

Preliminary
Drainage Report
For
Tentative Tract Map No. 20368
Victorville, CA

Prepared
December 2020

United Engineering Group - California
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Tel: (909) 466-9240

Provided for:

Tanner Family Trust
c/o Frank Tanner
2501 Markwood Street
Duarte, CA 91010

Project # 30194

This report has been prepared by or under the direction of the following registered civil engineer who attests to the technical information contained herein. The registered civil engineer has also judged the qualifications of any employees that have provided data and calculations upon which the recommendations, conclusions, and decisions are based.



Christopher F. Lenz, PE 63001

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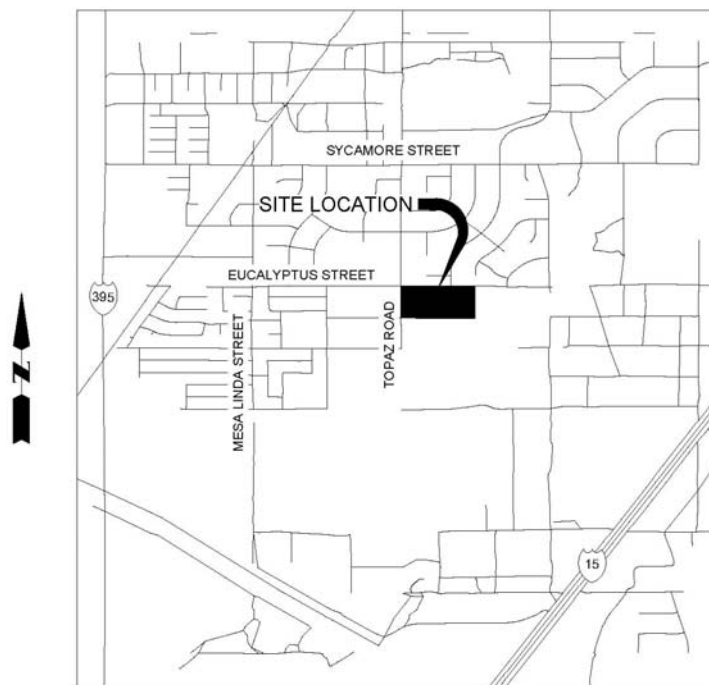
**APPENDIX B: PROJECT RATIONAL AND SCS UNIT HYDROGRAPH METHOD
HYDROLOGY STUDY INFORMATION**

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I. INTRODUCTION

TTM 20368 is a residential subdivision of approximately 20 gross acres into 65 single family residential lots, located at the southeast corner of Eucalyptus Road and Topaz Road in the City of Victorville. The property is rectangular in shape and is bordered on the North by Eucalyptus road, which is paved. There is existing development north of the project. Minimum lot size is 7,200 sf. The project is considered a “priority project” and thus WQMP calculations will be provided. A fully executed WQMP will be prepared with the final drainage report and project design.



The purpose of this study is to determine the pre-development and post development runoff emanating from on-site for TTM 20368. The study will determine the peak flow rate for the existing condition, the peak flow rate for the proposed condition, and the proposed condition flow rate routed through a combination water quality and detention basin. Additional analysis will confirm hydraulic capacity of proposed street sections compared to rationale expected runoff.

The scope of the study includes the following:

- Determination of points of flow concentration and watershed areas.
- Determination of the 10 and 100-year 24 hours storm runoff based upon the onsite drainage conditions utilizing the San Bernardino County Flood Control District (SBCFCD) SCS Unit Hydrograph Method.
- Determination of the 10-year and 100-year peak flow rates for the

offsite area utilizing the San Bernardino County Flood Control District (SBCFCD) Rational Method.

The project will be subject to and designed in compliance with the MS4 Phase II NPDES Permit, the Mojave River Watershed Group Stormwater Management Plan.

II. SITE DISCUSSION

The current property is vacant, undeveloped and undisturbed land with uniform slope of approximately 1.7 percent. The topography indicates that the runoff drains in a northeasterly direction in the form of sheet flow, and there is a ridge near the southeast corner of the site that is the edge of the bank of the large blue line stream just southwest of the new San Bernardino County Flood Control Amethyst Basin. There are no defined washes on site, but there is a small concentration of flow that follows a dirt access road from the area directly south of the property. Refer to Appendix A for additional offsite detail. The proposed development is for a 65 lot subdivision. No project phasing is proposed or evaluated at this time.

III. RAINFALL DATA

The San Bernardino County Flood Control District (SBCFCD) hydrology Manual, (Reference 1) was used to develop the hydrological parameters for the 10-year and 100-year storm events. The Rational Method was used to determine the peak flow rates associated with the existing project conditions as well as the time of concentration used in the Unit Hydrograph method. In addition, the Unit Hydrograph Method was utilized to determine the runoff volume. Computations were performed using the CivilCADD drainage software for San Bernardino County Developed by CivilDesign Corporation.

Rainfall data was taken from NOAA Atlas 14 Precipitation Frequency Data.

Return Period - Duration	Isohyetal (in)
10 year - 1 hour	0.72
10 year - 6 hour	1.53
10 year - 24 hour	3.14
2 year - 6 hour	0.93
2 year - 24 hour	1.74
100 year - 1 hour	1.19
100 year - 6 hour	2.65
100 year - 24 hour	5.75

Hydrologic Soil Group “A”, “Cajon Sand” is present, and an Antecedent Moisture Conditions (AMC) 2 is used for the study area. The percentage impervious is 60, and the SCS runoff is 32. Refer to Appendix B for additional detail.

The projects runoff is designed to be contained in a single basin that will act as both water quality infiltration, and flood storage for peak runoff mitigation. The 100- year 24 runoff event is the limiting factor for design.

IV. ONSITE RUNOFF

Existing Condition/Pre Development

The runoff from the subject site in the existing condition is primarily sheet flow, so for this study a single concentration of flow was analyzed. The site drains northeasterly to Eucalyptus Road where it continues easterly into an existing City Storm drain inlet along the north side of Eucalyptus. It is shown as Area A and Nodes 101 to 103 on the Existing Conditions Drainage Exhibit in Appendix A. In the existing condition a 100 year peak of 19.9 cfs is estimated. Post development conditions will require that be mitigated to 90% or <17.9 cfs.

Proposed Condition/Post Development

The proposed condition is to the basin for water quality and flood routing for the project. The Rationale method was prepared for determination of time of concentration for use in the development of the Unit Hydrographs. The un-routed post development peak flow is 42.8 cfs.

The post development runoff is then routed through the proposed basin to confirm post development runoff could be mitigated to less than pre-development runoff (90%). The basin is designed to be dual purpose retention and detention basins with the bottom for water quality retention only, with no outfall, relying on infiltration. The storage above that is detention for the flood storage and volume needed for peak flow mitigation. In order to drain the top volume, or flood storage, an outlet pipe has been shown and used for preliminary calculations. The following is the detail for the basin shown on the TTM;

PARK BASIN (3' depth w/ 4:1 side slopes)

STAGE	AREA	VOL	VOL TOTAL	Vol ac ft	Q INF [CFS]	Q WEIR [CFS]
3337	5682					
3338	7448	6565	6565	0.15	0.17	0
3339	9328	8388	14953	0.34	0.17	0
3340	16340	12834	27787	0.64	0.17	16
3341	19703	18022	45809	1.05	0.17	16

After routing through the proposed basin the post development 100 year 24 hour runoff for the project has a peak of 16.0 cfs, with 0.92 ac-ft stored at a depth of 3.7 feet. Preliminary storm drain capacity was used for calculations. At time of final design the final outlet structures shall be specified and designed per this report, and additional routing calculations should be prepared. Refer to Appendices B and C for detailed output files and the TTM for grading detail.

The primary hydraulic design elements are the roads and the storm drain. Roads within the project will be used to carry runoff. At the minimum design slope of 0.5% the roads can carry 37 cfs within the curbs and 52 cfs within the right-of-way. As design grades are increased, the streets can carry much more than that. Refer to Appendix C for details. The project stormdrain has been preliminarily sized by the CivilD Drainage program, or estimated using the Hydraflow Drainage Design software. The outlet pipe from the basin is preliminarily sized at a 24" pipe. Refer to the Proposed Conditions Drainage Exhibit in Appendix A and Appendix B and C for additional detail.

V. OFFSITE RUNOFF

Runoff from a roughly 39.3 acre area south of the project will need to be accepted and routed through the property matching existing conditions, and providing for a future outlet of developed flows when the bordering properties develop. As there is no development surrounding the property, this project will establish the concentration of flow and the alignment of the controlled flow path. The southern boundary of the site will be designed with block wall with an open area at the existing low point, or point of run-on near the southwest corner. The 100 year peak runoff from the contributing area is 25.0 cfs. The flow will be accepted via open channel, and routed into a sediment basin at the end of street A. That basin is designed to overtop northerly into the site retention basin, and then follow the same overflow path into the existing storm drain system in Eucalyptus. Once the property to the south is developed this run-on point will be maintained, although at a reduced runoff rate. Further, the sediment basin will no longer require periodic cleaning. Refer to Appendix A, Appendix B, and the TTM for preliminary details.

VI. STORMWATER TREATMENT

Stormwater treatment through infiltration will be provided at the bottom of the proposed basin, where the required volume will infiltrate through the site soils and into the groundwater. As shown on the TTM, the basin exceeds the required water quality volume. At time of final design

percolation testing will be required to confirm rates are sufficient to de-water the basins. Water quality calculations were prepared based on the San Bernardino County Model Water Quality Management Plan Guidance document. The following calculations were used in preliminary sizing of facilities;

- WQ Contributing area – 19.6 Acres
- 2 yr 1 hour rainfall – 0.42”
- Impervious ratio – 40% (from SBCFCD hydrology Manual)
- $C_{BMP} = 0.28$
- Drainage Area Region – Desert – Regression Coefficient $P_6 = 1.2371$
- $P_6 = 1.2371 \times 0.42'' = 0.52''$
- Regression Constant $a = 1.963$ for 48 hours
- $P_0 = a * C_{BMP} * P_6 = 1.963 \times 0.28 \times 0.52 = 0.286$
- $V_0 = (P_0 * A) / 12 = (0.286 \times 19.6) / 12 = 0.47 \text{ acft}$

Post construction BMP's should be implemented, including but not limited to; N1, N2, N3, N11, N12, N14, N15, SD-13, and SD-32. In addition the infiltration basin will require regular maintenance and inspection to ensure the 2 year 24hr storms are contained and infiltrated and the post development 10 year 24hr storm runoff does not exceed the pre-development conditions (as confirmed in the above results). Maintenance will be provided through inclusion of the basins into a City Managed Landscape Maintenance Assessment District (LMAD). Maintenance and inspection details will be included in the WQMP for the final plan check process.

VII. CONCLUSION

The proposed development of tract 20368, a 20 gross acres, 65 single family detached subdivision can be mitigated as designed and analyzed in this report to be compatible with the City of Victorville Master Plan of Drainage. The development of the subject site will not adversely affect area drainage patterns, impact any of the surrounding properties, or change any of the regional master plan facilities contemplated in the MDP. The Site will construct combination retention and detention basin of sufficient size to handle water quality through infiltration, and flood mitigation through detention. The streets have been analyzed and confirmed to contain the 10 year runoff within the curb, and the 100 year runoff within the right of way. At time of final design, the basins and outlet structures will need be designed and analyzed in conjunction with final grading and paving plans, street grades and curb inlets will need to be designed and sized to confirm capacity with final street design.

REFERENCES

1. San Bernardino County Flood Control and Water Conservation District Hydrology Manual, August 1986.
2. Baldy Mesa Master Plan of Drainage for Oro Grande Wash and Adjacent Watersheds that are Tributary to the Mojave River, Williamson & Schmid, March 1992.

APPENDIX A: PROJECT PRE AND POST CONDITION EXHIBITS

LEGAL DESCRIPTION:

REAL PROPERTY IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:
PARCELS 1 AND 2 OF PARCEL MAP NO. 14691, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER PLAT RECORDED IN BOOK 179 OF PARCEL MAPS, PAGES 100 AND 101, RECORDS OF SAID COUNTY, AMENDED BY CERTIFICATE OF CORRECTION RECORDED MARCH 24, 2003 AS INSTRUMENT NO. 2003-0189341, SAN BERNARDINO COUNTY RECORDS.

BASIS OF BEARINGS

THE BEARING N00°14'38"W AS SHOWN ON THE EAST LINE OF PARCEL 2 OF PARCEL MAP NO. 14691, AS PER MAP RECORDED IN BOOK 179, PAGES 100 & 101, OR PARCEL MAPS IN THE OFFICE OF THE COUNTY RECORDER OF SAN BERNARDINO COUNTY, WAS USED AS THE BASIS OF BEARINGS SHOWN ON THE MAP.

BENCHMARK

CITY OF VICTORVILLE BENCHMARK Y-223, LOCATED IN TO 5' E/O NE BOR MESA LINDA & EUCALYPTUS, ELEVATION = 3376.91 (NAVD 29)

IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA
EXISTING CONDITIONS MAP - TRACT NO. 20368

PARCELS 1 AND 2 OF PARCEL MAP 14691, IN THE CITY OF VICTORVILLE, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 179, PAGES 100 AND 101 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

UNITED ENGINEERING GROUP CA., INC AUGUST 2020



VICINITY MAP

NTS

GENERAL NOTES:

- ASSESSOR'S PARCEL NO.: 049-322-08 & 049-322-09
- THE PROPERTY SHOWN HEREIN CONTAINS THE ENTIRE CONTIGUOUS OWNERSHIP.
- TOTAL GROSS AREA = 790,066.47 SQ. FT., 18.137 ACRES
- TOTAL NET AREA = TBD
- TOTAL AREA TO BE DEDICATED FOR R/W = TBD
- TOTAL NO. OF NUMBERED LOTS = 68
- TOTAL NO. OF LETTERED LOTS = 2
- A STREET, B STREET, AND C STREET ARE STREETS FOR PUBLIC ROAD DEDICATION.
- LOTS 1 THROUGH 68 ARE 7,200 S.F. MIN. (RESIDENTIAL LOTS)
- NET DENSITY: TBD
- GROSS DENSITY: 3.75 DU/AC
- AVERAGE LOT SIZE = TBD
- TOPOGRAPHY SOURCE: ARROWHEAD MAPPING AUGUST 10, 2020.
- CONTOUR INTERVAL = 1 FOOT
- ALL SLOPES ARE 2:1 OR FLATTER
- LOT DIMENSIONS SHOWN HEREIN ARE APPROXIMATE.
- THIS MAP IS COMPILED FROM RECORD INFORMATION ONLY AND IS NOT TO BE USED AS A BOUNDARY SURVEY.
- LINEAR FEET OF NEW STREETS:
A STREET = 1474 LF
B STREET = 884 LF
C STREET = 298 LF
- NO REGULATED TREES EXIST ON SITE, UNLESS NOTED.
- THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE.
- ALL FRONT YARD BUILDING SETBACK LINES (BSL) ARE SHOWN TO AN AVERAGE DEPTH: MINIMUM FRONT YARD BSL = 20'

LAND USE INFORMATION:

EXISTING ZONING = R-1T (SINGLE FAMILY RESIDENTIAL)
PROPOSED ZONING = R-1T (SINGLE FAMILY RESIDENTIAL)
ADJACENT EXISTING LAND USE = NORTH = R-1TB1/2 (SINGLE FAMILY RESIDENTIAL)
SOUTH = R-1T (SINGLE FAMILY RESIDENTIAL)
EAST = R-1T (VACANT)
WEST = C-2T (VACANT)

LEGEND:

- CONTRIBUTORY AREA
- PROJECT BOUNDARY
- FLOWPATH
- FLOW DIRECTION
- 102 XX NODE/CONCENTRATION POINT FLOWLINE ELEVATION 29XX
- A2 24.4 SUBAREA ACRES

NOTE: REFER TO APPENDIX A FOR DESIGN DETAILS AND RESULTS OF DESIGN

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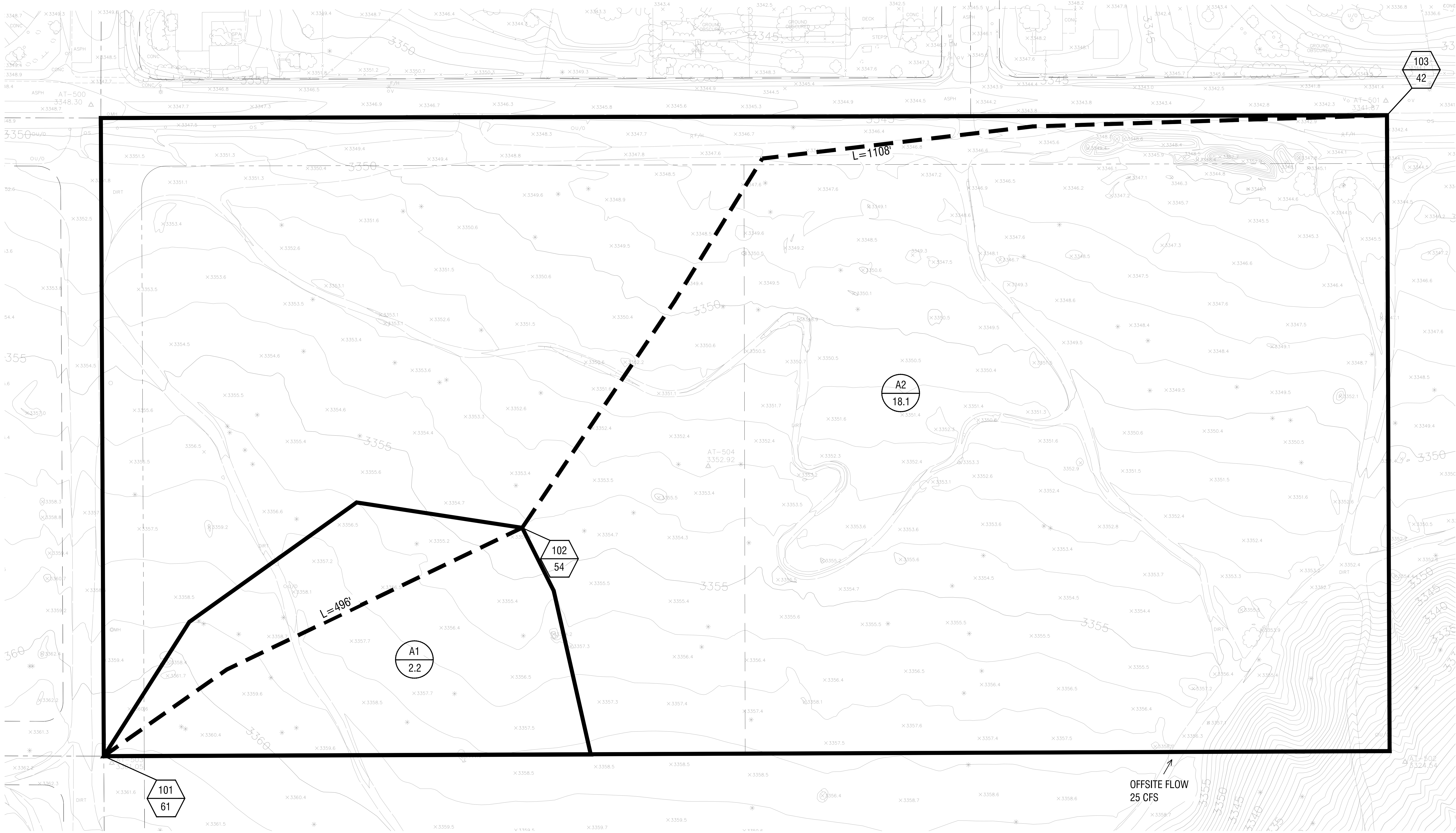
VESTING TENTATIVE MAP
TRACT NO. 20368

DECEMBER 2020

SHEET 1 OF 1

PROJECT NUMBER

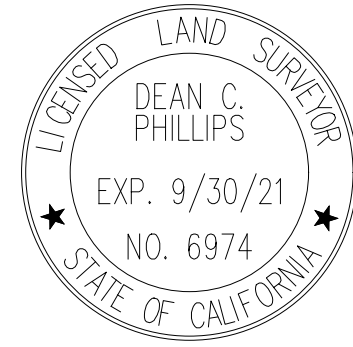
CA-30194



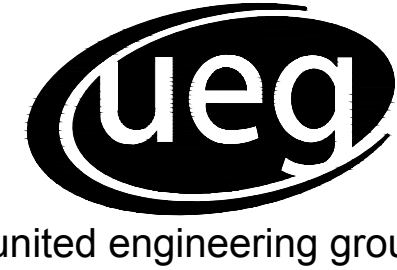
SUBMITTALS:	NO.	REVISIONS		DATE
		DESCRIPTION		
DESIGNED BY:				
DRAWN BY:				
CHECKED BY:				



CHRISTOPHER F. LENZ DATE
R.C.E. NO. 63001



DEAN C. PHILLIPS DATE
L.S. No. 6974
dphilips@unitedeng.com



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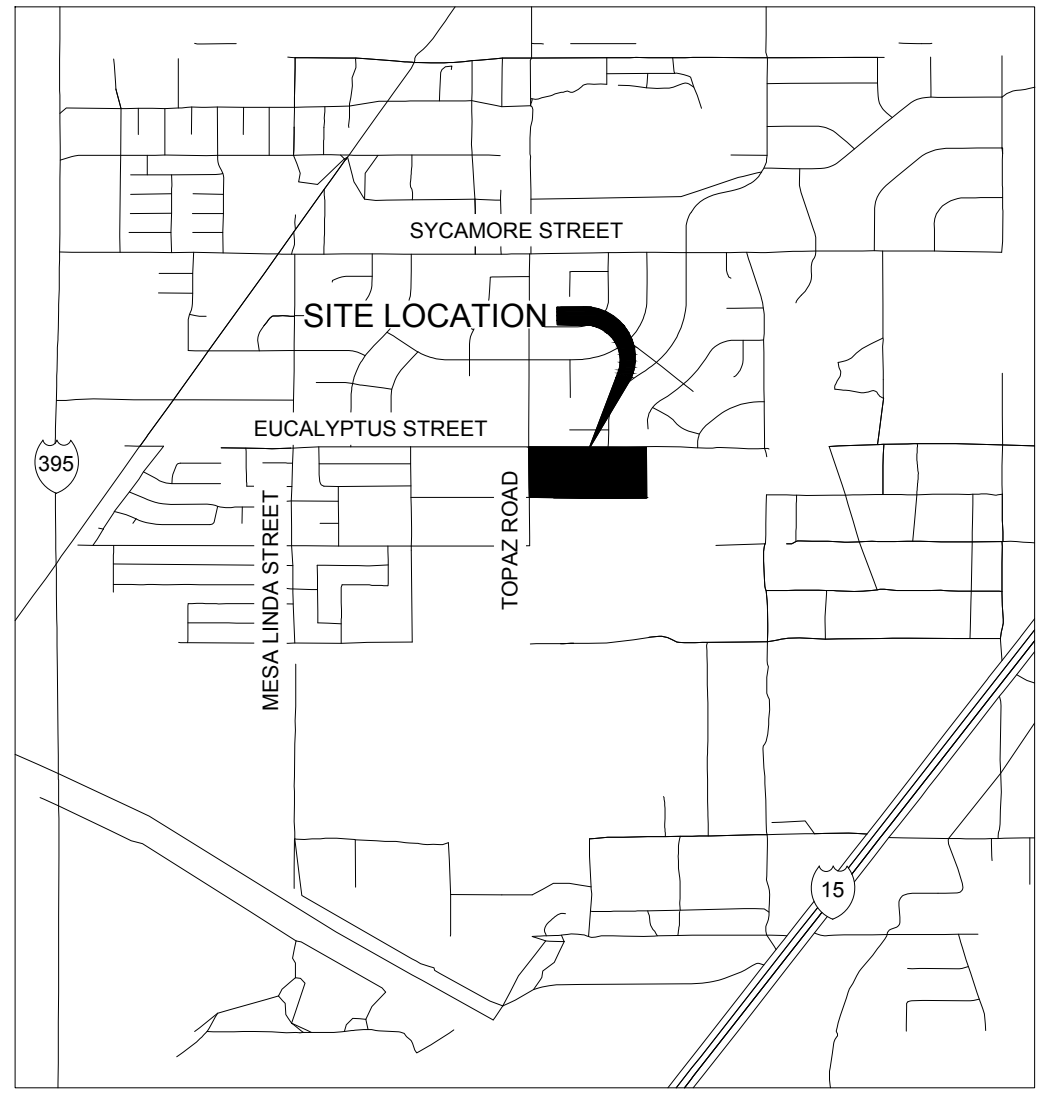
CITY OF VICTORVILLE BENCHMARK V-223, LOCATED IN TC 5' E/O NE BOR MESA LINDA & EUCALYPTUS, ELEVATION = 3376.91 (NAVD 29)

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PROPOSED CONDITIONS MAP - TRACT NO. 20368

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UNITED ENGINEERING GROUP CA., INC DECEMBER 2020



VICINITY MAP
NTS

CONNECT TO EXISTING CITY
CATCH BASIN AND STORM
DRAIN IN EUCALYPTUS

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LEGEND:

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- PROJECT BOUNDARY
- FLOWPATH
- FLOW DIRECTION
- 102 XX NODE/CONCENTRATION POINT
FLOWLINE ELEVATION 293x
- A2 24.4 SUBAREA
ACRES

NOTE: POINT 104 IS SPILLWAY AFTER ROUTING

NOTE: REFER TO APPENDIX A FOR
DESIGN DETAILS AND RESULTS OF DESIGN

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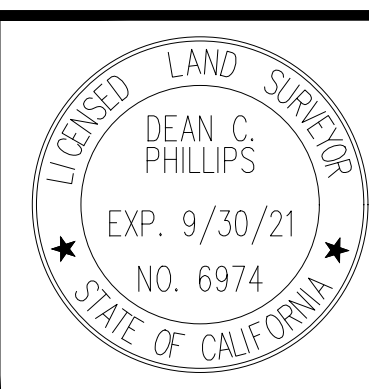
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DEAN C. PHILLIPS DATE
L.S. No. 6974
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TTM 20368 - OFFSITE FLOWS



3400

1000'

6.8AC

3382

Verano St

1820'

32.5 AC

3360

Fallen Leaf Dr

SITE

Eucalyptus St

**APPENDIX B:
PROJECT RATIONAL
SCS UNIT HYDROGRAPH
HYDROLOGY STUDY INFORMATION**



NOAA Atlas 14, Volume 6, Version 2
Location name: Victorville, California, USA*
Latitude: 34.4552°, Longitude: -117.3809°
Elevation: 3356.29 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.079 (0.065-0.096)	0.114 (0.094-0.140)	0.160 (0.132-0.197)	0.198 (0.162-0.245)	0.249 (0.197-0.318)	0.288 (0.223-0.376)	0.328 (0.248-0.439)	0.369 (0.271-0.507)	0.424 (0.299-0.608)	0.467 (0.318-0.693)
10-min	0.113 (0.093-0.138)	0.164 (0.135-0.200)	0.230 (0.189-0.282)	0.284 (0.232-0.351)	0.357 (0.282-0.456)	0.413 (0.320-0.539)	0.470 (0.355-0.629)	0.528 (0.388-0.727)	0.608 (0.428-0.871)	0.669 (0.455-0.993)
15-min	0.136 (0.113-0.167)	0.198 (0.163-0.242)	0.278 (0.229-0.341)	0.343 (0.280-0.424)	0.432 (0.341-0.552)	0.500 (0.387-0.652)	0.568 (0.429-0.760)	0.639 (0.469-0.879)	0.735 (0.518-1.05)	0.809 (0.550-1.20)
30-min	0.208 (0.172-0.254)	0.302 (0.249-0.369)	0.424 (0.349-0.520)	0.524 (0.428-0.647)	0.658 (0.520-0.842)	0.762 (0.589-0.994)	0.867 (0.654-1.16)	0.975 (0.716-1.34)	1.12 (0.789-1.61)	1.23 (0.839-1.83)
60-min	0.286 (0.237-0.349)	0.415 (0.343-0.507)	0.583 (0.481-0.715)	0.720 (0.588-0.890)	0.906 (0.716-1.16)	1.05 (0.811-1.37)	1.19 (0.900-1.60)	1.34 (0.984-1.84)	1.54 (1.09-2.21)	1.70 (1.15-2.52)
2-hr	0.404 (0.334-0.494)	0.551 (0.455-0.674)	0.750 (0.617-0.919)	0.916 (0.749-1.13)	1.15 (0.910-1.47)	1.34 (1.03-1.75)	1.53 (1.16-2.05)	1.74 (1.28-2.39)	2.03 (1.43-2.91)	2.26 (1.54-3.36)
3-hr	0.510 (0.422-0.623)	0.682 (0.564-0.834)	0.919 (0.757-1.13)	1.12 (0.917-1.39)	1.41 (1.12-1.80)	1.65 (1.27-2.15)	1.90 (1.43-2.54)	2.16 (1.59-2.98)	2.55 (1.79-3.65)	2.86 (1.95-4.24)
6-hr	0.703 (0.581-0.859)	0.931 (0.769-1.14)	1.25 (1.03-1.54)	1.53 (1.25-1.90)	1.94 (1.54-2.48)	2.28 (1.77-2.98)	2.65 (2.00-3.54)	3.05 (2.24-4.20)	3.64 (2.56-5.22)	4.13 (2.81-6.13)
12-hr	0.880 (0.728-1.08)	1.21 (1.00-1.48)	1.69 (1.39-2.07)	2.10 (1.71-2.59)	2.70 (2.13-3.45)	3.20 (2.48-4.18)	3.75 (2.83-5.01)	4.34 (3.19-5.97)	5.22 (3.67-7.48)	5.95 (4.05-8.83)
24-hr	1.21 (1.07-1.39)	1.74 (1.54-2.00)	2.49 (2.20-2.88)	3.14 (2.75-3.66)	4.10 (3.48-4.94)	4.89 (4.06-6.02)	5.75 (4.66-7.25)	6.69 (5.27-8.67)	8.07 (6.10-10.9)	9.21 (6.73-12.9)
2-day	1.31 (1.16-1.50)	1.87 (1.65-2.15)	2.66 (2.35-3.08)	3.36 (2.95-3.92)	4.40 (3.73-5.30)	5.26 (4.37-6.47)	6.21 (5.03-7.82)	7.25 (5.71-9.39)	8.79 (6.64-11.9)	10.1 (7.36-14.1)
3-day	1.39 (1.24-1.61)	1.97 (1.75-2.27)	2.80 (2.47-3.24)	3.53 (3.09-4.11)	4.61 (3.91-5.55)	5.52 (4.58-6.79)	6.52 (5.28-8.21)	7.62 (6.00-9.87)	9.25 (7.00-12.5)	10.6 (7.77-14.9)
4-day	1.51 (1.34-1.73)	2.12 (1.88-2.44)	3.00 (2.65-3.46)	3.77 (3.30-4.39)	4.92 (4.17-5.92)	5.88 (4.88-7.23)	6.94 (5.62-8.74)	8.11 (6.39-10.5)	9.84 (7.44-13.3)	11.3 (8.26-15.8)
7-day	1.65 (1.46-1.90)	2.29 (2.03-2.64)	3.21 (2.83-3.71)	4.01 (3.51-4.67)	5.20 (4.40-6.26)	6.18 (5.13-7.60)	7.26 (5.88-9.14)	8.45 (6.65-10.9)	10.2 (7.70-13.8)	11.7 (8.52-16.3)
10-day	1.77 (1.57-2.04)	2.44 (2.16-2.82)	3.40 (3.00-3.93)	4.23 (3.71-4.93)	5.46 (4.63-6.57)	6.48 (5.38-7.96)	7.58 (6.14-9.55)	8.79 (6.93-11.4)	10.6 (7.99-14.3)	12.1 (8.81-16.8)
20-day	2.17 (1.92-2.49)	2.96 (2.62-3.41)	4.07 (3.60-4.71)	5.04 (4.42-5.88)	6.46 (5.47-7.78)	7.63 (6.33-9.38)	8.89 (7.20-11.2)	10.3 (8.09-13.3)	12.3 (9.28-16.6)	13.9 (10.2-19.5)
30-day	2.55 (2.26-2.94)	3.45 (3.06-3.98)	4.72 (4.17-5.45)	5.82 (5.09-6.77)	7.41 (6.28-8.92)	8.73 (7.24-10.7)	10.1 (8.21-12.8)	11.7 (9.21-15.1)	13.9 (10.5-18.8)	15.8 (11.5-22.0)
45-day	3.01 (2.67-3.47)	4.01 (3.55-4.62)	5.42 (4.78-6.26)	6.63 (5.81-7.73)	8.40 (7.12-10.1)	9.85 (8.18-12.1)	11.4 (9.24-14.4)	13.1 (10.3-17.0)	15.6 (11.8-21.0)	17.6 (12.9-24.6)
60-day	3.41 (3.02-3.92)	4.47 (3.96-5.15)	5.96 (5.27-6.89)	7.25 (6.35-8.45)	9.13 (7.74-11.0)	10.7 (8.85-13.1)	12.3 (9.98-15.5)	14.1 (11.1-18.3)	16.7 (12.7-22.6)	18.9 (13.8-26.4)

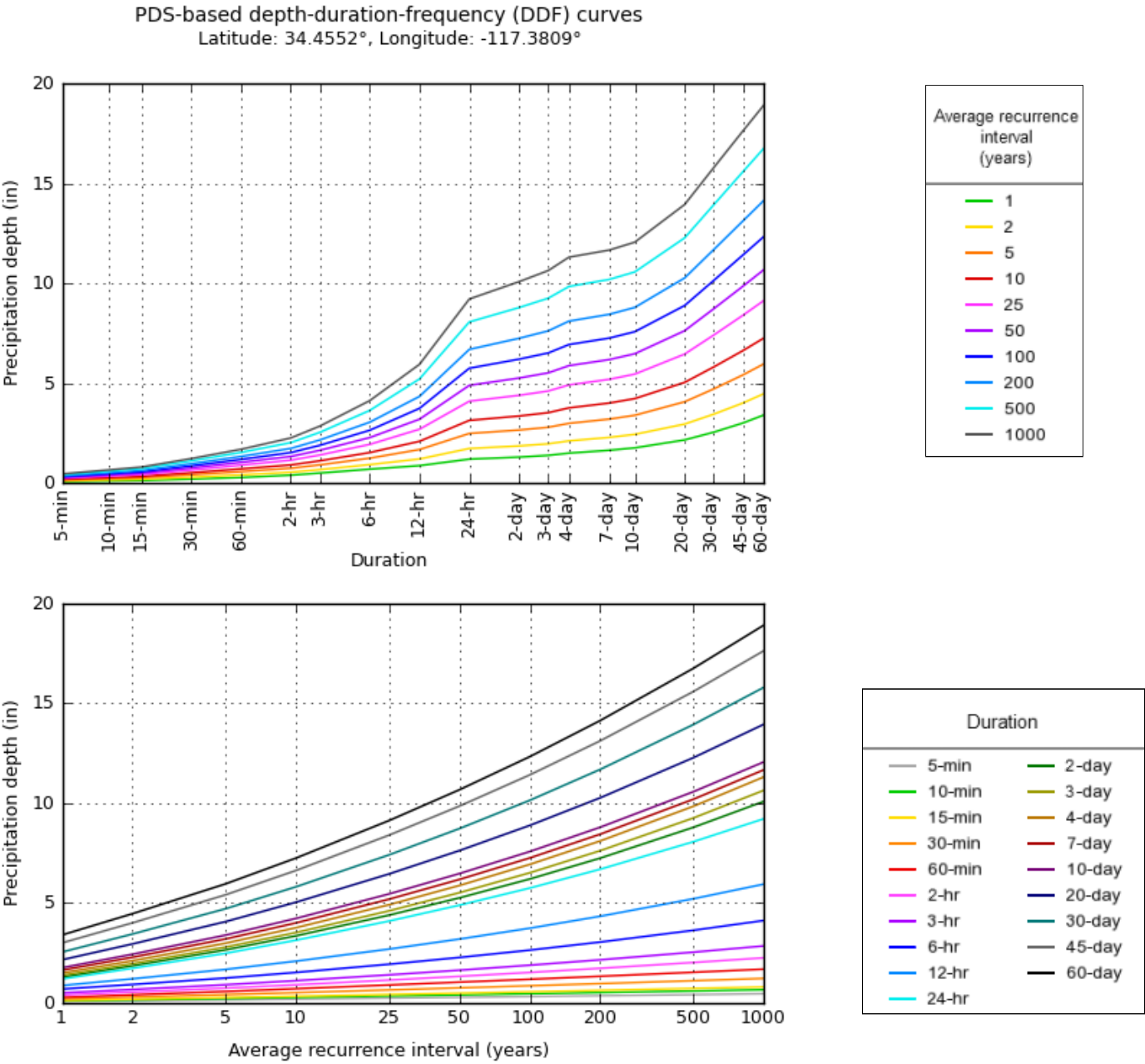
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

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

Please refer to NOAA Atlas 14 document for more information.

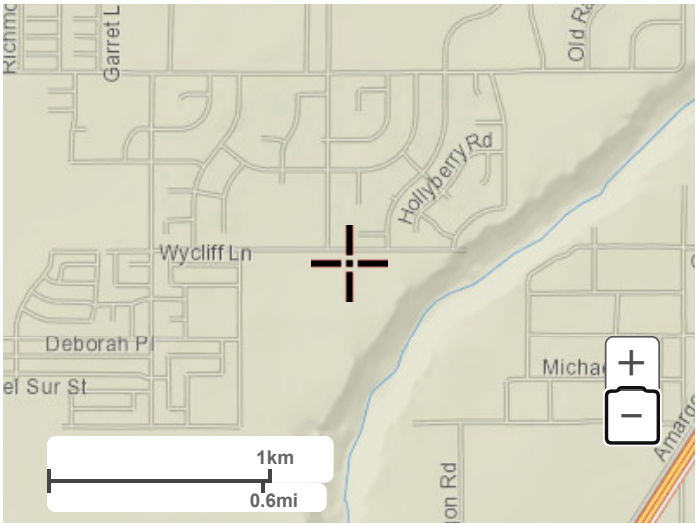
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PF graphical



Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

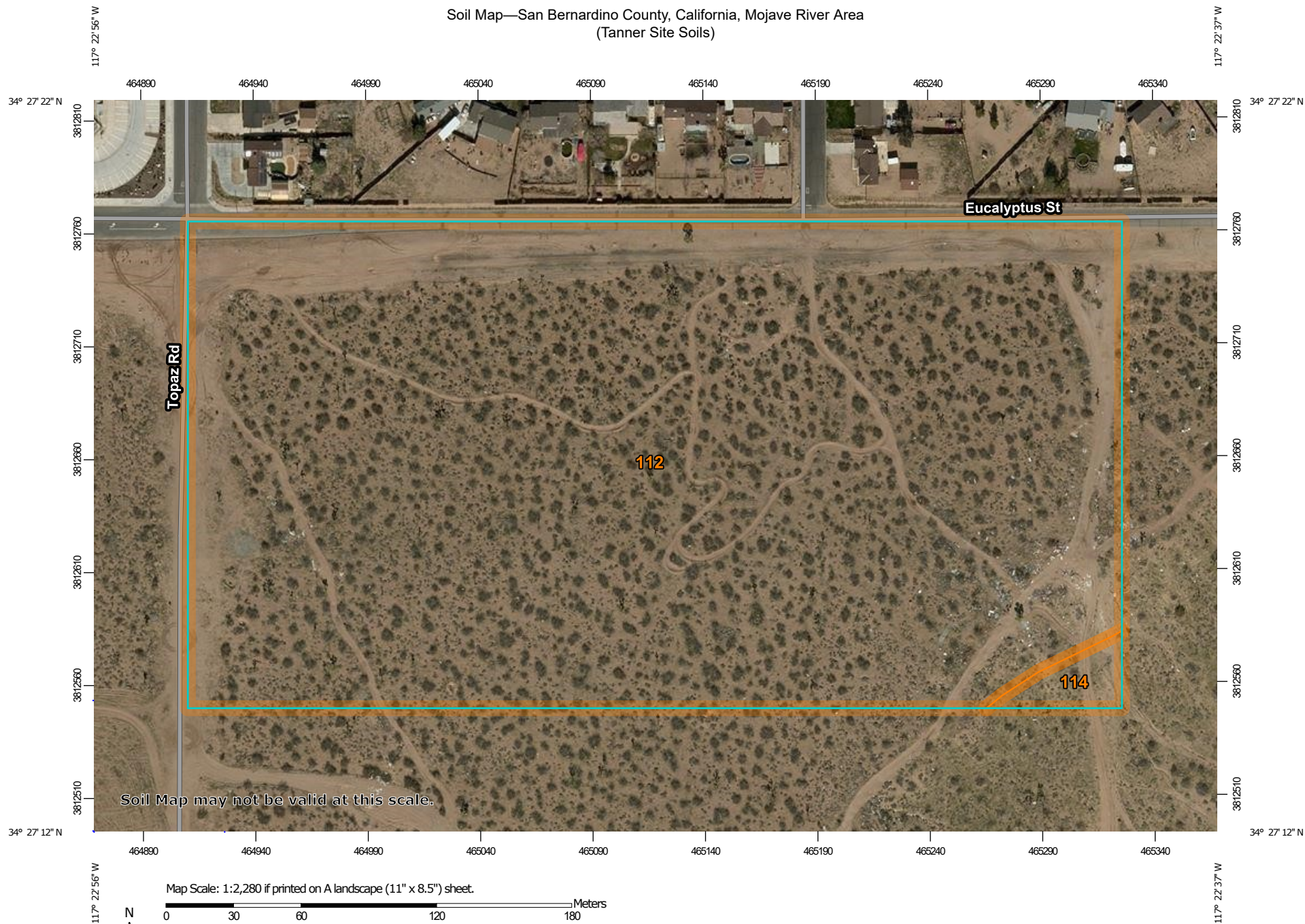


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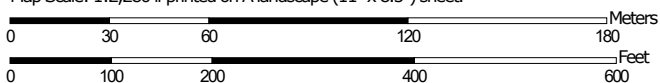
[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

Soil Map—San Bernardino County, California, Mojave River Area
(Tanner Site Soils)



Map Scale: 1:2,280 if printed on A landscape (11" x 8.5") sheet.



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



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

2/12/2020
Page 1 of 3

Soil Map—San Bernardino County, California, Mojave River Area
(Tanner Site Soils)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: San Bernardino County, California, Mojave River Area

Survey Area Data: Version 11, Sep 17, 2019

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

Date(s) aerial images were photographed: Feb 1, 2015—Feb 4, 2015

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
112	CAJON SAND, 0 TO 2 PERCENT SLOPES	21.9	98.7%
114	CAJON SAND, 9 TO 15 PERCENT SLOPES	0.3	1.3%
Totals for Area of Interest		22.2	100.0%

San Bernardino County, California, Mojave River Area

112—CAJON SAND, 0 TO 2 PERCENT SLOPES

Map Unit Setting

National map unit symbol: hkrj

Elevation: 1,800 to 3,200 feet

Mean annual precipitation: 3 to 6 inches

Mean annual air temperature: 59 to 66 degrees F

Frost-free period: 180 to 290 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Cajon and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cajon

Setting

Landform: Alluvial fans

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite sources

Typical profile

H1 - 0 to 7 inches: sand

H2 - 7 to 25 inches: sand

H3 - 25 to 45 inches: gravelly sand

H4 - 45 to 60 inches: stratified sand to loamy fine sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 1 percent

Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: Sandy (R030XF012CA)

Hydric soil rating: No

Minor Components

Manet

Percent of map unit: 5 percent

Landform: Playas

Hydric soil rating: Yes

Kimberlina

Percent of map unit: 5 percent

Helendale

Percent of map unit: 5 percent

Data Source Information

Soil Survey Area: San Bernardino County, California, Mojave River Area

Survey Area Data: Version 11, Sep 17, 2019

San Bernardino County Rational Hydrology Program

(Hydrology Manual Date - August 1986)

CIVILCADD/CIVILDESIGN Engineering Software, (c) 1989-2005
Version 7.1

Rational Hydrology Study Date: 12/10/20

TTM 20368
OFFSITE AREAS
100YEAR RATIONALE RUNOFF

Program License Serial Number 6232

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

Rational hydrology study storm event year is 100.0
10 Year storm 1 hour rainfall = 0.720(In.)
100 Year storm 1 hour rainfall = 1.190(In.)
Computed rainfall intensity:
Storm year = 100.00 1 hour rainfall = 1.190 (In.)
Slope used for rainfall intensity curve b = 0.7000
Soil antecedent moisture condition (AMC) = 2

++++
+++++
Process from Point/Station 101.000 to Point/Station
102.000
**** INITIAL AREA EVALUATION ****

UNDEVELOPED (average cover) subarea
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) = 50.00
Pervious ratio(Ap) = 1.0000 Max loss rate(Fm)= 0.810
(In/Hr)
Initial subarea data:
Initial area flow distance = 1000.000(Ft.)
Top (of initial area) elevation = 3400.000(Ft.)
Bottom (of initial area) elevation = 3382.000(Ft.)
Difference in elevation = 18.000(Ft.)
Slope = 0.01800 s(%)= 1.80
 $TC = k(0.706)*[(length^3)/(elevation\ change)]^{0.2}$
Initial area time of concentration = 24.989 min.
Rainfall intensity = 2.197(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.568

Subarea runoff = 8.491(CFS)
Total initial stream area = 6.800(Ac.)
Pervious area fraction = 1.000
Initial area Fm value = 0.810(In/Hr)

++++
Process from Point/Station 102.000 to Point/Station
103.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****

Estimated mean flow rate at midpoint of channel = 16.752(CFS)
Depth of flow = 0.359(Ft.), Average velocity = 1.733(Ft/s)
***** Irregular Channel Data *****

Information entered for subchannel number 1 :
Point number 'X' coordinate 'Y' coordinate
1 0.00 2.00
2 100.00 0.00
3 200.00 1.00
Manning's 'N' friction factor = 0.030

Sub-Channel flow = 16.752(CFS)
' ' flow top width = 53.853(Ft.)
' ' velocity = 1.733(Ft/s)
' ' area = 9.667(Sq.Ft)
' ' Froude number = 0.721

Upstream point elevation = 3382.000(Ft.)
Downstream point elevation = 3360.000(Ft.)
Flow length = 1820.000(Ft.)
Travel time = 17.50 min.
Time of concentration = 42.49 min.
Depth of flow = 0.359(Ft.)
Average velocity = 1.733(Ft/s)
Total irregular channel flow = 16.752(CFS)
Irregular channel normal depth above invert elev. = 0.359(Ft.)
Average velocity of channel(s) = 1.733(Ft/s)
Adding area flow to channel

UNDEVELOPED (average cover) subarea
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) = 50.00
Pervious ratio(Ap) = 1.0000 Max loss rate(Fm)= 0.810
(In/Hr)
Rainfall intensity = 1.515(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area, (total area with
modified
rational method)(Q=KCIA) is C = 0.419
Subarea runoff = 16.463(CFS) for 32.500(Ac.)
Total runoff = 24.954(CFS)
Effective area this stream = 39.30(Ac.)
Total Study Area (Main Stream No. 1) = 39.30(Ac.)
Area averaged Fm value = 0.810(In/Hr)
Depth of flow = 0.417(Ft.), Average velocity = 1.914(Ft/s)
End of computations, Total Study Area = 39.30 (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(A_p) = 1.000

Area averaged SCS curve number = 50.0

San Bernardino County Rational Hydrology Program

(Hydrology Manual Date - August 1986)

CIVILCADD/CIVILDESIGN Engineering Software, (c) 1989-2005
Version 7.1

Rational Hydrology Study Date: 12/10/20

TTM 20368
Rationale TC and Q Check
Predevelopment Condition

Program License Serial Number 6232

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

Rational hydrology study storm event year is 100.0
10 Year storm 1 hour rainfall = 0.720(In.)
100 Year storm 1 hour rainfall = 1.190(In.)
Computed rainfall intensity:
Storm year = 100.00 1 hour rainfall = 1.190 (In.)
Slope used for rainfall intensity curve b = 0.7000
Soil antecedent moisture condition (AMC) = 2

++++
++++
Process from Point/Station 101.000 to Point/Station
102.000
***** INITIAL AREA EVALUATION *****

UNDEVELOPED (average cover) subarea
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) = 50.00
Pervious ratio(Ap) = 1.0000 Max loss rate(Fm)= 0.810
(In/Hr)
Initial subarea data:
Initial area flow distance = 496.000(Ft.)
Top (of initial area) elevation = 61.000(Ft.)
Bottom (of initial area) elevation = 54.000(Ft.)
Difference in elevation = 7.000(Ft.)
Slope = 0.01411 s(%)= 1.41
TC = $k(0.706)*[(\text{length}^3)/(\text{elevation change})]^{0.2}$
Initial area time of concentration = 19.819 min.
Rainfall intensity = 2.584(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.618

Subarea runoff = 3.514(CFS)
Total initial stream area = 2.200(Ac.)
Pervious area fraction = 1.000
Initial area Fm value = 0.810(In/Hr)

++++
Process from Point/Station 102.000 to Point/Station 103.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****

Estimated mean flow rate at midpoint of channel = 0.000(CFS)
Depth of flow = 0.374(Ft.), Average velocity = 1.684(Ft/s)
***** Irregular Channel Data *****

Information entered for subchannel number 1 :
Point number 'X' coordinate 'Y' coordinate
1 0.00 1.00
2 50.00 0.00
3 100.00 1.00
Manning's 'N' friction factor = 0.030

Sub-Channel flow = 11.748(CFS)
' ' flow top width = 37.353(Ft.)
' ' velocity = 1.684(Ft/s)
' ' area = 6.976(Sq.Ft)
' ' Froude number = 0.687

Upstream point elevation = 54.000(Ft.)
Downstream point elevation = 42.000(Ft.)
Flow length = 1108.000(Ft.)
Travel time = 10.97 min.
Time of concentration = 30.78 min.
Depth of flow = 0.374(Ft.)
Average velocity = 1.684(Ft/s)
Total irregular channel flow = 11.748(CFS)
Irregular channel normal depth above invert elev. = 0.374(Ft.)
Average velocity of channel(s) = 1.684(Ft/s)
Adding area flow to channel

UNDEVELOPED (average cover) subarea
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) = 50.00
Pervious ratio(Ap) = 1.0000 Max loss rate(Fm)= 0.810
(In/Hr)
Rainfall intensity = 1.899(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area, (total area with
modified
rational method)(Q=KCIA) is C = 0.516
Subarea runoff = 16.383(CFS) for 18.100(Ac.)
Total runoff = 19.897(CFS)
Effective area this stream = 20.30(Ac.)
Total Study Area (Main Stream No. 1) = 20.30(Ac.)
Area averaged Fm value = 0.810(In/Hr)
Depth of flow = 0.455(Ft.), Average velocity = 1.921(Ft/s)
End of computations, Total Study Area = 20.30 (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(A_p) = 1.000

Area averaged SCS curve number = 50.0

San Bernardino County Rational Hydrology Program

(Hydrology Manual Date - August 1986)

CIVILCADD/CIVILDESIGN Engineering Software, (c) 1989-2005
Version 7.1

Rational Hydrology Study Date: 12/10/20

TTM 20368
Post Development
100 year runoff
& Preliminary Storm Drain Sizing

Program License Serial Number 6232

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

Rational hydrology study storm event year is 100.0
10 Year storm 1 hour rainfall = 0.720(In.)
100 Year storm 1 hour rainfall = 1.190(In.)
Computed rainfall intensity:
Storm year = 100.00 1 hour rainfall = 1.190 (In.)
Slope used for rainfall intensity curve b = 0.7000
Soil antecedent moisture condition (AMC) = 2

++++
++++
Process from Point/Station 101.000 to Point/Station
102.000
**** INITIAL AREA EVALUATION ****

RESIDENTIAL(3 - 4 dwl/acre)
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) = 0.6000 Max loss rate(Fm)= 0.587
(In/Hr)
Initial subarea data:
Initial area flow distance = 809.000(Ft.)
Top (of initial area) elevation = 59.000(Ft.)
Bottom (of initial area) elevation = 50.000(Ft.)
Difference in elevation = 9.000(Ft.)
Slope = 0.01112 s(%)= 1.11
TC = $k(0.412)*[(\text{length}^3)/(\text{elevation change})]^{0.2}$
Initial area time of concentration = 14.751 min.
Rainfall intensity = 3.177(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.734

Subarea runoff = 15.856(CFS)
Total initial stream area = 6.800(Ac.)
Pervious area fraction = 0.600
Initial area Fm value = 0.587(In/Hr)

++++
Process from Point/Station 102.000 to Point/Station
103.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 50.000(Ft.)
Downstream point/station elevation = 41.000(Ft.)
Pipe length = 847.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 15.856(CFS)
Nearest computed pipe diameter = 21.00(In.)
Calculated individual pipe flow = 15.856(CFS)
Normal flow depth in pipe = 16.69(In.)
Flow top width inside pipe = 16.97(In.)
Critical Depth = 17.64(In.)
Pipe flow velocity = 7.74(Ft/s)
Travel time through pipe = 1.82 min.
Time of concentration (TC) = 16.58 min.

++++
Process from Point/Station 102.000 to Point/Station
103.000
**** CONFLUENCE OF MAIN STREAMS ****

The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area = 6.800(Ac.)
Runoff from this stream = 15.856(CFS)
Time of concentration = 16.58 min.
Rainfall intensity = 2.928(In/Hr)
Area averaged loss rate (Fm) = 0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Program is now starting with Main Stream No. 2

++++
Process from Point/Station 201.000 to Point/Station
202.000
**** INITIAL AREA EVALUATION ****

RESIDENTIAL(3 - 4 dwl/acre)
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) = 0.6000 Max loss rate(Fm)= 0.587
(In/Hr)

Initial subarea data:
 Initial area flow distance = 728.000(Ft.)
 Top (of initial area) elevation = 61.000(Ft.)
 Bottom (of initial area) elevation = 54.000(Ft.)
 Difference in elevation = 7.000(Ft.)
 Slope = 0.00962 s(%)= 0.96
 $TC = k(0.412)*[(length^3)/(elevation\ change)]^{0.2}$
 Initial area time of concentration = 14.560 min.
 Rainfall intensity = 3.207(In/Hr) for a 100.0 year storm
 Effective runoff coefficient used for area (Q=KCIA) is C = 0.735
 Subarea runoff = 4.952(CFS)
 Total initial stream area = 2.100(Ac.)
 Pervious area fraction = 0.600
 Initial area Fm value = 0.587(In/Hr)

++++
 Process from Point/Station 202.000 to Point/Station
 203.000
 ***** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION *****

Top of street segment elevation = 54.000(Ft.)
 End of street segment elevation = 50.000(Ft.)
 Length of street segment = 584.000(Ft.)
 Height of curb above gutter flowline = 6.0(In.)
 Width of half street (curb to crown) = 20.000(Ft.)
 Distance from crown to crossfall grade break = 18.000(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 = 10.000(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 = 8.110(CFS)
 Depth of flow = 0.474(Ft.), Average velocity = 2.577(Ft/s)
 Streetflow hydraulics at midpoint of street travel:
 Halfstreet flow width = 17.380(Ft.)
 Flow velocity = 2.58(Ft/s)
 Travel time = 3.78 min. TC = 18.34 min.
 Adding area flow to street
 RESIDENTIAL(3 - 4 dwl/acre)
 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) = 0.6000 Max loss rate(Fm)= 0.587
 (In/Hr)
 Rainfall intensity = 2.728(In/Hr) for a 100.0 year storm
 Effective runoff coefficient used for area,(total area with
 modified
 rational method)(Q=KCIA) is C = 0.706
 Subarea runoff = 6.228(CFS) for 3.700(Ac.)
 Total runoff = 11.180(CFS)

Effective area this stream = 5.80(Ac.)
Total Study Area (Main Stream No. 2) = 12.60(Ac.)
Area averaged Fm value = 0.587(In/Hr)
Street flow at end of street = 11.180(CFS)
Half street flow at end of street = 11.180(CFS)
Depth of flow = 0.525(Ft.), Average velocity = 2.725(Ft/s)
Warning: depth of flow exceeds top of curb
Distance that curb overflow reaches into property = 0.99(Ft.)
Flow width (from curb towards crown)= 19.910(Ft.)

++++
++++

Process from Point/Station 203.000 to Point/Station
204.000

**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 50.000(Ft.)
Downstream point elevation = 38.000(Ft.)
Channel length thru subarea = 374.000(Ft.)
Channel base width = 0.000(Ft.)
Slope or 'Z' of left channel bank = 4.000
Slope or 'Z' of right channel bank = 4.000
Estimated mean flow rate at midpoint of channel = 11.991(CFS)
Manning's 'N' = 0.030
Maximum depth of channel = 2.000(Ft.)
Flow(q) thru subarea = 11.991(CFS)
Depth of flow = 0.798(Ft.), Average velocity = 4.711(Ft/s)
Channel flow top width = 6.382(Ft.)
Flow Velocity = 4.71(Ft/s)
Travel time = 1.32 min.
Time of concentration = 19.66 min.
Critical depth = 0.891(Ft.)
Adding area flow to channel
PARK subarea
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) = 0.8500 Max loss rate(Fm)= 0.831
(In/Hr)
Rainfall intensity = 2.599(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area,(total area with
modified
rational method)(Q=KCIA) is C = 0.680
Subarea runoff = 1.549(CFS) for 1.400(Ac.)
Total runoff = 12.729(CFS)
Effective area this stream = 7.20(Ac.)
Total Study Area (Main Stream No. 2) = 14.00(Ac.)
Area averaged Fm value = 0.634(In/Hr)
Depth of flow = 0.816(Ft.), Average velocity = 4.782(Ft/s)
Critical depth = 0.914(Ft.)

++++
++++

Process from Point/Station 203.000 to Point/Station
204.000

**** CONFLUENCE OF MAIN STREAMS ****

The following data inside Main Stream is listed:

In Main Stream number: 2

Stream flow area = 7.200(Ac.)

Runoff from this stream = 12.729(CFS)

Time of concentration = 19.66 min.

Rainfall intensity = 2.599(In/Hr)

Area averaged loss rate (Fm) = 0.6342(In/Hr)

Area averaged Pervious ratio (Ap) = 0.6486

Program is now starting with Main Stream No. 3

++++
Process from Point/Station 101.000 to Point/Station
302.000
**** 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 = 462.000(Ft.)
Top (of initial area) elevation = 59.000(Ft.)
Bottom (of initial area) elevation = 46.000(Ft.)
Difference in elevation = 13.000(Ft.)
Slope = 0.02814 s(%)= 2.81
TC = $k(0.304)*[(\text{length}^3)/(\text{elevation change})]^{0.2}$
Initial area time of concentration = 7.226 min.
Rainfall intensity = 5.237(In/Hr) for a 100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.883
Subarea runoff = 3.237(CFS)
Total initial stream area = 0.700(Ac.)
Pervious area fraction = 0.100
Initial area Fm value = 0.098(In/Hr)

++++
Process from Point/Station 302.000 to Point/Station
103.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****

Top of street segment elevation = 46.000(Ft.)
End of street segment elevation = 41.000(Ft.)
Length of street segment = 1185.000(Ft.)
Height of curb above gutter flowline = 8.0(In.)
Width of half street (curb to crown) = 51.000(Ft.)
Distance from crown to crossfall grade break = 2.000(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) = 0.020
 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 = 8.900(CFS)
 Depth of flow = 0.523(Ft.), Average velocity = 2.195(Ft/s)
 Streetflow hydraulics at midpoint of street travel:
 Halfstreet flow width = 19.819(Ft.)
 Flow velocity = 2.20(Ft/s)
 Travel time = 9.00 min. TC = 16.22 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 = 2.973(In/Hr) for a 100.0 year storm
 Effective runoff coefficient used for area,(total area with
 modified
 rational method)(Q=KCIA) is C = 0.870
 Subarea runoff = 11.252(CFS) for 4.900(Ac.)
 Total runoff = 14.490(CFS)
 Effective area this stream = 5.60(Ac.)
 Total Study Area (Main Stream No. 3) = 19.60(Ac.)
 Area averaged Fm value = 0.098(In/Hr)
 Street flow at end of street = 14.490(CFS)
 Half street flow at end of street = 14.490(CFS)
 Depth of flow = 0.605(Ft.), Average velocity = 2.475(Ft/s)
 Flow width (from curb towards crown)= 23.934(Ft.)

++++++

 103.000 Process from Point/Station 302.000 to Point/Station
 **** CONFLUENCE OF MAIN STREAMS ****

The following data inside Main Stream is listed:
 In Main Stream number: 3
 Stream flow area = 5.600(Ac.)
 Runoff from this stream = 14.490(CFS)
 Time of concentration = 16.22 min.
 Rainfall intensity = 2.973(In/Hr)
 Area averaged loss rate (Fm) = 0.0978(In/Hr)
 Area averaged Pervious ratio (Ap) = 0.1000
 Summary of stream data:

Stream No.	Flow rate (CFS)	Area (Ac.)	TC (min)	Fm (In/Hr)	Rainfall Intensity (In/Hr)
1	15.86	6.800	16.58	0.587	2.928

2	12.73	7.200	19.66	0.634	2.599
3	14.49	5.600	16.22	0.098	2.973

Qmax(1) =

1.000 *	1.000 *	15.856) +	
1.168 *	0.843 *	12.729) +	
0.985 *	1.000 *	14.490) + =	42.655

Qmax(2) =

0.859 *	1.000 *	15.856) +	
1.000 *	1.000 *	12.729) +	
0.870 *	1.000 *	14.490) + =	38.956

Qmax(3) =

1.019 *	0.979 *	15.856) +	
1.190 *	0.825 *	12.729) +	
1.000 *	1.000 *	14.490) + =	42.807

Total of 3 main streams to confluence:

Flow rates before confluence point:

16.856	13.729	15.490
--------	--------	--------

Maximum flow rates at confluence using above data:

42.655	38.956	42.807
--------	--------	--------

Area of streams before confluence:

6.800	7.200	5.600
-------	-------	-------

Effective area values after confluence:

18.470	19.600	18.197
--------	--------	--------

Results of confluence:

Total flow rate = 42.807(CFS)

Time of concentration = 16.223 min.

Effective stream area after confluence = 18.197(Ac.)

Study area average Pervious fraction(Ap) = 0.475

Study area average soil loss rate(Fm) = 0.464(In/Hr)

Study area total = 19.60(Ac.)

End of computations, Total Study Area = 19.60 (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) = 0.475

Area averaged SCS curve number = 32.0

Unit Hydrograph Analysis

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7.0

Study date 12/11/20

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

Program License Serial Number 6232

TTM 20368
SCS Unit Hydrograph
100yr 3hr

--

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		
19.60	1	0.72

--
Rainfall data for year 2
19.60 6 0.93

--
Rainfall data for year 2
19.60 24 1.74

--
Rainfall data for year 100
19.60 1 1.19

```

--
Rainfall data for year 100
    19.60          6          2.65
-----
--
Rainfall data for year 100
    19.60          24         5.75
-----
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***** Area-averaged max loss rate, Fm *****

Fm      SCS curve   SCS curve      Area      Area      Fp(Fig C6)   Ap
(In/Hr) No.(AMCII) NO.(AMC 3)   (Ac.)     Fraction   (In/Hr)   (dec.)
    32.0      52.0      19.60      1.000      0.785      0.500
0.393

Area-averaged adjusted loss rate Fm (In/Hr) =  0.393

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

Area      Area      SCS CN   SCS CN      S      Pervious
(Ac.)     Fract      (AMC2)   (AMC3)      S      Yield Fr
    9.80    0.500      32.0     52.0      9.23    0.202
    9.80    0.500      98.0     98.0      0.20    0.959

Area-averaged catchment yield fraction, Y =  0.580
Area-averaged low loss fraction, Yb =  0.420
User entry of time of concentration =  0.304 (hours)
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++

Watershed area =      19.60(Ac.)
Catchment Lag time =  0.243 hours
Unit interval =  5.000 minutes
Unit interval percentage of lag time = 34.2654
Hydrograph baseflow =  0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.393(In/Hr)
Average low loss rate fraction (Yb) = 0.420 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.565(In)
Computed peak 30-minute rainfall =  0.967(In)
Specified peak 1-hour rainfall =  1.190(In)
Computed peak 3-hour rainfall =  1.944(In)
Specified peak 6-hour rainfall =  2.650(In)
Specified peak 24-hour rainfall =  5.750(In)

Rainfall depth area reduction factors:
Using a total area of      19.60(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999      Adjusted rainfall =  0.564(In)
30-minute factor = 0.999     Adjusted rainfall =  0.966(In)
1-hour factor = 0.999        Adjusted rainfall =  1.189(In)
3-hour factor = 1.000        Adjusted rainfall =  1.944(In)
6-hour factor = 1.000        Adjusted rainfall =  2.650(In)

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24-hour factor = 1.000 Adjusted rainfall = 5.750(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))
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(K = 237.04 (CFS))

1	2.161	5.122
2	12.710	25.006
3	39.574	63.678
4	59.013	46.077
5	69.402	24.627
6	76.309	16.373
7	81.222	11.645
8	84.953	8.843
9	87.980	7.174
10	90.213	5.294
11	92.063	4.386
12	93.620	3.690
13	94.863	2.946
14	95.925	2.517
15	96.795	2.063
16	97.460	1.576
17	97.953	1.170
18	98.305	0.833
19	98.707	0.954
20	99.118	0.975
21	99.497	0.898
22	99.729	0.551
23	100.000	0.275

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.5641	0.5641
2	0.6945	0.1304
3	0.7844	0.0898
4	0.8551	0.0707
5	0.9143	0.0592
6	0.9657	0.0514
7	1.0114	0.0457
8	1.0527	0.0413
9	1.0906	0.0379
10	1.1256	0.0350
11	1.1583	0.0326
12	1.1889	0.0306
13	1.2323	0.0434
14	1.2738	0.0416
15	1.3138	0.0399
16	1.3523	0.0385
17	1.3895	0.0372
18	1.4255	0.0360
19	1.4604	0.0349
20	1.4943	0.0339

21	1.5273	0.0330
22	1.5594	0.0321
23	1.5908	0.0313
24	1.6213	0.0306
25	1.6512	0.0299
26	1.6805	0.0292
27	1.7091	0.0286
28	1.7372	0.0280
29	1.7647	0.0275
30	1.7916	0.0270
31	1.8181	0.0265
32	1.8441	0.0260
33	1.8697	0.0256
34	1.8949	0.0251
35	1.9196	0.0247
36	1.9440	0.0244

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)

1	0.0244	0.0102	0.0141
2	0.0247	0.0104	0.0144
3	0.0256	0.0107	0.0148
4	0.0260	0.0109	0.0151
5	0.0270	0.0113	0.0157
6	0.0275	0.0115	0.0160
7	0.0286	0.0120	0.0166
8	0.0292	0.0123	0.0170
9	0.0306	0.0128	0.0177
10	0.0313	0.0132	0.0182
11	0.0330	0.0138	0.0191
12	0.0339	0.0142	0.0197
13	0.0360	0.0151	0.0209
14	0.0372	0.0156	0.0216
15	0.0399	0.0168	0.0232
16	0.0416	0.0174	0.0241
17	0.0306	0.0129	0.0178
18	0.0326	0.0137	0.0189
19	0.0379	0.0159	0.0220
20	0.0413	0.0174	0.0240
21	0.0514	0.0216	0.0298
22	0.0592	0.0249	0.0343
23	0.0898	0.0327	0.0571
24	0.1304	0.0327	0.0977
25	0.5641	0.0327	0.5314
26	0.0707	0.0297	0.0410
27	0.0457	0.0192	0.0265
28	0.0350	0.0147	0.0203
29	0.0434	0.0182	0.0252
30	0.0385	0.0162	0.0223
31	0.0349	0.0147	0.0203
32	0.0321	0.0135	0.0186
33	0.0299	0.0125	0.0173
34	0.0280	0.0118	0.0163
35	0.0265	0.0111	0.0154
36	0.0251	0.0106	0.0146

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Total soil rain loss =      0.58(In)
Total effective rainfall =      1.36(In)
Peak flow rate in flood hydrograph =      42.75(CFS)
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          3 - H O U R      S T O R M
        R u n o f f      H y d r o g r a p h
-----

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--
          Hydrograph in   5   Minute intervals ((CFS))
-----
--
Time(h+m) Volume Ac.Ft   Q(CFS)  0      12.5      25.0      37.5
50.0

```

0+ 5	0.0005	0.07	Q			
0+10	0.0034	0.43	Q			
0+15	0.0126	1.33	VQ			
0+20	0.0265	2.01	VQ			
0+25	0.0431	2.41	VQ			
0+30	0.0617	2.70	VQ			
0+35	0.0820	2.94	VQ			
0+40	0.1037	3.15	VQ			
0+45	0.1267	3.34	Q			
0+50	0.1509	3.52	Q			
0+55	0.1763	3.70	QV			
1+ 0	0.2030	3.87	Q			
1+ 5	0.2309	4.06	QV			
1+10	0.2602	4.25	QV			
1+15	0.2909	4.46	Q V			
1+20	0.3231	4.68	Q V			
1+25	0.3568	4.89	Q V			
1+30	0.3908	4.95	Q V			
1+35	0.4234	4.73	Q V			

	1+40	0.4558	4.70		Q	V					
	1+45	0.4899	4.95		Q	V					
	1+50	0.5268	5.37		Q	V					
	1+55	0.5690	6.12		Q	V					
	2+ 0	0.6210	7.55			Q	V				
	2+ 5	0.7081	12.64				Q V				
	2+10	0.8793	24.86					V	Q		
	2+15	1.1738	42.75						V		
	2+20	1.3984	32.62							VQ	
	2+25	1.5408	20.68					Q		V	
	2+30	1.6476	15.50					Q		V	
	2+35	1.7350	12.69				Q			V	
	2+40	1.8099	10.87				Q				V
	2+45	1.8756	9.55				Q				V
	2+50	1.9321	8.20				Q				V
	2+55	1.9828	7.36				Q				V
	3+ 0	2.0287	6.67				Q				V
	3+ 5	2.0695	5.93				Q				V
	3+10	2.1046	5.09				Q				V
	3+15	2.1304	3.75				Q				V
	3+20	2.1490	2.70				Q				V
	3+25	2.1630	2.04				Q				
V	3+30	2.1739	1.58				Q				
V	3+35	2.1836	1.42				Q				
V	3+40	2.1922	1.24	Q							
V	3+45	2.1993	1.04	Q							
V	3+50	2.2044	0.73	Q							
V	3+55	2.2077	0.48	Q							
V	4+ 0	2.2096	0.27	Q							
V	4+ 5	2.2110	0.21	Q							

V	4+10	2.2122	0.16	Q			
V	4+15	2.2130	0.13	Q			
V	4+20	2.2137	0.10	Q			
V	4+25	2.2142	0.07	Q			
V	4+30	2.2146	0.06	Q			
V	4+35	2.2149	0.04	Q			
V	4+40	2.2151	0.03	Q			
V	4+45	2.2152	0.01	Q			
V	4+50	2.2152	0.00	Q			

Unit Hydrograph Analysis

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7.0

Study date 12/11/20

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

Program License Serial Number 6232

TTM 20368
SCS Unit Hydrograph
100yr 6hr

--

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		
19.60	1	0.72

--
Rainfall data for year 2
19.60 6 0.93

--
Rainfall data for year 2
19.60 24 1.74

--
Rainfall data for year 100
19.60 1 1.19

```

--
Rainfall data for year 100
    19.60          6          2.65
-----
--
Rainfall data for year 100
    19.60          24         5.75
-----
--
++++
++

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

Fm      SCS curve   SCS curve      Area      Area      Fp(Fig C6)   Ap
(In/Hr) No.(AMCII) NO.(AMC 3)   (Ac.)     Fraction   (In/Hr)   (dec.)
    32.0      52.0      19.60      1.000      0.785      0.500
0.393

Area-averaged adjusted loss rate Fm (In/Hr) =  0.393

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

Area      Area      SCS CN      SCS CN      S      Pervious
(Ac.)     Fract      (AMC2)     (AMC3)     S      Yield Fr
    9.80     0.500      32.0      52.0      9.23     0.202
    9.80     0.500      98.0      98.0      0.20     0.959

Area-averaged catchment yield fraction, Y =  0.580
Area-averaged low loss fraction, Yb =  0.420
User entry of time of concentration =  0.304 (hours)
++++
++

Watershed area =      19.60(Ac.)
Catchment Lag time =  0.243 hours
Unit interval =  5.000 minutes
Unit interval percentage of lag time = 34.2654
Hydrograph baseflow =  0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.393(In/Hr)
Average low loss rate fraction (Yb) = 0.420 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.565(In)
Computed peak 30-minute rainfall =  0.967(In)
Specified peak 1-hour rainfall =  1.190(In)
Computed peak 3-hour rainfall =  1.944(In)
Specified peak 6-hour rainfall =  2.650(In)
Specified peak 24-hour rainfall =  5.750(In)

Rainfall depth area reduction factors:
Using a total area of      19.60(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999      Adjusted rainfall =  0.564(In)
30-minute factor = 0.999     Adjusted rainfall =  0.966(In)
1-hour factor = 0.999        Adjusted rainfall =  1.189(In)
3-hour factor = 1.000        Adjusted rainfall =  1.944(In)
6-hour factor = 1.000        Adjusted rainfall =  2.650(In)

```


24-hour factor = 1.000 Adjusted rainfall = 5.750(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 = 237.04 (CFS))

1	2.161	5.122
2	12.710	25.006
3	39.574	63.678
4	59.013	46.077
5	69.402	24.627
6	76.309	16.373
7	81.222	11.645
8	84.953	8.843
9	87.980	7.174
10	90.213	5.294
11	92.063	4.386
12	93.620	3.690
13	94.863	2.946
14	95.925	2.517
15	96.795	2.063
16	97.460	1.576
17	97.953	1.170
18	98.305	0.833
19	98.707	0.954
20	99.118	0.975
21	99.497	0.898
22	99.729	0.551
23	100.000	0.275

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
---------------------	--------------------------------	-----------------------

1	0.5641	0.5641
2	0.6945	0.1304
3	0.7844	0.0898
4	0.8551	0.0707
5	0.9143	0.0592
6	0.9657	0.0514
7	1.0114	0.0457
8	1.0527	0.0413
9	1.0906	0.0379
10	1.1256	0.0350
11	1.1583	0.0326
12	1.1889	0.0306
13	1.2323	0.0434
14	1.2738	0.0416
15	1.3138	0.0399
16	1.3523	0.0385
17	1.3895	0.0372
18	1.4255	0.0360
19	1.4604	0.0349
20	1.4943	0.0339

21	1.5273	0.0330
22	1.5594	0.0321
23	1.5908	0.0313
24	1.6213	0.0306
25	1.6512	0.0299
26	1.6805	0.0292
27	1.7091	0.0286
28	1.7372	0.0280
29	1.7647	0.0275
30	1.7916	0.0270
31	1.8181	0.0265
32	1.8441	0.0260
33	1.8697	0.0256
34	1.8949	0.0251
35	1.9196	0.0247
36	1.9440	0.0244
37	1.9679	0.0239
38	1.9915	0.0236
39	2.0148	0.0233
40	2.0377	0.0229
41	2.0603	0.0226
42	2.0826	0.0223
43	2.1046	0.0220
44	2.1264	0.0217
45	2.1478	0.0215
46	2.1690	0.0212
47	2.1900	0.0209
48	2.2107	0.0207
49	2.2311	0.0205
50	2.2514	0.0202
51	2.2714	0.0200
52	2.2912	0.0198
53	2.3108	0.0196
54	2.3301	0.0194
55	2.3493	0.0192
56	2.3683	0.0190
57	2.3871	0.0188
58	2.4058	0.0186
59	2.4242	0.0184
60	2.4425	0.0183
61	2.4606	0.0181
62	2.4785	0.0179
63	2.4963	0.0178
64	2.5140	0.0176
65	2.5314	0.0175
66	2.5488	0.0173
67	2.5660	0.0172
68	2.5830	0.0170
69	2.5999	0.0169
70	2.6167	0.0168
71	2.6333	0.0166
72	2.6498	0.0165

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0165	0.0069	0.0096

2	0.0166	0.0070	0.0097
3	0.0169	0.0071	0.0098
4	0.0170	0.0072	0.0099
5	0.0173	0.0073	0.0101
6	0.0175	0.0073	0.0101
7	0.0178	0.0075	0.0103
8	0.0179	0.0075	0.0104
9	0.0183	0.0077	0.0106
10	0.0184	0.0077	0.0107
11	0.0188	0.0079	0.0109
12	0.0190	0.0080	0.0110
13	0.0194	0.0081	0.0112
14	0.0196	0.0082	0.0114
15	0.0200	0.0084	0.0116
16	0.0202	0.0085	0.0117
17	0.0207	0.0087	0.0120
18	0.0209	0.0088	0.0122
19	0.0215	0.0090	0.0125
20	0.0217	0.0091	0.0126
21	0.0223	0.0094	0.0129
22	0.0226	0.0095	0.0131
23	0.0233	0.0098	0.0135
24	0.0236	0.0099	0.0137
25	0.0244	0.0102	0.0141
26	0.0247	0.0104	0.0144
27	0.0256	0.0107	0.0148
28	0.0260	0.0109	0.0151
29	0.0270	0.0113	0.0157
30	0.0275	0.0115	0.0160
31	0.0286	0.0120	0.0166
32	0.0292	0.0123	0.0170
33	0.0306	0.0128	0.0177
34	0.0313	0.0132	0.0182
35	0.0330	0.0138	0.0191
36	0.0339	0.0142	0.0197
37	0.0360	0.0151	0.0209
38	0.0372	0.0156	0.0216
39	0.0399	0.0168	0.0232
40	0.0416	0.0174	0.0241
41	0.0306	0.0129	0.0178
42	0.0326	0.0137	0.0189
43	0.0379	0.0159	0.0220
44	0.0413	0.0174	0.0240
45	0.0514	0.0216	0.0298
46	0.0592	0.0249	0.0343
47	0.0898	0.0327	0.0571
48	0.1304	0.0327	0.0977
49	0.5641	0.0327	0.5314
50	0.0707	0.0297	0.0410
51	0.0457	0.0192	0.0265
52	0.0350	0.0147	0.0203
53	0.0434	0.0182	0.0252
54	0.0385	0.0162	0.0223
55	0.0349	0.0147	0.0203
56	0.0321	0.0135	0.0186
57	0.0299	0.0125	0.0173
58	0.0280	0.0118	0.0163
59	0.0265	0.0111	0.0154
60	0.0251	0.0106	0.0146
61	0.0239	0.0101	0.0139

62	0.0229	0.0096	0.0133
63	0.0220	0.0092	0.0128
64	0.0212	0.0089	0.0123
65	0.0205	0.0086	0.0119
66	0.0198	0.0083	0.0115
67	0.0192	0.0081	0.0111
68	0.0186	0.0078	0.0108
69	0.0181	0.0076	0.0105
70	0.0176	0.0074	0.0102
71	0.0172	0.0072	0.0100
72	0.0168	0.0070	0.0097

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Total soil rain loss = 0.88(In)
 Total effective rainfall = 1.77(In)
 Peak flow rate in flood hydrograph = 42.75(CFS)

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

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Hydrograph in 5 Minute intervals ((CFS))

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Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	12.5	25.0	37.5
50.0							

0+ 5	0.0003	0.05	Q				
0+10	0.0023	0.29	Q				
0+15	0.0085	0.90	Q				
0+20	0.0179	1.35	VQ				
0+25	0.0289	1.60	VQ				
0+30	0.0412	1.78	VQ				
0+35	0.0543	1.91	VQ				
0+40	0.0683	2.02	VQ				
0+45	0.0828	2.12	Q				
0+50	0.0980	2.19	Q				
0+55	0.1136	2.27	Q				
1+ 0	0.1296	2.33	Q				
1+ 5	0.1461	2.39	QV				

1+10	0.1630	2.45	QV			
1+15	0.1803	2.51	Q			
1+20	0.1979	2.56	Q			
1+25	0.2159	2.61	Q			
1+30	0.2342	2.66	QV			
1+35	0.2529	2.71	QV			
1+40	0.2720	2.77	QV			
1+45	0.2915	2.83	Q V			
1+50	0.3113	2.88	Q V			
1+55	0.3316	2.94	Q V			
2+ 0	0.3522	2.99	Q V			
2+ 5	0.3732	3.06	Q V			
2+10	0.3947	3.12	Q V			
2+15	0.4167	3.19	Q V			
2+20	0.4391	3.26	Q V			
2+25	0.4621	3.34	Q V			
2+30	0.4856	3.42	Q V			
2+35	0.5098	3.51	Q V			
2+40	0.5345	3.60	Q V			
2+45	0.5600	3.70	Q V			
2+50	0.5863	3.81	Q V			
2+55	0.6133	3.93	Q V			
3+ 0	0.6413	4.06	Q V			
3+ 5	0.6703	4.21	Q V			
3+10	0.7004	4.37	Q V			
3+15	0.7317	4.55	Q V			
3+20	0.7645	4.75	Q V			
3+25	0.7985	4.95	Q V			
3+30	0.8329	4.99	Q V			
3+35	0.8658	4.77	Q V			

3+40	0.8983	4.72	Q	V		
3+45	0.9325	4.96	Q	V		
3+50	0.9695	5.37	Q	V		
3+55	1.0116	6.12	Q	V		
4+ 0	1.0636	7.55	Q	V		
4+ 5	1.1507	12.64		Q V		
4+10	1.3219	24.86		VQ		
4+15	1.6164	42.75		V		Q
4+20	1.8410	32.62		VQ		
4+25	1.9834	20.68		Q V		
4+30	2.0902	15.50		Q	V	
4+35	2.1776	12.69		Q	V	
4+40	2.2525	10.87	Q		V	
4+45	2.3183	9.55	Q		V	
4+50	2.3747	8.20	Q		V	
4+55	2.4254	7.36	Q		V	
5+ 0	2.4713	6.67	Q		V	
5+ 5	2.5126	6.00	Q		V	
5+10	2.5506	5.51	Q		V	
5+15	2.5852	5.03	Q		V	
5+20	2.6166	4.57	Q		V	
5+25	2.6454	4.17	Q		V	
5+30	2.6720	3.86	Q		V	
5+35	2.6980	3.78	Q		V	
5+40	2.7231	3.65	Q		V	
5+45	2.7469	3.46	Q		V	
5+50	2.7686	3.15	Q		V	
5+55	2.7885	2.89	Q		V	
6+ 0	2.8068	2.66	Q		V	
6+ 5	2.8242	2.53	Q			

V|

V	6+10	2.8395	2.21	Q			
V	6+15	2.8501	1.54	Q			
V	6+20	2.8574	1.06	Q			
V	6+25	2.8629	0.79	Q			
V	6+30	2.8671	0.61	Q			
V	6+35	2.8704	0.48	Q			
V	6+40	2.8731	0.39	Q			
V	6+45	2.8752	0.31	Q			
V	6+50	2.8769	0.25	Q			
V	6+55	2.8783	0.20	Q			
V	7+ 0	2.8794	0.16	Q			
V	7+ 5	2.8802	0.13	Q			
V	7+10	2.8809	0.10	Q			
V	7+15	2.8814	0.08	Q			
V	7+20	2.8818	0.06	Q			
V	7+25	2.8821	0.05	Q			
V	7+30	2.8824	0.04	Q			
V	7+35	2.8826	0.03	Q			
V	7+40	2.8827	0.02	Q			
V	7+45	2.8827	0.01	Q			
V	7+50	2.8828	0.00	Q			
V							

Unit Hydrograph Analysis

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7.0

Study date 12/11/20

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

Program License Serial Number 6232

TTM 20368
SCS Unit Hydrograph
100yr 24hr

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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		
19.60	1	0.72

--
Rainfall data for year 2
19.60 6 0.93

--
Rainfall data for year 2
19.60 24 1.74

--
Rainfall data for year 100
19.60 1 1.19

```

--
Rainfall data for year 100
    19.60          6          2.65
-----
--
Rainfall data for year 100
    19.60          24         5.75
-----
--
++++
++

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

Fm      SCS curve   SCS curve      Area      Area      Fp(Fig C6)   Ap
(In/Hr) No.(AMCII) NO.(AMC 3)   (Ac.)     Fraction    (In/Hr)  (dec.)
    32.0      52.0      19.60      1.000      0.785      0.500
0.393

Area-averaged adjusted loss rate Fm (In/Hr) =  0.393

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

Area      Area      SCS CN      SCS CN      S      Pervious
(Ac.)     Fract      (AMC2)     (AMC3)      S      Yield Fr
    9.80    0.500      32.0      52.0      9.23    0.202
    9.80    0.500      98.0      98.0      0.20    0.959

Area-averaged catchment yield fraction, Y =  0.580
Area-averaged low loss fraction, Yb =  0.420
User entry of time of concentration =  0.304 (hours)
++++
++

Watershed area =      19.60(Ac.)
Catchment Lag time =  0.243 hours
Unit interval =  5.000 minutes
Unit interval percentage of lag time = 34.2654
Hydrograph baseflow =  0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.393(In/Hr)
Average low loss rate fraction (Yb) = 0.420 (decimal)
DESERT S-Graph Selected
Computed peak 5-minute rainfall =  0.565(In)
Computed peak 30-minute rainfall =  0.967(In)
Specified peak 1-hour rainfall =  1.190(In)
Computed peak 3-hour rainfall =  1.944(In)
Specified peak 6-hour rainfall =  2.650(In)
Specified peak 24-hour rainfall =  5.750(In)

Rainfall depth area reduction factors:
Using a total area of      19.60(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999      Adjusted rainfall =  0.564(In)
30-minute factor = 0.999     Adjusted rainfall =  0.966(In)
1-hour factor = 0.999        Adjusted rainfall =  1.189(In)
3-hour factor = 1.000        Adjusted rainfall =  1.944(In)
6-hour factor = 1.000        Adjusted rainfall =  2.650(In)

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24-hour factor = 1.000 Adjusted rainfall = 5.750(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))
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(K = 237.04 (CFS))

1	2.161	5.122
2	12.710	25.006
3	39.574	63.678
4	59.013	46.077
5	69.402	24.627
6	76.309	16.373
7	81.222	11.645
8	84.953	8.843
9	87.980	7.174
10	90.213	5.294
11	92.063	4.386
12	93.620	3.690
13	94.863	2.946
14	95.925	2.517
15	96.795	2.063
16	97.460	1.576
17	97.953	1.170
18	98.305	0.833
19	98.707	0.954
20	99.118	0.975
21	99.497	0.898
22	99.729	0.551
23	100.000	0.275

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
---------------------	--------------------------------	-----------------------

1	0.5641	0.5641
2	0.6945	0.1304
3	0.7844	0.0898
4	0.8551	0.0707
5	0.9143	0.0592
6	0.9657	0.0514
7	1.0114	0.0457
8	1.0527	0.0413
9	1.0906	0.0379
10	1.1256	0.0350
11	1.1583	0.0326
12	1.1889	0.0306
13	1.2323	0.0434
14	1.2738	0.0416
15	1.3138	0.0399
16	1.3523	0.0385
17	1.3895	0.0372
18	1.4255	0.0360
19	1.4604	0.0349
20	1.4943	0.0339

21	1.5273	0.0330
22	1.5594	0.0321
23	1.5908	0.0313
24	1.6213	0.0306
25	1.6512	0.0299
26	1.6805	0.0292
27	1.7091	0.0286
28	1.7372	0.0280
29	1.7647	0.0275
30	1.7916	0.0270
31	1.8181	0.0265
32	1.8441	0.0260
33	1.8697	0.0256
34	1.8949	0.0251
35	1.9196	0.0247
36	1.9440	0.0244
37	1.9679	0.0239
38	1.9915	0.0236
39	2.0148	0.0233
40	2.0377	0.0229
41	2.0603	0.0226
42	2.0826	0.0223
43	2.1046	0.0220
44	2.1264	0.0217
45	2.1478	0.0215
46	2.1690	0.0212
47	2.1900	0.0209
48	2.2107	0.0207
49	2.2311	0.0205
50	2.2514	0.0202
51	2.2714	0.0200
52	2.2912	0.0198
53	2.3108	0.0196
54	2.3301	0.0194
55	2.3493	0.0192
56	2.3683	0.0190
57	2.3871	0.0188
58	2.4058	0.0186
59	2.4242	0.0184
60	2.4425	0.0183
61	2.4606	0.0181
62	2.4785	0.0179
63	2.4963	0.0178
64	2.5140	0.0176
65	2.5314	0.0175
66	2.5488	0.0173
67	2.5660	0.0172
68	2.5830	0.0170
69	2.5999	0.0169
70	2.6167	0.0168
71	2.6333	0.0166
72	2.6498	0.0165
73	2.6703	0.0205
74	2.6907	0.0204
75	2.7110	0.0203
76	2.7311	0.0201
77	2.7511	0.0200
78	2.7711	0.0199
79	2.7908	0.0198
80	2.8105	0.0197

81	2.8301	0.0196
82	2.8496	0.0195
83	2.8690	0.0194
84	2.8882	0.0193
85	2.9074	0.0192
86	2.9264	0.0191
87	2.9454	0.0190
88	2.9643	0.0189
89	2.9831	0.0188
90	3.0017	0.0187
91	3.0203	0.0186
92	3.0388	0.0185
93	3.0573	0.0184
94	3.0756	0.0183
95	3.0938	0.0182
96	3.1120	0.0182
97	3.1301	0.0181
98	3.1480	0.0180
99	3.1660	0.0179
100	3.1838	0.0178
101	3.2015	0.0178
102	3.2192	0.0177
103	3.2368	0.0176
104	3.2543	0.0175
105	3.2718	0.0174
106	3.2892	0.0174
107	3.3065	0.0173
108	3.3237	0.0172
109	3.3409	0.0172
110	3.3579	0.0171
111	3.3750	0.0170
112	3.3919	0.0170
113	3.4088	0.0169
114	3.4256	0.0168
115	3.4424	0.0168
116	3.4591	0.0167
117	3.4757	0.0166
118	3.4923	0.0166
119	3.5088	0.0165
120	3.5253	0.0164
121	3.5416	0.0164
122	3.5580	0.0163
123	3.5742	0.0163
124	3.5904	0.0162
125	3.6066	0.0162
126	3.6227	0.0161
127	3.6387	0.0160
128	3.6547	0.0160
129	3.6706	0.0159
130	3.6865	0.0159
131	3.7023	0.0158
132	3.7181	0.0158
133	3.7338	0.0157
134	3.7495	0.0157
135	3.7651	0.0156
136	3.7807	0.0156
137	3.7962	0.0155
138	3.8116	0.0155
139	3.8270	0.0154
140	3.8424	0.0154

141	3.8577	0.0153
142	3.8730	0.0153
143	3.8882	0.0152
144	3.9034	0.0152
145	3.9185	0.0151
146	3.9336	0.0151
147	3.9486	0.0150
148	3.9636	0.0150
149	3.9785	0.0149
150	3.9934	0.0149
151	4.0083	0.0149
152	4.0231	0.0148
153	4.0379	0.0148
154	4.0526	0.0147
155	4.0673	0.0147
156	4.0819	0.0146
157	4.0965	0.0146
158	4.1111	0.0146
159	4.1256	0.0145
160	4.1401	0.0145
161	4.1545	0.0144
162	4.1689	0.0144
163	4.1833	0.0144
164	4.1976	0.0143
165	4.2119	0.0143
166	4.2261	0.0142
167	4.2403	0.0142
168	4.2545	0.0142
169	4.2686	0.0141
170	4.2827	0.0141
171	4.2968	0.0141
172	4.3108	0.0140
173	4.3248	0.0140
174	4.3388	0.0140
175	4.3527	0.0139
176	4.3666	0.0139
177	4.3804	0.0138
178	4.3942	0.0138
179	4.4080	0.0138
180	4.4217	0.0137
181	4.4354	0.0137
182	4.4491	0.0137
183	4.4628	0.0136
184	4.4764	0.0136
185	4.4900	0.0136
186	4.5035	0.0135
187	4.5170	0.0135
188	4.5305	0.0135
189	4.5439	0.0135
190	4.5574	0.0134
191	4.5708	0.0134
192	4.5841	0.0134
193	4.5974	0.0133
194	4.6107	0.0133
195	4.6240	0.0133
196	4.6372	0.0132
197	4.6504	0.0132
198	4.6636	0.0132
199	4.6768	0.0131
200	4.6899	0.0131

201	4.7030	0.0131
202	4.7160	0.0131
203	4.7291	0.0130
204	4.7421	0.0130
205	4.7550	0.0130
206	4.7680	0.0129
207	4.7809	0.0129
208	4.7938	0.0129
209	4.8067	0.0129
210	4.8195	0.0128
211	4.8323	0.0128
212	4.8451	0.0128
213	4.8579	0.0128
214	4.8706	0.0127
215	4.8833	0.0127
216	4.8960	0.0127
217	4.9086	0.0127
218	4.9213	0.0126
219	4.9339	0.0126
220	4.9464	0.0126
221	4.9590	0.0126
222	4.9715	0.0125
223	4.9840	0.0125
224	4.9965	0.0125
225	5.0090	0.0125
226	5.0214	0.0124
227	5.0338	0.0124
228	5.0462	0.0124
229	5.0585	0.0124
230	5.0709	0.0123
231	5.0832	0.0123
232	5.0954	0.0123
233	5.1077	0.0123
234	5.1199	0.0122
235	5.1322	0.0122
236	5.1444	0.0122
237	5.1565	0.0122
238	5.1687	0.0121
239	5.1808	0.0121
240	5.1929	0.0121
241	5.2050	0.0121
242	5.2170	0.0121
243	5.2291	0.0120
244	5.2411	0.0120
245	5.2531	0.0120
246	5.2650	0.0120
247	5.2770	0.0119
248	5.2889	0.0119
249	5.3008	0.0119
250	5.3127	0.0119
251	5.3246	0.0119
252	5.3364	0.0118
253	5.3483	0.0118
254	5.3601	0.0118
255	5.3718	0.0118
256	5.3836	0.0118
257	5.3953	0.0117
258	5.4071	0.0117
259	5.4188	0.0117
260	5.4304	0.0117

261	5.4421	0.0117	
262	5.4537	0.0116	
263	5.4654	0.0116	
264	5.4770	0.0116	
265	5.4886	0.0116	
266	5.5001	0.0116	
267	5.5117	0.0115	
268	5.5232	0.0115	
269	5.5347	0.0115	
270	5.5462	0.0115	
271	5.5577	0.0115	
272	5.5691	0.0115	
273	5.5805	0.0114	
274	5.5920	0.0114	
275	5.6033	0.0114	
276	5.6147	0.0114	
277	5.6261	0.0114	
278	5.6374	0.0113	
279	5.6487	0.0113	
280	5.6601	0.0113	
281	5.6713	0.0113	
282	5.6826	0.0113	
283	5.6939	0.0113	
284	5.7051	0.0112	
285	5.7163	0.0112	
286	5.7275	0.0112	
287	5.7387	0.0112	
288	5.7499	0.0112	

---	Unit	Unit	Unit
	Period	Rainfall	Effective
	(number)	(In)	Rainfall
		(In)	(In)

1	0.0112	0.0047	0.0065
2	0.0112	0.0047	0.0065
3	0.0112	0.0047	0.0065
4	0.0112	0.0047	0.0065
5	0.0113	0.0047	0.0065
6	0.0113	0.0047	0.0065
7	0.0113	0.0048	0.0066
8	0.0113	0.0048	0.0066
9	0.0114	0.0048	0.0066
10	0.0114	0.0048	0.0066
11	0.0114	0.0048	0.0066
12	0.0115	0.0048	0.0066
13	0.0115	0.0048	0.0067
14	0.0115	0.0048	0.0067
15	0.0115	0.0048	0.0067
16	0.0116	0.0049	0.0067
17	0.0116	0.0049	0.0067
18	0.0116	0.0049	0.0067
19	0.0117	0.0049	0.0068
20	0.0117	0.0049	0.0068
21	0.0117	0.0049	0.0068
22	0.0117	0.0049	0.0068
23	0.0118	0.0049	0.0068
24	0.0118	0.0050	0.0068
25	0.0118	0.0050	0.0069

26	0.0119	0.0050	0.0069
27	0.0119	0.0050	0.0069
28	0.0119	0.0050	0.0069
29	0.0120	0.0050	0.0069
30	0.0120	0.0050	0.0070
31	0.0120	0.0051	0.0070
32	0.0121	0.0051	0.0070
33	0.0121	0.0051	0.0070
34	0.0121	0.0051	0.0070
35	0.0122	0.0051	0.0071
36	0.0122	0.0051	0.0071
37	0.0122	0.0051	0.0071
38	0.0123	0.0051	0.0071
39	0.0123	0.0052	0.0071
40	0.0123	0.0052	0.0072
41	0.0124	0.0052	0.0072
42	0.0124	0.0052	0.0072
43	0.0125	0.0052	0.0072
44	0.0125	0.0052	0.0072
45	0.0125	0.0053	0.0073
46	0.0126	0.0053	0.0073
47	0.0126	0.0053	0.0073
48	0.0126	0.0053	0.0073
49	0.0127	0.0053	0.0074
50	0.0127	0.0053	0.0074
51	0.0128	0.0054	0.0074
52	0.0128	0.0054	0.0074
53	0.0128	0.0054	0.0074
54	0.0129	0.0054	0.0075
55	0.0129	0.0054	0.0075
56	0.0129	0.0054	0.0075
57	0.0130	0.0055	0.0075
58	0.0130	0.0055	0.0076
59	0.0131	0.0055	0.0076
60	0.0131	0.0055	0.0076
61	0.0132	0.0055	0.0076
62	0.0132	0.0055	0.0077
63	0.0133	0.0056	0.0077
64	0.0133	0.0056	0.0077
65	0.0134	0.0056	0.0078
66	0.0134	0.0056	0.0078
67	0.0135	0.0056	0.0078
68	0.0135	0.0057	0.0078
69	0.0135	0.0057	0.0079
70	0.0136	0.0057	0.0079
71	0.0136	0.0057	0.0079
72	0.0137	0.0057	0.0079
73	0.0137	0.0058	0.0080
74	0.0138	0.0058	0.0080
75	0.0138	0.0058	0.0080
76	0.0139	0.0058	0.0081
77	0.0140	0.0059	0.0081
78	0.0140	0.0059	0.0081
79	0.0141	0.0059	0.0082
80	0.0141	0.0059	0.0082
81	0.0142	0.0059	0.0082
82	0.0142	0.0060	0.0082
83	0.0143	0.0060	0.0083
84	0.0143	0.0060	0.0083
85	0.0144	0.0060	0.0084

86	0.0144	0.0061	0.0084
87	0.0145	0.0061	0.0084
88	0.0146	0.0061	0.0084
89	0.0146	0.0061	0.0085
90	0.0147	0.0062	0.0085
91	0.0148	0.0062	0.0086
92	0.0148	0.0062	0.0086
93	0.0149	0.0063	0.0086
94	0.0149	0.0063	0.0087
95	0.0150	0.0063	0.0087
96	0.0151	0.0063	0.0087
97	0.0152	0.0064	0.0088
98	0.0152	0.0064	0.0088
99	0.0153	0.0064	0.0089
100	0.0154	0.0064	0.0089
101	0.0155	0.0065	0.0090
102	0.0155	0.0065	0.0090
103	0.0156	0.0066	0.0091
104	0.0157	0.0066	0.0091
105	0.0158	0.0066	0.0091
106	0.0158	0.0066	0.0092
107	0.0159	0.0067	0.0092
108	0.0160	0.0067	0.0093
109	0.0161	0.0068	0.0093
110	0.0162	0.0068	0.0094
111	0.0163	0.0068	0.0094
112	0.0163	0.0069	0.0095
113	0.0164	0.0069	0.0095
114	0.0165	0.0069	0.0096
115	0.0166	0.0070	0.0097
116	0.0167	0.0070	0.0097
117	0.0168	0.0071	0.0098
118	0.0169	0.0071	0.0098
119	0.0170	0.0071	0.0099
120	0.0171	0.0072	0.0099
121	0.0172	0.0072	0.0100
122	0.0173	0.0073	0.0100
123	0.0174	0.0073	0.0101
124	0.0175	0.0074	0.0102
125	0.0177	0.0074	0.0103
126	0.0178	0.0075	0.0103
127	0.0179	0.0075	0.0104
128	0.0180	0.0076	0.0104
129	0.0182	0.0076	0.0105
130	0.0182	0.0077	0.0106
131	0.0184	0.0077	0.0107
132	0.0185	0.0078	0.0107
133	0.0187	0.0078	0.0108
134	0.0188	0.0079	0.0109
135	0.0190	0.0080	0.0110
136	0.0191	0.0080	0.0111
137	0.0193	0.0081	0.0112
138	0.0194	0.0081	0.0112
139	0.0196	0.0082	0.0114
140	0.0197	0.0083	0.0114
141	0.0199	0.0084	0.0116
142	0.0200	0.0084	0.0116
143	0.0203	0.0085	0.0118
144	0.0204	0.0086	0.0118
145	0.0165	0.0069	0.0096

146	0.0166	0.0070	0.0097
147	0.0169	0.0071	0.0098
148	0.0170	0.0072	0.0099
149	0.0173	0.0073	0.0101
150	0.0175	0.0073	0.0101
151	0.0178	0.0075	0.0103
152	0.0179	0.0075	0.0104
153	0.0183	0.0077	0.0106
154	0.0184	0.0077	0.0107
155	0.0188	0.0079	0.0109
156	0.0190	0.0080	0.0110
157	0.0194	0.0081	0.0112
158	0.0196	0.0082	0.0114
159	0.0200	0.0084	0.0116
160	0.0202	0.0085	0.0117
161	0.0207	0.0087	0.0120
162	0.0209	0.0088	0.0122
163	0.0215	0.0090	0.0125
164	0.0217	0.0091	0.0126
165	0.0223	0.0094	0.0129
166	0.0226	0.0095	0.0131
167	0.0233	0.0098	0.0135
168	0.0236	0.0099	0.0137
169	0.0244	0.0102	0.0141
170	0.0247	0.0104	0.0144
171	0.0256	0.0107	0.0148
172	0.0260	0.0109	0.0151
173	0.0270	0.0113	0.0157
174	0.0275	0.0115	0.0160
175	0.0286	0.0120	0.0166
176	0.0292	0.0123	0.0170
177	0.0306	0.0128	0.0177
178	0.0313	0.0132	0.0182
179	0.0330	0.0138	0.0191
180	0.0339	0.0142	0.0197
181	0.0360	0.0151	0.0209
182	0.0372	0.0156	0.0216
183	0.0399	0.0168	0.0232
184	0.0416	0.0174	0.0241
185	0.0306	0.0129	0.0178
186	0.0326	0.0137	0.0189
187	0.0379	0.0159	0.0220
188	0.0413	0.0174	0.0240
189	0.0514	0.0216	0.0298
190	0.0592	0.0249	0.0343
191	0.0898	0.0327	0.0571
192	0.1304	0.0327	0.0977
193	0.5641	0.0327	0.5314
194	0.0707	0.0297	0.0410
195	0.0457	0.0192	0.0265
196	0.0350	0.0147	0.0203
197	0.0434	0.0182	0.0252
198	0.0385	0.0162	0.0223
199	0.0349	0.0147	0.0203
200	0.0321	0.0135	0.0186
201	0.0299	0.0125	0.0173
202	0.0280	0.0118	0.0163
203	0.0265	0.0111	0.0154
204	0.0251	0.0106	0.0146
205	0.0239	0.0101	0.0139

206	0.0229	0.0096	0.0133
207	0.0220	0.0092	0.0128
208	0.0212	0.0089	0.0123
209	0.0205	0.0086	0.0119
210	0.0198	0.0083	0.0115
211	0.0192	0.0081	0.0111
212	0.0186	0.0078	0.0108
213	0.0181	0.0076	0.0105
214	0.0176	0.0074	0.0102
215	0.0172	0.0072	0.0100
216	0.0168	0.0070	0.0097
217	0.0205	0.0086	0.0119
218	0.0201	0.0085	0.0117
219	0.0198	0.0083	0.0115
220	0.0195	0.0082	0.0113
221	0.0192	0.0080	0.0111
222	0.0189	0.0079	0.0109
223	0.0186	0.0078	0.0108
224	0.0183	0.0077	0.0106
225	0.0181	0.0076	0.0105
226	0.0178	0.0075	0.0103
227	0.0176	0.0074	0.0102
228	0.0174	0.0073	0.0101
229	0.0172	0.0072	0.0100
230	0.0170	0.0071	0.0098
231	0.0168	0.0070	0.0097
232	0.0166	0.0070	0.0096
233	0.0164	0.0069	0.0095
234	0.0162	0.0068	0.0094
235	0.0160	0.0067	0.0093
236	0.0159	0.0067	0.0092
237	0.0157	0.0066	0.0091
238	0.0156	0.0065	0.0090
239	0.0154	0.0065	0.0089
240	0.0153	0.0064	0.0089
241	0.0151	0.0063	0.0088
242	0.0150	0.0063	0.0087
243	0.0149	0.0062	0.0086
244	0.0147	0.0062	0.0085
245	0.0146	0.0061	0.0085
246	0.0145	0.0061	0.0084
247	0.0144	0.0060	0.0083
248	0.0142	0.0060	0.0083
249	0.0141	0.0059	0.0082
250	0.0140	0.0059	0.0081
251	0.0139	0.0058	0.0081
252	0.0138	0.0058	0.0080
253	0.0137	0.0058	0.0080
254	0.0136	0.0057	0.0079
255	0.0135	0.0057	0.0078
256	0.0134	0.0056	0.0078
257	0.0133	0.0056	0.0077
258	0.0132	0.0056	0.0077
259	0.0131	0.0055	0.0076
260	0.0131	0.0055	0.0076
261	0.0130	0.0054	0.0075
262	0.0129	0.0054	0.0075
263	0.0128	0.0054	0.0074
264	0.0127	0.0053	0.0074
265	0.0127	0.0053	0.0073

266	0.0126	0.0053	0.0073
267	0.0125	0.0052	0.0073
268	0.0124	0.0052	0.0072
269	0.0124	0.0052	0.0072
270	0.0123	0.0052	0.0071
271	0.0122	0.0051	0.0071
272	0.0121	0.0051	0.0070
273	0.0121	0.0051	0.0070
274	0.0120	0.0050	0.0070
275	0.0119	0.0050	0.0069
276	0.0119	0.0050	0.0069
277	0.0118	0.0050	0.0069
278	0.0118	0.0049	0.0068
279	0.0117	0.0049	0.0068
280	0.0116	0.0049	0.0068
281	0.0116	0.0049	0.0067
282	0.0115	0.0048	0.0067
283	0.0115	0.0048	0.0067
284	0.0114	0.0048	0.0066
285	0.0114	0.0048	0.0066
286	0.0113	0.0047	0.0066
287	0.0113	0.0047	0.0065
288	0.0112	0.0047	0.0065

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Total soil rain loss = 2.18(In)
Total effective rainfall = 3.57(In)
Peak flow rate in flood hydrograph = 42.75(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

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Hydrograph in 5 Minute intervals ((CFS))

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Time(h+m)	Volume	Ac.Ft	Q(CFS)	0	12.5	25.0	37.5
50.0							
0+ 5	0.0002	0.03	Q				
0+10	0.0016	0.20	Q				
0+15	0.0058	0.61	Q				
0+20	0.0120	0.91	Q				
0+25	0.0194	1.07	Q				
0+30	0.0275	1.18	Q				
0+35	0.0361	1.26	VQ				

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	0+40	0.0452	1.32	VQ			
	0+45	0.0546	1.37	VQ			
	0+50	0.0643	1.40	VQ			
	0+55	0.0742	1.44	VQ			
	1+ 0	0.0842	1.46	VQ			
	1+ 5	0.0945	1.49	VQ			
	1+10	0.1048	1.50	VQ			
	1+15	0.1153	1.52	VQ			
	1+20	0.1259	1.54	VQ			
	1+25	0.1365	1.55	VQ			
	1+30	0.1473	1.56	Q			
	1+35	0.1580	1.57	Q			
	1+40	0.1689	1.58	Q			
	1+45	0.1798	1.59	Q			
	1+50	0.1908	1.59	Q			
	1+55	0.2018	1.60	Q			
	2+ 0	0.2129	1.60	Q			
	2+ 5	0.2239	1.61	Q			
	2+10	0.2350	1.61	Q			
	2+15	0.2462	1.62	Q			
	2+20	0.2573	1.62	Q			
	2+25	0.2685	1.62	Q			
	2+30	0.2797	1.63	Q			
	2+35	0.2910	1.63	QV			
	2+40	0.3023	1.64	QV			
	2+45	0.3136	1.64	QV			
	2+50	0.3249	1.65	QV			
	2+55	0.3363	1.65	QV			
	3+ 0	0.3477	1.66	QV			
	3+ 5	0.3591	1.66	QV			

	3+10	0.3706	1.66	QV			
	3+15	0.3821	1.67	QV			
	3+20	0.3936	1.67	QV			
	3+25	0.4052	1.68	QV			
	3+30	0.4168	1.68	QV			
	3+35	0.4284	1.69	QV			
	3+40	0.4401	1.69	Q V			
	3+45	0.4517	1.70	Q V			
	3+50	0.4635	1.70	Q V			
	3+55	0.4752	1.71	Q V			
	4+ 0	0.4870	1.71	Q V			
	4+ 5	0.4989	1.72	Q V			
	4+10	0.5107	1.72	Q V			
	4+15	0.5226	1.73	Q V			
	4+20	0.5346	1.73	Q V			
	4+25	0.5466	1.74	Q V			
	4+30	0.5586	1.74	Q V			
	4+35	0.5706	1.75	Q V			
	4+40	0.5827	1.76	Q V			
	4+45	0.5948	1.76	Q V			
	4+50	0.6070	1.77	Q V			
	4+55	0.6192	1.77	Q V			
	5+ 0	0.6314	1.78	Q V			
	5+ 5	0.6437	1.78	Q V			
	5+10	0.6561	1.79	Q V			
	5+15	0.6684	1.80	Q V			
	5+20	0.6808	1.80	Q V			
	5+25	0.6933	1.81	Q V			
	5+30	0.7057	1.81	Q V			
	5+35	0.7183	1.82	Q V			

	5+40	0.7309	1.83	Q	V			
	5+45	0.7435	1.83	Q	V			
	5+50	0.7561	1.84	Q	V			
	5+55	0.7688	1.84	Q	V			
	6+ 0	0.7816	1.85	Q	V			
	6+ 5	0.7944	1.86	Q	V			
	6+10	0.8072	1.86	Q	V			
	6+15	0.8201	1.87	Q	V			
	6+20	0.8330	1.88	Q	V			
	6+25	0.8460	1.88	Q	V			
	6+30	0.8590	1.89	Q	V			
	6+35	0.8721	1.90	Q	V			
	6+40	0.8852	1.91	Q	V			
	6+45	0.8984	1.91	Q	V			
	6+50	0.9116	1.92	Q	V			
	6+55	0.9249	1.93	Q	V			
	7+ 0	0.9382	1.94	Q	V			
	7+ 5	0.9516	1.94	Q	V			
	7+10	0.9651	1.95	Q	V			
	7+15	0.9785	1.96	Q	V			
	7+20	0.9921	1.97	Q	V			
	7+25	1.0057	1.97	Q	V			
	7+30	1.0193	1.98	Q	V			
	7+35	1.0331	1.99	Q	V			
	7+40	1.0468	2.00	Q	V			
	7+45	1.0606	2.01	Q	V			
	7+50	1.0745	2.02	Q	V			
	7+55	1.0885	2.02	Q	V			
	8+ 0	1.1025	2.03	Q	V			
	8+ 5	1.1166	2.04	Q	V			

	8+10	1.1307	2.05	Q	V			
	8+15	1.1449	2.06	Q	V			
	8+20	1.1591	2.07	Q	V			
	8+25	1.1735	2.08	Q	V			
	8+30	1.1878	2.09	Q	V			
	8+35	1.2023	2.10	Q	V			
	8+40	1.2168	2.11	Q	V			
	8+45	1.2314	2.12	Q	V			
	8+50	1.2461	2.13	Q	V			
	8+55	1.2608	2.14	Q	V			
	9+ 0	1.2756	2.15	Q	V			
	9+ 5	1.2905	2.16	Q	V			
	9+10	1.3055	2.17	Q	V			
	9+15	1.3205	2.18	Q	V			
	9+20	1.3356	2.19	Q	V			
	9+25	1.3508	2.21	Q	V			
	9+30	1.3661	2.22	Q	V			
	9+35	1.3815	2.23	Q	V			
	9+40	1.3969	2.24	Q	V			
	9+45	1.4124	2.25	Q	V			
	9+50	1.4280	2.27	Q	V			
	9+55	1.4437	2.28	Q	V			
	10+ 0	1.4595	2.29	Q	V			
	10+ 5	1.4754	2.31	Q	V			
	10+10	1.4914	2.32	Q	V			
	10+15	1.5074	2.33	Q	V			
	10+20	1.5236	2.35	Q	V			
	10+25	1.5399	2.36	Q	V			
	10+30	1.5562	2.38	Q	V			
	10+35	1.5727	2.39	Q	V			

	10+40	1.5893	2.41	Q	V		
	10+45	1.6060	2.42	Q	V		
	10+50	1.6227	2.44	Q	V		
	10+55	1.6396	2.45	Q	V		
	11+ 0	1.6567	2.47	Q	V		
	11+ 5	1.6738	2.49	Q	V		
	11+10	1.6910	2.50	Q	V		
	11+15	1.7084	2.52	Q	V		
	11+20	1.7259	2.54	Q	V		
	11+25	1.7436	2.56	Q	V		
	11+30	1.7613	2.58	Q	V		
	11+35	1.7792	2.60	Q	V		
	11+40	1.7972	2.62	Q	V		
	11+45	1.8154	2.64	Q	V		
	11+50	1.8337	2.66	Q	V		
	11+55	1.8522	2.68	Q	V		
	12+ 0	1.8708	2.70	Q	V		
	12+ 5	1.8895	2.72	Q	V		
	12+10	1.9080	2.68	Q	V		
	12+15	1.9255	2.55	Q	V		
	12+20	1.9425	2.47	Q	V		
	12+25	1.9593	2.43	Q	V		
	12+30	1.9760	2.42	Q	V		
	12+35	1.9926	2.42	Q	V		
	12+40	2.0093	2.43	Q	V		
	12+45	2.0261	2.44	Q	V		
	12+50	2.0431	2.46	Q	V		
	12+55	2.0601	2.48	Q	V		
	13+ 0	2.0774	2.50	Q	V		
	13+ 5	2.0948	2.53	Q	V		

13+10	2.1124	2.56	Q	V	
13+15	2.1303	2.59	Q	V	
13+20	2.1484	2.63	Q	V	
13+25	2.1667	2.66	Q	V	
13+30	2.1853	2.70	Q	V	
13+35	2.2043	2.75	Q	V	
13+40	2.2235	2.79	Q	V	
13+45	2.2430	2.84	Q	V	
13+50	2.2629	2.89	Q	V	
13+55	2.2831	2.94	Q	V	
14+ 0	2.3037	2.99	Q	V	
14+ 5	2.3248	3.06	Q	V	
14+10	2.3463	3.12	Q	V	
14+15	2.3682	3.19	Q	V	
14+20	2.3906	3.26	Q	V	
14+25	2.4136	3.34	Q	V	
14+30	2.4372	3.42	Q	V	
14+35	2.4613	3.51	Q	V	
14+40	2.4861	3.60	Q	V	
14+45	2.5116	3.70	Q	V	
14+50	2.5378	3.81	Q	V	
14+55	2.5649	3.93	Q	V	
15+ 0	2.5929	4.06	Q	V	
15+ 5	2.6219	4.21	Q	V	
15+10	2.6519	4.37	Q	V	
15+15	2.6833	4.55	Q	V	
15+20	2.7160	4.75	Q	V	
15+25	2.7501	4.95	Q	V	
15+30	2.7845	4.99	Q	V	
15+35	2.8173	4.77	Q	V	

15+40	2.8498	4.72	Q		V	
15+45	2.8840	4.96	Q		V	
15+50	2.9210	5.37	Q		V	
15+55	2.9632	6.12	Q		V	
16+ 0	3.0152	7.55	Q		V	
16+ 5	3.1022	12.64	Q		V	
16+10	3.2735	24.86			Q V	
16+15	3.5679	42.75			V	Q
16+20	3.7925	32.62			Q	
16+25	3.9350	20.68		Q	V	
16+30	4.0417	15.50		Q	V	
16+35	4.1292	12.69	Q		V	
16+40	4.2040	10.87	Q		V	
16+45	4.2698	9.55	Q		V	
16+50	4.3263	8.20	Q		V	
16+55	4.3769	7.36	Q		V	
17+ 0	4.4228	6.67	Q		V	
17+ 5	4.4642	6.00	Q		V	
17+10	4.5021	5.51	Q		V	
17+15	4.5367	5.03	Q		V	
17+20	4.5682	4.57	Q		V	
17+25	4.5969	4.17	Q		V	
17+30	4.6235	3.86	Q		V	
17+35	4.6495	3.78	Q		V	
17+40	4.6746	3.65	Q		V	
17+45	4.6985	3.46	Q		V	
17+50	4.7202	3.15	Q		V	
17+55	4.7401	2.89	Q		V	
18+ 0	4.7584	2.66	Q		V	
18+ 5	4.7762	2.59	Q		V	

18+10	4.7939	2.57	Q			V
18+15	4.8122	2.65	Q			V
18+20	4.8307	2.70	Q			V
18+25	4.8493	2.70	Q			V
18+30	4.8678	2.68	Q			V
18+35	4.8860	2.65	Q			V
18+40	4.9041	2.63	Q			V
18+45	4.9220	2.60	Q			V
18+50	4.9397	2.57	Q			V
18+55	4.9572	2.54	Q			V
19+ 0	4.9745	2.51	Q			V
19+ 5	4.9915	2.48	Q			V
19+10	5.0084	2.45	Q			V
19+15	5.0251	2.42	Q			V
19+20	5.0416	2.39	Q			V
19+25	5.0578	2.36	Q			V
19+30	5.0739	2.34	Q			V
19+35	5.0899	2.31	Q			V
19+40	5.1056	2.29	Q			V
19+45	5.1212	2.26	Q			V
19+50	5.1366	2.24	Q			V
19+55	5.1519	2.22	Q			V
20+ 0	5.1670	2.19	Q			V
20+ 5	5.1819	2.17	Q			V
20+10	5.1967	2.15	Q			V
20+15	5.2114	2.13	Q			V
20+20	5.2259	2.11	Q			V
20+25	5.2403	2.09	Q			V
20+30	5.2545	2.07	Q			V
20+35	5.2686	2.05	Q			V

	20+40	5.2826	2.03	Q				V
	20+45	5.2965	2.01	Q				V
	20+50	5.3102	2.00	Q				V
	20+55	5.3239	1.98	Q				V
	21+ 0	5.3374	1.96	Q				V
	21+ 5	5.3508	1.95	Q				V
	21+10	5.3641	1.93	Q				V
	21+15	5.3773	1.92	Q				V
	21+20	5.3905	1.90	Q				V
	21+25	5.4035	1.89	Q				V
	21+30	5.4164	1.88	Q				V
	21+35	5.4292	1.86	Q				V
	21+40	5.4419	1.85	Q				V
	21+45	5.4546	1.84	Q				V
	21+50	5.4671	1.82	Q				V
	21+55	5.4796	1.81	Q				V
	22+ 0	5.4920	1.80	Q				V
	22+ 5	5.5043	1.79	Q				V
	22+10	5.5165	1.78	Q				V
	22+15	5.5287	1.76	Q				V
	22+20	5.5408	1.75	Q				V
	22+25	5.5528	1.74	Q				V
	22+30	5.5647	1.73	Q				V
	22+35	5.5765	1.72	Q				V
	22+40	5.5883	1.71	Q				V
	22+45	5.6000	1.70	Q				V
	22+50	5.6117	1.69	Q				V
	22+55	5.6233	1.68	Q				V
	23+ 0	5.6348	1.67	Q				V
	23+ 5	5.6462	1.66	Q				V

	23+10	5.6576	1.65	Q				V
	23+15	5.6690	1.64	Q				V
	23+20	5.6802	1.64	Q				
V	23+25	5.6914	1.63	Q				
V	23+30	5.7026	1.62	Q				
V	23+35	5.7137	1.61	Q				
V	23+40	5.7247	1.60	Q				
V	23+45	5.7357	1.59	Q				
V	23+50	5.7466	1.59	Q				
V	23+55	5.7575	1.58	Q				
V	24+ 0	5.7683	1.57	Q				
V	24+ 5	5.7788	1.53	Q				
V	24+10	5.7882	1.36	Q				
V	24+15	5.7947	0.94	Q				
V	24+20	5.7991	0.64	Q				
V	24+25	5.8024	0.48	Q				
V	24+30	5.8049	0.37	Q				
V	24+35	5.8069	0.29	Q				
V	24+40	5.8085	0.23	Q				
V	24+45	5.8098	0.19	Q				
V	24+50	5.8109	0.15	Q				
V	24+55	5.8117	0.12	Q				
V	25+ 0	5.8124	0.10	Q				
V	25+ 5	5.8129	0.08	Q				
V	25+10	5.8133	0.06	Q				
V	25+15	5.8137	0.05	Q				
V	25+20	5.8139	0.04	Q				
V	25+25	5.8141	0.03	Q				
V	25+30	5.8143	0.02	Q				
V	25+35	5.8144	0.02	Q				

V	25+40	5.8145	0.01	Q			
V	25+45	5.8145	0.01	Q			
V	25+50	5.8145	0.00	Q			

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2012
Study date: 12/21/20

TTM 20368
100yr 24hr
Basin Routing - post dev flows

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Program License Serial Number 6232

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***** HYDROGRAPH INFORMATION

From study/file name: tannerdev.rte
*****HYDROGRAPH
DATA*****
Number of intervals = 310
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 42.752 (CFS)
Total volume = 5.815 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS) 0.000 0.000 0.000 0.000
0.000
Vol (Ac.Ft) 0.000 0.000 0.000 0.000
0.000

++++
++++
Process from Point/Station 103.000 to Point/Station
104.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

--
Total number of inflow hydrograph intervals = 310
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

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

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Depth vs. Storage and Depth vs. Discharge data:
  Basin Depth   Storage   Outflow   (S-0*dt/2)   (S+0*dt/2)
    (Ft.)      (Ac.Ft)    (CFS)    (Ac.Ft)    (Ac.Ft)
-----
---
      0.000      0.000      0.000      0.000      0.000
      1.000      0.150      0.170      0.149      0.151
      2.000      0.340      0.170      0.339      0.341
      3.000      0.640     16.000      0.585      0.695
      4.000      1.050     16.000      0.995      1.105
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                        Hydrograph Detention Basin Routing
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Graph values: 'I'= unit inflow; 'O'=outflow at time shown
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Time   Inflow   Outflow   Storage
Depth  (Hours)  (CFS)    (CFS)    (Ac.Ft)
(Ft.)
0.003  0.03      0.00     0.000
0.00   0.167    0.00     0.001
0.01   0.250    0.00     0.004
0.02   0.333    0.01     0.009
0.06   0.417    0.02     0.016
0.10   0.500    0.03     0.023
0.15   0.583    0.04     0.031
0.21   0.667    0.05     0.040
0.27   0.750    0.06     0.049
0.33   0.833    0.07     0.058
0.39   0.917    0.08     0.067
0.45   1.000    0.09     0.077
0.51   1.083    0.10     0.086
0.57   1.167    0.11     0.096
0.64   1.250    0.12     0.105

```

0.70									
1.333	1.54	0.13	0.115	OI					
0.77									
1.417	1.55	0.14	0.125	OI					
0.83									
1.500	1.56	0.15	0.134	OI					
0.90									
1.583	1.57	0.16	0.144	OI					
0.96									
1.667	1.58	0.17	0.154	OI					
1.02									
1.750	1.59	0.17	0.163	OI					
1.07									
1.833	1.59	0.17	0.173	OI					
1.12									
1.917	1.60	0.17	0.183	OI					
1.17									
2.000	1.60	0.17	0.193	OI					
1.23									
2.083	1.61	0.17	0.203	OI					
1.28									
2.167	1.61	0.17	0.213	OI					
1.33									
2.250	1.62	0.17	0.223	OI					
1.38									
2.333	1.62	0.17	0.233	OI					
1.43									
2.417	1.62	0.17	0.243	OI					
1.49									
2.500	1.63	0.17	0.253	OI					
1.54									
2.583	1.63	0.17	0.263	OI					
1.59									
2.667	1.64	0.17	0.273	OI					
1.65									
2.750	1.64	0.17	0.283	OI					
1.70									
2.833	1.65	0.17	0.293	OI					
1.75									
2.917	1.65	0.17	0.303	OI					
1.81									
3.000	1.66	0.17	0.313	OI					
1.86									
3.083	1.66	0.17	0.324	OI					
1.91									
3.167	1.66	0.17	0.334	OI					
1.97									
3.250	1.67	0.36	0.344	OI					
2.01									
3.333	1.67	0.76	0.351	OI					
2.04									
3.417	1.68	1.05	0.357	OI					
2.06									
3.500	1.68	1.24	0.360	OI					
2.07									
3.583	1.69	1.38	0.363	0					
2.08									
3.667	1.69	1.47	0.365	0					
2.08									
3.750	1.70	1.54	0.366	0					

2.09									
3.833	1.70	1.59	0.367	0					
2.09									
3.917	1.71	1.63	0.368	0					
2.09									
4.000	1.71	1.65	0.368	0					
2.09									
4.083	1.72	1.67	0.368	0					
2.09									
4.167	1.72	1.69	0.369	0					
2.10									
4.250	1.73	1.70	0.369	0					
2.10									
4.333	1.73	1.71	0.369	0					
2.10									
4.417	1.74	1.72	0.369	0					
2.10									
4.500	1.74	1.72	0.369	0					
2.10									
4.583	1.75	1.73	0.370	0					
2.10									
4.667	1.76	1.74	0.370	0					
2.10									
4.750	1.76	1.74	0.370	0					
2.10									
4.833	1.77	1.75	0.370	0					
2.10									
4.917	1.77	1.76	0.370	0					
2.10									
5.000	1.78	1.76	0.370	0					
2.10									
5.083	1.78	1.77	0.370	0					
2.10									
5.167	1.79	1.77	0.370	0					
2.10									
5.250	1.80	1.78	0.370	0					
2.10									
5.333	1.80	1.78	0.371	0					
2.10									
5.417	1.81	1.79	0.371	0					
2.10									
5.500	1.81	1.80	0.371	0					
2.10									
5.583	1.82	1.80	0.371	0					
2.10									
5.667	1.83	1.81	0.371	0					
2.10									
5.750	1.83	1.81	0.371	0					
2.10									
5.833	1.84	1.82	0.371	0					
2.10									
5.917	1.84	1.83	0.371	0					
2.10									
6.000	1.85	1.83	0.372	0					
2.11									
6.083	1.86	1.84	0.372	0					
2.11									
6.167	1.86	1.85	0.372	0					
2.11									
6.250	1.87	1.85	0.372	0					

2.11									
6.333	1.88	1.86	0.372	0					
2.11									
6.417	1.88	1.87	0.372	0					
2.11									
6.500	1.89	1.87	0.372	0					
2.11									
6.583	1.90	1.88	0.372	0					
2.11									
6.667	1.91	1.89	0.373	0					
2.11									
6.750	1.91	1.89	0.373	0					
2.11									
6.833	1.92	1.90	0.373	0					
2.11									
6.917	1.93	1.91	0.373	0					
2.11									
7.000	1.94	1.92	0.373	0					
2.11									
7.083	1.94	1.92	0.373	0					
2.11									
7.167	1.95	1.93	0.373	0					
2.11									
7.250	1.96	1.94	0.373	0					
2.11									
7.333	1.97	1.95	0.374	0					
2.11									
7.417	1.97	1.95	0.374	0					
2.11									
7.500	1.98	1.96	0.374	0					
2.11									
7.583	1.99	1.97	0.374	0					
2.11									
7.667	2.00	1.98	0.374	0					
2.11									
7.750	2.01	1.98	0.374	0					
2.11									
7.833	2.02	1.99	0.375	0					
2.12									
7.917	2.02	2.00	0.375	0					
2.12									
8.000	2.03	2.01	0.375	0					
2.12									
8.083	2.04	2.02	0.375	0					
2.12									
8.167	2.05	2.03	0.375	0					
2.12									
8.250	2.06	2.04	0.375	0					
2.12									
8.333	2.07	2.05	0.376	0					
2.12									
8.417	2.08	2.05	0.376	0					
2.12									
8.500	2.09	2.06	0.376	0					
2.12									
8.583	2.10	2.07	0.376	0					
2.12									
8.667	2.11	2.08	0.376	0					
2.12									
8.750	2.12	2.09	0.376	0					

2.12									
8.833	2.13	2.10	0.377	0					
2.12									
8.917	2.14	2.11	0.377	0					
2.12									
9.000	2.15	2.12	0.377	0					
2.12									
9.083	2.16	2.13	0.377	0					
2.12									
9.167	2.17	2.14	0.377	0					
2.12									
9.250	2.18	2.15	0.378	0					
2.13									
9.333	2.19	2.16	0.378	0					
2.13									
9.417	2.21	2.18	0.378	0					
2.13									
9.500	2.22	2.19	0.378	0					
2.13									
9.583	2.23	2.20	0.378	0					
2.13									
9.667	2.24	2.21	0.379	0					
2.13									
9.750	2.25	2.22	0.379	0					
2.13									
9.833	2.27	2.23	0.379	0					
2.13									
9.917	2.28	2.25	0.379	0					
2.13									
10.000	2.29	2.26	0.380	0					
2.13									
10.083	2.31	2.27	0.380	0					
2.13									
10.167	2.32	2.28	0.380	0					
2.13									
10.250	2.33	2.30	0.380	0					
2.13									
10.333	2.35	2.31	0.381	0					
2.14									
10.417	2.36	2.32	0.381	0					
2.14									
10.500	2.38	2.34	0.381	0					
2.14									
10.583	2.39	2.35	0.381	0					
2.14									
10.667	2.41	2.37	0.382	0					
2.14									
10.750	2.42	2.38	0.382	0					
2.14									
10.833	2.44	2.40	0.382	0					
2.14									
10.917	2.45	2.41	0.382	0					
2.14									
11.000	2.47	2.43	0.383	0					
2.14									
11.083	2.49	2.44	0.383	0					
2.14									
11.167	2.50	2.46	0.383	0					
2.14									
11.250	2.52	2.48	0.384	0					

2.15									
11.333	2.54	2.49	0.384	0					
2.15									
11.417	2.56	2.51	0.384	0					
2.15									
11.500	2.58	2.53	0.385	0					
2.15									
11.583	2.60	2.55	0.385	0					
2.15									
11.667	2.62	2.57	0.385	0					
2.15									
11.750	2.64	2.59	0.386	0					
2.15									
11.833	2.66	2.61	0.386	0					
2.15									
11.917	2.68	2.63	0.387	OI					
2.16									
12.000	2.70	2.65	0.387	OI					
2.16									
12.083	2.72	2.67	0.387	OI					
2.16									
12.167	2.68	2.68	0.387	0					
2.16									
12.250	2.55	2.66	0.387	0					
2.16									
12.333	2.47	2.61	0.386	0					
2.15									
12.417	2.43	2.56	0.385	0					
2.15									
12.500	2.42	2.52	0.385	0					
2.15									
12.583	2.42	2.49	0.384	0					
2.15									
12.667	2.43	2.47	0.384	0					
2.15									
12.750	2.44	2.46	0.383	0					
2.14									
12.833	2.46	2.46	0.383	0					
2.14									
12.917	2.48	2.46	0.383	0					
2.14									
13.000	2.50	2.47	0.384	0					
2.15									
13.083	2.53	2.48	0.384	0					
2.15									
13.167	2.56	2.50	0.384	0					
2.15									
13.250	2.59	2.53	0.385	0					
2.15									
13.333	2.63	2.55	0.385	0					
2.15									
13.417	2.66	2.58	0.386	0					
2.15									
13.500	2.70	2.61	0.386	OI					
2.15									
13.583	2.75	2.65	0.387	OI					
2.16									
13.667	2.79	2.68	0.388	0					
2.16									
13.750	2.84	2.72	0.388	0					

2.16									
13.833	2.89	2.77	0.389	0					
2.16									
13.917	2.94	2.81	0.390	0					
2.17									
14.000	2.99	2.86	0.391	0					
2.17									
14.083	3.06	2.91	0.392	0					
2.17									
14.167	3.12	2.96	0.393	0					
2.18									
14.250	3.19	3.02	0.394	0					
2.18									
14.333	3.26	3.08	0.395	0					
2.18									
14.417	3.34	3.15	0.396	0					
2.19									
14.500	3.42	3.22	0.398	0					
2.19									
14.583	3.51	3.29	0.399	0					
2.20									
14.667	3.60	3.37	0.401	0					
2.20									
14.750	3.70	3.46	0.402	0					
2.21									
14.833	3.81	3.55	0.404	0					
2.21									
14.917	3.93	3.65	0.406	0					
2.22									
15.000	4.06	3.76	0.408	OI					
2.23									
15.083	4.21	3.87	0.410	OI					
2.23									
15.167	4.37	4.00	0.413	OI					
2.24									
15.250	4.55	4.14	0.415	0					
2.25									
15.333	4.75	4.30	0.418	0					
2.26									
15.417	4.95	4.47	0.421	0					
2.27									
15.500	4.99	4.62	0.424	0					
2.28									
15.583	4.77	4.70	0.426	0					
2.29									
15.667	4.72	4.72	0.426	0					
2.29									
15.750	4.96	4.75	0.427	0					
2.29									
15.833	5.37	4.88	0.429	OI					
2.30									
15.917	6.12	5.15	0.434	OI					
2.31									
16.000	7.55	5.67	0.444	OI					
2.35									
16.083	12.64	7.03	0.470	0	I				
2.43									
16.167	24.86	10.63	0.538		0	I			
2.66									
16.250	42.75	16.00	0.679			0			I

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2.16									
18.833	2.57	2.65	0.387	0					
2.16									
18.917	2.54	2.62	0.386	0					
2.15									
19.000	2.51	2.59	0.386	0					
2.15									
19.083	2.48	2.56	0.385	0					
2.15									
19.167	2.45	2.53	0.385	0					
2.15									
19.250	2.42	2.50	0.384	0					
2.15									
19.333	2.39	2.47	0.384	0					
2.15									
19.417	2.36	2.44	0.383	0					
2.14									
19.500	2.34	2.41	0.383	0					
2.14									
19.583	2.31	2.39	0.382	0					
2.14									
19.667	2.29	2.36	0.382	0					
2.14									
19.750	2.26	2.33	0.381	0					
2.14									
19.833	2.24	2.31	0.381	0					
2.14									
19.917	2.22	2.28	0.380	0					
2.13									
20.000	2.19	2.26	0.380	0					
2.13									
20.083	2.17	2.24	0.379	0					
2.13									
20.167	2.15	2.21	0.379	0					
2.13									
20.250	2.13	2.19	0.378	0					
2.13									
20.333	2.11	2.17	0.378	0					
2.13									
20.417	2.09	2.15	0.377	0					
2.12									
20.500	2.07	2.12	0.377	0					
2.12									
20.583	2.05	2.10	0.377	0					
2.12									
20.667	2.03	2.08	0.376	0					
2.12									
20.750	2.01	2.07	0.376	0					
2.12									
20.833	2.00	2.05	0.376	0					
2.12									
20.917	1.98	2.03	0.375	0					
2.12									
21.000	1.96	2.01	0.375	0					
2.12									
21.083	1.95	1.99	0.375	0					
2.12									
21.167	1.93	1.98	0.374	0					
2.11									
21.250	1.92	1.96	0.374	0					

2.11									
21.333	1.90	1.95	0.374	0					
2.11									
21.417	1.89	1.93	0.373	0					
2.11									
21.500	1.88	1.92	0.373	0					
2.11									
21.583	1.86	1.90	0.373	0					
2.11									
21.667	1.85	1.89	0.373	0					
2.11									
21.750	1.84	1.87	0.372	0					
2.11									
21.833	1.82	1.86	0.372	0					
2.11									
21.917	1.81	1.85	0.372	0					
2.11									
22.000	1.80	1.83	0.372	0					
2.11									
22.083	1.79	1.82	0.371	0					
2.10									
22.167	1.78	1.81	0.371	0					
2.10									
22.250	1.76	1.80	0.371	0					
2.10									
22.333	1.75	1.79	0.371	0					
2.10									
22.417	1.74	1.77	0.370	0					
2.10									
22.500	1.73	1.76	0.370	0					
2.10									
22.583	1.72	1.75	0.370	0					
2.10									
22.667	1.71	1.74	0.370	0					
2.10									
22.750	1.70	1.73	0.370	0					
2.10									
22.833	1.69	1.72	0.369	0					
2.10									
22.917	1.68	1.71	0.369	0					
2.10									
23.000	1.67	1.70	0.369	0					
2.10									
23.083	1.66	1.69	0.369	0					
2.10									
23.167	1.65	1.68	0.369	0					
2.10									
23.250	1.64	1.67	0.368	0					
2.09									
23.333	1.64	1.66	0.368	0					
2.09									
23.417	1.63	1.65	0.368	0					
2.09									
23.500	1.62	1.64	0.368	0					
2.09									
23.583	1.61	1.63	0.368	0					
2.09									
23.667	1.60	1.63	0.368	0					
2.09									
23.750	1.59	1.62	0.367	0					

2.09									
23.833	1.59	1.61	0.367	0					
2.09									
23.917	1.58	1.60	0.367	0					
2.09									
24.000	1.57	1.59	0.367	0					
2.09									
24.083	1.53	1.58	0.367	0					
2.09									
24.167	1.36	1.54	0.366	0					
2.09									
24.250	0.94	1.42	0.364	10					
2.08									
24.333	0.64	1.23	0.360	0					
2.07									
24.417	0.48	1.02	0.356	0					
2.05									
24.500	0.37	0.84	0.353	0					
2.04									
24.583	0.29	0.68	0.350	0					
2.03									
24.667	0.23	0.55	0.347	0					
2.02									
24.750	0.19	0.45	0.345	0					
2.02									
24.833	0.15	0.36	0.344	0					
2.01									
24.917	0.12	0.29	0.342	0					
2.01									
25.000	0.10	0.24	0.341	0					
2.00									
25.083	0.08	0.19	0.340	0					
2.00									
25.167	0.06	0.17	0.340	0					
2.00									
25.250	0.05	0.17	0.339	0					
1.99									
25.333	0.04	0.17	0.338	0					
1.99									
25.417	0.03	0.17	0.337	0					
1.98									
25.500	0.02	0.17	0.336	0					
1.98									
25.583	0.02	0.17	0.335	0					
1.97									
25.667	0.01	0.17	0.334	0					
1.97									
25.750	0.01	0.17	0.333	0					
1.96									
25.833	0.00	0.17	0.332	0					
1.96									
25.917	0.00	0.17	0.330	0					
1.95									
26.000	0.00	0.17	0.329	0					
1.94									
26.083	0.00	0.17	0.328	0					
1.94									
26.167	0.00	0.17	0.327	0					
1.93									
26.250	0.00	0.17	0.326	0					

1.93									
26.333	0.00	0.17	0.325	0					
1.92									
26.417	0.00	0.17	0.323	0					
1.91									
26.500	0.00	0.17	0.322	0					
1.91									
26.583	0.00	0.17	0.321	0					
1.90									
26.667	0.00	0.17	0.320	0					
1.89									
26.750	0.00	0.17	0.319	0					
1.89									
26.833	0.00	0.17	0.318	0					
1.88									
26.917	0.00	0.17	0.316	0					
1.88									
27.000	0.00	0.17	0.315	0					
1.87									
27.083	0.00	0.17	0.314	0					
1.86									
27.167	0.00	0.17	0.313	0					
1.86									
27.250	0.00	0.17	0.312	0					
1.85									
27.333	0.00	0.17	0.311	0					
1.85									
27.417	0.00	0.17	0.309	0					
1.84									
27.500	0.00	0.17	0.308	0					
1.83									
27.583	0.00	0.17	0.307	0					
1.83									
27.667	0.00	0.17	0.306	0					
1.82									
27.750	0.00	0.17	0.305	0					
1.81									
27.833	0.00	0.17	0.304	0					
1.81									
27.917	0.00	0.17	0.302	0					
1.80									
28.000	0.00	0.17	0.301	0					
1.80									
28.083	0.00	0.17	0.300	0					
1.79									
28.167	0.00	0.17	0.299	0					
1.78									
28.250	0.00	0.17	0.298	0					
1.78									
28.333	0.00	0.17	0.297	0					
1.77									
28.417	0.00	0.17	0.295	0					
1.77									
28.500	0.00	0.17	0.294	0					
1.76									
28.583	0.00	0.17	0.293	0					
1.75									
28.667	0.00	0.17	0.292	0					
1.75									
28.750	0.00	0.17	0.291	0					

1.74									
28.833	0.00	0.17	0.290	0					
1.73									
28.917	0.00	0.17	0.288	0					
1.73									
29.000	0.00	0.17	0.287	0					
1.72									
29.083	0.00	0.17	0.286	0					
1.72									
29.167	0.00	0.17	0.285	0					
1.71									
29.250	0.00	0.17	0.284	0					
1.70									
29.333	0.00	0.17	0.282	0					
1.70									
29.417	0.00	0.17	0.281	0					
1.69									
29.500	0.00	0.17	0.280	0					
1.69									
29.583	0.00	0.17	0.279	0					
1.68									
29.667	0.00	0.17	0.278	0					
1.67									
29.750	0.00	0.17	0.277	0					
1.67									
29.833	0.00	0.17	0.275	0					
1.66									
29.917	0.00	0.17	0.274	0					
1.65									
30.000	0.00	0.17	0.273	0					
1.65									
30.083	0.00	0.17	0.272	0					
1.64									
30.167	0.00	0.17	0.271	0					
1.64									
30.250	0.00	0.17	0.270	0					
1.63									
30.333	0.00	0.17	0.268	0					
1.62									
30.417	0.00	0.17	0.267	0					
1.62									
30.500	0.00	0.17	0.266	0					
1.61									
30.583	0.00	0.17	0.265	0					
1.60									
30.667	0.00	0.17	0.264	0					
1.60									
30.750	0.00	0.17	0.263	0					
1.59									
30.833	0.00	0.17	0.261	0					
1.59									
30.917	0.00	0.17	0.260	0					
1.58									
31.000	0.00	0.17	0.259	0					
1.57									
31.083	0.00	0.17	0.258	0					
1.57									
31.167	0.00	0.17	0.257	0					
1.56									
31.250	0.00	0.17	0.256	0					

1.56									
31.333	0.00	0.17	0.254	0					
1.55									
31.417	0.00	0.17	0.253	0					
1.54									
31.500	0.00	0.17	0.252	0					
1.54									
31.583	0.00	0.17	0.251	0					
1.53									
31.667	0.00	0.17	0.250	0					
1.52									
31.750	0.00	0.17	0.249	0					
1.52									
31.833	0.00	0.17	0.247	0					
1.51									
31.917	0.00	0.17	0.246	0					
1.51									
32.000	0.00	0.17	0.245	0					
1.50									
32.083	0.00	0.17	0.244	0					
1.49									
32.167	0.00	0.17	0.243	0					
1.49									
32.250	0.00	0.17	0.242	0					
1.48									
32.333	0.00	0.17	0.240	0					
1.48									
32.417	0.00	0.17	0.239	0					
1.47									
32.500	0.00	0.17	0.238	0					
1.46									
32.583	0.00	0.17	0.237	0					
1.46									
32.667	0.00	0.17	0.236	0					
1.45									
32.750	0.00	0.17	0.234	0					
1.44									
32.833	0.00	0.17	0.233	0					
1.44									
32.917	0.00	0.17	0.232	0					
1.43									
33.000	0.00	0.17	0.231	0					
1.43									
33.083	0.00	0.17	0.230	0					
1.42									
33.167	0.00	0.17	0.229	0					
1.41									
33.250	0.00	0.17	0.227	0					
1.41									
33.333	0.00	0.17	0.226	0					
1.40									
33.417	0.00	0.17	0.225	0					
1.40									
33.500	0.00	0.17	0.224	0					
1.39									
33.583	0.00	0.17	0.223	0					
1.38									
33.667	0.00	0.17	0.222	0					
1.38									
33.750	0.00	0.17	0.220	0					

1.37									
33.833	0.00	0.17	0.219	0					
1.36									
33.917	0.00	0.17	0.218	0					
1.36									
34.000	0.00	0.17	0.217	0					
1.35									
34.083	0.00	0.17	0.216	0					
1.35									
34.167	0.00	0.17	0.215	0					
1.34									
34.250	0.00	0.17	0.213	0					
1.33									
34.333	0.00	0.17	0.212	0					
1.33									
34.417	0.00	0.17	0.211	0					
1.32									
34.500	0.00	0.17	0.210	0					
1.32									
34.583	0.00	0.17	0.209	0					
1.31									
34.667	0.00	0.17	0.208	0					
1.30									
34.750	0.00	0.17	0.206	0					
1.30									
34.833	0.00	0.17	0.205	0					
1.29									
34.917	0.00	0.17	0.204	0					
1.28									
35.000	0.00	0.17	0.203	0					
1.28									
35.083	0.00	0.17	0.202	0					
1.27									
35.167	0.00	0.17	0.201	0					
1.27									
35.250	0.00	0.17	0.199	0					
1.26									
35.333	0.00	0.17	0.198	0					
1.25									
35.417	0.00	0.17	0.197	0					
1.25									
35.500	0.00	0.17	0.196	0					
1.24									
35.583	0.00	0.17	0.195	0					
1.24									
35.667	0.00	0.17	0.194	0					
1.23									
35.750	0.00	0.17	0.192	0					
1.22									
35.833	0.00	0.17	0.191	0					
1.22									
35.917	0.00	0.17	0.190	0					
1.21									
36.000	0.00	0.17	0.189	0					
1.20									
36.083	0.00	0.17	0.188	0					
1.20									
36.167	0.00	0.17	0.186	0					
1.19									
36.250	0.00	0.17	0.185	0					

1.19									
36.333	0.00	0.17	0.184	0					
1.18									
36.417	0.00	0.17	0.183	0					
1.17									
36.500	0.00	0.17	0.182	0					
1.17									
36.583	0.00	0.17	0.181	0					
1.16									
36.667	0.00	0.17	0.179	0					
1.16									
36.750	0.00	0.17	0.178	0					
1.15									
36.833	0.00	0.17	0.177	0					
1.14									
36.917	0.00	0.17	0.176	0					
1.14									
37.000	0.00	0.17	0.175	0					
1.13									
37.083	0.00	0.17	0.174	0					
1.12									
37.167	0.00	0.17	0.172	0					
1.12									
37.250	0.00	0.17	0.171	0					
1.11									
37.333	0.00	0.17	0.170	0					
1.11									
37.417	0.00	0.17	0.169	0					
1.10									
37.500	0.00	0.17	0.168	0					
1.09									
37.583	0.00	0.17	0.167	0					
1.09									
37.667	0.00	0.17	0.165	0					
1.08									
37.750	0.00	0.17	0.164	0					
1.07									
37.833	0.00	0.17	0.163	0					
1.07									
37.917	0.00	0.17	0.162	0					
1.06									
38.000	0.00	0.17	0.161	0					
1.06									
38.083	0.00	0.17	0.160	0					
1.05									
38.167	0.00	0.17	0.158	0					
1.04									
38.250	0.00	0.17	0.157	0					
1.04									
38.333	0.00	0.17	0.156	0					
1.03									
38.417	0.00	0.17	0.155	0					
1.03									
38.500	0.00	0.17	0.154	0					
1.02									
38.583	0.00	0.17	0.153	0					
1.01									
38.667	0.00	0.17	0.151	0					
1.01									
38.750	0.00	0.17	0.150	0					

1.00									
38.833	0.00	0.17	0.149	0					
0.99									
38.917	0.00	0.17	0.148	0					
0.99									
39.000	0.00	0.17	0.147	0					
0.98									
39.083	0.00	0.16	0.146	0					
0.97									
39.167	0.00	0.16	0.144	0					
0.96									
39.250	0.00	0.16	0.143	0					
0.96									
39.333	0.00	0.16	0.142	0					
0.95									
39.417	0.00	0.16	0.141	0					
0.94									
39.500	0.00	0.16	0.140	0					
0.93									
39.583	0.00	0.16	0.139	0					
0.93									
39.667	0.00	0.16	0.138	0					
0.92									
39.750	0.00	0.16	0.137	0					
0.91									
39.833	0.00	0.15	0.136	0					
0.90									
39.917	0.00	0.15	0.135	0					
0.90									
40.000	0.00	0.15	0.134	0					
0.89									
40.083	0.00	0.15	0.133	0					
0.88									
40.167	0.00	0.15	0.132	0					
0.88									
40.250	0.00	0.15	0.131	0					
0.87									
40.333	0.00	0.15	0.129	0					
0.86									
40.417	0.00	0.15	0.128	0					
0.86									
40.500	0.00	0.14	0.127	0					
0.85									
40.583	0.00	0.14	0.126	0					
0.84									
40.667	0.00	0.14	0.126	0					
0.84									
40.750	0.00	0.14	0.125	0					
0.83									
40.833	0.00	0.14	0.124	0					
0.82									
40.917	0.00	0.14	0.123	0					
0.82									
41.000	0.00	0.14	0.122	0					
0.81									
41.083	0.00	0.14	0.121	0					
0.80									
41.167	0.00	0.14	0.120	0					
0.80									
41.250	0.00	0.13	0.119	0					

0.79								
41.333	0.00	0.13	0.118	0				
0.79								
41.417	0.00	0.13	0.117	0				
0.78								
41.500	0.00	0.13	0.116	0				
0.77								
41.583	0.00	0.13	0.115	0				
0.77								
41.667	0.00	0.13	0.114	0				
0.76								
41.750	0.00	0.13	0.113	0				
0.76								
41.833	0.00	0.13	0.113	0				
0.75								
41.917	0.00	0.13	0.112	0				
0.74								
42.000	0.00	0.13	0.111	0				
0.74								
42.083	0.00	0.12	0.110	0				
0.73								
42.167	0.00	0.12	0.109	0				
0.73								
42.250	0.00	0.12	0.108	0				
0.72								
42.333	0.00	0.12	0.107	0				
0.72								
42.417	0.00	0.12	0.107	0				
0.71								
42.500	0.00	0.12	0.106	0				
0.70								
42.583	0.00	0.12	0.105	0				
0.70								
42.667	0.00	0.12	0.104	0				
0.69								
42.750	0.00	0.12	0.103	0				
0.69								
42.833	0.00	0.12	0.102	0				
0.68								
42.917	0.00	0.12	0.102	0				
0.68								
43.000	0.00	0.11	0.101	0				
0.67								
43.083	0.00	0.11	0.100	0				
0.67								
43.167	0.00	0.11	0.099	0				
0.66								
43.250	0.00	0.11	0.099	0				
0.66								
43.333	0.00	0.11	0.098	0				
0.65								
43.417	0.00	0.11	0.097	0				
0.65								
43.500	0.00	0.11	0.096	0				
0.64								
43.583	0.00	0.11	0.096	0				
0.64								
43.667	0.00	0.11	0.095	0				
0.63								
43.750	0.00	0.11	0.094	0				

0.63									
43.833	0.00	0.11	0.093	0					
0.62									
43.917	0.00	0.10	0.093	0					
0.62									
44.000	0.00	0.10	0.092	0					
0.61									
44.083	0.00	0.10	0.091	0					
0.61									
44.167	0.00	0.10	0.090	0					
0.60									
44.250	0.00	0.10	0.090	0					
0.60									
44.333	0.00	0.10	0.089	0					
0.59									
44.417	0.00	0.10	0.088	0					
0.59									
44.500	0.00	0.10	0.088	0					
0.58									
44.583	0.00	0.10	0.087	0					
0.58									
44.667	0.00	0.10	0.086	0					
0.58									
44.750	0.00	0.10	0.086	0					
0.57									
44.833	0.00	0.10	0.085	0					
0.57									
44.917	0.00	0.10	0.084	0					
0.56									
45.000	0.00	0.09	0.084	0					
0.56									
45.083	0.00	0.09	0.083	0					
0.55									
45.167	0.00	0.09	0.082	0					
0.55									
45.250	0.00	0.09	0.082	0					
0.54									
45.333	0.00	0.09	0.081	0					
0.54									
45.417	0.00	0.09	0.080	0					
0.54									
45.500	0.00	0.09	0.080	0					
0.53									
45.583	0.00	0.09	0.079	0					
0.53									
45.667	0.00	0.09	0.079	0					
0.52									
45.750	0.00	0.09	0.078	0					
0.52									
45.833	0.00	0.09	0.077	0					
0.52									
45.917	0.00	0.09	0.077	0					
0.51									
46.000	0.00	0.09	0.076	0					
0.51									
46.083	0.00	0.09	0.076	0					
0.50									
46.167	0.00	0.08	0.075	0					
0.50									
46.250	0.00	0.08	0.074	0					

0.50									
46.333	0.00	0.08	0.074	0					
0.49									
46.417	0.00	0.08	0.073	0					
0.49									
46.500	0.00	0.08	0.073	0					
0.48									
46.583	0.00	0.08	0.072	0					
0.48									
46.667	0.00	0.08	0.072	0					
0.48									
46.750	0.00	0.08	0.071	0					
0.47									
46.833	0.00	0.08	0.070	0					
0.47									
46.917	0.00	0.08	0.070	0					
0.47									
47.000	0.00	0.08	0.069	0					
0.46									
47.083	0.00	0.08	0.069	0					
0.46									
47.167	0.00	0.08	0.068	0					
0.46									
47.250	0.00	0.08	0.068	0					
0.45									
47.333	0.00	0.08	0.067	0					
0.45									
47.417	0.00	0.08	0.067	0					
0.44									
47.500	0.00	0.08	0.066	0					
0.44									
47.583	0.00	0.07	0.066	0					
0.44									
47.667	0.00	0.07	0.065	0					
0.43									
47.750	0.00	0.07	0.065	0					
0.43									
47.833	0.00	0.07	0.064	0					
0.43									
47.917	0.00	0.07	0.064	0					
0.42									
48.000	0.00	0.07	0.063	0					
0.42									
48.083	0.00	0.07	0.063	0					
0.42									
48.167	0.00	0.07	0.062	0					
0.41									
48.250	0.00	0.07	0.062	0					
0.41									
48.333	0.00	0.07	0.061	0					
0.41									
48.417	0.00	0.07	0.061	0					
0.40									
48.500	0.00	0.07	0.060	0					
0.40									
48.583	0.00	0.07	0.060	0					
0.40									
48.667	0.00	0.07	0.059	0					
0.40									
48.750	0.00	0.07	0.059	0					

0.39									
48.833	0.00	0.07	0.058	0					
0.39									
48.917	0.00	0.07	0.058	0					
0.39									
49.000	0.00	0.07	0.058	0					
0.38									
49.083	0.00	0.06	0.057	0					
0.38									
49.167	0.00	0.06	0.057	0					
0.38									
49.250	0.00	0.06	0.056	0					
0.37									
49.333	0.00	0.06	0.056	0					
0.37									
49.417	0.00	0.06	0.055	0					
0.37									
49.500	0.00	0.06	0.055	0					
0.37									
49.583	0.00	0.06	0.054	0					
0.36									
49.667	0.00	0.06	0.054	0					
0.36									
49.750	0.00	0.06	0.054	0					
0.36									
49.833	0.00	0.06	0.053	0					
0.35									
49.917	0.00	0.06	0.053	0					
0.35									
50.000	0.00	0.06	0.052	0					
0.35									
50.083	0.00	0.06	0.052	0					
0.35									
50.167	0.00	0.06	0.052	0					
0.34									
50.250	0.00	0.06	0.051	0					
0.34									
50.333	0.00	0.06	0.051	0					
0.34									
50.417	0.00	0.06	0.050	0					
0.34									
50.500	0.00	0.06	0.050	0					
0.33									
50.583	0.00	0.06	0.050	0					
0.33									
50.667	0.00	0.06	0.049	0					
0.33									
50.750	0.00	0.06	0.049	0					
0.33									
50.833	0.00	0.05	0.048	0					
0.32									
50.917	0.00	0.05	0.048	0					
0.32									
51.000	0.00	0.05	0.048	0					
0.32									
51.083	0.00	0.05	0.047	0					
0.32									
51.167	0.00	0.05	0.047	0					
0.31									
51.250	0.00	0.05	0.047	0					

0.31									
51.333	0.00	0.05	0.046	0					
0.31									
51.417	0.00	0.05	0.046	0					
0.31									
51.500	0.00	0.05	0.046	0					
0.30									
51.583	0.00	0.05	0.045	0					
0.30									
51.667	0.00	0.05	0.045	0					
0.30									
51.750	0.00	0.05	0.044	0					
0.30									
51.833	0.00	0.05	0.044	0					
0.29									
51.917	0.00	0.05	0.044	0					
0.29									
52.000	0.00	0.05	0.043	0					
0.29									
52.083	0.00	0.05	0.043	0					
0.29									
52.167	0.00	0.05	0.043	0					
0.28									
52.250	0.00	0.05	0.042	0					
0.28									
52.333	0.00	0.05	0.042	0					
0.28									
52.417	0.00	0.05	0.042	0					
0.28									
52.500	0.00	0.05	0.041	0					
0.28									
52.583	0.00	0.05	0.041	0					
0.27									
52.667	0.00	0.05	0.041	0					
0.27									
52.750	0.00	0.05	0.040	0					
0.27									
52.833	0.00	0.05	0.040	0					
0.27									
52.917	0.00	0.05	0.040	0					
0.27									
53.000	0.00	0.04	0.040	0					
0.26									
53.083	0.00	0.04	0.039	0					
0.26									
53.167	0.00	0.04	0.039	0					
0.26									
53.250	0.00	0.04	0.039	0					
0.26									
53.333	0.00	0.04	0.038	0					
0.26									
53.417	0.00	0.04	0.038	0					
0.25									
53.500	0.00	0.04	0.038	0					
0.25									
53.583	0.00	0.04	0.037	0					
0.25									
53.667	0.00	0.04	0.037	0					
0.25									
53.750	0.00	0.04	0.037	0					

0.25									
53.833	0.00	0.04	0.037	0					
0.24									
53.917	0.00	0.04	0.036	0					
0.24									
54.000	0.00	0.04	0.036	0					
0.24									
54.083	0.00	0.04	0.036	0					
0.24									
54.167	0.00	0.04	0.035	0					
0.24									
54.250	0.00	0.04	0.035	0					
0.23									
54.333	0.00	0.04	0.035	0					
0.23									
54.417	0.00	0.04	0.035	0					
0.23									
54.500	0.00	0.04	0.034	0					
0.23									
54.583	0.00	0.04	0.034	0					
0.23									
54.667	0.00	0.04	0.034	0					
0.23									
54.750	0.00	0.04	0.034	0					
0.22									
54.833	0.00	0.04	0.033	0					
0.22									
54.917	0.00	0.04	0.033	0					
0.22									
55.000	0.00	0.04	0.033	0					
0.22									
55.083	0.00	0.04	0.033	0					
0.22									
55.167	0.00	0.04	0.032	0					
0.22									
55.250	0.00	0.04	0.032	0					
0.21									
55.333	0.00	0.04	0.032	0					
0.21									
55.417	0.00	0.04	0.032	0					
0.21									
55.500	0.00	0.04	0.031	0					
0.21									
55.583	0.00	0.04	0.031	0					
0.21									
55.667	0.00	0.03	0.031	0					
0.21									
55.750	0.00	0.03	0.031	0					
0.20									
55.833	0.00	0.03	0.030	0					
0.20									
55.917	0.00	0.03	0.030	0					
0.20									
56.000	0.00	0.03	0.030	0					
0.20									
56.083	0.00	0.03	0.030	0					
0.20									
56.167	0.00	0.03	0.029	0					
0.20									
56.250	0.00	0.03	0.029	0					

0.19									
56.333	0.00	0.03	0.029	0					
0.19									
56.417	0.00	0.03	0.029	0					
0.19									
56.500	0.00	0.03	0.028	0					
0.19									
56.583	0.00	0.03	0.028	0					
0.19									
56.667	0.00	0.03	0.028	0					
0.19									
56.750	0.00	0.03	0.028	0					
0.19									
56.833	0.00	0.03	0.028	0					
0.18									
56.917	0.00	0.03	0.027	0					
0.18									
57.000	0.00	0.03	0.027	0					
0.18									
57.083	0.00	0.03	0.027	0					
0.18									
57.167	0.00	0.03	0.027	0					
0.18									
57.250	0.00	0.03	0.027	0					
0.18									
57.333	0.00	0.03	0.026	0					
0.18									
57.417	0.00	0.03	0.026	0					
0.17									
57.500	0.00	0.03	0.026	0					
0.17									
57.583	0.00	0.03	0.026	0					
0.17									
57.667	0.00	0.03	0.026	0					
0.17									
57.750	0.00	0.03	0.025	0					
0.17									
57.833	0.00	0.03	0.025	0					
0.17									
57.917	0.00	0.03	0.025	0					
0.17									
58.000	0.00	0.03	0.025	0					
0.17									
58.083	0.00	0.03	0.025	0					
0.16									
58.167	0.00	0.03	0.024	0					
0.16									
58.250	0.00	0.03	0.024	0					
0.16									
58.333	0.00	0.03	0.024	0					
0.16									
58.417	0.00	0.03	0.024	0					
0.16									
58.500	0.00	0.03	0.024	0					
0.16									
58.583	0.00	0.03	0.023	0					
0.16									
58.667	0.00	0.03	0.023	0					
0.16									
58.750	0.00	0.03	0.023	0					

0.15									
58.833	0.00	0.03	0.023	0					
0.15									
58.917	0.00	0.03	0.023	0					
0.15									
59.000	0.00	0.03	0.023	0					
0.15									
59.083	0.00	0.03	0.022	0					
0.15									
59.167	0.00	0.03	0.022	0					
0.15									
59.250	0.00	0.02	0.022	0					
0.15									
59.333	0.00	0.02	0.022	0					
0.15									
59.417	0.00	0.02	0.022	0					
0.14									
59.500	0.00	0.02	0.022	0					
0.14									
59.583	0.00	0.02	0.021	0					
0.14									
59.667	0.00	0.02	0.021	0					
0.14									
59.750	0.00	0.02	0.021	0					
0.14									
59.833	0.00	0.02	0.021	0					
0.14									
59.917	0.00	0.02	0.021	0					
0.14									
60.000	0.00	0.02	0.021	0					
0.14									
60.083	0.00	0.02	0.020	0					
0.14									
60.167	0.00	0.02	0.020	0					
0.13									
60.250	0.00	0.02	0.020	0					
0.13									
60.333	0.00	0.02	0.020	0					
0.13									
60.417	0.00	0.02	0.020	0					
0.13									
60.500	0.00	0.02	0.020	0					
0.13									
60.583	0.00	0.02	0.019	0					
0.13									
60.667	0.00	0.02	0.019	0					
0.13									
60.750	0.00	0.02	0.019	0					
0.13									
60.833	0.00	0.02	0.019	0					
0.13									
60.917	0.00	0.02	0.019	0					
0.13									
61.000	0.00	0.02	0.019	0					
0.12									
61.083	0.00	0.02	0.019	0					
0.12									
61.167	0.00	0.02	0.018	0					
0.12									
61.250	0.00	0.02	0.018	0					

0.12									
61.333	0.00	0.02	0.018	0					
0.12									
61.417	0.00	0.02	0.018	0					
0.12									
61.500	0.00	0.02	0.018	0					
0.12									
61.583	0.00	0.02	0.018	0					
0.12									
61.667	0.00	0.02	0.018	0					
0.12									
61.750	0.00	0.02	0.017	0					
0.12									
61.833	0.00	0.02	0.017	0					
0.12									
61.917	0.00	0.02	0.017	0					
0.11									
62.000	0.00	0.02	0.017	0					
0.11									
62.083	0.00	0.02	0.017	0					
0.11									
62.167	0.00	0.02	0.017	0					
0.11									
62.250	0.00	0.02	0.017	0					
0.11									
62.333	0.00	0.02	0.016	0					
0.11									
62.417	0.00	0.02	0.016	0					
0.11									
62.500	0.00	0.02	0.016	0					
0.11									
62.583	0.00	0.02	0.016	0					
0.11									
62.667	0.00	0.02	0.016	0					
0.11									
62.750	0.00	0.02	0.016	0					
0.11									
62.833	0.00	0.02	0.016	0					
0.10									
62.917	0.00	0.02	0.016	0					
0.10									
63.000	0.00	0.02	0.015	0					
0.10									
63.083	0.00	0.02	0.015	0					
0.10									
63.167	0.00	0.02	0.015	0					
0.10									
63.250	0.00	0.02	0.015	0					
0.10									
63.333	0.00	0.02	0.015	0					
0.10									
63.417	0.00	0.02	0.015	0					
0.10									
63.500	0.00	0.02	0.015	0					
0.10									
63.583	0.00	0.02	0.015	0					
0.10									
63.667	0.00	0.02	0.015	0					
0.10									
63.750	0.00	0.02	0.014	0					

0.10								
63.833	0.00	0.02	0.014	0				
0.10								
63.917	0.00	0.02	0.014	0				
0.09								
64.000	0.00	0.02	0.014	0				
0.09								
64.083	0.00	0.02	0.014	0				
0.09								
64.167	0.00	0.02	0.014	0				
0.09								
64.250	0.00	0.02	0.014	0				
0.09								
64.333	0.00	0.02	0.014	0				
0.09								
64.417	0.00	0.02	0.014	0				
0.09								
64.500	0.00	0.02	0.013	0				
0.09								
64.583	0.00	0.02	0.013	0				
0.09								
64.667	0.00	0.02	0.013	0				
0.09								
64.750	0.00	0.01	0.013	0				
0.09								
64.833	0.00	0.01	0.013	0				
0.09								
64.917	0.00	0.01	0.013	0				
0.09								
65.000	0.00	0.01	0.013	0				
0.09								
65.083	0.00	0.01	0.013	0				
0.08								
65.167	0.00	0.01	0.013	0				
0.08								
65.250	0.00	0.01	0.013	0				
0.08								
65.333	0.00	0.01	0.012	0				
0.08								
65.417	0.00	0.01	0.012	0				
0.08								
65.500	0.00	0.01	0.012	0				
0.08								
65.583	0.00	0.01	0.012	0				
0.08								
65.667	0.00	0.01	0.012	0				
0.08								
65.750	0.00	0.01	0.012	0				
0.08								
65.833	0.00	0.01	0.012	0				
0.08								
65.917	0.00	0.01	0.012	0				
0.08								
66.000	0.00	0.01	0.012	0				
0.08								
66.083	0.00	0.01	0.012	0				
0.08								
66.167	0.00	0.01	0.012	0				
0.08								
66.250	0.00	0.01	0.011	0				

0.08									
66.333	0.00	0.01	0.011	0					
0.08									
66.417	0.00	0.01	0.011	0					
0.08									
66.500	0.00	0.01	0.011	0					
0.07									
66.583	0.00	0.01	0.011	0					
0.07									
66.667	0.00	0.01	0.011	0					
0.07									
66.750	0.00	0.01	0.011	0					
0.07									
66.833	0.00	0.01	0.011	0					
0.07									
66.917	0.00	0.01	0.011	0					
0.07									
67.000	0.00	0.01	0.011	0					
0.07									
67.083	0.00	0.01	0.011	0					
0.07									
67.167	0.00	0.01	0.010	0					
0.07									
67.250	0.00	0.01	0.010	0					
0.07									
67.333	0.00	0.01	0.010	0					
0.07									
67.417	0.00	0.01	0.010	0					
0.07									
67.500	0.00	0.01	0.010	0					
0.07									
67.583	0.00	0.01	0.010	0					
0.07									
67.667	0.00	0.01	0.010	0					
0.07									
67.750	0.00	0.01	0.010	0					
0.07									
67.833	0.00	0.01	0.010	0					
0.07									
67.917	0.00	0.01	0.010	0					
0.07									
68.000	0.00	0.01	0.010	0					
0.06									
68.083	0.00	0.01	0.010	0					
0.06									
68.167	0.00	0.01	0.010	0					
0.06									
68.250	0.00	0.01	0.009	0					
0.06									
68.333	0.00	0.01	0.009	0					
0.06									
68.417	0.00	0.01	0.009	0					
0.06									
68.500	0.00	0.01	0.009	0					
0.06									
68.583	0.00	0.01	0.009	0					
0.06									
68.667	0.00	0.01	0.009	0					
0.06									
68.750	0.00	0.01	0.009	0					

0.06									
68.833	0.00	0.01	0.009	0					
0.06									
68.917	0.00	0.01	0.009	0					
0.06									
69.000	0.00	0.01	0.009	0					
0.06									
69.083	0.00	0.01	0.009	0					
0.06									
69.167	0.00	0.01	0.009	0					
0.06									
69.250	0.00	0.01	0.009	0					
0.06									
69.333	0.00	0.01	0.009	0					
0.06									
69.417	0.00	0.01	0.008	0					
0.06									
69.500	0.00	0.01	0.008	0					
0.06									
69.583	0.00	0.01	0.008	0					
0.06									
69.667	0.00	0.01	0.008	0					
0.06									
69.750	0.00	0.01	0.008	0					
0.05									
69.833	0.00	0.01	0.008	0					
0.05									
69.917	0.00	0.01	0.008	0					
0.05									
70.000	0.00	0.01	0.008	0					
0.05									
70.083	0.00	0.01	0.008	0					
0.05									
70.167	0.00	0.01	0.008	0					
0.05									
70.250	0.00	0.01	0.008	0					
0.05									
70.333	0.00	0.01	0.008	0					
0.05									
70.417	0.00	0.01	0.008	0					
0.05									
70.500	0.00	0.01	0.008	0					
0.05									
70.583	0.00	0.01	0.008	0					
0.05									
70.667	0.00	0.01	0.008	0					
0.05									
70.750	0.00	0.01	0.007	0					
0.05									
70.833	0.00	0.01	0.007	0					
0.05									
70.917	0.00	0.01	0.007	0					
0.05									
71.000	0.00	0.01	0.007	0					
0.05									
71.083	0.00	0.01	0.007	0					
0.05									
71.167	0.00	0.01	0.007	0					
0.05									
71.250	0.00	0.01	0.007	0					

0.05									
71.333	0.00	0.01	0.007	0					
0.05									
71.417	0.00	0.01	0.007	0					
0.05									
71.500	0.00	0.01	0.007	0					
0.05									
71.583	0.00	0.01	0.007	0					
0.05									
71.667	0.00	0.01	0.007	0					
0.05									
71.750	0.00	0.01	0.007	0					
0.05									
71.833	0.00	0.01	0.007	0					
0.05									
71.917	0.00	0.01	0.007	0					
0.04									
72.000	0.00	0.01	0.007	0					
0.04									
72.083	0.00	0.01	0.007	0					
0.04									
72.167	0.00	0.01	0.007	0					
0.04									
72.250	0.00	0.01	0.007	0					
0.04									
72.333	0.00	0.01	0.006	0					
0.04									
72.417	0.00	0.01	0.006	0					
0.04									
72.500	0.00	0.01	0.006	0					
0.04									
72.583	0.00	0.01	0.006	0					
0.04									
72.667	0.00	0.01	0.006	0					
0.04									
72.750	0.00	0.01	0.006	0					
0.04									
72.833	0.00	0.01	0.006	0					
0.04									
72.917	0.00	0.01	0.006	0					
0.04									
73.000	0.00	0.01	0.006	0					
0.04									
73.083	0.00	0.01	0.006	0					
0.04									
73.167	0.00	0.01	0.006	0					
0.04									
73.250	0.00	0.01	0.006	0					
0.04									
73.333	0.00	0.01	0.006	0					
0.04									
73.417	0.00	0.01	0.006	0					
0.04									
73.500	0.00	0.01	0.006	0					
0.04									
73.583	0.00	0.01	0.006	0					
0.04									
73.667	0.00	0.01	0.006	0					
0.04									
73.750	0.00	0.01	0.006	0					

0.04									
73.833	0.00	0.01	0.006	0					
0.04									
73.917	0.00	0.01	0.006	0					
0.04									
74.000	0.00	0.01	0.006	0					
0.04									
74.083	0.00	0.01	0.005	0					
0.04									
74.167	0.00	0.01	0.005	0					
0.04									
74.250	0.00	0.01	0.005	0					
0.04									
74.333	0.00	0.01	0.005	0					
0.04									
74.417	0.00	0.01	0.005	0					
0.04									
74.500	0.00	0.01	0.005	0					
0.04									
74.583	0.00	0.01	0.005	0					
0.03									
74.667	0.00	0.01	0.005	0					
0.03									
74.750	0.00	0.01	0.005	0					
0.03									
74.833	0.00	0.01	0.005	0					
0.03									
74.917	0.00	0.01	0.005	0					
0.03									
75.000	0.00	0.01	0.005	0					
0.03									
75.083	0.00	0.01	0.005	0					
0.03									
75.167	0.00	0.01	0.005	0					
0.03									
75.250	0.00	0.01	0.005	0					
0.03									
75.333	0.00	0.01	0.005	0					
0.03									
75.417	0.00	0.01	0.005	0					
0.03									
75.500	0.00	0.01	0.005	0					
0.03									
75.583	0.00	0.01	0.005	0					
0.03									
75.667	0.00	0.01	0.005	0					
0.03									
75.750	0.00	0.01	0.005	0					
0.03									
75.833	0.00	0.01	0.005	0					
0.03									
75.917	0.00	0.01	0.005	0					
0.03									
76.000	0.00	0.01	0.005	0					
0.03									
76.083	0.00	0.01	0.005	0					
0.03									
76.167	0.00	0.01	0.005	0					
0.03									
76.250	0.00	0.01	0.004	0					

0.03									
76.333	0.00	0.01	0.004	0					
0.03									
76.417	0.00	0.00	0.004	0					
0.03									
76.500	0.00	0.00	0.004	0					
0.03									
76.583	0.00	0.00	0.004	0					
0.03									
76.667	0.00	0.00	0.004	0					
0.03									
76.750	0.00	0.00	0.004	0					
0.03									
76.833	0.00	0.00	0.004	0					
0.03									
76.917	0.00	0.00	0.004	0					
0.03									
77.000	0.00	0.00	0.004	0					
0.03									
77.083	0.00	0.00	0.004	0					
0.03									
77.167	0.00	0.00	0.004	0					
0.03									
77.250	0.00	0.00	0.004	0					
0.03									
77.333	0.00	0.00	0.004	0					
0.03									
77.417	0.00	0.00	0.004	0					
0.03									
77.500	0.00	0.00	0.004	0					
0.03									
77.583	0.00	0.00	0.004	0					
0.03									
77.667	0.00	0.00	0.004	0					
0.03									
77.750	0.00	0.00	0.004	0					
0.03									
77.833	0.00	0.00	0.004	0					
0.03									
77.917	0.00	0.00	0.004	0					
0.03									
78.000	0.00	0.00	0.004	0					
0.03									
78.083	0.00	0.00	0.004	0					
0.03									
78.167	0.00	0.00	0.004	0					
0.02									
78.250	0.00	0.00	0.004	0					
0.02									
78.333	0.00	0.00	0.004	0					
0.02									
78.417	0.00	0.00	0.004	0					
0.02									
78.500	0.00	0.00	0.004	0					
0.02									
78.583	0.00	0.00	0.004	0					
0.02									
78.667	0.00	0.00	0.004	0					
0.02									
78.750	0.00	0.00	0.004	0					

0.02									
78.833	0.00	0.00	0.004	0					
0.02									
78.917	0.00	0.00	0.003	0					
0.02									
79.000	0.00	0.00	0.003	0					
0.02									
79.083	0.00	0.00	0.003	0					
0.02									
79.167	0.00	0.00	0.003	0					
0.02									
79.250	0.00	0.00	0.003	0					
0.02									
79.333	0.00	0.00	0.003	0					
0.02									
79.417	0.00	0.00	0.003	0					
0.02									
79.500	0.00	0.00	0.003	0					
0.02									
79.583	0.00	0.00	0.003	0					
0.02									
79.667	0.00	0.00	0.003	0					
0.02									
79.750	0.00	0.00	0.003	0					
0.02									
79.833	0.00	0.00	0.003	0					
0.02									
79.917	0.00	0.00	0.003	0					
0.02									
80.000	0.00	0.00	0.003	0					
0.02									
80.083	0.00	0.00	0.003	0					
0.02									
80.167	0.00	0.00	0.003	0					
0.02									
80.250	0.00	0.00	0.003	0					
0.02									
80.333	0.00	0.00	0.003	0					
0.02									
80.417	0.00	0.00	0.003	0					
0.02									
80.500	0.00	0.00	0.003	0					
0.02									
80.583	0.00	0.00	0.003	0					
0.02									
80.667	0.00	0.00	0.003	0					
0.02									
80.750	0.00	0.00	0.003	0					
0.02									
80.833	0.00	0.00	0.003	0					
0.02									
80.917	0.00	0.00	0.003	0					
0.02									
81.000	0.00	0.00	0.003	0					
0.02									
81.083	0.00	0.00	0.003	0					
0.02									
81.167	0.00	0.00	0.003	0					
0.02									
81.250	0.00	0.00	0.003	0					

0.02									
81.333	0.00	0.00	0.003	0					
0.02									
81.417	0.00	0.00	0.003	0					
0.02									
81.500	0.00	0.00	0.003	0					
0.02									
81.583	0.00	0.00	0.003	0					
0.02									
81.667	0.00	0.00	0.003	0					
0.02									
81.750	0.00	0.00	0.003	0					
0.02									
81.833	0.00	0.00	0.003	0					
0.02									
81.917	0.00	0.00	0.003	0					
0.02									
82.000	0.00	0.00	0.003	0					
0.02									
82.083	0.00	0.00	0.003	0					
0.02									
82.167	0.00	0.00	0.003	0					
0.02									
82.250	0.00	0.00	0.003	0					
0.02									
82.333	0.00	0.00	0.003	0					
0.02									
82.417	0.00	0.00	0.003	0					
0.02									
82.500	0.00	0.00	0.002	0					
0.02									
82.583	0.00	0.00	0.002	0					
0.02									
82.667	0.00	0.00	0.002	0					
0.02									
82.750	0.00	0.00	0.002	0					
0.02									
82.833	0.00	0.00	0.002	0					
0.02									
82.917	0.00	0.00	0.002	0					
0.02									
83.000	0.00	0.00	0.002	0					
0.02									
83.083	0.00	0.00	0.002	0					
0.02									
83.167	0.00	0.00	0.002	0					
0.02									
83.250	0.00	0.00	0.002	0					
0.02									
83.333	0.00	0.00	0.002	0					
0.02									
83.417	0.00	0.00	0.002	0					
0.02									
83.500	0.00	0.00	0.002	0					
0.02									
83.583	0.00	0.00	0.002	0					
0.02									
83.667	0.00	0.00	0.002	0					
0.01									
83.750	0.00	0.00	0.002	0					

0.01									
83.833	0.00	0.00	0.002	0					
0.01									
83.917	0.00	0.00	0.002	0					
0.01									
84.000	0.00	0.00	0.002	0					
0.01									
84.083	0.00	0.00	0.002	0					
0.01									
84.167	0.00	0.00	0.002	0					
0.01									
84.250	0.00	0.00	0.002	0					
0.01									
84.333	0.00	0.00	0.002	0					
0.01									
84.417	0.00	0.00	0.002	0					
0.01									
84.500	0.00	0.00	0.002	0					
0.01									
84.583	0.00	0.00	0.002	0					
0.01									
84.667	0.00	0.00	0.002	0					
0.01									
84.750	0.00	0.00	0.002	0					
0.01									
84.833	0.00	0.00	0.002	0					
0.01									
84.917	0.00	0.00	0.002	0					
0.01									
85.000	0.00	0.00	0.002	0					
0.01									
85.083	0.00	0.00	0.002	0					
0.01									
85.167	0.00	0.00	0.002	0					
0.01									
85.250	0.00	0.00	0.002	0					
0.01									
85.333	0.00	0.00	0.002	0					
0.01									
85.417	0.00	0.00	0.002	0					
0.01									
85.500	0.00	0.00	0.002	0					
0.01									
85.583	0.00	0.00	0.002	0					
0.01									
85.667	0.00	0.00	0.002	0					
0.01									
85.750	0.00	0.00	0.002	0					
0.01									
85.833	0.00	0.00	0.002	0					
0.01									
85.917	0.00	0.00	0.002	0					
0.01									
86.000	0.00	0.00	0.002	0					
0.01									
86.083	0.00	0.00	0.002	0					
0.01									
86.167	0.00	0.00	0.002	0					
0.01									
86.250	0.00	0.00	0.002	0					

0.01									
86.333	0.00	0.00	0.002	0					
0.01									
86.417	0.00	0.00	0.002	0					
0.01									
86.500	0.00	0.00	0.002	0					
0.01									
86.583	0.00	0.00	0.002	0					
0.01									
86.667	0.00	0.00	0.002	0					
0.01									
86.750	0.00	0.00	0.002	0					
0.01									
86.833	0.00	0.00	0.002	0					
0.01									
86.917	0.00	0.00	0.002	0					
0.01									
87.000	0.00	0.00	0.002	0					
0.01									
87.083	0.00	0.00	0.002	0					
0.01									
87.167	0.00	0.00	0.002	0					
0.01									
87.250	0.00	0.00	0.002	0					
0.01									
87.333	0.00	0.00	0.002	0					
0.01									
87.417	0.00	0.00	0.002	0					
0.01									
87.500	0.00	0.00	0.002	0					
0.01									
87.583	0.00	0.00	0.002	0					
0.01									
87.667	0.00	0.00	0.002	0					
0.01									
87.750	0.00	0.00	0.002	0					
0.01									
87.833	0.00	0.00	0.002	0					
0.01									
87.917	0.00	0.00	0.002	0					
0.01									
88.000	0.00	0.00	0.001	0					
0.01									
88.083	0.00	0.00	0.001	0					
0.01									
88.167	0.00	0.00	0.001	0					
0.01									
88.250	0.00	0.00	0.001	0					
0.01									
88.333	0.00	0.00	0.001	0					
0.01									
88.417	0.00	0.00	0.001	0					
0.01									
88.500	0.00	0.00	0.001	0					
0.01									
88.583	0.00	0.00	0.001	0					
0.01									
88.667	0.00	0.00	0.001	0					
0.01									
88.750	0.00	0.00	0.001	0					

0.01									
88.833	0.00	0.00	0.001	0					
0.01									
88.917	0.00	0.00	0.001	0					
0.01									
89.000	0.00	0.00	0.001	0					
0.01									
89.083	0.00	0.00	0.001	0					
0.01									
89.167	0.00	0.00	0.001	0					
0.01									
89.250	0.00	0.00	0.001	0					
0.01									
89.333	0.00	0.00	0.001	0					
0.01									
89.417	0.00	0.00	0.001	0					
0.01									
89.500	0.00	0.00	0.001	0					
0.01									
89.583	0.00	0.00	0.001	0					
0.01									
89.667	0.00	0.00	0.001	0					
0.01									
89.750	0.00	0.00	0.001	0					
0.01									
89.833	0.00	0.00	0.001	0					
0.01									
89.917	0.00	0.00	0.001	0					
0.01									
90.000	0.00	0.00	0.001	0					
0.01									
90.083	0.00	0.00	0.001	0					
0.01									
90.167	0.00	0.00	0.001	0					
0.01									
90.250	0.00	0.00	0.001	0					
0.01									
90.333	0.00	0.00	0.001	0					
0.01									
90.417	0.00	0.00	0.001	0					
0.01									
90.500	0.00	0.00	0.001	0					
0.01									
90.583	0.00	0.00	0.001	0					
0.01									
90.667	0.00	0.00	0.001	0					
0.01									
90.750	0.00	0.00	0.001	0					
0.01									
90.833	0.00	0.00	0.001	0					
0.01									
90.917	0.00	0.00	0.001	0					
0.01									
91.000	0.00	0.00	0.001	0					
0.01									
91.083	0.00	0.00	0.001	0					
0.01									
91.167	0.00	0.00	0.001	0					
0.01									
91.250	0.00	0.00	0.001	0					


```

*****HYDROGRAPH
DATA*****
      Number of intervals = 1124
      Time interval = 5.0 (Min.)
      Maximum/Peak flow rate = 16.000 (CFS)
      Total volume = 5.814 (Ac.Ft)
      Status of hydrographs being held in storage
      Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS)      0.000      0.000      0.000      0.000
0.000
Vol (Ac.Ft)      0.000      0.000      0.000      0.000
0.000
*****
*****

```

```

-----
--
+++++
+++++ Process from Point/Station      103.000 to Point/Station
104.000
**** PRINT CURRENT HYDROGRAPH ****

```

```

-----
++
      P R I N T   O F   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      4.0      8.0      12.0
16.0
-----
|  0+ 5      0.0000      0.00  Q      |      |      |
|  0+10      0.0000      0.00  Q      |      |      |
|  0+15      0.0000      0.00  Q      |      |      |
|  0+20      0.0001      0.01  Q      |      |      |
|  0+25      0.0002      0.02  Q      |      |      |
|  0+30      0.0004      0.03  Q      |      |      |
|  0+35      0.0007      0.04  Q      |      |      |
|  0+40      0.0010      0.05  Q      |      |      |
|  0+45      0.0013      0.06  Q      |      |      |
|  0+50      0.0018      0.07  Q      |      |      |
|

```


0+55	0.0023	0.08	Q			
1+ 0	0.0029	0.09	Q			
1+ 5	0.0036	0.10	Q			
1+10	0.0043	0.11	Q			
1+15	0.0052	0.12	Q			
1+20	0.0061	0.13	Q			
1+25	0.0070	0.14	Q			
1+30	0.0081	0.15	Q			
1+35	0.0092	0.16	Q			
1+40	0.0104	0.17	Q			
1+45	0.0115	0.17	Q			
1+50	0.0127	0.17	Q			
1+55	0.0139	0.17	Q			
2+ 0	0.0151	0.17	Q			
2+ 5	0.0162	0.17	Q			
2+10	0.0174	0.17	Q			
2+15	0.0186	0.17	Q			
2+20	0.0197	0.17	Q			
2+25	0.0209	0.17	Q			
2+30	0.0221	0.17	Q			
2+35	0.0233	0.17	Q			
2+40	0.0244	0.17	Q			
2+45	0.0256	0.17	Q			
2+50	0.0268	0.17	Q			
2+55	0.0279	0.17	Q			
3+ 0	0.0291	0.17	Q			
3+ 5	0.0303	0.17	Q			
3+10	0.0314	0.17	Q			
3+15	0.0339	0.36	Q			
3+20	0.0392	0.76	VQ			

	3+25	0.0464	1.05	V Q			
	3+30	0.0549	1.24	V Q			
	3+35	0.0644	1.38	V Q			
	3+40	0.0746	1.47	V Q			
	3+45	0.0852	1.54	V Q			
	3+50	0.0962	1.59	V Q			
	3+55	0.1074	1.63	V Q			
	4+ 0	0.1187	1.65	V Q			
	4+ 5	0.1302	1.67	V Q			
	4+10	0.1419	1.69	V Q			
	4+15	0.1536	1.70	V Q			
	4+20	0.1653	1.71	V Q			
	4+25	0.1772	1.72	V Q			
	4+30	0.1890	1.72	V Q			
	4+35	0.2010	1.73	V Q			
	4+40	0.2129	1.74	V Q			
	4+45	0.2249	1.74	V Q			
	4+50	0.2370	1.75	V Q			
	4+55	0.2491	1.76	V Q			
	5+ 0	0.2612	1.76	V Q			
	5+ 5	0.2734	1.77	V Q			
	5+10	0.2856	1.77	V Q			
	5+15	0.2979	1.78	V Q			
	5+20	0.3102	1.78	V Q			
	5+25	0.3225	1.79	V Q			
	5+30	0.3349	1.80	V Q			
	5+35	0.3473	1.80	V Q			
	5+40	0.3597	1.81	V Q			
	5+45	0.3722	1.81	V Q			
	5+50	0.3848	1.82	V Q			

5+55	0.3974	1.83	V Q			
6+ 0	0.4100	1.83	V Q			
6+ 5	0.4227	1.84	V Q			
6+10	0.4354	1.85	V Q			
6+15	0.4481	1.85	VQ			
6+20	0.4609	1.86	VQ			
6+25	0.4738	1.87	VQ			
6+30	0.4867	1.87	VQ			
6+35	0.4996	1.88	VQ			
6+40	0.5126	1.89	VQ			
6+45	0.5257	1.89	VQ			
6+50	0.5388	1.90	VQ			
6+55	0.5519	1.91	VQ			
7+ 0	0.5651	1.92	VQ			
7+ 5	0.5783	1.92	VQ			
7+10	0.5916	1.93	Q			
7+15	0.6050	1.94	Q			
7+20	0.6184	1.95	Q			
7+25	0.6318	1.95	Q			
7+30	0.6453	1.96	Q			
7+35	0.6589	1.97	Q			
7+40	0.6725	1.98	Q			
7+45	0.6862	1.98	Q			
7+50	0.6999	1.99	Q			
7+55	0.7137	2.00	VQ			
8+ 0	0.7275	2.01	Q			
8+ 5	0.7414	2.02	Q			
8+10	0.7554	2.03	Q			
8+15	0.7694	2.04	Q			
8+20	0.7835	2.05	Q			

8+25	0.7977	2.05		Q			
8+30	0.8119	2.06		Q			
8+35	0.8261	2.07		Q			
8+40	0.8405	2.08		Q			
8+45	0.8549	2.09		Q			
8+50	0.8694	2.10		Q			
8+55	0.8839	2.11		QV			
9+ 0	0.8985	2.12		QV			
9+ 5	0.9132	2.13		QV			
9+10	0.9280	2.14		QV			
9+15	0.9428	2.15		QV			
9+20	0.9577	2.16		QV			
9+25	0.9727	2.18		QV			
9+30	0.9878	2.19		QV			
9+35	1.0029	2.20		QV			
9+40	1.0181	2.21		Q V			
9+45	1.0334	2.22		Q V			
9+50	1.0488	2.23		Q V			
9+55	1.0643	2.25		Q V			
10+ 0	1.0798	2.26		Q V			
10+ 5	1.0955	2.27		Q V			
10+10	1.1112	2.28		Q V			
10+15	1.1270	2.30		Q V			
10+20	1.1429	2.31		Q V			
10+25	1.1589	2.32		Q V			
10+30	1.1750	2.34		Q V			
10+35	1.1912	2.35		Q V			
10+40	1.2075	2.37		Q V			
10+45	1.2239	2.38		Q V			
10+50	1.2404	2.40		Q V			

10+55	1.2570	2.41		Q V		
11+ 0	1.2737	2.43		Q V		
11+ 5	1.2906	2.44		Q V		
11+10	1.3075	2.46		Q V		
11+15	1.3246	2.48		Q V		
11+20	1.3417	2.49		Q V		
11+25	1.3590	2.51		Q V		
11+30	1.3764	2.53		Q V		
11+35	1.3940	2.55		Q V		
11+40	1.4117	2.57		Q V		
11+45	1.4295	2.59		Q V		
11+50	1.4474	2.61		Q V		
11+55	1.4655	2.63		Q V		
12+ 0	1.4837	2.65		Q V		
12+ 5	1.5021	2.67		Q V		
12+10	1.5205	2.68		Q V		
12+15	1.5388	2.66		Q V		
12+20	1.5568	2.61		Q V		
12+25	1.5744	2.56		Q V		
12+30	1.5918	2.52		Q V		
12+35	1.6089	2.49		Q V		
12+40	1.6259	2.47		Q V		
12+45	1.6428	2.46		Q V		
12+50	1.6597	2.46		Q V		
12+55	1.6767	2.46		Q V		
13+ 0	1.6937	2.47		Q V		
13+ 5	1.7108	2.48		Q V		
13+10	1.7280	2.50		Q V		
13+15	1.7454	2.53		Q V		
13+20	1.7630	2.55		Q V		

13+25	1.7808	2.58		Q		V			
13+30	1.7987	2.61		Q		V			
13+35	1.8170	2.65		Q		V			
13+40	1.8355	2.68		Q		V			
13+45	1.8542	2.72		Q		V			
13+50	1.8733	2.77		Q		V			
13+55	1.8926	2.81		Q		V			
14+ 0	1.9123	2.86		Q		V			
14+ 5	1.9324	2.91		Q		V			
14+10	1.9528	2.96		Q		V			
14+15	1.9736	3.02		Q		V			
14+20	1.9948	3.08		Q		V			
14+25	2.0165	3.15		Q		V			
14+30	2.0387	3.22		Q		V			
14+35	2.0614	3.29		Q		V			
14+40	2.0846	3.37		Q		V			
14+45	2.1084	3.46		Q		V			
14+50	2.1329	3.55		Q		V			
14+55	2.1580	3.65		Q		V			
15+ 0	2.1839	3.76		Q		V			
15+ 5	2.2105	3.87		Q		V			
15+10	2.2381	4.00		Q		V			
15+15	2.2666	4.14		Q		V			
15+20	2.2962	4.30		Q		V			
15+25	2.3270	4.47		Q		V			
15+30	2.3588	4.62		Q		V			
15+35	2.3912	4.70		Q		V			
15+40	2.4237	4.72		Q		V			
15+45	2.4564	4.75		Q		V			
15+50	2.4900	4.88			Q		V		

15+55	2.5255	5.15			Q	V		
16+ 0	2.5645	5.67			Q	V		
16+ 5	2.6129	7.03				Q		
16+10	2.6862	10.63				V		Q
16+15	2.7964	16.00				V		
16+20	2.9065	16.00				V		
16+25	3.0167	16.00				V		
16+30	3.1269	16.00				V		
16+35	3.2371	16.00						V
16+40	3.3473	16.00						V
16+45	3.4575	16.00						V
16+50	3.5677	16.00						V
16+55	3.6779	16.00						V
17+ 0	3.7881	16.00						V
17+ 5	3.8861	14.23						V
17+10	3.9661	11.62						V
17+15	4.0327	9.67						Q
17+20	4.0890	8.17						Q
17+25	4.1372	7.00						Q
17+30	4.1791	6.08						Q
17+35	4.2162	5.39						Q
17+40	4.2498	4.87						Q
17+45	4.2805	4.47						Q
17+50	4.3088	4.11						Q
17+55	4.3348	3.77						Q
18+ 0	4.3587	3.47						Q
18+ 5	4.3808	3.21						Q
18+10	4.4015	3.01						Q
18+15	4.4214	2.89						Q
18+20	4.4409	2.82						Q

18+25	4.4601	2.78		Q			V
18+30	4.4790	2.75		Q			V
18+35	4.4978	2.73		Q			V
18+40	4.5164	2.70		Q			V
18+45	4.5348	2.67		Q			V
18+50	4.5531	2.65		Q			V
18+55	4.5711	2.62		Q			V
19+ 0	4.5889	2.59		Q			V
19+ 5	4.6065	2.56		Q			V
19+10	4.6240	2.53		Q			V
19+15	4.6412	2.50		Q			V
19+20	4.6582	2.47		Q			V
19+25	4.6750	2.44		Q			V
19+30	4.6917	2.41		Q			V
19+35	4.7081	2.39		Q			V
19+40	4.7244	2.36		Q			V
19+45	4.7404	2.33		Q			V
19+50	4.7563	2.31		Q			V
19+55	4.7721	2.28		Q			V
20+ 0	4.7876	2.26		Q			V
20+ 5	4.8030	2.24		Q			V
20+10	4.8182	2.21		Q			V
20+15	4.8333	2.19		Q			V
20+20	4.8482	2.17		Q			V
20+25	4.8630	2.15		Q			V
20+30	4.8777	2.12		Q			V
20+35	4.8922	2.10		Q			V
20+40	4.9065	2.08		Q			V
20+45	4.9207	2.07		Q			V
20+50	4.9348	2.05		Q			V

20+55	4.9488	2.03		Q				V
21+ 0	4.9627	2.01		Q				V
21+ 5	4.9764	1.99		Q				V
21+10	4.9900	1.98		Q				V
21+15	5.0035	1.96		Q				V
21+20	5.0169	1.95		Q				V
21+25	5.0302	1.93		Q				V
21+30	5.0434	1.92		Q				V
21+35	5.0565	1.90		Q				V
21+40	5.0695	1.89		Q				V
21+45	5.0824	1.87		Q				V
21+50	5.0952	1.86		Q				V
21+55	5.1080	1.85		Q				V
22+ 0	5.1206	1.83		Q				V
22+ 5	5.1331	1.82		Q				V
22+10	5.1456	1.81		Q				V
22+15	5.1580	1.80		Q				V
22+20	5.1703	1.79		Q				V
22+25	5.1825	1.77		Q				V
22+30	5.1946	1.76		Q				V
22+35	5.2067	1.75		Q				V
22+40	5.2187	1.74		Q				V
22+45	5.2306	1.73		Q				V
22+50	5.2424	1.72		Q				V
22+55	5.2542	1.71		Q				V
23+ 0	5.2659	1.70		Q				V
23+ 5	5.2775	1.69		Q				V
23+10	5.2891	1.68		Q				V
23+15	5.3006	1.67		Q				V
23+20	5.3121	1.66		Q				V

	23+25	5.3234	1.65		Q				V
	23+30	5.3347	1.64		Q				V
	23+35	5.3460	1.63		Q				V
	23+40	5.3572	1.63		Q				V
	23+45	5.3683	1.62		Q				V
	23+50	5.3794	1.61		Q				V
	23+55	5.3904	1.60		Q				V
	24+ 0	5.4014	1.59		Q				V
	24+ 5	5.4123	1.58		Q				V
	24+10	5.4229	1.54		Q				V
	24+15	5.4327	1.42		Q				V
	24+20	5.4411	1.23		Q				V
	24+25	5.4481	1.02		Q				V
	24+30	5.4539	0.84		Q				V
	24+35	5.4586	0.68		Q				V
	24+40	5.4624	0.55		Q				V
	24+45	5.4655	0.45		Q				V
	24+50	5.4680	0.36		Q				V
	24+55	5.4700	0.29		Q				V
	25+ 0	5.4716	0.24		Q				V
	25+ 5	5.4729	0.19		Q				V
	25+10	5.4741	0.17		Q				V
	25+15	5.4753	0.17		Q				V
	25+20	5.4764	0.17		Q				V
	25+25	5.4776	0.17		Q				V
	25+30	5.4788	0.17		Q				V
	25+35	5.4799	0.17		Q				V
	25+40	5.4811	0.17		Q				V
	25+45	5.4823	0.17		Q				V
	25+50	5.4835	0.17		Q				V

25+55	5.4846	0.17	Q				V
26+ 0	5.4858	0.17	Q				V
26+ 5	5.4870	0.17	Q				V
26+10	5.4881	0.17	Q				V
26+15	5.4893	0.17	Q				V
26+20	5.4905	0.17	Q				V
26+25	5.4916	0.17	Q				V
26+30	5.4928	0.17	Q				V
26+35	5.4940	0.17	Q				V
26+40	5.4952	0.17	Q				V
26+45	5.4963	0.17	Q				V
26+50	5.4975	0.17	Q				V
26+55	5.4987	0.17	Q				V
27+ 0	5.4998	0.17	Q				V
27+ 5	5.5010	0.17	Q				V
27+10	5.5022	0.17	Q				V
27+15	5.5034	0.17	Q				V
27+20	5.5045	0.17	Q				V
27+25	5.5057	0.17	Q				V
27+30	5.5069	0.17	Q				V
27+35	5.5080	0.17	Q				V
27+40	5.5092	0.17	Q				V
27+45	5.5104	0.17	Q				V
27+50	5.5116	0.17	Q				V
27+55	5.5127	0.17	Q				V
28+ 0	5.5139	0.17	Q				V
28+ 5	5.5151	0.17	Q				V
28+10	5.5162	0.17	Q				V
28+15	5.5174	0.17	Q				V
28+20	5.5186	0.17	Q				V

	28+25	5.5197	0.17	Q				V
	28+30	5.5209	0.17	Q				V
	28+35	5.5221	0.17	Q				V
	28+40	5.5233	0.17	Q				V
	28+45	5.5244	0.17	Q				V
	28+50	5.5256	0.17	Q				V
	28+55	5.5268	0.17	Q				V
	29+ 0	5.5279	0.17	Q				V
	29+ 5	5.5291	0.17	Q				V
	29+10	5.5303	0.17	Q				V
	29+15	5.5315	0.17	Q				V
	29+20	5.5326	0.17	Q				V
	29+25	5.5338	0.17	Q				V
	29+30	5.5350	0.17	Q				V
	29+35	5.5361	0.17	Q				V
	29+40	5.5373	0.17	Q				V
	29+45	5.5385	0.17	Q				V
	29+50	5.5397	0.17	Q				V
	29+55	5.5408	0.17	Q				V
	30+ 0	5.5420	0.17	Q				V
	30+ 5	5.5432	0.17	Q				V
	30+10	5.5443	0.17	Q				V
	30+15	5.5455	0.17	Q				V
	30+20	5.5467	0.17	Q				V
	30+25	5.5478	0.17	Q				V
	30+30	5.5490	0.17	Q				V
	30+35	5.5502	0.17	Q				V
	30+40	5.5514	0.17	Q				V
	30+45	5.5525	0.17	Q				V
	30+50	5.5537	0.17	Q				V

30+55	5.5549	0.17	Q				V
31+ 0	5.5560	0.17	Q				V
31+ 5	5.5572	0.17	Q				V
31+10	5.5584	0.17	Q				V
31+15	5.5596	0.17	Q				V
31+20	5.5607	0.17	Q				V
31+25	5.5619	0.17	Q				V
31+30	5.5631	0.17	Q				V
31+35	5.5642	0.17	Q				V
31+40	5.5654	0.17	Q				V
31+45	5.5666	0.17	Q				V
31+50	5.5678	0.17	Q				V
31+55	5.5689	0.17	Q				V
32+ 0	5.5701	0.17	Q				V
32+ 5	5.5713	0.17	Q				V
32+10	5.5724	0.17	Q				V
32+15	5.5736	0.17	Q				V
32+20	5.5748	0.17	Q				V
32+25	5.5759	0.17	Q				V
32+30	5.5771	0.17	Q				V
32+35	5.5783	0.17	Q				V
32+40	5.5795	0.17	Q				V
32+45	5.5806	0.17	Q				V
32+50	5.5818	0.17	Q				V
32+55	5.5830	0.17	Q				V
33+ 0	5.5841	0.17	Q				V
33+ 5	5.5853	0.17	Q				V
33+10	5.5865	0.17	Q				V
33+15	5.5877	0.17	Q				V
33+20	5.5888	0.17	Q				V

	33+25	5.5900	0.17	Q				V
	33+30	5.5912	0.17	Q				V
	33+35	5.5923	0.17	Q				V
	33+40	5.5935	0.17	Q				V
	33+45	5.5947	0.17	Q				V
	33+50	5.5959	0.17	Q				V
	33+55	5.5970	0.17	Q				V
	34+ 0	5.5982	0.17	Q				V
	34+ 5	5.5994	0.17	Q				V
	34+10	5.6005	0.17	Q				V
	34+15	5.6017	0.17	Q				V
	34+20	5.6029	0.17	Q				V
	34+25	5.6040	0.17	Q				V
	34+30	5.6052	0.17	Q				V
	34+35	5.6064	0.17	Q				V
	34+40	5.6076	0.17	Q				V
	34+45	5.6087	0.17	Q				V
	34+50	5.6099	0.17	Q				V
	34+55	5.6111	0.17	Q				V
	35+ 0	5.6122	0.17	Q				V
	35+ 5	5.6134	0.17	Q				V
	35+10	5.6146	0.17	Q				V
	35+15	5.6158	0.17	Q				V
	35+20	5.6169	0.17	Q				V
	35+25	5.6181	0.17	Q				V
	35+30	5.6193	0.17	Q				V
	35+35	5.6204	0.17	Q				V
	35+40	5.6216	0.17	Q				V
	35+45	5.6228	0.17	Q				V
	35+50	5.6239	0.17	Q				V

35+55	5.6251	0.17	Q				V
36+ 0	5.6263	0.17	Q				V
36+ 5	5.6275	0.17	Q				V
36+10	5.6286	0.17	Q				V
36+15	5.6298	0.17	Q				V
36+20	5.6310	0.17	Q				V
36+25	5.6321	0.17	Q				V
36+30	5.6333	0.17	Q				V
36+35	5.6345	0.17	Q				V
36+40	5.6357	0.17	Q				V
36+45	5.6368	0.17	Q				V
36+50	5.6380	0.17	Q				V
36+55	5.6392	0.17	Q				V
37+ 0	5.6403	0.17	Q				V
37+ 5	5.6415	0.17	Q				V
37+10	5.6427	0.17	Q				V
37+15	5.6439	0.17	Q				V
37+20	5.6450	0.17	Q				V
37+25	5.6462	0.17	Q				V
37+30	5.6474	0.17	Q				V
37+35	5.6485	0.17	Q				V
37+40	5.6497	0.17	Q				V
37+45	5.6509	0.17	Q				V
37+50	5.6520	0.17	Q				V
37+55	5.6532	0.17	Q				V
38+ 0	5.6544	0.17	Q				V
38+ 5	5.6556	0.17	Q				V
38+10	5.6567	0.17	Q				V
38+15	5.6579	0.17	Q				V
38+20	5.6591	0.17	Q				V

	38+25	5.6602	0.17	Q				V
	38+30	5.6614	0.17	Q				V
	38+35	5.6626	0.17	Q				V
	38+40	5.6638	0.17	Q				V
	38+45	5.6649	0.17	Q				V
	38+50	5.6661	0.17	Q				V
	38+55	5.6672	0.17	Q				V
	39+ 0	5.6684	0.17	Q				
V	39+ 5	5.6695	0.16	Q				
V	39+10	5.6707	0.16	Q				
V	39+15	5.6718	0.16	Q				
V	39+20	5.6729	0.16	Q				
V	39+25	5.6740	0.16	Q				
V	39+30	5.6751	0.16	Q				
V	39+35	5.6762	0.16	Q				
V	39+40	5.6772	0.16	Q				
V	39+45	5.6783	0.16	Q				
V	39+50	5.6794	0.15	Q				
V	39+55	5.6804	0.15	Q				
V	40+ 0	5.6815	0.15	Q				
V	40+ 5	5.6825	0.15	Q				
V	40+10	5.6835	0.15	Q				
V	40+15	5.6845	0.15	Q				
V	40+20	5.6855	0.15	Q				
V	40+25	5.6866	0.15	Q				
V	40+30	5.6875	0.14	Q				
V	40+35	5.6885	0.14	Q				
V	40+40	5.6895	0.14	Q				
V	40+45	5.6905	0.14	Q				
V	40+50	5.6914	0.14	Q				

	40+55	5.6924	0.14	Q			
V	41+ 0	5.6934	0.14	Q			
V	41+ 5	5.6943	0.14	Q			
V	41+10	5.6952	0.14	Q			
V	41+15	5.6962	0.13	Q			
V	41+20	5.6971	0.13	Q			
V	41+25	5.6980	0.13	Q			
V	41+30	5.6989	0.13	Q			
V	41+35	5.6998	0.13	Q			
V	41+40	5.7007	0.13	Q			
V	41+45	5.7016	0.13	Q			
V	41+50	5.7025	0.13	Q			
V	41+55	5.7033	0.13	Q			
V	42+ 0	5.7042	0.13	Q			
V	42+ 5	5.7050	0.12	Q			
V	42+10	5.7059	0.12	Q			
V	42+15	5.7067	0.12	Q			
V	42+20	5.7076	0.12	Q			
V	42+25	5.7084	0.12	Q			
V	42+30	5.7092	0.12	Q			
V	42+35	5.7101	0.12	Q			
V	42+40	5.7109	0.12	Q			
V	42+45	5.7117	0.12	Q			
V	42+50	5.7125	0.12	Q			
V	42+55	5.7133	0.12	Q			
V	43+ 0	5.7141	0.11	Q			
V	43+ 5	5.7148	0.11	Q			
V	43+10	5.7156	0.11	Q			
V	43+15	5.7164	0.11	Q			
V	43+20	5.7171	0.11	Q			
V							

	43+25	5.7179	0.11	Q			
V	43+30	5.7187	0.11	Q			
V	43+35	5.7194	0.11	Q			
V	43+40	5.7201	0.11	Q			
V	43+45	5.7209	0.11	Q			
V	43+50	5.7216	0.11	Q			
V	43+55	5.7223	0.10	Q			
V	44+ 0	5.7230	0.10	Q			
V	44+ 5	5.7238	0.10	Q			
V	44+10	5.7245	0.10	Q			
V	44+15	5.7252	0.10	Q			
V	44+20	5.7259	0.10	Q			
V	44+25	5.7265	0.10	Q			
V	44+30	5.7272	0.10	Q			
V	44+35	5.7279	0.10	Q			
V	44+40	5.7286	0.10	Q			
V	44+45	5.7292	0.10	Q			
V	44+50	5.7299	0.10	Q			
V	44+55	5.7306	0.10	Q			
V	45+ 0	5.7312	0.09	Q			
V	45+ 5	5.7319	0.09	Q			
V	45+10	5.7325	0.09	Q			
V	45+15	5.7332	0.09	Q			
V	45+20	5.7338	0.09	Q			
V	45+25	5.7344	0.09	Q			
V	45+30	5.7350	0.09	Q			
V	45+35	5.7357	0.09	Q			
V	45+40	5.7363	0.09	Q			
V	45+45	5.7369	0.09	Q			
V	45+50	5.7375	0.09	Q			
V							

	45+55	5.7381	0.09	Q			
V	46+ 0	5.7387	0.09	Q			
V	46+ 5	5.7393	0.09	Q			
V	46+10	5.7398	0.08	Q			
V	46+15	5.7404	0.08	Q			
V	46+20	5.7410	0.08	Q			
V	46+25	5.7416	0.08	Q			
V	46+30	5.7421	0.08	Q			
V	46+35	5.7427	0.08	Q			
V	46+40	5.7433	0.08	Q			
V	46+45	5.7438	0.08	Q			
V	46+50	5.7444	0.08	Q			
V	46+55	5.7449	0.08	Q			
V	47+ 0	5.7455	0.08	Q			
V	47+ 5	5.7460	0.08	Q			
V	47+10	5.7465	0.08	Q			
V	47+15	5.7471	0.08	Q			
V	47+20	5.7476	0.08	Q			
V	47+25	5.7481	0.08	Q			
V	47+30	5.7486	0.08	Q			
V	47+35	5.7491	0.07	Q			
V	47+40	5.7496	0.07	Q			
V	47+45	5.7501	0.07	Q			
V	47+50	5.7506	0.07	Q			
V	47+55	5.7511	0.07	Q			
V	48+ 0	5.7516	0.07	Q			
V	48+ 5	5.7521	0.07	Q			
V	48+10	5.7526	0.07	Q			
V	48+15	5.7531	0.07	Q			
V	48+20	5.7536	0.07	Q			
V							

	48+25	5.7540	0.07	Q			
V	48+30	5.7545	0.07	Q			
V	48+35	5.7550	0.07	Q			
V	48+40	5.7554	0.07	Q			
V	48+45	5.7559	0.07	Q			
V	48+50	5.7564	0.07	Q			
V	48+55	5.7568	0.07	Q			
V	49+ 0	5.7573	0.07	Q			
V	49+ 5	5.7577	0.06	Q			
V	49+10	5.7581	0.06	Q			
V	49+15	5.7586	0.06	Q			
V	49+20	5.7590	0.06	Q			
V	49+25	5.7594	0.06	Q			
V	49+30	5.7599	0.06	Q			
V	49+35	5.7603	0.06	Q			
V	49+40	5.7607	0.06	Q			
V	49+45	5.7611	0.06	Q			
V	49+50	5.7616	0.06	Q			
V	49+55	5.7620	0.06	Q			
V	50+ 0	5.7624	0.06	Q			
V	50+ 5	5.7628	0.06	Q			
V	50+10	5.7632	0.06	Q			
V	50+15	5.7636	0.06	Q			
V	50+20	5.7640	0.06	Q			
V	50+25	5.7644	0.06	Q			
V	50+30	5.7648	0.06	Q			
V	50+35	5.7652	0.06	Q			
V	50+40	5.7655	0.06	Q			
V	50+45	5.7659	0.06	Q			
V	50+50	5.7663	0.05	Q			
V							

	50+55	5.7667	0.05	Q			
V	51+ 0	5.7670	0.05	Q			
V	51+ 5	5.7674	0.05	Q			
V	51+10	5.7678	0.05	Q			
V	51+15	5.7681	0.05	Q			
V	51+20	5.7685	0.05	Q			
V	51+25	5.7689	0.05	Q			
V	51+30	5.7692	0.05	Q			
V	51+35	5.7696	0.05	Q			
V	51+40	5.7699	0.05	Q			
V	51+45	5.7703	0.05	Q			
V	51+50	5.7706	0.05	Q			
V	51+55	5.7709	0.05	Q			
V	52+ 0	5.7713	0.05	Q			
V	52+ 5	5.7716	0.05	Q			
V	52+10	5.7720	0.05	Q			
V	52+15	5.7723	0.05	Q			
V	52+20	5.7726	0.05	Q			
V	52+25	5.7729	0.05	Q			
V	52+30	5.7733	0.05	Q			
V	52+35	5.7736	0.05	Q			
V	52+40	5.7739	0.05	Q			
V	52+45	5.7742	0.05	Q			
V	52+50	5.7745	0.05	Q			
V	52+55	5.7748	0.05	Q			
V	53+ 0	5.7752	0.04	Q			
V	53+ 5	5.7755	0.04	Q			
V	53+10	5.7758	0.04	Q			
V	53+15	5.7761	0.04	Q			
V	53+20	5.7764	0.04	Q			
V							

	53+25	5.7767	0.04	Q			
V	53+30	5.7770	0.04	Q			
V	53+35	5.7772	0.04	Q			
V	53+40	5.7775	0.04	Q			
V	53+45	5.7778	0.04	Q			
V	53+50	5.7781	0.04	Q			
V	53+55	5.7784	0.04	Q			
V	54+ 0	5.7787	0.04	Q			
V	54+ 5	5.7790	0.04	Q			
V	54+10	5.7792	0.04	Q			
V	54+15	5.7795	0.04	Q			
V	54+20	5.7798	0.04	Q			
V	54+25	5.7800	0.04	Q			
V	54+30	5.7803	0.04	Q			
V	54+35	5.7806	0.04	Q			
V	54+40	5.7808	0.04	Q			
V	54+45	5.7811	0.04	Q			
V	54+50	5.7814	0.04	Q			
V	54+55	5.7816	0.04	Q			
V	55+ 0	5.7819	0.04	Q			
V	55+ 5	5.7821	0.04	Q			
V	55+10	5.7824	0.04	Q			
V	55+15	5.7826	0.04	Q			
V	55+20	5.7829	0.04	Q			
V	55+25	5.7831	0.04	Q			
V	55+30	5.7834	0.04	Q			
V	55+35	5.7836	0.04	Q			
V	55+40	5.7839	0.03	Q			
V	55+45	5.7841	0.03	Q			
V	55+50	5.7843	0.03	Q			
V							

	55+55	5.7846	0.03	Q			
V	56+ 0	5.7848	0.03	Q			
V	56+ 5	5.7850	0.03	Q			
V	56+10	5.7853	0.03	Q			
V	56+15	5.7855	0.03	Q			
V	56+20	5.7857	0.03	Q			
V	56+25	5.7859	0.03	Q			
V	56+30	5.7862	0.03	Q			
V	56+35	5.7864	0.03	Q			
V	56+40	5.7866	0.03	Q			
V	56+45	5.7868	0.03	Q			
V	56+50	5.7870	0.03	Q			
V	56+55	5.7872	0.03	Q			
V	57+ 0	5.7875	0.03	Q			
V	57+ 5	5.7877	0.03	Q			
V	57+10	5.7879	0.03	Q			
V	57+15	5.7881	0.03	Q			
V	57+20	5.7883	0.03	Q			
V	57+25	5.7885	0.03	Q			
V	57+30	5.7887	0.03	Q			
V	57+35	5.7889	0.03	Q			
V	57+40	5.7891	0.03	Q			
V	57+45	5.7893	0.03	Q			
V	57+50	5.7895	0.03	Q			
V	57+55	5.7897	0.03	Q			
V	58+ 0	5.7899	0.03	Q			
V	58+ 5	5.7901	0.03	Q			
V	58+10	5.7903	0.03	Q			
V	58+15	5.7905	0.03	Q			
V	58+20	5.7906	0.03	Q			
V							

	58+25	5.7908	0.03	Q			
V	58+30	5.7910	0.03	Q			
V	58+35	5.7912	0.03	Q			
V	58+40	5.7914	0.03	Q			
V	58+45	5.7916	0.03	Q			
V	58+50	5.7917	0.03	Q			
V	58+55	5.7919	0.03	Q			
V	59+ 0	5.7921	0.03	Q			
V	59+ 5	5.7923	0.03	Q			
V	59+10	5.7924	0.03	Q			
V	59+15	5.7926	0.02	Q			
V	59+20	5.7928	0.02	Q			
V	59+25	5.7929	0.02	Q			
V	59+30	5.7931	0.02	Q			
V	59+35	5.7933	0.02	Q			
V	59+40	5.7934	0.02	Q			
V	59+45	5.7936	0.02	Q			
V	59+50	5.7938	0.02	Q			
V	59+55	5.7939	0.02	Q			
V	60+ 0	5.7941	0.02	Q			
V	60+ 5	5.7943	0.02	Q			
V	60+10	5.7944	0.02	Q			
V	60+15	5.7946	0.02	Q			
V	60+20	5.7947	0.02	Q			
V	60+25	5.7949	0.02	Q			
V	60+30	5.7950	0.02	Q			
V	60+35	5.7952	0.02	Q			
V	60+40	5.7953	0.02	Q			
V	60+45	5.7955	0.02	Q			
V	60+50	5.7956	0.02	Q			
V							

	60+55	5.7958	0.02	Q			
V	61+ 0	5.7959	0.02	Q			
V	61+ 5	5.7961	0.02	Q			
V	61+10	5.7962	0.02	Q			
V	61+15	5.7964	0.02	Q			
V	61+20	5.7965	0.02	Q			
V	61+25	5.7966	0.02	Q			
V	61+30	5.7968	0.02	Q			
V	61+35	5.7969	0.02	Q			
V	61+40	5.7970	0.02	Q			
V	61+45	5.7972	0.02	Q			
V	61+50	5.7973	0.02	Q			
V	61+55	5.7975	0.02	Q			
V	62+ 0	5.7976	0.02	Q			
V	62+ 5	5.7977	0.02	Q			
V	62+10	5.7978	0.02	Q			
V	62+15	5.7980	0.02	Q			
V	62+20	5.7981	0.02	Q			
V	62+25	5.7982	0.02	Q			
V	62+30	5.7984	0.02	Q			
V	62+35	5.7985	0.02	Q			
V	62+40	5.7986	0.02	Q			
V	62+45	5.7987	0.02	Q			
V	62+50	5.7989	0.02	Q			
V	62+55	5.7990	0.02	Q			
V	63+ 0	5.7991	0.02	Q			
V	63+ 5	5.7992	0.02	Q			
V	63+10	5.7993	0.02	Q			
V	63+15	5.7995	0.02	Q			
V	63+20	5.7996	0.02	Q			
V							

	63+25	5.7997	0.02	Q			
V	63+30	5.7998	0.02	Q			
V	63+35	5.7999	0.02	Q			
V	63+40	5.8000	0.02	Q			
V	63+45	5.8001	0.02	Q			
V	63+50	5.8003	0.02	Q			
V	63+55	5.8004	0.02	Q			
V	64+ 0	5.8005	0.02	Q			
V	64+ 5	5.8006	0.02	Q			
V	64+10	5.8007	0.02	Q			
V	64+15	5.8008	0.02	Q			
V	64+20	5.8009	0.02	Q			
V	64+25	5.8010	0.02	Q			
V	64+30	5.8011	0.02	Q			
V	64+35	5.8012	0.02	Q			
V	64+40	5.8013	0.02	Q			
V	64+45	5.8014	0.01	Q			
V	64+50	5.8015	0.01	Q			
V	64+55	5.8016	0.01	Q			
V	65+ 0	5.8017	0.01	Q			
V	65+ 5	5.8018	0.01	Q			
V	65+10	5.8019	0.01	Q			
V	65+15	5.8020	0.01	Q			
V	65+20	5.8021	0.01	Q			
V	65+25	5.8022	0.01	Q			
V	65+30	5.8023	0.01	Q			
V	65+35	5.8024	0.01	Q			
V	65+40	5.8025	0.01	Q			
V	65+45	5.8026	0.01	Q			
V	65+50	5.8027	0.01	Q			
V							

	65+55	5.8028	0.01	Q			
V	66+ 0	5.8029	0.01	Q			
V	66+ 5	5.8030	0.01	Q			
V	66+10	5.8031	0.01	Q			
V	66+15	5.8032	0.01	Q			
V	66+20	5.8032	0.01	Q			
V	66+25	5.8033	0.01	Q			
V	66+30	5.8034	0.01	Q			
V	66+35	5.8035	0.01	Q			
V	66+40	5.8036	0.01	Q			
V	66+45	5.8037	0.01	Q			
V	66+50	5.8038	0.01	Q			
V	66+55	5.8038	0.01	Q			
V	67+ 0	5.8039	0.01	Q			
V	67+ 5	5.8040	0.01	Q			
V	67+10	5.8041	0.01	Q			
V	67+15	5.8042	0.01	Q			
V	67+20	5.8043	0.01	Q			
V	67+25	5.8043	0.01	Q			
V	67+30	5.8044	0.01	Q			
V	67+35	5.8045	0.01	Q			
V	67+40	5.8046	0.01	Q			
V	67+45	5.8046	0.01	Q			
V	67+50	5.8047	0.01	Q			
V	67+55	5.8048	0.01	Q			
V	68+ 0	5.8049	0.01	Q			
V	68+ 5	5.8049	0.01	Q			
V	68+10	5.8050	0.01	Q			
V	68+15	5.8051	0.01	Q			
V	68+20	5.8052	0.01	Q			
V							

	68+25	5.8052	0.01	Q			
V	68+30	5.8053	0.01	Q			
V	68+35	5.8054	0.01	Q			
V	68+40	5.8055	0.01	Q			
V	68+45	5.8055	0.01	Q			
V	68+50	5.8056	0.01	Q			
V	68+55	5.8057	0.01	Q			
V	69+ 0	5.8057	0.01	Q			
V	69+ 5	5.8058	0.01	Q			
V	69+10	5.8059	0.01	Q			
V	69+15	5.8059	0.01	Q			
V	69+20	5.8060	0.01	Q			
V	69+25	5.8061	0.01	Q			
V	69+30	5.8061	0.01	Q			
V	69+35	5.8062	0.01	Q			
V	69+40	5.8063	0.01	Q			
V	69+45	5.8063	0.01	Q			
V	69+50	5.8064	0.01	Q			
V	69+55	5.8065	0.01	Q			
V	70+ 0	5.8065	0.01	Q			
V	70+ 5	5.8066	0.01	Q			
V	70+10	5.8066	0.01	Q			
V	70+15	5.8067	0.01	Q			
V	70+20	5.8068	0.01	Q			
V	70+25	5.8068	0.01	Q			
V	70+30	5.8069	0.01	Q			
V	70+35	5.8070	0.01	Q			
V	70+40	5.8070	0.01	Q			
V	70+45	5.8071	0.01	Q			
V	70+50	5.8071	0.01	Q			
V							

	70+55	5.8072	0.01	Q			
V	71+ 0	5.8072	0.01	Q			
V	71+ 5	5.8073	0.01	Q			
V	71+10	5.8074	0.01	Q			
V	71+15	5.8074	0.01	Q			
V	71+20	5.8075	0.01	Q			
V	71+25	5.8075	0.01	Q			
V	71+30	5.8076	0.01	Q			
V	71+35	5.8076	0.01	Q			
V	71+40	5.8077	0.01	Q			
V	71+45	5.8077	0.01	Q			
V	71+50	5.8078	0.01	Q			
V	71+55	5.8078	0.01	Q			
V	72+ 0	5.8079	0.01	Q			
V	72+ 5	5.8079	0.01	Q			
V	72+10	5.8080	0.01	Q			
V	72+15	5.8080	0.01	Q			
V	72+20	5.8081	0.01	Q			
V	72+25	5.8081	0.01	Q			
V	72+30	5.8082	0.01	Q			
V	72+35	5.8082	0.01	Q			
V	72+40	5.8083	0.01	Q			
V	72+45	5.8083	0.01	Q			
V	72+50	5.8084	0.01	Q			
V	72+55	5.8084	0.01	Q			
V	73+ 0	5.8085	0.01	Q			
V	73+ 5	5.8085	0.01	Q			
V	73+10	5.8086	0.01	Q			
V	73+15	5.8086	0.01	Q			
V	73+20	5.8087	0.01	Q			
V							

	73+25	5.8087	0.01	Q			
V	73+30	5.8088	0.01	Q			
V	73+35	5.8088	0.01	Q			
V	73+40	5.8089	0.01	Q			
V	73+45	5.8089	0.01	Q			
V	73+50	5.8089	0.01	Q			
V	73+55	5.8090	0.01	Q			
V	74+ 0	5.8090	0.01	Q			
V	74+ 5	5.8091	0.01	Q			
V	74+10	5.8091	0.01	Q			
V	74+15	5.8092	0.01	Q			
V	74+20	5.8092	0.01	Q			
V	74+25	5.8092	0.01	Q			
V	74+30	5.8093	0.01	Q			
V	74+35	5.8093	0.01	Q			
V	74+40	5.8094	0.01	Q			
V	74+45	5.8094	0.01	Q			
V	74+50	5.8094	0.01	Q			
V	74+55	5.8095	0.01	Q			
V	75+ 0	5.8095	0.01	Q			
V	75+ 5	5.8096	0.01	Q			
V	75+10	5.8096	0.01	Q			
V	75+15	5.8096	0.01	Q			
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V	75+25	5.8097	0.01	Q			
V	75+30	5.8098	0.01	Q			
V	75+35	5.8098	0.01	Q			
V	75+40	5.8098	0.01	Q			
V	75+45	5.8099	0.01	Q			
V	75+50	5.8099	0.01	Q			
V							

	75+55	5.8099	0.01	Q			
V	76+ 0	5.8100	0.01	Q			
V	76+ 5	5.8100	0.01	Q			
V	76+10	5.8100	0.01	Q			
V	76+15	5.8101	0.01	Q			
V	76+20	5.8101	0.01	Q			
V	76+25	5.8101	0.00	Q			
V	76+30	5.8102	0.00	Q			
V	76+35	5.8102	0.00	Q			
V	76+40	5.8102	0.00	Q			
V	76+45	5.8103	0.00	Q			
V	76+50	5.8103	0.00	Q			
V	76+55	5.8103	0.00	Q			
V	77+ 0	5.8104	0.00	Q			
V	77+ 5	5.8104	0.00	Q			
V	77+10	5.8104	0.00	Q			
V	77+15	5.8105	0.00	Q			
V	77+20	5.8105	0.00	Q			
V	77+25	5.8105	0.00	Q			
V	77+30	5.8106	0.00	Q			
V	77+35	5.8106	0.00	Q			
V	77+40	5.8106	0.00	Q			
V	77+45	5.8107	0.00	Q			
V	77+50	5.8107	0.00	Q			
V	77+55	5.8107	0.00	Q			
V	78+ 0	5.8107	0.00	Q			
V	78+ 5	5.8108	0.00	Q			
V	78+10	5.8108	0.00	Q			
V	78+15	5.8108	0.00	Q			
V	78+20	5.8109	0.00	Q			
V							

	78+25	5.8109	0.00	Q			
V	78+30	5.8109	0.00	Q			
V	78+35	5.8110	0.00	Q			
V	78+40	5.8110	0.00	Q			
V	78+45	5.8110	0.00	Q			
V	78+50	5.8110	0.00	Q			
V	78+55	5.8111	0.00	Q			
V	79+ 0	5.8111	0.00	Q			
V	79+ 5	5.8111	0.00	Q			
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V	79+15	5.8112	0.00	Q			
V	79+20	5.8112	0.00	Q			
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V	80+ 5	5.8114	0.00	Q			
V	80+10	5.8114	0.00	Q			
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V	80+25	5.8115	0.00	Q			
V	80+30	5.8115	0.00	Q			
V	80+35	5.8116	0.00	Q			
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V	80+50	5.8116	0.00	Q			
V							

	80+55	5.8117	0.00	Q			
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V	81+ 5	5.8117	0.00	Q			
V	81+10	5.8117	0.00	Q			
V	81+15	5.8117	0.00	Q			
V	81+20	5.8118	0.00	Q			
V	81+25	5.8118	0.00	Q			
V	81+30	5.8118	0.00	Q			
V	81+35	5.8118	0.00	Q			
V	81+40	5.8119	0.00	Q			
V	81+45	5.8119	0.00	Q			
V	81+50	5.8119	0.00	Q			
V	81+55	5.8119	0.00	Q			
V	82+ 0	5.8119	0.00	Q			
V	82+ 5	5.8120	0.00	Q			
V	82+10	5.8120	0.00	Q			
V	82+15	5.8120	0.00	Q			
V	82+20	5.8120	0.00	Q			
V	82+25	5.8120	0.00	Q			
V	82+30	5.8121	0.00	Q			
V	82+35	5.8121	0.00	Q			
V	82+40	5.8121	0.00	Q			
V	82+45	5.8121	0.00	Q			
V	82+50	5.8121	0.00	Q			
V	82+55	5.8121	0.00	Q			
V	83+ 0	5.8122	0.00	Q			
V	83+ 5	5.8122	0.00	Q			
V	83+10	5.8122	0.00	Q			
V	83+15	5.8122	0.00	Q			
V	83+20	5.8122	0.00	Q			
V							

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V	83+30	5.8123	0.00	Q			
V	83+35	5.8123	0.00	Q			
V	83+40	5.8123	0.00	Q			
V	83+45	5.8123	0.00	Q			
V	83+50	5.8123	0.00	Q			
V	83+55	5.8124	0.00	Q			
V	84+ 0	5.8124	0.00	Q			
V	84+ 5	5.8124	0.00	Q			
V	84+10	5.8124	0.00	Q			
V	84+15	5.8124	0.00	Q			
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V	84+25	5.8125	0.00	Q			
V	84+30	5.8125	0.00	Q			
V	84+35	5.8125	0.00	Q			
V	84+40	5.8125	0.00	Q			
V	84+45	5.8125	0.00	Q			
V	84+50	5.8125	0.00	Q			
V	84+55	5.8126	0.00	Q			
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V	85+ 5	5.8126	0.00	Q			
V	85+10	5.8126	0.00	Q			
V	85+15	5.8126	0.00	Q			
V	85+20	5.8126	0.00	Q			
V	85+25	5.8126	0.00	Q			
V	85+30	5.8127	0.00	Q			
V	85+35	5.8127	0.00	Q			
V	85+40	5.8127	0.00	Q			
V	85+45	5.8127	0.00	Q			
V	85+50	5.8127	0.00	Q			
V							

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V	86+15	5.8128	0.00	Q			
V	86+20	5.8128	0.00	Q			
V	86+25	5.8128	0.00	Q			
V	86+30	5.8128	0.00	Q			
V	86+35	5.8128	0.00	Q			
V	86+40	5.8129	0.00	Q			
V	86+45	5.8129	0.00	Q			
V	86+50	5.8129	0.00	Q			
V	86+55	5.8129	0.00	Q			
V	87+ 0	5.8129	0.00	Q			
V	87+ 5	5.8129	0.00	Q			
V	87+10	5.8129	0.00	Q			
V	87+15	5.8129	0.00	Q			
V	87+20	5.8130	0.00	Q			
V	87+25	5.8130	0.00	Q			
V	87+30	5.8130	0.00	Q			
V	87+35	5.8130	0.00	Q			
V	87+40	5.8130	0.00	Q			
V	87+45	5.8130	0.00	Q			
V	87+50	5.8130	0.00	Q			
V	87+55	5.8130	0.00	Q			
V	88+ 0	5.8131	0.00	Q			
V	88+ 5	5.8131	0.00	Q			
V	88+10	5.8131	0.00	Q			
V	88+15	5.8131	0.00	Q			
V	88+20	5.8131	0.00	Q			
V							

	88+25	5.8131	0.00	Q			
V	88+30	5.8131	0.00	Q			
V	88+35	5.8131	0.00	Q			
V	88+40	5.8131	0.00	Q			
V	88+45	5.8132	0.00	Q			
V	88+50	5.8132	0.00	Q			
V	88+55	5.8132	0.00	Q			
V	89+ 0	5.8132	0.00	Q			
V	89+ 5	5.8132	0.00	Q			
V	89+10	5.8132	0.00	Q			
V	89+15	5.8132	0.00	Q			
V	89+20	5.8132	0.00	Q			
V	89+25	5.8132	0.00	Q			
V	89+30	5.8132	0.00	Q			
V	89+35	5.8133	0.00	Q			
V	89+40	5.8133	0.00	Q			
V	89+45	5.8133	0.00	Q			
V	89+50	5.8133	0.00	Q			
V	89+55	5.8133	0.00	Q			
V	90+ 0	5.8133	0.00	Q			
V	90+ 5	5.8133	0.00	Q			
V	90+10	5.8133	0.00	Q			
V	90+15	5.8133	0.00	Q			
V	90+20	5.8133	0.00	Q			
V	90+25	5.8134	0.00	Q			
V	90+30	5.8134	0.00	Q			
V	90+35	5.8134	0.00	Q			
V	90+40	5.8134	0.00	Q			
V	90+45	5.8134	0.00	Q			
V	90+50	5.8134	0.00	Q			
V							

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V	91+10	5.8134	0.00	Q			
V	91+15	5.8134	0.00	Q			
V	91+20	5.8135	0.00	Q			
V	91+25	5.8135	0.00	Q			
V	91+30	5.8135	0.00	Q			
V	91+35	5.8135	0.00	Q			
V	91+40	5.8135	0.00	Q			
V	91+45	5.8135	0.00	Q			
V	91+50	5.8135	0.00	Q			
V	91+55	5.8135	0.00	Q			
V	92+ 0	5.8135	0.00	Q			
V	92+ 5	5.8135	0.00	Q			
V	92+10	5.8135	0.00	Q			
V	92+15	5.8135	0.00	Q			
V	92+20	5.8135	0.00	Q			
V	92+25	5.8136	0.00	Q			
V	92+30	5.8136	0.00	Q			
V	92+35	5.8136	0.00	Q			
V	92+40	5.8136	0.00	Q			
V	92+45	5.8136	0.00	Q			
V	92+50	5.8136	0.00	Q			
V	92+55	5.8136	0.00	Q			
V	93+ 0	5.8136	0.00	Q			
V	93+ 5	5.8136	0.00	Q			
V	93+10	5.8136	0.00	Q			
V	93+15	5.8136	0.00	Q			
V	93+20	5.8136	0.00	Q			
V							

V	93+25	5.8136	0.00	Q			
V	93+30	5.8137	0.00	Q			
V	93+35	5.8137	0.00	Q			
V	93+40	5.8137	0.00	Q			
V							

```

-----
*****HYDROGRAPH
DATA*****
      Number of intervals = 1124
      Time interval = 5.0 (Min.)
      Maximum/Peak flow rate = 16.000 (CFS)
      Total volume = 5.814 (Ac.Ft)
      Status of hydrographs being held in storage
      Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS) 0.000 0.000 0.000 0.000
0.000
Vol (Ac.Ft) 0.000 0.000 0.000 0.000
0.000
*****
*****
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APPENDIX C: PROJECT HYDRAULIC CALCULATIONS

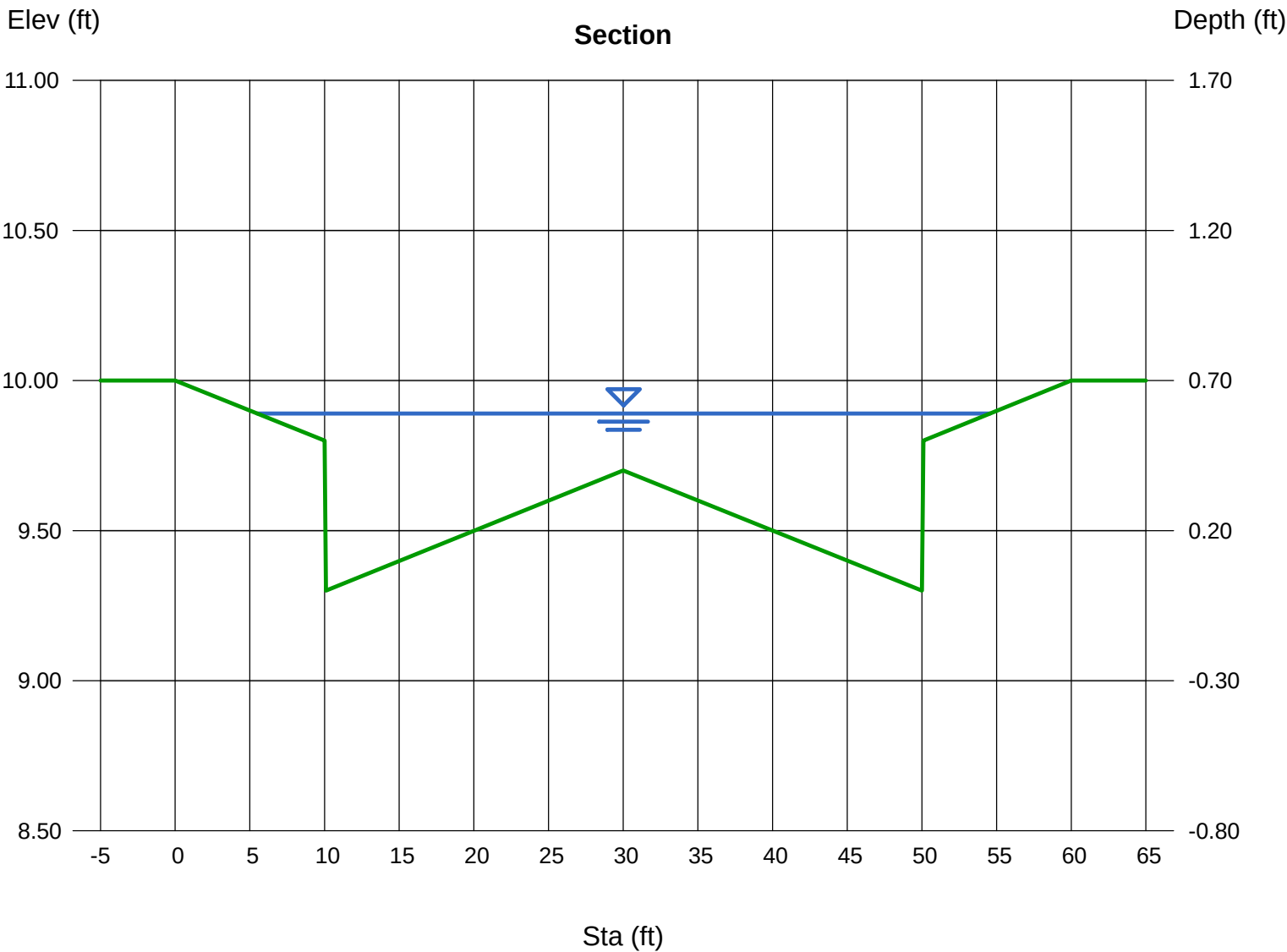
Channel Report

TTM 20268 STREET CAPACITY CHECK - PEAK RUNOFF 100 YR

User-defined		Highlighted	
Invert Elev (ft)	= 9.30	Depth (ft)	= 0.59
Slope (%)	= 0.50	Q (cfs)	= 42.80
N-Value	= 0.018	Area (sqft)	= 16.03
Calculations		Velocity (ft/s)	= 2.67
Compute by:	Known Q	Wetted Perim (ft)	= 49.88
Known Q (cfs)	= 42.80	Crit Depth, Yc (ft)	= 0.54
		Top Width (ft)	= 49.06
		EGL (ft)	= 0.70

(Sta, El, n)-(Sta, El, n)...

(0.00, 10.00)-(10.00, 9.80, 0.030)-(10.10, 9.30, 0.015)-(30.00, 9.70, 0.015)-(50.00, 9.30, 0.015)-(50.10, 9.80, 0.015)-(60.00, 10.00, 0.030)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc.

Monday, Dec 21 2020

TTM 20268 STREET CAPACITY CHECK - PEAK RUNOFF 10 YR

User-defined

Invert Elev (ft) = 9.30
Slope (%) = 0.50
N-Value = 0.015

Highlighted

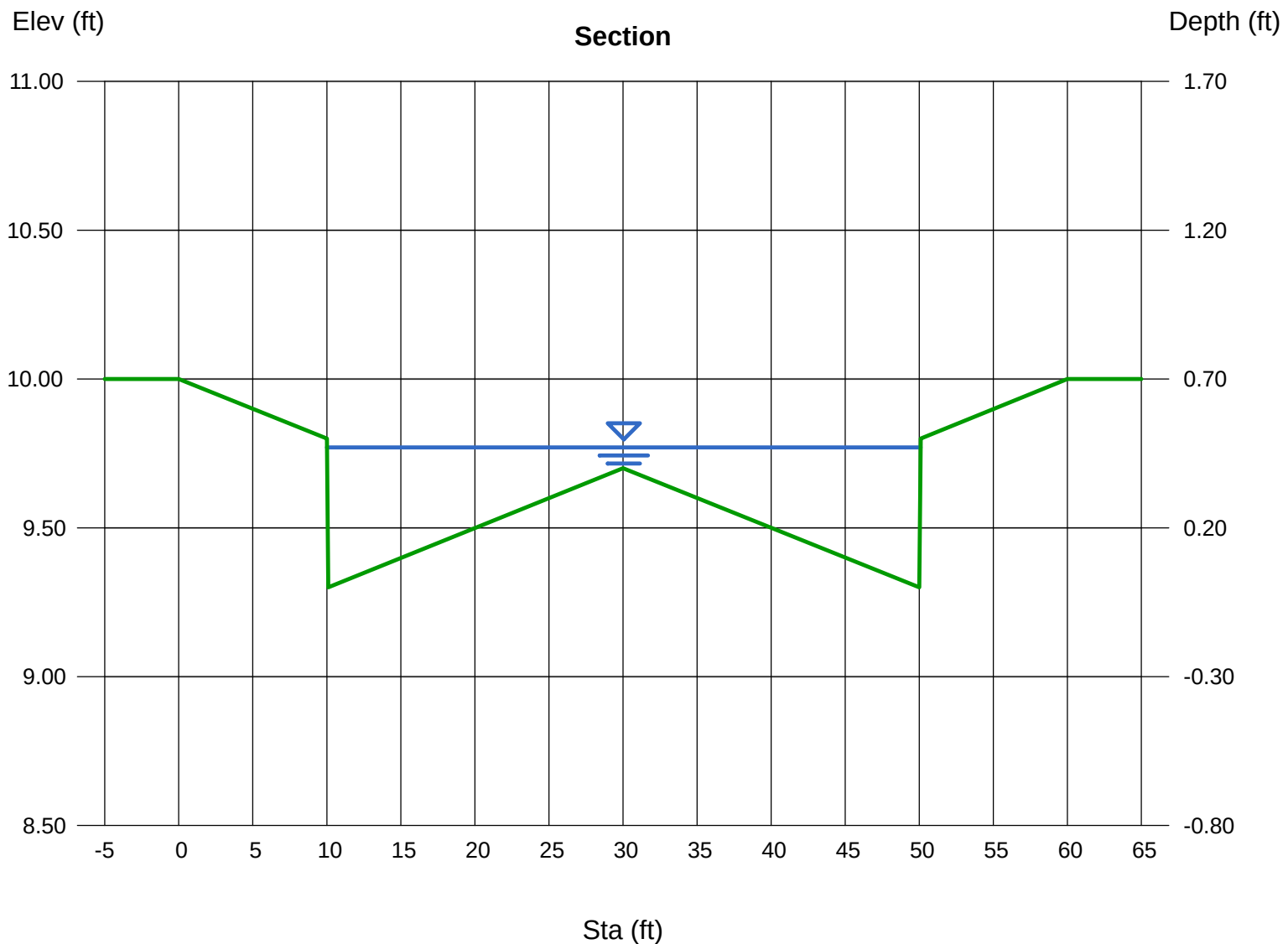
Depth (ft) = 0.47
Q (cfs) = 30.00
Area (sqft) = 10.82
Velocity (ft/s) = 2.77
Wetted Perim (ft) = 40.87
Crit Depth, Yc (ft) = 0.46
Top Width (ft) = 40.09
EGL (ft) = 0.59

Calculations

Compute by: Known Q
Known Q (cfs) = 30.00

(Sta, El, n)-(Sta, El, n)...

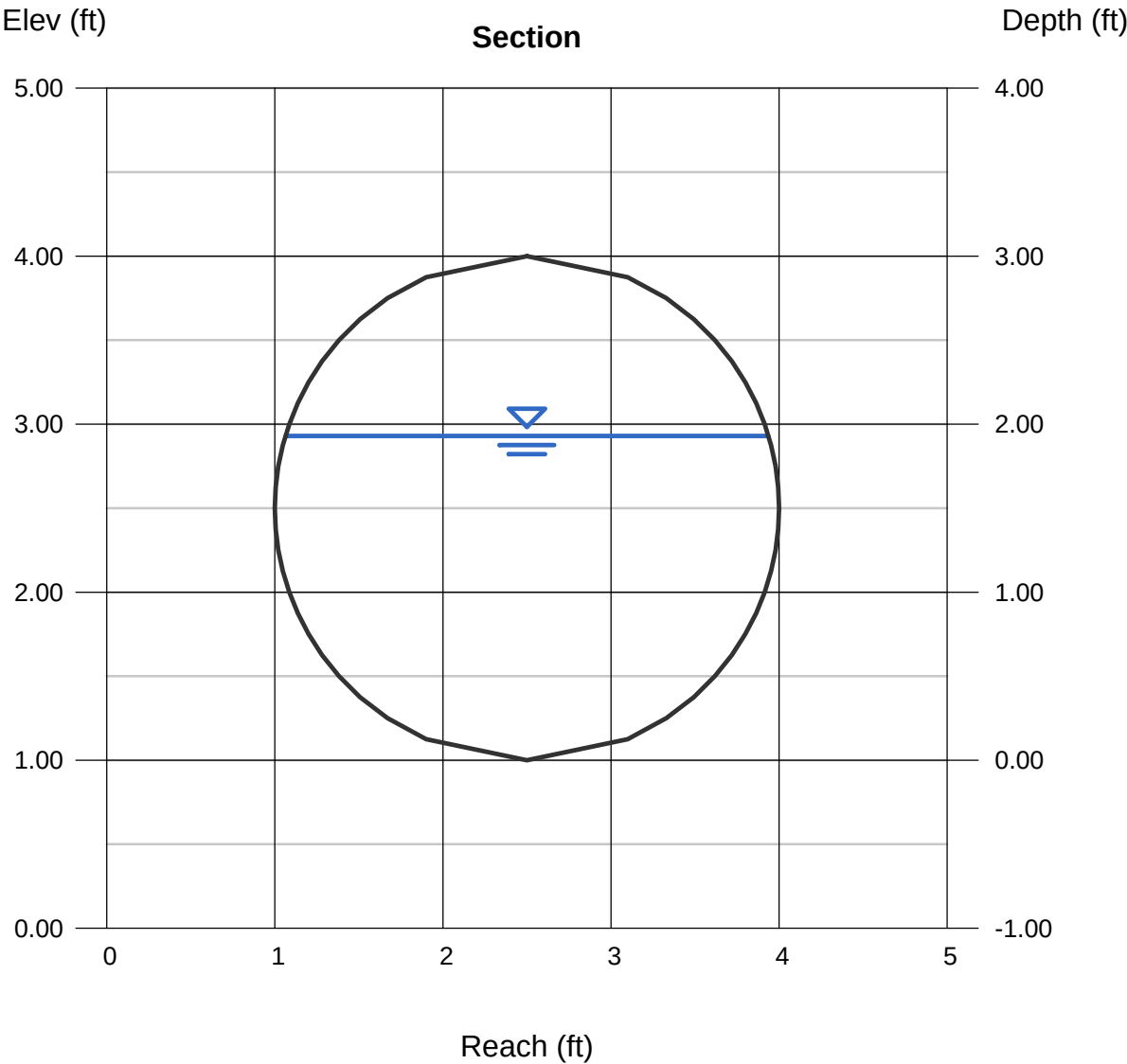
(0.00, 10.00)-(10.00, 9.80, 0.030)-(10.10, 9.30, 0.015)-(30.00, 9.70, 0.015)-(50.00, 9.30, 0.015)-(50.10, 9.80, 0.015)-(60.00, 10.00, 0.030)



Channel Report

SD CHECK - EUCALYPTUS

Circular		Highlighted	
Diameter (ft)	= 3.00	Depth (ft)	= 1.93
		Q (cfs)	= 30.40
		Area (sqft)	= 4.82
Invert Elev (ft)	= 1.00	Velocity (ft/s)	= 6.31
Slope (%)	= 0.50	Wetted Perim (ft)	= 5.59
N-Value	= 0.015	Crit Depth, Yc (ft)	= 1.79
		Top Width (ft)	= 2.87
		EGL (ft)	= 2.55
Calculations			
Compute by:	Known Q		
Known Q (cfs)	= 30.40		



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc.

Thursday, Dec 10 2020

Preliminary internal park channel

Triangular

Side Slopes (z:1) = 4.00, 4.00
Total Depth (ft) = 2.00

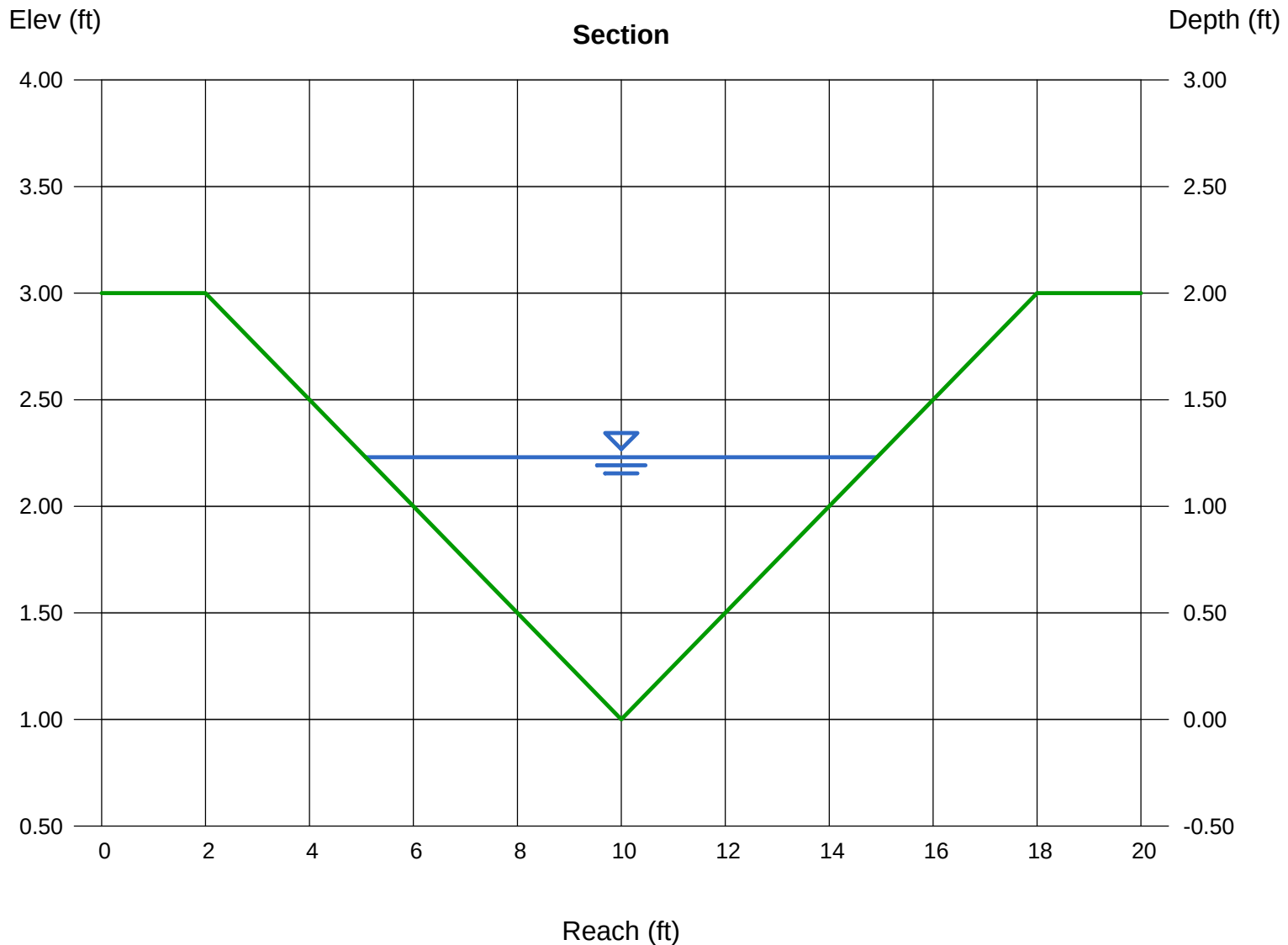
Invert Elev (ft) = 1.00
Slope (%) = 3.00
N-Value = 0.030

Calculations

Compute by: Known Q
Known Q (cfs) = 36.20

Highlighted

Depth (ft) = 1.23
Q (cfs) = 36.20
Area (sqft) = 6.05
Velocity (ft/s) = 5.98
Wetted Perim (ft) = 10.14
Crit Depth, Yc (ft) = 1.39
Top Width (ft) = 9.84
EGL (ft) = 1.79



**APPENDIX D:
PRIORITY PROJECT CHECKLIST AND APN'S**

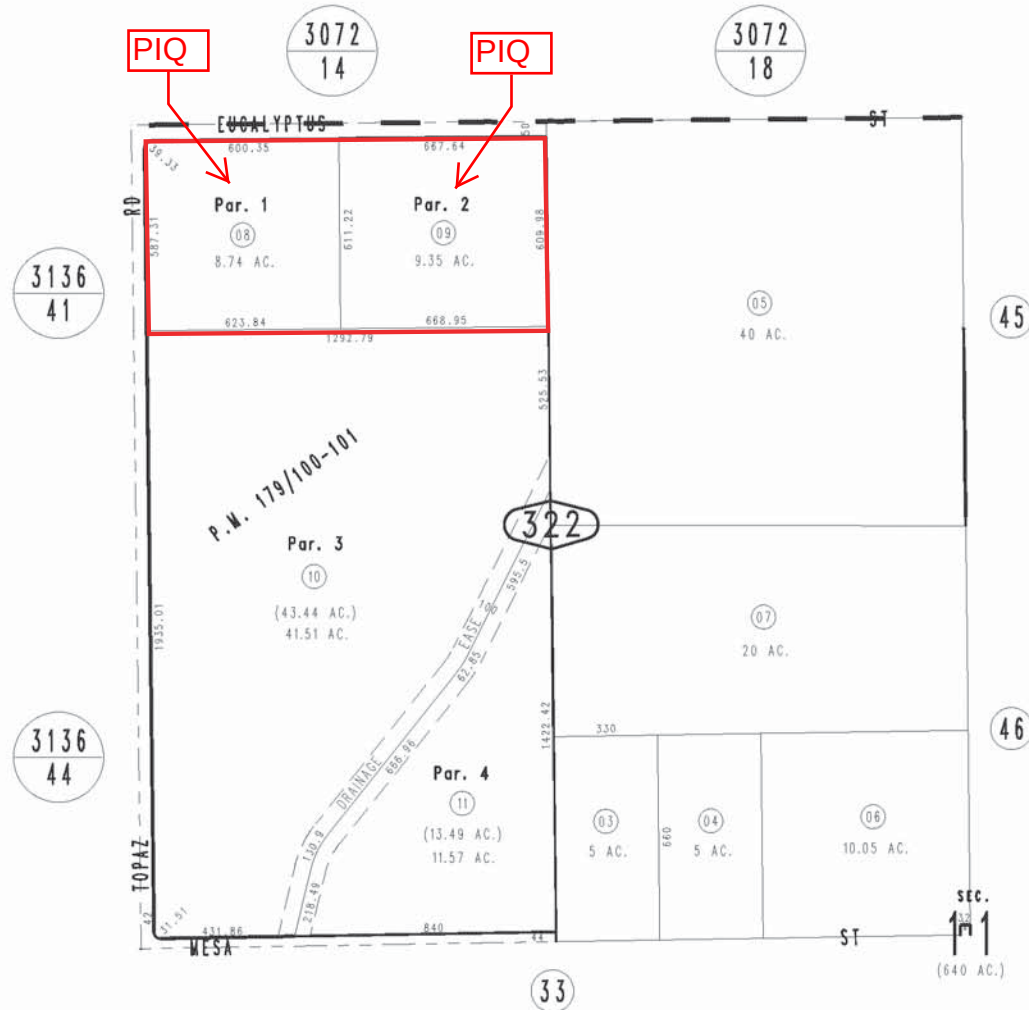
THIS MAP IS FOR THE PURPOSE
OF AD VALOREM TAXATION ONLY.



N.W.1/4, Sec.11, T.4N.,R.5W., S.B.B.&M.

City of Victorville
Tax Rate Area
12167

0405- 32



STORMWATER PLANNING PROGRAM PRIORITY PROJECT CHECKLIST

**FORM
PC**

Project Name Eucalyptus & Topaz	Owner Name Tanner Family Trust	Developer Name SAME AS OWNER
Project Address SEC Eucalyptus Rd and	Owner Address 2501 Markwood Street	Developer Address
Topaz, Victorville, CA	Duarte, CA 91010	
Plan Check # TTM 20368	Owner Phone	Developer Phone

TYPE OF PROJECT

Does the proposed project fall into one of the following categories? Please check Yes/No	YES	NO
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PRIORITY PROJECTS

1. A new project equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious* surface area	X	
2. A new industrial park with 10,000 square feet or more of surface area		X
3. A new commercial mall with 10,000 square feet or more surface area		X
4. A new retail gasoline outlet with 5,000 square feet or more of surface area		X
5. A new restaurant (SIC 5812) with 5,000 square feet or more of surface area		X
6. A new parking lot with either 5,000 ft ² or more of impervious* surface or with 25 or more parking spaces		X
7. A new automotive service facility (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) with 5,000 square feet or more of surface area		X
8. Projects located in or directly adjacent to, or discharging directly to a Significant Ecological Area (SEA)*, where the development will: a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and b. Create 2,500 square feet or more of impervious surface area		X
9. Redevelopment*		X

SPECIAL PROVISION PROJECTS

10. Green street* project		X
11. Single family hillside* home		X

If checked YES, numerical criteria will apply to items 1,2,6-9 and items 3-5 (for project areas of 5,000 ft² or more of surface area.) If any of the boxes are checked YES, this project will require the preparation of a Low Impact Development (LID) Plan and a Maintenance Agreement Transfer*

* Defined on back.

Frank Tanner
Applicant Name

MANAGING PARTNER
Applicant Title

TO BE SIGNED AT FINAL
Applicant Signature

TBD
Date

DEFINITIONS:

Impervious are those surfaces that do not allow stormwater runoff to percolate into the ground. Typical impervious surfaces include: concrete, asphalt, roofing materials, etc. However, some specially designed concrete/asphalt do allow water to percolate (pervious).

Hillside means property where the slope is 25% or greater and where grading contemplates cut or fill slopes. Single family hillside homes will require a less extensive plan. During the construction of a single-family hillside home, the following measures are implemented:

- a. Conserve natural areas
- b. Protect slopes and channels
- c. Provide storm drain system stenciling and signage
- d. Divert roof runoff to vegetated areas before discharge unless the diversion would result in slope instability
- e. Direct surface flow to vegetated areas before discharge unless the diversion would result in slope instability.

Green Streets means any street and road construction of 10,000 square feet or more of impervious surface area

- a. These projects will follow an approved green streets manual to the maximum extent practicable. Street and road construction applies to standalone streets, roads, highways, and freeway projects, and also applies to streets within larger projects. Stormwater mitigation measures must be in compliance with the approved green streets manual requirements.

Redevelopment means land-disturbing activities that result in the creation, addition, or replacement of 5,000 ft² or more of impervious surface area on an already developed site.

Redevelopment does not include routine maintenance activities that are conducted to maintain the original line and grade, hydraulic capacity, or original purpose of facility, nor does it include modifications to existing single family structures, or emergency construction activities required to immediately protect public health and safety.

Significant Ecological Area means an area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and would be disturbed or degraded by human activities and developments. Also, an area designated by the City as approved by the Regional Water Quality Control Board.

Maintenance Agreement and Transfer: All developments subject to LID and site specific plan requirements provide verification of maintenance provisions for Structural and Treatment Control BMPs, including but not limited to legal agreements, covenants, CEQA mitigation requirements, and/or conditional use permits. Verification at a minimum shall include:

- The developer's and/or owner's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and
- A signed statement from the public entity assuming responsibility for Structural or Treatment Control BMP maintenance and conduct a maintenance inspection at least once a year; or
- Written conditions in the sales or lease agreement, which requires the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year; or
- Written text in project conditions, covenants and restrictions (CCRs) for residential properties assigning maintenance responsibilities to the Home Owners Association for maintenance of the Structural and Treatment Control BMPs; or
- Any other legally enforceable agreement that assigns responsibility for the maintenance of post-construction Structural or Treatment Control BMPs.