Preliminary
Hydrology Study & Drainage Analysis

17783 & 17805 Taylor Avenue

Bloomington, CA 92313
APN(S): 0252-142-05 & -06

Prepared For:

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A. Introduction

1.1 Purpose & Scope

The following Hydrology & Hydraulics Study has been prepared for the development of 17783 and 17805 Taylor Avenue. It is located on two parcels on the south side of Taylor Avenue, between Alder Avenue and Locust Avenue, approximately 1.1 miles west of Cedar Avenue and 1.0 miles east of Sierra Avenue, on 3.61-acres in the Bloomington are of San Bernardino County, CA. Valley Boulevard is a block to the north and the 10 Freeway is to the South. This report has been prepared to satisfy San Bernardino County requirements per San Bernardino County Department of Public Works Hydrology/Hydraulics for developments of this type.

The scope of this Study is as follows:

- Identification of floodplain(s) impacting the site.
- Identification of existing conditions off-site tributary drainage.
- Identification of existing conditions on-site drainage areas and calculation of peak flow rates and runoff volumes for these areas.
- Identification of proposed on-site drainage areas and calculation of peak flow rates and runoff volumes for these areas.
- Identification of required storm water mitigation due to development.
- Sizing of on-site storm drain improvements.
- Summary of Findings & Conclusion

1.2 Project Overview

The project site is located on two parcels on the south side of Taylor Avenue, between Alder Avenue and Locust Avenue, approximately 1.1 miles west of Cedar Avenue and 1.0 miles east of Sierra Avenue, on 3.61-acres in the Bloomington are of San Bernardino County, CA.

SITE LOCATION (Source: Google Earth Pro, dated 03-25-2023)

1.3 Existing Conditions Off-Site Areas

The project site is located in the "Valley Corridor/Bloomington Enterprise" zoning area of San Bernardino County. The project site is located on two parcels on the south side of Taylor Avenue, between Alder Avenue and Locust Avenue, approximately 1.1 miles west of Cedar Avenue and 1.0 miles east of Sierra Avenue, on 3.61-acres in the Bloomington are of San Bernardino County, CA. Adjoining the project site directly to the south is a Caltrans channel and south of that is the Interstate 10 Freeway.

Drainage in the area generally flows to the south. The site is bounded to the north by Taylor Avenue and to the south by Interstate 10. The site flows from west to east along Taylor Avenue from Alder Avenue to a low point near the northeast corner of the project site's east property, APN 0252-142-06. Taylor Avenue flows from east to west from a high point approximately 660' east of said northeast corner of the project site. To the east and west are partially developed properties that naturally drain to the south. Flow south of the center line of Valley Boulevard flows southerly to Taylor Avenue. Drainage from Valley Boulevard flows south along Alder Avenue, with the majority continuing directly to the Caltrans channel, and a portion flowing to Taylor Avenue. Drainage south along Locust Avenue from Valley Boulevard directly to the channel. Drainage also flows southerly through the properties north of Taylor Avenue and the project site onto Taylor Avenue. Taylor Avenue is a 60 foot-wide right-of-way with no curb and gutter and varying widths of asphalt from edge to edge. See Exhibit "E" for Off-Site Tributary for this report.

There is an existing concrete trapezoidal channel immediately adjacent to the southern property line, located within Caltrans right-of-way, which flows to the east. Caltrans also has plans to build a sound wall along the southern property line in the near future.

1.4 Existing Conditions On-Site Areas

The project site's low point is the southeast corner, where an existing spillway to the Caltrans channel is located. This concrete spillway is located at the end of an existing 15 foot-wide drainage easement that runs along the east property line of the east parcel, APN 0252-142-06. There is an existing vegetated swale withing this drainage easement that drains into the spillway. There is currently a large amount of undocumented fill material located throughout the two parcels. This fill material appears to be hindering former drainage patters and could possible cause drainage issues on-site, primarily around the existing buildings. Historically, the general drainage outside of the drainage easement flows south and southeasterly to the spillway at the southeast corner. The site currently has three buildings and some impervious surfaces in the form of asphalt and concrete.

1.5 References

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

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

2.) Site plans by Joseph E. Bonadiman & Associates, Inc., January 2024.

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 were used as the basis for the methodology and calculations found in this Study. On-site and off-site calculations were performed using the Rational and Unit Hydrograph methods per County requirements for the Santa Ana River watershed.

For the 2 & 5-Year storm event, Antecedent Moisture Condition (AMC) I was used. For the 10, & 25-Year storm event, Antecedent Moisture Condition (AMC) II was used. For the 100-Year storm event, Antecedent Moisture Condition (AMC) III was used. The San Bernardino County-approved software applications provided by Civil Design ® Corporation were used for all study calculations.

1.2 Sources of Topography

Mapping of existing condition on-site and off-site area and topographic contours were provided by Aerotech Mapping, Inc., dated August 30, 2023. USGS data for San Bernardino County Flood Control Lidar was used to assist in determining the off-site tributary drainage area.

1.3 FEMA Floodplain Identification & Considerations

This site is located in the unshaded "Other Areas" Zone X, "Areas determined to be outside the 0.2% annual chance floodplain."

Refer to Exhibit "C" for FEMA Map No. 06071C8658H. printed (and revised) August 28, 2008.

1.4 Watershed Precipitation

Precipitation values used in this report were obtained from the isohyetal maps included in the San Bernardino County Hydrology Manual and are tabulate below. The slope of intensity duration curve value of 0.60 (valley areas) was used per the County Hydrology Manual.

Table 1 – Precipitation Values (Rational Method Calculations)

STORM	PRECIPITATION
10-YEAR, 1-HOUR	0.93"
100-YEAR, 1-HOUR	1.33"
2-YEAR, 6-HOUR	1.63"
100-YEAR, 6-HOUR	3.51"
2-YEAR, 24-HOUR	3.02"
100-YEAR, 24-HOUR	7.85"

Refer to Exhibit "D" for the San Bernardino County Hydrology Manual isohyetal maps used in this report.

1.5 Watershed Losses

Soil types and SCS Curve Number (AMC II) used in this report were obtained from the Soils Group maps and Figures C-2 & 3, included in the San Bernardino County Hydrology Manual, and are tabulated below.

Type "A" is shown for the entire area of study per Figure C-6 of the San Bernardino County Hydrology Manual. The existing conditions study site is currently developed, consisting of three buildings and some impervious areas and with existing landscaping and vegetated areas in poor condition. Per the San Bernardino County Hydrology Manual Figure C-2 & 3, the SCS Curve Number (AMC II) used for existing conditions areas is 50 ("Grass, Annual or Perennial/ Fair Condition"). For off-site calculations an actual impervious cover percentage of 90% ("Recommended Value for Average Condition Percent" for "Commercial, Downtown Business or Industrial"). The SCS Curve Number (AMC II) used for developed conditions pervious areas is 32 ("Landscape/Good Condition") for landscape areas and 98 ("Impervious Areas") for the parking lots, roofs, driveways, etc.

Table 2 – Off-site, Existing and Developed Condition Soil Loss Rates

COVER TYPE	SOIL TYPE	QUALITY OF COVER	SCS CURVE NO. (AMC II)
Annual/ Perennial Grass	A	FAIR	50
Commercial, Downtown Business, or Industrial	~	~	90% Impervious
Commercial Landscaping	A	GOOD	32
Impervious Area	A	~	98

Refer to Exhibit "E" for the San Bernardino County Hydrology Manual soils maps and SCS Curve Number per Figure C-2 & 3 and C-6 used in this report.

1.6 Rational Hydrology Method & Unit Hydrograph Hydrology Method Calculations

The San Bernardino County Rational Method (RSBC) and San Bernardino County Unit Hydrograph Method (UNSBC) software applications provided by CivilDesign® Corporation was used for the rational method and unit hydrograph method calculations included in this report. The hydrograph routing/basin analysis (ROUTE) software application provided by CivilDesign® Corporation was used for the basin routing calculations included in this report.

C. Existing Conditions Hydrology Calculations & Summary

1.1. Off-Site Conditions Rational Method Calculations

Input values for the Off-Site conditions rational method calculations prepared for this report are tabulated below:

Table 3 – Off-Site 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	6.23	Commercial	~	A	90% Imp.	0.10	1116.10	1106.89	1,000.00
A2 NODE 1-2	12.28	Commercial	~	A	90% Imp.	0.10	1106.89	1105.02	356.70

Output for the off-site conditions rational method calculations are tabulated as follows:

Table 4 – Off-Site Conditions Rational Method Output Calculations

AREA	NODE	Q_{10} (CFS	Q_{100} (CFS)
A	0-2	**34.78**	**51.21**
TC_{100} (MIN)		**14.24**	

Refer to Attachment No. 1 for printouts of the off-site conditions rational method calculations.

Refer to Exhibit "F" for the Off-Site Conditions Hydrology Study Map.

1.2. 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)
B NODE 0-1	3.61	Annual Grass	Fair	A	50	0.91	1108.09	1101.01	719.66

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)
B	0-1	**3.87**	**7.38**
TC_{100} (MIN)		**17.82**	

Refer to Attachment No. 2 for printouts of the existing conditions rational method calculations.

Refer to Exhibit "G" for the Existing Conditions Hydrology Study Map.

1.3. 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 5 – Existing Conditions Unit Hydrograph Method Input Values

DRAINAGE AREA	SIZE (AC)	SCS	PERVIOUS FRACTION	TC_{100} (HR)
B	3.61	50	0.91	0.297

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

Table 6 – 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	3.61	**2.24**	**3.11**	**4.25**	**5.30**	**7.80**	0.238

DRAINAGE AREA	SIZE (AC)	VOL_2 (AF)	VOL_5 (AF)	VOL_{10} (AF)	VOL_{25} (AF)	V_{100} (AF)	LAG_{100} (HR)
A	3.61	**0.1188**	**0.1690**	**0.3884**	**0.5708**	**1.4425**	0.238

Refer to Attachment No. 2 for printouts of the existing conditions unit hydrograph calculations.

Refer to Exhibit "G" for the Existing Conditions Hydrology Study Map.

D. Developed Conditions Hydrology Calculations

1.1 Developed Conditions Rational Method Calculations

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

Table 7 – 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)
B1 NODE 0-1	0.84	LANDSCAPING	GOOD	A	32	0.16	1107.96	1105.64	281.46
PIPE NODE 1-3	12"	~	~	~	~	~	1105.64	1096.62	461.21
CONFLUENCE MAJOR STREAM 1 OF 4 AT NODE 3									
B2 NODE 0-2	0.89	LANDSCAPING	GOOD	A	32	0.15	1107.96	1105.54	301.12
PIPE NODE 2-3	12"	~	~	~	~	~	1105.54	1096.62	437.26
CONFLUENCE MAJOR STREAM 2 OF 4 AT NODE 3									
B3 NODE 4-5	0.75	LANDSCAPING	GOOD	A	32	0.07	1107.96	1105.64	154.62
PIPE NODE 5-3	12"	~	~	~	~	~	1105.64	1096.62	225.21
CONFLUENCE MAJOR STREAM 3 OF 4 AT NODE 3									
B4 NODE 6-7	0.84	LANDSCAPING	GOOD	A	32	0.07	1107.96	1105.43	176.12
PIPE NODE 7-3	12"	~	~	~	~	~	1105.43	1096.62	244.10
CONFLUENCE MAJOR STREAM 4 OF 4 AT NODE 3									
B5 NODE 8-9	0.29	LANDSCAPING	GOOD	A	32	1.00	1102.00	1101.67	469.66

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

Table 8 – Developed Conditions Rational Method Output Calculations

AREA	NODE	Q_{10} (CFS	Q_{100} (CFS)
B1-4	0-7	**9.50**	**13.75**
TC_{100} (MIN)		**5.82**	
B5	8-9	**0.02**	**0.19**
TC_{100} (MIN)		**47.54**	

Refer to Attachment No. 3 for printouts of the final condition rational method calculations.

Refer to Exhibit "H" for the Final Conditions Hydrology 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 9 – Developed Conditions Unit Hydrograph Method Input Values

DRAINAGE AREA	SIZE (AC)	SCS	PERVIOUS FRACTION	TC_{100} (HR)
B	3.61	32	0.18	0.097

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

Table 10 - Developed Conditions Unit Hydrograph Method Output Calculations

DRAINAGE AREA	SIZE (AC)	Q_2 (CFS)	Q_{10} (CFS	Q_{25} (CFS)	Q_{100} (CFS)	LAG_{100} (HR)
A	3.61	7.02	10.28	12.15	15.10	0.078

DRAINAGE AREA	SIZE (AC)	VOL_2 (AF)	VOL_{10} (AF)	VOL_{25} (AF)	VOL_{100} (AF)	LAG_{100} (HR)
A	3.61	0.7016	1.1993	1.4891	2.0292	0.078

Refer to Attachment No. 4 for printouts of the existing conditions unit hydrograph calculations.

Refer to Exhibit "H" for the Final Conditions Hydrology Study Map.

E. Summary & Conclusion

1.1 Summary

A summary of the results of the Rational Method calculations are tabulated below:

Table 11 –Rational Method Calculations Summary

AREA	STORM EVENT	EXISTING CONDITIONS PEAK Q (CFS)	DEVELOPED CONDITIONS PEAK Q (CFS)	INCREASE (CFS)*
B	10	3.87	9.52	5.65
	100	7.38	13.94	6.56

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

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

Table 12 –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)*
B	2	2.24	7.02	4.78	0.1188	0.7016	0.5828
	10	4.25	10.28	6.03	0.3884	1.1993	0.8109
	25	5.30	12.15	6.85	0.5708	1.4891	0.9183
	100	7.80	15.10	7.30	1.4425	2.0292	.5867

* 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 as a result of the proposed development. The increase in flow rates shall be mitigated onsite as to reduce the total site discharge 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 13 – Area "B" Outlet Requirements

EXISTING AREA	STORM EVENT	EXISTING CONDITIONS PEAK Q (CFS)	ADJUSTED PEAK Q (CFS)	MAXIMUM ALLOWABLE DISCHARGE 90% OF ADJUSTED PEAK Q (CFS)
B	2	2.24	Q_2=2.24	**2.02**
	10	4.25	Q_5=3.11	**2.80**
	25	5.30	Q_{10}=4.25	**3.83**
	100	7.80	Q_{25}=5.30	**4.77**

1.2 Conclusion

As indicated in Tables 12 & 13, development of the site results in an 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 existing condition flow rate. 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. Mitigation of the 10, 25 & 100-year storm can be achieved with the use of an underground storm water chamber.

With the above mitigation measure the development of the 17783 and 17805 Taylor Avenue will not have a negative impact on downstream properties or facilities. It should be noted that under the assumed 100-year AMC III conditions, infiltration is assumed to be zero (saturated). Therefore, infiltration is not a factor in calculations. Refer to project specific WQMP for additional requirements.

(END)

EXHIBIT “A”

Project Watershed
Aerial Photo

AERIAL PHOTO EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA

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CHECKED BY:	J.T.S.

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

AERIAL PHOTO EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA

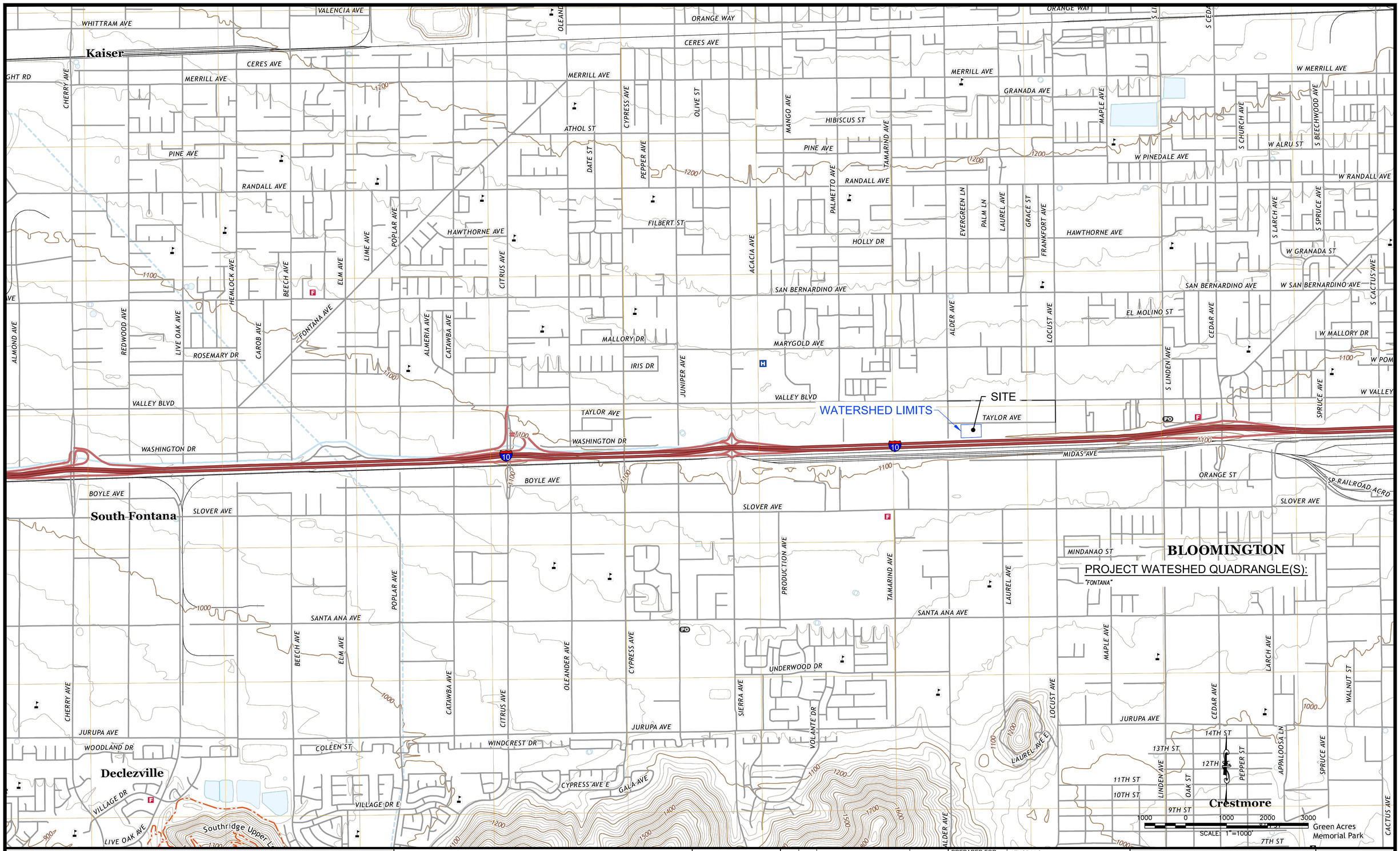
DISREGARD PRINTS BEARING EARLIER REVISION DATES → 01-30-24

A

SHEET 1 OF 1

EXHIBIT “B”

Project Watershed
USGS Quadrangle



USGS QUADRANGLE EXHIBIT

17783 & 17805 TAYLOR AVENUE

IN THE COUNTY OF SAN BERNARDINO, CA

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USGS QUADRANGLE EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 01-30-24

B

SHEET 1 OF 1

EXHIBIT “C”

FEMA Floodplain Maps

NOTES TO USERS

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

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

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

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

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

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

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

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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

Base map information shown on this FIRM was derived from digital orthophotography collected by the U.S. Department of Agriculture Farm Service Agency. This imagery was flown in 2005 and was produced with a 1-meter ground sample distance.

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

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

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

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

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

LEGEND

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

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

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

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

OTHER AREAS

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

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

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

* Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4276000mN — 1000-meter Universal Transverse Mercator grid values, zone 11N
- 600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone V (FIPSZONE 0405), Lambert Conformal Conic projection
- DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- ●M1.5 — River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
March 18, 1996

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
August 28, 2008 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

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

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

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 8658H

FIRM

FLOOD INSURANCE RATE MAP

SAN BERNARDINO COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 8658 OF 9400

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FONTANA, CITY OF	060274	8658	H
SAN BERNARDINO COUNTY	060270	8658	H

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

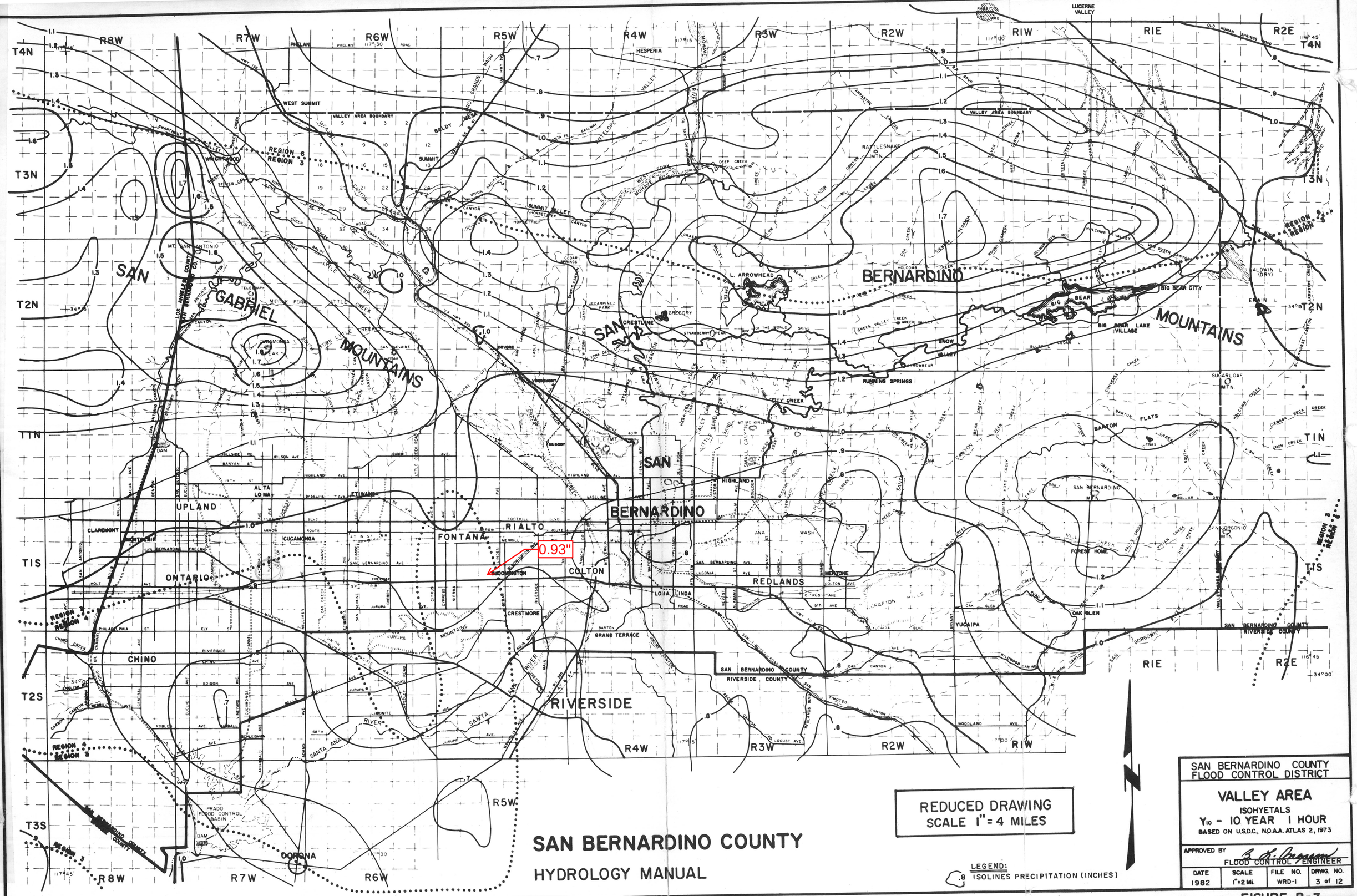
MAP NUMBER
06071C8658H

MAP REVISED
AUGUST 28, 2008

Federal Emergency Management Agency

EXHIBIT “D”

San Bernardino County
Hydrology Manual
Isohyetal Maps


SAN BERNARDINO COUNTY
HYDROLOGY MANUAL
REDUCED DRAWING
SCALE 1"= 4 MILES
LEGEND:
.8 ISOLINES PRECIPITATION (INCHES)
0.93"
SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT
VALLEY AREA
ISOHYETALS
Y10 - 10 YEAR 1 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973
APPROVED BY
FLOOD CONTROL ENGINEER
DATE 1982
SCALE 1"=2 Mi.
FILE NO. WRD-1
DRWG. NO. 3 of 12
FIGURE B-3
B-11

1.33"

SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

REDUCED DRAWING
SCALE 1" = 4 MILES

LEGEND:
1.8 ISOLINES PRECIPITATION (INCHES)

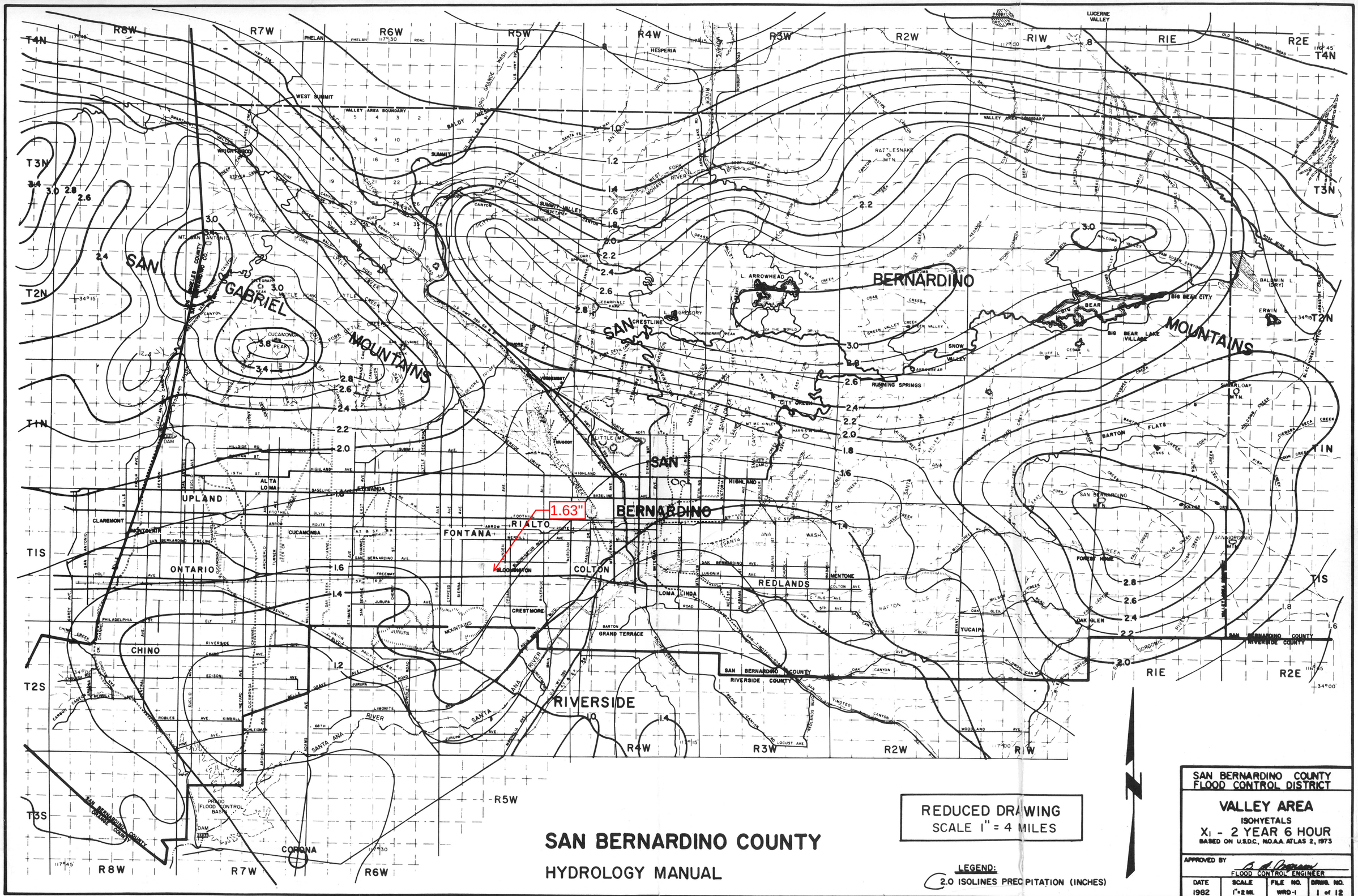
SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

VALLEY AREA
ISOHYETALS
Y_{100} - 100 YEAR 1 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973

APPROVED BY _____ FLOOD CONTROL ENGINEER

DATE	SCALE	FILE NO.	DRWG. NO.
1982	1"=2 MI.	WRD-1	4 of 12

WATER RESOURCES DIVISION



SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

REDUCED DRAWING
SCALE 1" = 4 MILES

LEGEND:
2.0 ISOLINES PRECIPITATION (INCHES)

SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

VALLEY AREA
ISOHYETALS
X_1 - 2 YEAR 6 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973

APPROVED BY
FLOOD CONTROL ENGINEER

DATE	SCALE	FILE NO.	DRWG. NO.
1982	1"=2 MI.	WRD-1	1 of 12

FIGURE B-1

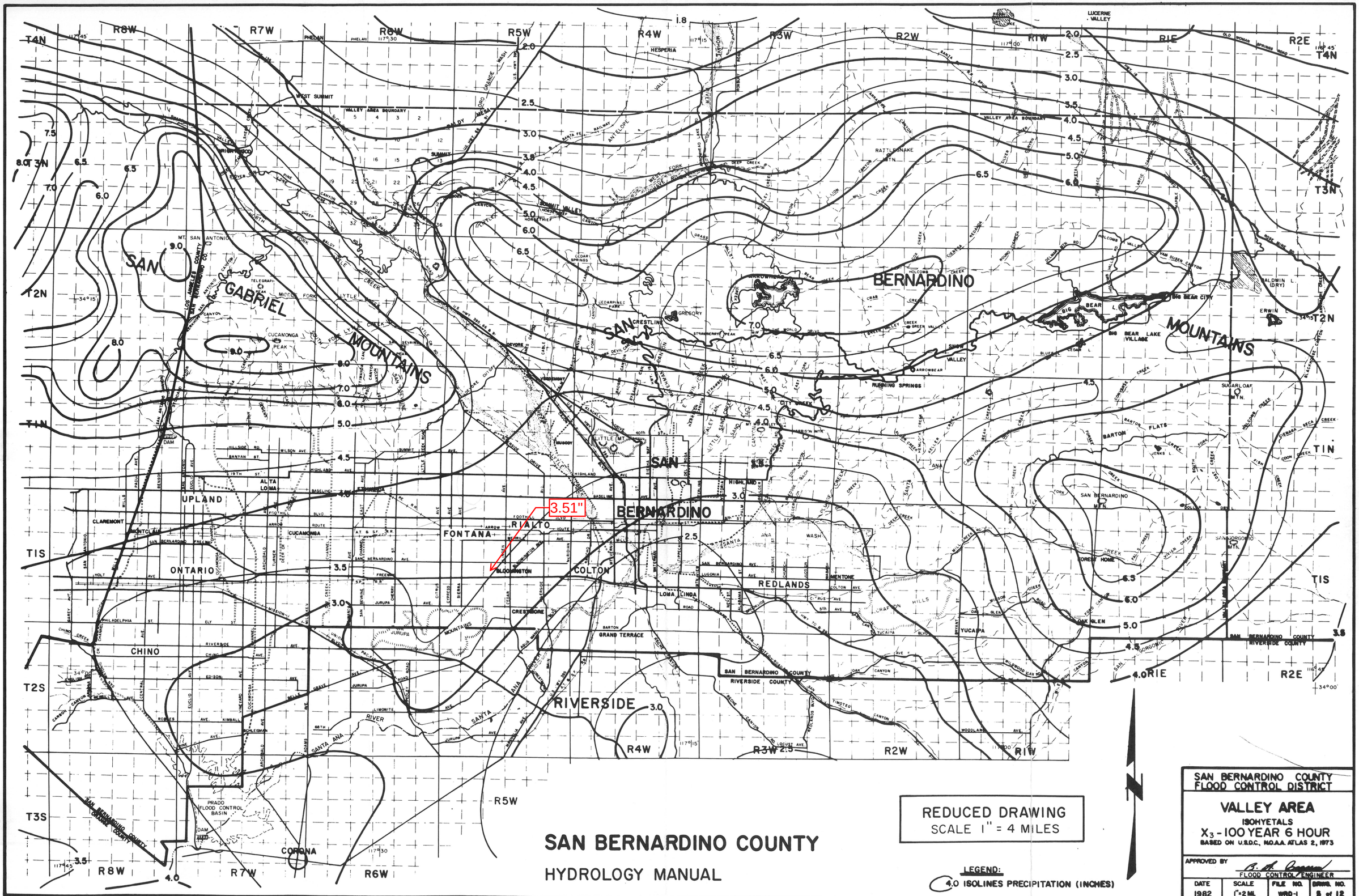

3.51"
SAN BERNARDINO COUNTY
HYDROLOGY MANUAL
REDUCED DRAWING
SCALE 1" = 4 MILES
LEGEND:
4.0 ISOLINES PRECIPITATION (INCHES)
SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT
VALLEY AREA
ISOHYETALS
X3 - 100 YEAR 6 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973
APPROVED BY
FLOOD CONTROL ENGINEER
DATE 1982
SCALE 1"=2 MI.
FILE NO. WRD-1
DRWG. NO. 5 of 12

FIGURE B-5

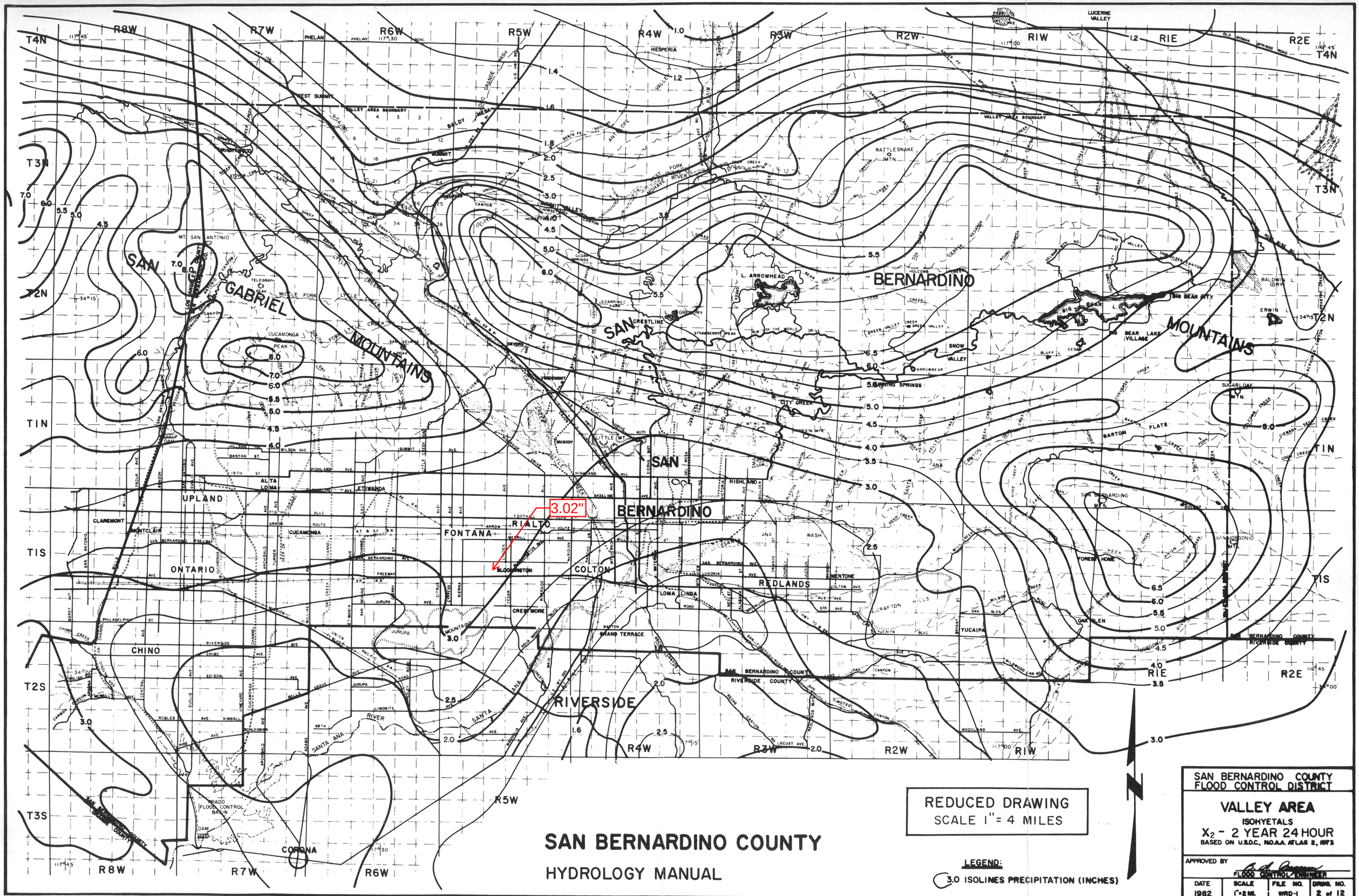

3.02"
SAN BERNARDINO COUNTY
HYDROLOGY MANUAL
REDUCED DRAWING
SCALE 1" = 4 MILES
LEGEND:
3.0 ISOLINES PRECIPITATION (INCHES)
SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT
VALLEY AREA
ISOHYETALS
X2 - 2 YEAR 24 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973
APPROVED BY
FLOOD CONTROL ENGINEER
DATE 1982
SCALE 1"=2 MI.
FILE NO. WRD-1
DRWG. NO. 2 of 12
WATER RESOURCES DIVISION

FIGURE B-2

7.85"

SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

REDUCED DRAWING
SCALE 1" = 4 MILES

LEGEND:
6.0 ISOLINES PRECIPITATION (INCHES)

SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

VALLEY AREA
ISOHYETALS
X_4 - 100 YEAR 24 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973

APPROVED BY _____
FLOOD CONTROL ENGINEER

DATE	SCALE	FILE NO.	DRWG. NO.
1982	1"=2 Mi.	WRD-1	6 of 12

FIGURE B-6

EXHIBIT “E”

San Bernardino County
Hydrology Manual
Soils Maps

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

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

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

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

Fallow - Fallow land is land plowed but not yet seeded or tilled.

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

Woodland - Areas on which coniferous or broadleaf trees predominate. The canopy density is at least 50 percent. Open areas may have a cover of annual or perennial grasses or of brush. Herbaceous plant cover under the trees is usually sparse because of leaf or needle litter accumulation.

Chaparral - Land on which the principal vegetation consists of evergreen shrubs with broad, hard, stiff leaves such as manzonita, ceanothus and scrub oak. The brush cover is usually dense or moderately dense. Diffusely branched evergreen shrubs with fine needle-like leaves, such as chamise and redchank, with dense high growth are also included in this soil cover.

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

Irrigated Pasture - Irrigated land planted to perennial grasses and legumes for production of forage and which is cultivated only to establish or renew the stand of plants. Dry land pasture is considered as annual grass.

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

Orchard (Deciduous) - Land planted to such deciduous trees as apples, apricots, pears, walnuts, and almonds.

Orchard (Evergreen) - Land planted to evergreen trees which include citrus and avocados and coniferous plantings.

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

POOR: Heavily grazed or regularly burned areas. Less than 50 percent of the ground surface is protected by plant cover or brush and tree canopy.

FAIR: Moderate cover with 50 percent to 75 percent of the ground surface protected by vegetation.

GOOD: Heavy or dense cover with more than 75 percent of the ground surface protected by vegetation.

In most cases, watershed existing conditions cover type and quality can be readily determined by a field review of a watershed. In ultimate planned open spaces, the soil cover condition shall be considered as "good." Figure C-3 provides the CN values for various types and quality of ground cover. Impervious areas shall be assigned a CN of 98. It is noted that for ultimately developed conditions, the CN for urban landscaping (turf) is provided in Figure C-3.

C.4. WATERSHED DEVELOPMENT CONDITIONS

Ultimate development of the watershed should normally be assumed since watershed urbanization is reasonably likely within the expected life of most hydraulic facilities. Long range master plans for the County and incorporated cities should be reviewed to insure that reasonable land use assumptions are made for the ultimate development of the watershed. A field review shall also be made to confirm existing use and drainage patterns. Particular attention shall be paid to existing and proposed landscape practices, as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. Appropriate actual impervious percentages can then be selected from Figure C-4. It should be noted that the recommended values from these figures are for average conditions and, therefore, some adjustment for particular applications may be required.

Runoff Index Numbers of Hydrologic Soil-Cover Complexes For Pervious Areas-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	71	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent.)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	25	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
AGRICULTURAL COVERS -					
Fallow (Land plowed but not tilled or seeded)		77	86	91	94

SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

CURVE NUMBERS FOR PERVIOUS AREAS

FIGURE C-3 (1 OF 2)

Runoff Index Numbers of Hydrologic Soil-Cover Complexes For Pervious Areas-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
AGRICULTURAL COVERS (Continued)					
Legumes, Close Seeded (Alfalfa, sweetclover, timothy, etc.)	Poor	66	77	85	89
	Good	58	72	81	85
Orchards, Evergreen (Citrus, avocados, etc.)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
Pasture, Dryland (Annual grasses)	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Pasture, Irrigated (Legumes and perennial grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
Row Crops (Field crops - tomatoes, sugar beets, etc.)	Poor	72	81	88	91
	Good	67	78	85	89
Small grain (Wheat, oats, barley, etc.)	Poor	65	76	84	88
	Good	63	75	83	87

Notes:

1. All runoff index (RI) numbers are for Antecedent Moisture Condition (AMC) II.
2. Quality of cover definitions:

   Poor-Heavily grazed or regularly burned areas. Less than 50 percent of the ground surface is protected by plant cover or brush and tree canopy.

   Fair-Moderate cover with 50 percent to 75 percent of the ground surface protected.

   Good-Heavy or dense cover with more than 75 percent of the ground surface protected.
3. See Figure C-2 for definition of cover types.

SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

NUMBERS FOR PERVIOUS AREAS

FIGURE C-3 (2 OF 2)

ACTUAL IMPERVIOUS COVER

Land Use (1)	Range-Percent	Recommended Value For Average Conditions-Percent (2)
Natural or Agriculture	0 - 0	0
Public Park	10 - 25	15
School	30 - 50	40
Single Family Residential: (3)		
2.5 acre lots	5 - 15	10
1 acre lots	10 - 25	20
2 dwellings/acre	20 - 40	30
3-4 dwellings/acre	30 - 50	40
5-7 dwellings/acre	35 - 55	50
8-10 dwellings/acre	50 - 70	60
More than 10 dwellings/acre	65 - 90	80
Multiple Family Residential:		
Condominiums	45 - 70	65
Apartments	65 - 90	80
Mobile Home Park	60 - 85	75
Commercial, Downtown Business or Industrial	80 - 100	90

Notes:

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

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

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

SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

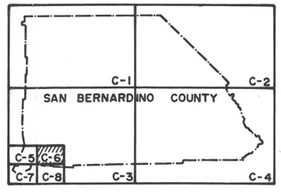
ACTUAL IMPERVIOUS COVER
FOR
DEVELOPED AREAS

Figure C-4

SOURCE: GEOLOGY MAP

SOURCE: GEOLOGY MAP
SOURCE: 1971 SCS SURVEY

SOIL TYPE A



INDEX MAP

LEGEND
SOIL GROUP BOUNDARY
A SOIL GROUP DESIGNATION
BOUNDARY OF INDICATED SOURCE

CONTOUR INTERVAL 40 FEET
SCALE 1:48,000

SCALE REDUCED BY 1/2

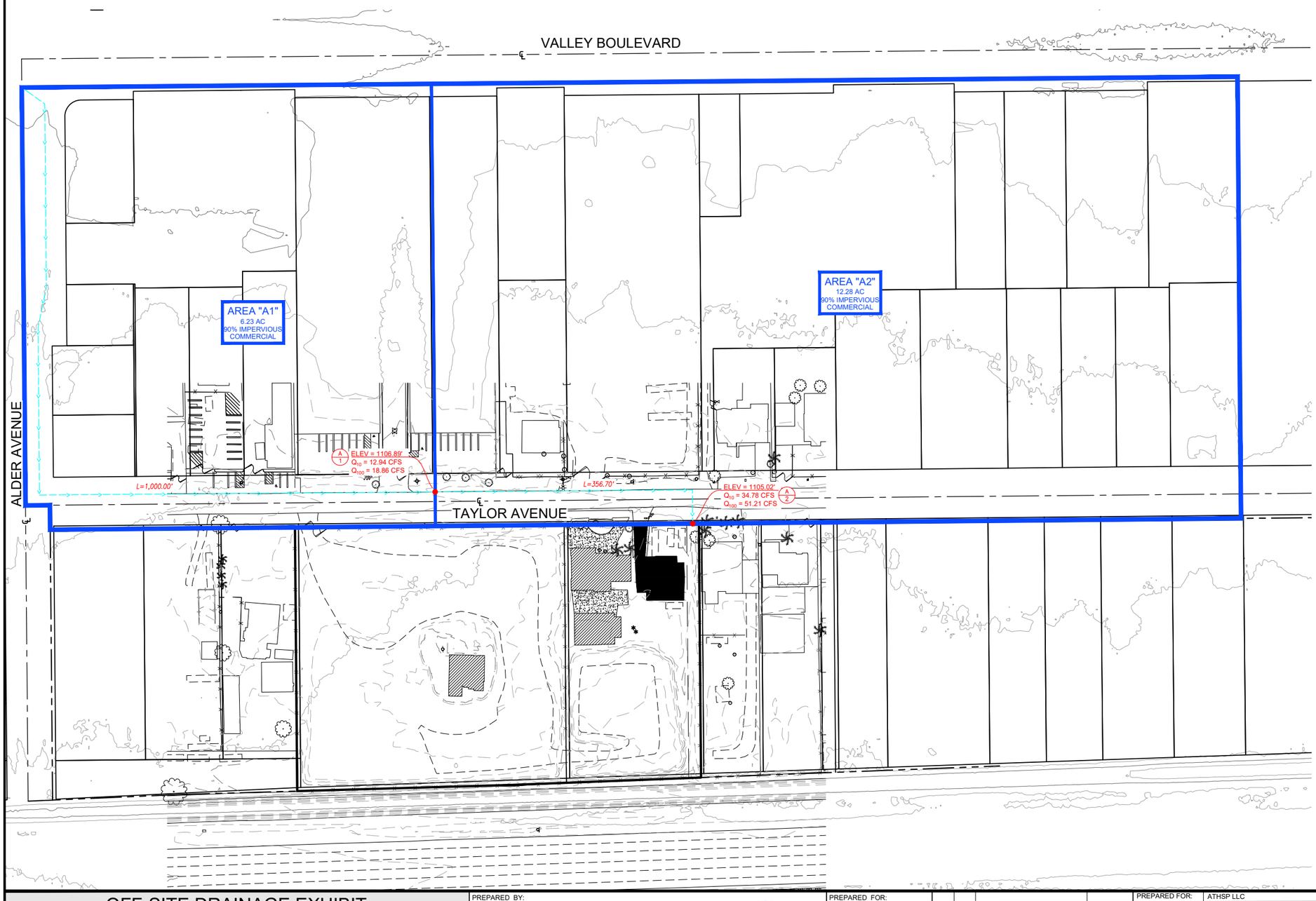
SAN BERNARDINO COUNTY
HYDROLOGY MANUAL

HYDROLOGIC SOILS GROUP MAP FOR SOUTHWEST-B AREA

FIGURE C-6

EXHIBIT “F”

Off-Site Hydrologic Conditions
Study Map



MAP LEGEND

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

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

Q_{100-24} = 1 CFS
V_{100-24} = 1 AF
SOURCE

UNIT HYDROGRAPH METHOD TOTAL PEAK Q_{100-24}

A 1.1 ELEV = 100.00
Q_{100} = 1.0CFS

RATIONAL METHOD NODE LOCATION, ELEVATION, & TOTAL PEAK Q_{100-1}

DRAINAGE AREA LIMITS

FLOW PATHS

DRAINAGE AREA CENTROIDS

60 0 60 120 180
SCALE: 1"=60'

OFF-SITE DRAINAGE EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA

PREPARED BY:
BONADIMAN
TEL. (909) 890-1818
CIVILDESIGN Software for Engineers, By Engineers

PREPARED FOR:
ATHSP, LLC
ATTN: HAE PARK
P.O. BOX 780
BLOOMINGTON, CA 92316

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	ATHSP LLC
JOB NO:	235094
PREPARED BY:	K.B.O.
CHECKED BY:	J.T.S.

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

OFF-SITE DRAINAGE EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 01-30-24

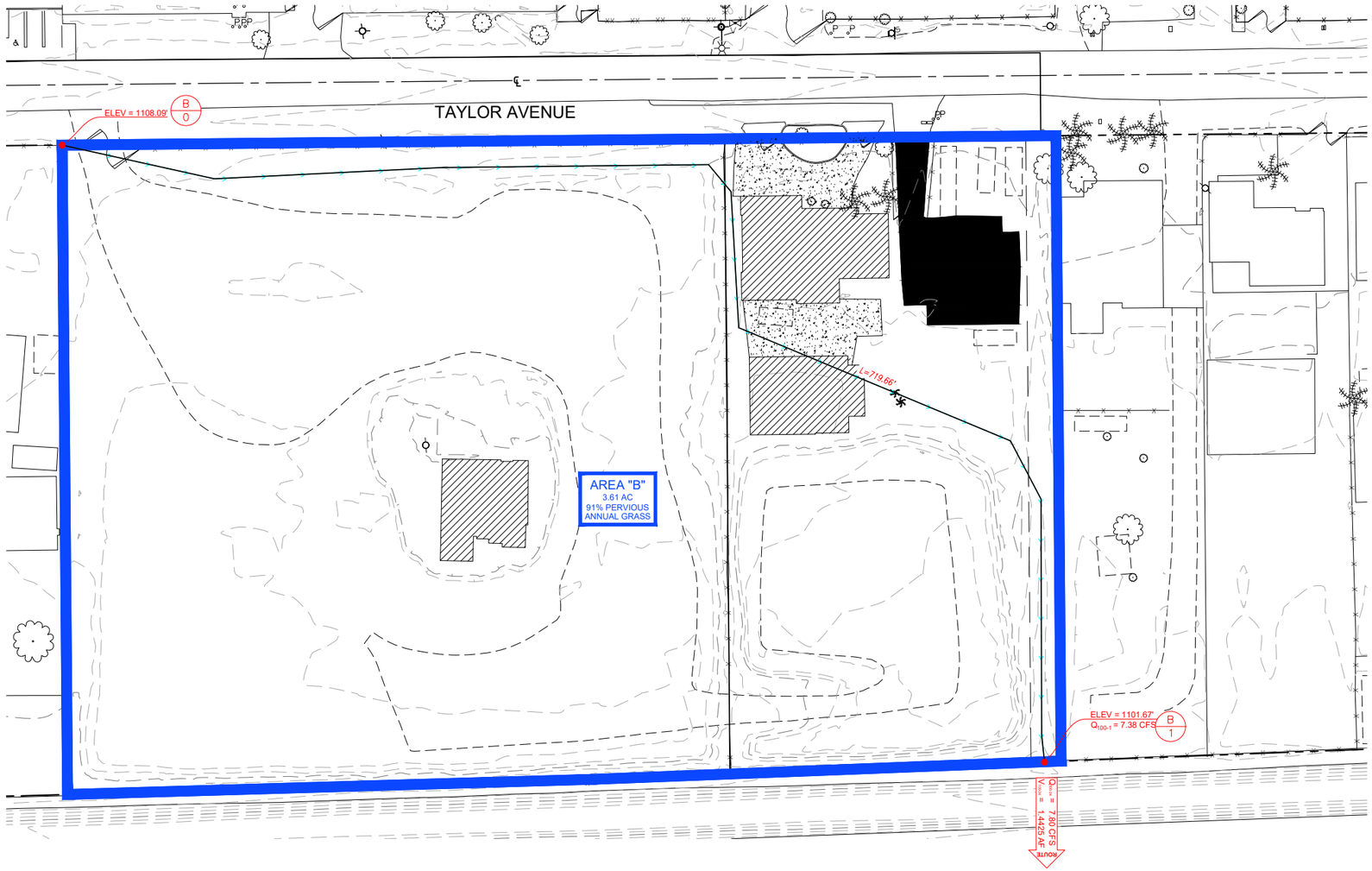
F

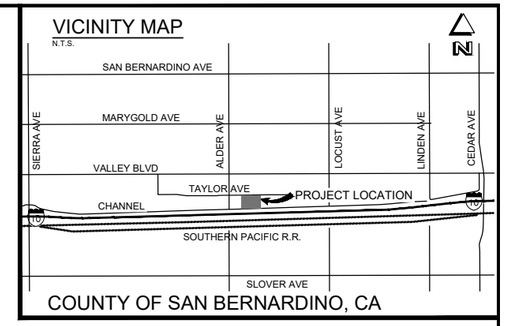
SHEET 1 OF 1

EXHIBIT “G”

Existing Hydrologic Conditions
Study Map (On-Site)

EXHIBIT "G"
EXISTING CONDITION EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA





CALCULATIONS SUMMARY (50-YEAR EVENT)

UNIT HYDROGRAPH SUMMARY

MAP LEGEND

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

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

Q_{100-24} = 1 CFS
V_{100-24} = 1 AF
ROUTE

UNIT HYDROGRAPH METHOD TOTAL PEAK Q_{100-24}

A
1.1
ELEV = 100.00
Q_{100} = 1.0CFS

RATIONAL METHOD NODE LOCATION, ELEVATION, & TOTAL PEAK Q_{100-1}

DRAINAGE AREA LIMITS

FLOW PATHS

DRAINAGE AREA CENTROIDS

30 0 30 60 90
SCALE: 1"=30'

EXISTING CONDITION EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA

PREPARED BY:
BONADIMAN
TEL. (909) 885-3888
CIVILDESIGN

PREPARED FOR:
ATHSP, LLC
ATTN: HAE PARK
P.O. BOX 780
BLOOMINGTON, CA 92316

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	ATHSP LLC
JOB NO:	235094
PREPARED BY:	K.B.O.
CHECKED BY:	J.T.S.

EXISTING CONDITION EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA

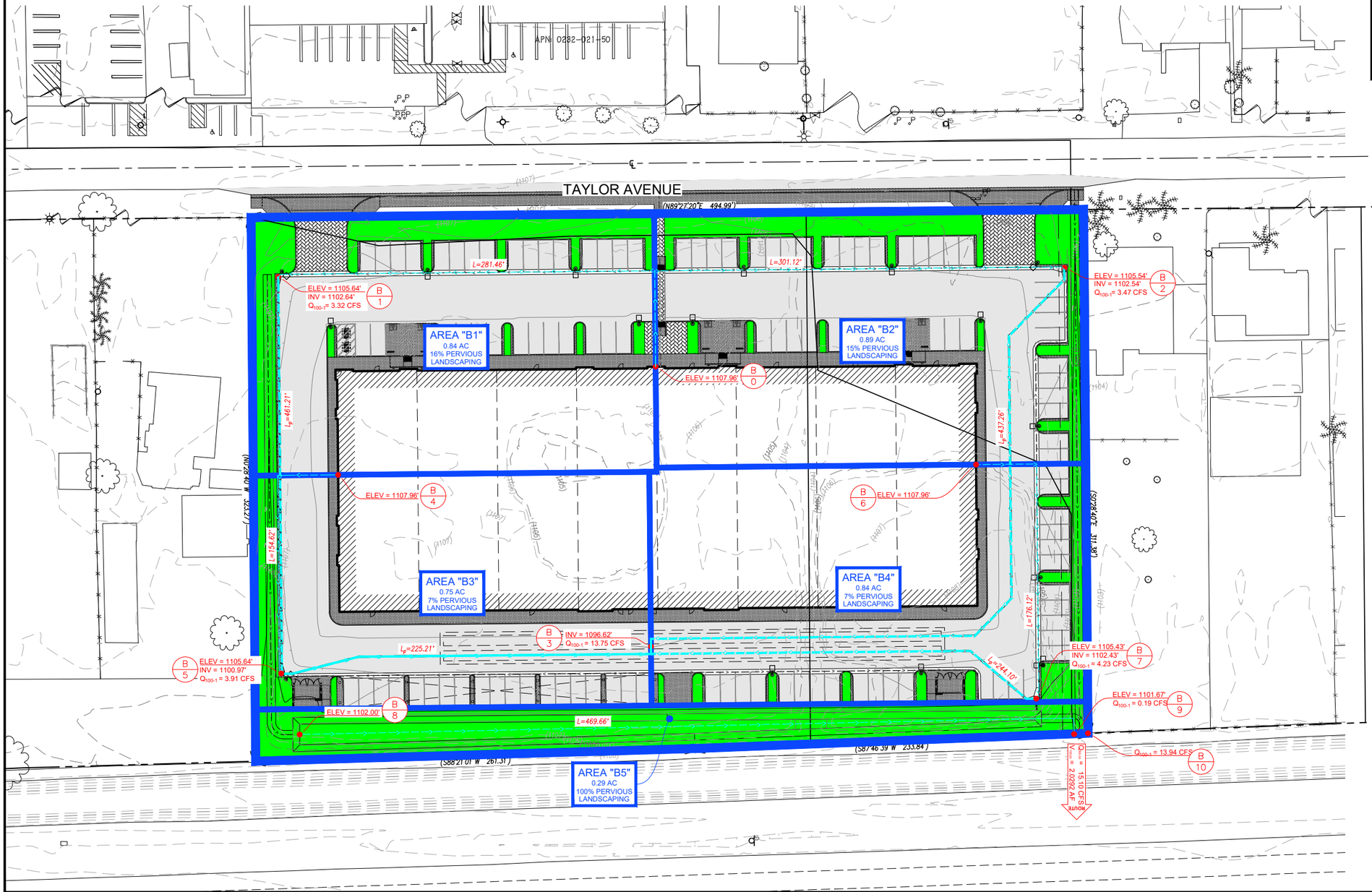
G

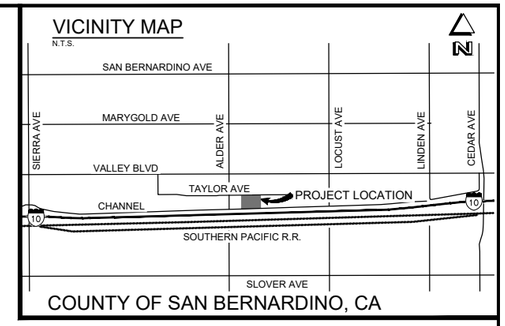
DISREGARD PRINTS BEARING EARLIER REVISION DATES → 01-30-24

EXHIBIT “H”

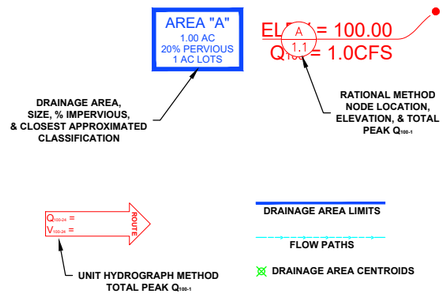
Developed Hydrologic Conditions
Study Map (On-Site)

EXHIBIT "H"
PROPOSED CONDITION EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA



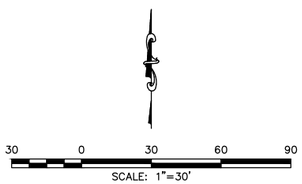


MAP LEGEND



CALCULATIONS SUMMARY (50-YEAR EVENT)

UNIT HYDROGRAPH SUMMARY



PROPOSED CONDITION EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA

PREPARED BY:
BONADIMAN
JOSEPH E. BONADIMAN & ASSOCIATES, INC.
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TEL. (909) 885-3888
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Software for Engineers, By Engineers

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P.O. BOX 780
BLOOMINGTON, CA 92316

BY	MARK	REVISION DESCRIPTION	DATE

PREPARED FOR:	ATHSP LLC
JOB NO:	235094
PREPARED BY:	K.B.O.
CHECKED BY:	J.T.S.

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PROPOSED CONDITION EXHIBIT
17783 & 17805 TAYLOR AVENUE
IN THE COUNTY OF SAN BERNARDINO, CA

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 01-30-24

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SHEET 1 OF 1

ATTACHMENT 1

Off-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: 01/29/24

235094 - 17783 & 17805 TAYLOR AVENUE
OFF-SITE CONDITIONS
10-YEAR, 1-HOUR STORM
BY: KBO DATE: 01-29-24

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 = 0.930 (In.)
Slope used for rainfall intensity curve b = 0.6000
Soil antecedent moisture condition (AMC) = 2

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

COMMERCIAL subarea type
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2) = 32.00
Pervious ratio(Ap) = 0.1000 Max loss rate(Fm)= 0.098(In/Hr)
Initial subarea data:
Initial area flow distance = 1000.000(Ft.)
Top (of initial area) elevation = 1116.100(Ft.)
Bottom (of initial area) elevation = 1106.890(Ft.)
Difference in elevation = 9.210(Ft.)
Slope = 0.00921 s(%)= 0.92
TC = k(0.304)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 12.303 min.
Rainfall intensity = 2.406(In/Hr) for a 10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.863
Subarea runoff = 12.944(CFS)
Total initial stream area = 6.230(Ac.)
Pervious area fraction = 0.100
Initial area Fm value = 0.098(In/Hr)

++
Process from Point/Station 1.000 to Point/Station 2.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****

Top of street segment elevation = 1106.890(Ft.)
End of street segment elevation = 1105.020(Ft.)
Length of street segment = 356.700(Ft.)
Height of curb above gutter flowline = 6.0(In.)
Width of half street (curb to crown) = 30.000(Ft.)
Distance from crown to crossfall grade break = 15.000(Ft.)
Slope from gutter to grade break (v/hz) = 0.020
Slope from grade break to crown (v/hz) = 0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line = 13.000(Ft.)
Slope from curb to property line (v/hz) = 0.025
Gutter width = 2.000(Ft.)

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Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     23.890(CFS)
Depth of flow =   0.685(Ft.), Average velocity =   2.772(Ft/s)
Warning: depth of flow exceeds top of curb
Distance that curb overflow reaches into property =    7.41(Ft.)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  27.935(Ft.)
Flow velocity =   2.77(Ft/s)
Travel time =    2.14 min.     TC =   14.45  min.
 Adding area flow to street
COMMERCIAL subarea type
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.1000     Max loss rate(Fm)=     0.098(In/Hr)
Rainfall intensity =      2.185(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.860
Subarea runoff =     21.830(CFS) for   12.280(Ac.)
Total runoff =     34.775(CFS)
Effective area this stream =       18.51(Ac.)
Total Study Area (Main Stream No. 1) =       18.51(Ac.)
Area averaged Fm value =    0.098(In/Hr)
Street flow at end of street =     34.775(CFS)
Half street flow at end of street =     34.775(CFS)
Depth of flow =   0.757(Ft.), Average velocity =   3.059(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =   10.29(Ft.)
Flow width (from curb towards crown)=  30.000(Ft.)
End of computations, Total Study Area =           18.51 (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) = 0.100
Area averaged SCS curve number =  32.0
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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: 01/29/24

235094 - 17783 & 17805 TAYLOR AVENUE
OFF-SITE CONDITIONS
100-YEAR, 1-HOUR STORM
BY: KBO DATE: 01-29-24

Program License Serial Number 6320

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

Rational hydrology study storm event year is 100.0
10 Year storm 1 hour rainfall = 0.930(In.)
100 Year storm 1 hour rainfall = 1.330(In.)
Computed rainfall intensity:
Storm year = 100.00 1 hour rainfall = 1.330 (In.)
Slope used for rainfall intensity curve b = 0.6000
Soil antecedent moisture condition (AMC) = 3

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

COMMERCIAL subarea type
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2) = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.1000 Max loss rate(Fm)= 0.079(In/Hr)
Initial subarea data:
Initial area flow distance = 1000.000(Ft.)
Top (of initial area) elevation = 1116.100(Ft.)
Bottom (of initial area) elevation = 1106.890(Ft.)
Difference in elevation = 9.210(Ft.)
Slope = 0.00921 s(%)= 0.92
TC = k(0.304)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 12.303 min.
Rainfall intensity = 3.441(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.879
Subarea runoff = 18.855(CFS)
Total initial stream area = 6.230(Ac.)
Pervious area fraction = 0.100
Initial area Fm value = 0.079(In/Hr)

++
Process from Point/Station 1.000 to Point/Station 2.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****

Top of street segment elevation = 1106.890(Ft.)
End of street segment elevation = 1105.020(Ft.)
Length of street segment = 356.700(Ft.)
Height of curb above gutter flowline = 6.0(In.)
Width of half street (curb to crown) = 30.000(Ft.)
Distance from crown to crossfall grade break = 15.000(Ft.)
Slope from gutter to grade break (v/hz) = 0.020
Slope from grade break to crown (v/hz) = 0.020
Street flow is on [1] side(s) of the street

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Distance from curb to property line  =  13.000(Ft.)
Slope from curb to property line (v/hz) =   0.025
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     35.072(CFS)
Depth of flow =   0.759(Ft.), Average velocity =   3.068(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =   10.35(Ft.)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  30.000(Ft.)
Flow velocity =   3.07(Ft/s)
Travel time =    1.94 min.     TC =   14.24  min.
 Adding area flow to street
COMMERCIAL subarea type
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.1000     Max loss rate(Fm)=     0.079(In/Hr)
Rainfall intensity =      3.152(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.878
Subarea runoff =     32.349(CFS) for   12.280(Ac.)
Total runoff =     51.205(CFS)
Effective area this stream =       18.51(Ac.)
Total Study Area (Main Stream No. 1) =       18.51(Ac.)
Area averaged Fm value =    0.079(In/Hr)
Street flow at end of street =     51.205(CFS)
Half street flow at end of street =     51.205(CFS)
Depth of flow =   0.837(Ft.), Average velocity =   3.481(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =   13.48(Ft.)
Flow width (from curb towards crown)=  30.000(Ft.)
End of computations, Total Study Area =           18.51 (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) = 0.100
Area averaged SCS curve number =  32.0
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ATTACHMENT 2

Existing Conditions
Rational 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: 01/29/24

235094 - 17783 & 17805 TAYLOR AVENUE
EXISTING CONDITIONS
10-YEAR, 1-HOUR STORM
BY: KBO DATE: 01-29-24

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 = 0.930 (In.)
Slope used for rainfall intensity curve b = 0.6000
Soil antecedent moisture condition (AMC) = 2

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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) = 50.00
Pervious ratio(Ap) = 0.9100 Max loss rate(Fm)= 0.737(In/Hr)
Initial subarea data:
Initial area flow distance = 719.660(Ft.)
Top (of initial area) elevation = 1108.090(Ft.)
Bottom (of initial area) elevation = 1101.670(Ft.)
Difference in elevation = 6.420(Ft.)
Slope = 0.00892 s(%)= 0.89
TC = k(0.499)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 17.815 min.
Rainfall intensity = 1.927(In/Hr) for a 10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.556
Subarea runoff = 3.868(CFS)
Total initial stream area = 3.610(Ac.)
Pervious area fraction = 0.910
Initial area Fm value = 0.737(In/Hr)
End of computations, Total Study Area = 3.61 (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) = 0.910
Area averaged SCS curve number = 50.0

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: 01/29/24

235094 - 17783 & 17805 TAYLOR AVENUE
EXISTING CONDITIONS
100-YEAR, 1-HOUR STORM
BY: KBO DATE: 01-29-24

Program License Serial Number 6320

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

Rational hydrology study storm event year is 100.0
10 Year storm 1 hour rainfall = 0.930(In.)
100 Year storm 1 hour rainfall = 1.330(In.)
Computed rainfall intensity:
Storm year = 100.00 1 hour rainfall = 1.330 (In.)
Slope used for rainfall intensity curve b = 0.6000
Soil antecedent moisture condition (AMC) = 3

++
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) = 50.00
Adjusted SCS curve number for AMC 3 = 70.00
Pervious ratio(Ap) = 0.9100 Max loss rate(Fm)= 0.485(In/Hr)
Initial subarea data:
Initial area flow distance = 719.660(Ft.)
Top (of initial area) elevation = 1108.090(Ft.)
Bottom (of initial area) elevation = 1101.670(Ft.)
Difference in elevation = 6.420(Ft.)
Slope = 0.00892 s(%)= 0.89
TC = k(0.499)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 17.815 min.
Rainfall intensity = 2.756(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.742
Subarea runoff = 7.380(CFS)
Total initial stream area = 3.610(Ac.)
Pervious area fraction = 0.910
Initial area Fm value = 0.485(In/Hr)
End of computations, Total Study Area = 3.61 (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) = 0.910
Area averaged SCS curve number = 50.0

ATTACHMENT 3

Existing Conditions
Hydrograph Calculations

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

Study date 01/29/24

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

Program License Serial Number 6320

235094 - 17783 & 17805 TAYLOR AVENUE
EXISTING CONDITIONS
2-YEAR, 24-HOUR STORM
BY: KBO DATE: 01-29-24

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		
3.61	1	0.93
Rainfall data for year 2		
3.61	6	1.63
Rainfall data for year 2		
3.61	24	3.02
Rainfall data for year 100		
3.61	1	1.33
Rainfall data for year 100		
3.61	6	3.51
Rainfall data for year 100		
3.61	24	7.85

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******** 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)
50.0	31.0	3.61	1.000	0.983	0.910	0.895

Area-averaged adjusted loss rate Fm (In/Hr) = 0.895

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
3.29	0.910	50.0	31.0	15.10	0.000
0.32	0.090	98.0	98.0	0.20	0.923

Area-averaged catchment yield fraction, Y = 0.083
Area-averaged low loss fraction, Yb = 0.917
User entry of time of concentration = 0.297 (hours)
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Watershed area = 3.61(Ac.)
Catchment Lag time = 0.238 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.0730
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.895(In/Hr)
Average low loss rate fraction (Yb) = 0.917 (decimal)
VALLEY DEVELOPED S-Graph Selected
Computed peak 5-minute rainfall = 0.241(In)
Computed peak 30-minute rainfall = 0.493(In)
Specified peak 1-hour rainfall = 0.650(In)
Computed peak 3-hour rainfall = 1.142(In)
Specified peak 6-hour rainfall = 1.630(In)
Specified peak 24-hour rainfall = 3.020(In)

Rainfall depth area reduction factors:
Using a total area of 3.61(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.241(In)
30-minute factor = 1.000 Adjusted rainfall = 0.493(In)
1-hour factor = 1.000 Adjusted rainfall = 0.650(In)
3-hour factor = 1.000 Adjusted rainfall = 1.142(In)
6-hour factor = 1.000 Adjusted rainfall = 1.630(In)
24-hour factor = 1.000 Adjusted rainfall = 3.020(In)

U n i t H y d r o g r a p h
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Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 43.66 (CFS))	
1	2.457	1.073
2	15.166	5.548
3	39.107	10.452
4	68.156	12.682
5	85.291	7.481
6	93.514	3.590
7	97.331	1.666
8	98.535	0.526
9	99.166	0.276
10	100.000	0.138

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2407	0.2407
2	0.3176	0.0769
3	0.3735	0.0559
4	0.4191	0.0456
5	0.4582	0.0391
6	0.4928	0.0347
7	0.5242	0.0313
8	0.5529	0.0288
9	0.5796	0.0267
10	0.6046	0.0249
11	0.6281	0.0235
12	0.6503	0.0222
13	0.6776	0.0273
14	0.7038	0.0262
15	0.7292	0.0254

16	0.7537	0.0245
17	0.7775	0.0238
18	0.8006	0.0231
19	0.8231	0.0225
20	0.8451	0.0219
21	0.8665	0.0214
22	0.8874	0.0209
23	0.9079	0.0205
24	0.9279	0.0200
25	0.9476	0.0196
26	0.9668	0.0193
27	0.9857	0.0189
28	1.0043	0.0186
29	1.0225	0.0182
30	1.0404	0.0179
31	1.0581	0.0176
32	1.0754	0.0174
33	1.0926	0.0171
34	1.1094	0.0169
35	1.1260	0.0166
36	1.1424	0.0164
37	1.1586	0.0162
38	1.1745	0.0160
39	1.1903	0.0157
40	1.2058	0.0156
41	1.2212	0.0154
42	1.2364	0.0152
43	1.2514	0.0150
44	1.2662	0.0148
45	1.2809	0.0147
46	1.2954	0.0145
47	1.3098	0.0144
48	1.3240	0.0142
49	1.3381	0.0141
50	1.3520	0.0139
51	1.3658	0.0138
52	1.3795	0.0137
53	1.3930	0.0135
54	1.4064	0.0134
55	1.4197	0.0133
56	1.4329	0.0132
57	1.4460	0.0131
58	1.4589	0.0130
59	1.4718	0.0128
60	1.4845	0.0127
61	1.4971	0.0126
62	1.5097	0.0125
63	1.5221	0.0124
64	1.5345	0.0123
65	1.5467	0.0122
66	1.5589	0.0122
67	1.5709	0.0121
68	1.5829	0.0120
69	1.5948	0.0119
70	1.6066	0.0118
71	1.6183	0.0117
72	1.6300	0.0116
73	1.6400	0.0100
74	1.6500	0.0100
75	1.6599	0.0099
76	1.6697	0.0098
77	1.6794	0.0097
78	1.6891	0.0097
79	1.6987	0.0096
80	1.7082	0.0095
81	1.7177	0.0095
82	1.7271	0.0094
83	1.7364	0.0093
84	1.7457	0.0093
85	1.7549	0.0092
86	1.7640	0.0092

87	1.7731	0.0091
88	1.7822	0.0090
89	1.7912	0.0090
90	1.8001	0.0089
91	1.8090	0.0089
92	1.8178	0.0088
93	1.8265	0.0088
94	1.8352	0.0087
95	1.8439	0.0087
96	1.8525	0.0086
97	1.8611	0.0086
98	1.8696	0.0085
99	1.8780	0.0085
100	1.8865	0.0084
101	1.8948	0.0084
102	1.9032	0.0083
103	1.9114	0.0083
104	1.9197	0.0082
105	1.9279	0.0082
106	1.9360	0.0081
107	1.9441	0.0081
108	1.9522	0.0081
109	1.9602	0.0080
110	1.9682	0.0080
111	1.9761	0.0079
112	1.9840	0.0079
113	1.9919	0.0079
114	1.9997	0.0078
115	2.0075	0.0078
116	2.0152	0.0077
117	2.0229	0.0077
118	2.0306	0.0077
119	2.0382	0.0076
120	2.0458	0.0076
121	2.0534	0.0076
122	2.0609	0.0075
123	2.0684	0.0075
124	2.0759	0.0075
125	2.0833	0.0074
126	2.0907	0.0074
127	2.0981	0.0074
128	2.1054	0.0073
129	2.1127	0.0073
130	2.1200	0.0073
131	2.1272	0.0072
132	2.1344	0.0072
133	2.1416	0.0072
134	2.1488	0.0071
135	2.1559	0.0071
136	2.1630	0.0071
137	2.1700	0.0071
138	2.1771	0.0070
139	2.1841	0.0070
140	2.1910	0.0070
141	2.1980	0.0069
142	2.2049	0.0069
143	2.2118	0.0069
144	2.2187	0.0069
145	2.2255	0.0068
146	2.2323	0.0068
147	2.2391	0.0068
148	2.2459	0.0068
149	2.2526	0.0067
150	2.2593	0.0067
151	2.2660	0.0067
152	2.2727	0.0067
153	2.2793	0.0066
154	2.2859	0.0066
155	2.2925	0.0066
156	2.2991	0.0066
157	2.3056	0.0065

158	2.3122	0.0065
159	2.3187	0.0065
160	2.3251	0.0065
161	2.3316	0.0065
162	2.3380	0.0064
163	2.3444	0.0064
164	2.3508	0.0064
165	2.3572	0.0064
166	2.3635	0.0063
167	2.3699	0.0063
168	2.3762	0.0063
169	2.3824	0.0063
170	2.3887	0.0063
171	2.3949	0.0062
172	2.4012	0.0062
173	2.4074	0.0062
174	2.4135	0.0062
175	2.4197	0.0062
176	2.4258	0.0061
177	2.4320	0.0061
178	2.4381	0.0061
179	2.4441	0.0061
180	2.4502	0.0061
181	2.4563	0.0060
182	2.4623	0.0060
183	2.4683	0.0060
184	2.4743	0.0060
185	2.4803	0.0060
186	2.4862	0.0060
187	2.4922	0.0059
188	2.4981	0.0059
189	2.5040	0.0059
190	2.5099	0.0059
191	2.5157	0.0059
192	2.5216	0.0059
193	2.5274	0.0058
194	2.5332	0.0058
195	2.5390	0.0058
196	2.5448	0.0058
197	2.5506	0.0058
198	2.5563	0.0058
199	2.5621	0.0057
200	2.5678	0.0057
201	2.5735	0.0057
202	2.5792	0.0057
203	2.5848	0.0057
204	2.5905	0.0057
205	2.5961	0.0056
206	2.6018	0.0056
207	2.6074	0.0056
208	2.6130	0.0056
209	2.6186	0.0056
210	2.6241	0.0056
211	2.6297	0.0056
212	2.6352	0.0055
213	2.6407	0.0055
214	2.6462	0.0055
215	2.6517	0.0055
216	2.6572	0.0055
217	2.6627	0.0055
218	2.6681	0.0055
219	2.6736	0.0054
220	2.6790	0.0054
221	2.6844	0.0054
222	2.6898	0.0054
223	2.6952	0.0054
224	2.7006	0.0054
225	2.7059	0.0054
226	2.7113	0.0053
227	2.7166	0.0053
228	2.7219	0.0053

229	2.7272	0.0053
230	2.7325	0.0053
231	2.7378	0.0053
232	2.7430	0.0053
233	2.7483	0.0053
234	2.7535	0.0052
235	2.7588	0.0052
236	2.7640	0.0052
237	2.7692	0.0052
238	2.7744	0.0052
239	2.7796	0.0052
240	2.7847	0.0052
241	2.7899	0.0052
242	2.7950	0.0051
243	2.8002	0.0051
244	2.8053	0.0051
245	2.8104	0.0051
246	2.8155	0.0051
247	2.8206	0.0051
248	2.8256	0.0051
249	2.8307	0.0051
250	2.8358	0.0051
251	2.8408	0.0050
252	2.8458	0.0050
253	2.8508	0.0050
254	2.8558	0.0050
255	2.8608	0.0050
256	2.8658	0.0050
257	2.8708	0.0050
258	2.8758	0.0050
259	2.8807	0.0050
260	2.8857	0.0049
261	2.8906	0.0049
262	2.8955	0.0049
263	2.9004	0.0049
264	2.9053	0.0049
265	2.9102	0.0049
266	2.9151	0.0049
267	2.9200	0.0049
268	2.9248	0.0049
269	2.9297	0.0048
270	2.9345	0.0048
271	2.9393	0.0048
272	2.9442	0.0048
273	2.9490	0.0048
274	2.9538	0.0048
275	2.9586	0.0048
276	2.9633	0.0048
277	2.9681	0.0048
278	2.9729	0.0048
279	2.9776	0.0048
280	2.9824	0.0047
281	2.9871	0.0047
282	2.9918	0.0047
283	2.9965	0.0047
284	3.0013	0.0047
285	3.0060	0.0047
286	3.0106	0.0047
287	3.0153	0.0047
288	3.0200	0.0047

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0047	0.0043	0.0004
2	0.0047	0.0043	0.0004
3	0.0047	0.0043	0.0004
4	0.0047	0.0043	0.0004
5	0.0047	0.0043	0.0004
6	0.0047	0.0043	0.0004

7	0.0048	0.0044	0.0004
8	0.0048	0.0044	0.0004
9	0.0048	0.0044	0.0004
10	0.0048	0.0044	0.0004
11	0.0048	0.0044	0.0004
12	0.0048	0.0044	0.0004
13	0.0048	0.0044	0.0004
14	0.0048	0.0044	0.0004
15	0.0049	0.0045	0.0004
16	0.0049	0.0045	0.0004
17	0.0049	0.0045	0.0004
18	0.0049	0.0045	0.0004
19	0.0049	0.0045	0.0004
20	0.0049	0.0045	0.0004
21	0.0050	0.0046	0.0004
22	0.0050	0.0046	0.0004
23	0.0050	0.0046	0.0004
24	0.0050	0.0046	0.0004
25	0.0050	0.0046	0.0004
26	0.0050	0.0046	0.0004
27	0.0051	0.0046	0.0004
28	0.0051	0.0047	0.0004
29	0.0051	0.0047	0.0004
30	0.0051	0.0047	0.0004
31	0.0051	0.0047	0.0004
32	0.0051	0.0047	0.0004
33	0.0052	0.0047	0.0004
34	0.0052	0.0047	0.0004
35	0.0052	0.0048	0.0004
36	0.0052	0.0048	0.0004
37	0.0052	0.0048	0.0004
38	0.0053	0.0048	0.0004
39	0.0053	0.0048	0.0004
40	0.0053	0.0049	0.0004
41	0.0053	0.0049	0.0004
42	0.0053	0.0049	0.0004
43	0.0054	0.0049	0.0004
44	0.0054	0.0049	0.0004
45	0.0054	0.0049	0.0004
46	0.0054	0.0050	0.0004
47	0.0054	0.0050	0.0005
48	0.0055	0.0050	0.0005
49	0.0055	0.0050	0.0005
50	0.0055	0.0050	0.0005
51	0.0055	0.0051	0.0005
52	0.0055	0.0051	0.0005
53	0.0056	0.0051	0.0005
54	0.0056	0.0051	0.0005
55	0.0056	0.0051	0.0005
56	0.0056	0.0052	0.0005
57	0.0057	0.0052	0.0005
58	0.0057	0.0052	0.0005
59	0.0057	0.0052	0.0005
60	0.0057	0.0052	0.0005
61	0.0058	0.0053	0.0005
62	0.0058	0.0053	0.0005
63	0.0058	0.0053	0.0005
64	0.0058	0.0053	0.0005
65	0.0059	0.0054	0.0005
66	0.0059	0.0054	0.0005
67	0.0059	0.0054	0.0005
68	0.0059	0.0054	0.0005
69	0.0060	0.0055	0.0005
70	0.0060	0.0055	0.0005
71	0.0060	0.0055	0.0005
72	0.0060	0.0055	0.0005
73	0.0061	0.0056	0.0005
74	0.0061	0.0056	0.0005
75	0.0061	0.0056	0.0005
76	0.0061	0.0056	0.0005
77	0.0062	0.0057	0.0005

78	0.0062	0.0057	0.0005
79	0.0062	0.0057	0.0005
80	0.0063	0.0057	0.0005
81	0.0063	0.0058	0.0005
82	0.0063	0.0058	0.0005
83	0.0064	0.0058	0.0005
84	0.0064	0.0059	0.0005
85	0.0064	0.0059	0.0005
86	0.0065	0.0059	0.0005
87	0.0065	0.0060	0.0005
88	0.0065	0.0060	0.0005
89	0.0066	0.0060	0.0005
90	0.0066	0.0060	0.0005
91	0.0066	0.0061	0.0006
92	0.0067	0.0061	0.0006
93	0.0067	0.0062	0.0006
94	0.0067	0.0062	0.0006
95	0.0068	0.0062	0.0006
96	0.0068	0.0062	0.0006
97	0.0069	0.0063	0.0006
98	0.0069	0.0063	0.0006
99	0.0069	0.0064	0.0006
100	0.0070	0.0064	0.0006
101	0.0070	0.0064	0.0006
102	0.0071	0.0065	0.0006
103	0.0071	0.0065	0.0006
104	0.0071	0.0066	0.0006
105	0.0072	0.0066	0.0006
106	0.0072	0.0066	0.0006
107	0.0073	0.0067	0.0006
108	0.0073	0.0067	0.0006
109	0.0074	0.0068	0.0006
110	0.0074	0.0068	0.0006
111	0.0075	0.0069	0.0006
112	0.0075	0.0069	0.0006
113	0.0076	0.0070	0.0006
114	0.0076	0.0070	0.0006
115	0.0077	0.0071	0.0006
116	0.0077	0.0071	0.0006
117	0.0078	0.0072	0.0006
118	0.0079	0.0072	0.0007
119	0.0079	0.0073	0.0007
120	0.0080	0.0073	0.0007
121	0.0081	0.0074	0.0007
122	0.0081	0.0074	0.0007
123	0.0082	0.0075	0.0007
124	0.0082	0.0075	0.0007
125	0.0083	0.0076	0.0007
126	0.0084	0.0077	0.0007
127	0.0085	0.0078	0.0007
128	0.0085	0.0078	0.0007
129	0.0086	0.0079	0.0007
130	0.0087	0.0079	0.0007
131	0.0088	0.0080	0.0007
132	0.0088	0.0081	0.0007
133	0.0089	0.0082	0.0007
134	0.0090	0.0082	0.0007
135	0.0091	0.0083	0.0008
136	0.0092	0.0084	0.0008
137	0.0093	0.0085	0.0008
138	0.0093	0.0086	0.0008
139	0.0095	0.0087	0.0008
140	0.0095	0.0087	0.0008
141	0.0097	0.0089	0.0008
142	0.0097	0.0089	0.0008
143	0.0099	0.0091	0.0008
144	0.0100	0.0091	0.0008
145	0.0116	0.0107	0.0010
146	0.0117	0.0108	0.0010
147	0.0119	0.0109	0.0010
148	0.0120	0.0110	0.0010

149	0.0122	0.0111	0.0010
150	0.0122	0.0112	0.0010
151	0.0124	0.0114	0.0010
152	0.0125	0.0115	0.0010
153	0.0127	0.0117	0.0011
154	0.0128	0.0118	0.0011
155	0.0131	0.0120	0.0011
156	0.0132	0.0121	0.0011
157	0.0134	0.0123	0.0011
158	0.0135	0.0124	0.0011
159	0.0138	0.0127	0.0011
160	0.0139	0.0128	0.0012
161	0.0142	0.0130	0.0012
162	0.0144	0.0132	0.0012
163	0.0147	0.0135	0.0012
164	0.0148	0.0136	0.0012
165	0.0152	0.0139	0.0013
166	0.0154	0.0141	0.0013
167	0.0157	0.0144	0.0013
168	0.0160	0.0146	0.0013
169	0.0164	0.0150	0.0014
170	0.0166	0.0152	0.0014
171	0.0171	0.0157	0.0014
172	0.0174	0.0159	0.0014
173	0.0179	0.0164	0.0015
174	0.0182	0.0167	0.0015
175	0.0189	0.0173	0.0016
176	0.0193	0.0177	0.0016
177	0.0200	0.0184	0.0017
178	0.0205	0.0188	0.0017
179	0.0214	0.0196	0.0018
180	0.0219	0.0201	0.0018
181	0.0231	0.0212	0.0019
182	0.0238	0.0218	0.0020
183	0.0254	0.0232	0.0021
184	0.0262	0.0241	0.0022
185	0.0222	0.0204	0.0018
186	0.0235	0.0215	0.0020
187	0.0267	0.0245	0.0022
188	0.0288	0.0264	0.0024
189	0.0347	0.0318	0.0029
190	0.0391	0.0359	0.0033
191	0.0559	0.0513	0.0046
192	0.0769	0.0705	0.0064
193	0.2407	0.0746	0.1661
194	0.0456	0.0418	0.0038
195	0.0313	0.0287	0.0026
196	0.0249	0.0229	0.0021
197	0.0273	0.0250	0.0023
198	0.0245	0.0225	0.0020
199	0.0225	0.0206	0.0019
200	0.0209	0.0192	0.0017
201	0.0196	0.0180	0.0016
202	0.0186	0.0170	0.0015
203	0.0176	0.0162	0.0015
204	0.0169	0.0155	0.0014
205	0.0162	0.0148	0.0013
206	0.0156	0.0143	0.0013
207	0.0150	0.0138	0.0012
208	0.0145	0.0133	0.0012
209	0.0141	0.0129	0.0012
210	0.0137	0.0125	0.0011
211	0.0133	0.0122	0.0011
212	0.0130	0.0119	0.0011
213	0.0126	0.0116	0.0010
214	0.0123	0.0113	0.0010
215	0.0121	0.0111	0.0010
216	0.0118	0.0108	0.0010
217	0.0100	0.0092	0.0008
218	0.0098	0.0090	0.0008
219	0.0096	0.0088	0.0008

220	0.0094	0.0086	0.0008
221	0.0092	0.0084	0.0008
222	0.0090	0.0083	0.0008
223	0.0089	0.0081	0.0007
224	0.0087	0.0080	0.0007
225	0.0086	0.0078	0.0007
226	0.0084	0.0077	0.0007
227	0.0083	0.0076	0.0007
228	0.0081	0.0075	0.0007
229	0.0080	0.0074	0.0007
230	0.0079	0.0072	0.0007
231	0.0078	0.0071	0.0006
232	0.0077	0.0070	0.0006
233	0.0076	0.0069	0.0006
234	0.0075	0.0068	0.0006
235	0.0074	0.0068	0.0006
236	0.0073	0.0067	0.0006
237	0.0072	0.0066	0.0006
238	0.0071	0.0065	0.0006
239	0.0070	0.0064	0.0006
240	0.0069	0.0063	0.0006
241	0.0068	0.0063	0.0006
242	0.0068	0.0062	0.0006
243	0.0067	0.0061	0.0006
244	0.0066	0.0061	0.0005
245	0.0065	0.0060	0.0005
246	0.0065	0.0059	0.0005
247	0.0064	0.0059	0.0005
248	0.0063	0.0058	0.0005
249	0.0063	0.0058	0.0005
250	0.0062	0.0057	0.0005
251	0.0062	0.0056	0.0005
252	0.0061	0.0056	0.0005
253	0.0060	0.0055	0.0005
254	0.0060	0.0055	0.0005
255	0.0059	0.0054	0.0005
256	0.0059	0.0054	0.0005
257	0.0058	0.0053	0.0005
258	0.0058	0.0053	0.0005
259	0.0057	0.0053	0.0005
260	0.0057	0.0052	0.0005
261	0.0056	0.0052	0.0005
262	0.0056	0.0051	0.0005
263	0.0056	0.0051	0.0005
264	0.0055	0.0051	0.0005
265	0.0055	0.0050	0.0005
266	0.0054	0.0050	0.0005
267	0.0054	0.0049	0.0004
268	0.0053	0.0049	0.0004
269	0.0053	0.0049	0.0004
270	0.0053	0.0048	0.0004
271	0.0052	0.0048	0.0004
272	0.0052	0.0048	0.0004
273	0.0052	0.0047	0.0004
274	0.0051	0.0047	0.0004
275	0.0051	0.0047	0.0004
276	0.0051	0.0046	0.0004
277	0.0050	0.0046	0.0004
278	0.0050	0.0046	0.0004
279	0.0050	0.0045	0.0004
280	0.0049	0.0045	0.0004
281	0.0049	0.0045	0.0004
282	0.0049	0.0045	0.0004
283	0.0048	0.0044	0.0004
284	0.0048	0.0044	0.0004
285	0.0048	0.0044	0.0004
286	0.0047	0.0043	0.0004
287	0.0047	0.0043	0.0004
288	0.0047	0.0043	0.0004

Total soil rain loss = 2.62(In)
Total effective rainfall = 0.40(In)
Peak flow rate in flood hydrograph = 2.24(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	0.0001	0.01	Q				
0+20	0.0001	0.01	Q				
0+25	0.0002	0.01	Q				
0+30	0.0004	0.02	Q				
0+35	0.0005	0.02	Q				
0+40	0.0006	0.02	Q				
0+45	0.0007	0.02	Q				
0+50	0.0008	0.02	Q				
0+55	0.0009	0.02	Q				
1+ 0	0.0011	0.02	Q				
1+ 5	0.0012	0.02	Q				
1+10	0.0013	0.02	Q				
1+15	0.0014	0.02	Q				
1+20	0.0015	0.02	Q				
1+25	0.0017	0.02	Q				
1+30	0.0018	0.02	Q				
1+35	0.0019	0.02	Q				
1+40	0.0020	0.02	Q				
1+45	0.0021	0.02	Q				
1+50	0.0023	0.02	Q				
1+55	0.0024	0.02	Q				
2+ 0	0.0025	0.02	Q				
2+ 5	0.0026	0.02	Q				
2+10	0.0028	0.02	Q				
2+15	0.0029	0.02	Q				
2+20	0.0030	0.02	QV				
2+25	0.0031	0.02	QV				
2+30	0.0033	0.02	QV				
2+35	0.0034	0.02	QV				
2+40	0.0035	0.02	QV				
2+45	0.0036	0.02	QV				
2+50	0.0038	0.02	QV				
2+55	0.0039	0.02	QV				
3+ 0	0.0040	0.02	QV				
3+ 5	0.0042	0.02	QV				
3+10	0.0043	0.02	QV				
3+15	0.0044	0.02	QV				
3+20	0.0045	0.02	QV				
3+25	0.0047	0.02	QV				
3+30	0.0048	0.02	QV				
3+35	0.0049	0.02	QV				
3+40	0.0051	0.02	QV				
3+45	0.0052	0.02	QV				
3+50	0.0053	0.02	QV				
3+55	0.0055	0.02	QV				
4+ 0	0.0056	0.02	QV				
4+ 5	0.0057	0.02	QV				
4+10	0.0059	0.02	QV				
4+15	0.0060	0.02	Q V				
4+20	0.0061	0.02	Q V				
4+25	0.0063	0.02	Q V				
4+30	0.0064	0.02	Q V				
4+35	0.0066	0.02	Q V				
4+40	0.0067	0.02	Q V				
4+45	0.0068	0.02	Q V				
4+50	0.0070	0.02	Q V				

4+55	0.0071	0.02	Q V	|	|	|	|
5+ 0	0.0073	0.02	Q V	|	|	|	|
5+ 5	0.0074	0.02	Q V	|	|	|	|
5+10	0.0075	0.02	Q V	|	|	|	|
5+15	0.0077	0.02	Q V	|	|	|	|
5+20	0.0078	0.02	Q V	|	|	|	|
5+25	0.0080	0.02	Q V	|	|	|	|
5+30	0.0081	0.02	Q V	|	|	|	|
5+35	0.0083	0.02	Q V	|	|	|	|
5+40	0.0084	0.02	Q V	|	|	|	|
5+45	0.0085	0.02	Q V	|	|	|	|
5+50	0.0087	0.02	Q V	|	|	|	|
5+55	0.0088	0.02	Q V	|	|	|	|
6+ 0	0.0090	0.02	Q V	|	|	|	|
6+ 5	0.0091	0.02	Q V	|	|	|	|
6+10	0.0093	0.02	Q V	|	|	|	|
6+15	0.0094	0.02	Q V	|	|	|	|
6+20	0.0096	0.02	Q V	|	|	|	|
6+25	0.0097	0.02	Q V	|	|	|	|
6+30	0.0099	0.02	Q V	|	|	|	|
6+35	0.0100	0.02	Q V	|	|	|	|
6+40	0.0102	0.02	Q V	|	|	|	|
6+45	0.0103	0.02	Q V	|	|	|	|
6+50	0.0105	0.02	Q V	|	|	|	|
6+55	0.0107	0.02	Q V	|	|	|	|
7+ 0	0.0108	0.02	Q V	|	|	|	|
7+ 5	0.0110	0.02	Q V	|	|	|	|
7+10	0.0111	0.02	Q V	|	|	|	|
7+15	0.0113	0.02	Q V	|	|	|	|
7+20	0.0114	0.02	Q V	|	|	|	|
7+25	0.0116	0.02	Q V	|	|	|	|
7+30	0.0118	0.02	Q V	|	|	|	|
7+35	0.0119	0.02	Q V	|	|	|	|
7+40	0.0121	0.02	Q V	|	|	|	|
7+45	0.0123	0.02	Q V	|	|	|	|
7+50	0.0124	0.02	Q V	|	|	|	|
7+55	0.0126	0.02	Q V	|	|	|	|
8+ 0	0.0128	0.02	Q V	|	|	|	|
8+ 5	0.0129	0.02	Q V	|	|	|	|
8+10	0.0131	0.02	Q V	|	|	|	|
8+15	0.0133	0.02	Q V	|	|	|	|
8+20	0.0134	0.02	Q V	|	|	|	|
8+25	0.0136	0.02	Q V	|	|	|	|
8+30	0.0138	0.03	Q V	|	|	|	|
8+35	0.0140	0.03	Q V	|	|	|	|
8+40	0.0141	0.03	Q V	|	|	|	|
8+45	0.0143	0.03	Q V	|	|	|	|
8+50	0.0145	0.03	Q V	|	|	|	|
8+55	0.0147	0.03	Q V	|	|	|	|
9+ 0	0.0148	0.03	Q V	|	|	|	|
9+ 5	0.0150	0.03	Q V	|	|	|	|
9+10	0.0152	0.03	Q V	|	|	|	|
9+15	0.0154	0.03	Q V	|	|	|	|
9+20	0.0156	0.03	Q V	|	|	|	|
9+25	0.0157	0.03	Q V	|	|	|	|
9+30	0.0159	0.03	Q V	|	|	|	|
9+35	0.0161	0.03	Q V	|	|	|	|
9+40	0.0163	0.03	Q V	|	|	|	|
9+45	0.0165	0.03	Q V	|	|	|	|
9+50	0.0167	0.03	Q V	|	|	|	|
9+55	0.0169	0.03	Q V	|	|	|	|
10+ 0	0.0171	0.03	Q V	|	|	|	|
10+ 5	0.0173	0.03	Q V	|	|	|	|
10+10	0.0175	0.03	Q V	|	|	|	|
10+15	0.0177	0.03	Q V	|	|	|	|
10+20	0.0179	0.03	Q V	|	|	|	|
10+25	0.0181	0.03	Q V	|	|	|	|
10+30	0.0183	0.03	Q V	|	|	|	|
10+35	0.0185	0.03	Q V	|	|	|	|
10+40	0.0187	0.03	Q V	|	|	|	|
10+45	0.0189	0.03	Q V	|	|	|	|

10+50	0.0191	0.03	Q V	|	|	|	|
10+55	0.0193	0.03	Q V	|	|	|	|
11+ 0	0.0195	0.03	Q V	|	|	|	|
11+ 5	0.0197	0.03	Q V	|	|	|	|
11+10	0.0200	0.03	Q V	|	|	|	|
11+15	0.0202	0.03	Q V	|	|	|	|
11+20	0.0204	0.03	Q V	|	|	|	|
11+25	0.0206	0.03	Q V	|	|	|	|
11+30	0.0209	0.03	Q V	|	|	|	|
11+35	0.0211	0.03	Q V	|	|	|	|
11+40	0.0213	0.03	Q V	|	|	|	|
11+45	0.0215	0.03	Q V	|	|	|	|
11+50	0.0218	0.03	Q V	|	|	|	|
11+55	0.0220	0.03	Q V	|	|	|	|
12+ 0	0.0223	0.03	Q V	|	|	|	|
12+ 5	0.0225	0.04	Q V	|	|	|	|
12+10	0.0228	0.04	Q V	|	|	|	|
12+15	0.0230	0.04	Q V	|	|	|	|
12+20	0.0233	0.04	Q V	|	|	|	|
12+25	0.0236	0.04	Q V	|	|	|	|
12+30	0.0239	0.04	Q V	|	|	|	|
12+35	0.0242	0.04	Q V	|	|	|	|
12+40	0.0245	0.04	Q V	|	|	|	|
12+45	0.0248	0.04	Q V	|	|	|	|
12+50	0.0251	0.04	Q V	|	|	|	|
12+55	0.0254	0.05	Q V	|	|	|	|
13+ 0	0.0257	0.05	Q V	|	|	|	|
13+ 5	0.0260	0.05	Q V	|	|	|	|
13+10	0.0264	0.05	Q V	|	|	|	|
13+15	0.0267	0.05	Q V	|	|	|	|
13+20	0.0270	0.05	Q V	|	|	|	|
13+25	0.0274	0.05	Q V	|	|	|	|
13+30	0.0277	0.05	Q V	|	|	|	|
13+35	0.0280	0.05	Q V	|	|	|	|
13+40	0.0284	0.05	Q V	|	|	|	|
13+45	0.0288	0.05	Q V	|	|	|	|
13+50	0.0291	0.05	Q V	|	|	|	|
13+55	0.0295	0.05	Q V	|	|	|	|
14+ 0	0.0299	0.05	Q V	|	|	|	|
14+ 5	0.0303	0.06	Q V	|	|	|	|
14+10	0.0306	0.06	Q V	|	|	|	|
14+15	0.0310	0.06	Q V	|	|	|	|
14+20	0.0315	0.06	Q V	|	|	|	|
14+25	0.0319	0.06	Q V	|	|	|	|
14+30	0.0323	0.06	Q V	|	|	|	|
14+35	0.0327	0.06	Q V	|	|	|	|
14+40	0.0332	0.06	Q V	|	|	|	|
14+45	0.0336	0.07	Q V	|	|	|	|
14+50	0.0341	0.07	Q V	|	|	|	|
14+55	0.0346	0.07	Q V	|	|	|	|
15+ 0	0.0351	0.07	Q V	|	|	|	|
15+ 5	0.0356	0.07	Q V	|	|	|	|
15+10	0.0361	0.08	Q V	|	|	|	|
15+15	0.0367	0.08	Q V	|	|	|	|
15+20	0.0372	0.08	Q V	|	|	|	|
15+25	0.0378	0.09	Q V	|	|	|	|
15+30	0.0385	0.09	Q V	|	|	|	|
15+35	0.0391	0.09	Q V	|	|	|	|
15+40	0.0397	0.09	Q V	|	|	|	|
15+45	0.0403	0.09	Q V	|	|	|	|
15+50	0.0410	0.10	Q V	|	|	|	|
15+55	0.0417	0.11	Q V	|	|	|	|
16+ 0	0.0427	0.13	Q V	|	|	|	|
16+ 5	0.0450	0.34	Q V	|	|	|	|
16+10	0.0525	1.09	Q V	|	|	|	|
16+15	0.0656	1.89	Q V	|	|	|	|
16+20	0.0810	2.24	Q V	|	|	|	|
16+25	0.0904	1.37	Q V	|	|	|	|
16+30	0.0953	0.71	Q V	|	|	|	|
16+35	0.0979	0.38	Q V	|	|	|	|
16+40	0.0991	0.18	Q V	|	|	|	|

16+45	0.1000	0.13	Q	|	|	| V	|
16+50	0.1008	0.10	Q	|	|	| V	|
16+55	0.1013	0.08	Q	|	|	| V	|
17+ 0	0.1018	0.07	Q	|	|	| V	|
17+ 5	0.1023	0.07	Q	|	|	| V	|
17+10	0.1027	0.06	Q	|	|	| V	|
17+15	0.1031	0.06	Q	|	|	| V	|
17+20	0.1035	0.06	Q	|	|	| V	|
17+25	0.1039	0.06	Q	|	|	| V	|
17+30	0.1043	0.05	Q	|	|	| V	|
17+35	0.1046	0.05	Q	|	|	| V	|
17+40	0.1050	0.05	Q	|	|	| V	|
17+45	0.1053	0.05	Q	|	|	| V	|
17+50	0.1057	0.05	Q	|	|	| V	|
17+55	0.1060	0.05	Q	|	|	| V	|
18+ 0	0.1063	0.05	Q	|	|	| V	|
18+ 5	0.1066	0.04	Q	|	|	| V	|
18+10	0.1069	0.04	Q	|	|	| V	|
18+15	0.1072	0.04	Q	|	|	| V	|
18+20	0.1074	0.04	Q	|	|	| V	|
18+25	0.1077	0.04	Q	|	|	| V	|
18+30	0.1079	0.04	Q	|	|	| V	|
18+35	0.1082	0.03	Q	|	|	| V	|
18+40	0.1084	0.03	Q	|	|	| V	|
18+45	0.1086	0.03	Q	|	|	| V	|
18+50	0.1088	0.03	Q	|	|	| V	|
18+55	0.1091	0.03	Q	|	|	| V	|
19+ 0	0.1093	0.03	Q	|	|	| V	|
19+ 5	0.1095	0.03	Q	|	|	| V	|
19+10	0.1097	0.03	Q	|	|	| V	|
19+15	0.1099	0.03	Q	|	|	| V	|
19+20	0.1101	0.03	Q	|	|	| V	|
19+25	0.1103	0.03	Q	|	|	| V	|
19+30	0.1105	0.03	Q	|	|	| V	|
19+35	0.1107	0.03	Q	|	|	| V	|
19+40	0.1109	0.03	Q	|	|	| V	|
19+45	0.1110	0.03	Q	|	|	| V	|
19+50	0.1112	0.03	Q	|	|	| V	|
19+55	0.1114	0.03	Q	|	|	| V	|
20+ 0	0.1116	0.03	Q	|	|	| V	|
20+ 5	0.1118	0.03	Q	|	|	| V	|
20+10	0.1119	0.03	Q	|	|	| V	|
20+15	0.1121	0.02	Q	|	|	| V	|
20+20	0.1123	0.02	Q	|	|	| V	|
20+25	0.1125	0.02	Q	|	|	| V	|
20+30	0.1126	0.02	Q	|	|	| V	|
20+35	0.1128	0.02	Q	|	|	| V	|
20+40	0.1129	0.02	Q	|	|	| V	|
20+45	0.1131	0.02	Q	|	|	| V	|
20+50	0.1133	0.02	Q	|	|	| V	|
20+55	0.1134	0.02	Q	|	|	| V	|
21+ 0	0.1136	0.02	Q	|	|	| V	|
21+ 5	0.1137	0.02	Q	|	|	| V	|
21+10	0.1139	0.02	Q	|	|	| V	|
21+15	0.1140	0.02	Q	|	|	| V	|
21+20	0.1142	0.02	Q	|	|	| V	|
21+25	0.1143	0.02	Q	|	|	| V	|
21+30	0.1145	0.02	Q	|	|	| V	|
21+35	0.1146	0.02	Q	|	|	| V	|
21+40	0.1148	0.02	Q	|	|	| V	|
21+45	0.1149	0.02	Q	|	|	| V	|
21+50	0.1151	0.02	Q	|	|	| V	|
21+55	0.1152	0.02	Q	|	|	| V	|
22+ 0	0.1153	0.02	Q	|	|	| V	|
22+ 5	0.1155	0.02	Q	|	|	| V	|
22+10	0.1156	0.02	Q	|	|	| V	|
22+15	0.1158	0.02	Q	|	|	| V	|
22+20	0.1159	0.02	Q	|	|	| V	|
22+25	0.1160	0.02	Q	|	|	| V	|
22+30	0.1162	0.02	Q	|	|	| V	|
22+35	0.1163	0.02	Q	|	|	| V	|

22+40	0.1164	0.02	Q				V|
22+45	0.1166	0.02	Q				V|
22+50	0.1167	0.02	Q				V|
22+55	0.1168	0.02	Q				V|
23+ 0	0.1169	0.02	Q				V|
23+ 5	0.1171	0.02	Q				V|
23+10	0.1172	0.02	Q				V|
23+15	0.1173	0.02	Q				V|
23+20	0.1174	0.02	Q				V|
23+25	0.1176	0.02	Q				V|
23+30	0.1177	0.02	Q				V|
23+35	0.1178	0.02	Q				V|
23+40	0.1179	0.02	Q				V|
23+45	0.1181	0.02	Q				V|
23+50	0.1182	0.02	Q				V|
23+55	0.1183	0.02	Q				V|
24+ 0	0.1184	0.02	Q				V|
24+ 5	0.1185	0.02	Q				V|
24+10	0.1186	0.01	Q				V|
24+15	0.1187	0.01	Q				V|
24+20	0.1187	0.01	Q				V|
24+25	0.1188	0.00	Q				V|
24+30	0.1188	0.00	Q				V|
24+35	0.1188	0.00	Q				V|
24+40	0.1188	0.00	Q				V|
24+45	0.1188	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

Study date 01/29/24

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

Program License Serial Number 6320

235094 - 17783 & 17805 TAYLOR AVENUE
EXISTING CONDITIONS
5-YEAR, 24-HOUR STORM
BY: KBO DATE: 01-29-24

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		
3.61	1	0.93
Rainfall data for year 2		
3.61	6	1.63
Rainfall data for year 2		
3.61	24	3.02
Rainfall data for year 100		
3.61	1	1.33
Rainfall data for year 100		
3.61	6	3.51
Rainfall data for year 100		
3.61	24	7.85

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******** 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)
50.0	31.0	3.61	1.000	0.983	0.910	0.895

Area-averaged adjusted loss rate Fm (In/Hr) = 0.895

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
3.29	0.910	50.0	31.0	20.76	0.000
0.32	0.090	98.0	98.0	0.20	0.943

Area-averaged catchment yield fraction, Y = 0.085
Area-averaged low loss fraction, Yb = 0.915
User entry of time of concentration = 0.297 (hours)
++
Watershed area = 3.61(Ac.)
Catchment Lag time = 0.238 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.0730
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.895(In/Hr)
Average low loss rate fraction (Yb) = 0.915 (decimal)
VALLEY DEVELOPED S-Graph Selected
Computed peak 5-minute rainfall = 0.300(In)
Computed peak 30-minute rainfall = 0.614(In)
Specified peak 1-hour rainfall = 0.810(In)
Computed peak 3-hour rainfall = 1.440(In)
Specified peak 6-hour rainfall = 2.070(In)
Specified peak 24-hour rainfall = 4.151(In)

Rainfall depth area reduction factors:
Using a total area of 3.61(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.300(In)
30-minute factor = 1.000 Adjusted rainfall = 0.613(In)
1-hour factor = 1.000 Adjusted rainfall = 0.809(In)
3-hour factor = 1.000 Adjusted rainfall = 1.440(In)
6-hour factor = 1.000 Adjusted rainfall = 2.070(In)
24-hour factor = 1.000 Adjusted rainfall = 4.151(In)

U n i t H y d r o g r a p h
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Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
(K = 43.66 (CFS))		
1	2.457	1.073
2	15.166	5.548
3	39.107	10.452
4	68.156	12.682
5	85.291	7.481
6	93.514	3.590
7	97.331	1.666
8	98.535	0.526
9	99.166	0.276
10	100.000	0.138

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2996	0.2996
2	0.3953	0.0957
3	0.4649	0.0696
4	0.5216	0.0567
5	0.5703	0.0487
6	0.6134	0.0431
7	0.6525	0.0390
8	0.6883	0.0358
9	0.7215	0.0332
10	0.7525	0.0311
11	0.7818	0.0292
12	0.8095	0.0277
13	0.8441	0.0347
14	0.8776	0.0334
15	0.9099	0.0323

16	0.9412	0.0313
17	0.9716	0.0304
18	1.0011	0.0295
19	1.0299	0.0288
20	1.0580	0.0281
21	1.0854	0.0274
22	1.1122	0.0268
23	1.1384	0.0262
24	1.1641	0.0257
25	1.1893	0.0252
26	1.2140	0.0247
27	1.2382	0.0243
28	1.2620	0.0238
29	1.2855	0.0234
30	1.3085	0.0230
31	1.3312	0.0227
32	1.3535	0.0223
33	1.3755	0.0220
34	1.3972	0.0217
35	1.4186	0.0214
36	1.4397	0.0211
37	1.4606	0.0208
38	1.4811	0.0206
39	1.5014	0.0203
40	1.5215	0.0201
41	1.5413	0.0198
42	1.5609	0.0196
43	1.5802	0.0194
44	1.5994	0.0192
45	1.6183	0.0189
46	1.6371	0.0187
47	1.6556	0.0186
48	1.6740	0.0184
49	1.6922	0.0182
50	1.7102	0.0180
51	1.7280	0.0178
52	1.7457	0.0177
53	1.7632	0.0175
54	1.7806	0.0174
55	1.7978	0.0172
56	1.8148	0.0171
57	1.8318	0.0169
58	1.8485	0.0168
59	1.8652	0.0166
60	1.8817	0.0165
61	1.8980	0.0164
62	1.9143	0.0162
63	1.9304	0.0161
64	1.9464	0.0160
65	1.9623	0.0159
66	1.9780	0.0158
67	1.9937	0.0156
68	2.0092	0.0155
69	2.0247	0.0154
70	2.0400	0.0153
71	2.0552	0.0152
72	2.0703	0.0151
73	2.0847	0.0144
74	2.0990	0.0143
75	2.1132	0.0142
76	2.1273	0.0141
77	2.1413	0.0140
78	2.1552	0.0139
79	2.1690	0.0138
80	2.1827	0.0137
81	2.1964	0.0137
82	2.2099	0.0136
83	2.2234	0.0135
84	2.2368	0.0134
85	2.2502	0.0133
86	2.2634	0.0132

87	2.2766	0.0132
88	2.2897	0.0131
89	2.3027	0.0130
90	2.3156	0.0129
91	2.3285	0.0129
92	2.3413	0.0128
93	2.3541	0.0127
94	2.3667	0.0127
95	2.3793	0.0126
96	2.3919	0.0125
97	2.4043	0.0125
98	2.4168	0.0124
99	2.4291	0.0123
100	2.4414	0.0123
101	2.4536	0.0122
102	2.4658	0.0122
103	2.4779	0.0121
104	2.4899	0.0120
105	2.5019	0.0120
106	2.5138	0.0119
107	2.5257	0.0119
108	2.5375	0.0118
109	2.5493	0.0118
110	2.5610	0.0117
111	2.5726	0.0117
112	2.5843	0.0116
113	2.5958	0.0116
114	2.6073	0.0115
115	2.6188	0.0115
116	2.6302	0.0114
117	2.6415	0.0114
118	2.6528	0.0113
119	2.6641	0.0113
120	2.6753	0.0112
121	2.6865	0.0112
122	2.6976	0.0111
123	2.7087	0.0111
124	2.7197	0.0110
125	2.7307	0.0110
126	2.7416	0.0109
127	2.7525	0.0109
128	2.7634	0.0109
129	2.7742	0.0108
130	2.7850	0.0108
131	2.7957	0.0107
132	2.8064	0.0107
133	2.8170	0.0106
134	2.8276	0.0106
135	2.8382	0.0106
136	2.8487	0.0105
137	2.8592	0.0105
138	2.8697	0.0105
139	2.8801	0.0104
140	2.8905	0.0104
141	2.9008	0.0103
142	2.9111	0.0103
143	2.9214	0.0103
144	2.9316	0.0102
145	2.9418	0.0102
146	2.9520	0.0102
147	2.9621	0.0101
148	2.9722	0.0101
149	2.9823	0.0101
150	2.9923	0.0100
151	3.0023	0.0100
152	3.0123	0.0100
153	3.0222	0.0099
154	3.0321	0.0099
155	3.0420	0.0099
156	3.0518	0.0098
157	3.0616	0.0098

158	3.0714	0.0098
159	3.0811	0.0097
160	3.0908	0.0097
161	3.1005	0.0097
162	3.1101	0.0096
163	3.1198	0.0096
164	3.1294	0.0096
165	3.1389	0.0096
166	3.1485	0.0095
167	3.1580	0.0095
168	3.1674	0.0095
169	3.1769	0.0094
170	3.1863	0.0094
171	3.1957	0.0094
172	3.2051	0.0094
173	3.2144	0.0093
174	3.2237	0.0093
175	3.2330	0.0093
176	3.2422	0.0093
177	3.2515	0.0092
178	3.2607	0.0092
179	3.2699	0.0092
180	3.2790	0.0092
181	3.2882	0.0091
182	3.2973	0.0091
183	3.3063	0.0091
184	3.3154	0.0091
185	3.3244	0.0090
186	3.3334	0.0090
187	3.3424	0.0090
188	3.3514	0.0090
189	3.3603	0.0089
190	3.3692	0.0089
191	3.3781	0.0089
192	3.3870	0.0089
193	3.3958	0.0088
194	3.4046	0.0088
195	3.4134	0.0088
196	3.4222	0.0088
197	3.4309	0.0088
198	3.4397	0.0087
199	3.4484	0.0087
200	3.4571	0.0087
201	3.4657	0.0087
202	3.4744	0.0086
203	3.4830	0.0086
204	3.4916	0.0086
205	3.5002	0.0086
206	3.5087	0.0086
207	3.5173	0.0085
208	3.5258	0.0085
209	3.5343	0.0085
210	3.5428	0.0085
211	3.5512	0.0085
212	3.5597	0.0084
213	3.5681	0.0084
214	3.5765	0.0084
215	3.5848	0.0084
216	3.5932	0.0084
217	3.6015	0.0083
218	3.6099	0.0083
219	3.6182	0.0083
220	3.6264	0.0083
221	3.6347	0.0083
222	3.6430	0.0082
223	3.6512	0.0082
224	3.6594	0.0082
225	3.6676	0.0082
226	3.6757	0.0082
227	3.6839	0.0082
228	3.6920	0.0081

229	3.7002	0.0081
230	3.7083	0.0081
231	3.7163	0.0081
232	3.7244	0.0081
233	3.7324	0.0080
234	3.7405	0.0080
235	3.7485	0.0080
236	3.7565	0.0080
237	3.7645	0.0080
238	3.7724	0.0080
239	3.7804	0.0079
240	3.7883	0.0079
241	3.7962	0.0079
242	3.8041	0.0079
243	3.8120	0.0079
244	3.8199	0.0079
245	3.8277	0.0078
246	3.8355	0.0078
247	3.8434	0.0078
248	3.8512	0.0078
249	3.8589	0.0078
250	3.8667	0.0078
251	3.8745	0.0078
252	3.8822	0.0077
253	3.8899	0.0077
254	3.8976	0.0077
255	3.9053	0.0077
256	3.9130	0.0077
257	3.9207	0.0077
258	3.9283	0.0076
259	3.9360	0.0076
260	3.9436	0.0076
261	3.9512	0.0076
262	3.9588	0.0076
263	3.9664	0.0076
264	3.9739	0.0076
265	3.9815	0.0075
266	3.9890	0.0075
267	3.9965	0.0075
268	4.0040	0.0075
269	4.0115	0.0075
270	4.0190	0.0075
271	4.0264	0.0075
272	4.0339	0.0074
273	4.0413	0.0074
274	4.0488	0.0074
275	4.0562	0.0074
276	4.0636	0.0074
277	4.0709	0.0074
278	4.0783	0.0074
279	4.0857	0.0074
280	4.0930	0.0073
281	4.1003	0.0073
282	4.1077	0.0073
283	4.1150	0.0073
284	4.1222	0.0073
285	4.1295	0.0073
286	4.1368	0.0073
287	4.1440	0.0073
288	4.1513	0.0072

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0072	0.0066	0.0006
2	0.0073	0.0066	0.0006
3	0.0073	0.0067	0.0006
4	0.0073	0.0067	0.0006
5	0.0073	0.0067	0.0006
6	0.0073	0.0067	0.0006

7	0.0074	0.0067	0.0006
8	0.0074	0.0067	0.0006
9	0.0074	0.0068	0.0006
10	0.0074	0.0068	0.0006
11	0.0074	0.0068	0.0006
12	0.0074	0.0068	0.0006
13	0.0075	0.0068	0.0006
14	0.0075	0.0069	0.0006
15	0.0075	0.0069	0.0006
16	0.0075	0.0069	0.0006
17	0.0076	0.0069	0.0006
18	0.0076	0.0069	0.0006
19	0.0076	0.0070	0.0006
20	0.0076	0.0070	0.0006
21	0.0076	0.0070	0.0006
22	0.0077	0.0070	0.0007
23	0.0077	0.0070	0.0007
24	0.0077	0.0071	0.0007
25	0.0077	0.0071	0.0007
26	0.0078	0.0071	0.0007
27	0.0078	0.0071	0.0007
28	0.0078	0.0071	0.0007
29	0.0078	0.0072	0.0007
30	0.0078	0.0072	0.0007
31	0.0079	0.0072	0.0007
32	0.0079	0.0072	0.0007
33	0.0079	0.0073	0.0007
34	0.0079	0.0073	0.0007
35	0.0080	0.0073	0.0007
36	0.0080	0.0073	0.0007
37	0.0080	0.0073	0.0007
38	0.0080	0.0074	0.0007
39	0.0081	0.0074	0.0007
40	0.0081	0.0074	0.0007
41	0.0081	0.0074	0.0007
42	0.0082	0.0075	0.0007
43	0.0082	0.0075	0.0007
44	0.0082	0.0075	0.0007
45	0.0082	0.0075	0.0007
46	0.0083	0.0076	0.0007
47	0.0083	0.0076	0.0007
48	0.0083	0.0076	0.0007
49	0.0084	0.0076	0.0007
50	0.0084	0.0077	0.0007
51	0.0084	0.0077	0.0007
52	0.0084	0.0077	0.0007
53	0.0085	0.0078	0.0007
54	0.0085	0.0078	0.0007
55	0.0085	0.0078	0.0007
56	0.0086	0.0078	0.0007
57	0.0086	0.0079	0.0007
58	0.0086	0.0079	0.0007
59	0.0087	0.0079	0.0007
60	0.0087	0.0079	0.0007
61	0.0087	0.0080	0.0007
62	0.0088	0.0080	0.0007
63	0.0088	0.0080	0.0007
64	0.0088	0.0081	0.0007
65	0.0089	0.0081	0.0008
66	0.0089	0.0081	0.0008
67	0.0089	0.0082	0.0008
68	0.0090	0.0082	0.0008
69	0.0090	0.0082	0.0008
70	0.0090	0.0083	0.0008
71	0.0091	0.0083	0.0008
72	0.0091	0.0083	0.0008
73	0.0092	0.0084	0.0008
74	0.0092	0.0084	0.0008
75	0.0092	0.0084	0.0008
76	0.0093	0.0085	0.0008
77	0.0093	0.0085	0.0008

78	0.0093	0.0085	0.0008
79	0.0094	0.0086	0.0008
80	0.0094	0.0086	0.0008
81	0.0095	0.0087	0.0008
82	0.0095	0.0087	0.0008
83	0.0096	0.0087	0.0008
84	0.0096	0.0088	0.0008
85	0.0096	0.0088	0.0008
86	0.0097	0.0089	0.0008
87	0.0097	0.0089	0.0008
88	0.0098	0.0089	0.0008
89	0.0098	0.0090	0.0008
90	0.0099	0.0090	0.0008
91	0.0099	0.0091	0.0008
92	0.0100	0.0091	0.0008
93	0.0100	0.0092	0.0009
94	0.0101	0.0092	0.0009
95	0.0101	0.0093	0.0009
96	0.0102	0.0093	0.0009
97	0.0102	0.0094	0.0009
98	0.0103	0.0094	0.0009
99	0.0103	0.0095	0.0009
100	0.0104	0.0095	0.0009
101	0.0105	0.0096	0.0009
102	0.0105	0.0096	0.0009
103	0.0106	0.0097	0.0009
104	0.0106	0.0097	0.0009
105	0.0107	0.0098	0.0009
106	0.0107	0.0098	0.0009
107	0.0108	0.0099	0.0009
108	0.0109	0.0099	0.0009
109	0.0109	0.0100	0.0009
110	0.0110	0.0101	0.0009
111	0.0111	0.0101	0.0009
112	0.0111	0.0102	0.0009
113	0.0112	0.0103	0.0010
114	0.0113	0.0103	0.0010
115	0.0114	0.0104	0.0010
116	0.0114	0.0104	0.0010
117	0.0115	0.0105	0.0010
118	0.0116	0.0106	0.0010
119	0.0117	0.0107	0.0010
120	0.0117	0.0107	0.0010
121	0.0118	0.0108	0.0010
122	0.0119	0.0109	0.0010
123	0.0120	0.0110	0.0010
124	0.0120	0.0110	0.0010
125	0.0122	0.0111	0.0010
126	0.0122	0.0112	0.0010
127	0.0123	0.0113	0.0010
128	0.0124	0.0114	0.0011
129	0.0125	0.0115	0.0011
130	0.0126	0.0115	0.0011
131	0.0127	0.0117	0.0011
132	0.0128	0.0117	0.0011
133	0.0129	0.0118	0.0011
134	0.0130	0.0119	0.0011
135	0.0132	0.0121	0.0011
136	0.0132	0.0121	0.0011
137	0.0134	0.0123	0.0011
138	0.0135	0.0123	0.0011
139	0.0137	0.0125	0.0012
140	0.0137	0.0126	0.0012
141	0.0139	0.0127	0.0012
142	0.0140	0.0128	0.0012
143	0.0142	0.0130	0.0012
144	0.0143	0.0131	0.0012
145	0.0151	0.0138	0.0013
146	0.0152	0.0139	0.0013
147	0.0154	0.0141	0.0013
148	0.0155	0.0142	0.0013

149	0.0158	0.0144	0.0013
150	0.0159	0.0145	0.0013
151	0.0161	0.0148	0.0014
152	0.0162	0.0149	0.0014
153	0.0165	0.0151	0.0014
154	0.0166	0.0152	0.0014
155	0.0169	0.0155	0.0014
156	0.0171	0.0156	0.0014
157	0.0174	0.0159	0.0015
158	0.0175	0.0160	0.0015
159	0.0178	0.0163	0.0015
160	0.0180	0.0165	0.0015
161	0.0184	0.0168	0.0016
162	0.0186	0.0170	0.0016
163	0.0189	0.0173	0.0016
164	0.0192	0.0175	0.0016
165	0.0196	0.0179	0.0017
166	0.0198	0.0181	0.0017
167	0.0203	0.0186	0.0017
168	0.0206	0.0188	0.0017
169	0.0211	0.0193	0.0018
170	0.0214	0.0196	0.0018
171	0.0220	0.0201	0.0019
172	0.0223	0.0204	0.0019
173	0.0230	0.0211	0.0020
174	0.0234	0.0214	0.0020
175	0.0243	0.0222	0.0021
176	0.0247	0.0226	0.0021
177	0.0257	0.0235	0.0022
178	0.0262	0.0240	0.0022
179	0.0274	0.0251	0.0023
180	0.0281	0.0257	0.0024
181	0.0295	0.0270	0.0025
182	0.0304	0.0278	0.0026
183	0.0323	0.0296	0.0027
184	0.0334	0.0306	0.0028
185	0.0277	0.0253	0.0024
186	0.0292	0.0268	0.0025
187	0.0332	0.0304	0.0028
188	0.0358	0.0328	0.0030
189	0.0431	0.0395	0.0037
190	0.0487	0.0446	0.0041
191	0.0696	0.0637	0.0059
192	0.0957	0.0746	0.0212
193	0.2996	0.0746	0.2250
194	0.0567	0.0519	0.0048
195	0.0390	0.0357	0.0033
196	0.0311	0.0284	0.0026
197	0.0347	0.0317	0.0029
198	0.0313	0.0286	0.0027
199	0.0288	0.0263	0.0024
200	0.0268	0.0245	0.0023
201	0.0252	0.0230	0.0021
202	0.0238	0.0218	0.0020
203	0.0227	0.0208	0.0019
204	0.0217	0.0199	0.0018
205	0.0208	0.0191	0.0018
206	0.0201	0.0184	0.0017
207	0.0194	0.0177	0.0016
208	0.0187	0.0172	0.0016
209	0.0182	0.0166	0.0015
210	0.0177	0.0162	0.0015
211	0.0172	0.0157	0.0015
212	0.0168	0.0153	0.0014
213	0.0164	0.0150	0.0014
214	0.0160	0.0146	0.0014
215	0.0156	0.0143	0.0013
216	0.0153	0.0140	0.0013
217	0.0144	0.0132	0.0012
218	0.0141	0.0129	0.0012
219	0.0138	0.0126	0.0012

220	0.0136	0.0124	0.0012
221	0.0133	0.0122	0.0011
222	0.0131	0.0120	0.0011
223	0.0129	0.0118	0.0011
224	0.0127	0.0116	0.0011
225	0.0125	0.0114	0.0011
226	0.0123	0.0112	0.0010
227	0.0121	0.0111	0.0010
228	0.0119	0.0109	0.0010
229	0.0118	0.0108	0.0010
230	0.0116	0.0106	0.0010
231	0.0115	0.0105	0.0010
232	0.0113	0.0103	0.0010
233	0.0112	0.0102	0.0009
234	0.0110	0.0101	0.0009
235	0.0109	0.0100	0.0009
236	0.0108	0.0099	0.0009
237	0.0106	0.0097	0.0009
238	0.0105	0.0096	0.0009
239	0.0104	0.0095	0.0009
240	0.0103	0.0094	0.0009
241	0.0102	0.0093	0.0009
242	0.0101	0.0092	0.0009
243	0.0100	0.0091	0.0008
244	0.0099	0.0091	0.0008
245	0.0098	0.0090	0.0008
246	0.0097	0.0089	0.0008
247	0.0096	0.0088	0.0008
248	0.0095	0.0087	0.0008
249	0.0094	0.0086	0.0008
250	0.0094	0.0086	0.0008
251	0.0093	0.0085	0.0008
252	0.0092	0.0084	0.0008
253	0.0091	0.0084	0.0008
254	0.0091	0.0083	0.0008
255	0.0090	0.0082	0.0008
256	0.0089	0.0082	0.0008
257	0.0088	0.0081	0.0008
258	0.0088	0.0080	0.0007
259	0.0087	0.0080	0.0007
260	0.0086	0.0079	0.0007
261	0.0086	0.0079	0.0007
262	0.0085	0.0078	0.0007
263	0.0085	0.0077	0.0007
264	0.0084	0.0077	0.0007
265	0.0083	0.0076	0.0007
266	0.0083	0.0076	0.0007
267	0.0082	0.0075	0.0007
268	0.0082	0.0075	0.0007
269	0.0081	0.0074	0.0007
270	0.0081	0.0074	0.0007
271	0.0080	0.0073	0.0007
272	0.0080	0.0073	0.0007
273	0.0079	0.0072	0.0007
274	0.0079	0.0072	0.0007
275	0.0078	0.0072	0.0007
276	0.0078	0.0071	0.0007
277	0.0077	0.0071	0.0007
278	0.0077	0.0070	0.0007
279	0.0076	0.0070	0.0006
280	0.0076	0.0069	0.0006
281	0.0075	0.0069	0.0006
282	0.0075	0.0069	0.0006
283	0.0075	0.0068	0.0006
284	0.0074	0.0068	0.0006
285	0.0074	0.0068	0.0006
286	0.0073	0.0067	0.0006
287	0.0073	0.0067	0.0006
288	0.0073	0.0066	0.0006

Total soil rain loss = 3.59(In)
Total effective rainfall = 0.57(In)
Peak flow rate in flood hydrograph = 3.11(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	0.0001	0.01	Q				
0+20	0.0002	0.02	Q				
0+25	0.0004	0.02	Q				
0+30	0.0006	0.03	Q				
0+35	0.0007	0.03	Q				
0+40	0.0009	0.03	Q				
0+45	0.0011	0.03	Q				
0+50	0.0013	0.03	Q				
0+55	0.0015	0.03	Q				
1+ 0	0.0017	0.03	Q				
1+ 5	0.0019	0.03	Q				
1+10	0.0021	0.03	Q				
1+15	0.0022	0.03	Q				
1+20	0.0024	0.03	Q				
1+25	0.0026	0.03	Q				
1+30	0.0028	0.03	Q				
1+35	0.0030	0.03	Q				
1+40	0.0032	0.03	Q				
1+45	0.0034	0.03	Q				
1+50	0.0036	0.03	Q				
1+55	0.0038	0.03	Q				
2+ 0	0.0040	0.03	Q				
2+ 5	0.0042	0.03	Q				
2+10	0.0044	0.03	QV				
2+15	0.0046	0.03	QV				
2+20	0.0048	0.03	QV				
2+25	0.0049	0.03	QV				
2+30	0.0051	0.03	QV				
2+35	0.0053	0.03	QV				
2+40	0.0055	0.03	QV				
2+45	0.0057	0.03	QV				
2+50	0.0059	0.03	QV				
2+55	0.0061	0.03	QV				
3+ 0	0.0063	0.03	QV				
3+ 5	0.0065	0.03	QV				
3+10	0.0067	0.03	QV				
3+15	0.0070	0.03	QV				
3+20	0.0072	0.03	QV				
3+25	0.0074	0.03	QV				
3+30	0.0076	0.03	QV				
3+35	0.0078	0.03	QV				
3+40	0.0080	0.03	QV				
3+45	0.0082	0.03	QV				
3+50	0.0084	0.03	QV				
3+55	0.0086	0.03	Q V				
4+ 0	0.0088	0.03	Q V				
4+ 5	0.0090	0.03	Q V				
4+10	0.0092	0.03	Q V				
4+15	0.0094	0.03	Q V				
4+20	0.0097	0.03	Q V				
4+25	0.0099	0.03	Q V				
4+30	0.0101	0.03	Q V				
4+35	0.0103	0.03	Q V				
4+40	0.0105	0.03	Q V				
4+45	0.0107	0.03	Q V				
4+50	0.0109	0.03	Q V				

4+55	0.0112	0.03	Q V	|	|	|	|
5+ 0	0.0114	0.03	Q V	|	|	|	|
5+ 5	0.0116	0.03	Q V	|	|	|	|
5+10	0.0118	0.03	Q V	|	|	|	|
5+15	0.0120	0.03	Q V	|	|	|	|
5+20	0.0123	0.03	Q V	|	|	|	|
5+25	0.0125	0.03	Q V	|	|	|	|
5+30	0.0127	0.03	Q V	|	|	|	|
5+35	0.0129	0.03	Q V	|	|	|	|
5+40	0.0132	0.03	Q V	|	|	|	|
5+45	0.0134	0.03	Q V	|	|	|	|
5+50	0.0136	0.03	Q V	|	|	|	|
5+55	0.0138	0.03	Q V	|	|	|	|
6+ 0	0.0141	0.03	Q V	|	|	|	|
6+ 5	0.0143	0.03	Q V	|	|	|	|
6+10	0.0145	0.03	Q V	|	|	|	|
6+15	0.0148	0.03	Q V	|	|	|	|
6+20	0.0150	0.03	Q V	|	|	|	|
6+25	0.0152	0.03	Q V	|	|	|	|
6+30	0.0155	0.03	Q V	|	|	|	|
6+35	0.0157	0.03	Q V	|	|	|	|
6+40	0.0159	0.03	Q V	|	|	|	|
6+45	0.0162	0.03	Q V	|	|	|	|
6+50	0.0164	0.03	Q V	|	|	|	|
6+55	0.0166	0.03	Q V	|	|	|	|
7+ 0	0.0169	0.03	Q V	|	|	|	|
7+ 5	0.0171	0.04	Q V	|	|	|	|
7+10	0.0174	0.04	Q V	|	|	|	|
7+15	0.0176	0.04	Q V	|	|	|	|
7+20	0.0179	0.04	Q V	|	|	|	|
7+25	0.0181	0.04	Q V	|	|	|	|
7+30	0.0184	0.04	Q V	|	|	|	|
7+35	0.0186	0.04	Q V	|	|	|	|
7+40	0.0188	0.04	Q V	|	|	|	|
7+45	0.0191	0.04	Q V	|	|	|	|
7+50	0.0194	0.04	Q V	|	|	|	|
7+55	0.0196	0.04	Q V	|	|	|	|
8+ 0	0.0199	0.04	Q V	|	|	|	|
8+ 5	0.0201	0.04	Q V	|	|	|	|
8+10	0.0204	0.04	Q V	|	|	|	|
8+15	0.0206	0.04	Q V	|	|	|	|
8+20	0.0209	0.04	Q V	|	|	|	|
8+25	0.0212	0.04	Q V	|	|	|	|
8+30	0.0214	0.04	Q V	|	|	|	|
8+35	0.0217	0.04	Q V	|	|	|	|
8+40	0.0219	0.04	Q V	|	|	|	|
8+45	0.0222	0.04	Q V	|	|	|	|
8+50	0.0225	0.04	Q V	|	|	|	|
8+55	0.0227	0.04	Q V	|	|	|	|
9+ 0	0.0230	0.04	Q V	|	|	|	|
9+ 5	0.0233	0.04	Q V	|	|	|	|
9+10	0.0236	0.04	Q V	|	|	|	|
9+15	0.0238	0.04	Q V	|	|	|	|
9+20	0.0241	0.04	Q V	|	|	|	|
9+25	0.0244	0.04	Q V	|	|	|	|
9+30	0.0247	0.04	Q V	|	|	|	|
9+35	0.0250	0.04	Q V	|	|	|	|
9+40	0.0252	0.04	Q V	|	|	|	|
9+45	0.0255	0.04	Q V	|	|	|	|
9+50	0.0258	0.04	Q V	|	|	|	|
9+55	0.0261	0.04	Q V	|	|	|	|
10+ 0	0.0264	0.04	Q V	|	|	|	|
10+ 5	0.0267	0.04	Q V	|	|	|	|
10+10	0.0270	0.04	Q V	|	|	|	|
10+15	0.0273	0.04	Q V	|	|	|	|
10+20	0.0276	0.04	Q V	|	|	|	|
10+25	0.0279	0.04	Q V	|	|	|	|
10+30	0.0282	0.04	Q V	|	|	|	|
10+35	0.0285	0.04	Q V	|	|	|	|
10+40	0.0288	0.04	Q V	|	|	|	|
10+45	0.0291	0.05	Q V	|	|	|	|

10+50	0.0294	0.05	Q V	|	|	|	|
10+55	0.0298	0.05	Q V	|	|	|	|
11+ 0	0.0301	0.05	Q V	|	|	|	|
11+ 5	0.0304	0.05	Q V	|	|	|	|
11+10	0.0307	0.05	Q V	|	|	|	|
11+15	0.0310	0.05	Q V	|	|	|	|
11+20	0.0314	0.05	Q V	|	|	|	|
11+25	0.0317	0.05	Q V	|	|	|	|
11+30	0.0320	0.05	Q V	|	|	|	|
11+35	0.0324	0.05	Q V	|	|	|	|
11+40	0.0327	0.05	Q V	|	|	|	|
11+45	0.0331	0.05	Q V	|	|	|	|
11+50	0.0334	0.05	Q V	|	|	|	|
11+55	0.0337	0.05	Q V	|	|	|	|
12+ 0	0.0341	0.05	Q V	|	|	|	|
12+ 5	0.0345	0.05	Q V	|	|	|	|
12+10	0.0348	0.05	Q V	|	|	|	|
12+15	0.0352	0.05	Q V	|	|	|	|
12+20	0.0356	0.05	Q V	|	|	|	|
12+25	0.0360	0.06	Q V	|	|	|	|
12+30	0.0363	0.06	Q V	|	|	|	|
12+35	0.0367	0.06	Q V	|	|	|	|
12+40	0.0371	0.06	Q V	|	|	|	|
12+45	0.0375	0.06	Q V	|	|	|	|
12+50	0.0380	0.06	Q V	|	|	|	|
12+55	0.0384	0.06	Q V	|	|	|	|
13+ 0	0.0388	0.06	Q V	|	|	|	|
13+ 5	0.0392	0.06	Q V	|	|	|	|
13+10	0.0396	0.06	Q V	|	|	|	|
13+15	0.0401	0.06	Q V	|	|	|	|
13+20	0.0405	0.06	Q V	|	|	|	|
13+25	0.0410	0.06	Q V	|	|	|	|
13+30	0.0414	0.07	Q V	|	|	|	|
13+35	0.0419	0.07	Q V	|	|	|	|
13+40	0.0423	0.07	Q V	|	|	|	|
13+45	0.0428	0.07	Q V	|	|	|	|
13+50	0.0433	0.07	Q V	|	|	|	|
13+55	0.0438	0.07	Q V	|	|	|	|
14+ 0	0.0443	0.07	Q V	|	|	|	|
14+ 5	0.0448	0.07	Q V	|	|	|	|
14+10	0.0453	0.07	Q V	|	|	|	|
14+15	0.0458	0.08	Q V	|	|	|	|
14+20	0.0464	0.08	Q V	|	|	|	|
14+25	0.0469	0.08	Q V	|	|	|	|
14+30	0.0475	0.08	Q V	|	|	|	|
14+35	0.0480	0.08	Q V	|	|	|	|
14+40	0.0486	0.08	Q V	|	|	|	|
14+45	0.0492	0.09	Q V	|	|	|	|
14+50	0.0498	0.09	Q V	|	|	|	|
14+55	0.0505	0.09	Q V	|	|	|	|
15+ 0	0.0511	0.09	Q V	|	|	|	|
15+ 5	0.0518	0.10	Q V	|	|	|	|
15+10	0.0525	0.10	Q V	|	|	|	|
15+15	0.0532	0.10	Q V	|	|	|	|
15+20	0.0539	0.11	Q V	|	|	|	|
15+25	0.0547	0.11	Q V	|	|	|	|
15+30	0.0555	0.11	Q V	|	|	|	|
15+35	0.0563	0.11	Q V	|	|	|	|
15+40	0.0571	0.11	Q V	|	|	|	|
15+45	0.0579	0.12	Q V	|	|	|	|
15+50	0.0587	0.13	Q V	|	|	|	|
15+55	0.0597	0.14	Q V	|	|	|	|
16+ 0	0.0610	0.18	Q V	|	|	|	|
16+ 5	0.0646	0.52	Q V	|	|	|	|
16+10	0.0756	1.60	Q V	|	|	|	|
16+15	0.0943	2.72	Q V	|	|	|	|
16+20	0.1158	3.11	Q V	|	|	|	|
16+25	0.1288	1.89	Q V	|	|	|	|
16+30	0.1355	0.97	Q V	|	|	|	|
16+35	0.1390	0.51	Q V	|	|	|	|
16+40	0.1407	0.25	Q V	|	|	|	|

16+45	0.1419	0.18	Q	|	|	| V	|
16+50	0.1429	0.14	Q	|	|	| V	|
16+55	0.1435	0.10	Q	|	|	| V	|
17+ 0	0.1442	0.09	Q	|	|	| V	|
17+ 5	0.1448	0.09	Q	|	|	| V	|
17+10	0.1454	0.08	Q	|	|	| V	|
17+15	0.1459	0.08	Q	|	|	| V	|
17+20	0.1465	0.08	Q	|	|	| V	|
17+25	0.1470	0.07	Q	|	|	| V	|
17+30	0.1475	0.07	Q	|	|	| V	|
17+35	0.1480	0.07	Q	|	|	| V	|
17+40	0.1484	0.07	Q	|	|	| V	|
17+45	0.1489	0.07	Q	|	|	| V	|
17+50	0.1493	0.06	Q	|	|	| V	|
17+55	0.1497	0.06	Q	|	|	| V	|
18+ 0	0.1501	0.06	Q	|	|	| V	|
18+ 5	0.1506	0.06	Q	|	|	| V	|
18+10	0.1510	0.06	Q	|	|	| V	|
18+15	0.1513	0.06	Q	|	|	| V	|
18+20	0.1517	0.05	Q	|	|	| V	|
18+25	0.1521	0.05	Q	|	|	| V	|
18+30	0.1524	0.05	Q	|	|	| V	|
18+35	0.1528	0.05	Q	|	|	| V	|
18+40	0.1531	0.05	Q	|	|	| V	|
18+45	0.1534	0.05	Q	|	|	| V	|
18+50	0.1538	0.05	Q	|	|	| V	|
18+55	0.1541	0.05	Q	|	|	| V	|
19+ 0	0.1544	0.05	Q	|	|	| V	|
19+ 5	0.1547	0.05	Q	|	|	| V	|
19+10	0.1550	0.04	Q	|	|	| V	|
19+15	0.1553	0.04	Q	|	|	| V	|
19+20	0.1556	0.04	Q	|	|	| V	|
19+25	0.1559	0.04	Q	|	|	| V	|
19+30	0.1562	0.04	Q	|	|	| V	|
19+35	0.1565	0.04	Q	|	|	| V	|
19+40	0.1568	0.04	Q	|	|	| V	|
19+45	0.1571	0.04	Q	|	|	| V	|
19+50	0.1573	0.04	Q	|	|	| V	|
19+55	0.1576	0.04	Q	|	|	| V	|
20+ 0	0.1579	0.04	Q	|	|	| V	|
20+ 5	0.1581	0.04	Q	|	|	| V	|
20+10	0.1584	0.04	Q	|	|	| V	|
20+15	0.1587	0.04	Q	|	|	| V	|
20+20	0.1589	0.04	Q	|	|	| V	|
20+25	0.1592	0.04	Q	|	|	| V	|
20+30	0.1594	0.04	Q	|	|	| V	|
20+35	0.1597	0.04	Q	|	|	| V	|
20+40	0.1599	0.04	Q	|	|	| V	|
20+45	0.1602	0.04	Q	|	|	| V	|
20+50	0.1604	0.04	Q	|	|	| V	|
20+55	0.1607	0.04	Q	|	|	| V	|
21+ 0	0.1609	0.03	Q	|	|	| V	|
21+ 5	0.1612	0.03	Q	|	|	| V	|
21+10	0.1614	0.03	Q	|	|	| V	|
21+15	0.1616	0.03	Q	|	|	| V	|
21+20	0.1619	0.03	Q	|	|	| V	|
21+25	0.1621	0.03	Q	|	|	| V	|
21+30	0.1623	0.03	Q	|	|	| V	|
21+35	0.1625	0.03	Q	|	|	| V	|
21+40	0.1628	0.03	Q	|	|	| V	|
21+45	0.1630	0.03	Q	|	|	| V	|
21+50	0.1632	0.03	Q	|	|	| V	|
21+55	0.1634	0.03	Q	|	|	| V	|
22+ 0	0.1636	0.03	Q	|	|	| V	|
22+ 5	0.1639	0.03	Q	|	|	| V	|
22+10	0.1641	0.03	Q	|	|	| V	|
22+15	0.1643	0.03	Q	|	|	| V	|
22+20	0.1645	0.03	Q	|	|	| V	|
22+25	0.1647	0.03	Q	|	|	| V	|
22+30	0.1649	0.03	Q	|	|	| V	|
22+35	0.1651	0.03	Q	|	|	| V	|

22+40	0.1653	0.03	Q				V
22+45	0.1655	0.03	Q				V
22+50	0.1657	0.03	Q				V
22+55	0.1659	0.03	Q				V
23+ 0	0.1661	0.03	Q				V
23+ 5	0.1663	0.03	Q				V
23+10	0.1665	0.03	Q				V
23+15	0.1667	0.03	Q				V
23+20	0.1669	0.03	Q				V
23+25	0.1671	0.03	Q				V
23+30	0.1673	0.03	Q				V
23+35	0.1675	0.03	Q				V
23+40	0.1677	0.03	Q				V
23+45	0.1679	0.03	Q				V
23+50	0.1681	0.03	Q				V
23+55	0.1683	0.03	Q				V
24+ 0	0.1685	0.03	Q				V
24+ 5	0.1686	0.03	Q				V
24+10	0.1688	0.02	Q				V
24+15	0.1689	0.02	Q				V
24+20	0.1690	0.01	Q				V
24+25	0.1690	0.00	Q				V
24+30	0.1690	0.00	Q				V
24+35	0.1690	0.00	Q				V
24+40	0.1690	0.00	Q				V
24+45	0.1690	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

Study date 01/29/24

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

Program License Serial Number 6320

235094 - 17783 & 17805 TAYLOR AVENUE
EXISTING CONDITIONS
10-YEAR, 24-HOUR STORM
BY: KBO DATE: 01-29-24

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
3.61	1	0.93
Rainfall data for year 2		
3.61	6	1.63
Rainfall data for year 2		
3.61	24	3.02
Rainfall data for year 100		
3.61	1	1.33
Rainfall data for year 100		
3.61	6	3.51
Rainfall data for year 100		
3.61	24	7.85

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******** 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)
50.0	50.0	3.61	1.000	0.810	0.910	0.737

Area-averaged adjusted loss rate Fm (In/Hr) = 0.737

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC2)	S	Pervious Yield Fr
3.29	0.910	50.0	50.0	10.00	0.139
0.32	0.090	98.0	98.0	0.20	0.953

Area-averaged catchment yield fraction, Y = 0.212
Area-averaged low loss fraction, Yb = 0.788
User entry of time of concentration = 0.297 (hours)
++
Watershed area = 3.61(Ac.)
Catchment Lag time = 0.238 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.0730
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.737(In/Hr)
Average low loss rate fraction (Yb) = 0.788 (decimal)
VALLEY DEVELOPED S-Graph Selected
Computed peak 5-minute rainfall = 0.344(In)
Computed peak 30-minute rainfall = 0.705(In)
Specified peak 1-hour rainfall = 0.930(In)
Computed peak 3-hour rainfall = 1.665(In)
Specified peak 6-hour rainfall = 2.403(In)
Specified peak 24-hour rainfall = 5.007(In)

Rainfall depth area reduction factors:
Using a total area of 3.61(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.344(In)
30-minute factor = 1.000 Adjusted rainfall = 0.705(In)
1-hour factor = 1.000 Adjusted rainfall = 0.930(In)
3-hour factor = 1.000 Adjusted rainfall = 1.665(In)
6-hour factor = 1.000 Adjusted rainfall = 2.403(In)
24-hour factor = 1.000 Adjusted rainfall = 5.007(In)

U n i t H y d r o g r a p h
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Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 43.66 (CFS))	
1	2.457	1.073
2	15.166	5.548
3	39.107	10.452
4	68.156	12.682
5	85.291	7.481
6	93.514	3.590
7	97.331	1.666
8	98.535	0.526
9	99.166	0.276
10	100.000	0.138

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.3441	0.3441
2	0.4541	0.1100
3	0.5341	0.0800
4	0.5992	0.0651
5	0.6551	0.0559
6	0.7047	0.0496
7	0.7495	0.0448
8	0.7906	0.0411
9	0.8288	0.0381
10	0.8644	0.0357
11	0.8980	0.0336
12	0.9298	0.0318
13	0.9701	0.0403
14	1.0090	0.0389
15	1.0466	0.0376

16	1.0830	0.0364
17	1.1184	0.0354
18	1.1528	0.0344
19	1.1863	0.0335
20	1.2190	0.0327
21	1.2509	0.0319
22	1.2822	0.0312
23	1.3127	0.0306
24	1.3427	0.0299
25	1.3720	0.0294
26	1.4009	0.0288
27	1.4292	0.0283
28	1.4570	0.0278
29	1.4843	0.0274
30	1.5112	0.0269
31	1.5377	0.0265
32	1.5638	0.0261
33	1.5896	0.0257
34	1.6149	0.0254
35	1.6399	0.0250
36	1.6646	0.0247
37	1.6889	0.0243
38	1.7130	0.0240
39	1.7367	0.0237
40	1.7602	0.0235
41	1.7834	0.0232
42	1.8063	0.0229
43	1.8289	0.0227
44	1.8514	0.0224
45	1.8735	0.0222
46	1.8955	0.0219
47	1.9172	0.0217
48	1.9387	0.0215
49	1.9600	0.0213
50	1.9811	0.0211
51	2.0020	0.0209
52	2.0227	0.0207
53	2.0432	0.0205
54	2.0636	0.0203
55	2.0837	0.0202
56	2.1037	0.0200
57	2.1236	0.0198
58	2.1432	0.0197
59	2.1627	0.0195
60	2.1821	0.0193
61	2.2013	0.0192
62	2.2203	0.0191
63	2.2392	0.0189
64	2.2580	0.0188
65	2.2766	0.0186
66	2.2951	0.0185
67	2.3135	0.0184
68	2.3317	0.0182
69	2.3498	0.0181
70	2.3678	0.0180
71	2.3857	0.0179
72	2.4034	0.0177
73	2.4210	0.0176
74	2.4385	0.0175
75	2.4559	0.0174
76	2.4732	0.0173
77	2.4904	0.0172
78	2.5075	0.0171
79	2.5244	0.0170
80	2.5413	0.0169
81	2.5581	0.0168
82	2.5747	0.0167
83	2.5913	0.0166
84	2.6078	0.0165
85	2.6242	0.0164
86	2.6405	0.0163

87	2.6567	0.0162
88	2.6728	0.0161
89	2.6889	0.0160
90	2.7048	0.0160
91	2.7207	0.0159
92	2.7365	0.0158
93	2.7522	0.0157
94	2.7678	0.0156
95	2.7834	0.0156
96	2.7988	0.0155
97	2.8142	0.0154
98	2.8296	0.0153
99	2.8448	0.0153
100	2.8600	0.0152
101	2.8751	0.0151
102	2.8901	0.0150
103	2.9051	0.0150
104	2.9200	0.0149
105	2.9348	0.0148
106	2.9496	0.0148
107	2.9643	0.0147
108	2.9789	0.0146
109	2.9935	0.0146
110	3.0080	0.0145
111	3.0225	0.0144
112	3.0368	0.0144
113	3.0512	0.0143
114	3.0654	0.0143
115	3.0796	0.0142
116	3.0938	0.0141
117	3.1079	0.0141
118	3.1219	0.0140
119	3.1359	0.0140
120	3.1498	0.0139
121	3.1637	0.0139
122	3.1775	0.0138
123	3.1913	0.0138
124	3.2050	0.0137
125	3.2186	0.0137
126	3.2322	0.0136
127	3.2458	0.0136
128	3.2593	0.0135
129	3.2728	0.0135
130	3.2862	0.0134
131	3.2995	0.0134
132	3.3128	0.0133
133	3.3261	0.0133
134	3.3393	0.0132
135	3.3525	0.0132
136	3.3656	0.0131
137	3.3787	0.0131
138	3.3917	0.0130
139	3.4047	0.0130
140	3.4177	0.0129
141	3.4306	0.0129
142	3.4434	0.0129
143	3.4562	0.0128
144	3.4690	0.0128
145	3.4818	0.0127
146	3.4944	0.0127
147	3.5071	0.0127
148	3.5197	0.0126
149	3.5323	0.0126
150	3.5448	0.0125
151	3.5573	0.0125
152	3.5698	0.0125
153	3.5822	0.0124
154	3.5946	0.0124
155	3.6069	0.0123
156	3.6192	0.0123
157	3.6315	0.0123

158	3.6437	0.0122
159	3.6559	0.0122
160	3.6680	0.0122
161	3.6801	0.0121
162	3.6922	0.0121
163	3.7043	0.0120
164	3.7163	0.0120
165	3.7283	0.0120
166	3.7402	0.0119
167	3.7521	0.0119
168	3.7640	0.0119
169	3.7759	0.0118
170	3.7877	0.0118
171	3.7995	0.0118
172	3.8112	0.0117
173	3.8229	0.0117
174	3.8346	0.0117
175	3.8463	0.0117
176	3.8579	0.0116
177	3.8695	0.0116
178	3.8810	0.0116
179	3.8925	0.0115
180	3.9040	0.0115
181	3.9155	0.0115
182	3.9270	0.0114
183	3.9384	0.0114
184	3.9497	0.0114
185	3.9611	0.0114
186	3.9724	0.0113
187	3.9837	0.0113
188	3.9950	0.0113
189	4.0062	0.0112
190	4.0174	0.0112
191	4.0286	0.0112
192	4.0398	0.0112
193	4.0509	0.0111
194	4.0620	0.0111
195	4.0730	0.0111
196	4.0841	0.0110
197	4.0951	0.0110
198	4.1061	0.0110
199	4.1171	0.0110
200	4.1280	0.0109
201	4.1389	0.0109
202	4.1498	0.0109
203	4.1607	0.0109
204	4.1715	0.0108
205	4.1823	0.0108
206	4.1931	0.0108
207	4.2039	0.0108
208	4.2146	0.0107
209	4.2253	0.0107
210	4.2360	0.0107
211	4.2467	0.0107
212	4.2573	0.0106
213	4.2680	0.0106
214	4.2786	0.0106
215	4.2891	0.0106
216	4.2997	0.0106
217	4.3102	0.0105
218	4.3207	0.0105
219	4.3312	0.0105
220	4.3417	0.0105
221	4.3521	0.0104
222	4.3625	0.0104
223	4.3729	0.0104
224	4.3833	0.0104
225	4.3936	0.0103
226	4.4040	0.0103
227	4.4143	0.0103
228	4.4245	0.0103

229	4.4348	0.0103
230	4.4451	0.0102
231	4.4553	0.0102
232	4.4655	0.0102
233	4.4757	0.0102
234	4.4858	0.0102
235	4.4960	0.0101
236	4.5061	0.0101
237	4.5162	0.0101
238	4.5262	0.0101
239	4.5363	0.0101
240	4.5463	0.0100
241	4.5564	0.0100
242	4.5664	0.0100
243	4.5763	0.0100
244	4.5863	0.0100
245	4.5963	0.0099
246	4.6062	0.0099
247	4.6161	0.0099
248	4.6260	0.0099
249	4.6358	0.0099
250	4.6457	0.0098
251	4.6555	0.0098
252	4.6653	0.0098
253	4.6751	0.0098
254	4.6849	0.0098
255	4.6946	0.0098
256	4.7044	0.0097
257	4.7141	0.0097
258	4.7238	0.0097
259	4.7335	0.0097
260	4.7432	0.0097
261	4.7528	0.0096
262	4.7624	0.0096
263	4.7721	0.0096
264	4.7816	0.0096
265	4.7912	0.0096
266	4.8008	0.0096
267	4.8103	0.0095
268	4.8199	0.0095
269	4.8294	0.0095
270	4.8389	0.0095
271	4.8484	0.0095
272	4.8578	0.0095
273	4.8673	0.0094
274	4.8767	0.0094
275	4.8861	0.0094
276	4.8955	0.0094
277	4.9049	0.0094
278	4.9143	0.0094
279	4.9236	0.0094
280	4.9330	0.0093
281	4.9423	0.0093
282	4.9516	0.0093
283	4.9609	0.0093
284	4.9701	0.0093
285	4.9794	0.0093
286	4.9886	0.0092
287	4.9979	0.0092
288	5.0071	0.0092

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0092	0.0073	0.0020
2	0.0092	0.0073	0.0020
3	0.0093	0.0073	0.0020
4	0.0093	0.0073	0.0020
5	0.0093	0.0073	0.0020
6	0.0093	0.0073	0.0020

7	0.0094	0.0074	0.0020
8	0.0094	0.0074	0.0020
9	0.0094	0.0074	0.0020
10	0.0094	0.0074	0.0020
11	0.0094	0.0074	0.0020
12	0.0095	0.0075	0.0020
13	0.0095	0.0075	0.0020
14	0.0095	0.0075	0.0020
15	0.0095	0.0075	0.0020
16	0.0096	0.0075	0.0020
17	0.0096	0.0076	0.0020
18	0.0096	0.0076	0.0020
19	0.0096	0.0076	0.0020
20	0.0097	0.0076	0.0021
21	0.0097	0.0076	0.0021
22	0.0097	0.0077	0.0021
23	0.0098	0.0077	0.0021
24	0.0098	0.0077	0.0021
25	0.0098	0.0077	0.0021
26	0.0098	0.0077	0.0021
27	0.0099	0.0078	0.0021
28	0.0099	0.0078	0.0021
29	0.0099	0.0078	0.0021
30	0.0099	0.0078	0.0021
31	0.0100	0.0079	0.0021
32	0.0100	0.0079	0.0021
33	0.0100	0.0079	0.0021
34	0.0101	0.0079	0.0021
35	0.0101	0.0080	0.0021
36	0.0101	0.0080	0.0021
37	0.0102	0.0080	0.0022
38	0.0102	0.0080	0.0022
39	0.0102	0.0081	0.0022
40	0.0102	0.0081	0.0022
41	0.0103	0.0081	0.0022
42	0.0103	0.0081	0.0022
43	0.0103	0.0082	0.0022
44	0.0104	0.0082	0.0022
45	0.0104	0.0082	0.0022
46	0.0104	0.0082	0.0022
47	0.0105	0.0083	0.0022
48	0.0105	0.0083	0.0022
49	0.0106	0.0083	0.0022
50	0.0106	0.0083	0.0022
51	0.0106	0.0084	0.0023
52	0.0106	0.0084	0.0023
53	0.0107	0.0084	0.0023
54	0.0107	0.0084	0.0023
55	0.0108	0.0085	0.0023
56	0.0108	0.0085	0.0023
57	0.0108	0.0085	0.0023
58	0.0109	0.0086	0.0023
59	0.0109	0.0086	0.0023
60	0.0109	0.0086	0.0023
61	0.0110	0.0087	0.0023
62	0.0110	0.0087	0.0023
63	0.0111	0.0087	0.0023
64	0.0111	0.0087	0.0024
65	0.0112	0.0088	0.0024
66	0.0112	0.0088	0.0024
67	0.0112	0.0089	0.0024
68	0.0113	0.0089	0.0024
69	0.0113	0.0089	0.0024
70	0.0114	0.0089	0.0024
71	0.0114	0.0090	0.0024
72	0.0114	0.0090	0.0024
73	0.0115	0.0091	0.0024
74	0.0115	0.0091	0.0024
75	0.0116	0.0091	0.0025
76	0.0116	0.0092	0.0025
77	0.0117	0.0092	0.0025

78	0.0117	0.0092	0.0025
79	0.0118	0.0093	0.0025
80	0.0118	0.0093	0.0025
81	0.0119	0.0094	0.0025
82	0.0119	0.0094	0.0025
83	0.0120	0.0094	0.0025
84	0.0120	0.0095	0.0025
85	0.0121	0.0095	0.0026
86	0.0121	0.0095	0.0026
87	0.0122	0.0096	0.0026
88	0.0122	0.0096	0.0026
89	0.0123	0.0097	0.0026
90	0.0123	0.0097	0.0026
91	0.0124	0.0098	0.0026
92	0.0125	0.0098	0.0026
93	0.0125	0.0099	0.0027
94	0.0126	0.0099	0.0027
95	0.0127	0.0100	0.0027
96	0.0127	0.0100	0.0027
97	0.0128	0.0101	0.0027
98	0.0128	0.0101	0.0027
99	0.0129	0.0102	0.0027
100	0.0129	0.0102	0.0027
101	0.0130	0.0103	0.0028
102	0.0131	0.0103	0.0028
103	0.0132	0.0104	0.0028
104	0.0132	0.0104	0.0028
105	0.0133	0.0105	0.0028
106	0.0134	0.0105	0.0028
107	0.0135	0.0106	0.0029
108	0.0135	0.0106	0.0029
109	0.0136	0.0107	0.0029
110	0.0137	0.0108	0.0029
111	0.0138	0.0108	0.0029
112	0.0138	0.0109	0.0029
113	0.0139	0.0110	0.0030
114	0.0140	0.0110	0.0030
115	0.0141	0.0111	0.0030
116	0.0141	0.0111	0.0030
117	0.0143	0.0112	0.0030
118	0.0143	0.0113	0.0030
119	0.0144	0.0114	0.0031
120	0.0145	0.0114	0.0031
121	0.0146	0.0115	0.0031
122	0.0147	0.0116	0.0031
123	0.0148	0.0117	0.0031
124	0.0149	0.0117	0.0032
125	0.0150	0.0118	0.0032
126	0.0151	0.0119	0.0032
127	0.0153	0.0120	0.0032
128	0.0153	0.0121	0.0032
129	0.0155	0.0122	0.0033
130	0.0156	0.0123	0.0033
131	0.0157	0.0124	0.0033
132	0.0158	0.0124	0.0033
133	0.0160	0.0126	0.0034
134	0.0160	0.0126	0.0034
135	0.0162	0.0128	0.0034
136	0.0163	0.0128	0.0035
137	0.0165	0.0130	0.0035
138	0.0166	0.0131	0.0035
139	0.0168	0.0132	0.0036
140	0.0169	0.0133	0.0036
141	0.0171	0.0135	0.0036
142	0.0172	0.0135	0.0036
143	0.0174	0.0137	0.0037
144	0.0175	0.0138	0.0037
145	0.0177	0.0140	0.0038
146	0.0179	0.0141	0.0038
147	0.0181	0.0143	0.0038
148	0.0182	0.0144	0.0039

149	0.0185	0.0146	0.0039
150	0.0186	0.0147	0.0040
151	0.0189	0.0149	0.0040
152	0.0191	0.0150	0.0040
153	0.0193	0.0152	0.0041
154	0.0195	0.0154	0.0041
155	0.0198	0.0156	0.0042
156	0.0200	0.0158	0.0042
157	0.0203	0.0160	0.0043
158	0.0205	0.0162	0.0044
159	0.0209	0.0165	0.0044
160	0.0211	0.0166	0.0045
161	0.0215	0.0169	0.0046
162	0.0217	0.0171	0.0046
163	0.0222	0.0175	0.0047
164	0.0224	0.0177	0.0048
165	0.0229	0.0181	0.0049
166	0.0232	0.0183	0.0049
167	0.0237	0.0187	0.0050
168	0.0240	0.0189	0.0051
169	0.0247	0.0194	0.0052
170	0.0250	0.0197	0.0053
171	0.0257	0.0203	0.0055
172	0.0261	0.0206	0.0055
173	0.0269	0.0212	0.0057
174	0.0274	0.0216	0.0058
175	0.0283	0.0223	0.0060
176	0.0288	0.0227	0.0061
177	0.0299	0.0236	0.0064
178	0.0306	0.0241	0.0065
179	0.0319	0.0252	0.0068
180	0.0327	0.0258	0.0069
181	0.0344	0.0271	0.0073
182	0.0354	0.0279	0.0075
183	0.0376	0.0296	0.0080
184	0.0389	0.0306	0.0082
185	0.0318	0.0251	0.0067
186	0.0336	0.0265	0.0071
187	0.0381	0.0301	0.0081
188	0.0411	0.0324	0.0087
189	0.0496	0.0391	0.0105
190	0.0559	0.0441	0.0119
191	0.0800	0.0614	0.0186
192	0.1100	0.0614	0.0486
193	0.3441	0.0614	0.2828
194	0.0651	0.0513	0.0138
195	0.0448	0.0353	0.0095
196	0.0357	0.0281	0.0076
197	0.0403	0.0318	0.0085
198	0.0364	0.0287	0.0077
199	0.0335	0.0264	0.0071
200	0.0312	0.0246	0.0066
201	0.0294	0.0231	0.0062
202	0.0278	0.0219	0.0059
203	0.0265	0.0209	0.0056
204	0.0254	0.0200	0.0054
205	0.0243	0.0192	0.0052
206	0.0235	0.0185	0.0050
207	0.0227	0.0179	0.0048
208	0.0219	0.0173	0.0047
209	0.0213	0.0168	0.0045
210	0.0207	0.0163	0.0044
211	0.0202	0.0159	0.0043
212	0.0197	0.0155	0.0042
213	0.0192	0.0151	0.0041
214	0.0188	0.0148	0.0040
215	0.0184	0.0145	0.0039
216	0.0180	0.0142	0.0038
217	0.0176	0.0139	0.0037
218	0.0173	0.0136	0.0037
219	0.0170	0.0134	0.0036

220	0.0167	0.0131	0.0035
221	0.0164	0.0129	0.0035
222	0.0161	0.0127	0.0034
223	0.0159	0.0125	0.0034
224	0.0156	0.0123	0.0033
225	0.0154	0.0121	0.0033
226	0.0152	0.0120	0.0032
227	0.0150	0.0118	0.0032
228	0.0148	0.0116	0.0031
229	0.0146	0.0115	0.0031
230	0.0144	0.0113	0.0031
231	0.0142	0.0112	0.0030
232	0.0140	0.0111	0.0030
233	0.0139	0.0109	0.0029
234	0.0137	0.0108	0.0029
235	0.0136	0.0107	0.0029
236	0.0134	0.0106	0.0028
237	0.0133	0.0105	0.0028
238	0.0131	0.0103	0.0028
239	0.0130	0.0102	0.0028
240	0.0129	0.0101	0.0027
241	0.0127	0.0100	0.0027
242	0.0126	0.0099	0.0027
243	0.0125	0.0098	0.0026
244	0.0124	0.0098	0.0026
245	0.0123	0.0097	0.0026
246	0.0122	0.0096	0.0026
247	0.0120	0.0095	0.0026
248	0.0119	0.0094	0.0025
249	0.0118	0.0093	0.0025
250	0.0117	0.0093	0.0025
251	0.0117	0.0092	0.0025
252	0.0116	0.0091	0.0025
253	0.0115	0.0090	0.0024
254	0.0114	0.0090	0.0024
255	0.0113	0.0089	0.0024
256	0.0112	0.0088	0.0024
257	0.0111	0.0088	0.0024
258	0.0110	0.0087	0.0023
259	0.0110	0.0086	0.0023
260	0.0109	0.0086	0.0023
261	0.0108	0.0085	0.0023
262	0.0107	0.0085	0.0023
263	0.0107	0.0084	0.0023
264	0.0106	0.0083	0.0022
265	0.0105	0.0083	0.0022
266	0.0105	0.0082	0.0022
267	0.0104	0.0082	0.0022
268	0.0103	0.0081	0.0022
269	0.0103	0.0081	0.0022
270	0.0102	0.0080	0.0022
271	0.0101	0.0080	0.0022
272	0.0101	0.0079	0.0021
273	0.0100	0.0079	0.0021
274	0.0100	0.0078	0.0021
275	0.0099	0.0078	0.0021
276	0.0098	0.0078	0.0021
277	0.0098	0.0077	0.0021
278	0.0097	0.0077	0.0021
279	0.0097	0.0076	0.0021
280	0.0096	0.0076	0.0020
281	0.0096	0.0075	0.0020
282	0.0095	0.0075	0.0020
283	0.0095	0.0075	0.0020
284	0.0094	0.0074	0.0020
285	0.0094	0.0074	0.0020
286	0.0093	0.0074	0.0020
287	0.0093	0.0073	0.0020
288	0.0092	0.0073	0.0020

Total soil rain loss = 3.71(In)
Total effective rainfall = 1.30(In)
Peak flow rate in flood hydrograph = 4.25(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	0.0001	0.01	Q				
0+15	0.0003	0.03	Q				
0+20	0.0007	0.06	Q				
0+25	0.0012	0.07	Q				
0+30	0.0018	0.08	Q				
0+35	0.0024	0.08	Q				
0+40	0.0029	0.08	Q				
0+45	0.0035	0.09	Q				
0+50	0.0041	0.09	Q				
0+55	0.0047	0.09	Q				
1+ 0	0.0053	0.09	Q				
1+ 5	0.0059	0.09	Q				
1+10	0.0065	0.09	Q				
1+15	0.0071	0.09	Q				
1+20	0.0077	0.09	Q				
1+25	0.0083	0.09	Q				
1+30	0.0089	0.09	Q				
1+35	0.0095	0.09	Q				
1+40	0.0101	0.09	QV				
1+45	0.0108	0.09	QV				
1+50	0.0114	0.09	QV				
1+55	0.0120	0.09	QV				
2+ 0	0.0126	0.09	QV				
2+ 5	0.0132	0.09	QV				
2+10	0.0138	0.09	QV				
2+15	0.0145	0.09	QV				
2+20	0.0151	0.09	QV				
2+25	0.0157	0.09	QV				
2+30	0.0163	0.09	QV				
2+35	0.0170	0.09	QV				
2+40	0.0176	0.09	QV				
2+45	0.0182	0.09	QV				
2+50	0.0188	0.09	QV				
2+55	0.0195	0.09	Q V				
3+ 0	0.0201	0.09	Q V				
3+ 5	0.0208	0.09	Q V				
3+10	0.0214	0.09	Q V				
3+15	0.0220	0.09	Q V				
3+20	0.0227	0.09	Q V				
3+25	0.0233	0.09	Q V				
3+30	0.0240	0.09	Q V				
3+35	0.0246	0.09	Q V				
3+40	0.0253	0.09	Q V				
3+45	0.0259	0.09	Q V				
3+50	0.0266	0.10	Q V				
3+55	0.0273	0.10	Q V				
4+ 0	0.0279	0.10	Q V				
4+ 5	0.0286	0.10	Q V				
4+10	0.0292	0.10	Q V				
4+15	0.0299	0.10	Q V				
4+20	0.0306	0.10	Q V				
4+25	0.0312	0.10	Q V				
4+30	0.0319	0.10	Q V				
4+35	0.0326	0.10	Q V				
4+40	0.0333	0.10	Q V				
4+45	0.0340	0.10	Q V				
4+50	0.0346	0.10	Q V				

4+55	0.0353	0.10	Q	V				
5+ 0	0.0360	0.10	Q	V				
5+ 5	0.0367	0.10	Q	V				
5+10	0.0374	0.10	Q	V				
5+15	0.0381	0.10	Q	V				
5+20	0.0388	0.10	Q	V				
5+25	0.0395	0.10	Q	V				
5+30	0.0402	0.10	Q	V				
5+35	0.0409	0.10	Q	V				
5+40	0.0416	0.10	Q	V				
5+45	0.0423	0.10	Q	V				
5+50	0.0430	0.10	Q	V				
5+55	0.0437	0.10	Q	V				
6+ 0	0.0444	0.10	Q	V				
6+ 5	0.0452	0.10	Q	V				
6+10	0.0459	0.11	Q	V				
6+15	0.0466	0.11	Q	V				
6+20	0.0473	0.11	Q	V				
6+25	0.0481	0.11	Q	V				
6+30	0.0488	0.11	Q	V				
6+35	0.0496	0.11	Q	V				
6+40	0.0503	0.11	Q	V				
6+45	0.0510	0.11	Q	V				
6+50	0.0518	0.11	Q	V				
6+55	0.0525	0.11	Q	V				
7+ 0	0.0533	0.11	Q	V				
7+ 5	0.0540	0.11	Q	V				
7+10	0.0548	0.11	Q	V				
7+15	0.0556	0.11	Q	V				
7+20	0.0563	0.11	Q	V				
7+25	0.0571	0.11	Q	V				
7+30	0.0579	0.11	Q	V				
7+35	0.0587	0.11	Q	V				
7+40	0.0594	0.11	Q	V				
7+45	0.0602	0.11	Q	V				
7+50	0.0610	0.11	Q	V				
7+55	0.0618	0.11	Q	V				
8+ 0	0.0626	0.12	Q	V				
8+ 5	0.0634	0.12	Q	V				
8+10	0.0642	0.12	Q	V				
8+15	0.0650	0.12	Q	V				
8+20	0.0658	0.12	Q	V				
8+25	0.0666	0.12	Q	V				
8+30	0.0674	0.12	Q	V				
8+35	0.0683	0.12	Q	V				
8+40	0.0691	0.12	Q	V				
8+45	0.0699	0.12	Q	V				
8+50	0.0708	0.12	Q	V				
8+55	0.0716	0.12	Q	V				
9+ 0	0.0724	0.12	Q	V				
9+ 5	0.0733	0.12	Q	V				
9+10	0.0741	0.12	Q	V				
9+15	0.0750	0.12	Q	V				
9+20	0.0759	0.13	Q	V				
9+25	0.0767	0.13	Q	V				
9+30	0.0776	0.13	Q	V				
9+35	0.0785	0.13	Q	V				
9+40	0.0794	0.13	Q	V				
9+45	0.0802	0.13	Q	V				
9+50	0.0811	0.13	Q	V				
9+55	0.0820	0.13	Q	V				
10+ 0	0.0829	0.13	Q	V				
10+ 5	0.0839	0.13	Q	V				
10+10	0.0848	0.13	Q	V				
10+15	0.0857	0.13	Q	V				
10+20	0.0866	0.13	Q	V				
10+25	0.0876	0.14	Q	V				
10+30	0.0885	0.14	Q	V				
10+35	0.0894	0.14	Q	V				
10+40	0.0904	0.14	Q	V				
10+45	0.0913	0.14	Q	V				

10+50	0.0923	0.14	Q	V|	|	|	|
10+55	0.0933	0.14	Q	V|	|	|	|
11+ 0	0.0943	0.14	Q	V|	|	|	|
11+ 5	0.0953	0.14	Q	V|	|	|	|
11+10	0.0963	0.14	Q	V|	|	|	|
11+15	0.0973	0.15	Q	V	|	|	|
11+20	0.0983	0.15	Q	V	|	|	|
11+25	0.0993	0.15	Q	V	|	|	|
11+30	0.1003	0.15	Q	V	|	|	|
11+35	0.1014	0.15	Q	V	|	|	|
11+40	0.1024	0.15	Q	V	|	|	|
11+45	0.1034	0.15	Q	V	|	|	|
11+50	0.1045	0.15	Q	V	|	|	|
11+55	0.1056	0.16	Q	V	|	|	|
12+ 0	0.1067	0.16	Q	V	|	|	|
12+ 5	0.1078	0.16	Q	|V	|	|	|
12+10	0.1089	0.16	Q	|V	|	|	|
12+15	0.1100	0.16	Q	|V	|	|	|
12+20	0.1111	0.16	Q	|V	|	|	|
12+25	0.1122	0.16	Q	|V	|	|	|
12+30	0.1134	0.17	Q	|V	|	|	|
12+35	0.1145	0.17	Q	|V	|	|	|
12+40	0.1157	0.17	Q	|V	|	|	|
12+45	0.1169	0.17	Q	| V	|	|	|
12+50	0.1181	0.17	Q	| V	|	|	|
12+55	0.1193	0.18	Q	| V	|	|	|
13+ 0	0.1205	0.18	Q	| V	|	|	|
13+ 5	0.1218	0.18	Q	| V	|	|	|
13+10	0.1230	0.18	Q	| V	|	|	|
13+15	0.1243	0.18	Q	| V	|	|	|
13+20	0.1256	0.19	Q	| V	|	|	|
13+25	0.1269	0.19	Q	| V	|	|	|
13+30	0.1282	0.19	Q	| V	|	|	|
13+35	0.1296	0.19	Q	| V	|	|	|
13+40	0.1309	0.20	Q	| V	|	|	|
13+45	0.1323	0.20	Q	| V	|	|	|
13+50	0.1337	0.20	Q	| V	|	|	|
13+55	0.1351	0.21	Q	| V	|	|	|
14+ 0	0.1366	0.21	Q	| V	|	|	|
14+ 5	0.1381	0.21	Q	| V	|	|	|
14+10	0.1396	0.22	Q	| V	|	|	|
14+15	0.1411	0.22	Q	| V	|	|	|
14+20	0.1427	0.23	Q	| V	|	|	|
14+25	0.1443	0.23	Q	| V	|	|	|
14+30	0.1459	0.24	Q	| V	|	|	|
14+35	0.1476	0.24	Q	| V	|	|	|
14+40	0.1493	0.25	Q	| V	|	|	|
14+45	0.1510	0.25	|Q	| V	|	|	|
14+50	0.1528	0.26	|Q	| V	|	|	|
14+55	0.1546	0.27	|Q	| V	|	|	|
15+ 0	0.1565	0.28	|Q	| V	|	|	|
15+ 5	0.1585	0.28	|Q	| V	|	|	|
15+10	0.1605	0.29	|Q	| V	|	|	|
15+15	0.1626	0.30	|Q	| V	|	|	|
15+20	0.1648	0.32	|Q	| V	|	|	|
15+25	0.1671	0.33	|Q	| V	|	|	|
15+30	0.1694	0.33	|Q	| V	|	|	|
15+35	0.1716	0.33	|Q	| V	|	|	|
15+40	0.1738	0.32	|Q	| V	|	|	|
15+45	0.1762	0.33	|Q	| V	|	|	|
15+50	0.1787	0.36	|Q	| V	|	|	|
15+55	0.1815	0.41	|Q	| V	|	|	|
16+ 0	0.1851	0.53	| Q	| V	|	|	|
16+ 5	0.1923	1.05	| Q	| V	|	|	|
16+10	0.2094	2.47	| Q	|	V	|	|
16+15	0.2360	3.86	| |	| Q	| V	|	|
16+20	0.2653	4.25	| |	| Q	| V	|	|
16+25	0.2835	2.66	| |	| Q |	| | V	|	|
16+30	0.2937	1.47	| |	| Q	| |	| V |	|
16+35	0.2996	0.86	| |	| Q	| |	| V |	|
16+40	0.3031	0.51	| |	| Q	| |	| |	|V	|

16+45	0.3060	0.41	|Q	|	|	|V	|
16+50	0.3084	0.35	|Q	|	|	|V	|
16+55	0.3104	0.29	|Q	|	|	|V	|
17+ 0	0.3123	0.27	|Q	|	|	| V	|
17+ 5	0.3141	0.26	|Q	|	|	| V	|
17+10	0.3158	0.25	Q	|	|	| V	|
17+15	0.3174	0.24	Q	|	|	| V	|
17+20	0.3189	0.23	Q	|	|	| V	|
17+25	0.3204	0.22	Q	|	|	| V	|
17+30	0.3219	0.21	Q	|	|	| V	|
17+35	0.3233	0.20	Q	|	|	| V	|
17+40	0.3246	0.20	Q	|	|	| V	|
17+45	0.3259	0.19	Q	|	|	| V	|
17+50	0.3272	0.19	Q	|	|	| V	|
17+55	0.3285	0.18	Q	|	|	| V	|
18+ 0	0.3297	0.18	Q	|	|	| V	|
18+ 5	0.3309	0.17	Q	|	|	| V	|
18+10	0.3320	0.17	Q	|	|	| V	|
18+15	0.3332	0.17	Q	|	|	| V	|
18+20	0.3343	0.16	Q	|	|	| V	|
18+25	0.3354	0.16	Q	|	|	| V	|
18+30	0.3365	0.16	Q	|	|	| V	|
18+35	0.3375	0.15	Q	|	|	| V	|
18+40	0.3386	0.15	Q	|	|	| V	|
18+45	0.3396	0.15	Q	|	|	| V	|
18+50	0.3406	0.15	Q	|	|	| V	|
18+55	0.3416	0.14	Q	|	|	| V	|
19+ 0	0.3426	0.14	Q	|	|	| V	|
19+ 5	0.3435	0.14	Q	|	|	| V	|
19+10	0.3445	0.14	Q	|	|	| V	|
19+15	0.3454	0.14	Q	|	|	| V	|
19+20	0.3464	0.13	Q	|	|	| V	|
19+25	0.3473	0.13	Q	|	|	| V	|
19+30	0.3482	0.13	Q	|	|	| V	|
19+35	0.3491	0.13	Q	|	|	| V	|
19+40	0.3499	0.13	Q	|	|	| V	|
19+45	0.3508	0.13	Q	|	|	| V	|
19+50	0.3517	0.12	Q	|	|	| V	|
19+55	0.3525	0.12	Q	|	|	| V	|
20+ 0	0.3534	0.12	Q	|	|	| V	|
20+ 5	0.3542	0.12	Q	|	|	| V	|
20+10	0.3550	0.12	Q	|	|	| V	|
20+15	0.3558	0.12	Q	|	|	| V	|
20+20	0.3566	0.12	Q	|	|	| V	|
20+25	0.3574	0.12	Q	|	|	| V	|
20+30	0.3582	0.12	Q	|	|	| V	|
20+35	0.3590	0.11	Q	|	|	| V	|
20+40	0.3598	0.11	Q	|	|	| V	|
20+45	0.3606	0.11	Q	|	|	| V	|
20+50	0.3613	0.11	Q	|	|	| V	|
20+55	0.3621	0.11	Q	|	|	| V	|
21+ 0	0.3628	0.11	Q	|	|	| V	|
21+ 5	0.3636	0.11	Q	|	|	| V	|
21+10	0.3643	0.11	Q	|	|	| V	|
21+15	0.3651	0.11	Q	|	|	| V	|
21+20	0.3658	0.11	Q	|	|	| V	|
21+25	0.3665	0.10	Q	|	|	| V	|
21+30	0.3672	0.10	Q	|	|	| V	|
21+35	0.3679	0.10	Q	|	|	| V	|
21+40	0.3686	0.10	Q	|	|	| V	|
21+45	0.3693	0.10	Q	|	|	| V	|
21+50	0.3700	0.10	Q	|	|	| V	|
21+55	0.3707	0.10	Q	|	|	| V	|
22+ 0	0.3714	0.10	Q	|	|	| V	|
22+ 5	0.3721	0.10	Q	|	|	| V	|
22+10	0.3728	0.10	Q	|	|	| V	|
22+15	0.3735	0.10	Q	|	|	| V	|
22+20	0.3741	0.10	Q	|	|	| V	|
22+25	0.3748	0.10	Q	|	|	| V	|
22+30	0.3754	0.10	Q	|	|	| V	|
22+35	0.3761	0.10	Q	|	|	| V	|

22+40	0.3767	0.09	Q	|	|	|	V |
22+45	0.3774	0.09	Q	|	|	|	V |
22+50	0.3780	0.09	Q	|	|	|	V |
22+55	0.3787	0.09	Q	|	|	|	V |
23+ 0	0.3793	0.09	Q	|	|	|	V|
23+ 5	0.3799	0.09	Q	|	|	|	V|
23+10	0.3806	0.09	Q	|	|	|	V|
23+15	0.3812	0.09	Q	|	|	|	V|
23+20	0.3818	0.09	Q	|	|	|	V|
23+25	0.3824	0.09	Q	|	|	|	V|
23+30	0.3831	0.09	Q	|	|	|	V|
23+35	0.3837	0.09	Q	|	|	|	V|
23+40	0.3843	0.09	Q	|	|	|	V|
23+45	0.3849	0.09	Q	|	|	|	V|
23+50	0.3855	0.09	Q	|	|	|	V|
23+55	0.3861	0.09	Q	|	|	|	V|
24+ 0	0.3867	0.09	Q	|	|	|	V|
24+ 5	0.3872	0.08	Q	|	|	|	V|
24+10	0.3877	0.07	Q	|	|	|	V|
24+15	0.3881	0.05	Q	|	|	|	V|
24+20	0.3883	0.03	Q	|	|	|	V|
24+25	0.3884	0.01	Q	|	|	|	V|
24+30	0.3884	0.01	Q	|	|	|	V|
24+35	0.3884	0.00	Q	|	|	|	V|
24+40	0.3884	0.00	Q	|	|	|	V|
24+45	0.3884	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

Study date 01/29/24

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

Program License Serial Number 6320

235094 - 17783 & 17805 TAYLOR AVENUE
EXISTING CONDITIONS
25-YEAR, 24-HOUR STORM
BY: KBO DATE: 01-29-24

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		
3.61	1	0.93
Rainfall data for year 2		
3.61	6	1.63
Rainfall data for year 2		
3.61	24	3.02
Rainfall data for year 100		
3.61	1	1.33
Rainfall data for year 100		
3.61	6	3.51
Rainfall data for year 100		
3.61	24	7.85

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******** 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)
50.0	50.0	3.61	1.000	0.810	0.910	0.737

Area-averaged adjusted loss rate Fm (In/Hr) = 0.737

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC2)	S	Pervious Yield Fr
3.29	0.910	50.0	50.0	10.00	0.197
0.32	0.090	98.0	98.0	0.20	0.961

Area-averaged catchment yield fraction, Y = 0.266
Area-averaged low loss fraction, Yb = 0.734
User entry of time of concentration = 0.297 (hours)
++
Watershed area = 3.61(Ac.)
Catchment Lag time = 0.238 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.0730
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.737(In/Hr)
Average low loss rate fraction (Yb) = 0.734 (decimal)
VALLEY DEVELOPED S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.825(In)
Specified peak 1-hour rainfall = 1.089(In)
Computed peak 3-hour rainfall = 1.962(In)
Specified peak 6-hour rainfall = 2.844(In)
Specified peak 24-hour rainfall = 6.138(In)

Rainfall depth area reduction factors:
Using a total area of 3.61(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.403(In)
30-minute factor = 1.000 Adjusted rainfall = 0.825(In)
1-hour factor = 1.000 Adjusted rainfall = 1.089(In)
3-hour factor = 1.000 Adjusted rainfall = 1.962(In)
6-hour factor = 1.000 Adjusted rainfall = 2.844(In)
24-hour factor = 1.000 Adjusted rainfall = 6.138(In)

U n i t H y d r o g r a p h
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Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 43.66 (CFS))	
1	2.457	1.073
2	15.166	5.548
3	39.107	10.452
4	68.156	12.682
5	85.291	7.481
6	93.514	3.590
7	97.331	1.666
8	98.535	0.526
9	99.166	0.276
10	100.000	0.138

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.4030	0.4030
2	0.5318	0.1288
3	0.6255	0.0936
4	0.7017	0.0763
5	0.7673	0.0655
6	0.8253	0.0580
7	0.8778	0.0525
8	0.9260	0.0482
9	0.9706	0.0447
10	1.0124	0.0418
11	1.0517	0.0393
12	1.0890	0.0372
13	1.1367	0.0477
14	1.1827	0.0460
15	1.2273	0.0445

16	1.2705	0.0432
17	1.3124	0.0419
18	1.3532	0.0408
19	1.3930	0.0398
20	1.4318	0.0388
21	1.4697	0.0379
22	1.5068	0.0371
23	1.5431	0.0363
24	1.5787	0.0356
25	1.6136	0.0349
26	1.6479	0.0343
27	1.6816	0.0337
28	1.7146	0.0331
29	1.7472	0.0325
30	1.7792	0.0320
31	1.8107	0.0315
32	1.8418	0.0311
33	1.8724	0.0306
34	1.9026	0.0302
35	1.9324	0.0298
36	1.9618	0.0294
37	1.9908	0.0290
38	2.0194	0.0286
39	2.0477	0.0283
40	2.0757	0.0280
41	2.1033	0.0276
42	2.1306	0.0273
43	2.1577	0.0270
44	2.1844	0.0267
45	2.2108	0.0265
46	2.2370	0.0262
47	2.2629	0.0259
48	2.2886	0.0257
49	2.3140	0.0254
50	2.3392	0.0252
51	2.3641	0.0249
52	2.3889	0.0247
53	2.4134	0.0245
54	2.4376	0.0243
55	2.4617	0.0241
56	2.4856	0.0239
57	2.5093	0.0237
58	2.5328	0.0235
59	2.5561	0.0233
60	2.5792	0.0231
61	2.6021	0.0229
62	2.6249	0.0228
63	2.6475	0.0226
64	2.6699	0.0224
65	2.6922	0.0223
66	2.7143	0.0221
67	2.7362	0.0220
68	2.7580	0.0218
69	2.7797	0.0217
70	2.8012	0.0215
71	2.8225	0.0214
72	2.8438	0.0212
73	2.8656	0.0219
74	2.8873	0.0217
75	2.9089	0.0216
76	2.9304	0.0215
77	2.9517	0.0213
78	2.9729	0.0212
79	2.9940	0.0211
80	3.0150	0.0210
81	3.0359	0.0209
82	3.0566	0.0207
83	3.0773	0.0206
84	3.0978	0.0205
85	3.1182	0.0204
86	3.1385	0.0203

87	3.1587	0.0202
88	3.1788	0.0201
89	3.1988	0.0200
90	3.2187	0.0199
91	3.2385	0.0198
92	3.2582	0.0197
93	3.2778	0.0196
94	3.2973	0.0195
95	3.3168	0.0194
96	3.3361	0.0193
97	3.3553	0.0192
98	3.3745	0.0192
99	3.3936	0.0191
100	3.4125	0.0190
101	3.4314	0.0189
102	3.4502	0.0188
103	3.4690	0.0187
104	3.4876	0.0187
105	3.5062	0.0186
106	3.5247	0.0185
107	3.5431	0.0184
108	3.5615	0.0183
109	3.5797	0.0183
110	3.5979	0.0182
111	3.6160	0.0181
112	3.6341	0.0180
113	3.6521	0.0180
114	3.6700	0.0179
115	3.6878	0.0178
116	3.7056	0.0178
117	3.7233	0.0177
118	3.7409	0.0176
119	3.7584	0.0176
120	3.7759	0.0175
121	3.7934	0.0174
122	3.8107	0.0174
123	3.8280	0.0173
124	3.8453	0.0172
125	3.8625	0.0172
126	3.8796	0.0171
127	3.8966	0.0171
128	3.9136	0.0170
129	3.9306	0.0169
130	3.9475	0.0169
131	3.9643	0.0168
132	3.9811	0.0168
133	3.9978	0.0167
134	4.0144	0.0167
135	4.0310	0.0166
136	4.0476	0.0165
137	4.0641	0.0165
138	4.0805	0.0164
139	4.0969	0.0164
140	4.1132	0.0163
141	4.1295	0.0163
142	4.1457	0.0162
143	4.1619	0.0162
144	4.1780	0.0161
145	4.1941	0.0161
146	4.2102	0.0160
147	4.2261	0.0160
148	4.2421	0.0159
149	4.2580	0.0159
150	4.2738	0.0158
151	4.2896	0.0158
152	4.3053	0.0157
153	4.3210	0.0157
154	4.3367	0.0157
155	4.3523	0.0156
156	4.3678	0.0156
157	4.3834	0.0155

158	4.3988	0.0155
159	4.4143	0.0154
160	4.4297	0.0154
161	4.4450	0.0153
162	4.4603	0.0153
163	4.4756	0.0153
164	4.4908	0.0152
165	4.5060	0.0152
166	4.5211	0.0151
167	4.5362	0.0151
168	4.5512	0.0151
169	4.5663	0.0150
170	4.5812	0.0150
171	4.5962	0.0149
172	4.6111	0.0149
173	4.6259	0.0149
174	4.6408	0.0148
175	4.6555	0.0148
176	4.6703	0.0147
177	4.6850	0.0147
178	4.6997	0.0147
179	4.7143	0.0146
180	4.7289	0.0146
181	4.7435	0.0146
182	4.7580	0.0145
183	4.7725	0.0145
184	4.7869	0.0145
185	4.8014	0.0144
186	4.8158	0.0144
187	4.8301	0.0144
188	4.8444	0.0143
189	4.8587	0.0143
190	4.8730	0.0143
191	4.8872	0.0142
192	4.9014	0.0142
193	4.9155	0.0142
194	4.9296	0.0141
195	4.9437	0.0141
196	4.9578	0.0141
197	4.9718	0.0140
198	4.9858	0.0140
199	4.9998	0.0140
200	5.0137	0.0139
201	5.0276	0.0139
202	5.0415	0.0139
203	5.0553	0.0138
204	5.0691	0.0138
205	5.0829	0.0138
206	5.0966	0.0137
207	5.1103	0.0137
208	5.1240	0.0137
209	5.1377	0.0137
210	5.1513	0.0136
211	5.1649	0.0136
212	5.1785	0.0136
213	5.1920	0.0135
214	5.2055	0.0135
215	5.2190	0.0135
216	5.2325	0.0135
217	5.2459	0.0134
218	5.2593	0.0134
219	5.2727	0.0134
220	5.2861	0.0133
221	5.2994	0.0133
222	5.3127	0.0133
223	5.3259	0.0133
224	5.3392	0.0132
225	5.3524	0.0132
226	5.3656	0.0132
227	5.3788	0.0132
228	5.3919	0.0131

229	5.4050	0.0131
230	5.4181	0.0131
231	5.4312	0.0131
232	5.4442	0.0130
233	5.4572	0.0130
234	5.4702	0.0130
235	5.4832	0.0130
236	5.4961	0.0129
237	5.5090	0.0129
238	5.5219	0.0129
239	5.5348	0.0129
240	5.5476	0.0128
241	5.5604	0.0128
242	5.5732	0.0128
243	5.5860	0.0128
244	5.5987	0.0127
245	5.6115	0.0127
246	5.6242	0.0127
247	5.6368	0.0127
248	5.6495	0.0127
249	5.6621	0.0126
250	5.6747	0.0126
251	5.6873	0.0126
252	5.6999	0.0126
253	5.7124	0.0125
254	5.7250	0.0125
255	5.7375	0.0125
256	5.7499	0.0125
257	5.7624	0.0125
258	5.7748	0.0124
259	5.7872	0.0124
260	5.7996	0.0124
261	5.8120	0.0124
262	5.8243	0.0123
263	5.8367	0.0123
264	5.8490	0.0123
265	5.8613	0.0123
266	5.8735	0.0123
267	5.8858	0.0122
268	5.8980	0.0122
269	5.9102	0.0122
270	5.9224	0.0122
271	5.9346	0.0122
272	5.9467	0.0121
273	5.9588	0.0121
274	5.9709	0.0121
275	5.9830	0.0121
276	5.9951	0.0121
277	6.0071	0.0120
278	6.0191	0.0120
279	6.0312	0.0120
280	6.0431	0.0120
281	6.0551	0.0120
282	6.0671	0.0120
283	6.0790	0.0119
284	6.0909	0.0119
285	6.1028	0.0119
286	6.1147	0.0119
287	6.1265	0.0119
288	6.1384	0.0118

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0118	0.0087	0.0032
2	0.0119	0.0087	0.0032
3	0.0119	0.0087	0.0032
4	0.0119	0.0087	0.0032
5	0.0120	0.0088	0.0032
6	0.0120	0.0088	0.0032

7	0.0120	0.0088	0.0032
8	0.0120	0.0088	0.0032
9	0.0121	0.0089	0.0032
10	0.0121	0.0089	0.0032
11	0.0121	0.0089	0.0032
12	0.0121	0.0089	0.0032
13	0.0122	0.0089	0.0032
14	0.0122	0.0090	0.0032
15	0.0122	0.0090	0.0033
16	0.0123	0.0090	0.0033
17	0.0123	0.0090	0.0033
18	0.0123	0.0090	0.0033
19	0.0124	0.0091	0.0033
20	0.0124	0.0091	0.0033
21	0.0124	0.0091	0.0033
22	0.0125	0.0091	0.0033
23	0.0125	0.0092	0.0033
24	0.0125	0.0092	0.0033
25	0.0126	0.0092	0.0033
26	0.0126	0.0092	0.0033
27	0.0126	0.0093	0.0034
28	0.0127	0.0093	0.0034
29	0.0127	0.0093	0.0034
30	0.0127	0.0093	0.0034
31	0.0128	0.0094	0.0034
32	0.0128	0.0094	0.0034
33	0.0128	0.0094	0.0034
34	0.0129	0.0094	0.0034
35	0.0129	0.0095	0.0034
36	0.0129	0.0095	0.0034
37	0.0130	0.0095	0.0035
38	0.0130	0.0095	0.0035
39	0.0131	0.0096	0.0035
40	0.0131	0.0096	0.0035
41	0.0131	0.0096	0.0035
42	0.0132	0.0097	0.0035
43	0.0132	0.0097	0.0035
44	0.0132	0.0097	0.0035
45	0.0133	0.0098	0.0035
46	0.0133	0.0098	0.0035
47	0.0134	0.0098	0.0036
48	0.0134	0.0098	0.0036
49	0.0135	0.0099	0.0036
50	0.0135	0.0099	0.0036
51	0.0135	0.0099	0.0036
52	0.0136	0.0100	0.0036
53	0.0136	0.0100	0.0036
54	0.0137	0.0100	0.0036
55	0.0137	0.0101	0.0036
56	0.0137	0.0101	0.0037
57	0.0138	0.0101	0.0037
58	0.0138	0.0102	0.0037
59	0.0139	0.0102	0.0037
60	0.0139	0.0102	0.0037
61	0.0140	0.0103	0.0037
62	0.0140	0.0103	0.0037
63	0.0141	0.0103	0.0037
64	0.0141	0.0104	0.0038
65	0.0142	0.0104	0.0038
66	0.0142	0.0104	0.0038
67	0.0143	0.0105	0.0038
68	0.0143	0.0105	0.0038
69	0.0144	0.0106	0.0038
70	0.0144	0.0106	0.0038
71	0.0145	0.0106	0.0039
72	0.0145	0.0107	0.0039
73	0.0146	0.0107	0.0039
74	0.0146	0.0107	0.0039
75	0.0147	0.0108	0.0039
76	0.0147	0.0108	0.0039
77	0.0148	0.0109	0.0039

78	0.0149	0.0109	0.0040
79	0.0149	0.0110	0.0040
80	0.0150	0.0110	0.0040
81	0.0151	0.0110	0.0040
82	0.0151	0.0111	0.0040
83	0.0152	0.0111	0.0040
84	0.0152	0.0112	0.0040
85	0.0153	0.0112	0.0041
86	0.0153	0.0113	0.0041
87	0.0154	0.0113	0.0041
88	0.0155	0.0114	0.0041
89	0.0156	0.0114	0.0041
90	0.0156	0.0115	0.0042
91	0.0157	0.0115	0.0042
92	0.0157	0.0116	0.0042
93	0.0158	0.0116	0.0042
94	0.0159	0.0117	0.0042
95	0.0160	0.0117	0.0043
96	0.0160	0.0118	0.0043
97	0.0161	0.0118	0.0043
98	0.0162	0.0119	0.0043
99	0.0163	0.0119	0.0043
100	0.0163	0.0120	0.0043
101	0.0164	0.0121	0.0044
102	0.0165	0.0121	0.0044
103	0.0166	0.0122	0.0044
104	0.0167	0.0122	0.0044
105	0.0168	0.0123	0.0045
106	0.0168	0.0123	0.0045
107	0.0169	0.0124	0.0045
108	0.0170	0.0125	0.0045
109	0.0171	0.0126	0.0046
110	0.0172	0.0126	0.0046
111	0.0173	0.0127	0.0046
112	0.0174	0.0127	0.0046
113	0.0175	0.0128	0.0047
114	0.0176	0.0129	0.0047
115	0.0177	0.0130	0.0047
116	0.0178	0.0130	0.0047
117	0.0179	0.0131	0.0048
118	0.0180	0.0132	0.0048
119	0.0181	0.0133	0.0048
120	0.0182	0.0134	0.0048
121	0.0183	0.0135	0.0049
122	0.0184	0.0135	0.0049
123	0.0186	0.0136	0.0049
124	0.0187	0.0137	0.0050
125	0.0188	0.0138	0.0050
126	0.0189	0.0139	0.0050
127	0.0191	0.0140	0.0051
128	0.0192	0.0141	0.0051
129	0.0193	0.0142	0.0051
130	0.0194	0.0143	0.0052
131	0.0196	0.0144	0.0052
132	0.0197	0.0145	0.0052
133	0.0199	0.0146	0.0053
134	0.0200	0.0147	0.0053
135	0.0202	0.0148	0.0054
136	0.0203	0.0149	0.0054
137	0.0205	0.0151	0.0055
138	0.0206	0.0151	0.0055
139	0.0209	0.0153	0.0056
140	0.0210	0.0154	0.0056
141	0.0212	0.0156	0.0056
142	0.0213	0.0157	0.0057
143	0.0216	0.0158	0.0057
144	0.0217	0.0159	0.0058
145	0.0212	0.0156	0.0056
146	0.0214	0.0157	0.0057
147	0.0217	0.0159	0.0058
148	0.0218	0.0160	0.0058

149	0.0221	0.0162	0.0059
150	0.0223	0.0163	0.0059
151	0.0226	0.0166	0.0060
152	0.0228	0.0167	0.0061
153	0.0231	0.0170	0.0062
154	0.0233	0.0171	0.0062
155	0.0237	0.0174	0.0063
156	0.0239	0.0175	0.0064
157	0.0243	0.0178	0.0065
158	0.0245	0.0180	0.0065
159	0.0249	0.0183	0.0066
160	0.0252	0.0185	0.0067
161	0.0257	0.0188	0.0068
162	0.0259	0.0190	0.0069
163	0.0265	0.0194	0.0070
164	0.0267	0.0196	0.0071
165	0.0273	0.0201	0.0073
166	0.0276	0.0203	0.0074
167	0.0283	0.0208	0.0075
168	0.0286	0.0210	0.0076
169	0.0294	0.0216	0.0078
170	0.0298	0.0219	0.0079
171	0.0306	0.0225	0.0081
172	0.0311	0.0228	0.0083
173	0.0320	0.0235	0.0085
174	0.0325	0.0239	0.0087
175	0.0337	0.0247	0.0090
176	0.0343	0.0251	0.0091
177	0.0356	0.0261	0.0095
178	0.0363	0.0267	0.0097
179	0.0379	0.0278	0.0101
180	0.0388	0.0285	0.0103
181	0.0408	0.0300	0.0109
182	0.0419	0.0308	0.0112
183	0.0445	0.0327	0.0119
184	0.0460	0.0338	0.0123
185	0.0372	0.0273	0.0099
186	0.0393	0.0289	0.0105
187	0.0447	0.0328	0.0119
188	0.0482	0.0353	0.0128
189	0.0580	0.0426	0.0154
190	0.0655	0.0481	0.0174
191	0.0936	0.0614	0.0323
192	0.1288	0.0614	0.0674
193	0.4030	0.0614	0.3417
194	0.0763	0.0560	0.0203
195	0.0525	0.0385	0.0140
196	0.0418	0.0307	0.0111
197	0.0477	0.0350	0.0127
198	0.0432	0.0317	0.0115
199	0.0398	0.0292	0.0106
200	0.0371	0.0272	0.0099
201	0.0349	0.0256	0.0093
202	0.0331	0.0243	0.0088
203	0.0315	0.0231	0.0084
204	0.0302	0.0222	0.0080
205	0.0290	0.0213	0.0077
206	0.0280	0.0205	0.0074
207	0.0270	0.0198	0.0072
208	0.0262	0.0192	0.0070
209	0.0254	0.0187	0.0068
210	0.0247	0.0181	0.0066
211	0.0241	0.0177	0.0064
212	0.0235	0.0172	0.0062
213	0.0229	0.0168	0.0061
214	0.0224	0.0165	0.0060
215	0.0220	0.0161	0.0058
216	0.0215	0.0158	0.0057
217	0.0219	0.0160	0.0058
218	0.0215	0.0158	0.0057
219	0.0211	0.0155	0.0056

220	0.0207	0.0152	0.0055
221	0.0204	0.0150	0.0054
222	0.0201	0.0148	0.0053
223	0.0198	0.0145	0.0053
224	0.0195	0.0143	0.0052
225	0.0192	0.0141	0.0051
226	0.0190	0.0139	0.0051
227	0.0187	0.0137	0.0050
228	0.0185	0.0136	0.0049
229	0.0183	0.0134	0.0049
230	0.0180	0.0132	0.0048
231	0.0178	0.0131	0.0047
232	0.0176	0.0129	0.0047
233	0.0174	0.0128	0.0046
234	0.0172	0.0127	0.0046
235	0.0171	0.0125	0.0045
236	0.0169	0.0124	0.0045
237	0.0167	0.0123	0.0044
238	0.0165	0.0121	0.0044
239	0.0164	0.0120	0.0044
240	0.0162	0.0119	0.0043
241	0.0161	0.0118	0.0043
242	0.0159	0.0117	0.0042
243	0.0158	0.0116	0.0042
244	0.0157	0.0115	0.0042
245	0.0155	0.0114	0.0041
246	0.0154	0.0113	0.0041
247	0.0153	0.0112	0.0041
248	0.0151	0.0111	0.0040
249	0.0150	0.0110	0.0040
250	0.0149	0.0109	0.0040
251	0.0148	0.0109	0.0039
252	0.0147	0.0108	0.0039
253	0.0146	0.0107	0.0039
254	0.0145	0.0106	0.0038
255	0.0144	0.0105	0.0038
256	0.0143	0.0105	0.0038
257	0.0142	0.0104	0.0038
258	0.0141	0.0103	0.0037
259	0.0140	0.0102	0.0037
260	0.0139	0.0102	0.0037
261	0.0138	0.0101	0.0037
262	0.0137	0.0100	0.0036
263	0.0136	0.0100	0.0036
264	0.0135	0.0099	0.0036
265	0.0134	0.0099	0.0036
266	0.0133	0.0098	0.0036
267	0.0133	0.0097	0.0035
268	0.0132	0.0097	0.0035
269	0.0131	0.0096	0.0035
270	0.0130	0.0096	0.0035
271	0.0130	0.0095	0.0034
272	0.0129	0.0095	0.0034
273	0.0128	0.0094	0.0034
274	0.0127	0.0094	0.0034
275	0.0127	0.0093	0.0034
276	0.0126	0.0093	0.0034
277	0.0125	0.0092	0.0033
278	0.0125	0.0092	0.0033
279	0.0124	0.0091	0.0033
280	0.0123	0.0091	0.0033
281	0.0123	0.0090	0.0033
282	0.0122	0.0090	0.0033
283	0.0122	0.0089	0.0032
284	0.0121	0.0089	0.0032
285	0.0120	0.0088	0.0032
286	0.0120	0.0088	0.0032
287	0.0119	0.0088	0.0032
288	0.0119	0.0087	0.0032

Total soil rain loss = 4.23(In)
Total effective rainfall = 1.91(In)
Peak flow rate in flood hydrograph = 5.30(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	0.0002	0.02	Q				
0+15	0.0005	0.05	Q				
0+20	0.0012	0.09	Q				
0+25	0.0020	0.12	Q				
0+30	0.0029	0.13	Q				
0+35	0.0038	0.13	Q				
0+40	0.0048	0.14	Q				
0+45	0.0057	0.14	Q				
0+50	0.0067	0.14	Q				
0+55	0.0076	0.14	Q				
1+ 0	0.0086	0.14	Q				
1+ 5	0.0095	0.14	Q				
1+10	0.0105	0.14	Q				
1+15	0.0115	0.14	Q				
1+20	0.0124	0.14	Q				
1+25	0.0134	0.14	Q				
1+30	0.0144	0.14	QV				
1+35	0.0154	0.14	QV				
1+40	0.0163	0.14	QV				
1+45	0.0173	0.14	QV				
1+50	0.0183	0.14	QV				
1+55	0.0193	0.14	QV				
2+ 0	0.0203	0.14	QV				
2+ 5	0.0213	0.14	QV				
2+10	0.0223	0.14	QV				
2+15	0.0233	0.14	QV				
2+20	0.0243	0.15	QV				
2+25	0.0253	0.15	QV				
2+30	0.0263	0.15	QV				
2+35	0.0273	0.15	QV				
2+40	0.0283	0.15	QV				
2+45	0.0293	0.15	Q V				
2+50	0.0303	0.15	Q V				
2+55	0.0313	0.15	Q V				
3+ 0	0.0324	0.15	Q V				
3+ 5	0.0334	0.15	Q V				
3+10	0.0344	0.15	Q V				
3+15	0.0354	0.15	Q V				
3+20	0.0365	0.15	Q V				
3+25	0.0375	0.15	Q V				
3+30	0.0386	0.15	Q V				
3+35	0.0396	0.15	Q V				
3+40	0.0406	0.15	Q V				
3+45	0.0417	0.15	Q V				
3+50	0.0427	0.15	Q V				
3+55	0.0438	0.15	Q V				
4+ 0	0.0449	0.15	Q V				
4+ 5	0.0459	0.15	Q V				
4+10	0.0470	0.15	Q V				
4+15	0.0480	0.15	Q V				
4+20	0.0491	0.16	Q V				
4+25	0.0502	0.16	Q V				
4+30	0.0513	0.16	Q V				
4+35	0.0524	0.16	Q V				
4+40	0.0534	0.16	Q V				
4+45	0.0545	0.16	Q V				
4+50	0.0556	0.16	Q V				

4+55	0.0567	0.16	Q	V			
5+ 0	0.0578	0.16	Q	V			
5+ 5	0.0589	0.16	Q	V			
5+10	0.0600	0.16	Q	V			
5+15	0.0611	0.16	Q	V			
5+20	0.0622	0.16	Q	V			
5+25	0.0634	0.16	Q	V			
5+30	0.0645	0.16	Q	V			
5+35	0.0656	0.16	Q	V			
5+40	0.0667	0.16	Q	V			
5+45	0.0679	0.16	Q	V			
5+50	0.0690	0.17	Q	V			
5+55	0.0701	0.17	Q	V			
6+ 0	0.0713	0.17	Q	V			
6+ 5	0.0724	0.17	Q	V			
6+10	0.0736	0.17	Q	V			
6+15	0.0747	0.17	Q	V			
6+20	0.0759	0.17	Q	V			
6+25	0.0771	0.17	Q	V			
6+30	0.0782	0.17	Q	V			
6+35	0.0794	0.17	Q	V			
6+40	0.0806	0.17	Q	V			
6+45	0.0818	0.17	Q	V			
6+50	0.0830	0.17	Q	V			
6+55	0.0842	0.17	Q	V			
7+ 0	0.0854	0.17	Q	V			
7+ 5	0.0866	0.17	Q	V			
7+10	0.0878	0.18	Q	V			
7+15	0.0890	0.18	Q	V			
7+20	0.0902	0.18	Q	V			
7+25	0.0914	0.18	Q	V			
7+30	0.0926	0.18	Q	V			
7+35	0.0939	0.18	Q	V			
7+40	0.0951	0.18	Q	V			
7+45	0.0964	0.18	Q	V			
7+50	0.0976	0.18	Q	V			
7+55	0.0989	0.18	Q	V			
8+ 0	0.1001	0.18	Q	V			
8+ 5	0.1014	0.18	Q	V			
8+10	0.1027	0.18	Q	V			
8+15	0.1039	0.19	Q	V			
8+20	0.1052	0.19	Q	V			
8+25	0.1065	0.19	Q	V			
8+30	0.1078	0.19	Q	V			
8+35	0.1091	0.19	Q	V			
8+40	0.1104	0.19	Q	V			
8+45	0.1117	0.19	Q	V			
8+50	0.1130	0.19	Q	V			
8+55	0.1144	0.19	Q	V			
9+ 0	0.1157	0.19	Q	V			
9+ 5	0.1170	0.19	Q	V			
9+10	0.1184	0.20	Q	V			
9+15	0.1197	0.20	Q	V			
9+20	0.1211	0.20	Q	V			
9+25	0.1225	0.20	Q	V			
9+30	0.1239	0.20	Q	V			
9+35	0.1252	0.20	Q	V			
9+40	0.1266	0.20	Q	V			
9+45	0.1280	0.20	Q	V			
9+50	0.1294	0.20	Q	V			
9+55	0.1309	0.21	Q	V			
10+ 0	0.1323	0.21	Q	V			
10+ 5	0.1337	0.21	Q	V			
10+10	0.1351	0.21	Q	V			
10+15	0.1366	0.21	Q	V			
10+20	0.1381	0.21	Q	V			
10+25	0.1395	0.21	Q	V			
10+30	0.1410	0.21	Q	V			
10+35	0.1425	0.22	Q	V			
10+40	0.1440	0.22	Q	V			
10+45	0.1455	0.22	Q	V			

10+50	0.1470	0.22	Q	V	|	|	|
10+55	0.1485	0.22	Q	V	|	|	|
11+ 0	0.1501	0.22	Q	V	|	|	|
11+ 5	0.1516	0.22	Q	V	|	|	|
11+10	0.1532	0.23	Q	V	|	|	|
11+15	0.1547	0.23	Q	V	|	|	|
11+20	0.1563	0.23	Q	V	|	|	|
11+25	0.1579	0.23	Q	|V	|	|	|
11+30	0.1595	0.23	Q	|V	|	|	|
11+35	0.1612	0.24	Q	|V	|	|	|
11+40	0.1628	0.24	Q	|V	|	|	|
11+45	0.1644	0.24	Q	|V	|	|	|
11+50	0.1661	0.24	Q	|V	|	|	|
11+55	0.1678	0.24	Q	|V	|	|	|
12+ 0	0.1694	0.24	Q	|V	|	|	|
12+ 5	0.1711	0.25	Q	|V	|	|	|
12+10	0.1729	0.25	Q	| V	|	|	|
12+15	0.1746	0.25	Q	| V	|	|	|
12+20	0.1763	0.25	Q	| V	|	|	|
12+25	0.1780	0.25	Q	| V	|	|	|
12+30	0.1797	0.25	|Q	| V	|	|	|
12+35	0.1814	0.25	|Q	| V	|	|	|
12+40	0.1832	0.26	|Q	| V	|	|	|
12+45	0.1850	0.26	|Q	| V	|	|	|
12+50	0.1868	0.26	|Q	| V	|	|	|
12+55	0.1886	0.26	|Q	| V	|	|	|
13+ 0	0.1904	0.27	|Q	| V	|	|	|
13+ 5	0.1923	0.27	|Q	| V	|	|	|
13+10	0.1942	0.27	|Q	| V	|	|	|
13+15	0.1961	0.28	|Q	| V	|	|	|
13+20	0.1980	0.28	|Q	| V	|	|	|
13+25	0.2000	0.28	|Q	| V	|	|	|
13+30	0.2019	0.29	|Q	| V	|	|	|
13+35	0.2040	0.29	|Q	| V	|	|	|
13+40	0.2060	0.30	|Q	| V	|	|	|
13+45	0.2081	0.30	|Q	| V	|	|	|
13+50	0.2102	0.31	|Q	| V	|	|	|
13+55	0.2123	0.31	|Q	| V	|	|	|
14+ 0	0.2145	0.32	|Q	| V	|	|	|
14+ 5	0.2167	0.32	|Q	| V	|	|	|
14+10	0.2189	0.33	|Q	| V	|	|	|
14+15	0.2212	0.33	|Q	| V	|	|	|
14+20	0.2236	0.34	|Q	| V	|	|	|
14+25	0.2259	0.35	|Q	| V	|	|	|
14+30	0.2284	0.35	|Q	| V	|	|	|
14+35	0.2309	0.36	|Q	| V	|	|	|
14+40	0.2334	0.37	|Q	| V	|	|	|
14+45	0.2360	0.38	|Q	| V	|	|	|
14+50	0.2387	0.39	|Q	| V	|	|	|
14+55	0.2414	0.40	|Q	| V	|	|	|
15+ 0	0.2443	0.41	|Q	| V	|	|	|
15+ 5	0.2472	0.42	|Q	| V	|	|	|
15+10	0.2502	0.44	|Q	| V	|	|	|
15+15	0.2533	0.45	|Q	| V	|	|	|
15+20	0.2566	0.47	|Q	| V	|	|	|
15+25	0.2599	0.49	|Q	| V	|	|	|
15+30	0.2633	0.49	|Q	| V	|	|	|
15+35	0.2667	0.49	|Q	| V	|	|	|
15+40	0.2700	0.48	|Q	| V	|	|	|
15+45	0.2734	0.49	|Q	| V|	|	|
15+50	0.2770	0.53	| Q	| V|	|	|
15+55	0.2812	0.61	| Q	| V|	|	|
16+ 0	0.2867	0.80	| Q	| V	|	|	|
16+ 5	0.2970	1.49	| Q	| V	|	|	|
16+10	0.3194	3.25	|	| Q	| | V	|	|	|
16+15	0.3531	4.89	|	|	| Q| V	|	|	|
16+20	0.3895	5.30	|	|	| |Q V	|	|	|
16+25	0.4126	3.35	|	| Q	|	| V |	|	|
16+30	0.4256	1.89	|	|	Q	|	| V|	|	|
16+35	0.4335	1.14	|	| Q	|	|	| V	|	|
16+40	0.4384	0.72	|	| Q	|	|	| V	|	|

16+45	0.4425	0.59	| Q	|	|	|V |
16+50	0.4460	0.51	| Q	|	|	|V |
16+55	0.4490	0.43	|Q	|	|	|V |
17+ 0	0.4518	0.41	|Q	|	|	|V |
17+ 5	0.4545	0.39	|Q	|	|	|V |
17+10	0.4570	0.37	|Q	|	|	| V |
17+15	0.4594	0.35	|Q	|	|	| V |
17+20	0.4617	0.34	|Q	|	|	| V |
17+25	0.4640	0.32	|Q	|	|	| V |
17+30	0.4661	0.31	|Q	|	|	| V |
17+35	0.4682	0.30	|Q	|	|	| V |
17+40	0.4703	0.29	|Q	|	|	| V |
17+45	0.4722	0.29	|Q	|	|	| V |
17+50	0.4741	0.28	|Q	|	|	| V |
17+55	0.4760	0.27	|Q	|	|	| V |
18+ 0	0.4778	0.27	|Q	|	|	| V |
18+ 5	0.4796	0.26	|Q	|	|	| V |
18+10	0.4814	0.26	|Q	|	|	| V |
18+15	0.4831	0.25	|Q	|	|	| V |
18+20	0.4849	0.25	|Q	|	|	| V |
18+25	0.4866	0.25	Q	|	|	| V |
18+30	0.4882	0.24	Q	|	|	| V |
18+35	0.4899	0.24	Q	|	|	| V |
18+40	0.4915	0.24	Q	|	|	| V |
18+45	0.4931	0.23	Q	|	|	| V |
18+50	0.4947	0.23	Q	|	|	| V |
18+55	0.4962	0.23	Q	|	|	| V |
19+ 0	0.4978	0.22	Q	|	|	| V |
19+ 5	0.4993	0.22	Q	|	|	| V |
19+10	0.5008	0.22	Q	|	|	| V |
19+15	0.5022	0.21	Q	|	|	| V |
19+20	0.5037	0.21	Q	|	|	| V |
19+25	0.5051	0.21	Q	|	|	| V |
19+30	0.5066	0.21	Q	|	|	| V |
19+35	0.5080	0.20	Q	|	|	| V |
19+40	0.5093	0.20	Q	|	|	| V |
19+45	0.5107	0.20	Q	|	|	| V |
19+50	0.5121	0.20	Q	|	|	| V |
19+55	0.5134	0.20	Q	|	|	| V |
20+ 0	0.5148	0.19	Q	|	|	| V |
20+ 5	0.5161	0.19	Q	|	|	| V |
20+10	0.5174	0.19	Q	|	|	| V |
20+15	0.5187	0.19	Q	|	|	| V |
20+20	0.5199	0.19	Q	|	|	| V |
20+25	0.5212	0.18	Q	|	|	| V |
20+30	0.5225	0.18	Q	|	|	| V |
20+35	0.5237	0.18	Q	|	|	| V |
20+40	0.5250	0.18	Q	|	|	| V |
20+45	0.5262	0.18	Q	|	|	| V |
20+50	0.5274	0.18	Q	|	|	| V |
20+55	0.5286	0.17	Q	|	|	| V |
21+ 0	0.5298	0.17	Q	|	|	| V |
21+ 5	0.5310	0.17	Q	|	|	| V |
21+10	0.5322	0.17	Q	|	|	| V |
21+15	0.5333	0.17	Q	|	|	| V |
21+20	0.5345	0.17	Q	|	|	| V |
21+25	0.5356	0.17	Q	|	|	| V |
21+30	0.5368	0.17	Q	|	|	| V |
21+35	0.5379	0.16	Q	|	|	| V |
21+40	0.5390	0.16	Q	|	|	| V |
21+45	0.5402	0.16	Q	|	|	| V |
21+50	0.5413	0.16	Q	|	|	| V |
21+55	0.5424	0.16	Q	|	|	| V |
22+ 0	0.5435	0.16	Q	|	|	| V |
22+ 5	0.5446	0.16	Q	|	|	| V |
22+10	0.5456	0.16	Q	|	|	| V |
22+15	0.5467	0.16	Q	|	|	| V |
22+20	0.5478	0.16	Q	|	|	| V |
22+25	0.5488	0.15	Q	|	|	| V |
22+30	0.5499	0.15	Q	|	|	| V |
22+35	0.5510	0.15	Q	|	|	| V |

22+40	0.5520	0.15	Q				V
22+45	0.5530	0.15	Q				V
22+50	0.5541	0.15	Q				V
22+55	0.5551	0.15	Q				V
23+ 0	0.5561	0.15	Q				V
23+ 5	0.5571	0.15	Q				V
23+10	0.5581	0.15	Q				V
23+15	0.5591	0.15	Q				V
23+20	0.5601	0.14	Q				V
23+25	0.5611	0.14	Q				V
23+30	0.5621	0.14	Q				V
23+35	0.5631	0.14	Q				V
23+40	0.5641	0.14	Q				V
23+45	0.5651	0.14	Q				V
23+50	0.5660	0.14	Q				V
23+55	0.5670	0.14	Q				V
24+ 0	0.5679	0.14	Q				V
24+ 5	0.5689	0.14	Q				V
24+10	0.5697	0.12	Q				V
24+15	0.5703	0.08	Q				V
24+20	0.5706	0.04	Q				V
24+25	0.5707	0.02	Q				V
24+30	0.5707	0.01	Q				V
24+35	0.5708	0.00	Q				V
24+40	0.5708	0.00	Q				V
24+45	0.5708	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

Study date 01/29/24

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

Program License Serial Number 6320

235094 - 17783 & 17805 TAYLOR AVENUE
EXISTING CONDITIONS
100-YEAR, 24-HOUR STORM
BY: KBO DATE: 01-29-24

Storm Event Year = 100

Antecedent Moisture Condition = 3

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		
3.61	1	0.93
Rainfall data for year 2		
3.61	6	1.63
Rainfall data for year 2		
3.61	24	3.02
Rainfall data for year 100		
3.61	1	1.33
Rainfall data for year 100		
3.61	6	3.51
Rainfall data for year 100		
3.61	24	7.85

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
50.0	70.0	3.61	1.000	0.532	0.910	0.485

Area-averaged adjusted loss rate Fm (In/Hr) = 0.485

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
3.29	0.910	50.0	70.0	4.29	0.552
0.32	0.090	98.0	98.0	0.20	0.969

Area-averaged catchment yield fraction, Y = 0.590
Area-averaged low loss fraction, Yb = 0.410
User entry of time of concentration = 0.297 (hours)
++
Watershed area = 3.61(Ac.)
Catchment Lag time = 0.238 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.0730
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.485(In/Hr)
Average low loss rate fraction (Yb) = 0.410 (decimal)
VALLEY DEVELOPED S-Graph Selected
Computed peak 5-minute rainfall = 0.492(In)
Computed peak 30-minute rainfall = 1.008(In)
Specified peak 1-hour rainfall = 1.330(In)
Computed peak 3-hour rainfall = 2.411(In)
Specified peak 6-hour rainfall = 3.510(In)
Specified peak 24-hour rainfall = 7.850(In)

Rainfall depth area reduction factors:
Using a total area of 3.61(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.492(In)
30-minute factor = 1.000 Adjusted rainfall = 1.008(In)
1-hour factor = 1.000 Adjusted rainfall = 1.330(In)
3-hour factor = 1.000 Adjusted rainfall = 2.411(In)
6-hour factor = 1.000 Adjusted rainfall = 3.510(In)
24-hour factor = 1.000 Adjusted rainfall = 7.850(In)

U n i t H y d r o g r a p h
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Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 43.66 (CFS))	
1	2.457	1.073
2	15.166	5.548
3	39.107	10.452
4	68.156	12.682
5	85.291	7.481
6	93.514	3.590
7	97.331	1.666
8	98.535	0.526
9	99.166	0.276
10	100.000	0.138

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.4922	0.4922
2	0.6494	0.1572
3	0.7638	0.1143
4	0.8569	0.0931
5	0.9369	0.0800
6	1.0078	0.0709
7	1.0719	0.0641
8	1.1307	0.0588
9	1.1852	0.0545
10	1.2362	0.0510
11	1.2843	0.0480
12	1.3298	0.0455
13	1.3887	0.0589
14	1.4456	0.0569
15	1.5006	0.0551

16	1.5540	0.0534
17	1.6059	0.0519
18	1.6564	0.0505
19	1.7057	0.0492
20	1.7537	0.0481
21	1.8007	0.0470
22	1.8467	0.0460
23	1.8917	0.0450
24	1.9358	0.0441
25	1.9791	0.0433
26	2.0216	0.0425
27	2.0633	0.0418
28	2.1044	0.0411
29	2.1448	0.0404
30	2.1845	0.0398
31	2.2237	0.0392
32	2.2623	0.0386
33	2.3003	0.0380
34	2.3378	0.0375
35	2.3748	0.0370
36	2.4113	0.0365
37	2.4474	0.0361
38	2.4830	0.0356
39	2.5182	0.0352
40	2.5529	0.0348
41	2.5873	0.0344
42	2.6213	0.0340
43	2.6549	0.0336
44	2.6882	0.0333
45	2.7211	0.0329
46	2.7537	0.0326
47	2.7860	0.0323
48	2.8179	0.0320
49	2.8496	0.0316
50	2.8809	0.0314
51	2.9120	0.0311
52	2.9428	0.0308
53	2.9733	0.0305
54	3.0035	0.0303
55	3.0335	0.0300
56	3.0633	0.0298
57	3.0928	0.0295
58	3.1221	0.0293
59	3.1511	0.0290
60	3.1799	0.0288
61	3.2085	0.0286
62	3.2369	0.0284
63	3.2651	0.0282
64	3.2930	0.0280
65	3.3208	0.0278
66	3.3484	0.0276
67	3.3758	0.0274
68	3.4030	0.0272
69	3.4300	0.0270
70	3.4568	0.0268
71	3.4835	0.0267
72	3.5100	0.0265
73	3.5382	0.0282
74	3.5662	0.0281
75	3.5941	0.0279
76	3.6219	0.0277
77	3.6495	0.0276
78	3.6769	0.0274
79	3.7042	0.0273
80	3.7314	0.0272
81	3.7584	0.0270
82	3.7853	0.0269
83	3.8120	0.0267
84	3.8386	0.0266
85	3.8651	0.0265
86	3.8914	0.0263

87	3.9176	0.0262
88	3.9437	0.0261
89	3.9697	0.0260
90	3.9955	0.0258
91	4.0212	0.0257
92	4.0468	0.0256
93	4.0723	0.0255
94	4.0976	0.0254
95	4.1229	0.0253
96	4.1480	0.0251
97	4.1731	0.0250
98	4.1980	0.0249
99	4.2228	0.0248
100	4.2475	0.0247
101	4.2721	0.0246
102	4.2967	0.0245
103	4.3211	0.0244
104	4.3454	0.0243
105	4.3696	0.0242
106	4.3937	0.0241
107	4.4177	0.0240
108	4.4416	0.0239
109	4.4655	0.0238
110	4.4892	0.0237
111	4.5129	0.0237
112	4.5364	0.0236
113	4.5599	0.0235
114	4.5833	0.0234
115	4.6066	0.0233
116	4.6298	0.0232
117	4.6529	0.0231
118	4.6760	0.0230
119	4.6990	0.0230
120	4.7218	0.0229
121	4.7446	0.0228
122	4.7674	0.0227
123	4.7900	0.0226
124	4.8126	0.0226
125	4.8351	0.0225
126	4.8575	0.0224
127	4.8799	0.0223
128	4.9021	0.0223
129	4.9243	0.0222
130	4.9465	0.0221
131	4.9685	0.0221
132	4.9905	0.0220
133	5.0124	0.0219
134	5.0343	0.0218
135	5.0560	0.0218
136	5.0778	0.0217
137	5.0994	0.0216
138	5.1210	0.0216
139	5.1425	0.0215
140	5.1639	0.0214
141	5.1853	0.0214
142	5.2066	0.0213
143	5.2279	0.0213
144	5.2491	0.0212
145	5.2702	0.0211
146	5.2913	0.0211
147	5.3123	0.0210
148	5.3333	0.0210
149	5.3542	0.0209
150	5.3750	0.0208
151	5.3958	0.0208
152	5.4165	0.0207
153	5.4372	0.0207
154	5.4578	0.0206
155	5.4783	0.0205
156	5.4988	0.0205
157	5.5192	0.0204

158	5.5396	0.0204
159	5.5600	0.0203
160	5.5802	0.0203
161	5.6005	0.0202
162	5.6206	0.0202
163	5.6407	0.0201
164	5.6608	0.0201
165	5.6808	0.0200
166	5.7008	0.0200
167	5.7207	0.0199
168	5.7406	0.0199
169	5.7604	0.0198
170	5.7802	0.0198
171	5.7999	0.0197
172	5.8195	0.0197
173	5.8392	0.0196
174	5.8587	0.0196
175	5.8783	0.0195
176	5.8977	0.0195
177	5.9172	0.0194
178	5.9366	0.0194
179	5.9559	0.0193
180	5.9752	0.0193
181	5.9945	0.0193
182	6.0137	0.0192
183	6.0328	0.0192
184	6.0519	0.0191
185	6.0710	0.0191
186	6.0900	0.0190
187	6.1090	0.0190
188	6.1280	0.0189
189	6.1469	0.0189
190	6.1658	0.0189
191	6.1846	0.0188
192	6.2034	0.0188
193	6.2221	0.0187
194	6.2408	0.0187
195	6.2594	0.0187
196	6.2781	0.0186
197	6.2966	0.0186
198	6.3152	0.0185
199	6.3337	0.0185
200	6.3521	0.0185
201	6.3706	0.0184
202	6.3889	0.0184
203	6.4073	0.0183
204	6.4256	0.0183
205	6.4439	0.0183
206	6.4621	0.0182
207	6.4803	0.0182
208	6.4984	0.0182
209	6.5166	0.0181
210	6.5347	0.0181
211	6.5527	0.0180
212	6.5707	0.0180
213	6.5887	0.0180
214	6.6066	0.0179
215	6.6245	0.0179
216	6.6424	0.0179
217	6.6603	0.0178
218	6.6781	0.0178
219	6.6958	0.0178
220	6.7136	0.0177
221	6.7313	0.0177
222	6.7489	0.0177
223	6.7666	0.0176
224	6.7842	0.0176
225	6.8017	0.0176
226	6.8193	0.0175
227	6.8368	0.0175
228	6.8542	0.0175

229	6.8717	0.0174
230	6.8891	0.0174
231	6.9065	0.0174
232	6.9238	0.0173
233	6.9411	0.0173
234	6.9584	0.0173
235	6.9757	0.0173
236	6.9929	0.0172
237	7.0101	0.0172
238	7.0272	0.0172
239	7.0444	0.0171
240	7.0614	0.0171
241	7.0785	0.0171
242	7.0956	0.0170
243	7.1126	0.0170
244	7.1295	0.0170
245	7.1465	0.0170
246	7.1634	0.0169
247	7.1803	0.0169
248	7.1972	0.0169
249	7.2140	0.0168
250	7.2308	0.0168
251	7.2476	0.0168
252	7.2643	0.0168
253	7.2811	0.0167
254	7.2978	0.0167
255	7.3144	0.0167
256	7.3311	0.0166
257	7.3477	0.0166
258	7.3643	0.0166
259	7.3808	0.0166
260	7.3974	0.0165
261	7.4139	0.0165
262	7.4304	0.0165
263	7.4468	0.0165
264	7.4632	0.0164
265	7.4796	0.0164
266	7.4960	0.0164
267	7.5124	0.0163
268	7.5287	0.0163
269	7.5450	0.0163
270	7.5613	0.0163
271	7.5775	0.0162
272	7.5937	0.0162
273	7.6099	0.0162
274	7.6261	0.0162
275	7.6422	0.0161
276	7.6584	0.0161
277	7.6745	0.0161
278	7.6905	0.0161
279	7.7066	0.0160
280	7.7226	0.0160
281	7.7386	0.0160
282	7.7546	0.0160
283	7.7705	0.0160
284	7.7865	0.0159
285	7.8024	0.0159
286	7.8183	0.0159
287	7.8341	0.0159
288	7.8500	0.0158

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0158	0.0065	0.0093
2	0.0159	0.0065	0.0094
3	0.0159	0.0065	0.0094
4	0.0159	0.0065	0.0094
5	0.0160	0.0066	0.0094
6	0.0160	0.0066	0.0094

7	0.0160	0.0066	0.0095
8	0.0161	0.0066	0.0095
9	0.0161	0.0066	0.0095
10	0.0161	0.0066	0.0095
11	0.0162	0.0066	0.0096
12	0.0162	0.0067	0.0096
13	0.0163	0.0067	0.0096
14	0.0163	0.0067	0.0096
15	0.0163	0.0067	0.0096
16	0.0164	0.0067	0.0097
17	0.0164	0.0067	0.0097
18	0.0165	0.0067	0.0097
19	0.0165	0.0068	0.0097
20	0.0165	0.0068	0.0098
21	0.0166	0.0068	0.0098
22	0.0166	0.0068	0.0098
23	0.0167	0.0068	0.0098
24	0.0167	0.0068	0.0098
25	0.0168	0.0069	0.0099
26	0.0168	0.0069	0.0099
27	0.0168	0.0069	0.0099
28	0.0169	0.0069	0.0099
29	0.0169	0.0069	0.0100
30	0.0170	0.0070	0.0100
31	0.0170	0.0070	0.0100
32	0.0170	0.0070	0.0101
33	0.0171	0.0070	0.0101
34	0.0171	0.0070	0.0101
35	0.0172	0.0070	0.0101
36	0.0172	0.0071	0.0102
37	0.0173	0.0071	0.0102
38	0.0173	0.0071	0.0102
39	0.0174	0.0071	0.0102
40	0.0174	0.0071	0.0103
41	0.0175	0.0072	0.0103
42	0.0175	0.0072	0.0103
43	0.0176	0.0072	0.0104
44	0.0176	0.0072	0.0104
45	0.0177	0.0072	0.0104
46	0.0177	0.0073	0.0104
47	0.0178	0.0073	0.0105
48	0.0178	0.0073	0.0105
49	0.0179	0.0073	0.0105
50	0.0179	0.0073	0.0106
51	0.0180	0.0074	0.0106
52	0.0180	0.0074	0.0106
53	0.0181	0.0074	0.0107
54	0.0181	0.0074	0.0107
55	0.0182	0.0075	0.0107
56	0.0182	0.0075	0.0108
57	0.0183	0.0075	0.0108
58	0.0183	0.0075	0.0108
59	0.0184	0.0076	0.0109
60	0.0185	0.0076	0.0109
61	0.0185	0.0076	0.0109
62	0.0186	0.0076	0.0110
63	0.0187	0.0077	0.0110
64	0.0187	0.0077	0.0110
65	0.0188	0.0077	0.0111
66	0.0188	0.0077	0.0111
67	0.0189	0.0078	0.0112
68	0.0189	0.0078	0.0112
69	0.0190	0.0078	0.0112
70	0.0191	0.0078	0.0113
71	0.0192	0.0079	0.0113
72	0.0192	0.0079	0.0113
73	0.0193	0.0079	0.0114
74	0.0193	0.0079	0.0114
75	0.0194	0.0080	0.0115
76	0.0195	0.0080	0.0115
77	0.0196	0.0080	0.0115

78	0.0196	0.0080	0.0116
79	0.0197	0.0081	0.0116
80	0.0198	0.0081	0.0117
81	0.0199	0.0081	0.0117
82	0.0199	0.0082	0.0117
83	0.0200	0.0082	0.0118
84	0.0201	0.0082	0.0118
85	0.0202	0.0083	0.0119
86	0.0202	0.0083	0.0119
87	0.0203	0.0083	0.0120
88	0.0204	0.0084	0.0120
89	0.0205	0.0084	0.0121
90	0.0205	0.0084	0.0121
91	0.0207	0.0085	0.0122
92	0.0207	0.0085	0.0122
93	0.0208	0.0085	0.0123
94	0.0209	0.0086	0.0123
95	0.0210	0.0086	0.0124
96	0.0211	0.0086	0.0124
97	0.0212	0.0087	0.0125
98	0.0213	0.0087	0.0125
99	0.0214	0.0088	0.0126
100	0.0214	0.0088	0.0127
101	0.0216	0.0089	0.0127
102	0.0216	0.0089	0.0128
103	0.0218	0.0089	0.0128
104	0.0218	0.0090	0.0129
105	0.0220	0.0090	0.0130
106	0.0221	0.0090	0.0130
107	0.0222	0.0091	0.0131
108	0.0223	0.0091	0.0131
109	0.0224	0.0092	0.0132
110	0.0225	0.0092	0.0133
111	0.0226	0.0093	0.0134
112	0.0227	0.0093	0.0134
113	0.0229	0.0094	0.0135
114	0.0230	0.0094	0.0135
115	0.0231	0.0095	0.0136
116	0.0232	0.0095	0.0137
117	0.0234	0.0096	0.0138
118	0.0235	0.0096	0.0138
119	0.0237	0.0097	0.0140
120	0.0237	0.0097	0.0140
121	0.0239	0.0098	0.0141
122	0.0240	0.0099	0.0142
123	0.0242	0.0099	0.0143
124	0.0243	0.0100	0.0143
125	0.0245	0.0101	0.0145
126	0.0246	0.0101	0.0145
127	0.0248	0.0102	0.0146
128	0.0249	0.0102	0.0147
129	0.0251	0.0103	0.0148
130	0.0253	0.0104	0.0149
131	0.0255	0.0105	0.0150
132	0.0256	0.0105	0.0151
133	0.0258	0.0106	0.0152
134	0.0260	0.0106	0.0153
135	0.0262	0.0107	0.0155
136	0.0263	0.0108	0.0155
137	0.0266	0.0109	0.0157
138	0.0267	0.0110	0.0158
139	0.0270	0.0111	0.0159
140	0.0272	0.0111	0.0160
141	0.0274	0.0113	0.0162
142	0.0276	0.0113	0.0163
143	0.0279	0.0114	0.0165
144	0.0281	0.0115	0.0166
145	0.0265	0.0109	0.0156
146	0.0267	0.0109	0.0157
147	0.0270	0.0111	0.0159
148	0.0272	0.0112	0.0160

149	0.0276	0.0113	0.0163
150	0.0278	0.0114	0.0164
151	0.0282	0.0116	0.0166
152	0.0284	0.0116	0.0167
153	0.0288	0.0118	0.0170
154	0.0290	0.0119	0.0171
155	0.0295	0.0121	0.0174
156	0.0298	0.0122	0.0175
157	0.0303	0.0124	0.0178
158	0.0305	0.0125	0.0180
159	0.0311	0.0127	0.0183
160	0.0314	0.0129	0.0185
161	0.0320	0.0131	0.0188
162	0.0323	0.0132	0.0190
163	0.0329	0.0135	0.0194
164	0.0333	0.0136	0.0196
165	0.0340	0.0139	0.0200
166	0.0344	0.0141	0.0203
167	0.0352	0.0144	0.0208
168	0.0356	0.0146	0.0210
169	0.0365	0.0150	0.0215
170	0.0370	0.0152	0.0218
171	0.0380	0.0156	0.0224
172	0.0386	0.0158	0.0228
173	0.0398	0.0163	0.0234
174	0.0404	0.0166	0.0238
175	0.0418	0.0171	0.0246
176	0.0425	0.0174	0.0251
177	0.0441	0.0181	0.0260
178	0.0450	0.0185	0.0265
179	0.0470	0.0193	0.0277
180	0.0481	0.0197	0.0283
181	0.0505	0.0207	0.0298
182	0.0519	0.0213	0.0306
183	0.0551	0.0226	0.0325
184	0.0569	0.0233	0.0336
185	0.0455	0.0187	0.0268
186	0.0480	0.0197	0.0283
187	0.0545	0.0224	0.0322
188	0.0588	0.0241	0.0347
189	0.0709	0.0291	0.0418
190	0.0800	0.0328	0.0472
191	0.1143	0.0404	0.0740
192	0.1572	0.0404	0.1169
193	0.4922	0.0404	0.4518
194	0.0931	0.0382	0.0549
195	0.0641	0.0263	0.0378
196	0.0510	0.0209	0.0301
197	0.0589	0.0242	0.0348
198	0.0534	0.0219	0.0315
199	0.0492	0.0202	0.0290
200	0.0460	0.0188	0.0271
201	0.0433	0.0178	0.0255
202	0.0411	0.0168	0.0242
203	0.0392	0.0161	0.0231
204	0.0375	0.0154	0.0221
205	0.0361	0.0148	0.0213
206	0.0348	0.0143	0.0205
207	0.0336	0.0138	0.0198
208	0.0326	0.0134	0.0192
209	0.0316	0.0130	0.0187
210	0.0308	0.0126	0.0182
211	0.0300	0.0123	0.0177
212	0.0293	0.0120	0.0173
213	0.0286	0.0117	0.0169
214	0.0280	0.0115	0.0165
215	0.0274	0.0112	0.0162
216	0.0268	0.0110	0.0158
217	0.0282	0.0116	0.0166
218	0.0277	0.0114	0.0164
219	0.0273	0.0112	0.0161

220	0.0269	0.0110	0.0159
221	0.0265	0.0109	0.0156
222	0.0261	0.0107	0.0154
223	0.0257	0.0105	0.0152
224	0.0254	0.0104	0.0150
225	0.0250	0.0103	0.0148
226	0.0247	0.0101	0.0146
227	0.0244	0.0100	0.0144
228	0.0241	0.0099	0.0142
229	0.0238	0.0098	0.0141
230	0.0236	0.0097	0.0139
231	0.0233	0.0096	0.0137
232	0.0230	0.0095	0.0136
233	0.0228	0.0094	0.0135
234	0.0226	0.0093	0.0133
235	0.0223	0.0092	0.0132
236	0.0221	0.0091	0.0131
237	0.0219	0.0090	0.0129
238	0.0217	0.0089	0.0128
239	0.0215	0.0088	0.0127
240	0.0213	0.0087	0.0126
241	0.0211	0.0087	0.0125
242	0.0210	0.0086	0.0124
243	0.0208	0.0085	0.0123
244	0.0206	0.0085	0.0122
245	0.0204	0.0084	0.0121
246	0.0203	0.0083	0.0120
247	0.0201	0.0083	0.0119
248	0.0200	0.0082	0.0118
249	0.0198	0.0081	0.0117
250	0.0197	0.0081	0.0116
251	0.0195	0.0080	0.0115
252	0.0194	0.0080	0.0114
253	0.0193	0.0079	0.0114
254	0.0191	0.0078	0.0113
255	0.0190	0.0078	0.0112
256	0.0189	0.0077	0.0111
257	0.0187	0.0077	0.0111
258	0.0186	0.0076	0.0110
259	0.0185	0.0076	0.0109
260	0.0184	0.0075	0.0108
261	0.0183	0.0075	0.0108
262	0.0182	0.0074	0.0107
263	0.0180	0.0074	0.0106
264	0.0179	0.0074	0.0106
265	0.0178	0.0073	0.0105
266	0.0177	0.0073	0.0105
267	0.0176	0.0072	0.0104
268	0.0175	0.0072	0.0103
269	0.0174	0.0072	0.0103
270	0.0173	0.0071	0.0102
271	0.0173	0.0071	0.0102
272	0.0172	0.0070	0.0101
273	0.0171	0.0070	0.0101
274	0.0170	0.0070	0.0100
275	0.0169	0.0069	0.0100
276	0.0168	0.0069	0.0099
277	0.0167	0.0069	0.0099
278	0.0166	0.0068	0.0098
279	0.0166	0.0068	0.0098
280	0.0165	0.0068	0.0097
281	0.0164	0.0067	0.0097
282	0.0163	0.0067	0.0096
283	0.0162	0.0067	0.0096
284	0.0162	0.0066	0.0095
285	0.0161	0.0066	0.0095
286	0.0160	0.0066	0.0095
287	0.0160	0.0065	0.0094
288	0.0159	0.0065	0.0094

Total soil rain loss = 3.03(In)
Total effective rainfall = 4.82(In)
Peak flow rate in flood hydrograph = 7.80(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q				
0+10	0.0005	0.06	Q				
0+15	0.0016	0.16	Q				
0+20	0.0035	0.28	VQ				
0+25	0.0059	0.35	VQ				
0+30	0.0086	0.38	VQ				
0+35	0.0113	0.40	VQ				
0+40	0.0141	0.41	VQ				
0+45	0.0169	0.41	VQ				
0+50	0.0197	0.41	VQ				
0+55	0.0226	0.41	VQ				
1+ 0	0.0254	0.41	VQ				
1+ 5	0.0283	0.41	VQ				
1+10	0.0311	0.41	VQ				
1+15	0.0340	0.42	VQ				
1+20	0.0369	0.42	|Q				
1+25	0.0397	0.42	|Q				
1+30	0.0426	0.42	|Q				
1+35	0.0455	0.42	|Q				
1+40	0.0484	0.42	|Q				
1+45	0.0513	0.42	|Q				
1+50	0.0542	0.42	|Q				
1+55	0.0571	0.42	|Q				
2+ 0	0.0601	0.42	|Q				
2+ 5	0.0630	0.43	|Q				
2+10	0.0659	0.43	|Q				
2+15	0.0689	0.43	|Q				
2+20	0.0718	0.43	|Q				
2+25	0.0748	0.43	|QV				
2+30	0.0778	0.43	|QV				
2+35	0.0808	0.43	|QV				
2+40	0.0837	0.43	|QV				
2+45	0.0867	0.43	|QV				
2+50	0.0897	0.44	|QV				
2+55	0.0927	0.44	|QV				
3+ 0	0.0958	0.44	|QV				
3+ 5	0.0988	0.44	|QV				
3+10	0.1018	0.44	|QV				
3+15	0.1049	0.44	|QV				
3+20	0.1079	0.44	|QV				
3+25	0.1110	0.44	|Q V				
3+30	0.1140	0.44	|Q V				
3+35	0.1171	0.45	|Q V				
3+40	0.1202	0.45	|Q V				
3+45	0.1233	0.45	|Q V				
3+50	0.1264	0.45	|Q V				
3+55	0.1295	0.45	|Q V				
4+ 0	0.1326	0.45	|Q V				
4+ 5	0.1357	0.45	|Q V				
4+10	0.1388	0.46	|Q V				
4+15	0.1420	0.46	|Q V				
4+20	0.1451	0.46	|Q V				
4+25	0.1483	0.46	|Q V				
4+30	0.1515	0.46	|Q V				
4+35	0.1547	0.46	|Q V				
4+40	0.1578	0.46	|Q V				
4+45	0.1610	0.46	|Q V				
4+50	0.1642	0.47	|Q V				

4+55	0.1675	0.47	Q V			
5+ 0	0.1707	0.47	Q V			
5+ 5	0.1739	0.47	Q V			
5+10	0.1772	0.47	Q V			
5+15	0.1804	0.47	Q V			
5+20	0.1837	0.47	Q V			
5+25	0.1870	0.48	Q V			
5+30	0.1903	0.48	Q V			
5+35	0.1936	0.48	Q V			
5+40	0.1969	0.48	Q V			
5+45	0.2002	0.48	Q V			
5+50	0.2036	0.48	Q V			
5+55	0.2069	0.49	Q V			
6+ 0	0.2103	0.49	Q V			
6+ 5	0.2136	0.49	Q V			
6+10	0.2170	0.49	Q V			
6+15	0.2204	0.49	Q V			
6+20	0.2238	0.49	Q V			
6+25	0.2272	0.50	Q V			
6+30	0.2306	0.50	Q V			
6+35	0.2341	0.50	Q V			
6+40	0.2375	0.50	Q V			
6+45	0.2410	0.50	Q V			
6+50	0.2445	0.50	Q V			
6+55	0.2480	0.51	Q V			
7+ 0	0.2515	0.51	Q V			
7+ 5	0.2550	0.51	Q V			
7+10	0.2585	0.51	Q V			
7+15	0.2621	0.51	Q V			
7+20	0.2656	0.52	Q V			
7+25	0.2692	0.52	Q V			
7+30	0.2728	0.52	Q V			
7+35	0.2764	0.52	Q V			
7+40	0.2800	0.52	Q V			
7+45	0.2836	0.53	Q V			
7+50	0.2873	0.53	Q V			
7+55	0.2909	0.53	Q V			
8+ 0	0.2946	0.53	Q V			
8+ 5	0.2983	0.54	Q V			
8+10	0.3020	0.54	Q V			
8+15	0.3057	0.54	Q V			
8+20	0.3094	0.54	Q V			
8+25	0.3132	0.55	Q V			
8+30	0.3170	0.55	Q V			
8+35	0.3208	0.55	Q V			
8+40	0.3246	0.55	Q V			
8+45	0.3284	0.56	Q V			
8+50	0.3322	0.56	Q V			
8+55	0.3361	0.56	Q V			
9+ 0	0.3400	0.56	Q V			
9+ 5	0.3439	0.57	Q V			
9+10	0.3478	0.57	Q V			
9+15	0.3517	0.57	Q V			
9+20	0.3557	0.57	Q V			
9+25	0.3596	0.58	Q V			
9+30	0.3636	0.58	Q V			
9+35	0.3676	0.58	Q V			
9+40	0.3717	0.59	Q V			
9+45	0.3757	0.59	Q V			
9+50	0.3798	0.59	Q V			
9+55	0.3839	0.60	Q V			
10+ 0	0.3880	0.60	Q V			
10+ 5	0.3922	0.60	Q V			
10+10	0.3963	0.61	Q V			
10+15	0.4005	0.61	Q V			
10+20	0.4048	0.61	Q V			
10+25	0.4090	0.62	Q V			
10+30	0.4133	0.62	Q V			
10+35	0.4176	0.62	Q V			
10+40	0.4219	0.63	Q V			
10+45	0.4262	0.63	Q V			

10+50	0.4306	0.64	Q	V			
10+55	0.4350	0.64	Q	V			
11+ 0	0.4394	0.64	Q	V			
11+ 5	0.4439	0.65	Q	V			
11+10	0.4484	0.65	Q	V			
11+15	0.4529	0.66	Q	V			
11+20	0.4575	0.66	Q	V			
11+25	0.4621	0.67	Q	V			
11+30	0.4667	0.67	Q	V			
11+35	0.4713	0.68	Q	V			
11+40	0.4760	0.68	Q	V			
11+45	0.4807	0.69	Q	V			
11+50	0.4855	0.69	Q	V			
11+55	0.4903	0.70	Q	V			
12+ 0	0.4951	0.70	Q	V			
12+ 5	0.5000	0.71	Q	V			
12+10	0.5049	0.71	Q	V			
12+15	0.5097	0.70	Q	V			
12+20	0.5145	0.69	Q	V			
12+25	0.5192	0.69	Q	V			
12+30	0.5240	0.69	Q	V			
12+35	0.5288	0.70	Q	V			
12+40	0.5337	0.71	Q	V			
12+45	0.5386	0.71	Q	V			
12+50	0.5436	0.72	Q	V			
12+55	0.5486	0.73	Q	V			
13+ 0	0.5537	0.74	Q	V			
13+ 5	0.5588	0.75	Q	V			
13+10	0.5640	0.76	Q	V			
13+15	0.5693	0.76	Q	V			
13+20	0.5746	0.77	Q	V			
13+25	0.5800	0.78	Q	V			
13+30	0.5855	0.79	Q	V			
13+35	0.5910	0.81	Q	V			
13+40	0.5967	0.82	Q	V			
13+45	0.6024	0.83	Q	V			
13+50	0.6082	0.84	Q	V			
13+55	0.6141	0.86	Q	V			
14+ 0	0.6201	0.87	Q	V			
14+ 5	0.6262	0.88	Q	V			
14+10	0.6324	0.90	Q	V			
14+15	0.6387	0.92	Q	V			
14+20	0.6451	0.93	Q	V			
14+25	0.6517	0.95	Q	V			
14+30	0.6584	0.97	Q	V			
14+35	0.6652	0.99	Q	V			
14+40	0.6722	1.02	Q	V			
14+45	0.6794	1.04	Q	V			
14+50	0.6867	1.07	Q	V			
14+55	0.6943	1.10	Q	V			
15+ 0	0.7021	1.13	Q	V			
15+ 5	0.7101	1.16	Q	V			
15+10	0.7184	1.20	Q	V			
15+15	0.7269	1.24	Q	V			
15+20	0.7358	1.29	Q	V			
15+25	0.7451	1.34	Q	V			
15+30	0.7544	1.35	Q	V			
15+35	0.7635	1.33	Q	V			
15+40	0.7724	1.30	Q	V			
15+45	0.7816	1.34	Q	V			
15+50	0.7916	1.45	Q	V			
15+55	0.8029	1.64	Q	V			
16+ 0	0.8167	2.01	Q	V			
16+ 5	0.8375	3.02	Q	V			
16+10	0.8741	5.31	Q	V			
16+15	0.9249	7.37	Q	V			
16+20	0.9786	7.80	Q	V			
16+25	1.0149	5.26	Q	V			
16+30	1.0376	3.31	Q	V			
16+35	1.0533	2.27	Q	V			
16+40	1.0649	1.69	Q	V			

16+45	1.0751	1.48	| Q |	|	|	V| |
16+50	1.0843	1.33	| Q |	|	|	V |
16+55	1.0925	1.19	| Q |	|	|	V |
17+ 0	1.1002	1.12	| Q |	|	|	V |
17+ 5	1.1075	1.06	| Q |	|	|	V |
17+10	1.1145	1.01	| Q |	|	|	V |
17+15	1.1211	0.97	| Q |	|	|	|V |
17+20	1.1275	0.93	| Q |	|	|	|V |
17+25	1.1337	0.89	| Q |	|	|	|V |
17+30	1.1396	0.86	| Q |	|	|	|V |
17+35	1.1454	0.84	| Q |	|	|	|V |
17+40	1.1510	0.81	| Q |	|	|	|V |
17+45	1.1564	0.79	| Q |	|	|	| V |
17+50	1.1617	0.77	| Q |	|	|	| V |
17+55	1.1669	0.75	| Q |	|	|	| V |
18+ 0	1.1720	0.73	| Q |	|	|	| V |
18+ 5	1.1769	0.72	| Q |	|	|	| V |
18+10	1.1818	0.71	| Q |	|	|	| V |
18+15	1.1867	0.71	| Q |	|	|	| V |
18+20	1.1916	0.71	| Q |	|	|	| V |
18+25	1.1964	0.70	| Q |	|	|	| V |
18+30	1.2012	0.70	| Q |	|	|	| V |
18+35	1.2060	0.69	| Q |	|	|	| V |
18+40	1.2106	0.68	| Q |	|	|	| V |
18+45	1.2152	0.67	| Q |	|	|	| V |
18+50	1.2198	0.66	| Q |	|	|	| V |
18+55	1.2242	0.65	| Q |	|	|	| V |
19+ 0	1.2287	0.64	| Q |	|	|	| V |
19+ 5	1.2330	0.63	| Q |	|	|	| V |
19+10	1.2373	0.63	| Q |	|	|	| V |
19+15	1.2416	0.62	| Q |	|	|	| V |
19+20	1.2458	0.61	| Q |	|	|	| V |
19+25	1.2500	0.60	| Q |	|	|	| V |
19+30	1.2541	0.60	| Q |	|	|	| V |
19+35	1.2581	0.59	| Q |	|	|	| V |
19+40	1.2622	0.58	| Q |	|	|	| V |
19+45	1.2661	0.58	| Q |	|	|	| V |
19+50	1.2701	0.57	| Q |	|	|	| V |
19+55	1.2740	0.57	| Q |	|	|	| V |
20+ 0	1.2779	0.56	| Q |	|	|	| V |
20+ 5	1.2817	0.56	| Q |	|	|	| V |
20+10	1.2855	0.55	| Q |	|	|	| V |
20+15	1.2892	0.55	| Q |	|	|	| V |
20+20	1.2930	0.54	| Q |	|	|	| V |
20+25	1.2967	0.54	| Q |	|	|	| V |
20+30	1.3003	0.53	| Q |	|	|	| V |
20+35	1.3040	0.53	| Q |	|	|	| V |
20+40	1.3076	0.52	| Q |	|	|	| V |
20+45	1.3112	0.52	| Q |	|	|	| V |
20+50	1.3147	0.52	| Q |	|	|	| V |
20+55	1.3182	0.51	| Q |	|	|	| V |
21+ 0	1.3217	0.51	| Q |	|	|	| V |
21+ 5	1.3252	0.50	| Q |	|	|	| V |
21+10	1.3286	0.50	| Q |	|	|	| V |
21+15	1.3321	0.50	|Q |	|	|	| V |
21+20	1.3355	0.49	|Q |	|	|	| V |
21+25	1.3388	0.49	|Q |	|	|	| V |
21+30	1.3422	0.49	|Q |	|	|	| V |
21+35	1.3455	0.48	|Q |	|	|	| V |
21+40	1.3488	0.48	|Q |	|	|	| V |
21+45	1.3521	0.48	|Q |	|	|	| V |
21+50	1.3554	0.47	|Q |	|	|	| V |
21+55	1.3586	0.47	|Q |	|	|	| V |
22+ 0	1.3618	0.47	|Q |	|	|	| V |
22+ 5	1.3650	0.47	|Q |	|	|	| V |
22+10	1.3682	0.46	|Q |	|	|	| V |
22+15	1.3714	0.46	|Q |	|	|	| V |
22+20	1.3745	0.46	|Q |	|	|	| V |
22+25	1.3777	0.45	|Q |	|	|	| V |
22+30	1.3808	0.45	|Q |	|	|	| V |
22+35	1.3839	0.45	|Q |	|	|	| V |

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   22+40       1.3870      0.45  |Q        |         |         |       V |
   22+45       1.3900      0.44  |Q        |         |         |       V |
   22+50       1.3931      0.44  |Q        |         |         |       V |
   22+55       1.3961      0.44  |Q        |         |         |       V |
   23+ 0       1.3991      0.44  |Q        |         |         |       V |
   23+ 5       1.4021      0.44  |Q        |         |         |       V |
   23+10       1.4051      0.43  |Q        |         |         |       V |
   23+15       1.4080      0.43  |Q        |         |         |        V|
   23+20       1.4110      0.43  |Q        |         |         |        V|
   23+25       1.4139      0.43  |Q        |         |         |        V|
   23+30       1.4168      0.42  |Q        |         |         |        V|
   23+35       1.4198      0.42  |Q        |         |         |        V|
   23+40       1.4226      0.42  |Q        |         |         |        V|
   23+45       1.4255      0.42  |Q        |         |         |        V|
   23+50       1.4284      0.42  |Q        |         |         |        V|
   23+55       1.4312      0.41  |Q        |         |         |        V|
   24+ 0       1.4341      0.41  |Q        |         |         |        V|
   24+ 5       1.4368      0.40  |Q        |         |         |        V|
   24+10       1.4392      0.35  |Q        |         |         |        V|
   24+15       1.4409      0.25  Q         |         |         |        V|
   24+20       1.4418      0.13  Q         |         |         |        V|
   24+25       1.4422      0.06  Q         |         |         |        V|
   24+30       1.4424      0.02  Q         |         |         |        V|
   24+35       1.4425      0.01  Q         |         |         |        V|
   24+40       1.4425      0.00  Q         |         |         |        V|
   24+45       1.4425      0.00  Q         |         |         |        V|
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ATTACHMENT 4

Developed Conditions
Rational 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: 01/30/24

235094 - 17783 & 17805 TAYLOR AVENUE
DEVELOPED CONDITIONS
10-YEAR, 1-HOUR STORM
BY: KBO DATE: 01-30-24

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 = 0.930 (In.)
Slope used for rainfall intensity curve b = 0.6000
Soil antecedent moisture condition (AMC) = 2

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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) = 32.00
Pervious ratio(Ap) = 0.1600 Max loss rate(Fm)= 0.156(In/Hr)
Initial subarea data:
Initial area flow distance = 281.460(Ft.)
Top (of initial area) elevation = 1107.960(Ft.)
Bottom (of initial area) elevation = 1105.640(Ft.)
Difference in elevation = 2.320(Ft.)
Slope = 0.00824 s(%)= 0.82
TC = k(0.314)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.824 min.
Rainfall intensity = 3.157(In/Hr) for a 10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.855
Subarea runoff = 2.269(CFS)
Total initial stream area = 0.840(Ac.)
Pervious area fraction = 0.160
Initial area Fm value = 0.156(In/Hr)

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Process from Point/Station 1.000 to Point/Station 3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****

Upstream point/station elevation = 1105.640(Ft.)
Downstream point/station elevation = 1096.620(Ft.)
Pipe length = 461.21(Ft.) Manning's N = 0.012
No. of pipes = 1 Required pipe flow = 2.269(CFS)
Given pipe size = 12.00(In.)
Calculated individual pipe flow = 2.269(CFS)
Normal flow depth in pipe = 5.43(In.)
Flow top width inside pipe = 11.94(In.)
Critical Depth = 7.73(In.)
Pipe flow velocity = 6.57(Ft/s)
Travel time through pipe = 1.17 min.
Time of concentration (TC) = 8.99 min.

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Process from Point/Station        1.000 to Point/Station        3.000
**** CONFLUENCE OF MAIN STREAMS ****
____________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      0.840(Ac.)
Runoff from this stream =      2.269(CFS)
Time of concentration =    8.99 min.
Rainfall intensity =     2.904(In/Hr)
Area averaged loss rate (Fm) =    0.1564(In/Hr)
Area averaged Pervious ratio (Ap) = 0.1600
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        0.000 to Point/Station        2.000
**** 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)  = 32.00
Pervious ratio(Ap) = 0.1500     Max loss rate(Fm)=     0.147(In/Hr)
Initial subarea data:
Initial area flow distance =   301.120(Ft.)
Top (of initial area) elevation =  1107.960(Ft.)
Bottom (of initial area) elevation =  1105.540(Ft.)
Difference in elevation =     2.420(Ft.)
Slope =    0.00804  s(%)=       0.80
TC = k(0.311)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.015 min.
Rainfall intensity =      3.112(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.858
Subarea runoff =      2.375(CFS)
Total initial stream area =        0.890(Ac.)
Pervious area fraction = 0.150
Initial area Fm value =    0.147(In/Hr)


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Process from Point/Station        2.000 to Point/Station        3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
____________________________________________________________________________
Upstream point/station elevation =  1105.540(Ft.)
Downstream point/station elevation =  1096.620(Ft.)
Pipe length  =   437.26(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     2.375(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     2.375(CFS)
Normal flow depth in pipe =    5.50(In.)
Flow top width inside pipe =   11.96(In.)
Critical Depth =    7.92(In.)
Pipe flow velocity =      6.76(Ft/s)
Travel time through pipe =    1.08 min.
Time of concentration (TC) =     9.09 min.


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Process from Point/Station        2.000 to Point/Station        3.000
**** CONFLUENCE OF MAIN STREAMS ****
____________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      0.890(Ac.)
Runoff from this stream =      2.375(CFS)
Time of concentration =    9.09 min.
Rainfall intensity =     2.885(In/Hr)
Area averaged loss rate (Fm) =    0.1467(In/Hr)
Area averaged Pervious ratio (Ap) = 0.1500
Program is now starting with Main Stream No. 3
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Process from Point/Station        4.000 to Point/Station        5.000
**** 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)  = 32.00
Pervious ratio(Ap) = 0.0700     Max loss rate(Fm)=     0.068(In/Hr)
Initial subarea data:
Initial area flow distance =   154.620(Ft.)
Top (of initial area) elevation =  1107.960(Ft.)
Bottom (of initial area) elevation =  1105.640(Ft.)
Difference in elevation =     2.320(Ft.)
Slope =    0.01500  s(%)=       1.50
TC = k(0.292)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.076 min.
Rainfall intensity =      4.093(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.885
Subarea runoff =      2.717(CFS)
Total initial stream area =        0.750(Ac.)
Pervious area fraction = 0.070
Initial area Fm value =    0.068(In/Hr)


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Process from Point/Station        5.000 to Point/Station        3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  1105.640(Ft.)
Downstream point/station elevation =  1096.620(Ft.)
Pipe length  =   225.21(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     2.717(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     2.717(CFS)
Normal flow depth in pipe =    4.92(In.)
Flow top width inside pipe =   11.80(In.)
Critical Depth =    8.48(In.)
Pipe flow velocity =      8.98(Ft/s)
Travel time through pipe =    0.42 min.
Time of concentration (TC) =     5.49 min.


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Process from Point/Station        5.000 to Point/Station        3.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 3
Stream flow area =      0.750(Ac.)
Runoff from this stream =      2.717(CFS)
Time of concentration =    5.49 min.
Rainfall intensity =     3.903(In/Hr)
Area averaged loss rate (Fm) =    0.0684(In/Hr)
Area averaged Pervious ratio (Ap) = 0.0700
Program is now starting with Main Stream No. 4


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        7.000
**** 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)  = 32.00
Pervious ratio(Ap) = 0.0700     Max loss rate(Fm)=     0.068(In/Hr)
Initial subarea data:
Initial area flow distance =   176.120(Ft.)
Top (of initial area) elevation =  1107.960(Ft.)
Bottom (of initial area) elevation =  1105.430(Ft.)
Difference in elevation =     2.530(Ft.)
Slope =    0.01437  s(%)=       1.44
```

```
TC = k(0.292)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.394 min.
Rainfall intensity =      3.947(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.884
Subarea runoff =      2.932(CFS)
Total initial stream area =        0.840(Ac.)
Pervious area fraction = 0.070
Initial area Fm value =    0.068(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        7.000 to Point/Station        3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  1105.430(Ft.)
Downstream point/station elevation =  1096.620(Ft.)
Pipe length  =   244.10(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     2.932(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     2.932(CFS)
Normal flow depth in pipe =    5.28(In.)
Flow top width inside pipe =   11.91(In.)
Critical Depth =    8.80(In.)
Pipe flow velocity =      8.82(Ft/s)
Travel time through pipe =    0.46 min.
Time of concentration (TC) =     5.86 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        7.000 to Point/Station        3.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 4
Stream flow area =      0.840(Ac.)
Runoff from this stream =      2.932(CFS)
Time of concentration =    5.86 min.
Rainfall intensity =     3.757(In/Hr)
Area averaged loss rate (Fm) =    0.0684(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      2.27     0.840      8.99    0.156      2.904
2      2.38     0.890      9.09    0.147      2.885
3      2.72     0.750      5.49    0.068      3.903
4      2.93     0.840      5.86    0.068      3.757
Qmax(1) =
          1.000 *    1.000 *     2.269) +
          1.007 *    0.989 *     2.375) +
          0.739 *    1.000 *     2.717) +
          0.769 *    1.000 *     2.932) + =       8.897
Qmax(2) =
          0.993 *    1.000 *     2.269) +
          1.000 *    1.000 *     2.375) +
          0.734 *    1.000 *     2.717) +
          0.764 *    1.000 *     2.932) + =       8.862
Qmax(3) =
          1.364 *    0.611 *     2.269) +
          1.372 *    0.604 *     2.375) +
          1.000 *    1.000 *     2.717) +
          1.040 *    0.938 *     2.932) + =       9.436
Qmax(4) =
          1.310 *    0.651 *     2.269) +
          1.319 *    0.644 *     2.375) +
          0.962 *    1.000 *     2.717) +
          1.000 *    1.000 *     2.932) + =       9.497
```

```
Total of 4 main streams to confluence:
Flow rates before confluence point:
       3.269       3.375       3.717       3.932
Maximum flow rates at confluence using above data:
        8.897        8.862        9.436        9.497
Area of streams before confluence:
        0.840        0.890        0.750        0.840
Effective area values after confluence:
        3.310        3.320        2.589        2.710


Results of confluence:
Total flow rate =      9.497(CFS)
Time of concentration =     5.855 min.
Effective stream area after confluence  =      2.710(Ac.)
Study area average Pervious fraction(Ap) =  0.114
Study area average soil loss rate(Fm) =    0.112(In/Hr)
Study area total =       3.32(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        8.000 to Point/Station        9.000
**** 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)  = 32.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.978(In/Hr)
Initial subarea data:
Initial area flow distance =   469.660(Ft.)
Top (of initial area) elevation =  1102.000(Ft.)
Bottom (of initial area) elevation =  1101.670(Ft.)
Difference in elevation =     0.330(Ft.)
Slope =    0.00070  s(%)=       0.07
TC = k(0.950)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   47.543 min.
Rainfall intensity =      1.069(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.077
Subarea runoff =      0.024(CFS)
Total initial stream area =        0.290(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.978(In/Hr)
End of computations, Total Study Area =            3.61 (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) = 0.185
Area averaged SCS curve number =  32.0
```

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: 01/30/24

235094 - 17783 & 17805 TAYLOR AVENUE
DEVELOPED CONDITIONS
100-YEAR, 1-HOUR STORM
BY: KBO DATE: 01-30-24

Program License Serial Number 6320

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

Rational hydrology study storm event year is 100.0
10 Year storm 1 hour rainfall = 0.930(In.)
100 Year storm 1 hour rainfall = 1.330(In.)
Computed rainfall intensity:
Storm year = 100.00 1 hour rainfall = 1.330 (In.)
Slope used for rainfall intensity curve b = 0.6000
Soil antecedent moisture condition (AMC) = 3

++
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) = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.1600 Max loss rate(Fm)= 0.126(In/Hr)
Initial subarea data:
Initial area flow distance = 281.460(Ft.)
Top (of initial area) elevation = 1107.960(Ft.)
Bottom (of initial area) elevation = 1105.640(Ft.)
Difference in elevation = 2.320(Ft.)
Slope = 0.00824 s(%)= 0.82
TC = k(0.314)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.824 min.
Rainfall intensity = 4.515(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.875
Subarea runoff = 3.319(CFS)
Total initial stream area = 0.840(Ac.)
Pervious area fraction = 0.160
Initial area Fm value = 0.126(In/Hr)

++
Process from Point/Station 1.000 to Point/Station 3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****

Upstream point/station elevation = 1105.640(Ft.)
Downstream point/station elevation = 1096.620(Ft.)
Pipe length = 461.21(Ft.) Manning's N = 0.012
No. of pipes = 1 Required pipe flow = 3.319(CFS)
Given pipe size = 12.00(In.)
Calculated individual pipe flow = 3.319(CFS)
Normal flow depth in pipe = 6.80(In.)
Flow top width inside pipe = 11.89(In.)
Critical Depth = 9.36(In.)
Pipe flow velocity = 7.22(Ft/s)
Travel time through pipe = 1.06 min.
Time of concentration (TC) = 8.89 min.

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        3.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      0.840(Ac.)
Runoff from this stream =      3.319(CFS)
Time of concentration =    8.89 min.
Rainfall intensity =     4.183(In/Hr)
Area averaged loss rate (Fm) =    0.1256(In/Hr)
Area averaged Pervious ratio (Ap) = 0.1600
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        0.000 to Point/Station        2.000
**** 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)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.1500     Max loss rate(Fm)=     0.118(In/Hr)
Initial subarea data:
Initial area flow distance =   301.120(Ft.)
Top (of initial area) elevation =  1107.960(Ft.)
Bottom (of initial area) elevation =  1105.540(Ft.)
Difference in elevation =     2.420(Ft.)
Slope =    0.00804  s(%)=       0.80
TC = k(0.311)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.015 min.
Rainfall intensity =      4.450(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.876
Subarea runoff =      3.470(CFS)
Total initial stream area =        0.890(Ac.)
Pervious area fraction = 0.150
Initial area Fm value =    0.118(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  1105.540(Ft.)
Downstream point/station elevation =  1096.620(Ft.)
Pipe length  =   437.26(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     3.470(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     3.470(CFS)
Normal flow depth in pipe =    6.90(In.)
Flow top width inside pipe =   11.86(In.)
Critical Depth =    9.55(In.)
Pipe flow velocity =      7.42(Ft/s)
Travel time through pipe =    0.98 min.
Time of concentration (TC) =     9.00 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        2.000 to Point/Station        3.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      0.890(Ac.)
Runoff from this stream =      3.470(CFS)
Time of concentration =    9.00 min.
Rainfall intensity =     4.152(In/Hr)
Area averaged loss rate (Fm) =    0.1178(In/Hr)
```

```
Area averaged Pervious ratio (Ap) = 0.1500
Program is now starting with Main Stream No. 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** 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)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.0700     Max loss rate(Fm)=     0.055(In/Hr)
Initial subarea data:
Initial area flow distance =   154.620(Ft.)
Top (of initial area) elevation =  1107.960(Ft.)
Bottom (of initial area) elevation =  1105.640(Ft.)
Difference in elevation =     2.320(Ft.)
Slope =    0.01500  s(%)=       1.50
TC = k(0.292)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.076 min.
Rainfall intensity =      5.854(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.892
Subarea runoff =      3.914(CFS)
Total initial stream area =        0.750(Ac.)
Pervious area fraction = 0.070
Initial area Fm value =    0.055(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
________________________________________________________________________
Upstream point/station elevation =  1105.640(Ft.)
Downstream point/station elevation =  1096.620(Ft.)
Pipe length  =   225.21(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     3.914(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     3.914(CFS)
Normal flow depth in pipe =    6.05(In.)
Flow top width inside pipe =   12.00(In.)
Critical Depth =   10.08(In.)
Pipe flow velocity =      9.87(Ft/s)
Travel time through pipe =    0.38 min.
Time of concentration (TC) =     5.46 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        3.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 3
Stream flow area =      0.750(Ac.)
Runoff from this stream =      3.914(CFS)
Time of concentration =    5.46 min.
Rainfall intensity =     5.606(In/Hr)
Area averaged loss rate (Fm) =    0.0550(In/Hr)
Area averaged Pervious ratio (Ap) = 0.0700
Program is now starting with Main Stream No. 4


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        6.000 to Point/Station        7.000
**** 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)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.0700     Max loss rate(Fm)=     0.055(In/Hr)
```

```
Initial subarea data:
Initial area flow distance =   176.120(Ft.)
Top (of initial area) elevation =  1107.960(Ft.)
Bottom (of initial area) elevation =  1105.430(Ft.)
Difference in elevation =     2.530(Ft.)
Slope =    0.01437  s(%)=       1.44
TC = k(0.292)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.394 min.
Rainfall intensity =      5.644(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.891
Subarea runoff =      4.226(CFS)
Total initial stream area =        0.840(Ac.)
Pervious area fraction = 0.070
Initial area Fm value =    0.055(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        7.000 to Point/Station        3.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
______________________________________________________________________________
Upstream point/station elevation =  1105.430(Ft.)
Downstream point/station elevation =  1096.620(Ft.)
Pipe length  =   244.10(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     4.226(CFS)
Given pipe size =     12.00(In.)
Calculated individual pipe flow  =     4.226(CFS)
Normal flow depth in pipe =    6.53(In.)
Flow top width inside pipe =   11.95(In.)
Critical Depth =   10.40(In.)
Pipe flow velocity =      9.67(Ft/s)
Travel time through pipe =    0.42 min.
Time of concentration (TC) =     5.81 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        7.000 to Point/Station        3.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 4
Stream flow area =      0.840(Ac.)
Runoff from this stream =      4.226(CFS)
Time of concentration =    5.81 min.
Rainfall intensity =     5.395(In/Hr)
Area averaged loss rate (Fm) =    0.0550(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      3.32     0.840      8.89    0.126      4.183
2      3.47     0.890      9.00    0.118      4.152
3      3.91     0.750      5.46    0.055      5.606
4      4.23     0.840      5.81    0.055      5.395
Qmax(1) =
          1.000 *    1.000 *     3.319) +
          1.008 *    0.988 *     3.470) +
          0.744 *    1.000 *     3.914) +
          0.773 *    1.000 *     4.226) + =      12.950
Qmax(2) =
          0.992 *    1.000 *     3.319) +
          1.000 *    1.000 *     3.470) +
          0.738 *    1.000 *     3.914) +
          0.767 *    1.000 *     4.226) + =      12.895
Qmax(3) =
          1.351 *    0.614 *     3.319) +
          1.360 *    0.606 *     3.470) +
          1.000 *    1.000 *     3.914) +
          1.039 *    0.938 *     4.226) + =      13.649
```

```
Qmax(4) =
          1.299 *    0.654 *     3.319) +
          1.308 *    0.646 *     3.470) +
          0.962 *    1.000 *     3.914) +
          1.000 *    1.000 *     4.226) + =      13.746

Total of 4 main streams to confluence:
Flow rates before confluence point:
       4.319       4.470       4.914       5.226
Maximum flow rates at confluence using above data:
       12.950       12.895       13.649       13.746
Area of streams before confluence:
        0.840        0.890        0.750        0.840
Effective area values after confluence:
        3.309        3.320        2.594        2.715


Results of confluence:
Total flow rate =      13.746(CFS)
Time of concentration =     5.815 min.
Effective stream area after confluence  =      2.715(Ac.)
Study area average Pervious fraction(Ap) =  0.114
Study area average soil loss rate(Fm) =    0.090(In/Hr)
Study area total =       3.32(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        8.000 to Point/Station        9.000
**** 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)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.785(In/Hr)
Initial subarea data:
Initial area flow distance =   469.660(Ft.)
Top (of initial area) elevation =  1102.000(Ft.)
Bottom (of initial area) elevation =  1101.670(Ft.)
Difference in elevation =     0.330(Ft.)
Slope =    0.00070  s(%)=       0.07
TC = k(0.950)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    47.543 min.
Rainfall intensity =      1.529(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.438
Subarea runoff =      0.194(CFS)
Total initial stream area =        0.290(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.785(In/Hr)
End of computations, Total Study Area =            3.61 (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) = 0.185
Area averaged SCS curve number =  32.0
```

ATTACHMENT 5

Developed Conditions
Hydrograph Calculations

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

Study date 01/30/24

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

Program License Serial Number 6320

235094 - 17783 & 17805 TAYLOR AVENUE
DEVELOPED CONDITIONS
2-YEAR, 24-HOUR STORM
BY: KBO DATE: 01-30-24

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		
3.61	1	0.93
Rainfall data for year 2		
3.61	6	1.63
Rainfall data for year 2		
3.61	24	3.02
Rainfall data for year 100		
3.61	1	1.33
Rainfall data for year 100		
3.61	6	3.51
Rainfall data for year 100		
3.61	24	7.85

++

******** 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)
32.0	16.6	3.61	1.000	1.000	0.180	0.180

Area-averaged adjusted loss rate Fm (In/Hr) = 0.180

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
0.65	0.180	32.0	16.6	15.10	0.000
2.96	0.820	98.0	98.0	0.20	0.923

Area-averaged catchment yield fraction, Y = 0.757
Area-averaged low loss fraction, Yb = 0.243
User entry of time of concentration = 0.097 (hours)
++
Watershed area = 3.61(Ac.)
Catchment Lag time = 0.078 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 107.3883
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.180(In/Hr)
Average low loss rate fraction (Yb) = 0.243 (decimal)
VALLEY DEVELOPED S-Graph Selected
Computed peak 5-minute rainfall = 0.241(In)
Computed peak 30-minute rainfall = 0.493(In)
Specified peak 1-hour rainfall = 0.650(In)
Computed peak 3-hour rainfall = 1.142(In)
Specified peak 6-hour rainfall = 1.630(In)
Specified peak 24-hour rainfall = 3.020(In)

Rainfall depth area reduction factors:
Using a total area of 3.61(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.241(In)
30-minute factor = 1.000 Adjusted rainfall = 0.493(In)
1-hour factor = 1.000 Adjusted rainfall = 0.650(In)
3-hour factor = 1.000 Adjusted rainfall = 1.142(In)
6-hour factor = 1.000 Adjusted rainfall = 1.630(In)
24-hour factor = 1.000 Adjusted rainfall = 3.020(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 = 43.66 (CFS))	
1	19.634	8.572
2	83.438	27.856
3	98.503	6.577
4	100.000	0.654

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2407	0.2407
2	0.3176	0.0769
3	0.3735	0.0559
4	0.4191	0.0456
5	0.4582	0.0391
6	0.4928	0.0347
7	0.5242	0.0313
8	0.5529	0.0288
9	0.5796	0.0267
10	0.6046	0.0249
11	0.6281	0.0235
12	0.6503	0.0222
13	0.6776	0.0273
14	0.7038	0.0262
15	0.7292	0.0254
16	0.7537	0.0245
17	0.7775	0.0238
18	0.8006	0.0231
19	0.8231	0.0225
20	0.8451	0.0219
21	0.8665	0.0214

22	0.8874	0.0209
23	0.9079	0.0205
24	0.9279	0.0200
25	0.9476	0.0196
26	0.9668	0.0193
27	0.9857	0.0189
28	1.0043	0.0186
29	1.0225	0.0182
30	1.0404	0.0179
31	1.0581	0.0176
32	1.0754	0.0174
33	1.0926	0.0171
34	1.1094	0.0169
35	1.1260	0.0166
36	1.1424	0.0164
37	1.1586	0.0162
38	1.1745	0.0160
39	1.1903	0.0157
40	1.2058	0.0156
41	1.2212	0.0154
42	1.2364	0.0152
43	1.2514	0.0150
44	1.2662	0.0148
45	1.2809	0.0147
46	1.2954	0.0145
47	1.3098	0.0144
48	1.3240	0.0142
49	1.3381	0.0141
50	1.3520	0.0139
51	1.3658	0.0138
52	1.3795	0.0137
53	1.3930	0.0135
54	1.4064	0.0134
55	1.4197	0.0133
56	1.4329	0.0132
57	1.4460	0.0131
58	1.4589	0.0130
59	1.4718	0.0128
60	1.4845	0.0127
61	1.4971	0.0126
62	1.5097	0.0125
63	1.5221	0.0124
64	1.5345	0.0123
65	1.5467	0.0122
66	1.5589	0.0122
67	1.5709	0.0121
68	1.5829	0.0120
69	1.5948	0.0119
70	1.6066	0.0118
71	1.6183	0.0117
72	1.6300	0.0116
73	1.6400	0.0100
74	1.6500	0.0100
75	1.6599	0.0099
76	1.6697	0.0098
77	1.6794	0.0097
78	1.6891	0.0097
79	1.6987	0.0096
80	1.7082	0.0095
81	1.7177	0.0095
82	1.7271	0.0094
83	1.7364	0.0093
84	1.7457	0.0093
85	1.7549	0.0092
86	1.7640	0.0092
87	1.7731	0.0091
88	1.7822	0.0090
89	1.7912	0.0090
90	1.8001	0.0089
91	1.8090	0.0089
92	1.8178	0.0088

93	1.8265	0.0088
94	1.8352	0.0087
95	1.8439	0.0087
96	1.8525	0.0086
97	1.8611	0.0086
98	1.8696	0.0085
99	1.8780	0.0085
100	1.8865	0.0084
101	1.8948	0.0084
102	1.9032	0.0083
103	1.9114	0.0083
104	1.9197	0.0082
105	1.9279	0.0082
106	1.9360	0.0081
107	1.9441	0.0081
108	1.9522	0.0081
109	1.9602	0.0080
110	1.9682	0.0080
111	1.9761	0.0079
112	1.9840	0.0079
113	1.9919	0.0079
114	1.9997	0.0078
115	2.0075	0.0078
116	2.0152	0.0077
117	2.0229	0.0077
118	2.0306	0.0077
119	2.0382	0.0076
120	2.0458	0.0076
121	2.0534	0.0076
122	2.0609	0.0075
123	2.0684	0.0075
124	2.0759	0.0075
125	2.0833	0.0074
126	2.0907	0.0074
127	2.0981	0.0074
128	2.1054	0.0073
129	2.1127	0.0073
130	2.1200	0.0073
131	2.1272	0.0072
132	2.1344	0.0072
133	2.1416	0.0072
134	2.1488	0.0071
135	2.1559	0.0071
136	2.1630	0.0071
137	2.1700	0.0071
138	2.1771	0.0070
139	2.1841	0.0070
140	2.1910	0.0070
141	2.1980	0.0069
142	2.2049	0.0069
143	2.2118	0.0069
144	2.2187	0.0069
145	2.2255	0.0068
146	2.2323	0.0068
147	2.2391	0.0068
148	2.2459	0.0068
149	2.2526	0.0067
150	2.2593	0.0067
151	2.2660	0.0067
152	2.2727	0.0067
153	2.2793	0.0066
154	2.2859	0.0066
155	2.2925	0.0066
156	2.2991	0.0066
157	2.3056	0.0065
158	2.3122	0.0065
159	2.3187	0.0065
160	2.3251	0.0065
161	2.3316	0.0065
162	2.3380	0.0064
163	2.3444	0.0064

164	2.3508	0.0064
165	2.3572	0.0064
166	2.3635	0.0063
167	2.3699	0.0063
168	2.3762	0.0063
169	2.3824	0.0063
170	2.3887	0.0063
171	2.3949	0.0062
172	2.4012	0.0062
173	2.4074	0.0062
174	2.4135	0.0062
175	2.4197	0.0062
176	2.4258	0.0061
177	2.4320	0.0061
178	2.4381	0.0061
179	2.4441	0.0061
180	2.4502	0.0061
181	2.4563	0.0060
182	2.4623	0.0060
183	2.4683	0.0060
184	2.4743	0.0060
185	2.4803	0.0060
186	2.4862	0.0060
187	2.4922	0.0059
188	2.4981	0.0059
189	2.5040	0.0059
190	2.5099	0.0059
191	2.5157	0.0059
192	2.5216	0.0059
193	2.5274	0.0058
194	2.5332	0.0058
195	2.5390	0.0058
196	2.5448	0.0058
197	2.5506	0.0058
198	2.5563	0.0058
199	2.5621	0.0057
200	2.5678	0.0057
201	2.5735	0.0057
202	2.5792	0.0057
203	2.5848	0.0057
204	2.5905	0.0057
205	2.5961	0.0056
206	2.6018	0.0056
207	2.6074	0.0056
208	2.6130	0.0056
209	2.6186	0.0056
210	2.6241	0.0056
211	2.6297	0.0056
212	2.6352	0.0055
213	2.6407	0.0055
214	2.6462	0.0055
215	2.6517	0.0055
216	2.6572	0.0055
217	2.6627	0.0055
218	2.6681	0.0055
219	2.6736	0.0054
220	2.6790	0.0054
221	2.6844	0.0054
222	2.6898	0.0054
223	2.6952	0.0054
224	2.7006	0.0054
225	2.7059	0.0054
226	2.7113	0.0053
227	2.7166	0.0053
228	2.7219	0.0053
229	2.7272	0.0053
230	2.7325	0.0053
231	2.7378	0.0053
232	2.7430	0.0053
233	2.7483	0.0053
234	2.7535	0.0052

235	2.7588	0.0052
236	2.7640	0.0052
237	2.7692	0.0052
238	2.7744	0.0052
239	2.7796	0.0052
240	2.7847	0.0052
241	2.7899	0.0052
242	2.7950	0.0051
243	2.8002	0.0051
244	2.8053	0.0051
245	2.8104	0.0051
246	2.8155	0.0051
247	2.8206	0.0051
248	2.8256	0.0051
249	2.8307	0.0051
250	2.8358	0.0051
251	2.8408	0.0050
252	2.8458	0.0050
253	2.8508	0.0050
254	2.8558	0.0050
255	2.8608	0.0050
256	2.8658	0.0050
257	2.8708	0.0050
258	2.8758	0.0050
259	2.8807	0.0050
260	2.8857	0.0049
261	2.8906	0.0049
262	2.8955	0.0049
263	2.9004	0.0049
264	2.9053	0.0049
265	2.9102	0.0049
266	2.9151	0.0049
267	2.9200	0.0049
268	2.9248	0.0049
269	2.9297	0.0048
270	2.9345	0.0048
271	2.9393	0.0048
272	2.9442	0.0048
273	2.9490	0.0048
274	2.9538	0.0048
275	2.9586	0.0048
276	2.9633	0.0048
277	2.9681	0.0048
278	2.9729	0.0048
279	2.9776	0.0048
280	2.9824	0.0047
281	2.9871	0.0047
282	2.9918	0.0047
283	2.9965	0.0047
284	3.0013	0.0047
285	3.0060	0.0047
286	3.0106	0.0047
287	3.0153	0.0047
288	3.0200	0.0047

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0047	0.0011	0.0035
2	0.0047	0.0011	0.0035
3	0.0047	0.0011	0.0036
4	0.0047	0.0011	0.0036
5	0.0047	0.0011	0.0036
6	0.0047	0.0011	0.0036
7	0.0048	0.0012	0.0036
8	0.0048	0.0012	0.0036
9	0.0048	0.0012	0.0036
10	0.0048	0.0012	0.0036
11	0.0048	0.0012	0.0036
12	0.0048	0.0012	0.0036

13	0.0048	0.0012	0.0037
14	0.0048	0.0012	0.0037
15	0.0049	0.0012	0.0037
16	0.0049	0.0012	0.0037
17	0.0049	0.0012	0.0037
18	0.0049	0.0012	0.0037
19	0.0049	0.0012	0.0037
20	0.0049	0.0012	0.0037
21	0.0050	0.0012	0.0038
22	0.0050	0.0012	0.0038
23	0.0050	0.0012	0.0038
24	0.0050	0.0012	0.0038
25	0.0050	0.0012	0.0038
26	0.0050	0.0012	0.0038
27	0.0051	0.0012	0.0038
28	0.0051	0.0012	0.0038
29	0.0051	0.0012	0.0039
30	0.0051	0.0012	0.0039
31	0.0051	0.0012	0.0039
32	0.0051	0.0012	0.0039
33	0.0052	0.0013	0.0039
34	0.0052	0.0013	0.0039
35	0.0052	0.0013	0.0039
36	0.0052	0.0013	0.0039
37	0.0052	0.0013	0.0040
38	0.0053	0.0013	0.0040
39	0.0053	0.0013	0.0040
40	0.0053	0.0013	0.0040
41	0.0053	0.0013	0.0040
42	0.0053	0.0013	0.0040
43	0.0054	0.0013	0.0041
44	0.0054	0.0013	0.0041
45	0.0054	0.0013	0.0041
46	0.0054	0.0013	0.0041
47	0.0054	0.0013	0.0041
48	0.0055	0.0013	0.0041
49	0.0055	0.0013	0.0041
50	0.0055	0.0013	0.0042
51	0.0055	0.0013	0.0042
52	0.0055	0.0013	0.0042
53	0.0056	0.0014	0.0042
54	0.0056	0.0014	0.0042
55	0.0056	0.0014	0.0042
56	0.0056	0.0014	0.0043
57	0.0057	0.0014	0.0043
58	0.0057	0.0014	0.0043
59	0.0057	0.0014	0.0043
60	0.0057	0.0014	0.0043
61	0.0058	0.0014	0.0044
62	0.0058	0.0014	0.0044
63	0.0058	0.0014	0.0044
64	0.0058	0.0014	0.0044
65	0.0059	0.0014	0.0044
66	0.0059	0.0014	0.0044
67	0.0059	0.0014	0.0045
68	0.0059	0.0014	0.0045
69	0.0060	0.0014	0.0045
70	0.0060	0.0015	0.0045
71	0.0060	0.0015	0.0045
72	0.0060	0.0015	0.0046
73	0.0061	0.0015	0.0046
74	0.0061	0.0015	0.0046
75	0.0061	0.0015	0.0046
76	0.0061	0.0015	0.0046
77	0.0062	0.0015	0.0047
78	0.0062	0.0015	0.0047
79	0.0062	0.0015	0.0047
80	0.0063	0.0015	0.0047
81	0.0063	0.0015	0.0048
82	0.0063	0.0015	0.0048
83	0.0064	0.0015	0.0048

84	0.0064	0.0016	0.0048
85	0.0064	0.0016	0.0049
86	0.0065	0.0016	0.0049
87	0.0065	0.0016	0.0049
88	0.0065	0.0016	0.0049
89	0.0066	0.0016	0.0050
90	0.0066	0.0016	0.0050
91	0.0066	0.0016	0.0050
92	0.0067	0.0016	0.0050
93	0.0067	0.0016	0.0051
94	0.0067	0.0016	0.0051
95	0.0068	0.0016	0.0051
96	0.0068	0.0017	0.0052
97	0.0069	0.0017	0.0052
98	0.0069	0.0017	0.0052
99	0.0069	0.0017	0.0053
100	0.0070	0.0017	0.0053
101	0.0070	0.0017	0.0053
102	0.0071	0.0017	0.0053
103	0.0071	0.0017	0.0054
104	0.0071	0.0017	0.0054
105	0.0072	0.0018	0.0055
106	0.0072	0.0018	0.0055
107	0.0073	0.0018	0.0055
108	0.0073	0.0018	0.0056
109	0.0074	0.0018	0.0056
110	0.0074	0.0018	0.0056
111	0.0075	0.0018	0.0057
112	0.0075	0.0018	0.0057
113	0.0076	0.0018	0.0058
114	0.0076	0.0019	0.0058
115	0.0077	0.0019	0.0058
116	0.0077	0.0019	0.0059
117	0.0078	0.0019	0.0059
118	0.0079	0.0019	0.0060
119	0.0079	0.0019	0.0060
120	0.0080	0.0019	0.0060
121	0.0081	0.0020	0.0061
122	0.0081	0.0020	0.0061
123	0.0082	0.0020	0.0062
124	0.0082	0.0020	0.0062
125	0.0083	0.0020	0.0063
126	0.0084	0.0020	0.0063
127	0.0085	0.0021	0.0064
128	0.0085	0.0021	0.0064
129	0.0086	0.0021	0.0065
130	0.0087	0.0021	0.0066
131	0.0088	0.0021	0.0066
132	0.0088	0.0021	0.0067
133	0.0089	0.0022	0.0068
134	0.0090	0.0022	0.0068
135	0.0091	0.0022	0.0069
136	0.0092	0.0022	0.0069
137	0.0093	0.0023	0.0070
138	0.0093	0.0023	0.0071
139	0.0095	0.0023	0.0072
140	0.0095	0.0023	0.0072
141	0.0097	0.0023	0.0073
142	0.0097	0.0024	0.0074
143	0.0099	0.0024	0.0075
144	0.0100	0.0024	0.0075
145	0.0116	0.0028	0.0088
146	0.0117	0.0028	0.0089
147	0.0119	0.0029	0.0090
148	0.0120	0.0029	0.0091
149	0.0122	0.0030	0.0092
150	0.0122	0.0030	0.0093
151	0.0124	0.0030	0.0094
152	0.0125	0.0030	0.0095
153	0.0127	0.0031	0.0096
154	0.0128	0.0031	0.0097

155	0.0131	0.0032	0.0099
156	0.0132	0.0032	0.0100
157	0.0134	0.0033	0.0102
158	0.0135	0.0033	0.0103
159	0.0138	0.0034	0.0104
160	0.0139	0.0034	0.0105
161	0.0142	0.0035	0.0108
162	0.0144	0.0035	0.0109
163	0.0147	0.0036	0.0111
164	0.0148	0.0036	0.0112
165	0.0152	0.0037	0.0115
166	0.0154	0.0037	0.0116
167	0.0157	0.0038	0.0119
168	0.0160	0.0039	0.0121
169	0.0164	0.0040	0.0124
170	0.0166	0.0040	0.0126
171	0.0171	0.0042	0.0130
172	0.0174	0.0042	0.0132
173	0.0179	0.0044	0.0136
174	0.0182	0.0044	0.0138
175	0.0189	0.0046	0.0143
176	0.0193	0.0047	0.0146
177	0.0200	0.0049	0.0152
178	0.0205	0.0050	0.0155
179	0.0214	0.0052	0.0162
180	0.0219	0.0053	0.0166
181	0.0231	0.0056	0.0175
182	0.0238	0.0058	0.0180
183	0.0254	0.0062	0.0192
184	0.0262	0.0064	0.0199
185	0.0222	0.0054	0.0168
186	0.0235	0.0057	0.0178
187	0.0267	0.0065	0.0202
188	0.0288	0.0070	0.0218
189	0.0347	0.0084	0.0262
190	0.0391	0.0095	0.0296
191	0.0559	0.0136	0.0423
192	0.0769	0.0150	0.0619
193	0.2407	0.0150	0.2257
194	0.0456	0.0111	0.0345
195	0.0313	0.0076	0.0237
196	0.0249	0.0061	0.0189
197	0.0273	0.0066	0.0206
198	0.0245	0.0060	0.0186
199	0.0225	0.0055	0.0170
200	0.0209	0.0051	0.0158
201	0.0196	0.0048	0.0149
202	0.0186	0.0045	0.0140
203	0.0176	0.0043	0.0134
204	0.0169	0.0041	0.0128
205	0.0162	0.0039	0.0122
206	0.0156	0.0038	0.0118
207	0.0150	0.0036	0.0114
208	0.0145	0.0035	0.0110
209	0.0141	0.0034	0.0107
210	0.0137	0.0033	0.0103
211	0.0133	0.0032	0.0101
212	0.0130	0.0031	0.0098
213	0.0126	0.0031	0.0096
214	0.0123	0.0030	0.0093
215	0.0121	0.0029	0.0091
216	0.0118	0.0029	0.0089
217	0.0100	0.0024	0.0076
218	0.0098	0.0024	0.0074
219	0.0096	0.0023	0.0073
220	0.0094	0.0023	0.0071
221	0.0092	0.0022	0.0070
222	0.0090	0.0022	0.0068
223	0.0089	0.0022	0.0067
224	0.0087	0.0021	0.0066
225	0.0086	0.0021	0.0065

226	0.0084	0.0020	0.0064
227	0.0083	0.0020	0.0063
228	0.0081	0.0020	0.0062
229	0.0080	0.0019	0.0061
230	0.0079	0.0019	0.0060
231	0.0078	0.0019	0.0059
232	0.0077	0.0019	0.0058
233	0.0076	0.0018	0.0057
234	0.0075	0.0018	0.0057
235	0.0074	0.0018	0.0056
236	0.0073	0.0018	0.0055
237	0.0072	0.0017	0.0054
238	0.0071	0.0017	0.0054
239	0.0070	0.0017	0.0053
240	0.0069	0.0017	0.0052
241	0.0068	0.0017	0.0052
242	0.0068	0.0016	0.0051
243	0.0067	0.0016	0.0051
244	0.0066	0.0016	0.0050
245	0.0065	0.0016	0.0050
246	0.0065	0.0016	0.0049
247	0.0064	0.0016	0.0049
248	0.0063	0.0015	0.0048
249	0.0063	0.0015	0.0048
250	0.0062	0.0015	0.0047
251	0.0062	0.0015	0.0047
252	0.0061	0.0015	0.0046
253	0.0060	0.0015	0.0046
254	0.0060	0.0015	0.0045
255	0.0059	0.0014	0.0045
256	0.0059	0.0014	0.0045
257	0.0058	0.0014	0.0044
258	0.0058	0.0014	0.0044
259	0.0057	0.0014	0.0043
260	0.0057	0.0014	0.0043
261	0.0056	0.0014	0.0043
262	0.0056	0.0014	0.0042
263	0.0056	0.0013	0.0042
264	0.0055	0.0013	0.0042
265	0.0055	0.0013	0.0041
266	0.0054	0.0013	0.0041
267	0.0054	0.0013	0.0041
268	0.0053	0.0013	0.0040
269	0.0053	0.0013	0.0040
270	0.0053	0.0013	0.0040
271	0.0052	0.0013	0.0040
272	0.0052	0.0013	0.0039
273	0.0052	0.0013	0.0039
274	0.0051	0.0012	0.0039
275	0.0051	0.0012	0.0039
276	0.0051	0.0012	0.0038
277	0.0050	0.0012	0.0038
278	0.0050	0.0012	0.0038
279	0.0050	0.0012	0.0037
280	0.0049	0.0012	0.0037
281	0.0049	0.0012	0.0037
282	0.0049	0.0012	0.0037
283	0.0048	0.0012	0.0037
284	0.0048	0.0012	0.0036
285	0.0048	0.0012	0.0036
286	0.0047	0.0012	0.0036
287	0.0047	0.0011	0.0036
288	0.0047	0.0011	0.0035

Total soil rain loss = 0.69(In)
Total effective rainfall = 2.33(In)
Peak flow rate in flood hydrograph = 7.02(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	0.0002	0.03	Q				
0+10	0.0011	0.13	Q				
0+15	0.0021	0.15	Q				
0+20	0.0032	0.16	Q				
0+25	0.0043	0.16	Q				
0+30	0.0054	0.16	Q				
0+35	0.0064	0.16	Q				
0+40	0.0075	0.16	Q				
0+45	0.0086	0.16	Q				
0+50	0.0097	0.16	Q				
0+55	0.0108	0.16	Q				
1+ 0	0.0119	0.16	Q				
1+ 5	0.0130	0.16	Q				
1+10	0.0141	0.16	Q				
1+15	0.0152	0.16	Q				
1+20	0.0163	0.16	Q				
1+25	0.0174	0.16	Q				
1+30	0.0185	0.16	QV				
1+35	0.0196	0.16	QV				
1+40	0.0208	0.16	QV				
1+45	0.0219	0.16	QV				
1+50	0.0230	0.16	QV				
1+55	0.0241	0.16	QV				
2+ 0	0.0253	0.17	QV				
2+ 5	0.0264	0.17	QV				
2+10	0.0276	0.17	QV				
2+15	0.0287	0.17	QV				
2+20	0.0299	0.17	QV				
2+25	0.0310	0.17	QV				
2+30	0.0322	0.17	QV				
2+35	0.0333	0.17	QV				
2+40	0.0345	0.17	QV				
2+45	0.0357	0.17	Q V				
2+50	0.0369	0.17	Q V				
2+55	0.0380	0.17	Q V				
3+ 0	0.0392	0.17	Q V				
3+ 5	0.0404	0.17	Q V				
3+10	0.0416	0.17	Q V				
3+15	0.0428	0.17	Q V				
3+20	0.0440	0.17	Q V				
3+25	0.0452	0.17	Q V				
3+30	0.0464	0.18	Q V				
3+35	0.0476	0.18	Q V				
3+40	0.0488	0.18	Q V				
3+45	0.0501	0.18	Q V				
3+50	0.0513	0.18	Q V				
3+55	0.0525	0.18	Q V				
4+ 0	0.0538	0.18	Q V				
4+ 5	0.0550	0.18	Q V				
4+10	0.0563	0.18	Q V				
4+15	0.0575	0.18	Q V				
4+20	0.0588	0.18	Q V				
4+25	0.0600	0.18	Q V				
4+30	0.0613	0.18	Q V				
4+35	0.0626	0.18	Q V				
4+40	0.0638	0.19	Q V				
4+45	0.0651	0.19	Q V				
4+50	0.0664	0.19	Q V				
4+55	0.0677	0.19	Q V				
5+ 0	0.0690	0.19	Q V				
5+ 5	0.0703	0.19	Q V				
5+10	0.0716	0.19	Q V				
5+15	0.0729	0.19	Q V				
5+20	0.0742	0.19	Q V				

5+25	0.0756	0.19	Q V	|	|	|	|
5+30	0.0769	0.19	Q V	|	|	|	|
5+35	0.0782	0.19	Q V	|	|	|	|
5+40	0.0796	0.19	Q V	|	|	|	|
5+45	0.0809	0.20	Q V	|	|	|	|
5+50	0.0823	0.20	Q V	|	|	|	|
5+55	0.0836	0.20	Q V	|	|	|	|
6+ 0	0.0850	0.20	Q V	|	|	|	|
6+ 5	0.0864	0.20	Q V	|	|	|	|
6+10	0.0878	0.20	Q V	|	|	|	|
6+15	0.0891	0.20	Q V	|	|	|	|
6+20	0.0905	0.20	Q V	|	|	|	|
6+25	0.0919	0.20	Q V	|	|	|	|
6+30	0.0933	0.20	Q V	|	|	|	|
6+35	0.0948	0.21	Q V	|	|	|	|
6+40	0.0962	0.21	Q V	|	|	|	|
6+45	0.0976	0.21	Q V	|	|	|	|
6+50	0.0990	0.21	Q V	|	|	|	|
6+55	0.1005	0.21	Q V	|	|	|	|
7+ 0	0.1019	0.21	Q V	|	|	|	|
7+ 5	0.1034	0.21	Q V	|	|	|	|
7+10	0.1048	0.21	Q V	|	|	|	|
7+15	0.1063	0.21	Q V	|	|	|	|
7+20	0.1078	0.21	Q V	|	|	|	|
7+25	0.1093	0.22	Q V	|	|	|	|
7+30	0.1108	0.22	Q V	|	|	|	|
7+35	0.1123	0.22	Q V	|	|	|	|
7+40	0.1138	0.22	Q V	|	|	|	|
7+45	0.1153	0.22	Q V	|	|	|	|
7+50	0.1168	0.22	Q V	|	|	|	|
7+55	0.1184	0.22	Q V	|	|	|	|
8+ 0	0.1199	0.22	Q V	|	|	|	|
8+ 5	0.1215	0.23	Q V	|	|	|	|
8+10	0.1230	0.23	Q V	|	|	|	|
8+15	0.1246	0.23	Q V	|	|	|	|
8+20	0.1262	0.23	Q V	|	|	|	|
8+25	0.1278	0.23	Q V	|	|	|	|
8+30	0.1294	0.23	Q V	|	|	|	|
8+35	0.1310	0.23	Q V	|	|	|	|
8+40	0.1326	0.24	Q V	|	|	|	|
8+45	0.1342	0.24	Q V	|	|	|	|
8+50	0.1359	0.24	Q V	|	|	|	|
8+55	0.1375	0.24	Q V	|	|	|	|
9+ 0	0.1392	0.24	Q V	|	|	|	|
9+ 5	0.1408	0.24	Q V	|	|	|	|
9+10	0.1425	0.24	Q V	|	|	|	|
9+15	0.1442	0.25	Q V	|	|	|	|
9+20	0.1459	0.25	Q V	|	|	|	|
9+25	0.1476	0.25	Q V	|	|	|	|
9+30	0.1494	0.25	|Q V	|	|	|	|
9+35	0.1511	0.25	|Q V	|	|	|	|
9+40	0.1529	0.25	|Q V	|	|	|	|
9+45	0.1546	0.26	|Q V	|	|	|	|
9+50	0.1564	0.26	|Q V	|	|	|	|
9+55	0.1582	0.26	|Q V	|	|	|	|
10+ 0	0.1600	0.26	|Q V	|	|	|	|
10+ 5	0.1618	0.26	|Q V	|	|	|	|
10+10	0.1637	0.27	|Q V	|	|	|	|
10+15	0.1655	0.27	|Q V	|	|	|	|
10+20	0.1674	0.27	|Q V	|	|	|	|
10+25	0.1692	0.27	|Q V	|	|	|	|
10+30	0.1711	0.27	|Q V	|	|	|	|
10+35	0.1730	0.28	|Q V	|	|	|	|
10+40	0.1750	0.28	|Q V	|	|	|	|
10+45	0.1769	0.28	|Q V	|	|	|	|
10+50	0.1789	0.28	|Q V	|	|	|	|
10+55	0.1808	0.29	|Q V	|	|	|	|
11+ 0	0.1828	0.29	|Q V	|	|	|	|
11+ 5	0.1848	0.29	|Q V	|	|	|	|
11+10	0.1869	0.29	|Q V	|	|	|	|
11+15	0.1889	0.30	|Q V	|	|	|	|

11+20	0.1910	0.30	Q	V			
11+25	0.1931	0.30	Q	V			
11+30	0.1952	0.31	Q	V			
11+35	0.1973	0.31	Q	V			
11+40	0.1995	0.31	Q	V			
11+45	0.2016	0.32	Q	V			
11+50	0.2038	0.32	Q	V			
11+55	0.2061	0.32	Q	V			
12+ 0	0.2083	0.33	Q	V			
12+ 5	0.2106	0.34	Q	V			
12+10	0.2132	0.38	Q	V			
12+15	0.2159	0.39	Q	V			
12+20	0.2186	0.39	Q	V			
12+25	0.2213	0.40	Q	V			
12+30	0.2241	0.40	Q	V			
12+35	0.2269	0.41	Q	V			
12+40	0.2297	0.41	Q	V			
12+45	0.2326	0.42	Q	V			
12+50	0.2355	0.42	Q	V			
12+55	0.2384	0.43	Q	V			
13+ 0	0.2414	0.43	Q	V			
13+ 5	0.2444	0.44	Q	V			
13+10	0.2474	0.44	Q	V			
13+15	0.2505	0.45	Q	V			
13+20	0.2537	0.46	Q	V			
13+25	0.2568	0.46	Q	V			
13+30	0.2601	0.47	Q	V			
13+35	0.2633	0.48	Q	V			
13+40	0.2667	0.48	Q	V			
13+45	0.2701	0.49	Q	V			
13+50	0.2735	0.50	Q	V			
13+55	0.2770	0.51	Q	V			
14+ 0	0.2806	0.52	Q	V			
14+ 5	0.2842	0.53	Q	V			
14+10	0.2880	0.54	Q	V			
14+15	0.2918	0.55	Q	V			
14+20	0.2956	0.56	Q	V			
14+25	0.2996	0.58	Q	V			
14+30	0.3037	0.59	Q	V			
14+35	0.3079	0.61	Q	V			
14+40	0.3121	0.62	Q	V			
14+45	0.3165	0.64	Q	V			
14+50	0.3211	0.66	Q	V			
14+55	0.3258	0.68	Q	V			
15+ 0	0.3306	0.71	Q	V			
15+ 5	0.3357	0.73	Q	V			
15+10	0.3409	0.76	Q	V			
15+15	0.3464	0.79	Q	V			
15+20	0.3521	0.83	Q	V			
15+25	0.3579	0.84	Q	V			
15+30	0.3631	0.76	Q	V			
15+35	0.3686	0.79	Q	V			
15+40	0.3746	0.88	Q	V			
15+45	0.3814	0.98	Q	V			
15+50	0.3892	1.14	Q	V			
15+55	0.3987	1.37	Q	V			
16+ 0	0.4119	1.92	Q	V			
16+ 5	0.4392	3.96	Q	V			
16+10	0.4875	7.02	Q	V			
16+15	0.5060	2.69	Q	V			
16+20	0.5143	1.20	Q	V			
16+25	0.5203	0.88	Q	V			
16+30	0.5264	0.87	Q	V			
16+35	0.5319	0.81	Q	V			
16+40	0.5371	0.75	Q	V			
16+45	0.5419	0.69	Q	V			
16+50	0.5463	0.65	Q	V			
16+55	0.5506	0.61	Q	V			
17+ 0	0.5546	0.58	Q	V			
17+ 5	0.5584	0.56	Q	V			
17+10	0.5621	0.53	Q	V			

17+15	0.5656	0.51	| Q	|	|	| V |
17+20	0.5691	0.50	|Q	|	|	| V |
17+25	0.5724	0.48	|Q	|	|	| V |
17+30	0.5756	0.47	|Q	|	|	| V |
17+35	0.5787	0.45	|Q	|	|	| V |
17+40	0.5817	0.44	|Q	|	|	| V |
17+45	0.5846	0.43	|Q	|	|	| V |
17+50	0.5875	0.42	|Q	|	|	| V |
17+55	0.5903	0.41	|Q	|	|	| V |
18+ 0	0.5931	0.40	|Q	|	|	| V |
18+ 5	0.5957	0.38	|Q	|	|	| V |
18+10	0.5980	0.34	|Q	|	|	| V |
18+15	0.6003	0.32	|Q	|	|	| V |
18+20	0.6025	0.32	|Q	|	|	| V |
18+25	0.6046	0.31	|Q	|	|	| V |
18+30	0.6067	0.30	|Q	|	|	| V |
18+35	0.6088	0.30	|Q	|	|	| V |
18+40	0.6108	0.29	|Q	|	|	| V |
18+45	0.6128	0.29	|Q	|	|	| V |
18+50	0.6147	0.28	|Q	|	|	| V |
18+55	0.6166	0.28	|Q	|	|	| V |
19+ 0	0.6185	0.27	|Q	|	|	| V |
19+ 5	0.6204	0.27	|Q	|	|	| V |
19+10	0.6222	0.27	|Q	|	|	| V |
19+15	0.6240	0.26	|Q	|	|	| V |
19+20	0.6258	0.26	|Q	|	|	| V |
19+25	0.6275	0.25	|Q	|	|	| V |
19+30	0.6292	0.25	|Q	|	|	| V |
19+35	0.6309	0.25	Q	|	|	| V |
19+40	0.6326	0.24	Q	|	|	| V |
19+45	0.6343	0.24	Q	|	|	| V |
19+50	0.6359	0.24	Q	|	|	| V |
19+55	0.6375	0.23	Q	|	|	| V |
20+ 0	0.6391	0.23	Q	|	|	| V |
20+ 5	0.6407	0.23	Q	|	|	| V |
20+10	0.6422	0.23	Q	|	|	| V |
20+15	0.6438	0.22	Q	|	|	| V |
20+20	0.6453	0.22	Q	|	|	| V |
20+25	0.6468	0.22	Q	|	|	| V |
20+30	0.6483	0.22	Q	|	|	| V |
20+35	0.6498	0.21	Q	|	|	| V |
20+40	0.6512	0.21	Q	|	|	| V |
20+45	0.6527	0.21	Q	|	|	| V |
20+50	0.6541	0.21	Q	|	|	| V |
20+55	0.6555	0.21	Q	|	|	| V |
21+ 0	0.6569	0.20	Q	|	|	| V |
21+ 5	0.6583	0.20	Q	|	|	| V |
21+10	0.6597	0.20	Q	|	|	| V |
21+15	0.6610	0.20	Q	|	|	| V |
21+20	0.6624	0.20	Q	|	|	| V |
21+25	0.6637	0.19	Q	|	|	| V |
21+30	0.6651	0.19	Q	|	|	| V |
21+35	0.6664	0.19	Q	|	|	| V |
21+40	0.6677	0.19	Q	|	|	| V |
21+45	0.6690	0.19	Q	|	|	| V |
21+50	0.6703	0.19	Q	|	|	| V |
21+55	0.6715	0.18	Q	|	|	| V |
22+ 0	0.6728	0.18	Q	|	|	| V |
22+ 5	0.6740	0.18	Q	|	|	| V |
22+10	0.6753	0.18	Q	|	|	| V |
22+15	0.6765	0.18	Q	|	|	| V |
22+20	0.6778	0.18	Q	|	|	| V |
22+25	0.6790	0.18	Q	|	|	| V |
22+30	0.6802	0.18	Q	|	|	| V |
22+35	0.6814	0.17	Q	|	|	| V |
22+40	0.6826	0.17	Q	|	|	| V |
22+45	0.6837	0.17	Q	|	|	| V |
22+50	0.6849	0.17	Q	|	|	| V|
22+55	0.6861	0.17	Q	|	|	| V|
23+ 0	0.6872	0.17	Q	|	|	| V|
23+ 5	0.6884	0.17	Q	|	|	| V|

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   23+10       0.6895      0.17  Q          |          |          |         V|
   23+15       0.6907      0.16  Q          |          |          |         V|
   23+20       0.6918      0.16  Q          |          |          |         V|
   23+25       0.6929      0.16  Q          |          |          |         V|
   23+30       0.6940      0.16  Q          |          |          |         V|
   23+35       0.6951      0.16  Q          |          |          |         V|
   23+40       0.6962      0.16  Q          |          |          |         V|
   23+45       0.6973      0.16  Q          |          |          |         V|
   23+50       0.6984      0.16  Q          |          |          |         V|
   23+55       0.6995      0.16  Q          |          |          |         V|
   24+ 0       0.7006      0.16  Q          |          |          |         V|
   24+ 5       0.7014      0.12  Q          |          |          |         V|
   24+10       0.7016      0.03  Q          |          |          |         V|
   24+15       0.7016      0.00  Q          |          |          |          V
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U n i t H y d r o g r a p h A n a l y s i s

Study date 01/30/24

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

Program License Serial Number 6320

235094 - 17783 & 17805 TAYLOR AVENUE
DEVELOPED CONDITIONS
10-YEAR, 24-HOUR STORM
BY: KBO DATE: 01-30-24

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10	3.61	1	0.93
Rainfall data for year 2	3.61	6	1.63
Rainfall data for year 2	3.61	24	3.02
Rainfall data for year 100	3.61	1	1.33
Rainfall data for year 100	3.61	6	3.51
Rainfall data for year 100	3.61	24	7.85

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******** 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)
32.0	32.0	3.61	1.000	0.978	0.180	0.176

Area-averaged adjusted loss rate Fm (In/Hr) = 0.176

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC2)	S	Pervious Yield Fr
0.65	0.180	32.0	32.0	21.25	0.005
2.96	0.820	98.0	98.0	0.20	0.953

Area-averaged catchment yield fraction, Y = 0.782
Area-averaged low loss fraction, Yb = 0.218
User entry of time of concentration = 0.097 (hours)
++
Watershed area = 3.61(Ac.)
Catchment Lag time = 0.078 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 107.3883
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.176(In/Hr)
Average low loss rate fraction (Yb) = 0.218 (decimal)
VALLEY DEVELOPED S-Graph Selected
Computed peak 5-minute rainfall = 0.344(In)
Computed peak 30-minute rainfall = 0.705(In)
Specified peak 1-hour rainfall = 0.930(In)
Computed peak 3-hour rainfall = 1.665(In)
Specified peak 6-hour rainfall = 2.403(In)
Specified peak 24-hour rainfall = 5.007(In)

Rainfall depth area reduction factors:
Using a total area of 3.61(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.344(In)
30-minute factor = 1.000 Adjusted rainfall = 0.705(In)
1-hour factor = 1.000 Adjusted rainfall = 0.930(In)
3-hour factor = 1.000 Adjusted rainfall = 1.665(In)
6-hour factor = 1.000 Adjusted rainfall = 2.403(In)
24-hour factor = 1.000 Adjusted rainfall = 5.007(In)

U n i t H y d r o g r a p h
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Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 43.66 (CFS))	
1	19.634	8.572
2	83.438	27.856
3	98.503	6.577
4	100.000	0.654

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.3441	0.3441
2	0.4541	0.1100
3	0.5341	0.0800
4	0.5992	0.0651
5	0.6551	0.0559
6	0.7047	0.0496
7	0.7495	0.0448
8	0.7906	0.0411
9	0.8288	0.0381
10	0.8644	0.0357
11	0.8980	0.0336
12	0.9298	0.0318
13	0.9701	0.0403
14	1.0090	0.0389
15	1.0466	0.0376
16	1.0830	0.0364
17	1.1184	0.0354
18	1.1528	0.0344
19	1.1863	0.0335
20	1.2190	0.0327
21	1.2509	0.0319

22	1.2822	0.0312
23	1.3127	0.0306
24	1.3427	0.0299
25	1.3720	0.0294
26	1.4009	0.0288
27	1.4292	0.0283
28	1.4570	0.0278
29	1.4843	0.0274
30	1.5112	0.0269
31	1.5377	0.0265
32	1.5638	0.0261
33	1.5896	0.0257
34	1.6149	0.0254
35	1.6399	0.0250
36	1.6646	0.0247
37	1.6889	0.0243
38	1.7130	0.0240
39	1.7367	0.0237
40	1.7602	0.0235
41	1.7834	0.0232
42	1.8063	0.0229
43	1.8289	0.0227
44	1.8514	0.0224
45	1.8735	0.0222
46	1.8955	0.0219
47	1.9172	0.0217
48	1.9387	0.0215
49	1.9600	0.0213
50	1.9811	0.0211
51	2.0020	0.0209
52	2.0227	0.0207
53	2.0432	0.0205
54	2.0636	0.0203
55	2.0837	0.0202
56	2.1037	0.0200
57	2.1236	0.0198
58	2.1432	0.0197
59	2.1627	0.0195
60	2.1821	0.0193
61	2.2013	0.0192
62	2.2203	0.0191
63	2.2392	0.0189
64	2.2580	0.0188
65	2.2766	0.0186
66	2.2951	0.0185
67	2.3135	0.0184
68	2.3317	0.0182
69	2.3498	0.0181
70	2.3678	0.0180
71	2.3857	0.0179
72	2.4034	0.0177
73	2.4210	0.0176
74	2.4385	0.0175
75	2.4559	0.0174
76	2.4732	0.0173
77	2.4904	0.0172
78	2.5075	0.0171
79	2.5244	0.0170
80	2.5413	0.0169
81	2.5581	0.0168
82	2.5747	0.0167
83	2.5913	0.0166
84	2.6078	0.0165
85	2.6242	0.0164
86	2.6405	0.0163
87	2.6567	0.0162
88	2.6728	0.0161
89	2.6889	0.0160
90	2.7048	0.0160
91	2.7207	0.0159
92	2.7365	0.0158

93	2.7522	0.0157
94	2.7678	0.0156
95	2.7834	0.0156
96	2.7988	0.0155
97	2.8142	0.0154
98	2.8296	0.0153
99	2.8448	0.0153
100	2.8600	0.0152
101	2.8751	0.0151
102	2.8901	0.0150
103	2.9051	0.0150
104	2.9200	0.0149
105	2.9348	0.0148
106	2.9496	0.0148
107	2.9643	0.0147
108	2.9789	0.0146
109	2.9935	0.0146
110	3.0080	0.0145
111	3.0225	0.0144
112	3.0368	0.0144
113	3.0512	0.0143
114	3.0654	0.0143
115	3.0796	0.0142
116	3.0938	0.0141
117	3.1079	0.0141
118	3.1219	0.0140
119	3.1359	0.0140
120	3.1498	0.0139
121	3.1637	0.0139
122	3.1775	0.0138
123	3.1913	0.0138
124	3.2050	0.0137
125	3.2186	0.0137
126	3.2322	0.0136
127	3.2458	0.0136
128	3.2593	0.0135
129	3.2728	0.0135
130	3.2862	0.0134
131	3.2995	0.0134
132	3.3128	0.0133
133	3.3261	0.0133
134	3.3393	0.0132
135	3.3525	0.0132
136	3.3656	0.0131
137	3.3787	0.0131
138	3.3917	0.0130
139	3.4047	0.0130
140	3.4177	0.0129
141	3.4306	0.0129
142	3.4434	0.0129
143	3.4562	0.0128
144	3.4690	0.0128
145	3.4818	0.0127
146	3.4944	0.0127
147	3.5071	0.0127
148	3.5197	0.0126
149	3.5323	0.0126
150	3.5448	0.0125
151	3.5573	0.0125
152	3.5698	0.0125
153	3.5822	0.0124
154	3.5946	0.0124
155	3.6069	0.0123
156	3.6192	0.0123
157	3.6315	0.0123
158	3.6437	0.0122
159	3.6559	0.0122
160	3.6680	0.0122
161	3.6801	0.0121
162	3.6922	0.0121
163	3.7043	0.0120

164	3.7163	0.0120
165	3.7283	0.0120
166	3.7402	0.0119
167	3.7521	0.0119
168	3.7640	0.0119
169	3.7759	0.0118
170	3.7877	0.0118
171	3.7995	0.0118
172	3.8112	0.0117
173	3.8229	0.0117
174	3.8346	0.0117
175	3.8463	0.0117
176	3.8579	0.0116
177	3.8695	0.0116
178	3.8810	0.0116
179	3.8925	0.0115
180	3.9040	0.0115
181	3.9155	0.0115
182	3.9270	0.0114
183	3.9384	0.0114
184	3.9497	0.0114
185	3.9611	0.0114
186	3.9724	0.0113
187	3.9837	0.0113
188	3.9950	0.0113
189	4.0062	0.0112
190	4.0174	0.0112
191	4.0286	0.0112
192	4.0398	0.0112
193	4.0509	0.0111
194	4.0620	0.0111
195	4.0730	0.0111
196	4.0841	0.0110
197	4.0951	0.0110
198	4.1061	0.0110
199	4.1171	0.0110
200	4.1280	0.0109
201	4.1389	0.0109
202	4.1498	0.0109
203	4.1607	0.0109
204	4.1715	0.0108
205	4.1823	0.0108
206	4.1931	0.0108
207	4.2039	0.0108
208	4.2146	0.0107
209	4.2253	0.0107
210	4.2360	0.0107
211	4.2467	0.0107
212	4.2573	0.0106
213	4.2680	0.0106
214	4.2786	0.0106
215	4.2891	0.0106
216	4.2997	0.0106
217	4.3102	0.0105
218	4.3207	0.0105
219	4.3312	0.0105
220	4.3417	0.0105
221	4.3521	0.0104
222	4.3625	0.0104
223	4.3729	0.0104
224	4.3833	0.0104
225	4.3936	0.0103
226	4.4040	0.0103
227	4.4143	0.0103
228	4.4245	0.0103
229	4.4348	0.0103
230	4.4451	0.0102
231	4.4553	0.0102
232	4.4655	0.0102
233	4.4757	0.0102
234	4.4858	0.0102

235	4.4960	0.0101
236	4.5061	0.0101
237	4.5162	0.0101
238	4.5262	0.0101
239	4.5363	0.0101
240	4.5463	0.0100
241	4.5564	0.0100
242	4.5664	0.0100
243	4.5763	0.0100
244	4.5863	0.0100
245	4.5963	0.0099
246	4.6062	0.0099
247	4.6161	0.0099
248	4.6260	0.0099
249	4.6358	0.0099
250	4.6457	0.0098
251	4.6555	0.0098
252	4.6653	0.0098
253	4.6751	0.0098
254	4.6849	0.0098
255	4.6946	0.0098
256	4.7044	0.0097
257	4.7141	0.0097
258	4.7238	0.0097
259	4.7335	0.0097
260	4.7432	0.0097
261	4.7528	0.0096
262	4.7624	0.0096
263	4.7721	0.0096
264	4.7816	0.0096
265	4.7912	0.0096
266	4.8008	0.0096
267	4.8103	0.0095
268	4.8199	0.0095
269	4.8294	0.0095
270	4.8389	0.0095
271	4.8484	0.0095
272	4.8578	0.0095
273	4.8673	0.0094
274	4.8767	0.0094
275	4.8861	0.0094
276	4.8955	0.0094
277	4.9049	0.0094
278	4.9143	0.0094
279	4.9236	0.0094
280	4.9330	0.0093
281	4.9423	0.0093
282	4.9516	0.0093
283	4.9609	0.0093
284	4.9701	0.0093
285	4.9794	0.0093
286	4.9886	0.0092
287	4.9979	0.0092
288	5.0071	0.0092

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0092	0.0020	0.0072
2	0.0092	0.0020	0.0072
3	0.0093	0.0020	0.0072
4	0.0093	0.0020	0.0073
5	0.0093	0.0020	0.0073
6	0.0093	0.0020	0.0073
7	0.0094	0.0020	0.0073
8	0.0094	0.0020	0.0073
9	0.0094	0.0020	0.0074
10	0.0094	0.0021	0.0074
11	0.0094	0.0021	0.0074
12	0.0095	0.0021	0.0074

13	0.0095	0.0021	0.0074
14	0.0095	0.0021	0.0074
15	0.0095	0.0021	0.0075
16	0.0096	0.0021	0.0075
17	0.0096	0.0021	0.0075
18	0.0096	0.0021	0.0075
19	0.0096	0.0021	0.0075
20	0.0097	0.0021	0.0076
21	0.0097	0.0021	0.0076
22	0.0097	0.0021	0.0076
23	0.0098	0.0021	0.0076
24	0.0098	0.0021	0.0076
25	0.0098	0.0021	0.0077
26	0.0098	0.0021	0.0077
27	0.0099	0.0021	0.0077
28	0.0099	0.0022	0.0077
29	0.0099	0.0022	0.0078
30	0.0099	0.0022	0.0078
31	0.0100	0.0022	0.0078
32	0.0100	0.0022	0.0078
33	0.0100	0.0022	0.0079
34	0.0101	0.0022	0.0079
35	0.0101	0.0022	0.0079
36	0.0101	0.0022	0.0079
37	0.0102	0.0022	0.0079
38	0.0102	0.0022	0.0080
39	0.0102	0.0022	0.0080
40	0.0102	0.0022	0.0080
41	0.0103	0.0022	0.0080
42	0.0103	0.0022	0.0081
43	0.0103	0.0023	0.0081
44	0.0104	0.0023	0.0081
45	0.0104	0.0023	0.0081
46	0.0104	0.0023	0.0082
47	0.0105	0.0023	0.0082
48	0.0105	0.0023	0.0082
49	0.0106	0.0023	0.0083
50	0.0106	0.0023	0.0083
51	0.0106	0.0023	0.0083
52	0.0106	0.0023	0.0083
53	0.0107	0.0023	0.0084
54	0.0107	0.0023	0.0084
55	0.0108	0.0023	0.0084
56	0.0108	0.0024	0.0084
57	0.0108	0.0024	0.0085
58	0.0109	0.0024	0.0085
59	0.0109	0.0024	0.0085
60	0.0109	0.0024	0.0086
61	0.0110	0.0024	0.0086
62	0.0110	0.0024	0.0086
63	0.0111	0.0024	0.0087
64	0.0111	0.0024	0.0087
65	0.0112	0.0024	0.0087
66	0.0112	0.0024	0.0087
67	0.0112	0.0024	0.0088
68	0.0113	0.0025	0.0088
69	0.0113	0.0025	0.0089
70	0.0114	0.0025	0.0089
71	0.0114	0.0025	0.0089
72	0.0114	0.0025	0.0089
73	0.0115	0.0025	0.0090
74	0.0115	0.0025	0.0090
75	0.0116	0.0025	0.0091
76	0.0116	0.0025	0.0091
77	0.0117	0.0025	0.0091
78	0.0117	0.0026	0.0092
79	0.0118	0.0026	0.0092
80	0.0118	0.0026	0.0092
81	0.0119	0.0026	0.0093
82	0.0119	0.0026	0.0093
83	0.0120	0.0026	0.0094

84	0.0120	0.0026	0.0094
85	0.0121	0.0026	0.0095
86	0.0121	0.0026	0.0095
87	0.0122	0.0027	0.0095
88	0.0122	0.0027	0.0096
89	0.0123	0.0027	0.0096
90	0.0123	0.0027	0.0097
91	0.0124	0.0027	0.0097
92	0.0125	0.0027	0.0097
93	0.0125	0.0027	0.0098
94	0.0126	0.0027	0.0098
95	0.0127	0.0028	0.0099
96	0.0127	0.0028	0.0099
97	0.0128	0.0028	0.0100
98	0.0128	0.0028	0.0100
99	0.0129	0.0028	0.0101
100	0.0129	0.0028	0.0101
101	0.0130	0.0028	0.0102
102	0.0131	0.0028	0.0102
103	0.0132	0.0029	0.0103
104	0.0132	0.0029	0.0103
105	0.0133	0.0029	0.0104
106	0.0134	0.0029	0.0104
107	0.0135	0.0029	0.0105
108	0.0135	0.0029	0.0106
109	0.0136	0.0030	0.0106
110	0.0137	0.0030	0.0107
111	0.0138	0.0030	0.0108
112	0.0138	0.0030	0.0108
113	0.0139	0.0030	0.0109
114	0.0140	0.0030	0.0109
115	0.0141	0.0031	0.0110
116	0.0141	0.0031	0.0111
117	0.0143	0.0031	0.0112
118	0.0143	0.0031	0.0112
119	0.0144	0.0031	0.0113
120	0.0145	0.0032	0.0113
121	0.0146	0.0032	0.0114
122	0.0147	0.0032	0.0115
123	0.0148	0.0032	0.0116
124	0.0149	0.0032	0.0117
125	0.0150	0.0033	0.0118
126	0.0151	0.0033	0.0118
127	0.0153	0.0033	0.0119
128	0.0153	0.0033	0.0120
129	0.0155	0.0034	0.0121
130	0.0156	0.0034	0.0122
131	0.0157	0.0034	0.0123
132	0.0158	0.0034	0.0123
133	0.0160	0.0035	0.0125
134	0.0160	0.0035	0.0125
135	0.0162	0.0035	0.0127
136	0.0163	0.0036	0.0127
137	0.0165	0.0036	0.0129
138	0.0166	0.0036	0.0130
139	0.0168	0.0037	0.0131
140	0.0169	0.0037	0.0132
141	0.0171	0.0037	0.0134
142	0.0172	0.0037	0.0134
143	0.0174	0.0038	0.0136
144	0.0175	0.0038	0.0137
145	0.0177	0.0039	0.0139
146	0.0179	0.0039	0.0140
147	0.0181	0.0039	0.0142
148	0.0182	0.0040	0.0143
149	0.0185	0.0040	0.0145
150	0.0186	0.0041	0.0146
151	0.0189	0.0041	0.0148
152	0.0191	0.0042	0.0149
153	0.0193	0.0042	0.0151
154	0.0195	0.0042	0.0153

155	0.0198	0.0043	0.0155
156	0.0200	0.0044	0.0156
157	0.0203	0.0044	0.0159
158	0.0205	0.0045	0.0161
159	0.0209	0.0046	0.0163
160	0.0211	0.0046	0.0165
161	0.0215	0.0047	0.0168
162	0.0217	0.0047	0.0170
163	0.0222	0.0048	0.0173
164	0.0224	0.0049	0.0175
165	0.0229	0.0050	0.0179
166	0.0232	0.0051	0.0181
167	0.0237	0.0052	0.0186
168	0.0240	0.0052	0.0188
169	0.0247	0.0054	0.0193
170	0.0250	0.0054	0.0196
171	0.0257	0.0056	0.0201
172	0.0261	0.0057	0.0204
173	0.0269	0.0059	0.0211
174	0.0274	0.0060	0.0214
175	0.0283	0.0062	0.0221
176	0.0288	0.0063	0.0225
177	0.0299	0.0065	0.0234
178	0.0306	0.0067	0.0239
179	0.0319	0.0070	0.0250
180	0.0327	0.0071	0.0256
181	0.0344	0.0075	0.0269
182	0.0354	0.0077	0.0277
183	0.0376	0.0082	0.0294
184	0.0389	0.0085	0.0304
185	0.0318	0.0069	0.0249
186	0.0336	0.0073	0.0263
187	0.0381	0.0083	0.0298
188	0.0411	0.0090	0.0322
189	0.0496	0.0108	0.0388
190	0.0559	0.0122	0.0438
191	0.0800	0.0147	0.0653
192	0.1100	0.0147	0.0953
193	0.3441	0.0147	0.3295
194	0.0651	0.0142	0.0509
195	0.0448	0.0098	0.0351
196	0.0357	0.0078	0.0279
197	0.0403	0.0088	0.0315
198	0.0364	0.0079	0.0285
199	0.0335	0.0073	0.0262
200	0.0312	0.0068	0.0244
201	0.0294	0.0064	0.0230
202	0.0278	0.0061	0.0218
203	0.0265	0.0058	0.0207
204	0.0254	0.0055	0.0198
205	0.0243	0.0053	0.0190
206	0.0235	0.0051	0.0183
207	0.0227	0.0049	0.0177
208	0.0219	0.0048	0.0172
209	0.0213	0.0046	0.0167
210	0.0207	0.0045	0.0162
211	0.0202	0.0044	0.0158
212	0.0197	0.0043	0.0154
213	0.0192	0.0042	0.0150
214	0.0188	0.0041	0.0147
215	0.0184	0.0040	0.0144
216	0.0180	0.0039	0.0141
217	0.0176	0.0038	0.0138
218	0.0173	0.0038	0.0135
219	0.0170	0.0037	0.0133
220	0.0167	0.0036	0.0130
221	0.0164	0.0036	0.0128
222	0.0161	0.0035	0.0126
223	0.0159	0.0035	0.0124
224	0.0156	0.0034	0.0122
225	0.0154	0.0034	0.0120

226	0.0152	0.0033	0.0119
227	0.0150	0.0033	0.0117
228	0.0148	0.0032	0.0115
229	0.0146	0.0032	0.0114
230	0.0144	0.0031	0.0113
231	0.0142	0.0031	0.0111
232	0.0140	0.0031	0.0110
233	0.0139	0.0030	0.0108
234	0.0137	0.0030	0.0107
235	0.0136	0.0030	0.0106
236	0.0134	0.0029	0.0105
237	0.0133	0.0029	0.0104
238	0.0131	0.0029	0.0103
239	0.0130	0.0028	0.0102
240	0.0129	0.0028	0.0101
241	0.0127	0.0028	0.0100
242	0.0126	0.0027	0.0099
243	0.0125	0.0027	0.0098
244	0.0124	0.0027	0.0097
245	0.0123	0.0027	0.0096
246	0.0122	0.0026	0.0095
247	0.0120	0.0026	0.0094
248	0.0119	0.0026	0.0093
249	0.0118	0.0026	0.0093
250	0.0117	0.0026	0.0092
251	0.0117	0.0025	0.0091
252	0.0116	0.0025	0.0090
253	0.0115	0.0025	0.0090
254	0.0114	0.0025	0.0089
255	0.0113	0.0025	0.0088
256	0.0112	0.0024	0.0088
257	0.0111	0.0024	0.0087
258	0.0110	0.0024	0.0086
259	0.0110	0.0024	0.0086
260	0.0109	0.0024	0.0085
261	0.0108	0.0024	0.0085
262	0.0107	0.0023	0.0084
263	0.0107	0.0023	0.0083
264	0.0106	0.0023	0.0083
265	0.0105	0.0023	0.0082
266	0.0105	0.0023	0.0082
267	0.0104	0.0023	0.0081
268	0.0103	0.0022	0.0081
269	0.0103	0.0022	0.0080
270	0.0102	0.0022	0.0080
271	0.0101	0.0022	0.0079
272	0.0101	0.0022	0.0079
273	0.0100	0.0022	0.0078
274	0.0100	0.0022	0.0078
275	0.0099	0.0022	0.0077
276	0.0098	0.0021	0.0077
277	0.0098	0.0021	0.0077
278	0.0097	0.0021	0.0076
279	0.0097	0.0021	0.0076
280	0.0096	0.0021	0.0075
281	0.0096	0.0021	0.0075
282	0.0095	0.0021	0.0075
283	0.0095	0.0021	0.0074
284	0.0094	0.0021	0.0074
285	0.0094	0.0020	0.0073
286	0.0093	0.0020	0.0073
287	0.0093	0.0020	0.0073
288	0.0092	0.0020	0.0072

Total soil rain loss = 1.02(In)
Total effective rainfall = 3.99(In)
Peak flow rate in flood hydrograph = 10.28(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	0.0004	0.06	Q	|	|	|	|
0+10	0.0022	0.26	Q	|	|	|	|
0+15	0.0044	0.31	Q	|	|	|	|
0+20	0.0065	0.32	Q	|	|	|	|
0+25	0.0087	0.32	Q	|	|	|	|
0+30	0.0109	0.32	Q	|	|	|	|
0+35	0.0131	0.32	Q	|	|	|	|
0+40	0.0153	0.32	Q	|	|	|	|
0+45	0.0175	0.32	Q	|	|	|	|
0+50	0.0197	0.32	Q	|	|	|	|
0+55	0.0219	0.32	Q	|	|	|	|
1+ 0	0.0242	0.32	Q	|	|	|	|
1+ 5	0.0264	0.32	Q	|	|	|	|
1+10	0.0286	0.32	Q	|	|	|	|
1+15	0.0309	0.32	QV	|	|	|	|
1+20	0.0331	0.33	QV	|	|	|	|
1+25	0.0354	0.33	QV	|	|	|	|
1+30	0.0376	0.33	QV	|	|	|	|
1+35	0.0399	0.33	QV	|	|	|	|
1+40	0.0421	0.33	QV	|	|	|	|
1+45	0.0444	0.33	QV	|	|	|	|
1+50	0.0467	0.33	QV	|	|	|	|
1+55	0.0490	0.33	QV	|	|	|	|
2+ 0	0.0513	0.33	QV	|	|	|	|
2+ 5	0.0536	0.33	QV	|	|	|	|
2+10	0.0559	0.33	QV	|	|	|	|
2+15	0.0582	0.34	QV	|	|	|	|
2+20	0.0605	0.34	Q V	|	|	|	|
2+25	0.0628	0.34	Q V	|	|	|	|
2+30	0.0652	0.34	Q V	|	|	|	|
2+35	0.0675	0.34	Q V	|	|	|	|
2+40	0.0699	0.34	Q V	|	|	|	|
2+45	0.0722	0.34	Q V	|	|	|	|
2+50	0.0746	0.34	Q V	|	|	|	|
2+55	0.0769	0.34	Q V	|	|	|	|
3+ 0	0.0793	0.34	Q V	|	|	|	|
3+ 5	0.0817	0.35	Q V	|	|	|	|
3+10	0.0841	0.35	Q V	|	|	|	|
3+15	0.0865	0.35	Q V	|	|	|	|
3+20	0.0889	0.35	Q V	|	|	|	|
3+25	0.0913	0.35	Q V	|	|	|	|
3+30	0.0937	0.35	Q V	|	|	|	|
3+35	0.0961	0.35	Q V	|	|	|	|
3+40	0.0986	0.35	Q V	|	|	|	|
3+45	0.1010	0.35	Q V	|	|	|	|
3+50	0.1035	0.36	Q V	|	|	|	|
3+55	0.1059	0.36	Q V	|	|	|	|
4+ 0	0.1084	0.36	Q V	|	|	|	|
4+ 5	0.1108	0.36	Q V	|	|	|	|
4+10	0.1133	0.36	Q V	|	|	|	|
4+15	0.1158	0.36	Q V	|	|	|	|
4+20	0.1183	0.36	Q V	|	|	|	|
4+25	0.1208	0.36	Q V	|	|	|	|
4+30	0.1233	0.36	Q V	|	|	|	|
4+35	0.1258	0.37	Q V	|	|	|	|
4+40	0.1284	0.37	Q V	|	|	|	|
4+45	0.1309	0.37	Q V	|	|	|	|
4+50	0.1335	0.37	Q V	|	|	|	|
4+55	0.1360	0.37	Q V	|	|	|	|
5+ 0	0.1386	0.37	Q V	|	|	|	|
5+ 5	0.1412	0.37	Q V	|	|	|	|
5+10	0.1437	0.38	Q V	|	|	|	|
5+15	0.1463	0.38	Q V	|	|	|	|
5+20	0.1489	0.38	Q V	|	|	|	|

5+25	0.1516	0.38	Q	V	|	|	|	|
5+30	0.1542	0.38	Q	V	|	|	|	|
5+35	0.1568	0.38	Q	V	|	|	|	|
5+40	0.1594	0.38	Q	V	|	|	|	|
5+45	0.1621	0.38	Q	V	|	|	|	|
5+50	0.1648	0.39	Q	V	|	|	|	|
5+55	0.1674	0.39	Q	V	|	|	|	|
6+ 0	0.1701	0.39	Q	V	|	|	|	|
6+ 5	0.1728	0.39	Q	V	|	|	|	|
6+10	0.1755	0.39	Q	V	|	|	|	|
6+15	0.1782	0.39	Q	V	|	|	|	|
6+20	0.1809	0.40	Q	V	|	|	|	|
6+25	0.1837	0.40	Q	V	|	|	|	|
6+30	0.1864	0.40	Q	V	|	|	|	|
6+35	0.1892	0.40	Q	V	|	|	|	|
6+40	0.1920	0.40	Q	V	|	|	|	|
6+45	0.1947	0.40	Q	V	|	|	|	|
6+50	0.1975	0.41	Q	V	|	|	|	|
6+55	0.2003	0.41	Q	V	|	|	|	|
7+ 0	0.2031	0.41	Q	V	|	|	|	|
7+ 5	0.2060	0.41	Q	V	|	|	|	|
7+10	0.2088	0.41	Q	V	|	|	|	|
7+15	0.2117	0.41	Q	V	|	|	|	|
7+20	0.2145	0.42	Q	V	|	|	|	|
7+25	0.2174	0.42	Q	V	|	|	|	|
7+30	0.2203	0.42	Q	V	|	|	|	|
7+35	0.2232	0.42	Q	V	|	|	|	|
7+40	0.2261	0.42	Q	V	|	|	|	|
7+45	0.2290	0.43	Q	V	|	|	|	|
7+50	0.2320	0.43	Q	V	|	|	|	|
7+55	0.2350	0.43	Q	V	|	|	|	|
8+ 0	0.2379	0.43	Q	V	|	|	|	|
8+ 5	0.2409	0.43	Q	V	|	|	|	|
8+10	0.2439	0.44	Q	V	|	|	|	|
8+15	0.2469	0.44	Q	V	|	|	|	|
8+20	0.2500	0.44	Q	V	|	|	|	|
8+25	0.2530	0.44	Q	V	|	|	|	|
8+30	0.2561	0.44	Q	V	|	|	|	|
8+35	0.2592	0.45	Q	V	|	|	|	|
8+40	0.2623	0.45	Q	V	|	|	|	|
8+45	0.2654	0.45	Q	V	|	|	|	|
8+50	0.2685	0.45	Q	V	|	|	|	|
8+55	0.2716	0.46	Q	V	|	|	|	|
9+ 0	0.2748	0.46	Q	V	|	|	|	|
9+ 5	0.2780	0.46	Q	V	|	|	|	|
9+10	0.2812	0.46	Q	V	|	|	|	|
9+15	0.2844	0.47	Q	V	|	|	|	|
9+20	0.2876	0.47	Q	V	|	|	|	|
9+25	0.2909	0.47	Q	V	|	|	|	|
9+30	0.2941	0.48	Q	V	|	|	|	|
9+35	0.2974	0.48	Q	V	|	|	|	|
9+40	0.3008	0.48	Q	V	|	|	|	|
9+45	0.3041	0.48	Q	V	|	|	|	|
9+50	0.3074	0.49	Q	V	|	|	|	|
9+55	0.3108	0.49	Q	V	|	|	|	|
10+ 0	0.3142	0.49	Q	V	|	|	|	|
10+ 5	0.3176	0.50	Q	V	|	|	|	|
10+10	0.3211	0.50	Q	V	|	|	|	|
10+15	0.3245	0.50	Q	V	|	|	|	|
10+20	0.3280	0.51	Q	V	|	|	|	|
10+25	0.3315	0.51	Q	V	|	|	|	|
10+30	0.3350	0.51	Q	V	|	|	|	|
10+35	0.3386	0.52	Q	V	|	|	|	|
10+40	0.3422	0.52	Q	V	|	|	|	|
10+45	0.3458	0.52	Q	V	|	|	|	|
10+50	0.3494	0.53	Q	V	|	|	|	|
10+55	0.3531	0.53	Q	V	|	|	|	|
11+ 0	0.3568	0.54	Q	V	|	|	|	|
11+ 5	0.3605	0.54	Q	V	|	|	|	|
11+10	0.3642	0.54	Q	V	|	|	|	|
11+15	0.3680	0.55	Q	V	|	|	|	|

11+20	0.3718	0.55	Q	V			
11+25	0.3757	0.56	Q	V			
11+30	0.3795	0.56	Q	V			
11+35	0.3834	0.57	Q	V			
11+40	0.3874	0.57	Q	V			
11+45	0.3914	0.58	Q	V			
11+50	0.3954	0.58	Q	V			
11+55	0.3994	0.59	Q	V			
12+ 0	0.4035	0.59	Q	V			
12+ 5	0.4076	0.60	Q	V			
12+10	0.4118	0.61	Q	V			
12+15	0.4160	0.61	Q	V			
12+20	0.4203	0.62	Q	V			
12+25	0.4245	0.62	Q	V			
12+30	0.4289	0.63	Q	V			
12+35	0.4333	0.64	Q	V			
12+40	0.4377	0.64	Q	V			
12+45	0.4422	0.65	Q	V			
12+50	0.4468	0.66	Q	V			
12+55	0.4513	0.67	Q	V			
13+ 0	0.4560	0.68	Q	V			
13+ 5	0.4607	0.68	Q	V			
13+10	0.4655	0.69	Q	V			
13+15	0.4703	0.70	Q	V			
13+20	0.4752	0.71	Q	V			
13+25	0.4802	0.72	Q	V			
13+30	0.4853	0.73	Q	V			
13+35	0.4904	0.74	Q	V			
13+40	0.4956	0.76	Q	V			
13+45	0.5009	0.77	Q	V			
13+50	0.5063	0.78	Q	V			
13+55	0.5117	0.79	Q	V			
14+ 0	0.5173	0.81	Q	V			
14+ 5	0.5230	0.82	Q	V			
14+10	0.5288	0.84	Q	V			
14+15	0.5347	0.86	Q	V			
14+20	0.5407	0.88	Q	V			
14+25	0.5468	0.89	Q	V			
14+30	0.5532	0.92	Q	V			
14+35	0.5596	0.94	Q	V			
14+40	0.5663	0.96	Q	V			
14+45	0.5731	0.99	Q	V			
14+50	0.5801	1.02	Q	V			
14+55	0.5873	1.05	Q	V			
15+ 0	0.5948	1.09	Q	V			
15+ 5	0.6025	1.12	Q	V			
15+10	0.6106	1.17	Q	V			
15+15	0.6190	1.22	Q	V			
15+20	0.6278	1.28	Q	V			
15+25	0.6366	1.27	Q	V			
15+30	0.6444	1.14	Q	V			
15+35	0.6524	1.17	Q	V			
15+40	0.6614	1.30	Q	V			
15+45	0.6713	1.44	Q	V			
15+50	0.6829	1.69	Q	V			
15+55	0.6971	2.05	Q	V			
16+ 0	0.7174	2.95	Q	V			
16+ 5	0.7583	5.94	Q	V			
16+10	0.8291	10.28	Q	V			
16+15	0.8563	3.95	Q	V			
16+20	0.8684	1.77	Q	V			
16+25	0.8775	1.31	Q	V			
16+30	0.8866	1.33	Q	V			
16+35	0.8952	1.24	Q	V			
16+40	0.9031	1.15	Q	V			
16+45	0.9104	1.07	Q	V			
16+50	0.9174	1.00	Q	V			
16+55	0.9239	0.95	Q	V			
17+ 0	0.9301	0.91	Q	V			
17+ 5	0.9361	0.87	Q	V			
17+10	0.9418	0.83	Q	V			

17+15	0.9474	0.80	|Q	|	|	|V |
17+20	0.9527	0.77	|Q	|	|	|V |
17+25	0.9578	0.75	|Q	|	|	|V |
17+30	0.9629	0.73	|Q	|	|	| V |
17+35	0.9677	0.71	|Q	|	|	| V |
17+40	0.9725	0.69	|Q	|	|	| V |
17+45	0.9771	0.67	|Q	|	|	| V |
17+50	0.9816	0.66	|Q	|	|	| V |
17+55	0.9860	0.64	|Q	|	|	| V |
18+ 0	0.9903	0.63	|Q	|	|	| V |
18+ 5	0.9946	0.61	|Q	|	|	| V |
18+10	0.9987	0.60	|Q	|	|	| V |
18+15	1.0028	0.59	|Q	|	|	| V |
18+20	1.0068	0.58	|Q	|	|	| V |
18+25	1.0107	0.57	|Q	|	|	| V |
18+30	1.0145	0.56	|Q	|	|	| V |
18+35	1.0183	0.55	|Q	|	|	| V |
18+40	1.0221	0.54	|Q	|	|	| V |
18+45	1.0257	0.53	|Q	|	|	| V |
18+50	1.0294	0.53	|Q	|	|	| V |
18+55	1.0329	0.52	|Q	|	|	| V |
19+ 0	1.0365	0.51	|Q	|	|	| V |
19+ 5	1.0399	0.50	|Q	|	|	| V |
19+10	1.0433	0.50	Q	|	|	| V |
19+15	1.0467	0.49	Q	|	|	| V |
19+20	1.0501	0.49	Q	|	|	| V |
19+25	1.0534	0.48	Q	|	|	| V |
19+30	1.0566	0.47	Q	|	|	| V |
19+35	1.0599	0.47	Q	|	|	| V |
19+40	1.0630	0.46	Q	|	|	| V |
19+45	1.0662	0.46	Q	|	|	| V |
19+50	1.0693	0.45	Q	|	|	| V |
19+55	1.0724	0.45	Q	|	|	| V |
20+ 0	1.0755	0.44	Q	|	|	| V |
20+ 5	1.0785	0.44	Q	|	|	| V |
20+10	1.0815	0.43	Q	|	|	| V |
20+15	1.0844	0.43	Q	|	|	| V |
20+20	1.0874	0.43	Q	|	|	| V |
20+25	1.0903	0.42	Q	|	|	| V |
20+30	1.0932	0.42	Q	|	|	| V |
20+35	1.0960	0.42	Q	|	|	| V |
20+40	1.0989	0.41	Q	|	|	| V |
20+45	1.1017	0.41	Q	|	|	| V |
20+50	1.1045	0.40	Q	|	|	| V |
20+55	1.1072	0.40	Q	|	|	| V |
21+ 0	1.1100	0.40	Q	|	|	| V |
21+ 5	1.1127	0.39	Q	|	|	| V |
21+10	1.1154	0.39	Q	|	|	| V |
21+15	1.1181	0.39	Q	|	|	| V |
21+20	1.1207	0.39	Q	|	|	| V |
21+25	1.1233	0.38	Q	|	|	| V |
21+30	1.1260	0.38	Q	|	|	| V |
21+35	1.1286	0.38	Q	|	|	| V |
21+40	1.1311	0.37	Q	|	|	| V |
21+45	1.1337	0.37	Q	|	|	| V |
21+50	1.1362	0.37	Q	|	|	| V |
21+55	1.1388	0.37	Q	|	|	| V |
22+ 0	1.1413	0.36	Q	|	|	| V |
22+ 5	1.1438	0.36	Q	|	|	| V |
22+10	1.1462	0.36	Q	|	|	| V |
22+15	1.1487	0.36	Q	|	|	| V |
22+20	1.1511	0.35	Q	|	|	| V |
22+25	1.1536	0.35	Q	|	|	| V |
22+30	1.1560	0.35	Q	|	|	| V |
22+35	1.1584	0.35	Q	|	|	| V |
22+40	1.1608	0.35	Q	|	|	| V |
22+45	1.1631	0.34	Q	|	|	| V |
22+50	1.1655	0.34	Q	|	|	| V |
22+55	1.1678	0.34	Q	|	|	| V |
23+ 0	1.1702	0.34	Q	|	|	| V|
23+ 5	1.1725	0.34	Q	|	|	| V|

23+10	1.1748	0.33	Q				V|
23+15	1.1771	0.33	Q				V|
23+20	1.1794	0.33	Q				V|
23+25	1.1816	0.33	Q				V|
23+30	1.1839	0.33	Q				V|
23+35	1.1861	0.33	Q				V|
23+40	1.1883	0.32	Q				V|
23+45	1.1906	0.32	Q				V|
23+50	1.1928	0.32	Q				V|
23+55	1.1950	0.32	Q				V|
24+ 0	1.1972	0.32	Q				V|
24+ 5	1.1989	0.25	Q				V|
24+10	1.1993	0.05	Q				V|
24+15	1.1993	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

Study date 01/30/24

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

Program License Serial Number 6320

235094 - 17783 & 17805 TAYLOR AVENUE
DEVELOPED CONDITIONS
25-YEAR, 24-HOUR STORM
BY: KBO DATE: 01-30-24

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		
3.61	1	0.93
Rainfall data for year 2		
3.61	6	1.63
Rainfall data for year 2		
3.61	24	3.02
Rainfall data for year 100		
3.61	1	1.33
Rainfall data for year 100		
3.61	6	3.51
Rainfall data for year 100		
3.61	24	7.85

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******** 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)
32.0	32.0	3.61	1.000	0.978	0.180	0.176

Area-averaged adjusted loss rate Fm (In/Hr) = 0.176

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC2)	S	Pervious Yield Fr
0.65	0.180	32.0	32.0	21.25	0.025
2.96	0.820	98.0	98.0	0.20	0.961

Area-averaged catchment yield fraction, Y = 0.793
Area-averaged low loss fraction, Yb = 0.207
User entry of time of concentration = 0.097 (hours)
++
Watershed area = 3.61(Ac.)
Catchment Lag time = 0.078 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 107.3883
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.176(In/Hr)
Average low loss rate fraction (Yb) = 0.207 (decimal)
VALLEY DEVELOPED S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.825(In)
Specified peak 1-hour rainfall = 1.089(In)
Computed peak 3-hour rainfall = 1.962(In)
Specified peak 6-hour rainfall = 2.844(In)
Specified peak 24-hour rainfall = 6.138(In)

Rainfall depth area reduction factors:
Using a total area of 3.61(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.403(In)
30-minute factor = 1.000 Adjusted rainfall = 0.825(In)
1-hour factor = 1.000 Adjusted rainfall = 1.089(In)
3-hour factor = 1.000 Adjusted rainfall = 1.962(In)
6-hour factor = 1.000 Adjusted rainfall = 2.844(In)
24-hour factor = 1.000 Adjusted rainfall = 6.138(In)

U n i t H y d r o g r a p h
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Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 43.66 (CFS))	
1	19.634	8.572
2	83.438	27.856
3	98.503	6.577
4	100.000	0.654

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.4030	0.4030
2	0.5318	0.1288
3	0.6255	0.0936
4	0.7017	0.0763
5	0.7673	0.0655
6	0.8253	0.0580
7	0.8778	0.0525
8	0.9260	0.0482
9	0.9706	0.0447
10	1.0124	0.0418
11	1.0517	0.0393
12	1.0890	0.0372
13	1.1367	0.0477
14	1.1827	0.0460
15	1.2273	0.0445
16	1.2705	0.0432
17	1.3124	0.0419
18	1.3532	0.0408
19	1.3930	0.0398
20	1.4318	0.0388
21	1.4697	0.0379

22	1.5068	0.0371
23	1.5431	0.0363
24	1.5787	0.0356
25	1.6136	0.0349
26	1.6479	0.0343
27	1.6816	0.0337
28	1.7146	0.0331
29	1.7472	0.0325
30	1.7792	0.0320
31	1.8107	0.0315
32	1.8418	0.0311
33	1.8724	0.0306
34	1.9026	0.0302
35	1.9324	0.0298
36	1.9618	0.0294
37	1.9908	0.0290
38	2.0194	0.0286
39	2.0477	0.0283
40	2.0757	0.0280
41	2.1033	0.0276
42	2.1306	0.0273
43	2.1577	0.0270
44	2.1844	0.0267
45	2.2108	0.0265
46	2.2370	0.0262
47	2.2629	0.0259
48	2.2886	0.0257
49	2.3140	0.0254
50	2.3392	0.0252
51	2.3641	0.0249
52	2.3889	0.0247
53	2.4134	0.0245
54	2.4376	0.0243
55	2.4617	0.0241
56	2.4856	0.0239
57	2.5093	0.0237
58	2.5328	0.0235
59	2.5561	0.0233
60	2.5792	0.0231
61	2.6021	0.0229
62	2.6249	0.0228
63	2.6475	0.0226
64	2.6699	0.0224
65	2.6922	0.0223
66	2.7143	0.0221
67	2.7362	0.0220
68	2.7580	0.0218
69	2.7797	0.0217
70	2.8012	0.0215
71	2.8225	0.0214
72	2.8438	0.0212
73	2.8656	0.0219
74	2.8873	0.0217
75	2.9089	0.0216
76	2.9304	0.0215
77	2.9517	0.0213
78	2.9729	0.0212
79	2.9940	0.0211
80	3.0150	0.0210
81	3.0359	0.0209
82	3.0566	0.0207
83	3.0773	0.0206
84	3.0978	0.0205
85	3.1182	0.0204
86	3.1385	0.0203
87	3.1587	0.0202
88	3.1788	0.0201
89	3.1988	0.0200
90	3.2187	0.0199
91	3.2385	0.0198
92	3.2582	0.0197

93	3.2778	0.0196
94	3.2973	0.0195
95	3.3168	0.0194
96	3.3361	0.0193
97	3.3553	0.0192
98	3.3745	0.0192
99	3.3936	0.0191
100	3.4125	0.0190
101	3.4314	0.0189
102	3.4502	0.0188
103	3.4690	0.0187
104	3.4876	0.0187
105	3.5062	0.0186
106	3.5247	0.0185
107	3.5431	0.0184
108	3.5615	0.0183
109	3.5797	0.0183
110	3.5979	0.0182
111	3.6160	0.0181
112	3.6341	0.0180
113	3.6521	0.0180
114	3.6700	0.0179
115	3.6878	0.0178
116	3.7056	0.0178
117	3.7233	0.0177
118	3.7409	0.0176
119	3.7584	0.0176
120	3.7759	0.0175
121	3.7934	0.0174
122	3.8107	0.0174
123	3.8280	0.0173
124	3.8453	0.0172
125	3.8625	0.0172
126	3.8796	0.0171
127	3.8966	0.0171
128	3.9136	0.0170
129	3.9306	0.0169
130	3.9475	0.0169
131	3.9643	0.0168
132	3.9811	0.0168
133	3.9978	0.0167
134	4.0144	0.0167
135	4.0310	0.0166
136	4.0476	0.0165
137	4.0641	0.0165
138	4.0805	0.0164
139	4.0969	0.0164
140	4.1132	0.0163
141	4.1295	0.0163
142	4.1457	0.0162
143	4.1619	0.0162
144	4.1780	0.0161
145	4.1941	0.0161
146	4.2102	0.0160
147	4.2261	0.0160
148	4.2421	0.0159
149	4.2580	0.0159
150	4.2738	0.0158
151	4.2896	0.0158
152	4.3053	0.0157
153	4.3210	0.0157
154	4.3367	0.0157
155	4.3523	0.0156
156	4.3678	0.0156
157	4.3834	0.0155
158	4.3988	0.0155
159	4.4143	0.0154
160	4.4297	0.0154
161	4.4450	0.0153
162	4.4603	0.0153
163	4.4756	0.0153

164	4.4908	0.0152
165	4.5060	0.0152
166	4.5211	0.0151
167	4.5362	0.0151
168	4.5512	0.0151
169	4.5663	0.0150
170	4.5812	0.0150
171	4.5962	0.0149
172	4.6111	0.0149
173	4.6259	0.0149
174	4.6408	0.0148
175	4.6555	0.0148
176	4.6703	0.0147
177	4.6850	0.0147
178	4.6997	0.0147
179	4.7143	0.0146
180	4.7289	0.0146
181	4.7435	0.0146
182	4.7580	0.0145
183	4.7725	0.0145
184	4.7869	0.0145
185	4.8014	0.0144
186	4.8158	0.0144
187	4.8301	0.0144
188	4.8444	0.0143
189	4.8587	0.0143
190	4.8730	0.0143
191	4.8872	0.0142
192	4.9014	0.0142
193	4.9155	0.0142
194	4.9296	0.0141
195	4.9437	0.0141
196	4.9578	0.0141
197	4.9718	0.0140
198	4.9858	0.0140
199	4.9998	0.0140
200	5.0137	0.0139
201	5.0276	0.0139
202	5.0415	0.0139
203	5.0553	0.0138
204	5.0691	0.0138
205	5.0829	0.0138
206	5.0966	0.0137
207	5.1103	0.0137
208	5.1240	0.0137
209	5.1377	0.0137
210	5.1513	0.0136
211	5.1649	0.0136
212	5.1785	0.0136
213	5.1920	0.0135
214	5.2055	0.0135
215	5.2190	0.0135
216	5.2325	0.0135
217	5.2459	0.0134
218	5.2593	0.0134
219	5.2727	0.0134
220	5.2861	0.0133
221	5.2994	0.0133
222	5.3127	0.0133
223	5.3259	0.0133
224	5.3392	0.0132
225	5.3524	0.0132
226	5.3656	0.0132
227	5.3788	0.0132
228	5.3919	0.0131
229	5.4050	0.0131
230	5.4181	0.0131
231	5.4312	0.0131
232	5.4442	0.0130
233	5.4572	0.0130
234	5.4702	0.0130

235	5.4832	0.0130
236	5.4961	0.0129
237	5.5090	0.0129
238	5.5219	0.0129
239	5.5348	0.0129
240	5.5476	0.0128
241	5.5604	0.0128
242	5.5732	0.0128
243	5.5860	0.0128
244	5.5987	0.0127
245	5.6115	0.0127
246	5.6242	0.0127
247	5.6368	0.0127
248	5.6495	0.0127
249	5.6621	0.0126
250	5.6747	0.0126
251	5.6873	0.0126
252	5.6999	0.0126
253	5.7124	0.0125
254	5.7250	0.0125
255	5.7375	0.0125
256	5.7499	0.0125
257	5.7624	0.0125
258	5.7748	0.0124
259	5.7872	0.0124
260	5.7996	0.0124
261	5.8120	0.0124
262	5.8243	0.0123
263	5.8367	0.0123
264	5.8490	0.0123
265	5.8613	0.0123
266	5.8735	0.0123
267	5.8858	0.0122
268	5.8980	0.0122
269	5.9102	0.0122
270	5.9224	0.0122
271	5.9346	0.0122
272	5.9467	0.0121
273	5.9588	0.0121
274	5.9709	0.0121
275	5.9830	0.0121
276	5.9951	0.0121
277	6.0071	0.0120
278	6.0191	0.0120
279	6.0312	0.0120
280	6.0431	0.0120
281	6.0551	0.0120
282	6.0671	0.0120
283	6.0790	0.0119
284	6.0909	0.0119
285	6.1028	0.0119
286	6.1147	0.0119
287	6.1265	0.0119
288	6.1384	0.0118

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0118	0.0025	0.0094
2	0.0119	0.0025	0.0094
3	0.0119	0.0025	0.0094
4	0.0119	0.0025	0.0094
5	0.0120	0.0025	0.0095
6	0.0120	0.0025	0.0095
7	0.0120	0.0025	0.0095
8	0.0120	0.0025	0.0095
9	0.0121	0.0025	0.0096
10	0.0121	0.0025	0.0096
11	0.0121	0.0025	0.0096
12	0.0121	0.0025	0.0096

13	0.0122	0.0025	0.0097
14	0.0122	0.0025	0.0097
15	0.0122	0.0025	0.0097
16	0.0123	0.0025	0.0097
17	0.0123	0.0026	0.0098
18	0.0123	0.0026	0.0098
19	0.0124	0.0026	0.0098
20	0.0124	0.0026	0.0098
21	0.0124	0.0026	0.0099
22	0.0125	0.0026	0.0099
23	0.0125	0.0026	0.0099
24	0.0125	0.0026	0.0099
25	0.0126	0.0026	0.0100
26	0.0126	0.0026	0.0100
27	0.0126	0.0026	0.0100
28	0.0127	0.0026	0.0100
29	0.0127	0.0026	0.0101
30	0.0127	0.0026	0.0101
31	0.0128	0.0026	0.0101
32	0.0128	0.0027	0.0101
33	0.0128	0.0027	0.0102
34	0.0129	0.0027	0.0102
35	0.0129	0.0027	0.0102
36	0.0129	0.0027	0.0103
37	0.0130	0.0027	0.0103
38	0.0130	0.0027	0.0103
39	0.0131	0.0027	0.0104
40	0.0131	0.0027	0.0104
41	0.0131	0.0027	0.0104
42	0.0132	0.0027	0.0104
43	0.0132	0.0027	0.0105
44	0.0132	0.0027	0.0105
45	0.0133	0.0028	0.0105
46	0.0133	0.0028	0.0106
47	0.0134	0.0028	0.0106
48	0.0134	0.0028	0.0106
49	0.0135	0.0028	0.0107
50	0.0135	0.0028	0.0107
51	0.0135	0.0028	0.0107
52	0.0136	0.0028	0.0108
53	0.0136	0.0028	0.0108
54	0.0137	0.0028	0.0108
55	0.0137	0.0028	0.0109
56	0.0137	0.0028	0.0109
57	0.0138	0.0029	0.0109
58	0.0138	0.0029	0.0110
59	0.0139	0.0029	0.0110
60	0.0139	0.0029	0.0110
61	0.0140	0.0029	0.0111
62	0.0140	0.0029	0.0111
63	0.0141	0.0029	0.0112
64	0.0141	0.0029	0.0112
65	0.0142	0.0029	0.0112
66	0.0142	0.0029	0.0113
67	0.0143	0.0030	0.0113
68	0.0143	0.0030	0.0114
69	0.0144	0.0030	0.0114
70	0.0144	0.0030	0.0114
71	0.0145	0.0030	0.0115
72	0.0145	0.0030	0.0115
73	0.0146	0.0030	0.0116
74	0.0146	0.0030	0.0116
75	0.0147	0.0030	0.0117
76	0.0147	0.0031	0.0117
77	0.0148	0.0031	0.0117
78	0.0149	0.0031	0.0118
79	0.0149	0.0031	0.0118
80	0.0150	0.0031	0.0119
81	0.0151	0.0031	0.0119
82	0.0151	0.0031	0.0120
83	0.0152	0.0031	0.0120

84	0.0152	0.0032	0.0121
85	0.0153	0.0032	0.0121
86	0.0153	0.0032	0.0122
87	0.0154	0.0032	0.0122
88	0.0155	0.0032	0.0123
89	0.0156	0.0032	0.0123
90	0.0156	0.0032	0.0124
91	0.0157	0.0033	0.0124
92	0.0157	0.0033	0.0125
93	0.0158	0.0033	0.0126
94	0.0159	0.0033	0.0126
95	0.0160	0.0033	0.0127
96	0.0160	0.0033	0.0127
97	0.0161	0.0033	0.0128
98	0.0162	0.0034	0.0128
99	0.0163	0.0034	0.0129
100	0.0163	0.0034	0.0129
101	0.0164	0.0034	0.0130
102	0.0165	0.0034	0.0131
103	0.0166	0.0034	0.0132
104	0.0167	0.0035	0.0132
105	0.0168	0.0035	0.0133
106	0.0168	0.0035	0.0133
107	0.0169	0.0035	0.0134
108	0.0170	0.0035	0.0135
109	0.0171	0.0035	0.0136
110	0.0172	0.0036	0.0136
111	0.0173	0.0036	0.0137
112	0.0174	0.0036	0.0138
113	0.0175	0.0036	0.0139
114	0.0176	0.0036	0.0139
115	0.0177	0.0037	0.0140
116	0.0178	0.0037	0.0141
117	0.0179	0.0037	0.0142
118	0.0180	0.0037	0.0142
119	0.0181	0.0038	0.0144
120	0.0182	0.0038	0.0144
121	0.0183	0.0038	0.0145
122	0.0184	0.0038	0.0146
123	0.0186	0.0039	0.0147
124	0.0187	0.0039	0.0148
125	0.0188	0.0039	0.0149
126	0.0189	0.0039	0.0150
127	0.0191	0.0040	0.0151
128	0.0192	0.0040	0.0152
129	0.0193	0.0040	0.0153
130	0.0194	0.0040	0.0154
131	0.0196	0.0041	0.0155
132	0.0197	0.0041	0.0156
133	0.0199	0.0041	0.0158
134	0.0200	0.0041	0.0159
135	0.0202	0.0042	0.0160
136	0.0203	0.0042	0.0161
137	0.0205	0.0043	0.0163
138	0.0206	0.0043	0.0164
139	0.0209	0.0043	0.0165
140	0.0210	0.0043	0.0166
141	0.0212	0.0044	0.0168
142	0.0213	0.0044	0.0169
143	0.0216	0.0045	0.0171
144	0.0217	0.0045	0.0172
145	0.0212	0.0044	0.0168
146	0.0214	0.0044	0.0169
147	0.0217	0.0045	0.0172
148	0.0218	0.0045	0.0173
149	0.0221	0.0046	0.0175
150	0.0223	0.0046	0.0176
151	0.0226	0.0047	0.0179
152	0.0228	0.0047	0.0180
153	0.0231	0.0048	0.0183
154	0.0233	0.0048	0.0185

155	0.0237	0.0049	0.0188
156	0.0239	0.0049	0.0189
157	0.0243	0.0050	0.0193
158	0.0245	0.0051	0.0194
159	0.0249	0.0052	0.0198
160	0.0252	0.0052	0.0200
161	0.0257	0.0053	0.0203
162	0.0259	0.0054	0.0205
163	0.0265	0.0055	0.0210
164	0.0267	0.0055	0.0212
165	0.0273	0.0057	0.0217
166	0.0276	0.0057	0.0219
167	0.0283	0.0059	0.0224
168	0.0286	0.0059	0.0227
169	0.0294	0.0061	0.0233
170	0.0298	0.0062	0.0236
171	0.0306	0.0063	0.0243
172	0.0311	0.0064	0.0246
173	0.0320	0.0066	0.0254
174	0.0325	0.0067	0.0258
175	0.0337	0.0070	0.0267
176	0.0343	0.0071	0.0272
177	0.0356	0.0074	0.0282
178	0.0363	0.0075	0.0288
179	0.0379	0.0079	0.0301
180	0.0388	0.0080	0.0308
181	0.0408	0.0085	0.0324
182	0.0419	0.0087	0.0332
183	0.0445	0.0092	0.0353
184	0.0460	0.0095	0.0365
185	0.0372	0.0077	0.0295
186	0.0393	0.0082	0.0312
187	0.0447	0.0093	0.0354
188	0.0482	0.0100	0.0382
189	0.0580	0.0120	0.0460
190	0.0655	0.0136	0.0519
191	0.0936	0.0147	0.0790
192	0.1288	0.0147	0.1141
193	0.4030	0.0147	0.3884
194	0.0763	0.0147	0.0616
195	0.0525	0.0109	0.0416
196	0.0418	0.0087	0.0331
197	0.0477	0.0099	0.0378
198	0.0432	0.0090	0.0342
199	0.0398	0.0082	0.0315
200	0.0371	0.0077	0.0294
201	0.0349	0.0072	0.0277
202	0.0331	0.0069	0.0262
203	0.0315	0.0065	0.0250
204	0.0302	0.0063	0.0239
205	0.0290	0.0060	0.0230
206	0.0280	0.0058	0.0222
207	0.0270	0.0056	0.0214
208	0.0262	0.0054	0.0208
209	0.0254	0.0053	0.0201
210	0.0247	0.0051	0.0196
211	0.0241	0.0050	0.0191
212	0.0235	0.0049	0.0186
213	0.0229	0.0048	0.0182
214	0.0224	0.0046	0.0178
215	0.0220	0.0046	0.0174
216	0.0215	0.0045	0.0170
217	0.0219	0.0045	0.0173
218	0.0215	0.0044	0.0170
219	0.0211	0.0044	0.0167
220	0.0207	0.0043	0.0164
221	0.0204	0.0042	0.0162
222	0.0201	0.0042	0.0159
223	0.0198	0.0041	0.0157
224	0.0195	0.0040	0.0155
225	0.0192	0.0040	0.0153

226	0.0190	0.0039	0.0150
227	0.0187	0.0039	0.0148
228	0.0185	0.0038	0.0147
229	0.0183	0.0038	0.0145
230	0.0180	0.0037	0.0143
231	0.0178	0.0037	0.0141
232	0.0176	0.0037	0.0140
233	0.0174	0.0036	0.0138
234	0.0172	0.0036	0.0137
235	0.0171	0.0035	0.0135
236	0.0169	0.0035	0.0134
237	0.0167	0.0035	0.0132
238	0.0165	0.0034	0.0131
239	0.0164	0.0034	0.0130
240	0.0162	0.0034	0.0129
241	0.0161	0.0033	0.0127
242	0.0159	0.0033	0.0126
243	0.0158	0.0033	0.0125
244	0.0157	0.0032	0.0124
245	0.0155	0.0032	0.0123
246	0.0154	0.0032	0.0122
247	0.0153	0.0032	0.0121
248	0.0151	0.0031	0.0120
249	0.0150	0.0031	0.0119
250	0.0149	0.0031	0.0118
251	0.0148	0.0031	0.0117
252	0.0147	0.0030	0.0116
253	0.0146	0.0030	0.0115
254	0.0145	0.0030	0.0115
255	0.0144	0.0030	0.0114
256	0.0143	0.0030	0.0113
257	0.0142	0.0029	0.0112
258	0.0141	0.0029	0.0111
259	0.0140	0.0029	0.0111
260	0.0139	0.0029	0.0110
261	0.0138	0.0029	0.0109
262	0.0137	0.0028	0.0109
263	0.0136	0.0028	0.0108
264	0.0135	0.0028	0.0107
265	0.0134	0.0028	0.0106
266	0.0133	0.0028	0.0106
267	0.0133	0.0028	0.0105
268	0.0132	0.0027	0.0105
269	0.0131	0.0027	0.0104
270	0.0130	0.0027	0.0103
271	0.0130	0.0027	0.0103
272	0.0129	0.0027	0.0102
273	0.0128	0.0027	0.0102
274	0.0127	0.0026	0.0101
275	0.0127	0.0026	0.0100
276	0.0126	0.0026	0.0100
277	0.0125	0.0026	0.0099
278	0.0125	0.0026	0.0099
279	0.0124	0.0026	0.0098
280	0.0123	0.0026	0.0098
281	0.0123	0.0025	0.0097
282	0.0122	0.0025	0.0097
283	0.0122	0.0025	0.0096
284	0.0121	0.0025	0.0096
285	0.0120	0.0025	0.0095
286	0.0120	0.0025	0.0095
287	0.0119	0.0025	0.0095
288	0.0119	0.0025	0.0094

Total soil rain loss = 1.19(In)
Total effective rainfall = 4.95(In)
Peak flow rate in flood hydrograph = 12.15(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	0.0006	0.08	Q				
0+10	0.0029	0.34	Q				
0+15	0.0057	0.40	Q				
0+20	0.0085	0.41	Q				
0+25	0.0114	0.41	Q				
0+30	0.0142	0.41	Q				
0+35	0.0171	0.41	Q				
0+40	0.0199	0.42	Q				
0+45	0.0228	0.42	Q				
0+50	0.0257	0.42	Q				
0+55	0.0286	0.42	Q				
1+ 0	0.0314	0.42	Q				
1+ 5	0.0343	0.42	Q				
1+10	0.0372	0.42	QV				
1+15	0.0402	0.42	QV				
1+20	0.0431	0.42	QV				
1+25	0.0460	0.42	QV				
1+30	0.0489	0.43	QV				
1+35	0.0519	0.43	QV				
1+40	0.0548	0.43	QV				
1+45	0.0578	0.43	QV				
1+50	0.0607	0.43	QV				
1+55	0.0637	0.43	QV				
2+ 0	0.0667	0.43	QV				
2+ 5	0.0697	0.43	QV				
2+10	0.0727	0.43	QV				
2+15	0.0757	0.44	Q V				
2+20	0.0787	0.44	Q V				
2+25	0.0817	0.44	Q V				
2+30	0.0847	0.44	Q V				
2+35	0.0877	0.44	Q V				
2+40	0.0908	0.44	Q V				
2+45	0.0938	0.44	Q V				
2+50	0.0969	0.44	Q V				
2+55	0.1000	0.45	Q V				
3+ 0	0.1030	0.45	Q V				
3+ 5	0.1061	0.45	Q V				
3+10	0.1092	0.45	Q V				
3+15	0.1123	0.45	Q V				
3+20	0.1154	0.45	Q V				
3+25	0.1186	0.45	Q V				
3+30	0.1217	0.45	Q V				
3+35	0.1248	0.46	Q V				
3+40	0.1280	0.46	Q V				
3+45	0.1311	0.46	Q V				
3+50	0.1343	0.46	Q V				
3+55	0.1375	0.46	Q V				
4+ 0	0.1407	0.46	Q V				
4+ 5	0.1439	0.46	Q V				
4+10	0.1471	0.47	Q V				
4+15	0.1503	0.47	Q V				
4+20	0.1535	0.47	Q V				
4+25	0.1568	0.47	Q V				
4+30	0.1600	0.47	Q V				
4+35	0.1633	0.47	Q V				
4+40	0.1665	0.47	Q V				
4+45	0.1698	0.48	Q V				
4+50	0.1731	0.48	Q V				
4+55	0.1764	0.48	Q V				
5+ 0	0.1797	0.48	Q V				
5+ 5	0.1830	0.48	Q V				
5+10	0.1864	0.48	Q V				
5+15	0.1897	0.49	Q V				
5+20	0.1931	0.49	Q V				

5+25	0.1964	0.49	Q	V	|	|	|	|
5+30	0.1998	0.49	Q	V	|	|	|	|
5+35	0.2032	0.49	Q	V	|	|	|	|
5+40	0.2066	0.49	Q	V	|	|	|	|
5+45	0.2100	0.50	Q	V	|	|	|	|
5+50	0.2134	0.50	Q	V	|	|	|	|
5+55	0.2169	0.50	Q	V	|	|	|	|
6+ 0	0.2203	0.50	|Q	V	|	|	|	|
6+ 5	0.2238	0.50	|Q	V	|	|	|	|
6+10	0.2273	0.51	|Q	V	|	|	|	|
6+15	0.2308	0.51	|Q	V	|	|	|	|
6+20	0.2343	0.51	|Q	V	|	|	|	|
6+25	0.2378	0.51	|Q	V	|	|	|	|
6+30	0.2413	0.51	|Q	V	|	|	|	|
6+35	0.2449	0.51	|Q	V	|	|	|	|
6+40	0.2484	0.52	|Q	V	|	|	|	|
6+45	0.2520	0.52	|Q	V	|	|	|	|
6+50	0.2556	0.52	|Q	V	|	|	|	|
6+55	0.2592	0.52	|Q	V	|	|	|	|
7+ 0	0.2628	0.53	|Q	V	|	|	|	|
7+ 5	0.2664	0.53	|Q	V	|	|	|	|
7+10	0.2701	0.53	|Q	V	|	|	|	|
7+15	0.2737	0.53	|Q	V	|	|	|	|
7+20	0.2774	0.53	|Q	V	|	|	|	|
7+25	0.2811	0.54	|Q	V	|	|	|	|
7+30	0.2848	0.54	|Q	V	|	|	|	|
7+35	0.2885	0.54	|Q	V	|	|	|	|
7+40	0.2923	0.54	|Q	V	|	|	|	|
7+45	0.2960	0.55	|Q	V	|	|	|	|
7+50	0.2998	0.55	|Q	V	|	|	|	|
7+55	0.3036	0.55	|Q	V	|	|	|	|
8+ 0	0.3074	0.55	|Q	V	|	|	|	|
8+ 5	0.3112	0.56	|Q	V	|	|	|	|
8+10	0.3151	0.56	|Q	V	|	|	|	|
8+15	0.3189	0.56	|Q	V	|	|	|	|
8+20	0.3228	0.56	|Q	V	|	|	|	|
8+25	0.3267	0.57	|Q	V	|	|	|	|
8+30	0.3306	0.57	|Q	V	|	|	|	|
8+35	0.3345	0.57	|Q	V	|	|	|	|
8+40	0.3385	0.57	|Q	V	|	|	|	|
8+45	0.3425	0.58	|Q	V	|	|	|	|
8+50	0.3465	0.58	|Q	V	|	|	|	|
8+55	0.3505	0.58	|Q	V	|	|	|	|
9+ 0	0.3545	0.59	|Q	V	|	|	|	|
9+ 5	0.3586	0.59	|Q	V	|	|	|	|
9+10	0.3626	0.59	|Q	V	|	|	|	|
9+15	0.3667	0.60	|Q	V	|	|	|	|
9+20	0.3709	0.60	|Q	V	|	|	|	|
9+25	0.3750	0.60	|Q	V	|	|	|	|
9+30	0.3792	0.61	|Q	V	|	|	|	|
9+35	0.3834	0.61	|Q	V	|	|	|	|
9+40	0.3876	0.61	|Q	V	|	|	|	|
9+45	0.3918	0.62	|Q	V	|	|	|	|
9+50	0.3961	0.62	|Q	V	|	|	|	|
9+55	0.4004	0.62	|Q	V	|	|	|	|
10+ 0	0.4047	0.63	|Q	V	|	|	|	|
10+ 5	0.4090	0.63	|Q	V	|	|	|	|
10+10	0.4134	0.63	|Q	V	|	|	|	|
10+15	0.4178	0.64	|Q	V	|	|	|	|
10+20	0.4222	0.64	|Q	V	|	|	|	|
10+25	0.4267	0.65	|Q	V	|	|	|	|
10+30	0.4311	0.65	|Q	V	|	|	|	|
10+35	0.4356	0.65	|Q	V	|	|	|	|
10+40	0.4402	0.66	|Q	V	|	|	|	|
10+45	0.4448	0.66	|Q	V	|	|	|	|
10+50	0.4494	0.67	|Q	V	|	|	|	|
10+55	0.4540	0.67	|Q	V	|	|	|	|
11+ 0	0.4587	0.68	|Q	V	|	|	|	|
11+ 5	0.4634	0.68	|Q	V	|	|	|	|
11+10	0.4681	0.69	|Q	V	|	|	|	|
11+15	0.4729	0.69	|Q	V	|	|	|	|

11+20	0.4777	0.70	Q	V			
11+25	0.4825	0.70	Q	V			
11+30	0.4874	0.71	Q	V			
11+35	0.4923	0.71	Q	V			
11+40	0.4973	0.72	Q	V			
11+45	0.5023	0.73	Q	V			
11+50	0.5074	0.73	Q	V			
11+55	0.5125	0.74	Q	V			
12+ 0	0.5176	0.75	Q	V			
12+ 5	0.5228	0.75	Q	V			
12+10	0.5278	0.74	Q	V			
12+15	0.5329	0.74	Q	V			
12+20	0.5381	0.75	Q	V			
12+25	0.5433	0.76	Q	V			
12+30	0.5486	0.76	Q	V			
12+35	0.5539	0.77	Q	V			
12+40	0.5593	0.78	Q	V			
12+45	0.5647	0.79	Q	V			
12+50	0.5702	0.80	Q	V			
12+55	0.5758	0.81	Q	V			
13+ 0	0.5814	0.82	Q	V			
13+ 5	0.5871	0.83	Q	V			
13+10	0.5929	0.84	Q	V			
13+15	0.5987	0.85	Q	V			
13+20	0.6047	0.86	Q	V			
13+25	0.6107	0.87	Q	V			
13+30	0.6168	0.89	Q	V			
13+35	0.6230	0.90	Q	V			
13+40	0.6293	0.91	Q	V			
13+45	0.6357	0.93	Q	V			
13+50	0.6422	0.94	Q	V			
13+55	0.6488	0.96	Q	V			
14+ 0	0.6555	0.98	Q	V			
14+ 5	0.6623	0.99	Q	V			
14+10	0.6693	1.02	Q	V			
14+15	0.6765	1.03	Q	V			
14+20	0.6837	1.06	Q	V			
14+25	0.6912	1.08	Q	V			
14+30	0.6988	1.11	Q	V			
14+35	0.7066	1.13	Q	V			
14+40	0.7146	1.16	Q	V			
14+45	0.7228	1.19	Q	V			
14+50	0.7312	1.23	Q	V			
14+55	0.7399	1.26	Q	V			
15+ 0	0.7489	1.31	Q	V			
15+ 5	0.7583	1.35	Q	V			
15+10	0.7679	1.41	Q	V			
15+15	0.7780	1.46	Q	V			
15+20	0.7886	1.54	Q	V			
15+25	0.7991	1.52	Q	V			
15+30	0.8084	1.35	Q	V			
15+35	0.8180	1.39	Q	V			
15+40	0.8286	1.54	Q	V			
15+45	0.8404	1.71	Q	V			
15+50	0.8541	2.00	Q	V			
15+55	0.8710	2.45	Q	V			
16+ 0	0.8955	3.55	Q	V			
16+ 5	0.9441	7.06	Q	V			
16+10	1.0278	12.15	Q	V			
16+15	1.0601	4.70	Q	V			
16+20	1.0746	2.10	Q	V			
16+25	1.0854	1.56	Q	V			
16+30	1.0963	1.59	Q	V			
16+35	1.1066	1.49	Q	V			
16+40	1.1161	1.38	Q	V			
16+45	1.1250	1.29	Q	V			
16+50	1.1333	1.21	Q	V			
16+55	1.1412	1.15	Q	V			
17+ 0	1.1487	1.09	Q	V			
17+ 5	1.1559	1.05	Q	V			
17+10	1.1628	1.00	Q	V			

17+15	1.1695	0.97	|Q	|	|	|V	|
17+20	1.1760	0.94	|Q	|	|	|V	|
17+25	1.1822	0.91	|Q	|	|	|V	|
17+30	1.1883	0.88	|Q	|	|	|V	|
17+35	1.1941	0.86	|Q	|	|	| V	|
17+40	1.1999	0.83	|Q	|	|	| V	|
17+45	1.2055	0.81	|Q	|	|	| V	|
17+50	1.2109	0.79	|Q	|	|	| V	|
17+55	1.2163	0.78	|Q	|	|	| V	|
18+ 0	1.2215	0.76	|Q	|	|	| V	|
18+ 5	1.2267	0.75	|Q	|	|	| V	|
18+10	1.2319	0.75	|Q	|	|	| V	|
18+15	1.2370	0.74	|Q	|	|	| V	|
18+20	1.2420	0.73	|Q	|	|	| V	|
18+25	1.2469	0.72	|Q	|	|	| V	|
18+30	1.2518	0.71	|Q	|	|	| V	|
18+35	1.2566	0.70	|Q	|	|	| V	|
18+40	1.2613	0.69	|Q	|	|	| V	|
18+45	1.2660	0.68	|Q	|	|	| V	|
18+50	1.2706	0.67	|Q	|	|	| V	|
18+55	1.2751	0.66	|Q	|	|	| V	|
19+ 0	1.2795	0.65	|Q	|	|	| V	|
19+ 5	1.2840	0.64	|Q	|	|	| V	|
19+10	1.2883	0.63	|Q	|	|	| V	|
19+15	1.2926	0.62	|Q	|	|	| V	|
19+20	1.2969	0.62	|Q	|	|	| V	|
19+25	1.3011	0.61	|Q	|	|	| V	|
19+30	1.3052	0.60	|Q	|	|	| V	|
19+35	1.3093	0.60	|Q	|	|	| V	|
19+40	1.3134	0.59	|Q	|	|	| V	|
19+45	1.3174	0.58	|Q	|	|	| V	|
19+50	1.3214	0.58	|Q	|	|	| V	|
19+55	1.3253	0.57	|Q	|	|	| V	|
20+ 0	1.3292	0.57	|Q	|	|	| V	|
20+ 5	1.3331	0.56	|Q	|	|	| V	|
20+10	1.3369	0.56	|Q	|	|	| V	|
20+15	1.3407	0.55	|Q	|	|	| V	|
20+20	1.3445	0.55	|Q	|	|	| V	|
20+25	1.3482	0.54	|Q	|	|	| V	|
20+30	1.3519	0.54	|Q	|	|	| V	|
20+35	1.3556	0.53	|Q	|	|	| V	|
20+40	1.3592	0.53	|Q	|	|	| V	|
20+45	1.3628	0.52	|Q	|	|	| V	|
20+50	1.3664	0.52	|Q	|	|	| V	|
20+55	1.3700	0.52	|Q	|	|	| V	|
21+ 0	1.3735	0.51	|Q	|	|	| V	|
21+ 5	1.3770	0.51	|Q	|	|	| V	|
21+10	1.3805	0.50	|Q	|	|	| V	|
21+15	1.3839	0.50	|Q	|	|	| V	|
21+20	1.3873	0.50	Q	|	|	| V	|
21+25	1.3907	0.49	Q	|	|	| V	|
21+30	1.3941	0.49	Q	|	|	| V	|
21+35	1.3975	0.49	Q	|	|	| V	|
21+40	1.4008	0.48	Q	|	|	| V	|
21+45	1.4041	0.48	Q	|	|	| V	|
21+50	1.4074	0.48	Q	|	|	| V	|
21+55	1.4106	0.47	Q	|	|	| V	|
22+ 0	1.4139	0.47	Q	|	|	| V	|
22+ 5	1.4171	0.47	Q	|	|	| V	|
22+10	1.4203	0.46	Q	|	|	| V	|
22+15	1.4235	0.46	Q	|	|	| V	|
22+20	1.4266	0.46	Q	|	|	| V	|
22+25	1.4298	0.46	Q	|	|	| V	|
22+30	1.4329	0.45	Q	|	|	| V	|
22+35	1.4360	0.45	Q	|	|	| V	|
22+40	1.4391	0.45	Q	|	|	| V	|
22+45	1.4422	0.45	Q	|	|	| V	|
22+50	1.4452	0.44	Q	|	|	| V	|
22+55	1.4483	0.44	Q	|	|	| V	|
23+ 0	1.4513	0.44	Q	|	|	| V	|
23+ 5	1.4543	0.44	Q	|	|	| V	|

23+10	1.4573	0.43	Q				V|
23+15	1.4603	0.43	Q				V|
23+20	1.4632	0.43	Q				V|
23+25	1.4662	0.43	Q				V|
23+30	1.4691	0.43	Q				V|
23+35	1.4720	0.42	Q				V|
23+40	1.4749	0.42	Q				V|
23+45	1.4778	0.42	Q				V|
23+50	1.4807	0.42	Q				V|
23+55	1.4835	0.41	Q				V|
24+ 0	1.4864	0.41	Q				V|
24+ 5	1.4886	0.33	Q				V|
24+10	1.4891	0.07	Q				V|
24+15	1.4891	0.01	Q				V

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

Study date 01/30/24

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

Program License Serial Number 6320

235094 - 17783 & 17805 TAYLOR AVENUE
DEVELOPED CONDITIONS
100-YEAR, 24-HOUR STORM
BY: KBO DATE: 01-30-24

Storm Event Year = 100

Antecedent Moisture Condition = 3

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		
3.61	1	0.93
Rainfall data for year 2		
3.61	6	1.63
Rainfall data for year 2		
3.61	24	3.02
Rainfall data for year 100		
3.61	1	1.33
Rainfall data for year 100		
3.61	6	3.51
Rainfall data for year 100		
3.61	24	7.85

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 3)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
32.0	52.0	3.61	1.000	0.785	0.180	0.141

Area-averaged adjusted loss rate Fm (In/Hr) = 0.141

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC3)	S	Pervious Yield Fr
0.65	0.180	32.0	52.0	9.23	0.301
2.96	0.820	98.0	98.0	0.20	0.969

Area-averaged catchment yield fraction, Y = 0.849
Area-averaged low loss fraction, Yb = 0.151
User entry of time of concentration = 0.097 (hours)
++
Watershed area = 3.61(Ac.)
Catchment Lag time = 0.078 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 107.3883
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.141(In/Hr)
Average low loss rate fraction (Yb) = 0.151 (decimal)
VALLEY DEVELOPED S-Graph Selected
Computed peak 5-minute rainfall = 0.492(In)
Computed peak 30-minute rainfall = 1.008(In)
Specified peak 1-hour rainfall = 1.330(In)
Computed peak 3-hour rainfall = 2.411(In)
Specified peak 6-hour rainfall = 3.510(In)
Specified peak 24-hour rainfall = 7.850(In)

Rainfall depth area reduction factors:
Using a total area of 3.61(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.492(In)
30-minute factor = 1.000 Adjusted rainfall = 1.008(In)
1-hour factor = 1.000 Adjusted rainfall = 1.330(In)
3-hour factor = 1.000 Adjusted rainfall = 2.411(In)
6-hour factor = 1.000 Adjusted rainfall = 3.510(In)
24-hour factor = 1.000 Adjusted rainfall = 7.850(In)

U n i t H y d r o g r a p h
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Interval Number	'S' Graph Mean values	Unit Hydrograph ((CFS))
	(K = 43.66 (CFS))	
1	19.634	8.572
2	83.438	27.856
3	98.503	6.577
4	100.000	0.654

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.4922	0.4922
2	0.6494	0.1572
3	0.7638	0.1143
4	0.8569	0.0931
5	0.9369	0.0800
6	1.0078	0.0709
7	1.0719	0.0641
8	1.1307	0.0588
9	1.1852	0.0545
10	1.2362	0.0510
11	1.2843	0.0480
12	1.3298	0.0455
13	1.3887	0.0589
14	1.4456	0.0569
15	1.5006	0.0551
16	1.5540	0.0534
17	1.6059	0.0519
18	1.6564	0.0505
19	1.7057	0.0492
20	1.7537	0.0481
21	1.8007	0.0470

22	1.8467	0.0460
23	1.8917	0.0450
24	1.9358	0.0441
25	1.9791	0.0433
26	2.0216	0.0425
27	2.0633	0.0418
28	2.1044	0.0411
29	2.1448	0.0404
30	2.1845	0.0398
31	2.2237	0.0392
32	2.2623	0.0386
33	2.3003	0.0380
34	2.3378	0.0375
35	2.3748	0.0370
36	2.4113	0.0365
37	2.4474	0.0361
38	2.4830	0.0356
39	2.5182	0.0352
40	2.5529	0.0348
41	2.5873	0.0344
42	2.6213	0.0340
43	2.6549	0.0336
44	2.6882	0.0333
45	2.7211	0.0329
46	2.7537	0.0326
47	2.7860	0.0323
48	2.8179	0.0320
49	2.8496	0.0316
50	2.8809	0.0314
51	2.9120	0.0311
52	2.9428	0.0308
53	2.9733	0.0305
54	3.0035	0.0303
55	3.0335	0.0300
56	3.0633	0.0298
57	3.0928	0.0295
58	3.1221	0.0293
59	3.1511	0.0290
60	3.1799	0.0288
61	3.2085	0.0286
62	3.2369	0.0284
63	3.2651	0.0282
64	3.2930	0.0280
65	3.3208	0.0278
66	3.3484	0.0276
67	3.3758	0.0274
68	3.4030	0.0272
69	3.4300	0.0270
70	3.4568	0.0268
71	3.4835	0.0267
72	3.5100	0.0265
73	3.5382	0.0282
74	3.5662	0.0281
75	3.5941	0.0279
76	3.6219	0.0277
77	3.6495	0.0276
78	3.6769	0.0274
79	3.7042	0.0273
80	3.7314	0.0272
81	3.7584	0.0270
82	3.7853	0.0269
83	3.8120	0.0267
84	3.8386	0.0266
85	3.8651	0.0265
86	3.8914	0.0263
87	3.9176	0.0262
88	3.9437	0.0261
89	3.9697	0.0260
90	3.9955	0.0258
91	4.0212	0.0257
92	4.0468	0.0256

93	4.0723	0.0255
94	4.0976	0.0254
95	4.1229	0.0253
96	4.1480	0.0251
97	4.1731	0.0250
98	4.1980	0.0249
99	4.2228	0.0248
100	4.2475	0.0247
101	4.2721	0.0246
102	4.2967	0.0245
103	4.3211	0.0244
104	4.3454	0.0243
105	4.3696	0.0242
106	4.3937	0.0241
107	4.4177	0.0240
108	4.4416	0.0239
109	4.4655	0.0238
110	4.4892	0.0237
111	4.5129	0.0237
112	4.5364	0.0236
113	4.5599	0.0235
114	4.5833	0.0234
115	4.6066	0.0233
116	4.6298	0.0232
117	4.6529	0.0231
118	4.6760	0.0230
119	4.6990	0.0230
120	4.7218	0.0229
121	4.7446	0.0228
122	4.7674	0.0227
123	4.7900	0.0226
124	4.8126	0.0226
125	4.8351	0.0225
126	4.8575	0.0224
127	4.8799	0.0223
128	4.9021	0.0223
129	4.9243	0.0222
130	4.9465	0.0221
131	4.9685	0.0221
132	4.9905	0.0220
133	5.0124	0.0219
134	5.0343	0.0218
135	5.0560	0.0218
136	5.0778	0.0217
137	5.0994	0.0216
138	5.1210	0.0216
139	5.1425	0.0215
140	5.1639	0.0214
141	5.1853	0.0214
142	5.2066	0.0213
143	5.2279	0.0213
144	5.2491	0.0212
145	5.2702	0.0211
146	5.2913	0.0211
147	5.3123	0.0210
148	5.3333	0.0210
149	5.3542	0.0209
150	5.3750	0.0208
151	5.3958	0.0208
152	5.4165	0.0207
153	5.4372	0.0207
154	5.4578	0.0206
155	5.4783	0.0205
156	5.4988	0.0205
157	5.5192	0.0204
158	5.5396	0.0204
159	5.5600	0.0203
160	5.5802	0.0203
161	5.6005	0.0202
162	5.6206	0.0202
163	5.6407	0.0201

164	5.6608	0.0201
165	5.6808	0.0200
166	5.7008	0.0200
167	5.7207	0.0199
168	5.7406	0.0199
169	5.7604	0.0198
170	5.7802	0.0198
171	5.7999	0.0197
172	5.8195	0.0197
173	5.8392	0.0196
174	5.8587	0.0196
175	5.8783	0.0195
176	5.8977	0.0195
177	5.9172	0.0194
178	5.9366	0.0194
179	5.9559	0.0193
180	5.9752	0.0193
181	5.9945	0.0193
182	6.0137	0.0192
183	6.0328	0.0192
184	6.0519	0.0191
185	6.0710	0.0191
186	6.0900	0.0190
187	6.1090	0.0190
188	6.1280	0.0189
189	6.1469	0.0189
190	6.1658	0.0189
191	6.1846	0.0188
192	6.2034	0.0188
193	6.2221	0.0187
194	6.2408	0.0187
195	6.2594	0.0187
196	6.2781	0.0186
197	6.2966	0.0186
198	6.3152	0.0185
199	6.3337	0.0185
200	6.3521	0.0185
201	6.3706	0.0184
202	6.3889	0.0184
203	6.4073	0.0183
204	6.4256	0.0183
205	6.4439	0.0183
206	6.4621	0.0182
207	6.4803	0.0182
208	6.4984	0.0182
209	6.5166	0.0181
210	6.5347	0.0181
211	6.5527	0.0180
212	6.5707	0.0180
213	6.5887	0.0180
214	6.6066	0.0179
215	6.6245	0.0179
216	6.6424	0.0179
217	6.6603	0.0178
218	6.6781	0.0178
219	6.6958	0.0178
220	6.7136	0.0177
221	6.7313	0.0177
222	6.7489	0.0177
223	6.7666	0.0176
224	6.7842	0.0176
225	6.8017	0.0176
226	6.8193	0.0175
227	6.8368	0.0175
228	6.8542	0.0175
229	6.8717	0.0174
230	6.8891	0.0174
231	6.9065	0.0174
232	6.9238	0.0173
233	6.9411	0.0173
234	6.9584	0.0173

235	6.9757	0.0173
236	6.9929	0.0172
237	7.0101	0.0172
238	7.0272	0.0172
239	7.0444	0.0171
240	7.0614	0.0171
241	7.0785	0.0171
242	7.0956	0.0170
243	7.1126	0.0170
244	7.1295	0.0170
245	7.1465	0.0170
246	7.1634	0.0169
247	7.1803	0.0169
248	7.1972	0.0169
249	7.2140	0.0168
250	7.2308	0.0168
251	7.2476	0.0168
252	7.2643	0.0168
253	7.2811	0.0167
254	7.2978	0.0167
255	7.3144	0.0167
256	7.3311	0.0166
257	7.3477	0.0166
258	7.3643	0.0166
259	7.3808	0.0166
260	7.3974	0.0165
261	7.4139	0.0165
262	7.4304	0.0165
263	7.4468	0.0165
264	7.4632	0.0164
265	7.4796	0.0164
266	7.4960	0.0164
267	7.5124	0.0163
268	7.5287	0.0163
269	7.5450	0.0163
270	7.5613	0.0163
271	7.5775	0.0162
272	7.5937	0.0162
273	7.6099	0.0162
274	7.6261	0.0162
275	7.6422	0.0161
276	7.6584	0.0161
277	7.6745	0.0161
278	7.6905	0.0161
279	7.7066	0.0160
280	7.7226	0.0160
281	7.7386	0.0160
282	7.7546	0.0160
283	7.7705	0.0160
284	7.7865	0.0159
285	7.8024	0.0159
286	7.8183	0.0159
287	7.8341	0.0159
288	7.8500	0.0158

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0158	0.0024	0.0134
2	0.0159	0.0024	0.0135
3	0.0159	0.0024	0.0135
4	0.0159	0.0024	0.0135
5	0.0160	0.0024	0.0136
6	0.0160	0.0024	0.0136
7	0.0160	0.0024	0.0136
8	0.0161	0.0024	0.0137
9	0.0161	0.0024	0.0137
10	0.0161	0.0024	0.0137
11	0.0162	0.0024	0.0138
12	0.0162	0.0024	0.0138

13	0.0163	0.0025	0.0138
14	0.0163	0.0025	0.0138
15	0.0163	0.0025	0.0139
16	0.0164	0.0025	0.0139
17	0.0164	0.0025	0.0140
18	0.0165	0.0025	0.0140
19	0.0165	0.0025	0.0140
20	0.0165	0.0025	0.0140
21	0.0166	0.0025	0.0141
22	0.0166	0.0025	0.0141
23	0.0167	0.0025	0.0142
24	0.0167	0.0025	0.0142
25	0.0168	0.0025	0.0142
26	0.0168	0.0025	0.0142
27	0.0168	0.0025	0.0143
28	0.0169	0.0025	0.0143
29	0.0169	0.0026	0.0144
30	0.0170	0.0026	0.0144
31	0.0170	0.0026	0.0144
32	0.0170	0.0026	0.0145
33	0.0171	0.0026	0.0145
34	0.0171	0.0026	0.0145
35	0.0172	0.0026	0.0146
36	0.0172	0.0026	0.0146
37	0.0173	0.0026	0.0147
38	0.0173	0.0026	0.0147
39	0.0174	0.0026	0.0148
40	0.0174	0.0026	0.0148
41	0.0175	0.0026	0.0148
42	0.0175	0.0026	0.0149
43	0.0176	0.0026	0.0149
44	0.0176	0.0027	0.0149
45	0.0177	0.0027	0.0150
46	0.0177	0.0027	0.0150
47	0.0178	0.0027	0.0151
48	0.0178	0.0027	0.0151
49	0.0179	0.0027	0.0152
50	0.0179	0.0027	0.0152
51	0.0180	0.0027	0.0153
52	0.0180	0.0027	0.0153
53	0.0181	0.0027	0.0154
54	0.0181	0.0027	0.0154
55	0.0182	0.0027	0.0155
56	0.0182	0.0027	0.0155
57	0.0183	0.0028	0.0155
58	0.0183	0.0028	0.0156
59	0.0184	0.0028	0.0156
60	0.0185	0.0028	0.0157
61	0.0185	0.0028	0.0157
62	0.0186	0.0028	0.0158
63	0.0187	0.0028	0.0158
64	0.0187	0.0028	0.0159
65	0.0188	0.0028	0.0159
66	0.0188	0.0028	0.0160
67	0.0189	0.0029	0.0161
68	0.0189	0.0029	0.0161
69	0.0190	0.0029	0.0162
70	0.0191	0.0029	0.0162
71	0.0192	0.0029	0.0163
72	0.0192	0.0029	0.0163
73	0.0193	0.0029	0.0164
74	0.0193	0.0029	0.0164
75	0.0194	0.0029	0.0165
76	0.0195	0.0029	0.0165
77	0.0196	0.0030	0.0166
78	0.0196	0.0030	0.0167
79	0.0197	0.0030	0.0167
80	0.0198	0.0030	0.0168
81	0.0199	0.0030	0.0169
82	0.0199	0.0030	0.0169
83	0.0200	0.0030	0.0170

84	0.0201	0.0030	0.0170
85	0.0202	0.0030	0.0171
86	0.0202	0.0030	0.0172
87	0.0203	0.0031	0.0173
88	0.0204	0.0031	0.0173
89	0.0205	0.0031	0.0174
90	0.0205	0.0031	0.0175
91	0.0207	0.0031	0.0175
92	0.0207	0.0031	0.0176
93	0.0208	0.0031	0.0177
94	0.0209	0.0032	0.0177
95	0.0210	0.0032	0.0178
96	0.0211	0.0032	0.0179
97	0.0212	0.0032	0.0180
98	0.0213	0.0032	0.0181
99	0.0214	0.0032	0.0182
100	0.0214	0.0032	0.0182
101	0.0216	0.0033	0.0183
102	0.0216	0.0033	0.0184
103	0.0218	0.0033	0.0185
104	0.0218	0.0033	0.0186
105	0.0220	0.0033	0.0187
106	0.0221	0.0033	0.0187
107	0.0222	0.0033	0.0189
108	0.0223	0.0034	0.0189
109	0.0224	0.0034	0.0190
110	0.0225	0.0034	0.0191
111	0.0226	0.0034	0.0192
112	0.0227	0.0034	0.0193
113	0.0229	0.0035	0.0194
114	0.0230	0.0035	0.0195
115	0.0231	0.0035	0.0196
116	0.0232	0.0035	0.0197
117	0.0234	0.0035	0.0199
118	0.0235	0.0035	0.0199
119	0.0237	0.0036	0.0201
120	0.0237	0.0036	0.0202
121	0.0239	0.0036	0.0203
122	0.0240	0.0036	0.0204
123	0.0242	0.0037	0.0206
124	0.0243	0.0037	0.0206
125	0.0245	0.0037	0.0208
126	0.0246	0.0037	0.0209
127	0.0248	0.0037	0.0211
128	0.0249	0.0038	0.0212
129	0.0251	0.0038	0.0214
130	0.0253	0.0038	0.0214
131	0.0255	0.0038	0.0216
132	0.0256	0.0039	0.0217
133	0.0258	0.0039	0.0219
134	0.0260	0.0039	0.0220
135	0.0262	0.0040	0.0223
136	0.0263	0.0040	0.0224
137	0.0266	0.0040	0.0226
138	0.0267	0.0040	0.0227
139	0.0270	0.0041	0.0229
140	0.0272	0.0041	0.0231
141	0.0274	0.0041	0.0233
142	0.0276	0.0042	0.0234
143	0.0279	0.0042	0.0237
144	0.0281	0.0042	0.0238
145	0.0265	0.0040	0.0225
146	0.0267	0.0040	0.0226
147	0.0270	0.0041	0.0229
148	0.0272	0.0041	0.0231
149	0.0276	0.0042	0.0234
150	0.0278	0.0042	0.0236
151	0.0282	0.0042	0.0239
152	0.0284	0.0043	0.0241
153	0.0288	0.0043	0.0245
154	0.0290	0.0044	0.0247

155	0.0295	0.0044	0.0251
156	0.0298	0.0045	0.0253
157	0.0303	0.0046	0.0257
158	0.0305	0.0046	0.0259
159	0.0311	0.0047	0.0264
160	0.0314	0.0047	0.0266
161	0.0320	0.0048	0.0271
162	0.0323	0.0049	0.0274
163	0.0329	0.0050	0.0280
164	0.0333	0.0050	0.0282
165	0.0340	0.0051	0.0289
166	0.0344	0.0052	0.0292
167	0.0352	0.0053	0.0299
168	0.0356	0.0054	0.0302
169	0.0365	0.0055	0.0310
170	0.0370	0.0056	0.0314
171	0.0380	0.0057	0.0323
172	0.0386	0.0058	0.0328
173	0.0398	0.0060	0.0338
174	0.0404	0.0061	0.0343
175	0.0418	0.0063	0.0355
176	0.0425	0.0064	0.0361
177	0.0441	0.0067	0.0375
178	0.0450	0.0068	0.0382
179	0.0470	0.0071	0.0399
180	0.0481	0.0072	0.0408
181	0.0505	0.0076	0.0429
182	0.0519	0.0078	0.0441
183	0.0551	0.0083	0.0468
184	0.0569	0.0086	0.0483
185	0.0455	0.0069	0.0386
186	0.0480	0.0072	0.0408
187	0.0545	0.0082	0.0463
188	0.0588	0.0089	0.0499
189	0.0709	0.0107	0.0602
190	0.0800	0.0118	0.0682
191	0.1143	0.0118	0.1026
192	0.1572	0.0118	0.1455
193	0.4922	0.0118	0.4804
194	0.0931	0.0118	0.0814
195	0.0641	0.0097	0.0544
196	0.0510	0.0077	0.0433
197	0.0589	0.0089	0.0500
198	0.0534	0.0081	0.0453
199	0.0492	0.0074	0.0418
200	0.0460	0.0069	0.0390
201	0.0433	0.0065	0.0368
202	0.0411	0.0062	0.0349
203	0.0392	0.0059	0.0332
204	0.0375	0.0057	0.0318
205	0.0361	0.0054	0.0306
206	0.0348	0.0052	0.0295
207	0.0336	0.0051	0.0286
208	0.0326	0.0049	0.0277
209	0.0316	0.0048	0.0269
210	0.0308	0.0046	0.0261
211	0.0300	0.0045	0.0255
212	0.0293	0.0044	0.0249
213	0.0286	0.0043	0.0243
214	0.0280	0.0042	0.0238
215	0.0274	0.0041	0.0233
216	0.0268	0.0040	0.0228
217	0.0282	0.0043	0.0240
218	0.0277	0.0042	0.0236
219	0.0273	0.0041	0.0232
220	0.0269	0.0041	0.0228
221	0.0265	0.0040	0.0225
222	0.0261	0.0039	0.0221
223	0.0257	0.0039	0.0218
224	0.0254	0.0038	0.0215
225	0.0250	0.0038	0.0213

226	0.0247	0.0037	0.0210
227	0.0244	0.0037	0.0207
228	0.0241	0.0036	0.0205
229	0.0238	0.0036	0.0202
230	0.0236	0.0036	0.0200
231	0.0233	0.0035	0.0198
232	0.0230	0.0035	0.0196
233	0.0228	0.0034	0.0194
234	0.0226	0.0034	0.0192
235	0.0223	0.0034	0.0190
236	0.0221	0.0033	0.0188
237	0.0219	0.0033	0.0186
238	0.0217	0.0033	0.0184
239	0.0215	0.0032	0.0183
240	0.0213	0.0032	0.0181
241	0.0211	0.0032	0.0179
242	0.0210	0.0032	0.0178
243	0.0208	0.0031	0.0176
244	0.0206	0.0031	0.0175
245	0.0204	0.0031	0.0174
246	0.0203	0.0031	0.0172
247	0.0201	0.0030	0.0171
248	0.0200	0.0030	0.0170
249	0.0198	0.0030	0.0168
250	0.0197	0.0030	0.0167
251	0.0195	0.0029	0.0166
252	0.0194	0.0029	0.0165
253	0.0193	0.0029	0.0163
254	0.0191	0.0029	0.0162
255	0.0190	0.0029	0.0161
256	0.0189	0.0028	0.0160
257	0.0187	0.0028	0.0159
258	0.0186	0.0028	0.0158
259	0.0185	0.0028	0.0157
260	0.0184	0.0028	0.0156
261	0.0183	0.0028	0.0155
262	0.0182	0.0027	0.0154
263	0.0180	0.0027	0.0153
264	0.0179	0.0027	0.0152
265	0.0178	0.0027	0.0151
266	0.0177	0.0027	0.0151
267	0.0176	0.0027	0.0150
268	0.0175	0.0026	0.0149
269	0.0174	0.0026	0.0148
270	0.0173	0.0026	0.0147
271	0.0173	0.0026	0.0146
272	0.0172	0.0026	0.0146
273	0.0171	0.0026	0.0145
274	0.0170	0.0026	0.0144
275	0.0169	0.0025	0.0143
276	0.0168	0.0025	0.0143
277	0.0167	0.0025	0.0142
278	0.0166	0.0025	0.0141
279	0.0166	0.0025	0.0141
280	0.0165	0.0025	0.0140
281	0.0164	0.0025	0.0139
282	0.0163	0.0025	0.0139
283	0.0162	0.0024	0.0138
284	0.0162	0.0024	0.0137
285	0.0161	0.0024	0.0137
286	0.0160	0.0024	0.0136
287	0.0160	0.0024	0.0135
288	0.0159	0.0024	0.0135

Total soil rain loss = 1.10(In)
Total effective rainfall = 6.75(In)
Peak flow rate in flood hydrograph = 15.10(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	0.0008	0.12	Q				
0+10	0.0042	0.49	Q				
0+15	0.0082	0.58	VQ				
0+20	0.0122	0.59	VQ				
0+25	0.0163	0.59	VQ				
0+30	0.0204	0.59	VQ				
0+35	0.0245	0.59	VQ				
0+40	0.0286	0.59	VQ				
0+45	0.0327	0.60	VQ				
0+50	0.0368	0.60	VQ				
0+55	0.0409	0.60	VQ				
1+ 0	0.0450	0.60	VQ				
1+ 5	0.0492	0.60	VQ				
1+10	0.0533	0.60	|Q				
1+15	0.0575	0.60	|Q				
1+20	0.0617	0.61	|Q				
1+25	0.0659	0.61	|Q				
1+30	0.0700	0.61	|Q				
1+35	0.0742	0.61	|Q				
1+40	0.0785	0.61	|Q				
1+45	0.0827	0.61	|Q				
1+50	0.0869	0.61	|Q				
1+55	0.0912	0.62	|Q				
2+ 0	0.0954	0.62	|Q				
2+ 5	0.0997	0.62	|Q				
2+10	0.1040	0.62	|QV				
2+15	0.1082	0.62	|QV				
2+20	0.1125	0.62	|QV				
2+25	0.1168	0.63	|QV				
2+30	0.1212	0.63	|QV				
2+35	0.1255	0.63	|QV				
2+40	0.1298	0.63	|QV				
2+45	0.1342	0.63	|QV				
2+50	0.1386	0.63	|QV				
2+55	0.1429	0.64	|QV				
3+ 0	0.1473	0.64	|QV				
3+ 5	0.1517	0.64	|QV				
3+10	0.1561	0.64	|Q V				
3+15	0.1606	0.64	|Q V				
3+20	0.1650	0.64	|Q V				
3+25	0.1694	0.65	|Q V				
3+30	0.1739	0.65	|Q V				
3+35	0.1784	0.65	|Q V				
3+40	0.1828	0.65	|Q V				
3+45	0.1873	0.65	|Q V				
3+50	0.1919	0.65	|Q V				
3+55	0.1964	0.66	|Q V				
4+ 0	0.2009	0.66	|Q V				
4+ 5	0.2055	0.66	|Q V				
4+10	0.2100	0.66	|Q V				
4+15	0.2146	0.66	|Q V				
4+20	0.2192	0.67	|Q V				
4+25	0.2238	0.67	|Q V				
4+30	0.2284	0.67	|Q V				
4+35	0.2330	0.67	|Q V				
4+40	0.2377	0.67	|Q V				
4+45	0.2423	0.68	|Q V				
4+50	0.2470	0.68	|Q V				
4+55	0.2517	0.68	|Q V				
5+ 0	0.2564	0.68	|Q V				
5+ 5	0.2611	0.68	|Q V				
5+10	0.2658	0.69	|Q V				
5+15	0.2706	0.69	|Q V				
5+20	0.2754	0.69	|Q V				

5+25	0.2801	0.69	Q V				
5+30	0.2849	0.70	Q V				
5+35	0.2897	0.70	Q V				
5+40	0.2946	0.70	Q V				
5+45	0.2994	0.70	Q V				
5+50	0.3043	0.71	Q V				
5+55	0.3091	0.71	Q V				
6+ 0	0.3140	0.71	Q V				
6+ 5	0.3189	0.71	Q V				
6+10	0.3238	0.72	Q V				
6+15	0.3288	0.72	Q V				
6+20	0.3338	0.72	Q V				
6+25	0.3387	0.72	Q V				
6+30	0.3437	0.73	Q V				
6+35	0.3487	0.73	Q V				
6+40	0.3538	0.73	Q V				
6+45	0.3588	0.73	Q V				
6+50	0.3639	0.74	Q V				
6+55	0.3690	0.74	Q V				
7+ 0	0.3741	0.74	Q V				
7+ 5	0.3792	0.74	Q V				
7+10	0.3844	0.75	Q V				
7+15	0.3895	0.75	Q V				
7+20	0.3947	0.75	Q V				
7+25	0.3999	0.76	Q V				
7+30	0.4052	0.76	Q V				
7+35	0.4104	0.76	Q V				
7+40	0.4157	0.77	Q V				
7+45	0.4210	0.77	Q V				
7+50	0.4263	0.77	Q V				
7+55	0.4316	0.78	Q V				
8+ 0	0.4370	0.78	Q V				
8+ 5	0.4424	0.78	Q V				
8+10	0.4478	0.79	Q V				
8+15	0.4532	0.79	Q V				
8+20	0.4587	0.79	Q V				
8+25	0.4642	0.80	Q V				
8+30	0.4697	0.80	Q V				
8+35	0.4752	0.80	Q V				
8+40	0.4807	0.81	Q V				
8+45	0.4863	0.81	Q V				
8+50	0.4919	0.81	Q V				
8+55	0.4976	0.82	Q V				
9+ 0	0.5032	0.82	Q V				
9+ 5	0.5089	0.83	Q V				
9+10	0.5147	0.83	Q V				
9+15	0.5204	0.83	Q V				
9+20	0.5262	0.84	Q V				
9+25	0.5320	0.84	Q V				
9+30	0.5378	0.85	Q V				
9+35	0.5437	0.85	Q V				
9+40	0.5496	0.86	Q V				
9+45	0.5555	0.86	Q V				
9+50	0.5615	0.87	Q V				
9+55	0.5675	0.87	Q V				
10+ 0	0.5735	0.88	Q V				
10+ 5	0.5796	0.88	Q V				
10+10	0.5857	0.89	Q V				
10+15	0.5919	0.89	Q V				
10+20	0.5980	0.90	Q V				
10+25	0.6042	0.90	Q V				
10+30	0.6105	0.91	Q V				
10+35	0.6168	0.91	Q V				
10+40	0.6231	0.92	Q V				
10+45	0.6295	0.92	Q V				
10+50	0.6359	0.93	Q V				
10+55	0.6424	0.94	Q V				
11+ 0	0.6489	0.94	Q V				
11+ 5	0.6554	0.95	Q V				
11+10	0.6620	0.96	Q V				
11+15	0.6686	0.96	Q V				

11+20	0.6753	0.97	Q	V			
11+25	0.6820	0.98	Q	V			
11+30	0.6888	0.99	Q	V			
11+35	0.6957	0.99	Q	V			
11+40	0.7026	1.00	Q	V			
11+45	0.7095	1.01	Q	V			
11+50	0.7165	1.02	Q	V			
11+55	0.7236	1.02	Q	V			
12+ 0	0.7307	1.03	Q	V			
12+ 5	0.7378	1.03	Q	V			
12+10	0.7446	0.99	Q	V			
12+15	0.7514	0.99	Q	V			
12+20	0.7583	1.00	Q	V			
12+25	0.7653	1.01	Q	V			
12+30	0.7723	1.02	Q	V			
12+35	0.7794	1.03	Q	V			
12+40	0.7866	1.04	Q	V			
12+45	0.7938	1.05	Q	V			
12+50	0.8012	1.07	Q	V			
12+55	0.8086	1.08	Q	V			
13+ 0	0.8161	1.09	Q	V			
13+ 5	0.8238	1.10	Q	V			
13+10	0.8315	1.12	Q	V			
13+15	0.8393	1.13	Q	V			
13+20	0.8472	1.15	Q	V			
13+25	0.8552	1.16	Q	V			
13+30	0.8634	1.18	Q	V			
13+35	0.8716	1.20	Q	V			
13+40	0.8800	1.22	Q	V			
13+45	0.8885	1.24	Q	V			
13+50	0.8972	1.26	Q	V			
13+55	0.9060	1.28	Q	V			
14+ 0	0.9150	1.30	Q	V			
14+ 5	0.9241	1.32	Q	V			
14+10	0.9334	1.35	Q	V			
14+15	0.9429	1.38	Q	V			
14+20	0.9526	1.41	Q	V			
14+25	0.9624	1.43	Q	V			
14+30	0.9726	1.47	Q	V			
14+35	0.9829	1.50	Q	V			
14+40	0.9936	1.54	Q	V			
14+45	1.0045	1.58	Q	V			
14+50	1.0157	1.63	Q	V			
14+55	1.0272	1.68	Q	V			
15+ 0	1.0392	1.74	Q	V			
15+ 5	1.0516	1.79	Q	V			
15+10	1.0644	1.87	Q	V			
15+15	1.0777	1.94	Q	V			
15+20	1.0918	2.03	Q	V			
15+25	1.1056	2.01	Q	V			
15+30	1.1178	1.77	Q	V			
15+35	1.1304	1.82	Q	V			
15+40	1.1442	2.01	Q	V			
15+45	1.1596	2.24	Q	V			
15+50	1.1777	2.62	Q	V			
15+55	1.1998	3.21	Q	V			
16+ 0	1.2314	4.59	Q	V			
16+ 5	1.2926	8.89	Q	V			
16+10	1.3966	15.10	Q	V			
16+15	1.4379	5.99	Q	V			
16+20	1.4567	2.74	Q	V			
16+25	1.4708	2.05	Q	V			
16+30	1.4853	2.10	Q	V			
16+35	1.4989	1.98	Q	V			
16+40	1.5115	1.83	Q	V			
16+45	1.5233	1.71	Q	V			
16+50	1.5344	1.61	Q	V			
16+55	1.5449	1.52	Q	V			
17+ 0	1.5549	1.45	Q	V			
17+ 5	1.5644	1.39	Q	V			
17+10	1.5737	1.34	Q	V			

17+15	1.5825	1.29	Q			V
17+20	1.5911	1.25	Q			V
17+25	1.5994	1.21	Q			V
17+30	1.6075	1.17	Q			V
17+35	1.6154	1.14	Q			V
17+40	1.6230	1.11	Q			V
17+45	1.6305	1.09	Q			V
17+50	1.6378	1.06	Q			V
17+55	1.6450	1.04	Q			V
18+ 0	1.6520	1.02	Q			V
18+ 5	1.6589	1.01	Q			V
18+10	1.6660	1.03	Q			V
18+15	1.6731	1.03	Q			V
18+20	1.6801	1.01	Q			V
18+25	1.6869	1.00	Q			V
18+30	1.6937	0.98	Q			V
18+35	1.7004	0.97	Q			V
18+40	1.7069	0.95	Q			V
18+45	1.7134	0.94	Q			V
18+50	1.7198	0.93	Q			V
18+55	1.7261	0.92	Q			V
19+ 0	1.7323	0.90	Q			V
19+ 5	1.7385	0.89	Q			V
19+10	1.7446	0.88	Q			V
19+15	1.7506	0.87	Q			V
19+20	1.7565	0.86	Q			V
19+25	1.7624	0.85	Q			V
19+30	1.7682	0.85	Q			V
19+35	1.7740	0.84	Q			V
19+40	1.7797	0.83	Q			V
19+45	1.7854	0.82	Q			V
19+50	1.7910	0.81	Q			V
19+55	1.7965	0.80	Q			V
20+ 0	1.8020	0.80	Q			V
20+ 5	1.8074	0.79	Q			V
20+10	1.8128	0.78	Q			V
20+15	1.8182	0.78	Q			V
20+20	1.8235	0.77	Q			V
20+25	1.8287	0.76	Q			V
20+30	1.8340	0.76	Q			V
20+35	1.8391	0.75	Q			V
20+40	1.8443	0.75	Q			V
20+45	1.8494	0.74	Q			V
20+50	1.8544	0.73	Q			V
20+55	1.8595	0.73	Q			V
21+ 0	1.8644	0.72	Q			V
21+ 5	1.8694	0.72	Q			V
21+10	1.8743	0.71	Q			V
21+15	1.8792	0.71	Q			V
21+20	1.8840	0.70	Q			V
21+25	1.8889	0.70	Q			V
21+30	1.8936	0.69	Q			V
21+35	1.8984	0.69	Q			V
21+40	1.9031	0.69	Q			V
21+45	1.9078	0.68	Q			V
21+50	1.9125	0.68	Q			V
21+55	1.9171	0.67	Q			V
22+ 0	1.9217	0.67	Q			V
22+ 5	1.9263	0.67	Q			V
22+10	1.9309	0.66	Q			V
22+15	1.9354	0.66	Q			V
22+20	1.9399	0.65	Q			V
22+25	1.9444	0.65	Q			V
22+30	1.9488	0.65	Q			V
22+35	1.9532	0.64	Q			V
22+40	1.9576	0.64	Q			V
22+45	1.9620	0.64	Q			V
22+50	1.9664	0.63	Q			V
22+55	1.9707	0.63	Q			V
23+ 0	1.9750	0.63	Q			V
23+ 5	1.9793	0.62	Q			V

23+10	1.9836	0.62	|Q	|	|	|	V|
23+15	1.9878	0.62	|Q	|	|	|	V|
23+20	1.9921	0.61	|Q	|	|	|	V|
23+25	1.9963	0.61	|Q	|	|	|	V|
23+30	2.0005	0.61	|Q	|	|	|	V|
23+35	2.0046	0.61	|Q	|	|	|	V|
23+40	2.0088	0.60	|Q	|	|	|	V|
23+45	2.0129	0.60	|Q	|	|	|	V|
23+50	2.0170	0.60	|Q	|	|	|	V|
23+55	2.0211	0.59	|Q	|	|	|	V|
24+ 0	2.0252	0.59	|Q	|	|	|	V|
24+ 5	2.0285	0.47	Q	|	|	|	V|
24+10	2.0291	0.10	Q	|	|	|	V|
24+15	2.0292	0.01	Q	|	|	|	V|