       |      3.67
22.417    0.33    0.00      1.417  o       |       |       |       |      3.68
22.500    0.33    0.00      1.419  o       |       |       |       |      3.68
22.583    0.32    0.00      1.421  o       |       |       |       |      3.69
22.667    0.32    0.00      1.423  o       |       |       |       |      3.69
22.750    0.32    0.00      1.426  o       |       |       |       |      3.70
22.833    0.32    0.00      1.428  o       |       |       |       |      3.70
22.917    0.31    0.00      1.430  o       |       |       |       |      3.70
23.000    0.31    0.00      1.432  o       |       |       |       |      3.71
23.083    0.31    0.00      1.434  o       |       |       |       |      3.71
23.167    0.31    0.00      1.436  o       |       |       |       |      3.72
23.250    0.31    0.00      1.438  o       |       |       |       |      3.72
23.333    0.30    0.00      1.441  o       |       |       |       |      3.73
23.417    0.30    0.00      1.443  o       |       |       |       |      3.73
23.500    0.30    0.00      1.445  o       |       |       |       |      3.74
23.583    0.30    0.00      1.447  o       |       |       |       |      3.74
23.667    0.29    0.00      1.449  o       |       |       |       |      3.75
23.750    0.29    0.00      1.451  o       |       |       |       |      3.75
23.833    0.29    0.00      1.453  o       |       |       |       |      3.76
23.917    0.29    0.00      1.455  o       |       |       |       |      3.76
24.000    0.29    0.00      1.457  o       |       |       |       |      3.76
24.083    0.25    0.00      1.459  o       |       |       |       |      3.77
24.167    0.12    0.00      1.460  o       |       |       |       |      3.77
24.250    0.06    0.00      1.461  o       |       |       |       |      3.77
24.333    0.04    0.00      1.461  o       |       |       |       |      3.77
24.417    0.02    0.00      1.461  o       |       |       |       |      3.77
24.500    0.01    0.00      1.461  o       |       |       |       |      3.77
24.583    0.01    0.00      1.461  o       |       |       |       |      3.77
24.667    0.00    0.00      1.461  o       |       |       |       |      3.77
24.750    0.00    0.00      1.461  o       |       |       |       |      3.77
24.833    0.00    0.00      1.461  o       |       |       |       |      3.77

        Remaining water in basin =    1.46 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =   298
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =        0.000 (CFS)
                        Total volume =       0.000 (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        6.000 to Point/Station       13.000
        **** STORE OR DELETE CURRENT HYDROGRAPH ****
        _______________________________________________________________________
        Current stream hydrograph saved in file route.rte
        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =     0
                        Time interval =    0.0 (Min.)
                        Maximum/Peak flow rate =        0.000 (CFS)
                        Total volume =       0.000 (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: 06/23/22

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224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
DEVELOPED CONDITION - ROUTE
10-YEAR, 24-HOUR STORM
BY: JTS  DATE: 06-23-22
---------------------------------------------------------------------


Program License Serial Number 6320

---------------------------------------------------------------------
******************** HYDROGRAPH INFORMATION **********************

                From study/file name: DEVHYD10.rte
****************************HYDROGRAPH DATA****************************
                Number of intervals =   297
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       32.887 (CFS)
                Total volume =       2.712 (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        6.000 to Point/Station       13.000
**** 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 =    4.00(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    4.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
Calculated individual pipe flow  =     1.593(CFS)
Normal flow depth in pipe =    5.07(In.)
Flow top width inside pipe =   14.19(In.)
Critical Depth =    0.50(Ft.)
Calculated flow rate through pipe(s) =      1.593(CFS)

Total outflow at this depth =      1.59(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    5.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
```

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Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      0.450(Ft.)
Pipe friction loss =      0.106(Ft.)
Minor friction loss =      0.344(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      4.713(CFS)

Total outflow at this depth =      4.71(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    6.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      1.450(Ft.)
Pipe friction loss =      0.343(Ft.)
Minor friction loss =      1.107(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      8.460(CFS)

Total outflow at this depth =      8.46(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    8.00(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      2.950(Ft.)
Pipe friction loss =      0.698(Ft.)
Minor friction loss =      2.252(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =     12.067(CFS)

Total outflow at this depth =     12.07(CFS)

--------------------------------------------------------------------
Total number of inflow hydrograph intervals = 297
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      0.116      0.000      0.116        0.116
  1.500      0.463      0.000      0.463        0.463
  2.500      0.886      0.000      0.886        0.886
  3.500      1.337      0.000      1.337        1.337
  4.000      1.564      0.000      1.564        1.564
  4.500      1.788      1.593      1.783        1.793
  5.500      2.211      4.713      2.195        2.227
  6.500      2.558      8.460      2.529        2.587
  8.000      2.905     12.067      2.863        2.947
--------------------------------------------------------------------
                 Hydrograph Detention Basin Routing
--------------------------------------------------------------------

Graph values: 'I'= unit inflow; 'O'=outflow at time shown
--------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                  Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       8.2   16.44   24.67   32.89 (Ft.)
 0.083    0.06    0.00      0.000  O       |       |       |       |     0.00
 0.167    0.30    0.00      0.001  O       |       |       |       |     0.01
 0.250    0.40    0.00      0.004  O       |       |       |       |     0.02
 0.333    0.45    0.00      0.007  O       |       |       |       |     0.03
 0.417    0.48    0.00      0.010  O       |       |       |       |     0.04
 0.500    0.49    0.00      0.013  O       |       |       |       |     0.06
 0.583    0.51    0.00      0.017  O       |       |       |       |     0.07
 0.667    0.51    0.00      0.020  O       |       |       |       |     0.09
 0.750    0.52    0.00      0.024  O       |       |       |       |     0.10
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0.833	0.52	0.00	0.027	o	|	|	|	|	0.12
0.917	0.53	0.00	0.031	o	|	|	|	|	0.13
1.000	0.53	0.00	0.035	o	|	|	|	|	0.15
1.083	0.53	0.00	0.038	o	|	|	|	|	0.16
1.167	0.53	0.00	0.042	o	|	|	|	|	0.18
1.250	0.53	0.00	0.046	o	|	|	|	|	0.20
1.333	0.54	0.00	0.049	o	|	|	|	|	0.21
1.417	0.54	0.00	0.053	o	|	|	|	|	0.23
1.500	0.54	0.00	0.057	o	|	|	|	|	0.24
1.583	0.54	0.00	0.060	o	|	|	|	|	0.26
1.667	0.54	0.00	0.064	o	|	|	|	|	0.28
1.750	0.54	0.00	0.068	o	|	|	|	|	0.29
1.833	0.55	0.00	0.072	o	|	|	|	|	0.31
1.917	0.55	0.00	0.075	o	|	|	|	|	0.32
2.000	0.55	0.00	0.079	o	|	|	|	|	0.34
2.083	0.55	0.00	0.083	o	|	|	|	|	0.36
2.167	0.55	0.00	0.087	o	|	|	|	|	0.37
2.250	0.56	0.00	0.091	o	|	|	|	|	0.39
2.333	0.56	0.00	0.094	o	|	|	|	|	0.41
2.417	0.56	0.00	0.098	o	|	|	|	|	0.42
2.500	0.56	0.00	0.102	o	|	|	|	|	0.44
2.583	0.56	0.00	0.106	o	|	|	|	|	0.46
2.667	0.57	0.00	0.110	o	|	|	|	|	0.47
2.750	0.57	0.00	0.114	o	|	|	|	|	0.49
2.833	0.57	0.00	0.118	o	|	|	|	|	0.51
2.917	0.57	0.00	0.122	o	|	|	|	|	0.52
3.000	0.58	0.00	0.126	o	|	|	|	|	0.53
3.083	0.58	0.00	0.130	o	|	|	|	|	0.54
3.167	0.58	0.00	0.134	o	|	|	|	|	0.55
3.250	0.58	0.00	0.138	o	|	|	|	|	0.56
3.333	0.58	0.00	0.142	o	|	|	|	|	0.57
3.417	0.59	0.00	0.146	o	|	|	|	|	0.59
3.500	0.59	0.00	0.150	o	|	|	|	|	0.60
3.583	0.59	0.00	0.154	o	|	|	|	|	0.61
3.667	0.59	0.00	0.158	o	|	|	|	|	0.62
3.750	0.60	0.00	0.162	o	|	|	|	|	0.63
3.833	0.60	0.00	0.166	o	|	|	|	|	0.64
3.917	0.60	0.00	0.170	o	|	|	|	|	0.66
4.000	0.60	0.00	0.174	o	|	|	|	|	0.67
4.083	0.61	0.00	0.179	o	|	|	|	|	0.68
4.167	0.61	0.00	0.183	o	|	|	|	|	0.69
4.250	0.61	0.00	0.187	o	|	|	|	|	0.70
4.333	0.61	0.00	0.191	o	|	|	|	|	0.72
4.417	0.62	0.00	0.195	o	|	|	|	|	0.73
4.500	0.62	0.00	0.200	o	|	|	|	|	0.74
4.583	0.62	0.00	0.204	o	|	|	|	|	0.75
4.667	0.63	0.00	0.208	o	|	|	|	|	0.77
4.750	0.63	0.00	0.213	o	|	|	|	|	0.78
4.833	0.63	0.00	0.217	o	|	|	|	|	0.79
4.917	0.63	0.00	0.221	o	|	|	|	|	0.80
5.000	0.64	0.00	0.226	o	|	|	|	|	0.82
5.083	0.64	0.00	0.230	o	|	|	|	|	0.83
5.167	0.64	0.00	0.234	o	|	|	|	|	0.84
5.250	0.65	0.00	0.239	o	|	|	|	|	0.85
5.333	0.65	0.00	0.243	o	|	|	|	|	0.87
5.417	0.65	0.00	0.248	o	|	|	|	|	0.88
5.500	0.65	0.00	0.252	o	|	|	|	|	0.89
5.583	0.66	0.00	0.257	o	|	|	|	|	0.91
5.667	0.66	0.00	0.261	o	|	|	|	|	0.92
5.750	0.66	0.00	0.266	o	|	|	|	|	0.93
5.833	0.67	0.00	0.270	o	|	|	|	|	0.95
5.917	0.67	0.00	0.275	o	|	|	|	|	0.96
6.000	0.67	0.00	0.280	o	|	|	|	|	0.97
6.083	0.68	0.00	0.284	o	|	|	|	|	0.99
6.167	0.68	0.00	0.289	o	|	|	|	|	1.00
6.250	0.68	0.00	0.294	o	|	|	|	|	1.01
6.333	0.69	0.00	0.298	o	|	|	|	|	1.03
6.417	0.69	0.00	0.303	o	|	|	|	|	1.04
6.500	0.69	0.00	0.308	o	|	|	|	|	1.05
6.583	0.70	0.00	0.313	o	|	|	|	|	1.07
6.667	0.70	0.00	0.318	o	|	|	|	|	1.08
6.750	0.71	0.00	0.322	o	|	|	|	|	1.09
6.833	0.71	0.00	0.327	o	|	|	|	|	1.11
6.917	0.71	0.00	0.332	o	|	|	|	|	1.12
7.000	0.72	0.00	0.337	o	|	|	|	|	1.14
7.083	0.72	0.00	0.342	o	|	|	|	|	1.15
7.167	0.73	0.00	0.347	o	|	|	|	|	1.17
7.250	0.73	0.00	0.352	o	|	|	|	|	1.18
7.333	0.73	0.00	0.357	o	|	|	|	|	1.19
7.417	0.74	0.00	0.362	o	|	|	|	|	1.21
7.500	0.74	0.00	0.367	o	|	|	|	|	1.22

7.583	0.75	0.00	0.372	O	|	|	|	|	1.24
7.667	0.75	0.00	0.378	O	|	|	|	|	1.25
7.750	0.76	0.00	0.383	O	|	|	|	|	1.27
7.833	0.76	0.00	0.388	O	|	|	|	|	1.28
7.917	0.77	0.00	0.393	O	|	|	|	|	1.30
8.000	0.77	0.00	0.399	O	|	|	|	|	1.31
8.083	0.77	0.00	0.404	O	|	|	|	|	1.33
8.167	0.78	0.00	0.409	O	|	|	|	|	1.35
8.250	0.78	0.00	0.415	O	|	|	|	|	1.36
8.333	0.79	0.00	0.420	O	|	|	|	|	1.38
8.417	0.79	0.00	0.425	O	|	|	|	|	1.39
8.500	0.80	0.00	0.431	O	|	|	|	|	1.41
8.583	0.81	0.00	0.437	O	|	|	|	|	1.42
8.667	0.81	0.00	0.442	O	|	|	|	|	1.44
8.750	0.82	0.00	0.448	O	|	|	|	|	1.46
8.833	0.82	0.00	0.453	O	|	|	|	|	1.47
8.917	0.83	0.00	0.459	O	|	|	|	|	1.49
9.000	0.83	0.00	0.465	O	|	|	|	|	1.50
9.083	0.84	0.00	0.470	O	|	|	|	|	1.52
9.167	0.85	0.00	0.476	O	|	|	|	|	1.53
9.250	0.85	0.00	0.482	O	|	|	|	|	1.55
9.333	0.86	0.00	0.488	O	|	|	|	|	1.56
9.417	0.86	0.00	0.494	O	|	|	|	|	1.57
9.500	0.87	0.00	0.500	O	|	|	|	|	1.59
9.583	0.88	0.00	0.506	O	|	|	|	|	1.60
9.667	0.88	0.00	0.512	O	|	|	|	|	1.62
9.750	0.89	0.00	0.518	O	|	|	|	|	1.63
9.833	0.90	0.00	0.524	O	|	|	|	|	1.64
9.917	0.91	0.00	0.531	O	|	|	|	|	1.66
10.000	0.91	0.00	0.537	O	|	|	|	|	1.67
10.083	0.92	0.00	0.543	O	|	|	|	|	1.69
10.167	0.93	0.00	0.549	O	|	|	|	|	1.70
10.250	0.94	0.00	0.556	O	|	|	|	|	1.72
10.333	0.94	0.00	0.562	O	|	|	|	|	1.73
10.417	0.95	0.00	0.569	O	|	|	|	|	1.75
10.500	0.96	0.00	0.576	O	|	|	|	|	1.77
10.583	0.97	0.00	0.582	O	|	|	|	|	1.78
10.667	0.98	0.00	0.589	O	|	|	|	|	1.80
10.750	0.99	0.00	0.596	O	|	|	|	|	1.81
10.833	1.00	0.00	0.602	O	|	|	|	|	1.83
10.917	1.01	0.00	0.609	O	|	|	|	|	1.85
11.000	1.02	0.00	0.616	O	|	|	|	|	1.86
11.083	1.03	0.00	0.623	O	|	|	|	|	1.88
11.167	1.04	0.00	0.630	OI	|	|	|	|	1.90
11.250	1.05	0.00	0.638	OI	|	|	|	|	1.91
11.333	1.06	0.00	0.645	OI	|	|	|	|	1.93
11.417	1.07	0.00	0.652	OI	|	|	|	|	1.95
11.500	1.08	0.00	0.660	OI	|	|	|	|	1.96
11.583	1.09	0.00	0.667	OI	|	|	|	|	1.98
11.667	1.11	0.00	0.675	OI	|	|	|	|	2.00
11.750	1.12	0.00	0.682	OI	|	|	|	|	2.02
11.833	1.13	0.00	0.690	OI	|	|	|	|	2.04
11.917	1.14	0.00	0.698	OI	|	|	|	|	2.06
12.000	1.16	0.00	0.706	OI	|	|	|	|	2.07
12.083	1.18	0.00	0.714	OI	|	|	|	|	2.09
12.167	1.24	0.00	0.722	OI	|	|	|	|	2.11
12.250	1.27	0.00	0.731	OI	|	|	|	|	2.13
12.333	1.30	0.00	0.740	OI	|	|	|	|	2.15
12.417	1.32	0.00	0.749	OI	|	|	|	|	2.18
12.500	1.34	0.00	0.758	OI	|	|	|	|	2.20
12.583	1.35	0.00	0.767	OI	|	|	|	|	2.22
12.667	1.38	0.00	0.777	OI	|	|	|	|	2.24
12.750	1.39	0.00	0.786	OI	|	|	|	|	2.26
12.833	1.42	0.00	0.796	OI	|	|	|	|	2.29
12.917	1.44	0.00	0.806	OI	|	|	|	|	2.31
13.000	1.46	0.00	0.816	OI	|	|	|	|	2.33
13.083	1.48	0.00	0.826	OI	|	|	|	|	2.36
13.167	1.50	0.00	0.836	OI	|	|	|	|	2.38
13.250	1.53	0.00	0.846	OI	|	|	|	|	2.41
13.333	1.56	0.00	0.857	OI	|	|	|	|	2.43
13.417	1.58	0.00	0.868	OI	|	|	|	|	2.46
13.500	1.61	0.00	0.879	OI	|	|	|	|	2.48
13.583	1.64	0.00	0.890	OI	|	|	|	|	2.51
13.667	1.67	0.00	0.901	OI	|	|	|	|	2.53
13.750	1.70	0.00	0.913	OI	|	|	|	|	2.56
13.833	1.74	0.00	0.925	OI	|	|	|	|	2.59
13.917	1.77	0.00	0.937	OI	|	|	|	|	2.61
14.000	1.81	0.00	0.949	OI	|	|	|	|	2.64
14.083	1.85	0.00	0.962	OI	|	|	|	|	2.67
14.167	1.90	0.00	0.975	OI	|	|	|	|	2.70
14.250	1.94	0.00	0.988	OI	|	|	|	|	2.73

14.333	2.00	0.00	1.002	OI					2.76
14.417	2.05	0.00	1.016	OI					2.79
14.500	2.11	0.00	1.030	O I					2.82
14.583	2.17	0.00	1.045	O I					2.85
14.667	2.24	0.00	1.060	O I					2.89
14.750	2.31	0.00	1.076	O I					2.92
14.833	2.40	0.00	1.092	O I					2.96
14.917	2.48	0.00	1.109	O I					2.99
15.000	2.59	0.00	1.126	O I					3.03
15.083	2.69	0.00	1.144	O I					3.07
15.167	2.82	0.00	1.163	O I					3.11
15.250	2.95	0.00	1.183	O I					3.16
15.333	3.13	0.00	1.204	O I					3.21
15.417	3.19	0.00	1.226	O I					3.25
15.500	2.95	0.00	1.247	O I					3.30
15.583	2.98	0.00	1.267	O I					3.35
15.667	3.22	0.00	1.289	O I					3.39
15.750	3.56	0.00	1.312	O I					3.44
15.833	4.24	0.00	1.339	O I					3.50
15.917	5.26	0.00	1.372	O I					3.58
16.000	7.58	0.00	1.416	O I					3.67
16.083	15.55	0.00	1.495	O		I			3.85
16.167	32.89	0.68	1.660	O				I	4.21
16.250	17.77	1.87	1.826	O		I			4.59
16.333	10.20	2.47	1.907	O	I				4.78
16.417	7.04	2.77	1.948	O I					4.88
16.500	5.69	2.95	1.972	O I					4.94
16.583	4.66	3.06	1.987	O I					4.97
16.667	3.82	3.12	1.995	O					4.99
16.750	3.42	3.15	1.999	O					5.00
16.833	3.02	3.15	1.999	IO					5.00
16.917	2.45	3.13	1.996	IO					4.99
17.000	2.27	3.09	1.991	IO					4.98
17.083	2.13	3.05	1.985	O					4.97
17.167	2.02	3.00	1.979	IO					4.95
17.250	1.92	2.95	1.972	IO					4.93
17.333	1.83	2.89	1.964	IO					4.92
17.417	1.75	2.84	1.957	IO					4.90
17.500	1.68	2.78	1.949	IO					4.88
17.583	1.62	2.73	1.942	IO					4.86
17.667	1.56	2.67	1.934	IO					4.85
17.750	1.51	2.61	1.927	IO					4.83
17.833	1.46	2.56	1.919	IO					4.81
17.917	1.42	2.50	1.911	IO					4.79
18.000	1.38	2.45	1.904	IO					4.77
18.083	1.33	2.39	1.897	IO					4.76
18.167	1.26	2.34	1.889	IO					4.74
18.250	1.21	2.29	1.882	IO					4.72
18.333	1.17	2.23	1.875	IO					4.70
18.417	1.14	2.18	1.867	IO					4.69
18.500	1.11	2.13	1.860	IO					4.67
18.583	1.09	2.07	1.853	IO					4.65
18.667	1.06	2.03	1.847	O					4.64
18.750	1.04	1.98	1.840	O					4.62
18.833	1.02	1.93	1.834	IO					4.61
18.917	1.00	1.88	1.828	IO					4.59
19.000	0.98	1.84	1.822	IO					4.58
19.083	0.96	1.80	1.816	IO					4.57
19.167	0.95	1.76	1.810	IO					4.55
19.250	0.93	1.71	1.805	IO					4.54
19.333	0.91	1.68	1.799	IO					4.53
19.417	0.90	1.64	1.794	IO					4.51
19.500	0.89	1.60	1.789	IO					4.50
19.583	0.87	1.57	1.784	IO					4.49
19.667	0.86	1.53	1.779	IO					4.48
19.750	0.85	1.50	1.775	IO					4.47
19.833	0.83	1.47	1.770	IO					4.46
19.917	0.82	1.44	1.766	IO					4.45
20.000	0.81	1.41	1.762	IO					4.44
20.083	0.80	1.38	1.758	IO					4.43
20.167	0.79	1.35	1.754	IO					4.42
20.250	0.78	1.32	1.750	IO					4.42
20.333	0.77	1.30	1.747	IO					4.41
20.417	0.76	1.27	1.743	IO					4.40
20.500	0.75	1.25	1.739	IO					4.39
20.583	0.74	1.22	1.736	IO					4.38
20.667	0.73	1.20	1.733	IO					4.38
20.750	0.73	1.18	1.730	IO					4.37
20.833	0.72	1.16	1.727	IO					4.36
20.917	0.71	1.14	1.724	IO					4.36
21.000	0.70	1.11	1.721	IO					4.35

21.083	0.70	1.09	1.718	IO					4.34
21.167	0.69	1.08	1.715	IO					4.34
21.250	0.68	1.06	1.713	IO					4.33
21.333	0.67	1.04	1.710	IO					4.33
21.417	0.67	1.02	1.708	O					4.32
21.500	0.66	1.00	1.705	O					4.32
21.583	0.65	0.99	1.703	O					4.31
21.667	0.65	0.97	1.701	O					4.30
21.750	0.64	0.96	1.698	O					4.30
21.833	0.64	0.94	1.696	O					4.30
21.917	0.63	0.93	1.694	O					4.29
22.000	0.63	0.91	1.692	O					4.29
22.083	0.62	0.90	1.690	O					4.28
22.167	0.61	0.88	1.688	O					4.28
22.250	0.61	0.87	1.687	O					4.27
22.333	0.60	0.86	1.685	O					4.27
22.417	0.60	0.85	1.683	O					4.27
22.500	0.59	0.83	1.681	O					4.26
22.583	0.59	0.82	1.680	O					4.26
22.667	0.58	0.81	1.678	O					4.25
22.750	0.58	0.80	1.677	O					4.25
22.833	0.58	0.79	1.675	O					4.25
22.917	0.57	0.78	1.674	O					4.24
23.000	0.57	0.77	1.672	O					4.24
23.083	0.56	0.76	1.671	O					4.24
23.167	0.56	0.75	1.670	O					4.24
23.250	0.55	0.74	1.668	O					4.23
23.333	0.55	0.73	1.667	O					4.23
23.417	0.55	0.72	1.666	O					4.23
23.500	0.54	0.71	1.665	O					4.22
23.583	0.54	0.71	1.663	O					4.22
23.667	0.54	0.70	1.662	O					4.22
23.750	0.53	0.69	1.661	O					4.22
23.833	0.53	0.68	1.660	O					4.21
23.917	0.52	0.68	1.659	O					4.21
24.000	0.52	0.67	1.658	O					4.21
24.083	0.46	0.66	1.657	O					4.21
24.167	0.22	0.64	1.655	O					4.20
24.250	0.11	0.62	1.651	O					4.20
24.333	0.07	0.60	1.648	O					4.19
24.417	0.04	0.57	1.644	O					4.18
24.500	0.02	0.54	1.641	O					4.17
24.583	0.01	0.52	1.637	O					4.16
24.667	0.01	0.50	1.634	O					4.16
24.750	0.00	0.47	1.630	O					4.15
24.833	0.00	0.45	1.627	O					4.14
24.917	0.00	0.43	1.624	O					4.13
25.000	0.00	0.41	1.621	O					4.13
25.083	0.00	0.39	1.619	O					4.12
25.167	0.00	0.37	1.616	O					4.12
25.250	0.00	0.35	1.613	O					4.11
25.333	0.00	0.33	1.611	O					4.11
25.417	0.00	0.32	1.609	O					4.10
25.500	0.00	0.30	1.607	O					4.10
25.583	0.00	0.29	1.605	O					4.09
25.667	0.00	0.28	1.603	O					4.09
25.750	0.00	0.26	1.601	O					4.08
25.833	0.00	0.25	1.599	O					4.08
25.917	0.00	0.24	1.597	O					4.07
26.000	0.00	0.23	1.596	O					4.07
26.083	0.00	0.22	1.594	O					4.07
26.167	0.00	0.21	1.593	O					4.06
26.250	0.00	0.20	1.591	O					4.06
26.333	0.00	0.19	1.590	O					4.06
26.417	0.00	0.18	1.589	O					4.06
26.500	0.00	0.17	1.588	O					4.05
26.583	0.00	0.16	1.587	O					4.05
26.667	0.00	0.15	1.586	O					4.05
26.750	0.00	0.15	1.584	O					4.05
26.833	0.00	0.14	1.584	O					4.04
26.917	0.00	0.13	1.583	O					4.04
27.000	0.00	0.13	1.582	O					4.04
27.083	0.00	0.12	1.581	O					4.04
27.167	0.00	0.11	1.580	O					4.04
27.250	0.00	0.11	1.579	O					4.03
27.333	0.00	0.10	1.579	O					4.03
27.417	0.00	0.10	1.578	O					4.03
27.500	0.00	0.09	1.577	O					4.03
27.583	0.00	0.09	1.577	O					4.03
27.667	0.00	0.08	1.576	O					4.03
27.750	0.00	0.08	1.575	O					4.03

27.833	0.00	0.08	1.575	o	|	|	|	|	4.02
27.917	0.00	0.07	1.574	o	|	|	|	|	4.02
28.000	0.00	0.07	1.574	o	|	|	|	|	4.02
28.083	0.00	0.07	1.573	o	|	|	|	|	4.02
28.167	0.00	0.06	1.573	o	|	|	|	|	4.02
28.250	0.00	0.06	1.572	o	|	|	|	|	4.02
28.333	0.00	0.06	1.572	o	|	|	|	|	4.02
28.417	0.00	0.05	1.572	o	|	|	|	|	4.02
28.500	0.00	0.05	1.571	o	|	|	|	|	4.02
28.583	0.00	0.05	1.571	o	|	|	|	|	4.02
28.667	0.00	0.05	1.571	o	|	|	|	|	4.01
28.750	0.00	0.04	1.570	o	|	|	|	|	4.01
28.833	0.00	0.04	1.570	o	|	|	|	|	4.01
28.917	0.00	0.04	1.570	o	|	|	|	|	4.01
29.000	0.00	0.04	1.569	o	|	|	|	|	4.01
29.083	0.00	0.04	1.569	o	|	|	|	|	4.01
29.167	0.00	0.04	1.569	o	|	|	|	|	4.01
29.250	0.00	0.03	1.569	o	|	|	|	|	4.01
29.333	0.00	0.03	1.568	o	|	|	|	|	4.01
29.417	0.00	0.03	1.568	o	|	|	|	|	4.01
29.500	0.00	0.03	1.568	o	|	|	|	|	4.01
29.583	0.00	0.03	1.568	o	|	|	|	|	4.01
29.667	0.00	0.03	1.568	o	|	|	|	|	4.01
29.750	0.00	0.02	1.568	o	|	|	|	|	4.01
29.833	0.00	0.02	1.567	o	|	|	|	|	4.01
29.917	0.00	0.02	1.567	o	|	|	|	|	4.01
30.000	0.00	0.02	1.567	o	|	|	|	|	4.01
30.083	0.00	0.02	1.567	o	|	|	|	|	4.01
30.167	0.00	0.02	1.567	o	|	|	|	|	4.01
30.250	0.00	0.02	1.567	o	|	|	|	|	4.01
30.333	0.00	0.02	1.566	o	|	|	|	|	4.01
30.417	0.00	0.02	1.566	o	|	|	|	|	4.01
30.500	0.00	0.02	1.566	o	|	|	|	|	4.01
30.583	0.00	0.02	1.566	o	|	|	|	|	4.00
30.667	0.00	0.01	1.566	o	|	|	|	|	4.00
30.750	0.00	0.01	1.566	o	|	|	|	|	4.00
30.833	0.00	0.01	1.566	o	|	|	|	|	4.00
30.917	0.00	0.01	1.566	o	|	|	|	|	4.00
31.000	0.00	0.01	1.566	o	|	|	|	|	4.00
31.083	0.00	0.01	1.566	o	|	|	|	|	4.00
31.167	0.00	0.01	1.566	o	|	|	|	|	4.00
31.250	0.00	0.01	1.565	o	|	|	|	|	4.00
31.333	0.00	0.01	1.565	o	|	|	|	|	4.00
31.417	0.00	0.01	1.565	o	|	|	|	|	4.00
31.500	0.00	0.01	1.565	o	|	|	|	|	4.00
31.583	0.00	0.01	1.565	o	|	|	|	|	4.00
31.667	0.00	0.01	1.565	o	|	|	|	|	4.00
31.750	0.00	0.01	1.565	o	|	|	|	|	4.00
31.833	0.00	0.01	1.565	o	|	|	|	|	4.00
31.917	0.00	0.01	1.565	o	|	|	|	|	4.00
32.000	0.00	0.01	1.565	o	|	|	|	|	4.00
32.083	0.00	0.01	1.565	o	|	|	|	|	4.00
32.167	0.00	0.01	1.565	o	|	|	|	|	4.00
32.250	0.00	0.01	1.565	o	|	|	|	|	4.00
32.333	0.00	0.01	1.565	o	|	|	|	|	4.00
32.417	0.00	0.01	1.565	o	|	|	|	|	4.00
32.500	0.00	0.00	1.565	o	|	|	|	|	4.00
32.583	0.00	0.00	1.565	o	|	|	|	|	4.00
32.667	0.00	0.00	1.565	o	|	|	|	|	4.00
32.750	0.00	0.00	1.565	o	|	|	|	|	4.00
32.833	0.00	0.00	1.565	o	|	|	|	|	4.00
32.917	0.00	0.00	1.565	o	|	|	|	|	4.00
33.000	0.00	0.00	1.565	o	|	|	|	|	4.00
33.083	0.00	0.00	1.564	o	|	|	|	|	4.00
33.167	0.00	0.00	1.564	o	|	|	|	|	4.00
33.250	0.00	0.00	1.564	o	|	|	|	|	4.00
33.333	0.00	0.00	1.564	o	|	|	|	|	4.00
33.417	0.00	0.00	1.564	o	|	|	|	|	4.00
33.500	0.00	0.00	1.564	o	|	|	|	|	4.00
33.583	0.00	0.00	1.564	o	|	|	|	|	4.00
33.667	0.00	0.00	1.564	o	|	|	|	|	4.00
33.750	0.00	0.00	1.564	o	|	|	|	|	4.00
33.833	0.00	0.00	1.564	o	|	|	|	|	4.00
33.917	0.00	0.00	1.564	o	|	|	|	|	4.00
34.000	0.00	0.00	1.564	o	|	|	|	|	4.00
34.083	0.00	0.00	1.564	o	|	|	|	|	4.00
34.167	0.00	0.00	1.564	o	|	|	|	|	4.00
34.250	0.00	0.00	1.564	o	|	|	|	|	4.00
34.333	0.00	0.00	1.564	o	|	|	|	|	4.00
34.417	0.00	0.00	1.564	o	|	|	|	|	4.00
34.500	0.00	0.00	1.564	o	|	|	|	|	4.00

```
34.583    0.00    0.00      1.564  o       |       |       |       |     4.00
34.667    0.00    0.00      1.564  o       |       |       |       |     4.00
34.750    0.00    0.00      1.564  o       |       |       |       |     4.00
34.833    0.00    0.00      1.564  o       |       |       |       |     4.00
34.917    0.00    0.00      1.564  o       |       |       |       |     4.00
35.000    0.00    0.00      1.564  o       |       |       |       |     4.00
35.083    0.00    0.00      1.564  o       |       |       |       |     4.00
35.167    0.00    0.00      1.564  o       |       |       |       |     4.00
35.250    0.00    0.00      1.564  o       |       |       |       |     4.00

        Remaining water in basin =    1.56 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =   423
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =        3.150 (CFS)
                        Total volume =       1.148 (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        6.000 to Point/Station       13.000
        **** STORE OR DELETE CURRENT HYDROGRAPH ****
        ______________________________________________________________________
        Current stream hydrograph saved in file route.rte
        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =     0
                        Time interval =    0.0 (Min.)
                        Maximum/Peak flow rate =        0.000 (CFS)
                        Total volume =       0.000 (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: 06/23/22

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


224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
DEVELOPED CONDITION - ROUTE
25-YEAR, 24-HOUR STORM
BY: JTS  DATE: 06-23-22
---------------------------------------------------------------------


Program License Serial Number 6320

---------------------------------------------------------------------
******************** HYDROGRAPH INFORMATION **********************

                From study/file name: DEVHYD25.rte
****************************HYDROGRAPH DATA****************************
                Number of intervals =   297
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       43.430 (CFS)
                Total volume =       3.417 (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        6.000 to Point/Station       13.000
**** 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 =    4.00(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    4.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
Calculated individual pipe flow  =     1.593(CFS)
Normal flow depth in pipe =    5.07(In.)
Flow top width inside pipe =   14.19(In.)
Critical Depth =    0.50(Ft.)
Calculated flow rate through pipe(s) =      1.593(CFS)

Total outflow at this depth =      1.59(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    5.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
```

```
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      0.450(Ft.)
Pipe friction loss =      0.106(Ft.)
Minor friction loss =      0.344(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      4.713(CFS)

Total outflow at this depth =      4.71(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    6.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      1.450(Ft.)
Pipe friction loss =      0.343(Ft.)
Minor friction loss =      1.107(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      8.460(CFS)

Total outflow at this depth =      8.46(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    8.00(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      2.950(Ft.)
Pipe friction loss =      0.698(Ft.)
Minor friction loss =      2.252(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =     12.067(CFS)

Total outflow at this depth =     12.07(CFS)

--------------------------------------------------------------------
Total number of inflow hydrograph intervals = 297
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      0.116      0.000      0.116        0.116
  1.500      0.463      0.000      0.463        0.463
  2.500      0.886      0.000      0.886        0.886
  3.500      1.337      0.000      1.337        1.337
  4.000      1.564      0.000      1.564        1.564
  4.500      1.788      1.593      1.783        1.793
  5.500      2.211      4.713      2.195        2.227
  6.500      2.558      8.460      2.529        2.587
  8.000      2.905     12.067      2.863        2.947
--------------------------------------------------------------------
                 Hydrograph Detention Basin Routing
-------------------------------------------------------------------

Graph values: 'I'= unit inflow; 'O'=outflow at time shown
--------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                    Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0      10.9   21.71   32.57   43.43 (Ft.)
 0.083    0.07    0.00      0.000  O       |       |       |       |     0.00
 0.167    0.37    0.00      0.002  O       |       |       |       |     0.01
 0.250    0.50    0.00      0.005  O       |       |       |       |     0.02
 0.333    0.56    0.00      0.008  O       |       |       |       |     0.04
 0.417    0.60    0.00      0.012  O       |       |       |       |     0.05
 0.500    0.62    0.00      0.017  O       |       |       |       |     0.07
 0.583    0.64    0.00      0.021  O       |       |       |       |     0.09
 0.667    0.64    0.00      0.025  O       |       |       |       |     0.11
 0.750    0.65    0.00      0.030  O       |       |       |       |     0.13
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0.833	0.66	0.00	0.034	o	|	|	|	|	0.15
0.917	0.66	0.00	0.039	o	|	|	|	|	0.17
1.000	0.66	0.00	0.043	o	|	|	|	|	0.19
1.083	0.67	0.00	0.048	o	|	|	|	|	0.21
1.167	0.67	0.00	0.053	o	|	|	|	|	0.23
1.250	0.67	0.00	0.057	o	|	|	|	|	0.25
1.333	0.67	0.00	0.062	o	|	|	|	|	0.27
1.417	0.67	0.00	0.067	o	|	|	|	|	0.29
1.500	0.68	0.00	0.071	o	|	|	|	|	0.31
1.583	0.68	0.00	0.076	o	|	|	|	|	0.33
1.667	0.68	0.00	0.081	o	|	|	|	|	0.35
1.750	0.68	0.00	0.085	o	|	|	|	|	0.37
1.833	0.69	0.00	0.090	o	|	|	|	|	0.39
1.917	0.69	0.00	0.095	o	|	|	|	|	0.41
2.000	0.69	0.00	0.099	o	|	|	|	|	0.43
2.083	0.69	0.00	0.104	o	|	|	|	|	0.45
2.167	0.70	0.00	0.109	o	|	|	|	|	0.47
2.250	0.70	0.00	0.114	o	|	|	|	|	0.49
2.333	0.70	0.00	0.119	o	|	|	|	|	0.51
2.417	0.70	0.00	0.123	o	|	|	|	|	0.52
2.500	0.71	0.00	0.128	o	|	|	|	|	0.54
2.583	0.71	0.00	0.133	o	|	|	|	|	0.55
2.667	0.71	0.00	0.138	o	|	|	|	|	0.56
2.750	0.71	0.00	0.143	o	|	|	|	|	0.58
2.833	0.72	0.00	0.148	o	|	|	|	|	0.59
2.917	0.72	0.00	0.153	o	|	|	|	|	0.61
3.000	0.72	0.00	0.158	o	|	|	|	|	0.62
3.083	0.73	0.00	0.163	o	|	|	|	|	0.64
3.167	0.73	0.00	0.168	o	|	|	|	|	0.65
3.250	0.73	0.00	0.173	o	|	|	|	|	0.66
3.333	0.73	0.00	0.178	o	|	|	|	|	0.68
3.417	0.74	0.00	0.183	o	|	|	|	|	0.69
3.500	0.74	0.00	0.188	o	|	|	|	|	0.71
3.583	0.74	0.00	0.193	o	|	|	|	|	0.72
3.667	0.75	0.00	0.198	o	|	|	|	|	0.74
3.750	0.75	0.00	0.204	o	|	|	|	|	0.75
3.833	0.75	0.00	0.209	o	|	|	|	|	0.77
3.917	0.76	0.00	0.214	o	|	|	|	|	0.78
4.000	0.76	0.00	0.219	o	|	|	|	|	0.80
4.083	0.76	0.00	0.224	o	|	|	|	|	0.81
4.167	0.77	0.00	0.230	o	|	|	|	|	0.83
4.250	0.77	0.00	0.235	o	|	|	|	|	0.84
4.333	0.77	0.00	0.240	o	|	|	|	|	0.86
4.417	0.78	0.00	0.246	o	|	|	|	|	0.87
4.500	0.78	0.00	0.251	o	|	|	|	|	0.89
4.583	0.78	0.00	0.256	o	|	|	|	|	0.90
4.667	0.79	0.00	0.262	o	|	|	|	|	0.92
4.750	0.79	0.00	0.267	o	|	|	|	|	0.94
4.833	0.79	0.00	0.273	o	|	|	|	|	0.95
4.917	0.80	0.00	0.278	o	|	|	|	|	0.97
5.000	0.80	0.00	0.283	o	|	|	|	|	0.98
5.083	0.80	0.00	0.289	o	|	|	|	|	1.00
5.167	0.81	0.00	0.295	o	|	|	|	|	1.01
5.250	0.81	0.00	0.300	o	|	|	|	|	1.03
5.333	0.81	0.00	0.306	o	|	|	|	|	1.05
5.417	0.82	0.00	0.311	o	|	|	|	|	1.06
5.500	0.82	0.00	0.317	o	|	|	|	|	1.08
5.583	0.83	0.00	0.323	o	|	|	|	|	1.10
5.667	0.83	0.00	0.328	o	|	|	|	|	1.11
5.750	0.83	0.00	0.334	o	|	|	|	|	1.13
5.833	0.84	0.00	0.340	o	|	|	|	|	1.15
5.917	0.84	0.00	0.346	o	|	|	|	|	1.16
6.000	0.85	0.00	0.351	o	|	|	|	|	1.18
6.083	0.85	0.00	0.357	o	|	|	|	|	1.20
6.167	0.86	0.00	0.363	o	|	|	|	|	1.21
6.250	0.86	0.00	0.369	o	|	|	|	|	1.23
6.333	0.86	0.00	0.375	o	|	|	|	|	1.25
6.417	0.87	0.00	0.381	o	|	|	|	|	1.26
6.500	0.87	0.00	0.387	o	|	|	|	|	1.28
6.583	0.88	0.00	0.393	o	|	|	|	|	1.30
6.667	0.88	0.00	0.399	o	|	|	|	|	1.32
6.750	0.89	0.00	0.405	o	|	|	|	|	1.33
6.833	0.89	0.00	0.411	o	|	|	|	|	1.35
6.917	0.90	0.00	0.418	o	|	|	|	|	1.37
7.000	0.90	0.00	0.424	o	|	|	|	|	1.39
7.083	0.91	0.00	0.430	o	|	|	|	|	1.40
7.167	0.91	0.00	0.436	o	|	|	|	|	1.42
7.250	0.92	0.00	0.443	o	|	|	|	|	1.44
7.333	0.92	0.00	0.449	o	|	|	|	|	1.46
7.417	0.93	0.00	0.455	o	|	|	|	|	1.48
7.500	0.93	0.00	0.462	o	|	|	|	|	1.50

7.583	0.94	0.00	0.468	o	|	|	|	|	1.51
7.667	0.95	0.00	0.475	o	|	|	|	|	1.53
7.750	0.95	0.00	0.481	o	|	|	|	|	1.54
7.833	0.96	0.00	0.488	o	|	|	|	|	1.56
7.917	0.96	0.00	0.494	o	|	|	|	|	1.57
8.000	0.97	0.00	0.501	o	|	|	|	|	1.59
8.083	0.97	0.00	0.508	o	|	|	|	|	1.61
8.167	0.98	0.00	0.514	o	|	|	|	|	1.62
8.250	0.99	0.00	0.521	o	|	|	|	|	1.64
8.333	0.99	0.00	0.528	o	|	|	|	|	1.65
8.417	1.00	0.00	0.535	o	|	|	|	|	1.67
8.500	1.01	0.00	0.542	o	|	|	|	|	1.69
8.583	1.01	0.00	0.549	o	|	|	|	|	1.70
8.667	1.02	0.00	0.556	o	|	|	|	|	1.72
8.750	1.03	0.00	0.563	o	|	|	|	|	1.74
8.833	1.03	0.00	0.570	o	|	|	|	|	1.75
8.917	1.04	0.00	0.577	o	|	|	|	|	1.77
9.000	1.05	0.00	0.584	o	|	|	|	|	1.79
9.083	1.06	0.00	0.591	o	|	|	|	|	1.80
9.167	1.06	0.00	0.599	o	|	|	|	|	1.82
9.250	1.07	0.00	0.606	o	|	|	|	|	1.84
9.333	1.08	0.00	0.613	o	|	|	|	|	1.86
9.417	1.09	0.00	0.621	o	|	|	|	|	1.87
9.500	1.10	0.00	0.628	o	|	|	|	|	1.89
9.583	1.10	0.00	0.636	o	|	|	|	|	1.91
9.667	1.11	0.00	0.644	o	|	|	|	|	1.93
9.750	1.12	0.00	0.651	o	|	|	|	|	1.95
9.833	1.13	0.00	0.659	o	|	|	|	|	1.96
9.917	1.14	0.00	0.667	o	|	|	|	|	1.98
10.000	1.15	0.00	0.675	o	|	|	|	|	2.00
10.083	1.16	0.00	0.683	o	|	|	|	|	2.02
10.167	1.17	0.00	0.691	o	|	|	|	|	2.04
10.250	1.18	0.00	0.699	o	|	|	|	|	2.06
10.333	1.19	0.00	0.707	o	|	|	|	|	2.08
10.417	1.20	0.00	0.715	o	|	|	|	|	2.10
10.500	1.21	0.00	0.724	o	|	|	|	|	2.12
10.583	1.22	0.00	0.732	o	|	|	|	|	2.14
10.667	1.23	0.00	0.740	o	|	|	|	|	2.16
10.750	1.24	0.00	0.749	o	|	|	|	|	2.18
10.833	1.26	0.00	0.757	o	|	|	|	|	2.20
10.917	1.27	0.00	0.766	o	|	|	|	|	2.22
11.000	1.28	0.00	0.775	o	|	|	|	|	2.24
11.083	1.29	0.00	0.784	o	|	|	|	|	2.26
11.167	1.31	0.00	0.793	o	|	|	|	|	2.28
11.250	1.32	0.00	0.802	o	|	|	|	|	2.30
11.333	1.33	0.00	0.811	o	|	|	|	|	2.32
11.417	1.35	0.00	0.820	o	|	|	|	|	2.34
11.500	1.36	0.00	0.829	oI	|	|	|	|	2.37
11.583	1.38	0.00	0.839	oI	|	|	|	|	2.39
11.667	1.39	0.00	0.848	oI	|	|	|	|	2.41
11.750	1.41	0.00	0.858	oI	|	|	|	|	2.43
11.833	1.42	0.00	0.868	oI	|	|	|	|	2.46
11.917	1.44	0.00	0.878	oI	|	|	|	|	2.48
12.000	1.46	0.00	0.888	oI	|	|	|	|	2.50
12.083	1.47	0.00	0.898	oI	|	|	|	|	2.53
12.167	1.48	0.00	0.908	oI	|	|	|	|	2.55
12.250	1.49	0.00	0.918	oI	|	|	|	|	2.57
12.333	1.51	0.00	0.929	oI	|	|	|	|	2.59
12.417	1.53	0.00	0.939	oI	|	|	|	|	2.62
12.500	1.55	0.00	0.950	oI	|	|	|	|	2.64
12.583	1.57	0.00	0.960	oI	|	|	|	|	2.66
12.667	1.60	0.00	0.971	oI	|	|	|	|	2.69
12.750	1.62	0.00	0.982	oI	|	|	|	|	2.71
12.833	1.64	0.00	0.994	oI	|	|	|	|	2.74
12.917	1.67	0.00	1.005	oI	|	|	|	|	2.76
13.000	1.70	0.00	1.017	oI	|	|	|	|	2.79
13.083	1.72	0.00	1.028	oI	|	|	|	|	2.82
13.167	1.75	0.00	1.040	oI	|	|	|	|	2.84
13.250	1.78	0.00	1.052	oI	|	|	|	|	2.87
13.333	1.82	0.00	1.065	oI	|	|	|	|	2.90
13.417	1.85	0.00	1.077	oI	|	|	|	|	2.92
13.500	1.88	0.00	1.090	oI	|	|	|	|	2.95
13.583	1.92	0.00	1.103	oI	|	|	|	|	2.98
13.667	1.96	0.00	1.117	oI	|	|	|	|	3.01
13.750	2.00	0.00	1.130	oI	|	|	|	|	3.04
13.833	2.04	0.00	1.144	oI	|	|	|	|	3.07
13.917	2.09	0.00	1.159	oI	|	|	|	|	3.10
14.000	2.14	0.00	1.173	oI	|	|	|	|	3.14
14.083	2.19	0.00	1.188	oI	|	|	|	|	3.17
14.167	2.25	0.00	1.203	oI	|	|	|	|	3.20
14.250	2.30	0.00	1.219	oI	|	|	|	|	3.24

14.333	2.37	0.00	1.235	OI					3.27
14.417	2.43	0.00	1.252	OI					3.31
14.500	2.51	0.00	1.269	OI					3.35
14.583	2.59	0.00	1.286	OI					3.39
14.667	2.68	0.00	1.304	OI					3.43
14.750	2.77	0.00	1.323	O I					3.47
14.833	2.88	0.00	1.342	O I					3.51
14.917	2.98	0.00	1.363	O I					3.56
15.000	3.12	0.00	1.384	O I					3.60
15.083	3.25	0.00	1.406	O I					3.65
15.167	3.42	0.00	1.429	O I					3.70
15.250	3.59	0.00	1.453	O I					3.75
15.333	3.82	0.00	1.478	O I					3.81
15.417	3.94	0.00	1.505	O I					3.87
15.500	3.81	0.00	1.532	O I					3.93
15.583	3.93	0.00	1.558	O I					3.99
15.667	4.30	0.16	1.586	O I					4.05
15.750	4.82	0.37	1.616	O I					4.12
15.833	5.77	0.60	1.649	O I					4.19
15.917	7.13	0.88	1.688	O I					4.28
16.000	10.18	1.25	1.740	O I					4.39
16.083	20.66	1.94	1.836	O		I			4.61
16.167	43.43	3.44	2.038	O				I	5.09
16.250	23.59	5.02	2.239	O		I			5.58
16.333	13.64	5.99	2.330	O	I				5.84
16.417	9.37	6.39	2.366	O I					5.95
16.500	7.38	6.53	2.379	OI					5.99
16.583	5.94	6.54	2.380	O					5.99
16.667	4.79	6.46	2.372	IO					5.97
16.750	4.25	6.32	2.360	IO					5.93
16.833	3.71	6.15	2.344	I O					5.88
16.917	2.95	5.95	2.325	I O					5.83
17.000	2.72	5.72	2.305	I O					5.77
17.083	2.55	5.50	2.284	I O					5.71
17.167	2.40	5.29	2.264	I O					5.65
17.250	2.27	5.07	2.244	I O					5.60
17.333	2.16	4.87	2.225	I O					5.54
17.417	2.06	4.68	2.207	I O					5.49
17.500	1.97	4.55	2.189	I O					5.45
17.583	1.89	4.42	2.172	I O					5.41
17.667	1.82	4.29	2.154	I O					5.37
17.750	1.76	4.17	2.137	I O					5.33
17.833	1.70	4.05	2.121	IO					5.29
17.917	1.65	3.93	2.105	IO					5.25
18.000	1.60	3.82	2.090	IO					5.21
18.083	1.56	3.71	2.075	IO					5.18
18.167	1.53	3.60	2.060	IO					5.14
18.250	1.49	3.50	2.046	IO					5.11
18.333	1.46	3.40	2.032	IO					5.08
18.417	1.42	3.30	2.019	IO					5.05
18.500	1.39	3.21	2.007	IO					5.02
18.583	1.36	3.11	1.994	IO					4.99
18.667	1.33	3.03	1.982	I O					4.96
18.750	1.31	2.94	1.971	I O					4.93
18.833	1.28	2.86	1.960	I O					4.91
18.917	1.26	2.78	1.949	I O					4.88
19.000	1.23	2.71	1.939	IO					4.86
19.083	1.21	2.63	1.929	IO					4.83
19.167	1.19	2.56	1.919	IO					4.81
19.250	1.17	2.49	1.910	IO					4.79
19.333	1.15	2.43	1.901	IO					4.77
19.417	1.13	2.36	1.892	IO					4.75
19.500	1.11	2.30	1.884	IO					4.73
19.583	1.10	2.24	1.876	IO					4.71
19.667	1.08	2.19	1.868	IO					4.69
19.750	1.06	2.13	1.861	IO					4.67
19.833	1.05	2.08	1.854	IO					4.66
19.917	1.03	2.03	1.847	IO					4.64
20.000	1.02	1.98	1.840	IO					4.62
20.083	1.01	1.93	1.834	IO					4.61
20.167	0.99	1.88	1.827	IO					4.59
20.250	0.98	1.84	1.821	IO					4.58
20.333	0.97	1.80	1.815	IO					4.56
20.417	0.96	1.75	1.810	IO					4.55
20.500	0.95	1.71	1.805	IO					4.54
20.583	0.93	1.68	1.799	IO					4.53
20.667	0.92	1.64	1.794	IO					4.51
20.750	0.91	1.60	1.789	IO					4.50
20.833	0.90	1.57	1.785	IO					4.49
20.917	0.89	1.54	1.780	IO					4.48
21.000	0.88	1.51	1.776	IO					4.47

21.083	0.87	1.48	1.772	IO					4.46
21.167	0.86	1.45	1.768	IO					4.45
21.250	0.86	1.42	1.764	IO					4.45
21.333	0.85	1.39	1.760	IO					4.44
21.417	0.84	1.37	1.756	IO					4.43
21.500	0.83	1.34	1.753	O					4.42
21.583	0.82	1.32	1.749	O					4.41
21.667	0.82	1.29	1.746	O					4.41
21.750	0.81	1.27	1.743	O					4.40
21.833	0.80	1.25	1.739	O					4.39
21.917	0.79	1.23	1.736	O					4.38
22.000	0.79	1.20	1.733	O					4.38
22.083	0.78	1.18	1.731	O					4.37
22.167	0.77	1.16	1.728	O					4.37
22.250	0.77	1.15	1.725	O					4.36
22.333	0.76	1.13	1.723	O					4.35
22.417	0.75	1.11	1.720	O					4.35
22.500	0.75	1.09	1.718	O					4.34
22.583	0.74	1.08	1.715	O					4.34
22.667	0.73	1.06	1.713	O					4.33
22.750	0.73	1.04	1.711	O					4.33
22.833	0.72	1.03	1.709	O					4.32
22.917	0.72	1.01	1.707	O					4.32
23.000	0.71	1.00	1.705	O					4.31
23.083	0.71	0.99	1.703	O					4.31
23.167	0.70	0.97	1.701	O					4.31
23.250	0.70	0.96	1.699	O					4.30
23.333	0.69	0.95	1.697	O					4.30
23.417	0.69	0.93	1.695	O					4.29
23.500	0.68	0.92	1.694	O					4.29
23.583	0.68	0.91	1.692	O					4.29
23.667	0.67	0.90	1.691	O					4.28
23.750	0.67	0.89	1.689	O					4.28
23.833	0.66	0.88	1.687	O					4.28
23.917	0.66	0.87	1.686	O					4.27
24.000	0.65	0.86	1.685	O					4.27
24.083	0.58	0.85	1.683	O					4.27
24.167	0.27	0.83	1.680	O					4.26
24.250	0.14	0.80	1.676	O					4.25
24.333	0.08	0.76	1.671	O					4.24
24.417	0.05	0.73	1.667	O					4.23
24.500	0.03	0.70	1.662	O					4.22
24.583	0.02	0.67	1.658	O					4.21
24.667	0.01	0.63	1.653	O					4.20
24.750	0.00	0.60	1.649	O					4.19
24.833	0.00	0.58	1.645	O					4.18
24.917	0.00	0.55	1.641	O					4.17
25.000	0.00	0.52	1.637	O					4.16
25.083	0.00	0.50	1.634	O					4.16
25.167	0.00	0.47	1.631	O					4.15
25.250	0.00	0.45	1.627	O					4.14
25.333	0.00	0.43	1.624	O					4.13
25.417	0.00	0.41	1.621	O					4.13
25.500	0.00	0.39	1.619	O					4.12
25.583	0.00	0.37	1.616	O					4.12
25.667	0.00	0.35	1.614	O					4.11
25.750	0.00	0.34	1.611	O					4.11
25.833	0.00	0.32	1.609	O					4.10
25.917	0.00	0.30	1.607	O					4.10
26.000	0.00	0.29	1.605	O					4.09
26.083	0.00	0.28	1.603	O					4.09
26.167	0.00	0.26	1.601	O					4.08
26.250	0.00	0.25	1.599	O					4.08
26.333	0.00	0.24	1.598	O					4.07
26.417	0.00	0.23	1.596	O					4.07
26.500	0.00	0.22	1.594	O					4.07
26.583	0.00	0.21	1.593	O					4.06
26.667	0.00	0.20	1.592	O					4.06
26.750	0.00	0.19	1.590	O					4.06
26.833	0.00	0.18	1.589	O					4.06
26.917	0.00	0.17	1.588	O					4.05
27.000	0.00	0.16	1.587	O					4.05
27.083	0.00	0.15	1.586	O					4.05
27.167	0.00	0.15	1.585	O					4.05
27.250	0.00	0.14	1.584	O					4.04
27.333	0.00	0.13	1.583	O					4.04
27.417	0.00	0.13	1.582	O					4.04
27.500	0.00	0.12	1.581	O					4.04
27.583	0.00	0.11	1.580	O					4.04
27.667	0.00	0.11	1.579	O					4.03
27.750	0.00	0.10	1.579	O					4.03

27.833	0.00	0.10	1.578	o	|	|	|	|	4.03
27.917	0.00	0.09	1.577	o	|	|	|	|	4.03
28.000	0.00	0.09	1.577	o	|	|	|	|	4.03
28.083	0.00	0.09	1.576	o	|	|	|	|	4.03
28.167	0.00	0.08	1.575	o	|	|	|	|	4.03
28.250	0.00	0.08	1.575	o	|	|	|	|	4.02
28.333	0.00	0.07	1.574	o	|	|	|	|	4.02
28.417	0.00	0.07	1.574	o	|	|	|	|	4.02
28.500	0.00	0.07	1.573	o	|	|	|	|	4.02
28.583	0.00	0.06	1.573	o	|	|	|	|	4.02
28.667	0.00	0.06	1.573	o	|	|	|	|	4.02
28.750	0.00	0.06	1.572	o	|	|	|	|	4.02
28.833	0.00	0.05	1.572	o	|	|	|	|	4.02
28.917	0.00	0.05	1.571	o	|	|	|	|	4.02
29.000	0.00	0.05	1.571	o	|	|	|	|	4.02
29.083	0.00	0.05	1.571	o	|	|	|	|	4.01
29.167	0.00	0.05	1.570	o	|	|	|	|	4.01
29.250	0.00	0.04	1.570	o	|	|	|	|	4.01
29.333	0.00	0.04	1.570	o	|	|	|	|	4.01
29.417	0.00	0.04	1.569	o	|	|	|	|	4.01
29.500	0.00	0.04	1.569	o	|	|	|	|	4.01
29.583	0.00	0.04	1.569	o	|	|	|	|	4.01
29.667	0.00	0.03	1.569	o	|	|	|	|	4.01
29.750	0.00	0.03	1.568	o	|	|	|	|	4.01
29.833	0.00	0.03	1.568	o	|	|	|	|	4.01
29.917	0.00	0.03	1.568	o	|	|	|	|	4.01
30.000	0.00	0.03	1.568	o	|	|	|	|	4.01
30.083	0.00	0.03	1.568	o	|	|	|	|	4.01
30.167	0.00	0.03	1.568	o	|	|	|	|	4.01
30.250	0.00	0.02	1.567	o	|	|	|	|	4.01
30.333	0.00	0.02	1.567	o	|	|	|	|	4.01
30.417	0.00	0.02	1.567	o	|	|	|	|	4.01
30.500	0.00	0.02	1.567	o	|	|	|	|	4.01
30.583	0.00	0.02	1.567	o	|	|	|	|	4.01
30.667	0.00	0.02	1.567	o	|	|	|	|	4.01
30.750	0.00	0.02	1.567	o	|	|	|	|	4.01
30.833	0.00	0.02	1.566	o	|	|	|	|	4.01
30.917	0.00	0.02	1.566	o	|	|	|	|	4.01
31.000	0.00	0.02	1.566	o	|	|	|	|	4.00
31.083	0.00	0.01	1.566	o	|	|	|	|	4.00
31.167	0.00	0.01	1.566	o	|	|	|	|	4.00
31.250	0.00	0.01	1.566	o	|	|	|	|	4.00
31.333	0.00	0.01	1.566	o	|	|	|	|	4.00
31.417	0.00	0.01	1.566	o	|	|	|	|	4.00
31.500	0.00	0.01	1.566	o	|	|	|	|	4.00
31.583	0.00	0.01	1.566	o	|	|	|	|	4.00
31.667	0.00	0.01	1.565	o	|	|	|	|	4.00
31.750	0.00	0.01	1.565	o	|	|	|	|	4.00
31.833	0.00	0.01	1.565	o	|	|	|	|	4.00
31.917	0.00	0.01	1.565	o	|	|	|	|	4.00
32.000	0.00	0.01	1.565	o	|	|	|	|	4.00
32.083	0.00	0.01	1.565	o	|	|	|	|	4.00
32.167	0.00	0.01	1.565	o	|	|	|	|	4.00
32.250	0.00	0.01	1.565	o	|	|	|	|	4.00
32.333	0.00	0.01	1.565	o	|	|	|	|	4.00
32.417	0.00	0.01	1.565	o	|	|	|	|	4.00
32.500	0.00	0.01	1.565	o	|	|	|	|	4.00
32.583	0.00	0.01	1.565	o	|	|	|	|	4.00
32.667	0.00	0.01	1.565	o	|	|	|	|	4.00
32.750	0.00	0.01	1.565	o	|	|	|	|	4.00
32.833	0.00	0.01	1.565	o	|	|	|	|	4.00
32.917	0.00	0.00	1.565	o	|	|	|	|	4.00
33.000	0.00	0.00	1.565	o	|	|	|	|	4.00
33.083	0.00	0.00	1.565	o	|	|	|	|	4.00
33.167	0.00	0.00	1.565	o	|	|	|	|	4.00
33.250	0.00	0.00	1.565	o	|	|	|	|	4.00
33.333	0.00	0.00	1.565	o	|	|	|	|	4.00
33.417	0.00	0.00	1.565	o	|	|	|	|	4.00
33.500	0.00	0.00	1.564	o	|	|	|	|	4.00
33.583	0.00	0.00	1.564	o	|	|	|	|	4.00
33.667	0.00	0.00	1.564	o	|	|	|	|	4.00
33.750	0.00	0.00	1.564	o	|	|	|	|	4.00
33.833	0.00	0.00	1.564	o	|	|	|	|	4.00
33.917	0.00	0.00	1.564	o	|	|	|	|	4.00
34.000	0.00	0.00	1.564	o	|	|	|	|	4.00
34.083	0.00	0.00	1.564	o	|	|	|	|	4.00
34.167	0.00	0.00	1.564	o	|	|	|	|	4.00
34.250	0.00	0.00	1.564	o	|	|	|	|	4.00
34.333	0.00	0.00	1.564	o	|	|	|	|	4.00
34.417	0.00	0.00	1.564	o	|	|	|	|	4.00
34.500	0.00	0.00	1.564	o	|	|	|	|	4.00

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34.583    0.00    0.00      1.564  o       |       |       |       |     4.00
34.667    0.00    0.00      1.564  o       |       |       |       |     4.00
34.750    0.00    0.00      1.564  o       |       |       |       |     4.00
34.833    0.00    0.00      1.564  o       |       |       |       |     4.00
34.917    0.00    0.00      1.564  o       |       |       |       |     4.00
35.000    0.00    0.00      1.564  o       |       |       |       |     4.00
35.083    0.00    0.00      1.564  o       |       |       |       |     4.00
35.167    0.00    0.00      1.564  o       |       |       |       |     4.00
35.250    0.00    0.00      1.564  o       |       |       |       |     4.00
35.333    0.00    0.00      1.564  o       |       |       |       |     4.00
35.417    0.00    0.00      1.564  o       |       |       |       |     4.00
35.500    0.00    0.00      1.564  o       |       |       |       |     4.00
35.583    0.00    0.00      1.564  o       |       |       |       |     4.00
35.667    0.00    0.00      1.564  o       |       |       |       |     4.00

        Remaining water in basin =    1.56 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =   428
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =        6.541 (CFS)
                        Total volume =       1.853 (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        6.000 to Point/Station       13.000
        **** STORE OR DELETE CURRENT HYDROGRAPH ****
        _____________________________________________________________________
        Current stream hydrograph saved in file route.rte
        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =     0
                        Time interval =    0.0 (Min.)
                        Maximum/Peak flow rate =        0.000 (CFS)
                        Total volume =       0.000 (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: 06/23/22

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


224986 FISHER CONSTRUCTION - GTS COLD STORAGE APPLE VALLEY
DEVELOPED CONDITION - ROUTE
100-YEAR, 24-HOUR STORM
BY: JTS  DATE: 06-23-22
---------------------------------------------------------------------


Program License Serial Number 6320

---------------------------------------------------------------------
******************** HYDROGRAPH INFORMATION **********************

                From study/file name: DEVHYD100.rte
****************************HYDROGRAPH DATA****************************
                Number of intervals =   297
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       59.384 (CFS)
                Total volume =       4.489 (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        6.000 to Point/Station       13.000
**** 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 =    4.00(Ft.))
Total outflow at this depth =      0.00(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    4.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
Calculated individual pipe flow  =     1.593(CFS)
Normal flow depth in pipe =    5.07(In.)
Flow top width inside pipe =   14.19(In.)
Critical Depth =    0.50(Ft.)
Calculated flow rate through pipe(s) =      1.593(CFS)

Total outflow at this depth =      1.59(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    5.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
```

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Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      0.450(Ft.)
Pipe friction loss =      0.106(Ft.)
Minor friction loss =      0.344(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      4.713(CFS)

Total outflow at this depth =      4.71(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    6.50(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      1.450(Ft.)
Pipe friction loss =      0.343(Ft.)
Minor friction loss =      1.107(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =      8.460(CFS)

Total outflow at this depth =      8.46(CFS)


CALCULATED OUTFLOW DATA AT DEPTH =    8.00(Ft.))
Pipe length  =    20.00(Ft.)   Elevation difference =   0.20(Ft.)
Manning's N = 0.013   No. of pipes = 1
Given pipe size =     15.00(In.)
 NOTE: Assuming outlet depth at soffit of outlet.
NOTE: Normal flow is pressure flow.
The total friction loss through the pipe is      2.950(Ft.)
Pipe friction loss =      0.698(Ft.)
Minor friction loss =      2.252(Ft.)     K-factor =   1.50
Calculated flow rate through pipe(s) =     12.067(CFS)

Total outflow at this depth =     12.07(CFS)

--------------------------------------------------------------------
Total number of inflow hydrograph intervals = 297
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      0.116      0.000      0.116        0.116
  1.500      0.463      0.000      0.463        0.463
  2.500      0.886      0.000      0.886        0.886
  3.500      1.337      0.000      1.337        1.337
  4.000      1.564      0.000      1.564        1.564
  4.500      1.788      1.593      1.783        1.793
  5.500      2.211      4.713      2.195        2.227
  6.500      2.558      8.460      2.529        2.587
  8.000      2.905     12.067      2.863        2.947
--------------------------------------------------------------------
                 Hydrograph Detention Basin Routing
--------------------------------------------------------------------

Graph values: 'I'= unit inflow; 'O'=outflow at time shown
--------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                   Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0      14.8   29.69   44.54   59.38 (Ft.)
 0.083    0.09    0.00      0.000  O       |       |       |       |     0.00
 0.167    0.49    0.00      0.002  O       |       |       |       |     0.01
 0.250    0.66    0.00      0.006  O       |       |       |       |     0.03
 0.333    0.74    0.00      0.011  O       |       |       |       |     0.05
 0.417    0.78    0.00      0.016  O       |       |       |       |     0.07
 0.500    0.81    0.00      0.022  O       |       |       |       |     0.09
 0.583    0.83    0.00      0.028  O       |       |       |       |     0.12
 0.667    0.85    0.00      0.033  O       |       |       |       |     0.14
 0.750    0.86    0.00      0.039  O       |       |       |       |     0.17
```

0.833	0.86	0.00	0.045	o	|	|	|	|	0.19
0.917	0.87	0.00	0.051	o	|	|	|	|	0.22
1.000	0.87	0.00	0.057	o	|	|	|	|	0.25
1.083	0.87	0.00	0.063	o	|	|	|	|	0.27
1.167	0.88	0.00	0.069	o	|	|	|	|	0.30
1.250	0.88	0.00	0.075	o	|	|	|	|	0.32
1.333	0.88	0.00	0.081	o	|	|	|	|	0.35
1.417	0.89	0.00	0.087	o	|	|	|	|	0.38
1.500	0.89	0.00	0.093	o	|	|	|	|	0.40
1.583	0.89	0.00	0.100	o	|	|	|	|	0.43
1.667	0.89	0.00	0.106	o	|	|	|	|	0.46
1.750	0.90	0.00	0.112	o	|	|	|	|	0.48
1.833	0.90	0.00	0.118	o	|	|	|	|	0.51
1.917	0.90	0.00	0.124	o	|	|	|	|	0.52
2.000	0.91	0.00	0.130	o	|	|	|	|	0.54
2.083	0.91	0.00	0.137	o	|	|	|	|	0.56
2.167	0.91	0.00	0.143	o	|	|	|	|	0.58
2.250	0.92	0.00	0.149	o	|	|	|	|	0.60
2.333	0.92	0.00	0.156	o	|	|	|	|	0.61
2.417	0.92	0.00	0.162	o	|	|	|	|	0.63
2.500	0.93	0.00	0.168	o	|	|	|	|	0.65
2.583	0.93	0.00	0.175	o	|	|	|	|	0.67
2.667	0.93	0.00	0.181	o	|	|	|	|	0.69
2.750	0.94	0.00	0.188	o	|	|	|	|	0.71
2.833	0.94	0.00	0.194	o	|	|	|	|	0.73
2.917	0.95	0.00	0.201	o	|	|	|	|	0.74
3.000	0.95	0.00	0.207	o	|	|	|	|	0.76
3.083	0.95	0.00	0.214	o	|	|	|	|	0.78
3.167	0.96	0.00	0.220	o	|	|	|	|	0.80
3.250	0.96	0.00	0.227	o	|	|	|	|	0.82
3.333	0.96	0.00	0.234	o	|	|	|	|	0.84
3.417	0.97	0.00	0.240	o	|	|	|	|	0.86
3.500	0.97	0.00	0.247	o	|	|	|	|	0.88
3.583	0.98	0.00	0.254	o	|	|	|	|	0.90
3.667	0.98	0.00	0.260	o	|	|	|	|	0.92
3.750	0.98	0.00	0.267	o	|	|	|	|	0.94
3.833	0.99	0.00	0.274	o	|	|	|	|	0.95
3.917	0.99	0.00	0.281	o	|	|	|	|	0.97
4.000	1.00	0.00	0.287	o	|	|	|	|	0.99
4.083	1.00	0.00	0.294	o	|	|	|	|	1.01
4.167	1.00	0.00	0.301	o	|	|	|	|	1.03
4.250	1.01	0.00	0.308	o	|	|	|	|	1.05
4.333	1.01	0.00	0.315	o	|	|	|	|	1.07
4.417	1.02	0.00	0.322	o	|	|	|	|	1.09
4.500	1.02	0.00	0.329	o	|	|	|	|	1.11
4.583	1.03	0.00	0.336	o	|	|	|	|	1.13
4.667	1.03	0.00	0.343	o	|	|	|	|	1.16
4.750	1.04	0.00	0.350	o	|	|	|	|	1.18
4.833	1.04	0.00	0.358	o	|	|	|	|	1.20
4.917	1.04	0.00	0.365	o	|	|	|	|	1.22
5.000	1.05	0.00	0.372	o	|	|	|	|	1.24
5.083	1.05	0.00	0.379	o	|	|	|	|	1.26
5.167	1.06	0.00	0.387	o	|	|	|	|	1.28
5.250	1.06	0.00	0.394	o	|	|	|	|	1.30
5.333	1.07	0.00	0.401	o	|	|	|	|	1.32
5.417	1.07	0.00	0.409	o	|	|	|	|	1.34
5.500	1.08	0.00	0.416	o	|	|	|	|	1.36
5.583	1.08	0.00	0.423	o	|	|	|	|	1.39
5.667	1.09	0.00	0.431	o	|	|	|	|	1.41
5.750	1.10	0.00	0.438	o	|	|	|	|	1.43
5.833	1.10	0.00	0.446	o	|	|	|	|	1.45
5.917	1.11	0.00	0.454	o	|	|	|	|	1.47
6.000	1.11	0.00	0.461	o	|	|	|	|	1.50
6.083	1.12	0.00	0.469	o	|	|	|	|	1.51
6.167	1.12	0.00	0.477	o	|	|	|	|	1.53
6.250	1.13	0.00	0.484	o	|	|	|	|	1.55
6.333	1.14	0.00	0.492	o	|	|	|	|	1.57
6.417	1.14	0.00	0.500	o	|	|	|	|	1.59
6.500	1.15	0.00	0.508	o	|	|	|	|	1.61
6.583	1.15	0.00	0.516	o	|	|	|	|	1.62
6.667	1.16	0.00	0.524	o	|	|	|	|	1.64
6.750	1.17	0.00	0.532	o	|	|	|	|	1.66
6.833	1.17	0.00	0.540	o	|	|	|	|	1.68
6.917	1.18	0.00	0.548	o	|	|	|	|	1.70
7.000	1.19	0.00	0.556	o	|	|	|	|	1.72
7.083	1.19	0.00	0.564	o	|	|	|	|	1.74
7.167	1.20	0.00	0.573	o	|	|	|	|	1.76
7.250	1.20	0.00	0.581	o	|	|	|	|	1.78
7.333	1.21	0.00	0.589	o	|	|	|	|	1.80
7.417	1.22	0.00	0.597	o	|	|	|	|	1.82
7.500	1.23	0.00	0.606	o	|	|	|	|	1.84

7.583	1.23	0.00	0.614	O	|	|	|	|	1.86
7.667	1.24	0.00	0.623	O	|	|	|	|	1.88
7.750	1.25	0.00	0.631	O	|	|	|	|	1.90
7.833	1.26	0.00	0.640	O	|	|	|	|	1.92
7.917	1.26	0.00	0.649	O	|	|	|	|	1.94
8.000	1.27	0.00	0.657	O	|	|	|	|	1.96
8.083	1.28	0.00	0.666	O	|	|	|	|	1.98
8.167	1.29	0.00	0.675	O	|	|	|	|	2.00
8.250	1.30	0.00	0.684	O	|	|	|	|	2.02
8.333	1.30	0.00	0.693	O	|	|	|	|	2.04
8.417	1.31	0.00	0.702	O	|	|	|	|	2.06
8.500	1.32	0.00	0.711	O	|	|	|	|	2.09
8.583	1.33	0.00	0.720	O	|	|	|	|	2.11
8.667	1.34	0.00	0.729	O	|	|	|	|	2.13
8.750	1.35	0.00	0.739	O	|	|	|	|	2.15
8.833	1.36	0.00	0.748	O	|	|	|	|	2.17
8.917	1.37	0.00	0.757	O	|	|	|	|	2.20
9.000	1.38	0.00	0.767	O	|	|	|	|	2.22
9.083	1.39	0.00	0.776	O	|	|	|	|	2.24
9.167	1.40	0.00	0.786	O	|	|	|	|	2.26
9.250	1.41	0.00	0.796	O	|	|	|	|	2.29
9.333	1.42	0.00	0.805	O	|	|	|	|	2.31
9.417	1.43	0.00	0.815	O	|	|	|	|	2.33
9.500	1.44	0.00	0.825	O	|	|	|	|	2.36
9.583	1.45	0.00	0.835	O	|	|	|	|	2.38
9.667	1.46	0.00	0.845	O	|	|	|	|	2.40
9.750	1.47	0.00	0.855	O	|	|	|	|	2.43
9.833	1.49	0.00	0.865	O	|	|	|	|	2.45
9.917	1.50	0.00	0.876	O	|	|	|	|	2.48
10.000	1.51	0.00	0.886	O	|	|	|	|	2.50
10.083	1.52	0.00	0.896	O	|	|	|	|	2.52
10.167	1.54	0.00	0.907	O	|	|	|	|	2.55
10.250	1.55	0.00	0.917	O	|	|	|	|	2.57
10.333	1.56	0.00	0.928	O	|	|	|	|	2.59
10.417	1.58	0.00	0.939	O	|	|	|	|	2.62
10.500	1.59	0.00	0.950	O	|	|	|	|	2.64
10.583	1.60	0.00	0.961	O	|	|	|	|	2.67
10.667	1.62	0.00	0.972	O	|	|	|	|	2.69
10.750	1.63	0.00	0.983	O	|	|	|	|	2.72
10.833	1.65	0.00	0.995	O	|	|	|	|	2.74
10.917	1.67	0.00	1.006	O	|	|	|	|	2.77
11.000	1.68	0.00	1.017	O	|	|	|	|	2.79
11.083	1.70	0.00	1.029	O	|	|	|	|	2.82
11.167	1.72	0.00	1.041	O	|	|	|	|	2.84
11.250	1.73	0.00	1.053	O	|	|	|	|	2.87
11.333	1.75	0.00	1.065	O	|	|	|	|	2.90
11.417	1.77	0.00	1.077	O	|	|	|	|	2.92
11.500	1.79	0.00	1.089	O	|	|	|	|	2.95
11.583	1.81	0.00	1.102	O	|	|	|	|	2.98
11.667	1.83	0.00	1.114	O	|	|	|	|	3.01
11.750	1.85	0.00	1.127	O	|	|	|	|	3.03
11.833	1.87	0.00	1.140	OI	|	|	|	|	3.06
11.917	1.89	0.00	1.153	OI	|	|	|	|	3.09
12.000	1.92	0.00	1.166	OI	|	|	|	|	3.12
12.083	1.92	0.00	1.179	OI	|	|	|	|	3.15
12.167	1.85	0.00	1.192	O	|	|	|	|	3.18
12.250	1.84	0.00	1.205	O	|	|	|	|	3.21
12.333	1.85	0.00	1.217	O	|	|	|	|	3.23
12.417	1.86	0.00	1.230	OI	|	|	|	|	3.26
12.500	1.88	0.00	1.243	OI	|	|	|	|	3.29
12.583	1.91	0.00	1.256	OI	|	|	|	|	3.32
12.667	1.93	0.00	1.269	OI	|	|	|	|	3.35
12.750	1.96	0.00	1.283	OI	|	|	|	|	3.38
12.833	1.99	0.00	1.296	OI	|	|	|	|	3.41
12.917	2.02	0.00	1.310	OI	|	|	|	|	3.44
13.000	2.06	0.00	1.324	OI	|	|	|	|	3.47
13.083	2.09	0.00	1.338	OI	|	|	|	|	3.50
13.167	2.13	0.00	1.353	OI	|	|	|	|	3.54
13.250	2.17	0.00	1.368	OI	|	|	|	|	3.57
13.333	2.21	0.00	1.383	OI	|	|	|	|	3.60
13.417	2.25	0.00	1.398	OI	|	|	|	|	3.63
13.500	2.30	0.00	1.414	OI	|	|	|	|	3.67
13.583	2.35	0.00	1.430	OI	|	|	|	|	3.70
13.667	2.40	0.00	1.446	OI	|	|	|	|	3.74
13.750	2.45	0.00	1.463	OI	|	|	|	|	3.78
13.833	2.51	0.00	1.480	OI	|	|	|	|	3.82
13.917	2.56	0.00	1.497	OI	|	|	|	|	3.85
14.000	2.63	0.00	1.515	OI	|	|	|	|	3.89
14.083	2.69	0.00	1.534	OI	|	|	|	|	3.93
14.167	2.77	0.00	1.553	OI	|	|	|	|	3.97
14.250	2.84	0.05	1.572	OI	|	|	|	|	4.02

14.333	2.93	0.19	1.591	OI				4.06
14.417	3.01	0.32	1.609	OI				4.10
14.500	3.12	0.45	1.628	OI				4.14
14.583	3.21	0.58	1.646	OI				4.18
14.667	3.33	0.71	1.664	OI				4.22
14.750	3.45	0.84	1.682	OI				4.26
14.833	3.59	0.97	1.700	OI				4.30
14.917	3.73	1.10	1.718	O I				4.34
15.000	3.91	1.23	1.737	O I				4.39
15.083	4.09	1.36	1.755	O I				4.43
15.167	4.31	1.50	1.774	O I				4.47
15.250	4.54	1.64	1.794	O I				4.51
15.333	4.84	1.79	1.815	O I				4.56
15.417	5.06	1.95	1.836	OI				4.61
15.500	5.12	2.10	1.857	OI				4.66
15.583	5.40	2.26	1.878	OI				4.71
15.667	6.02	2.43	1.901	O I				4.77
15.750	6.79	2.63	1.928	O I				4.83
15.833	8.10	2.86	1.960	O I				4.91
15.917	9.97	3.17	2.002	O I				5.01
16.000	14.14	3.61	2.062	O I				5.15
16.083	28.40	4.49	2.180	O	I			5.43
16.167	59.38	7.21	2.442	O			I	6.17
16.250	32.39	9.93	2.699	O	I			7.11
16.333	18.84	11.01	2.803	O I				7.56
16.417	12.93	11.35	2.836	O				7.70
16.500	9.94	11.35	2.836	IO				7.70
16.583	7.86	11.18	2.820	I O				7.63
16.667	6.25	10.90	2.793	I O				7.51
16.750	5.50	10.55	2.759	I O				7.37
16.833	4.74	10.18	2.723	I O				7.21
16.917	3.72	9.77	2.684	I O				7.04
17.000	3.40	9.34	2.642	I O				6.86
17.083	3.16	8.92	2.602	I O				6.69
17.167	2.97	8.51	2.563	I O				6.52
17.250	2.80	8.11	2.526	I O				6.41
17.333	2.65	7.73	2.490	I O				6.30
17.417	2.53	7.36	2.456	I O				6.21
17.500	2.41	7.01	2.423	I O				6.11
17.583	2.31	6.67	2.393	I O				6.02
17.667	2.22	6.36	2.363	I O				5.94
17.750	2.14	6.06	2.336	I O				5.86
17.833	2.07	5.77	2.309	I O				5.78
17.917	2.00	5.51	2.284	IO				5.71
18.000	1.94	5.25	2.261	IO				5.64
18.083	1.90	5.01	2.239	IO				5.58
18.167	1.94	4.79	2.218	IO				5.52
18.250	1.93	4.63	2.199	IO				5.47
18.333	1.90	4.49	2.181	IO				5.43
18.417	1.86	4.36	2.163	IO				5.39
18.500	1.82	4.24	2.146	I O				5.35
18.583	1.79	4.12	2.130	I O				5.31
18.667	1.75	4.00	2.114	I O				5.27
18.750	1.72	3.89	2.099	I O				5.24
18.833	1.68	3.78	2.084	I O				5.20
18.917	1.65	3.67	2.070	IO				5.17
19.000	1.62	3.57	2.057	IO				5.13
19.083	1.59	3.48	2.043	IO				5.10
19.167	1.56	3.38	2.031	IO				5.07
19.250	1.54	3.29	2.018	IO				5.04
19.333	1.51	3.20	2.006	IO				5.02
19.417	1.49	3.12	1.995	IO				4.99
19.500	1.46	3.04	1.984	IO				4.96
19.583	1.44	2.96	1.973	IO				4.94
19.667	1.42	2.88	1.963	IO				4.91
19.750	1.40	2.81	1.953	IO				4.89
19.833	1.38	2.74	1.944	IO				4.87
19.917	1.36	2.67	1.934	IO				4.85
20.000	1.34	2.61	1.925	IO				4.82
20.083	1.32	2.54	1.917	IO				4.80
20.167	1.31	2.48	1.909	IO				4.79
20.250	1.29	2.42	1.901	IO				4.77
20.333	1.27	2.37	1.893	IO				4.75
20.417	1.26	2.31	1.886	IO				4.73
20.500	1.24	2.26	1.878	IO				4.71
20.583	1.23	2.21	1.872	IO				4.70
20.667	1.21	2.16	1.865	IO				4.68
20.750	1.20	2.11	1.858	IO				4.67
20.833	1.19	2.07	1.852	IO				4.65
20.917	1.17	2.02	1.846	IO				4.64
21.000	1.16	1.98	1.841	IO				4.62

21.083	1.15	1.94	1.835	IO					4.61
21.167	1.14	1.90	1.830	IO					4.60
21.250	1.12	1.86	1.824	IO					4.59
21.333	1.11	1.83	1.819	O					4.57
21.417	1.10	1.79	1.815	O					4.56
21.500	1.09	1.76	1.810	O					4.55
21.583	1.08	1.72	1.806	O					4.54
21.667	1.07	1.69	1.801	O					4.53
21.750	1.06	1.66	1.797	O					4.52
21.833	1.05	1.63	1.793	O					4.51
21.917	1.04	1.60	1.789	O					4.50
22.000	1.03	1.57	1.785	O					4.49
22.083	1.02	1.55	1.782	O					4.49
22.167	1.01	1.52	1.778	O					4.48
22.250	1.00	1.50	1.775	O					4.47
22.333	1.00	1.47	1.771	O					4.46
22.417	0.99	1.45	1.768	O					4.46
22.500	0.98	1.43	1.765	O					4.45
22.583	0.97	1.41	1.762	O					4.44
22.667	0.96	1.39	1.759	O					4.43
22.750	0.96	1.37	1.756	O					4.43
22.833	0.95	1.35	1.753	O					4.42
22.917	0.94	1.33	1.751	O					4.42
23.000	0.93	1.31	1.748	O					4.41
23.083	0.93	1.29	1.745	O					4.40
23.167	0.92	1.27	1.743	O					4.40
23.250	0.91	1.26	1.741	O					4.39
23.333	0.91	1.24	1.738	O					4.39
23.417	0.90	1.22	1.736	O					4.38
23.500	0.89	1.21	1.734	O					4.38
23.583	0.89	1.19	1.732	O					4.37
23.667	0.88	1.18	1.730	O					4.37
23.750	0.88	1.16	1.728	O					4.37
23.833	0.87	1.15	1.726	O					4.36
23.917	0.86	1.14	1.724	O					4.36
24.000	0.86	1.12	1.722	O					4.35
24.083	0.76	1.11	1.720	O					4.35
24.167	0.36	1.08	1.716	O					4.34
24.250	0.19	1.04	1.711	O					4.33
24.333	0.11	1.00	1.705	O					4.31
24.417	0.07	0.96	1.699	O					4.30
24.500	0.04	0.91	1.692	O					4.29
24.583	0.02	0.87	1.687	O					4.27
24.667	0.01	0.83	1.681	O					4.26
24.750	0.01	0.79	1.675	O					4.25
24.833	0.00	0.75	1.670	O					4.24
24.917	0.00	0.72	1.665	O					4.23
25.000	0.00	0.68	1.660	O					4.21
25.083	0.00	0.65	1.656	O					4.20
25.167	0.00	0.62	1.651	O					4.19
25.250	0.00	0.59	1.647	O					4.19
25.333	0.00	0.56	1.643	O					4.18
25.417	0.00	0.53	1.639	O					4.17
25.500	0.00	0.51	1.636	O					4.16
25.583	0.00	0.49	1.632	O					4.15
25.667	0.00	0.46	1.629	O					4.14
25.750	0.00	0.44	1.626	O					4.14
25.833	0.00	0.42	1.623	O					4.13
25.917	0.00	0.40	1.620	O					4.13
26.000	0.00	0.38	1.617	O					4.12
26.083	0.00	0.36	1.615	O					4.11
26.167	0.00	0.34	1.612	O					4.11
26.250	0.00	0.33	1.610	O					4.10
26.333	0.00	0.31	1.608	O					4.10
26.417	0.00	0.30	1.606	O					4.09
26.500	0.00	0.28	1.604	O					4.09
26.583	0.00	0.27	1.602	O					4.08
26.667	0.00	0.26	1.600	O					4.08
26.750	0.00	0.24	1.598	O					4.08
26.833	0.00	0.23	1.597	O					4.07
26.917	0.00	0.22	1.595	O					4.07
27.000	0.00	0.21	1.594	O					4.07
27.083	0.00	0.20	1.592	O					4.06
27.167	0.00	0.19	1.591	O					4.06
27.250	0.00	0.18	1.590	O					4.06
27.333	0.00	0.17	1.588	O					4.05
27.417	0.00	0.17	1.587	O					4.05
27.500	0.00	0.16	1.586	O					4.05
27.583	0.00	0.15	1.585	O					4.05
27.667	0.00	0.14	1.584	O					4.04
27.750	0.00	0.14	1.583	O					4.04

27.833	0.00	0.13	1.582	o	|	|	|	|	4.04
27.917	0.00	0.12	1.581	o	|	|	|	|	4.04
28.000	0.00	0.12	1.580	o	|	|	|	|	4.04
28.083	0.00	0.11	1.580	o	|	|	|	|	4.04
28.167	0.00	0.11	1.579	o	|	|	|	|	4.03
28.250	0.00	0.10	1.578	o	|	|	|	|	4.03
28.333	0.00	0.10	1.578	o	|	|	|	|	4.03
28.417	0.00	0.09	1.577	o	|	|	|	|	4.03
28.500	0.00	0.09	1.576	o	|	|	|	|	4.03
28.583	0.00	0.08	1.576	o	|	|	|	|	4.03
28.667	0.00	0.08	1.575	o	|	|	|	|	4.02
28.750	0.00	0.08	1.575	o	|	|	|	|	4.02
28.833	0.00	0.07	1.574	o	|	|	|	|	4.02
28.917	0.00	0.07	1.574	o	|	|	|	|	4.02
29.000	0.00	0.07	1.573	o	|	|	|	|	4.02
29.083	0.00	0.06	1.573	o	|	|	|	|	4.02
29.167	0.00	0.06	1.572	o	|	|	|	|	4.02
29.250	0.00	0.06	1.572	o	|	|	|	|	4.02
29.333	0.00	0.05	1.572	o	|	|	|	|	4.02
29.417	0.00	0.05	1.571	o	|	|	|	|	4.02
29.500	0.00	0.05	1.571	o	|	|	|	|	4.02
29.583	0.00	0.05	1.570	o	|	|	|	|	4.01
29.667	0.00	0.04	1.570	o	|	|	|	|	4.01
29.750	0.00	0.04	1.570	o	|	|	|	|	4.01
29.833	0.00	0.04	1.570	o	|	|	|	|	4.01
29.917	0.00	0.04	1.569	o	|	|	|	|	4.01
30.000	0.00	0.04	1.569	o	|	|	|	|	4.01
30.083	0.00	0.03	1.569	o	|	|	|	|	4.01
30.167	0.00	0.03	1.569	o	|	|	|	|	4.01
30.250	0.00	0.03	1.568	o	|	|	|	|	4.01
30.333	0.00	0.03	1.568	o	|	|	|	|	4.01
30.417	0.00	0.03	1.568	o	|	|	|	|	4.01
30.500	0.00	0.03	1.568	o	|	|	|	|	4.01
30.583	0.00	0.03	1.568	o	|	|	|	|	4.01
30.667	0.00	0.02	1.567	o	|	|	|	|	4.01
30.750	0.00	0.02	1.567	o	|	|	|	|	4.01
30.833	0.00	0.02	1.567	o	|	|	|	|	4.01
30.917	0.00	0.02	1.567	o	|	|	|	|	4.01
31.000	0.00	0.02	1.567	o	|	|	|	|	4.01
31.083	0.00	0.02	1.567	o	|	|	|	|	4.01
31.167	0.00	0.02	1.567	o	|	|	|	|	4.01
31.250	0.00	0.02	1.566	o	|	|	|	|	4.01
31.333	0.00	0.02	1.566	o	|	|	|	|	4.01
31.417	0.00	0.02	1.566	o	|	|	|	|	4.00
31.500	0.00	0.01	1.566	o	|	|	|	|	4.00
31.583	0.00	0.01	1.566	o	|	|	|	|	4.00
31.667	0.00	0.01	1.566	o	|	|	|	|	4.00
31.750	0.00	0.01	1.566	o	|	|	|	|	4.00
31.833	0.00	0.01	1.566	o	|	|	|	|	4.00
31.917	0.00	0.01	1.566	o	|	|	|	|	4.00
32.000	0.00	0.01	1.566	o	|	|	|	|	4.00
32.083	0.00	0.01	1.565	o	|	|	|	|	4.00
32.167	0.00	0.01	1.565	o	|	|	|	|	4.00
32.250	0.00	0.01	1.565	o	|	|	|	|	4.00
32.333	0.00	0.01	1.565	o	|	|	|	|	4.00
32.417	0.00	0.01	1.565	o	|	|	|	|	4.00
32.500	0.00	0.01	1.565	o	|	|	|	|	4.00
32.583	0.00	0.01	1.565	o	|	|	|	|	4.00
32.667	0.00	0.01	1.565	o	|	|	|	|	4.00
32.750	0.00	0.01	1.565	o	|	|	|	|	4.00
32.833	0.00	0.01	1.565	o	|	|	|	|	4.00
32.917	0.00	0.01	1.565	o	|	|	|	|	4.00
33.000	0.00	0.01	1.565	o	|	|	|	|	4.00
33.083	0.00	0.01	1.565	o	|	|	|	|	4.00
33.167	0.00	0.01	1.565	o	|	|	|	|	4.00
33.250	0.00	0.01	1.565	o	|	|	|	|	4.00
33.333	0.00	0.01	1.565	o	|	|	|	|	4.00
33.417	0.00	0.00	1.565	o	|	|	|	|	4.00
33.500	0.00	0.00	1.565	o	|	|	|	|	4.00
33.583	0.00	0.00	1.565	o	|	|	|	|	4.00
33.667	0.00	0.00	1.565	o	|	|	|	|	4.00
33.750	0.00	0.00	1.565	o	|	|	|	|	4.00
33.833	0.00	0.00	1.565	o	|	|	|	|	4.00
33.917	0.00	0.00	1.565	o	|	|	|	|	4.00
34.000	0.00	0.00	1.564	o	|	|	|	|	4.00
34.083	0.00	0.00	1.564	o	|	|	|	|	4.00
34.167	0.00	0.00	1.564	o	|	|	|	|	4.00
34.250	0.00	0.00	1.564	o	|	|	|	|	4.00
34.333	0.00	0.00	1.564	o	|	|	|	|	4.00
34.417	0.00	0.00	1.564	o	|	|	|	|	4.00
34.500	0.00	0.00	1.564	o	|	|	|	|	4.00

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34.583    0.00    0.00      1.564  o       |       |       |       |     4.00
34.667    0.00    0.00      1.564  o       |       |       |       |     4.00
34.750    0.00    0.00      1.564  o       |       |       |       |     4.00
34.833    0.00    0.00      1.564  o       |       |       |       |     4.00
34.917    0.00    0.00      1.564  o       |       |       |       |     4.00
35.000    0.00    0.00      1.564  o       |       |       |       |     4.00
35.083    0.00    0.00      1.564  o       |       |       |       |     4.00
35.167    0.00    0.00      1.564  o       |       |       |       |     4.00
35.250    0.00    0.00      1.564  o       |       |       |       |     4.00
35.333    0.00    0.00      1.564  o       |       |       |       |     4.00
35.417    0.00    0.00      1.564  o       |       |       |       |     4.00
35.500    0.00    0.00      1.564  o       |       |       |       |     4.00
35.583    0.00    0.00      1.564  o       |       |       |       |     4.00
35.667    0.00    0.00      1.564  o       |       |       |       |     4.00
35.750    0.00    0.00      1.564  o       |       |       |       |     4.00
35.833    0.00    0.00      1.564  o       |       |       |       |     4.00
35.917    0.00    0.00      1.564  o       |       |       |       |     4.00
36.000    0.00    0.00      1.564  o       |       |       |       |     4.00
36.083    0.00    0.00      1.564  o       |       |       |       |     4.00
36.167    0.00    0.00      1.564  o       |       |       |       |     4.00

        Remaining water in basin =    1.56 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =   434
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       11.354 (CFS)
                        Total volume =       2.925 (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        6.000 to Point/Station       13.000
        **** STORE OR DELETE CURRENT HYDROGRAPH ****
        ______________________________________________________________________
        Current stream hydrograph saved in file route.rte
        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =     0
                        Time interval =    0.0 (Min.)
                        Maximum/Peak flow rate =        0.000 (CFS)
                        Total volume =       0.000 (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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