

# **PRELIMINARY HYDROLOGY STUDY TENTATIVE TRACT MAP No. 38094 Krameria Avenue & Dant Street Project**

## **Project Address:**

Krameria Avenue & Dant Street  
Riverside, California

## **Prepared For:**

Coastal commercial Properties  
1020 Second Street, Suite C  
Encinitas, California 92024

## **Prepared By:**

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**February 2021**

# Table of Contents

1.0 PURPOSE OF STUDY:.....	1
2.0 SITE DESCRIPTION: .....	1
3.0 PRE-DEVELOPMENT CONDITIONS: .....	1
4.0 POST-DEVELOPMENT CONDITIONS:.....	2
5.0 METHODOLOGY:.....	3
6.0 RESULTS: .....	4
7.0 CONCLUSION: .....	6

## APPENDIX A: Hydrology Maps

Preliminary Pre-Development Conditions Hydrology Map

Preliminary Post-Development Conditions Hydrology Map

## APPENDIX B: Precipitation Map

## APPENDIX C: Hydrology Calculations

Pre-Development & Post-Development Conditions Hydrology Calculations (2-year Storm Event)

Pre-Development & Post-Development Conditions Hydrology Calculations (10-year Storm Event)

Pre-Development & Post-Development Conditions Hydrology Calculations (50-year Storm Event)

Pre-Development & Post-Development Conditions Hydrology Calculations (100-year Storm Event)

## APPENDIX D: Synthetic Unit Hydrograph

Pre-Development & Post-Development Conditions CivilDesign (2-year Storm Event)

Pre-Development & Post-Development Conditions CivilDesign (100-year Storm Event)

## APPENDIX E: Basin Routing Calculations

## APPENDIX F: Hydraulic Calculations

## APPENDIX G: USDA Soil Map

## APPENDIX H: FEMA Flood Map and RCFC&WCD Hydrology Manual References

## APPENDIX I: Tentative Tract Map

**Preliminary Hydrology Study  
Tentative Tract Map No. 38094**

**ACKNOWLEDGEMENT AND SIGNATURE PAGE**

This Preliminary Hydrology Study was prepared by C&V Consulting, Inc. under the supervision of Dane P. McDougall, P.E.

\_\_\_\_\_  
Dane P. McDougall, R.C.E. 80705  
Principal, C&V Consulting, Inc.

\_\_\_\_\_  
Date

### **1.0 PURPOSE OF STUDY:**

The preliminary hydrology study will determine the amount of stormwater runoff generated from the project site under pre-development and post-development conditions. The values and statements within this report confirm the Post-Development site is designed and planned in accordance with the Riverside County Flood Control and Water Conservation District (RCFC&WCD) Hydrology Manual and the City of Riverside drainage requirements. This study will anticipate whether detention or other peak flow mitigation methods will be required by comparing the Post-Development and Pre-Development condition peak flow rates for the 100-year storm events.

### **2.0 SITE DESCRIPTION:**

The proposed site is located at Krameria Avenue and Dant Street, in the City of Riverside, County of Riverside. The site is made up of two rectangle shape bordered by Krameria Avenue to the north, Lurin Avenue to the south, Wood Road to the west, and Dant Street to the east. A group of single-family homes is to the west and east of the northern portion of the site within the road boundaries. The Development site is approximately 18.93 acres in gross area and currently a vacant land.

According to the USDA Natural Resources Conservation Service, the entire site in located in the hydrologic soil group "C".

### **3.0 PRE-DEVELOPMENT CONDITIONS:**

In the current onsite condition, stormwater generally sheet flows over land from the north-easterly portion of the site to the westerly portion of the site.

There is no sign of offsite run-on drainage to the site identified on the perimeter of the property line of the site due to Pre-Development site grading and/or Pre-Development perimeter controls.

According to the Federal Emergency Management Agency (FEMA), FIRM rate map Number 06065C0740G, effective date August 28, 2008, the site is located within flood Zone D. Zone D is areas of undetermined flood Hazard but is relatively close to Zone X on the south border, which is areas determined to be outside of the 0.2% annual chance floodplain. Refer to the FIRM rate map within Appendix H.

The topographic survey was utilized to identify Pre-Development onsite high points and overall site conveyance of storm water runoff. All the Pre-Development onsite stormwater runoff ultimately reaches the outlet Wood Road. The site was separated to two portions to approximately quantify the runoff based on the longest hydraulic path from the most remote high point to drain low point, which will be used to compare to the proposed condition.

Refer to the "Pre-Development Conditions Hydrology Map" located in Appendix A for reference.

**4.0 POST-DEVELOPMENT CONDITIONS:**

The proposed project consists of 96 single-family residential units on an approximate 17.63 net acre site. The proposed development includes drive aisles, parking, landscaping, walkways, and common open space areas.

The site will be graded to collect runoff at multiple catch basins spread throughout the site which eventually connect to the bio-retention basins located at the west and south boundary of the site. The basins will be connected to a detention pipe system underneath and discharge runoffs to the offsite storm drain system on Wood Road.

In an event where the proposed onsite storm drain system exceeds full capacity, stormwater will overflow through basin culvert to outlet to Wood Road. During final engineering, water surface elevations will be analyzed to provide flood protection as required from the 100-year storm event.

Refer to “Post-Development Conditions Preliminary Hydrology Map” in Appendix A for reference.

## **5.0 METHODOLOGY:**

For preliminary purposes, the project drainage analysis considers two (2) initial sub-area for the on-site drainage area to obtain the runoffs generated from the project site. The pre-development and post-development conditions were analyzed using Advanced Engineering Software (AES), Rational Method per Riverside County Flood Control and Water Conservation District (RCFC&WCD) Hydrology Manual. Each drainage area was divided as demonstrated on the hydrology map, was analyzed for acreage, land-use, soil type, impervious cover, and time of concentration according to the Rational Method. Storms of 2-, 10-, 50-, and 100-year storm events were applied to the subareas in each condition, and the peak flow rates corresponding with the post-development condition were compared to that of the Pre-Development condition expressed in cubic feet per second (cfs).

As for the volume calculation, CivilDesign Hydrograph Method was used to analyze the project site as two (2) drainage areas using the longest flow path per RCFC&WCD Hydrology Manual's synthetic unit hydrograph method. The CivilDesign Routing analysis was utilized to demonstrate that post-development condition volume is designed release runoff at the rate similar to the pre-development condition for the different storm events and the bio-retention basins/ detention system is adequately sized for its storage capacity.

Per the separately prepared Project Specific Water Quality Management Plan, the bio-retention/ detention will also provide sufficient storage for the BMP Design Volume ( $V_{BMP}$ ).

In this preliminary hydrology study, the impervious area percentage values were used either from a sheet extracted from RCFC&WCD Hydrology Manual 1978 referenced in Appendix H or conservative estimation. During final engineering, impervious areas will be calculated in more detail to refine all peak flow rates. Catch basin & pipe sizing and 100-year water surface elevation calculations will be provided during final engineering. Confluence analysis and travel time considerations will be incorporated in the calculations during final engineering to reflect more accurate peak flow rate values.

Refer to Hydrologic Calculations in Appendix C.

Refer to the Pre-Development and Post-Development Unit Hydrographs in Appendix D.

**6.0 RESULTS:**

**Hydrology Summary**

The results from this preliminary hydrology study utilizing the methods provided by the City of Riverside and the RCFC&WCD demonstrate that the post-development storm water runoffs from the project site are greater than the pre-development conditions. Refer to the hydrologic calculation summary below:

<b>Pre-Development Conditions</b>	<b>ΣQ2 (cfs)</b>	<b>ΣQ10 (cfs)</b>	<b>ΣQ50 (cfs)</b>	<b>ΣQ100 (cfs)</b>
<b>DMA XA (Node 1.2)</b>	3.89	8.04	12.35	14.45
<b>DMA XB (Node 2.2)</b>	3.49	7.75	12.22	14.26
<b>Total</b>	7.38	15.79	24.57	28.71

The pre-development Q the summation of the flow generated by the DMAs upstream.

<b>Post-Development Conditions</b>	<b>ΣQ2 (cfs)</b>	<b>ΣQ10 (cfs)</b>	<b>ΣQ50 (cfs)</b>	<b>ΣQ100 (cfs)</b>
<b>DMA A (Node 1.6)</b>	7.55	14.22	20.76	23.66
<b>DMA B (Node 2.4)</b>	7.16	13.29	19.31	21.96
<b>Total</b>	14.71	27.51	40.07	45.62

The post-development Q the summation of the flow generated by the DMAs upstream.

Refer to Pre and Post Development Condition Hydrology Map in Appendix A.

**Bio-Retention Sizing / Detention Routing**

The Synthetic Unit Hydrograph Method per the Riverside County Flood Control and Water Conservation District Hydrology Manual 1978 was utilized through CivilDesign to calculate the flowrate and volume generated by the 24-hour, 2- and 100-year storm event. The flowrate and volumes of the Pre-Development and Post-Development site were analyzed as two (2) drainage area applying the longest flow path. The volume difference between pre- and post- development was compared for the required detentions at each basin.

The proposed bio-retention/ detention system will be interconnected and direct storm water runoff to the detention system that will promote subsurface infiltration. The proposed bio-retention/ detention systems have been sized with routing analysis to accommodate runoff volumes for both the 2- and 100-year, 24-hour storm event so additional detention would not be needed.

The calculations within Appendix E and the results tabulated below verify that the bio-retention basins/ detention system will provide the appropriate capacity for both water quality and hydrology purposes:

<b>Basin A - Storm Event</b>	<b>Existing</b>		<b>Proposed</b>		<b>Routed</b>	
	<b>cfs</b>	<b>Volume (cf)</b>	<b>cfs</b>	<b>Volume (cf)</b>	<b>cfs</b>	<b>Depth (cf)</b>
2 year, 24-hour	0.182	4,855.4	0.917	24,277.0	0.19	1662.79
100 year, 24-hour	3.721	58,689.6	4.156	86,450.3	3.75	1666.41

<b>Basin B - Storm Event</b>	<b>Existing</b>		<b>Proposed</b>		<b>Routed</b>	
	<b>cfs</b>	<b>Volume (cf)</b>	<b>cfs</b>	<b>Volume (cf)</b>	<b>cfs</b>	<b>Depth (cf)</b>
2 year, 24-hour	0.188	5,070.3	0.958	25,351.5	0.19	1666.95
100 year, 24-hour	3.827	61,287.0	4.341	90,276.3	3.91	1670.54

The development’s proposed grading/ drainage design has been developed to limit the diversion of Pre-Development flow patterns and maintain the Pre-Development runoff conditions for overflow pathways to extend the feasibility for the developed site conditions. By implementing the total onsite retention for the Post-Development condition, no significant impact to the downstream water bodies is anticipated.

Refer to Basin Design Parameter in Appendix E.

Refer to the separately prepared project Preliminary WQMP for additional information regarding the water quality design.

Catch Basin Sizing

Catch basin Sizing will be analyzed for the 100-year storm event peak flow rates and a summary table will be provided to substantiate sizes during final engineering.

Pipe Sizing

A preliminary pipe sizing for onsite runoff conveyance inlets were accomplished using AutoCAD Civil 3D – HydraFlow4-6 2019 based on the 10-year storm event peak flow rates and provided in Appendix F of this report.

Pipe Sizing will be analyzed using WSPG software to verify hydraulic grade line (HGL) based on the 10-year storm event peak flow rates and a summary table will be provided to substantiate sizes during final engineering during for Post-Development onsite conveyance pipe.



## **7.0 CONCLUSION:**

The results from this preliminary hydrology study utilizing Riverside County Flood Control and Water Conservation District Hydrology Manual 1978 demonstrate that the Post-Development condition stormwater peak flow for different year storm event frequencies from the subject site will increase compared to the Pre-Development condition peak flow as indicated in the hydrology summary results in Section 6 of this report. This is mainly due to the increased change in impervious area based on the type of development is being proposed. This condition represents higher overall peak flow rates.

The interconnected bio-retention basins/ detention system was designed so that the system store adequate amount of runoff to maintain the Pre-Development conditions of the 100-year, 24-hour storm event per the results outlined in Appendix E.

A preliminary pipe sizing for onsite runoff conveyance inlets were done using AutoCAD Civil 3D – HydraFlow 2019 based on the 10-year storm event peak flow rates and provided in Appendix F of this report.

During final engineering, impervious area for Post-Development conditions will be calculated in more details based on the finalized landscape plan. The Post-Development peak flow rates will be re-evaluated to reflect the actual Post-Development conditions. However, the fact of the proposed development generating higher peak flows will remain the same.

## **8.0 DESIGN ASSUMPTIONS:**

1. The property is located in the City of Riverside, Riverside County rainfall region.
2. Assumed Single Family Residential – 7,200 – 10,000 S. F. Lots – 50% Impervious area for post-development conditions. Refer to RCFC&WCD Hydrology Manual Plate D-5.6
3. Runoff index for Pre-Development is assumed to be grass covers of 79 and Post-Development is assumed to be urban covers as residential or commercial landscaping of 69.
4. The site located within Hydrologic Soil Type “C” per the USDA Web Soil Survey Data (See Appendix G of this report for reference).
5. Peak flow rates and time of concentrations were calculated using Rational Method described in Riverside County Flood Control and Water Conservation District Hydrology Manual 1978.
6. 100-year storm event flood level protection analysis required for habitable structures per City of Riverside requirements.
7. 10-year storm event flood level protection analysis required for storm drain system per City of Riverside requirements.

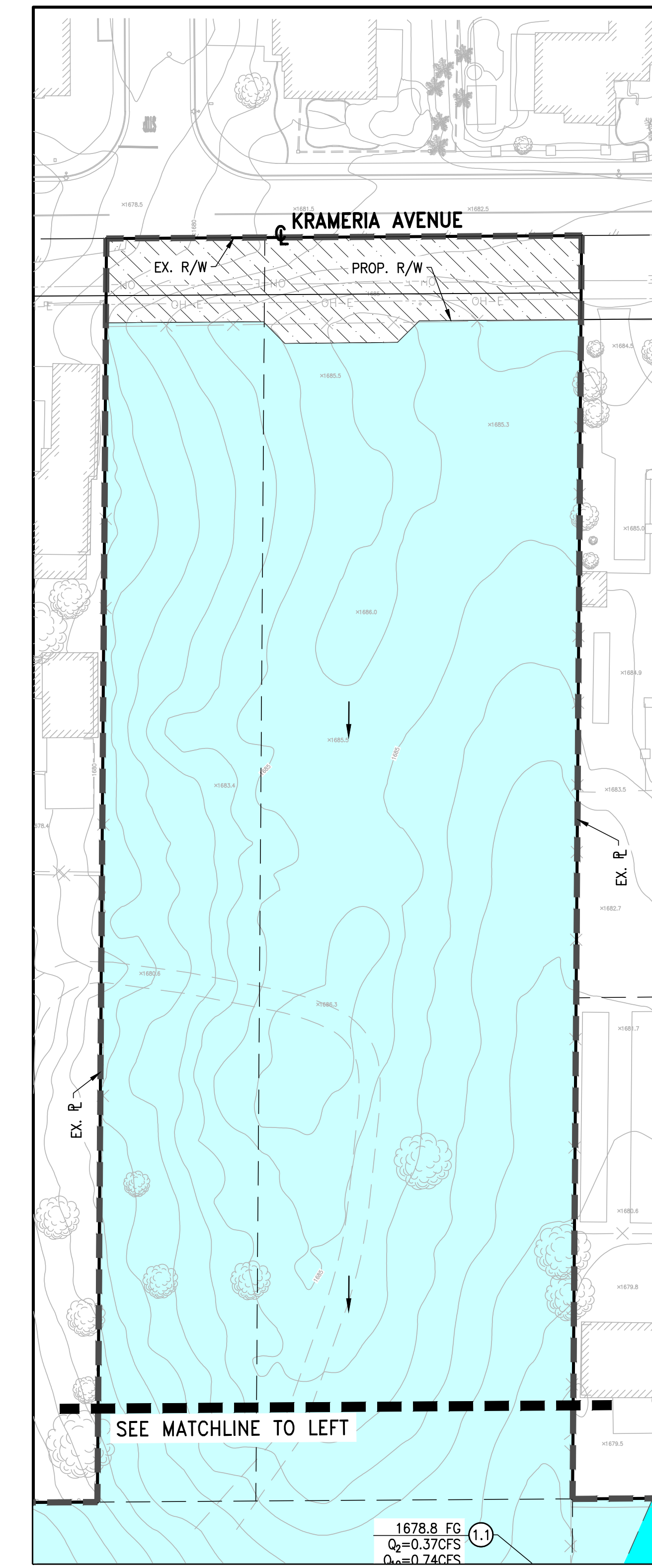
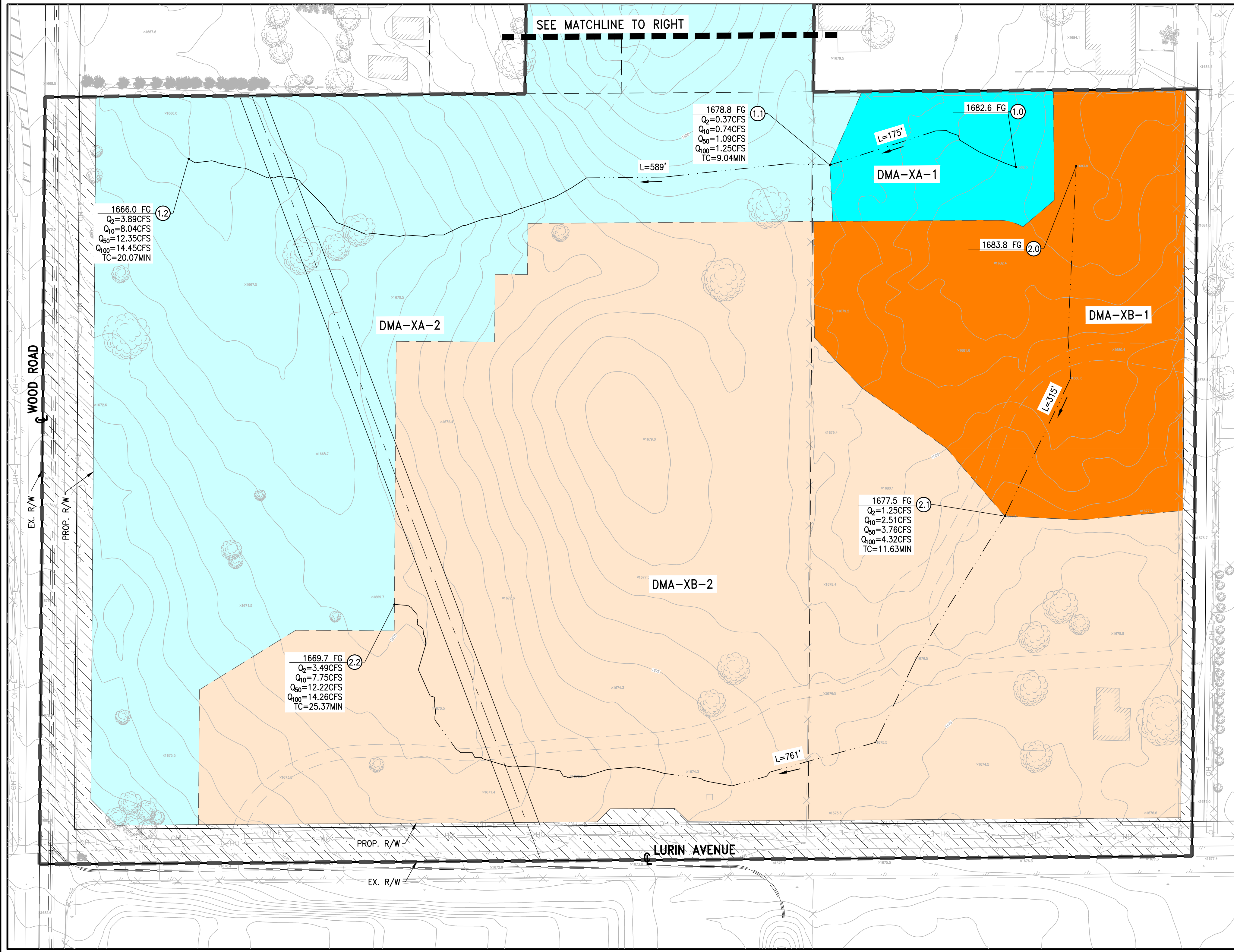
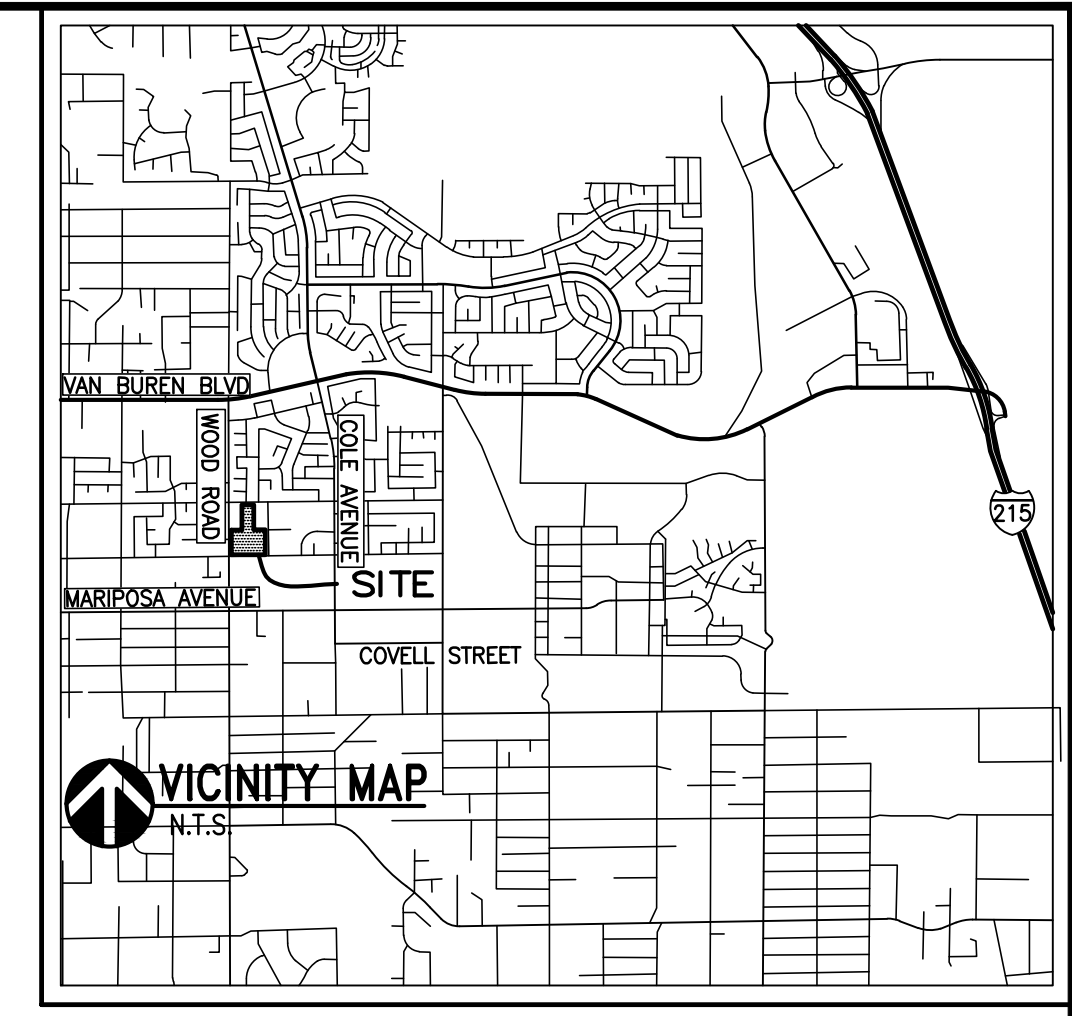
## **9.0 REFERENCES:**

1. Riverside County Flood Control and Water Conservation District Hydrology Manual 1978
2. United States Department of Agriculture Natural Resources Conservation Service Soil Map
3. Advance Engineering Software (AES), 2014
4. UNRIV: Unit Hydrograph Hydrology, Riverside Co. CivilDesign.
5. NOAA Atlas 14 Point Precipitation Frequency Estimates for California per [https://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html?bkmrk=ca](https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ca)
6. AutoCAD Civil 3D – HydraFlow Expressed used to preliminarily size Tributary Flow conveyance pipe.

**APPENDIX A**  
**HYDROLOGY MAPS**

# **Preliminary Pre-Development Conditions Hydrology Map**

# PRELIMINARY PRE-DEVELOPMENT CONDITION HYDROLOGY MAP



**LEGEND**

- DRAINAGE AREA BOUNDARY
- FLOW DIRECTION
- FLOW LINE
- INITIAL SUBAREA NODE
- SPOT ELEVATION
- $Q_p = X.XX$  CFS
- $T_c = X.X$  MIN

NOTE: ALL Q IS SUMMATION OF FLOWS FROM UPSTREAM DMAS

DMA	COLOR	LANDUSE	AREA (SF)	AREA (AC)
XA-1		RESIDENTIAL	20,626.30	0.47
XA-2		RESIDENTIAL	343,735.16	7.89
XB-1		RESIDENTIAL	81,392.93	1.87
XB-2		RESIDENTIAL	298,767.12	6.86

MARK	REVISIONS	APPR.	DATE
DESIGNED BY _____	DRAWN BY _____	CHECKED BY _____	

CITY OF RIVERSIDE

**TTM 38094**

PRELIMINARY PRE-DEVELOPMENT  
CONDITION HYDROLOGY MAP

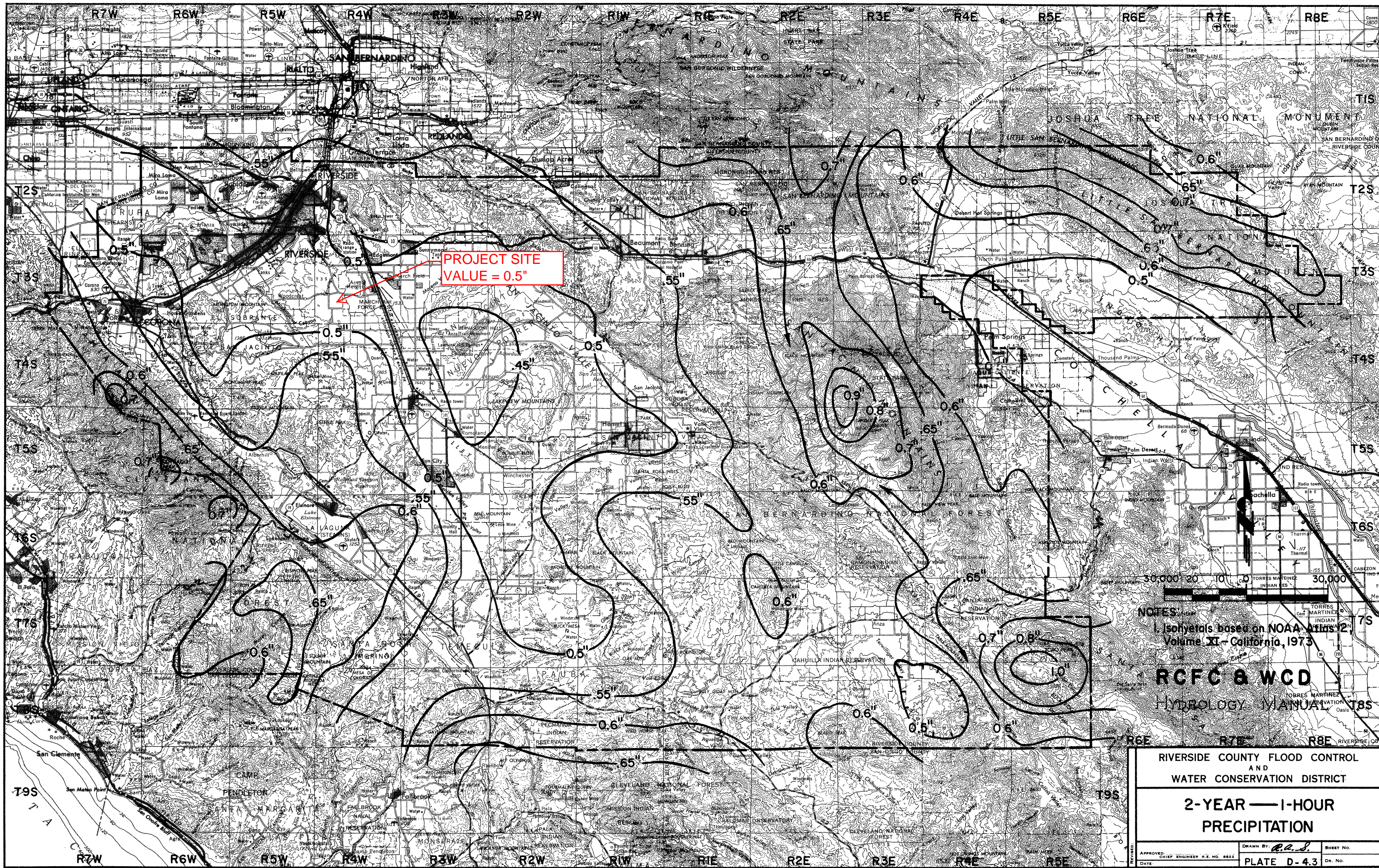
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# **Preliminary Post-Development Conditions Hydrology Map**



**APPENDIX B**  
**Precipitation Map**





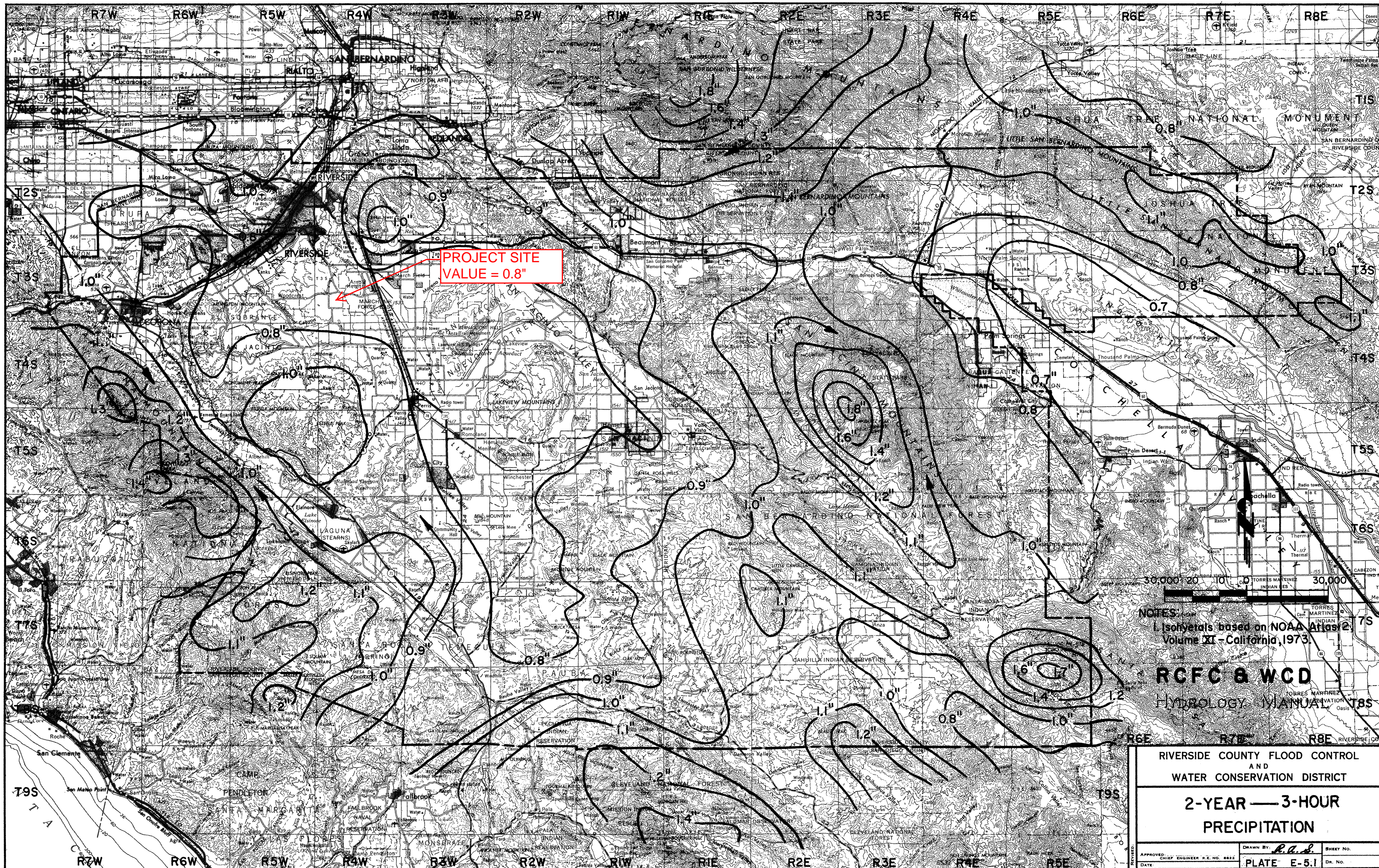
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NOTES:  
Isohyets based on NOAA Atlas 2,  
Volume XI - California, 1973

**RCFC & WCD**  
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL  
AND  
WATER CONSERVATION DISTRICT  
**2-YEAR — 1-HOUR  
PRECIPITATION**

APPROVED: _____ DATE: _____	CHIEF ENGINEER R.E. NO. 8822	DRAWN BY: <i>P.L.S.</i>	SHEET NO. _____
DATE: _____		PLATE D-4.3	DR. NO. _____



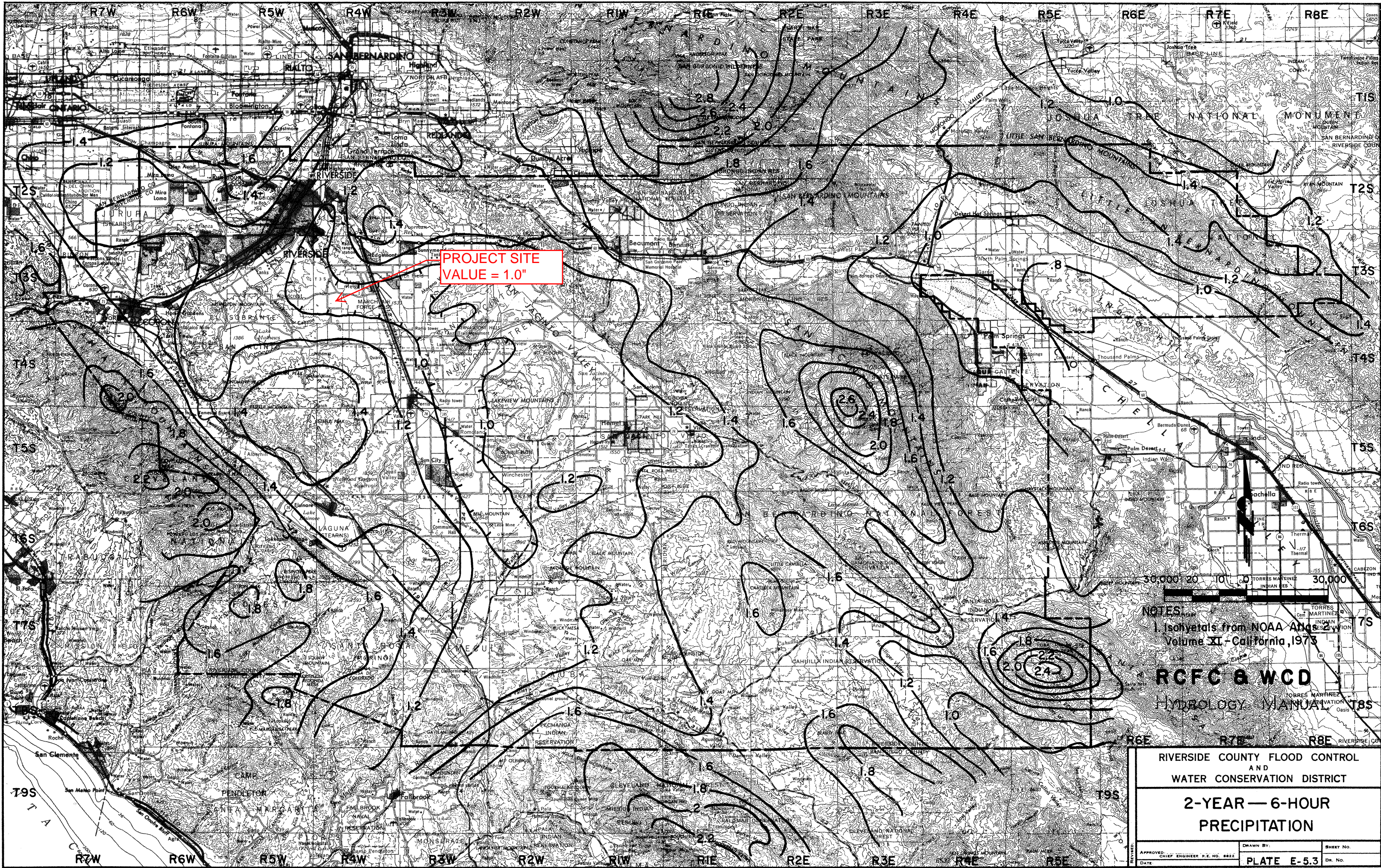
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Volume XI - California, 1973.

**RCFC & WCD**  
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL  
AND  
WATER CONSERVATION DISTRICT  
**2-YEAR — 3-HOUR  
PRECIPITATION**

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DATE		PLATE	E-5.1	DR. NO.



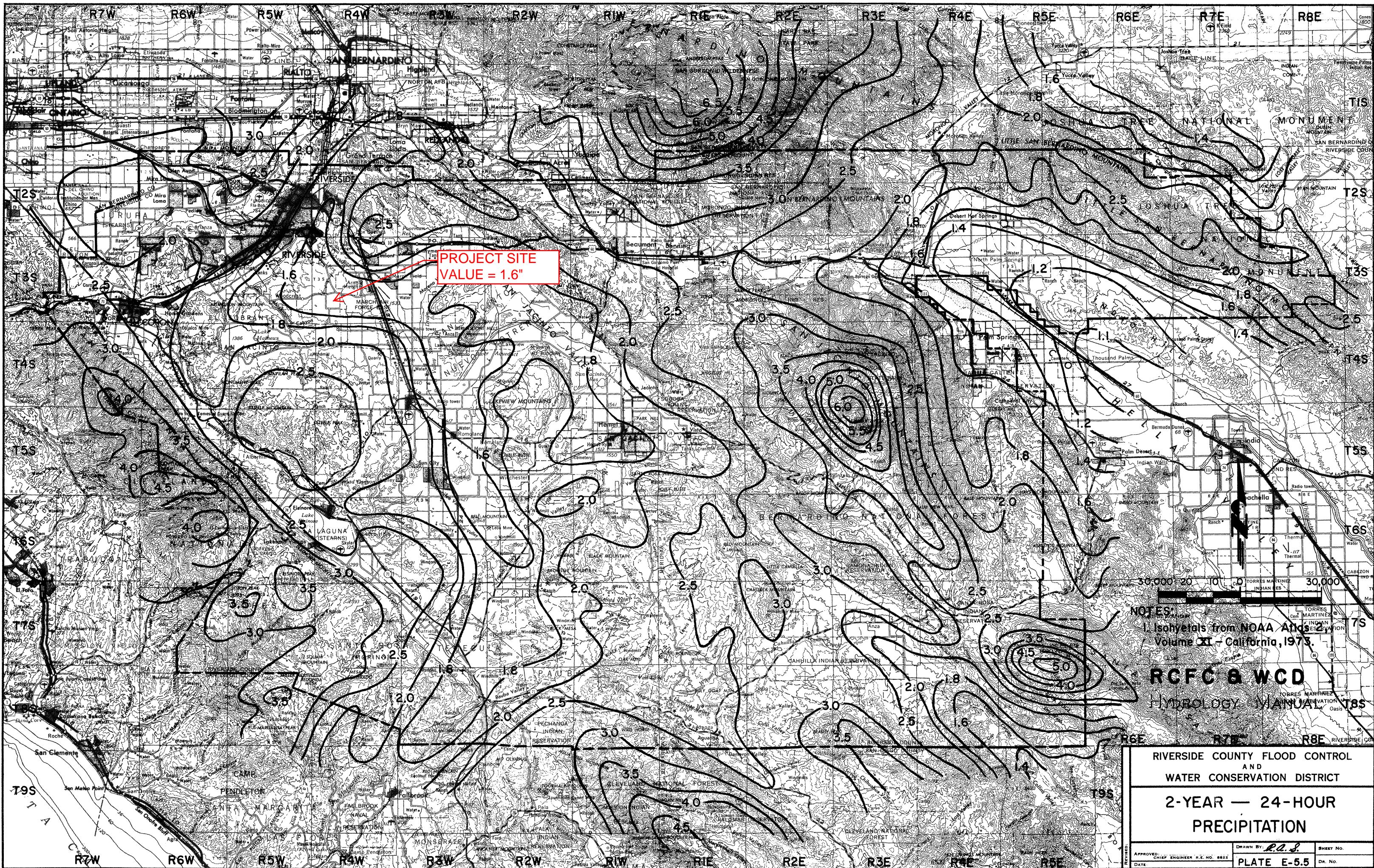
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NOTES  
Isohyets from NOAA Atlas  
Volume XI - California, 1973

**RCFC & WCD**  
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL  
AND  
WATER CONSERVATION DISTRICT  
**2-YEAR — 6-HOUR  
PRECIPITATION**

APPROVED: CHIEF ENGINEER R.E. NO. 8822	DRAWN BY:	SHEET NO.
DATE:	PLATE E-5.3	DR. NO.



**PROJECT SITE  
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NOTES:  
1. Isohyets from NOAA Atlas 2  
Volume XI - California, 1973.

**RCFC & WCD**  
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
<b>2-YEAR — 24-HOUR PRECIPITATION</b>	
APPROVED: _____ DATE: _____	CHIEF ENGINEER R.E. NO. 8822
DRAWN BY: <i>R.A.S.</i>	SHEET NO. _____
PLATE E-5.5	DR. NO. _____

# RAINFALL INTENSITY—INCHES PER HOUR

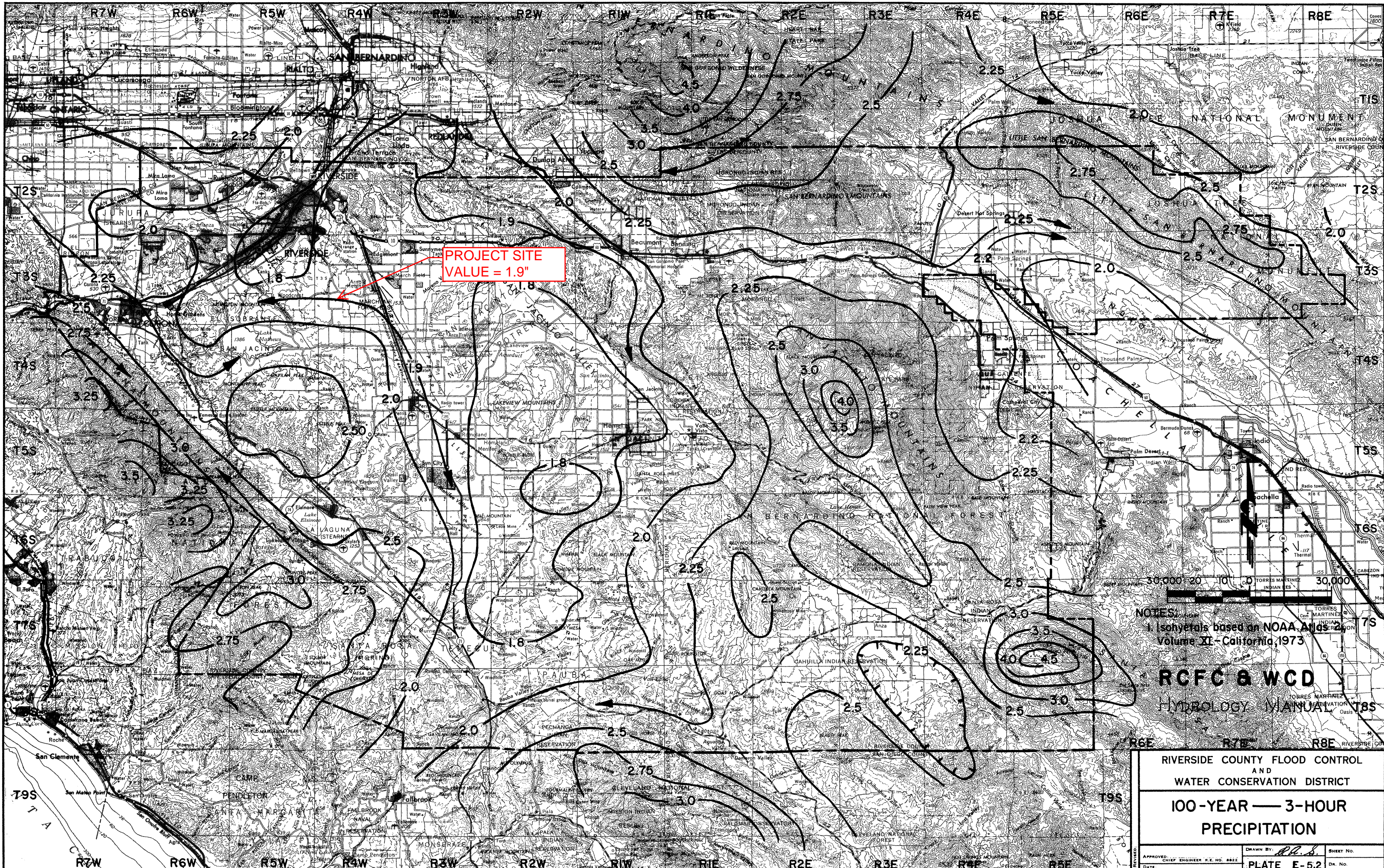
**RCFC & WCD**  
 HYDROLOGY MANUAL

STANDARD  
 INTENSITY - DURATION  
 CURVES DATA

SUNNYMEAD - MORENO			WOODCREST		
DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY	
	10 YEAR	100 YEAR		10 YEAR	100 YEAR
5	2.84	4.16	5	3.37	5.30
6	2.59	3.79	6	3.05	4.79
7	2.40	3.51	7	2.80	4.40
8	2.25	3.29	8	2.60	4.09
9	2.12	3.10	9	2.44	3.83
10	2.01	2.94	10	2.30	3.62
11	1.92	2.80	11	2.19	3.43
12	1.83	2.68	12	2.08	3.27
13	1.76	2.58	13	1.99	3.13
14	1.70	2.48	14	1.91	3.01
15	1.64	2.40	15	1.84	2.89
16	1.59	2.32	16	1.78	2.79
17	1.54	2.25	17	1.72	2.70
18	1.50	2.19	18	1.67	2.62
19	1.46	2.13	19	1.62	2.54
20	1.42	2.08	20	1.57	2.47
22	1.35	1.98	22	1.49	2.34
24	1.30	1.90	24	1.42	2.23
26	1.25	1.82	26	1.36	2.14
28	1.20	1.76	28	1.31	2.05
30	1.16	1.70	30	1.26	1.98
32	1.12	1.64	32	1.22	1.91
34	1.09	1.59	34	1.18	1.85
36	1.06	1.55	36	1.14	1.79
38	1.03	1.51	38	1.11	1.74
40	1.00	1.47	40	1.07	1.69
45	.95	1.39	45	1.01	1.58
50	.90	1.31	50	.95	1.49
55	.86	1.25	55	.90	1.42
60	.82	1.20	60	.86	1.35
65	.79	1.15	65	.82	1.29
70	.76	1.11	70	.79	1.24
75	.73	1.07	75	.76	1.19
80	.71	1.04	80	.73	1.15
85	.69	1.01	85	.71	1.11

SLOPE = .500

SLOPE = .550



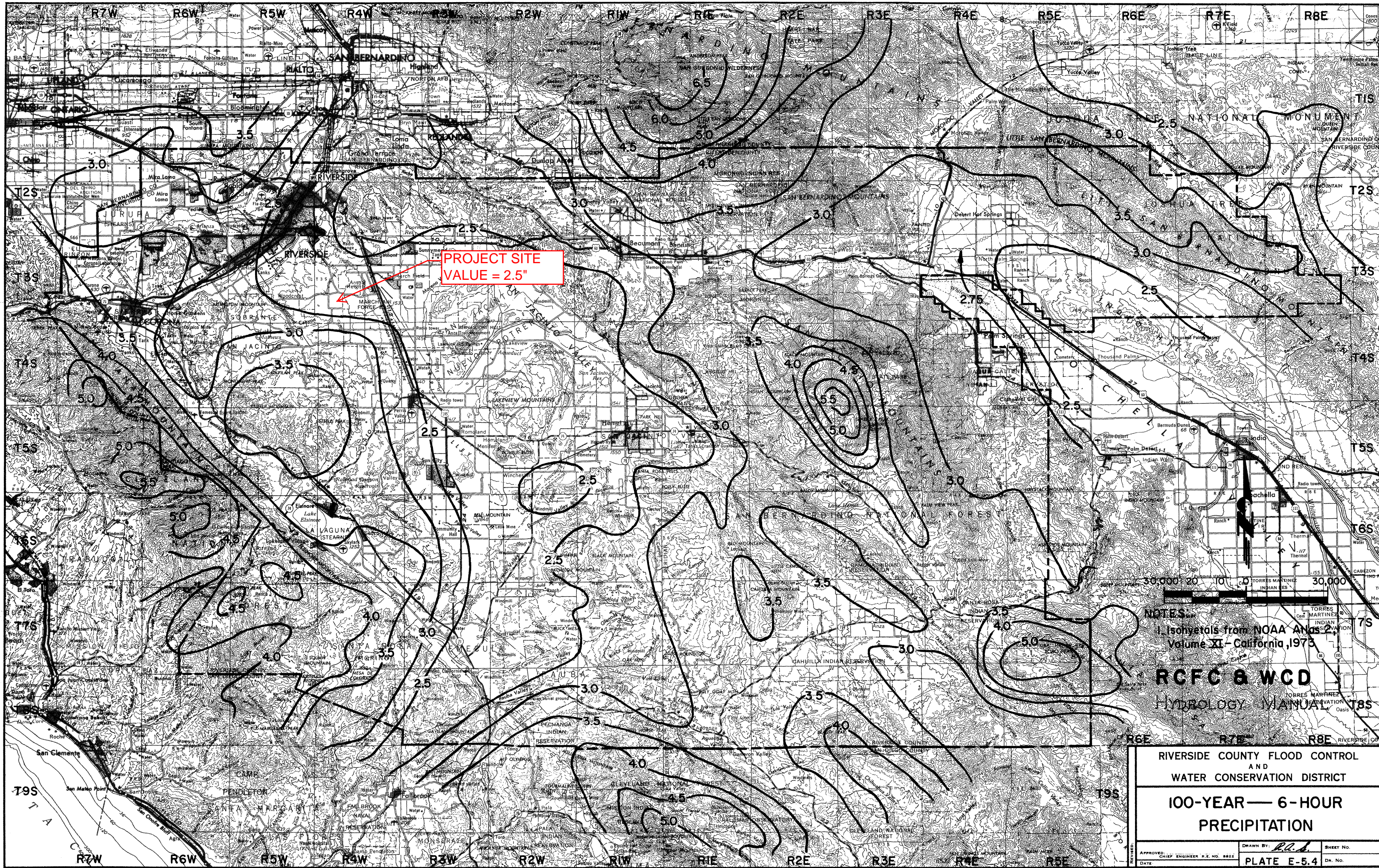
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NOTES:  
1 Isohyets based on NOAA Atlas 2  
Volume XI - California, 1973

**RCFC & WCD**  
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
<b>100-YEAR — 3-HOUR PRECIPITATION</b>		
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DATE	PLATE E-5.2	DR. NO.



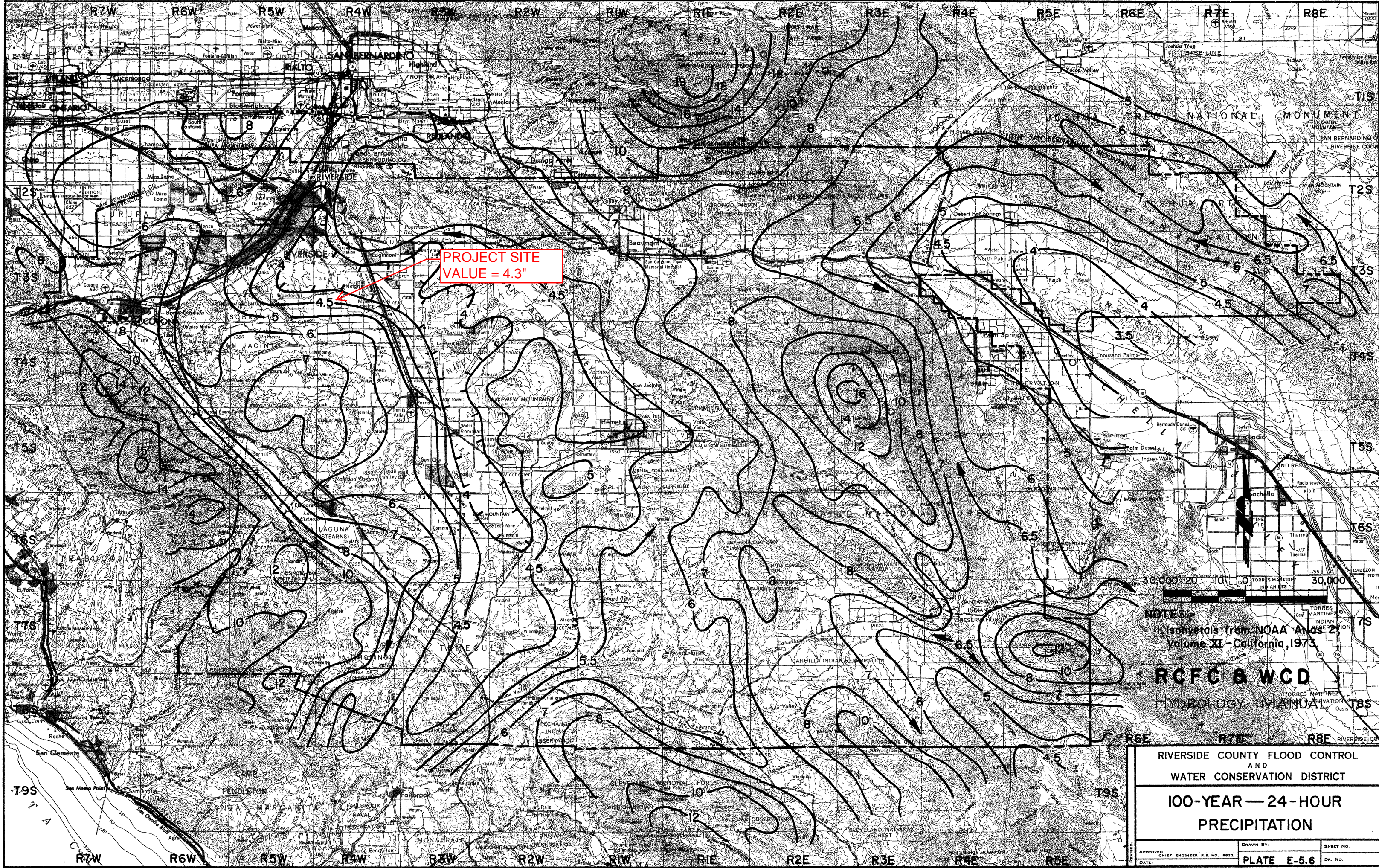
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NOTES:  
1. Isohyets from NOAA Atlas 2,  
Volume XI - California, 1973

**RCFC & WCD**  
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL  
AND  
WATER CONSERVATION DISTRICT  
**100-YEAR — 6-HOUR  
PRECIPITATION**

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DATE	PLATE E-5.4	DR. NO.



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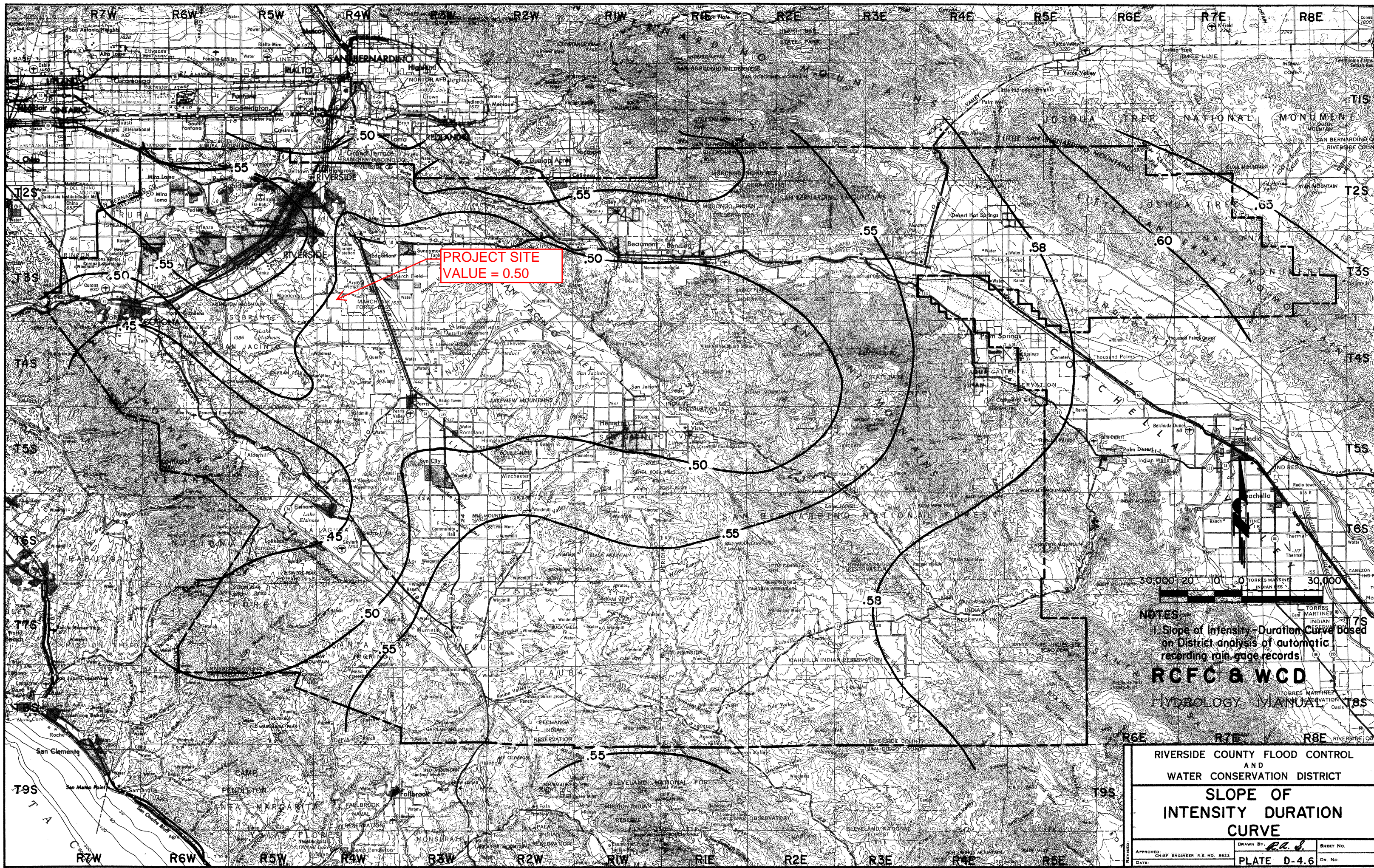
NOTES:  
1. Isohyets from NOAA Atlas 2,  
Volume XI - California, 1973.

**RCFC & WCD**  
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL  
AND  
WATER CONSERVATION DISTRICT  
**100-YEAR — 24-HOUR  
PRECIPITATION**

APPROVED: CHIEF ENGINEER R.E. NO. 8822	DRAWN BY:	SHEET NO.
DATE:	PLATE E-5.6	DR. NO.





PROJECT SITE  
VALUE = 0.50

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

**RCFC & WCD**  
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
<b>SLOPE OF INTENSITY DURATION CURVE</b>		
APPROVED: _____ CHIEF ENGINEER R.E. NO. 8822	DRAWN BY: <i>R.C.S.</i>	SHEET NO. _____
DATE: _____	PLATE D-4.6	DR. NO. _____

# **APPENDIX C**

## **HYDROLOGY CALCULATIONS**

# **Pre-Development & Post-Development Conditions Hydrology Calculations (2-year Storm Event)**

\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON  
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT  
(RCFC&WCD) 1978 HYDROLOGY MANUAL  
(c) Copyright 1982-2014 Advanced Engineering Software (aes)  
(Rational Tabling Version 21.0)  
Release Date: 06/01/2014 License ID 1580

Analysis prepared by:

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* KRAMERIA AVE PROJECT \*  
\* TTM NO. 38094 \*  
\* EXISTING Q2 \*  
\*\*\*\*\*

FILE NAME: CC02X2.DAT  
TIME/DATE OF STUDY: 15:27 02/22/2021

-----  
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:  
-----

USER SPECIFIED STORM EVENT(YEAR) = 2.00  
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00  
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90  
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500  
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.350

COMPUTED RAINFALL INTENSITY DATA:

STORM EVENT = 2.00 1-HOUR INTENSITY(INCH/HOUR) = 0.500  
SLOPE OF INTENSITY DURATION CURVE = 0.5000

RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL  
AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- CROWN TO		STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES:			MANNING FACTOR (n)
	WIDTH (FT)	CROSSFALL (FT)			WIDTH (FT)	LIP (FT)	HIKE (FT)	
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET  
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.00 TO NODE 1.10 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
 DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER  
 $TC = K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**0.2}$   
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 175.00  
 UPSTREAM ELEVATION(FEET) = 1682.60  
 DOWNSTREAM ELEVATION(FEET) = 1678.80  
 ELEVATION DIFFERENCE(FEET) = 3.80  
 $TC = 0.533 * [(175.00^{**3}) / (3.80)]^{**0.2} = 9.042$   
 2 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.288  
 UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6143  
 SOIL CLASSIFICATION IS "C"  
 SUBAREA RUNOFF(CFS) = 0.37  
 TOTAL AREA(ACRES) = 0.47 TOTAL RUNOFF(CFS) = 0.37

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.10 TO NODE 1.20 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<  
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1678.80 DOWNSTREAM(FEET) = 1666.00  
 CHANNEL LENGTH THRU SUBAREA(FEET) = 589.00 CHANNEL SLOPE = 0.0217  
 SLOPE ADJUSTMENT CURVE USED:  
 EFFECTIVE SLOPE = .0217 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION  
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.37  
 FLOW VELOCITY(FEET/SEC) = 0.83 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
 TRAVEL TIME(MIN.) = 11.89 Tc(MIN.) = 20.93  
 LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.20 = 764.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.20 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) = 0.846  
 UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5270  
 SOIL CLASSIFICATION IS "C"  
 SUBAREA AREA(ACRES) = 7.89 SUBAREA RUNOFF(CFS) = 3.52  
 TOTAL AREA(ACRES) = 8.4 TOTAL RUNOFF(CFS) = 3.89  
 TC(MIN.) = 20.93

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.00 TO NODE 2.10 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER  
TC =  $K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**.2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 315.00  
UPSTREAM ELEVATION(FEET) = 1683.80  
DOWNSTREAM ELEVATION(FEET) = 1677.50  
ELEVATION DIFFERENCE(FEET) = 6.30  
TC =  $0.533 * [(315.00^{**3}) / (6.30)]^{**.2} = 11.628$   
2 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.136  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5892  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 1.25  
TOTAL AREA(ACRES) = 1.87 TOTAL RUNOFF(CFS) = 1.25

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.10 TO NODE 2.20 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1677.50 DOWNSTREAM(FEET) = 1669.70  
CHANNEL LENGTH THRU SUBAREA(FEET) = 761.00 CHANNEL SLOPE = 0.0102  
SLOPE ADJUSTMENT CURVE USED:  
EFFECTIVE SLOPE = .0102 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
CHANNEL FLOW THRU SUBAREA(CFS) = 1.25  
FLOW VELOCITY(FEET/SEC) = 0.61 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
TRAVEL TIME(MIN.) = 20.76 Tc(MIN.) = 32.39  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.20 = 1076.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.20 TO NODE 2.20 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) = 0.681  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4787  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 6.86 SUBAREA RUNOFF(CFS) = 2.23  
TOTAL AREA(ACRES) = 8.7 TOTAL RUNOFF(CFS) = 3.49  
TC(MIN.) = 32.39

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 8.7 TC(MIN.) = 32.39  
PEAK FLOW RATE(CFS) = 3.49

=====

END OF RATIONAL METHOD ANALYSIS



\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON  
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT  
(RCFC&WCD) 1978 HYDROLOGY MANUAL  
(c) Copyright 1982-2014 Advanced Engineering Software (aes)  
(Rational Tabling Version 21.0)  
Release Date: 06/01/2014 License ID 1580

Analysis prepared by:

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* KRAMERIA AVENUE PROJECT \*  
\* TTM NO. 38094 \*  
\* PROPOSED Q2 \*  
\*\*\*\*\*

FILE NAME: CC02P2.DAT  
TIME/DATE OF STUDY: 09:31 02/22/2021

-----  
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:  
-----

USER SPECIFIED STORM EVENT(YEAR) = 2.00  
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00  
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90  
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500  
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.350

COMPUTED RAINFALL INTENSITY DATA:

STORM EVENT = 2.00 1-HOUR INTENSITY(INCH/HOUR) = 0.500  
SLOPE OF INTENSITY DURATION CURVE = 0.5000

RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL  
AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT-/ SIDE / SIDE/ WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH (FT)	LIP (FT)	HIKE (FT)	MANNING FACTOR (n)
1	36.0	31.0	0.020/0.020/0.020	0.50	1.50	0.0313	0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET  
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN



OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.00 TO NODE 1.10 IS CODE = 21

-----  
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS SINGLE FAMILY (1/4 ACRE)  
TC =  $K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**.2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 109.00  
UPSTREAM ELEVATION(FEET) = 1681.60  
DOWNSTREAM ELEVATION(FEET) = 1680.70  
ELEVATION DIFFERENCE(FEET) = 0.90  
TC =  $0.393 * [(109.00^{**3}) / (0.90)]^{**.2}$  = 6.692  
2 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.497  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .7714  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 0.42  
TOTAL AREA(ACRES) = 0.36 TOTAL RUNOFF(CFS) = 0.42

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.10 TO NODE 1.20 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1676.20 DOWNSTREAM(FEET) = 1676.00  
FLOW LENGTH(FEET) = 21.00 MANNING'S N = 0.013  
DEPTH OF FLOW IN 18.0 INCH PIPE IS 2.5 INCHES  
PIPE-FLOW VELOCITY(FEET/SEC.) = 2.74  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 0.42  
PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 6.82  
LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.20 = 130.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.20 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.483  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .7705  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 0.35 SUBAREA RUNOFF(CFS) = 0.40  
TOTAL AREA(ACRES) = 0.7 TOTAL RUNOFF(CFS) = 0.82  
TC(MIN.) = 6.82

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.30 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1676.00	DOWNSTREAM(FEET) =	1669.60
FLOW LENGTH(FEET) =	636.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	3.5 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	3.40		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	0.82		
PIPE TRAVEL TIME(MIN.) =	3.12	Tc(MIN.) =	9.94
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.30 =	766.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.30 TO NODE 1.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) =	1.228		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7525		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	2.87	SUBAREA RUNOFF(CFS) =	2.65
TOTAL AREA(ACRES) =	3.6	TOTAL RUNOFF(CFS) =	3.47
TC(MIN.) =	9.94		

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.30 TO NODE 1.40 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1669.60	DOWNSTREAM(FEET) =	1666.10
FLOW LENGTH(FEET) =	357.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	7.4 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	5.09		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	3.47		
PIPE TRAVEL TIME(MIN.) =	1.17	Tc(MIN.) =	11.11
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.40 =	1123.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.40 TO NODE 1.40 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) =	1.162		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7469		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	0.42	SUBAREA RUNOFF(CFS) =	0.36
TOTAL AREA(ACRES) =	4.0	TOTAL RUNOFF(CFS) =	3.83

TC(MIN.) = 11.11

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.40 TO NODE 1.50 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1666.10	DOWNSTREAM(FEET) =	1665.60
FLOW LENGTH(FEET) =	46.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS	7.6 INCHES		
PIPE-FLOW VELOCITY(FEET/SEC.) =	5.44		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	3.83		
PIPE TRAVEL TIME(MIN.) =	0.14	Tc(MIN.) =	11.25
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.50 =	1169.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.50 TO NODE 1.50 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) =	1.155		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7463		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	0.71	SUBAREA RUNOFF(CFS) =	0.61
TOTAL AREA(ACRES) =	4.7	TOTAL RUNOFF(CFS) =	4.45
TC(MIN.) =	11.25		

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.50 TO NODE 1.60 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1665.60	DOWNSTREAM(FEET) =	1664.80
FLOW LENGTH(FEET) =	80.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS	8.4 INCHES		
PIPE-FLOW VELOCITY(FEET/SEC.) =	5.48		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	4.45		
PIPE TRAVEL TIME(MIN.) =	0.24	Tc(MIN.) =	11.49
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.60 =	1249.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.60 TO NODE 1.60 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) =	1.142		
--	-------	--	--

SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .7452  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 3.65 SUBAREA RUNOFF(CFS) = 3.11  
TOTAL AREA(ACRES) = 8.4 TOTAL RUNOFF(CFS) = 7.55  
TC(MIN.) = 11.49

\*\*\*\*\*  
FLOW PROCESS FROM NODE 2.00 TO NODE 2.10 IS CODE = 21  
-----

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS SINGLE FAMILY (1/4 ACRE)  
TC =  $K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{** .2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 395.00  
UPSTREAM ELEVATION(FEET) = 1683.00  
DOWNSTREAM ELEVATION(FEET) = 1678.30  
ELEVATION DIFFERENCE(FEET) = 4.70  
TC =  $0.393 * [(395.00^{**3}) / (4.70)]^{** .2} = 10.411$   
2 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.200  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .7502  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 1.05  
TOTAL AREA(ACRES) = 1.17 TOTAL RUNOFF(CFS) = 1.05

\*\*\*\*\*  
FLOW PROCESS FROM NODE 2.10 TO NODE 2.20 IS CODE = 41  
-----

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1672.10 DOWNSTREAM(FEET) = 1670.30  
FLOW LENGTH(FEET) = 305.00 MANNING'S N = 0.013  
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.5 INCHES  
PIPE-FLOW VELOCITY(FEET/SEC.) = 3.04  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 1.05  
PIPE TRAVEL TIME(MIN.) = 1.67 Tc(MIN.) = 12.08  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.20 = 700.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 2.20 TO NODE 2.20 IS CODE = 81  
-----

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.114  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .7427  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 1.95 SUBAREA RUNOFF(CFS) = 1.61  
TOTAL AREA(ACRES) = 3.1 TOTAL RUNOFF(CFS) = 2.67

TC(MIN.) = 12.08

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.20 TO NODE 2.30 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1670.30	DOWNSTREAM(FEET) =	1669.60
FLOW LENGTH(FEET) =	114.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS	7.3 INCHES		
PIPE-FLOW VELOCITY(FEET/SEC.) =	4.00		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	2.67		
PIPE TRAVEL TIME(MIN.) =	0.47	Tc(MIN.) =	12.56
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.30 =	814.00 FEET.		

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) =	1.093		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7407		
SOIL CLASSIFICATION IS "C"			
SUBAREA AREA(ACRES) =	1.34	SUBAREA RUNOFF(CFS) =	1.08
TOTAL AREA(ACRES) =	4.5	TOTAL RUNOFF(CFS) =	3.75
TC(MIN.) =	12.56		

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) =	1.093		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7407		
SOIL CLASSIFICATION IS "C"			
SUBAREA AREA(ACRES) =	1.42	SUBAREA RUNOFF(CFS) =	1.15
TOTAL AREA(ACRES) =	5.9	TOTAL RUNOFF(CFS) =	4.90
TC(MIN.) =	12.56		

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.40 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1669.60	DOWNSTREAM(FEET) =	1669.00
FLOW LENGTH(FEET) =	116.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS	10.9 INCHES		

PIPE-FLOW VELOCITY(FEET/SEC.) = 4.37  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 4.90  
PIPE TRAVEL TIME(MIN.) = 0.44 Tc(MIN.) = 13.00  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.40 = 930.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.40 TO NODE 2.40 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

2 YEAR RAINFALL INTENSITY(INCH/HOUR) =	1.074		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7389		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	2.85	SUBAREA RUNOFF(CFS) =	2.26
TOTAL AREA(ACRES) =	8.7	TOTAL RUNOFF(CFS) =	7.16
TC(MIN.) =	13.00		

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES)	=	8.7	TC(MIN.) =	13.00
PEAK FLOW RATE(CFS)	=	7.16		

=====

END OF RATIONAL METHOD ANALYSIS

↑

# **Pre-Development & Post-Development Conditions Hydrology Calculations (10-year Storm Event)**

\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON  
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT  
(RCFC&WCD) 1978 HYDROLOGY MANUAL  
(c) Copyright 1982-2014 Advanced Engineering Software (aes)  
(Rational Tabling Version 21.0)  
Release Date: 06/01/2014 License ID 1580

Analysis prepared by:

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* KRAMERIA AVE PROJECT \*  
\* TTM NO. 38094 \*  
\* EXISTING Q10 \*  
\*\*\*\*\*

FILE NAME: CC02X10.DAT  
TIME/DATE OF STUDY: 15:28 02/22/2021

-----  
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:  
-----

USER SPECIFIED STORM EVENT(YEAR) = 10.00  
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00  
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90  
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500  
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.350

COMPUTED RAINFALL INTENSITY DATA:  
STORM EVENT = 10.00 1-HOUR INTENSITY(INCH/HOUR) = 0.858  
SLOPE OF INTENSITY DURATION CURVE = 0.5000

RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD  
NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL  
AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- CROWN TO		STREET-CROSSFALL:		CURB HEIGHT (FT)	GUTTER-GEOMETRIES:			MANNING FACTOR (n)
	WIDTH (FT)	CROSSFALL (FT)	IN- / SIDE	OUT- / PARK- / WAY		WIDTH (FT)	LIP (FT)	HIKE (FT)	
1	30.0	20.0	0.018/0.018	0.020	0.67	2.00	0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET  
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN



OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.00 TO NODE 1.10 IS CODE = 21

-----  
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER  
TC =  $K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{** .2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 175.00  
UPSTREAM ELEVATION(FEET) = 1682.60  
DOWNSTREAM ELEVATION(FEET) = 1678.80  
ELEVATION DIFFERENCE(FEET) = 3.80  
TC =  $0.533 * [(175.00^{**3}) / (3.80)]^{** .2} = 9.042$   
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.211  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7081  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 0.74  
TOTAL AREA(ACRES) = 0.47 TOTAL RUNOFF(CFS) = 0.74

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.10 TO NODE 1.20 IS CODE = 53

-----  
>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<  
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1678.80 DOWNSTREAM(FEET) = 1666.00  
CHANNEL LENGTH THRU SUBAREA(FEET) = 589.00 CHANNEL SLOPE = 0.0217  
SLOPE ADJUSTMENT CURVE USED:  
EFFECTIVE SLOPE = .0217 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION  
CHANNEL FLOW THRU SUBAREA(CFS) = 0.74  
FLOW VELOCITY(FEET/SEC) = 0.83 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
TRAVEL TIME(MIN.) = 11.89 Tc(MIN.) = 20.93  
LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.20 = 764.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.20 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.453  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6373  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 7.89 SUBAREA RUNOFF(CFS) = 7.31  
TOTAL AREA(ACRES) = 8.4 TOTAL RUNOFF(CFS) = 8.04  
TC(MIN.) = 20.93

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.00 TO NODE 2.10 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER  
TC =  $K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**.2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 315.00  
UPSTREAM ELEVATION(FEET) = 1683.80  
DOWNSTREAM ELEVATION(FEET) = 1677.50  
ELEVATION DIFFERENCE(FEET) = 6.30  
TC =  $0.533 * [(315.00^{**3}) / (6.30)]^{**.2} = 11.628$   
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.949  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6884  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 2.51  
TOTAL AREA(ACRES) = 1.87 TOTAL RUNOFF(CFS) = 2.51

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.10 TO NODE 2.20 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1677.50 DOWNSTREAM(FEET) = 1669.70  
CHANNEL LENGTH THRU SUBAREA(FEET) = 761.00 CHANNEL SLOPE = 0.0102  
SLOPE ADJUSTMENT CURVE USED:  
EFFECTIVE SLOPE = .0102 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
CHANNEL FLOW THRU SUBAREA(CFS) = 2.51  
FLOW VELOCITY(FEET/SEC) = 0.77 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
TRAVEL TIME(MIN.) = 16.47 Tc(MIN.) = 28.10  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.20 = 1076.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.20 TO NODE 2.20 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.254  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6091  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 6.86 SUBAREA RUNOFF(CFS) = 5.24  
TOTAL AREA(ACRES) = 8.7 TOTAL RUNOFF(CFS) = 7.75  
TC(MIN.) = 28.10

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 8.7 TC(MIN.) = 28.10  
PEAK FLOW RATE(CFS) = 7.75

=====

END OF RATIONAL METHOD ANALYSIS



\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON  
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT  
(RCFC&WCD) 1978 HYDROLOGY MANUAL  
(c) Copyright 1982-2014 Advanced Engineering Software (aes)  
(Rational Tabling Version 21.0)  
Release Date: 06/01/2014 License ID 1580

Analysis prepared by:

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* KRAMERIA AVENUE PROJECT \*  
\* TTM NO. 38094 \*  
\* PROPOSED Q10 \*  
\*\*\*\*\*

FILE NAME: CC02P10.DAT  
TIME/DATE OF STUDY: 09:29 02/22/2021

-----  
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:  
-----

USER SPECIFIED STORM EVENT(YEAR) = 10.00  
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00  
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90  
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500  
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.350

COMPUTED RAINFALL INTENSITY DATA:

STORM EVENT = 10.00 1-HOUR INTENSITY(INCH/HOUR) = 0.858  
SLOPE OF INTENSITY DURATION CURVE = 0.5000

RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL  
AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- CROWN TO		STREET-CROSSFALL:		CURB HEIGHT (FT)	GUTTER-GEOMETRIES:			MANNING FACTOR (n)
	WIDTH (FT)	CROSSFALL (FT)	IN- / SIDE	OUT- / PARK- / WAY		WIDTH (FT)	LIP (FT)	HIKE (FT)	
1	36.0	31.0	0.020	0.020/0.020	0.50	1.50	0.0313	0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET  
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.00 TO NODE 1.10 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS SINGLE FAMILY (1/4 ACRE)  
 $TC = K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**.2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 109.00  
UPSTREAM ELEVATION(FEET) = 1681.60  
DOWNSTREAM ELEVATION(FEET) = 1680.70  
ELEVATION DIFFERENCE(FEET) = 0.90  
 $TC = 0.393 * [(109.00^{**3}) / (0.90)]^{**.2} = 6.692$   
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.570  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8149  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 0.75  
TOTAL AREA(ACRES) = 0.36 TOTAL RUNOFF(CFS) = 0.75

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.10 TO NODE 1.20 IS CODE = 41

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1676.20 DOWNSTREAM(FEET) = 1676.00  
FLOW LENGTH(FEET) = 21.00 MANNING'S N = 0.013  
DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.4 INCHES  
PIPE-FLOW VELOCITY(FEET/SEC.) = 3.27  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 0.75  
PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 6.80  
LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.20 = 130.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.20 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.549  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8144  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 0.35 SUBAREA RUNOFF(CFS) = 0.73  
TOTAL AREA(ACRES) = 0.7 TOTAL RUNOFF(CFS) = 1.48  
TC(MIN.) = 6.80

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.30 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1676.00	DOWNSTREAM(FEET) =	1669.60
FLOW LENGTH(FEET) =	636.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	4.7 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	4.05		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	1.48		
PIPE TRAVEL TIME(MIN.) =	2.61	Tc(MIN.) =	9.41
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.30 =	766.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.30 TO NODE 1.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) =	2.167		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.8025		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	2.87	SUBAREA RUNOFF(CFS) =	4.99
TOTAL AREA(ACRES) =	3.6	TOTAL RUNOFF(CFS) =	6.47
TC(MIN.) =	9.41		

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.30 TO NODE 1.40 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1669.60	DOWNSTREAM(FEET) =	1666.10
FLOW LENGTH(FEET) =	357.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	10.6 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	5.95		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	6.47		
PIPE TRAVEL TIME(MIN.) =	1.00	Tc(MIN.) =	10.41
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.40 =	1123.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.40 TO NODE 1.40 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) =	2.060		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7986		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	0.42	SUBAREA RUNOFF(CFS) =	0.69
TOTAL AREA(ACRES) =	4.0	TOTAL RUNOFF(CFS) =	7.16

TC(MIN.) = 10.41

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.40 TO NODE 1.50 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1666.10	DOWNSTREAM(FEET) =	1665.60
FLOW LENGTH(FEET) =	46.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	11.0 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	6.34		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	7.16		
PIPE TRAVEL TIME(MIN.) =	0.12	Tc(MIN.) =	10.53
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.50 =	1169.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.50 TO NODE 1.50 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) =	2.048		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7982		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	0.71	SUBAREA RUNOFF(CFS) =	1.16
TOTAL AREA(ACRES) =	4.7	TOTAL RUNOFF(CFS) =	8.32
TC(MIN.) =	10.53		

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.50 TO NODE 1.60 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1665.60	DOWNSTREAM(FEET) =	1664.80
FLOW LENGTH(FEET) =	80.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	12.6 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	6.31		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	8.32		
PIPE TRAVEL TIME(MIN.) =	0.21	Tc(MIN.) =	10.75
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.60 =	1249.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.60 TO NODE 1.60 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) =	2.028		
---	-------	--	--

SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .7974  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 3.65 SUBAREA RUNOFF(CFS) = 5.90  
TOTAL AREA(ACRES) = 8.4 TOTAL RUNOFF(CFS) = 14.22  
TC(MIN.) = 10.75

\*\*\*\*\*  
FLOW PROCESS FROM NODE 2.00 TO NODE 2.10 IS CODE = 21  
-----

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS SINGLE FAMILY (1/4 ACRE)  
TC =  $K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{** .2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 395.00  
UPSTREAM ELEVATION(FEET) = 1683.00  
DOWNSTREAM ELEVATION(FEET) = 1678.30  
ELEVATION DIFFERENCE(FEET) = 4.70  
TC =  $0.393 * [(395.00^{**3}) / (4.70)]^{** .2} = 10.411$   
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.060  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .7986  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 1.93  
TOTAL AREA(ACRES) = 1.17 TOTAL RUNOFF(CFS) = 1.93

\*\*\*\*\*  
FLOW PROCESS FROM NODE 2.10 TO NODE 2.20 IS CODE = 41  
-----

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1672.10 DOWNSTREAM(FEET) = 1670.30  
FLOW LENGTH(FEET) = 305.00 MANNING'S N = 0.013  
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.2 INCHES  
PIPE-FLOW VELOCITY(FEET/SEC.) = 3.60  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 1.93  
PIPE TRAVEL TIME(MIN.) = 1.41 Tc(MIN.) = 11.82  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.20 = 700.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 2.20 TO NODE 2.20 IS CODE = 81  
-----

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.933  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .7936  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 1.95 SUBAREA RUNOFF(CFS) = 2.99  
TOTAL AREA(ACRES) = 3.1 TOTAL RUNOFF(CFS) = 4.92



TC(MIN.) = 11.82

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.20 TO NODE 2.30 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1670.30	DOWNSTREAM(FEET) =	1669.60
FLOW LENGTH(FEET) =	114.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	10.4 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	4.67		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	4.92		
PIPE TRAVEL TIME(MIN.) =	0.41	Tc(MIN.) =	12.23
LONGEST FLOWPATH FROM NODE	2.00 TO NODE	2.30 =	814.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) =	1.901		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7922		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	1.34	SUBAREA RUNOFF(CFS) =	2.02
TOTAL AREA(ACRES) =	4.5	TOTAL RUNOFF(CFS) =	6.93
TC(MIN.) =	12.23		

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) =	1.901		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.7922		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	1.42	SUBAREA RUNOFF(CFS) =	2.14
TOTAL AREA(ACRES) =	5.9	TOTAL RUNOFF(CFS) =	9.07
TC(MIN.) =	12.23		

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.40 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1669.60	DOWNSTREAM(FEET) =	1669.00
FLOW LENGTH(FEET) =	116.00	MANNING'S N =	0.013
ASSUME FULL-FLOWING PIPELINE			

PIPE-FLOW VELOCITY(FEET/SEC.) = 5.13  
PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 9.07  
PIPE TRAVEL TIME(MIN.) = 0.38 Tc(MIN.) = 12.60  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.40 = 930.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 2.40 TO NODE 2.40 IS CODE = 81  
-----

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.872  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .7909  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 2.85 SUBAREA RUNOFF(CFS) = 4.22  
TOTAL AREA(ACRES) = 8.7 TOTAL RUNOFF(CFS) = 13.29  
TC(MIN.) = 12.60

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 8.7 TC(MIN.) = 12.60  
PEAK FLOW RATE(CFS) = 13.29

=====

END OF RATIONAL METHOD ANALYSIS



# **Pre-Development & Post-Development Conditions Hydrology Calculations (50-year Storm Event)**

\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON  
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT  
(RCFC&WCD) 1978 HYDROLOGY MANUAL  
(c) Copyright 1982-2014 Advanced Engineering Software (aes)  
(Rational Tabling Version 21.0)  
Release Date: 06/01/2014 License ID 1580

Analysis prepared by:

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* KRAMERIA AVE PROJECT \*  
\* TTM NO. 38094 \*  
\* EXISTING Q50 \*  
\*\*\*\*\*

FILE NAME: CC02X50.DAT  
TIME/DATE OF STUDY: 15:30 02/22/2021

-----  
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:  
-----

USER SPECIFIED STORM EVENT(YEAR) = 50.00  
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00  
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90  
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500  
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.350

COMPUTED RAINFALL INTENSITY DATA:  
STORM EVENT = 50.00 1-HOUR INTENSITY(INCH/HOUR) = 1.199  
SLOPE OF INTENSITY DURATION CURVE = 0.5000

RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD  
NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL  
AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- CROWN TO		STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES:			MANNING HIKE (n)
	WIDTH (FT)	CROSSFALL (FT)			WIDTH (FT)	LIP (FT)	HIKE (FT)	
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET  
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.00 TO NODE 1.10 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER  
 $TC = K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{** .2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 175.00  
UPSTREAM ELEVATION(FEET) = 1682.60  
DOWNSTREAM ELEVATION(FEET) = 1678.80  
ELEVATION DIFFERENCE(FEET) = 3.80  
 $TC = 0.533 * [(175.00^{**3}) / (3.80)]^{** .2} = 9.042$   
50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.090  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7538  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 1.09  
TOTAL AREA(ACRES) = 0.47 TOTAL RUNOFF(CFS) = 1.09

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.10 TO NODE 1.20 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<  
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1678.80 DOWNSTREAM(FEET) = 1666.00  
CHANNEL LENGTH THRU SUBAREA(FEET) = 589.00 CHANNEL SLOPE = 0.0217  
SLOPE ADJUSTMENT CURVE USED:  
EFFECTIVE SLOPE = .0217 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
CHANNEL FLOW THRU SUBAREA(CFS) = 1.09  
FLOW VELOCITY(FEET/SEC) = 0.85 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
TRAVEL TIME(MIN.) = 11.54 Tc(MIN.) = 20.58  
LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.20 = 764.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.20 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.048  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6963  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 7.89 SUBAREA RUNOFF(CFS) = 11.25  
TOTAL AREA(ACRES) = 8.4 TOTAL RUNOFF(CFS) = 12.35  
TC(MIN.) = 20.58

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.00 TO NODE 2.10 IS CODE = 21

-----  
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER  
TC =  $K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**.2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 315.00  
UPSTREAM ELEVATION(FEET) = 1683.80  
DOWNSTREAM ELEVATION(FEET) = 1677.50  
ELEVATION DIFFERENCE(FEET) = 6.30  
TC =  $0.533 * [(315.00^{**3}) / (6.30)]^{**.2} = 11.628$   
50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.724  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7378  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 3.76  
TOTAL AREA(ACRES) = 1.87 TOTAL RUNOFF(CFS) = 3.76

\*\*\*\*\*  
FLOW PROCESS FROM NODE 2.10 TO NODE 2.20 IS CODE = 53

-----  
>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<  
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1677.50 DOWNSTREAM(FEET) = 1669.70  
CHANNEL LENGTH THRU SUBAREA(FEET) = 761.00 CHANNEL SLOPE = 0.0102  
SLOPE ADJUSTMENT CURVE USED:  
EFFECTIVE SLOPE = .0102 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
CHANNEL FLOW THRU SUBAREA(CFS) = 3.76  
FLOW VELOCITY(FEET/SEC) = 0.88 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
TRAVEL TIME(MIN.) = 14.39 Tc(MIN.) = 26.02  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.20 = 1076.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 2.20 TO NODE 2.20 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 1.821  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6772  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 6.86 SUBAREA RUNOFF(CFS) = 8.46  
TOTAL AREA(ACRES) = 8.7 TOTAL RUNOFF(CFS) = 12.22  
TC(MIN.) = 26.02

=====

END OF STUDY SUMMARY:  
TOTAL AREA(ACRES) = 8.7 TC(MIN.) = 26.02  
PEAK FLOW RATE(CFS) = 12.22

=====

=====

END OF RATIONAL METHOD ANALYSIS

\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON  
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT  
(RCFC&WCD) 1978 HYDROLOGY MANUAL  
(c) Copyright 1982-2014 Advanced Engineering Software (aes)  
(Rational Tabling Version 21.0)  
Release Date: 06/01/2014 License ID 1580

Analysis prepared by:

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* KRAMERIA AVENUE PROJECT \*  
\* TTM NO. 38094 \*  
\* PROPOSED Q50 \*  
\*\*\*\*\*

FILE NAME: CC02P50.DAT  
TIME/DATE OF STUDY: 09:21 02/22/2021

-----  
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:  
-----

USER SPECIFIED STORM EVENT(YEAR) = 50.00  
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00  
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90  
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500  
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.350

COMPUTED RAINFALL INTENSITY DATA:

STORM EVENT = 50.00 1-HOUR INTENSITY(INCH/HOUR) = 1.199  
SLOPE OF INTENSITY DURATION CURVE = 0.5000

RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL  
AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- CROWN TO		STREET-CROSSFALL:		CURB HEIGHT (FT)	GUTTER-GEOMETRIES:			MANNING FACTOR (n)
	WIDTH (FT)	CROSSFALL (FT)	IN- / SIDE	OUT- / PARK- / WAY		WIDTH (FT)	LIP (FT)	HIKE (FT)	
1	36.0	31.0	0.020	0.020/0.020	0.50	1.50	0.0313	0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET  
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.00 TO NODE 1.10 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS SINGLE FAMILY (1/4 ACRE)  
 $TC = K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**0.2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 109.00  
UPSTREAM ELEVATION(FEET) = 1681.60  
DOWNSTREAM ELEVATION(FEET) = 1680.70  
ELEVATION DIFFERENCE(FEET) = 0.90  
 $TC = 0.393 * [(109.00^{**3}) / (0.90)]^{**0.2} = 6.692$   
50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.591  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8357  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 1.08  
TOTAL AREA(ACRES) = 0.36 TOTAL RUNOFF(CFS) = 1.08

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.10 TO NODE 1.20 IS CODE = 41

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1676.20 DOWNSTREAM(FEET) = 1676.00  
FLOW LENGTH(FEET) = 21.00 MANNING'S N = 0.013  
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.1 INCHES  
PIPE-FLOW VELOCITY(FEET/SEC.) = 3.63  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 1.08  
PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 6.79  
LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.20 = 130.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.20 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.566  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8353  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 0.35 SUBAREA RUNOFF(CFS) = 1.04  
TOTAL AREA(ACRES) = 0.7 TOTAL RUNOFF(CFS) = 2.12  
TC(MIN.) = 6.79

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.30 IS CODE = 41



-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1676.00	DOWNSTREAM(FEET) =	1669.60
FLOW LENGTH(FEET) =	636.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	5.6 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	4.49		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	2.12		
PIPE TRAVEL TIME(MIN.) =	2.36	Tc(MIN.) =	9.15
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.30 =	766.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.30 TO NODE 1.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

50 YEAR RAINFALL INTENSITY(INCH/HOUR) =	3.071		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.8266		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	2.87	SUBAREA RUNOFF(CFS) =	7.29
TOTAL AREA(ACRES) =	3.6	TOTAL RUNOFF(CFS) =	9.41
TC(MIN.) =	9.15		

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.30 TO NODE 1.40 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1669.60	DOWNSTREAM(FEET) =	1666.10
FLOW LENGTH(FEET) =	357.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	14.1 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	6.36		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	9.41		
PIPE TRAVEL TIME(MIN.) =	0.94	Tc(MIN.) =	10.09
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.40 =	1123.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.40 TO NODE 1.40 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

50 YEAR RAINFALL INTENSITY(INCH/HOUR) =	2.925		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.8235		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	0.42	SUBAREA RUNOFF(CFS) =	1.01
TOTAL AREA(ACRES) =	4.0	TOTAL RUNOFF(CFS) =	10.42

TC(MIN.) = 10.09

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.40 TO NODE 1.50 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1666.10	DOWNSTREAM(FEET) =	1665.60
FLOW LENGTH(FEET) =	46.00	MANNING'S N =	0.013
ASSUME FULL-FLOWING PIPELINE			
PIPE-FLOW VELOCITY(FEET/SEC.) =	5.90		
PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)			
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	10.42		
PIPE TRAVEL TIME(MIN.) =	0.13	Tc(MIN.) =	10.22
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.50 =	1169.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.50 TO NODE 1.50 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

50 YEAR RAINFALL INTENSITY(INCH/HOUR) =	2.907		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.8231		
SOIL CLASSIFICATION IS "C"			
SUBAREA AREA(ACRES) =	0.71	SUBAREA RUNOFF(CFS) =	1.70
TOTAL AREA(ACRES) =	4.7	TOTAL RUNOFF(CFS) =	12.12
TC(MIN.) =	10.22		

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.50 TO NODE 1.60 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1665.60	DOWNSTREAM(FEET) =	1664.80
FLOW LENGTH(FEET) =	80.00	MANNING'S N =	0.013
ASSUME FULL-FLOWING PIPELINE			
PIPE-FLOW VELOCITY(FEET/SEC.) =	6.86		
PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)			
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	12.12		
PIPE TRAVEL TIME(MIN.) =	0.19	Tc(MIN.) =	10.41
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.60 =	1249.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.60 TO NODE 1.60 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

```

=====
50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.879
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8225
SOIL CLASSIFICATION IS "C"
SUBAREA AREA(ACRES) = 3.65 SUBAREA RUNOFF(CFS) = 8.64
TOTAL AREA(ACRES) = 8.4 TOTAL RUNOFF(CFS) = 20.76
TC(MIN.) = 10.41

```

```

*****
FLOW PROCESS FROM NODE 2.00 TO NODE 2.10 IS CODE = 21
-----

```

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```

=====
ASSUMED INITIAL SUBAREA UNIFORM
DEVELOPMENT IS SINGLE FAMILY (1/4 ACRE)
TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
INITIAL SUBAREA FLOW-LENGTH(FEET) = 395.00
UPSTREAM ELEVATION(FEET) = 1683.00
DOWNSTREAM ELEVATION(FEET) = 1678.30
ELEVATION DIFFERENCE(FEET) = 4.70
TC = 0.393*[( 395.00**3)/( 4.70)]**.2 = 10.411
50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.879
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8225
SOIL CLASSIFICATION IS "C"
SUBAREA RUNOFF(CFS) = 2.77
TOTAL AREA(ACRES) = 1.17 TOTAL RUNOFF(CFS) = 2.77

```

```

*****
FLOW PROCESS FROM NODE 2.10 TO NODE 2.20 IS CODE = 41
-----

```

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1672.10 DOWNSTREAM(FEET) = 1670.30
FLOW LENGTH(FEET) = 305.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 3.98
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 2.77
PIPE TRAVEL TIME(MIN.) = 1.28 Tc(MIN.) = 11.69
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.20 = 700.00 FEET.

```

```

*****
FLOW PROCESS FROM NODE 2.20 TO NODE 2.20 IS CODE = 81
-----

```

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

```

=====
50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.718
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8187
SOIL CLASSIFICATION IS "C"

```

SUBAREA AREA(ACRES) = 1.95 SUBAREA RUNOFF(CFS) = 4.34  
TOTAL AREA(ACRES) = 3.1 TOTAL RUNOFF(CFS) = 7.11  
TC(MIN.) = 11.69

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.20 TO NODE 2.30 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1670.30 DOWNSTREAM(FEET) = 1669.60  
FLOW LENGTH(FEET) = 114.00 MANNING'S N = 0.013  
DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.5 INCHES  
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.01  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 7.11  
PIPE TRAVEL TIME(MIN.) = 0.38 Tc(MIN.) = 12.07  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.30 = 814.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.675  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8177  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 1.34 SUBAREA RUNOFF(CFS) = 2.93  
TOTAL AREA(ACRES) = 4.5 TOTAL RUNOFF(CFS) = 10.04  
TC(MIN.) = 12.07

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

50 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.675  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8177  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 1.42 SUBAREA RUNOFF(CFS) = 3.11  
TOTAL AREA(ACRES) = 5.9 TOTAL RUNOFF(CFS) = 13.15  
TC(MIN.) = 12.07

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.40 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1669.60 DOWNSTREAM(FEET) = 1669.00

FLOW LENGTH(FEET) = 116.00 MANNING'S N = 0.013  
ASSUME FULL-FLOWING PIPELINE  
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.44  
PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 13.15  
PIPE TRAVEL TIME(MIN.) = 0.26 Tc(MIN.) = 12.33  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.40 = 930.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.40 TO NODE 2.40 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

50 YEAR RAINFALL INTENSITY(INCH/HOUR) =	2.646		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.8169		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	2.85	SUBAREA RUNOFF(CFS) =	6.16
TOTAL AREA(ACRES) =	8.7	TOTAL RUNOFF(CFS) =	19.31
TC(MIN.) =	12.33		

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES)	=	8.7	TC(MIN.) =	12.33
PEAK FLOW RATE(CFS)	=	19.31		

=====

END OF RATIONAL METHOD ANALYSIS



# **Pre-Development & Post-Development Conditions Hydrology Calculations (100-year Storm Event)**

\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON  
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT  
(RCFC&WCD) 1978 HYDROLOGY MANUAL  
(c) Copyright 1982-2014 Advanced Engineering Software (aes)  
(Rational Tabling Version 21.0)  
Release Date: 06/01/2014 License ID 1580

Analysis prepared by:

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* KRAMERIA AVE PROJECT \*  
\* TTM NO. 38094 \*  
\* EXISTING Q100 \*  
\*\*\*\*\*

FILE NAME: CC02X100.DAT  
TIME/DATE OF STUDY: 15:32 02/22/2021

-----  
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:  
-----

USER SPECIFIED STORM EVENT(YEAR) = 100.00  
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00  
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90  
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500  
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.350

COMPUTED RAINFALL INTENSITY DATA:

STORM EVENT = 100.00 1-HOUR INTENSITY(INCH/HOUR) = 1.350  
SLOPE OF INTENSITY DURATION CURVE = 0.5000

RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL  
AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- CROWN TO		STREET-CROSSFALL:		CURB HEIGHT (FT)	GUTTER-GEOMETRIES:			MANNING FACTOR (n)
	WIDTH (FT)	CROSSFALL (FT)	IN- / SIDE	OUT- / PARK- / WAY		WIDTH (FT)	LIP (FT)	HIKE (FT)	
1	30.0	20.0	0.018/0.018	0.020	0.67	2.00	0.0313	0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET  
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.00 TO NODE 1.10 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER  
 $TC = K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**.2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 175.00  
UPSTREAM ELEVATION(FEET) = 1682.60  
DOWNSTREAM ELEVATION(FEET) = 1678.80  
ELEVATION DIFFERENCE(FEET) = 3.80  
 $TC = 0.533 * [(175.00^{**3}) / (3.80)]^{**.2} = 9.042$   
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.478  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7677  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 1.25  
TOTAL AREA(ACRES) = 0.47 TOTAL RUNOFF(CFS) = 1.25

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.10 TO NODE 1.20 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<  
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1678.80 DOWNSTREAM(FEET) = 1666.00  
CHANNEL LENGTH THRU SUBAREA(FEET) = 589.00 CHANNEL SLOPE = 0.0217  
SLOPE ADJUSTMENT CURVE USED:  
EFFECTIVE SLOPE = .0217 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
CHANNEL FLOW THRU SUBAREA(CFS) = 1.25  
FLOW VELOCITY(FEET/SEC) = 0.89 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
TRAVEL TIME(MIN.) = 11.03 Tc(MIN.) = 20.07  
LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.20 = 764.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.20 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.334  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7162  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 7.89 SUBAREA RUNOFF(CFS) = 13.19  
TOTAL AREA(ACRES) = 8.4 TOTAL RUNOFF(CFS) = 14.45  
TC(MIN.) = 20.07

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.00 TO NODE 2.10 IS CODE = 21



-----  
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS: UNDEVELOPED WITH POOR COVER  
TC =  $K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**.2}$   
INITIAL SUBAREA FLOW-LENGTH(FEET) = 315.00  
UPSTREAM ELEVATION(FEET) = 1683.80  
DOWNSTREAM ELEVATION(FEET) = 1677.50  
ELEVATION DIFFERENCE(FEET) = 6.30  
TC =  $0.533 * [(315.00^{**3}) / (6.30)]^{**.2} = 11.628$   
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.067  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7529  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 4.32  
TOTAL AREA(ACRES) = 1.87 TOTAL RUNOFF(CFS) = 4.32

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.10 TO NODE 2.20 IS CODE = 53

-----  
>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<  
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1677.50 DOWNSTREAM(FEET) = 1669.70  
CHANNEL LENGTH THRU SUBAREA(FEET) = 761.00 CHANNEL SLOPE = 0.0102  
SLOPE ADJUSTMENT CURVE USED:  
EFFECTIVE SLOPE = .0102 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
CHANNEL FLOW THRU SUBAREA(CFS) = 4.32  
FLOW VELOCITY(FEET/SEC) = 0.92 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)  
TRAVEL TIME(MIN.) = 13.75 Tc(MIN.) = 25.37  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.20 = 1076.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.20 TO NODE 2.20 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.076  
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6985  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 6.86 SUBAREA RUNOFF(CFS) = 9.95  
TOTAL AREA(ACRES) = 8.7 TOTAL RUNOFF(CFS) = 14.26  
TC(MIN.) = 25.37

=====

END OF STUDY SUMMARY:  
TOTAL AREA(ACRES) = 8.7 TC(MIN.) = 25.37  
PEAK FLOW RATE(CFS) = 14.26

=====

=====

END OF RATIONAL METHOD ANALYSIS

\*\*\*\*\*

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON  
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT  
(RCFC&WCD) 1978 HYDROLOGY MANUAL  
(c) Copyright 1982-2014 Advanced Engineering Software (aes)  
(Rational Tabling Version 21.0)  
Release Date: 06/01/2014 License ID 1580

Analysis prepared by:

\*\*\*\*\* DESCRIPTION OF STUDY \*\*\*\*\*

\* KRAMERIA AVENUE PROJECT \*  
\* TTM NO. 38094 \*  
\* PROPOSED Q100 \*  
\*\*\*\*\*

FILE NAME: CC02P100.DAT  
TIME/DATE OF STUDY: 09:19 02/22/2021

-----  
USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:  
-----

USER SPECIFIED STORM EVENT(YEAR) = 100.00  
SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00  
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90  
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500  
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.350

COMPUTED RAINFALL INTENSITY DATA:

STORM EVENT = 100.00 1-HOUR INTENSITY(INCH/HOUR) = 1.350  
SLOPE OF INTENSITY DURATION CURVE = 0.5000

RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL  
AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES

\*USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL\*

NO.	HALF- CROWN TO STREET-CROSSFALL:			CURB GUTTER-GEOMETRIES:				MANNING FACTOR (n)
	WIDTH (FT)	CROSSFALL (FT)	IN- / OUT- / PARK- SIDE / SIDE / WAY	HEIGHT (FT)	WIDTH (FT)	LIP (FT)	HIKE (FT)	
1	36.0	31.0	0.020/0.020/0.020	0.50	1.50	0.0313	0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET  
as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)\*(Velocity) Constraint = 6.0 (FT\*FT/S)

\*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.\*

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.00 TO NODE 1.10 IS CODE = 21

-----

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
 DEVELOPMENT IS SINGLE FAMILY (1/4 ACRE)  
 $TC = K * [(LENGTH^{**3}) / (ELEVATION CHANGE)]^{**0.2}$   
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 109.00  
 UPSTREAM ELEVATION(FEET) = 1681.60  
 DOWNSTREAM ELEVATION(FEET) = 1680.70  
 ELEVATION DIFFERENCE(FEET) = 0.90  
 $TC = 0.393 * [(109.00^{**3}) / (0.90)]^{**0.2} = 6.692$   
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.042  
 SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8419  
 SOIL CLASSIFICATION IS "C"  
 SUBAREA RUNOFF(CFS) = 1.23  
 TOTAL AREA(ACRES) = 0.36 TOTAL RUNOFF(CFS) = 1.23

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.10 TO NODE 1.20 IS CODE = 41

-----

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1676.20 DOWNSTREAM(FEET) = 1676.00  
 FLOW LENGTH(FEET) = 21.00 MANNING'S N = 0.013  
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.3 INCHES  
 PIPE-FLOW VELOCITY(FEET/SEC.) = 3.76  
 GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
 PIPE-FLOW(CFS) = 1.23  
 PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 6.79  
 LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.20 = 130.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.20 IS CODE = 81

-----

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.014  
 SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8416  
 SOIL CLASSIFICATION IS "C"  
 SUBAREA AREA(ACRES) = 0.35 SUBAREA RUNOFF(CFS) = 1.18  
 TOTAL AREA(ACRES) = 0.7 TOTAL RUNOFF(CFS) = 2.41  
 TC(MIN.) = 6.79

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.20 TO NODE 1.30 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1676.00	DOWNSTREAM(FEET) =	1669.60
FLOW LENGTH(FEET) =	636.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	6.0 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	4.65		
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	2.41		
PIPE TRAVEL TIME(MIN.) =	2.28	Tc(MIN.) =	9.06
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.30 =	766.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.30 TO NODE 1.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	3.473		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.8338		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	2.87	SUBAREA RUNOFF(CFS) =	8.31
TOTAL AREA(ACRES) =	3.6	TOTAL RUNOFF(CFS) =	10.72
TC(MIN.) =	9.06		

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.30 TO NODE 1.40 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1669.60	DOWNSTREAM(FEET) =	1666.10
FLOW LENGTH(FEET) =	357.00	MANNING'S N =	0.013
ASSUME FULL-FLOWING PIPELINE			
PIPE-FLOW VELOCITY(FEET/SEC.) =	6.07		
PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)			
GIVEN PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	10.72		
PIPE TRAVEL TIME(MIN.) =	0.98	Tc(MIN.) =	10.04
LONGEST FLOWPATH FROM NODE	1.00 TO NODE	1.40 =	1123.00 FEET.

\*\*\*\*\*  
FLOW PROCESS FROM NODE 1.40 TO NODE 1.40 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	3.300		
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT =	.8309		
SOIL CLASSIFICATION IS	"C"		
SUBAREA AREA(ACRES) =	0.42	SUBAREA RUNOFF(CFS) =	1.15

TOTAL AREA(ACRES) = 4.0 TOTAL RUNOFF(CFS) = 11.87  
TC(MIN.) = 10.04

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.40 TO NODE 1.50 IS CODE = 41

-----  
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<<  
>>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1666.10 DOWNSTREAM(FEET) = 1665.60  
FLOW LENGTH(FEET) = 46.00 MANNING'S N = 0.013  
ASSUME FULL-FLOWING PIPELINE  
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.72  
PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 11.87  
PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 10.16  
LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.50 = 1169.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.50 TO NODE 1.50 IS CODE = 81

-----  
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.281  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8305  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 0.71 SUBAREA RUNOFF(CFS) = 1.93  
TOTAL AREA(ACRES) = 4.7 TOTAL RUNOFF(CFS) = 13.81  
TC(MIN.) = 10.16

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.50 TO NODE 1.60 IS CODE = 41

-----  
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<<  
>>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1665.60 DOWNSTREAM(FEET) = 1664.80  
FLOW LENGTH(FEET) = 80.00 MANNING'S N = 0.013  
ASSUME FULL-FLOWING PIPELINE  
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.81  
PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 13.81  
PIPE TRAVEL TIME(MIN.) = 0.17 Tc(MIN.) = 10.33  
LONGEST FLOWPATH FROM NODE 1.00 TO NODE 1.60 = 1249.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 1.60 TO NODE 1.60 IS CODE = 81

-----

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.254  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8300  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 3.65 SUBAREA RUNOFF(CFS) = 9.86  
TOTAL AREA(ACRES) = 8.4 TOTAL RUNOFF(CFS) = 23.66  
TC(MIN.) = 10.33

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.00 TO NODE 2.10 IS CODE = 21

-----

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

ASSUMED INITIAL SUBAREA UNIFORM  
DEVELOPMENT IS SINGLE FAMILY (1/4 ACRE)  
TC = K\*[(LENGTH\*\*3)/(ELEVATION CHANGE)]\*\*.2  
INITIAL SUBAREA FLOW-LENGTH(FEET) = 395.00  
UPSTREAM ELEVATION(FEET) = 1683.00  
DOWNSTREAM ELEVATION(FEET) = 1678.30  
ELEVATION DIFFERENCE(FEET) = 4.70  
TC = 0.393\*[( 395.00\*\*3)/( 4.70)]\*\*.2 = 10.411  
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.241  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8298  
SOIL CLASSIFICATION IS "C"  
SUBAREA RUNOFF(CFS) = 3.15  
TOTAL AREA(ACRES) = 1.17 TOTAL RUNOFF(CFS) = 3.15

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.10 TO NODE 2.20 IS CODE = 41

-----

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1672.10 DOWNSTREAM(FEET) = 1670.30  
FLOW LENGTH(FEET) = 305.00 MANNING'S N = 0.013  
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.0 INCHES  
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.12  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 3.15  
PIPE TRAVEL TIME(MIN.) = 1.23 Tc(MIN.) = 11.64  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.20 = 700.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.20 TO NODE 2.20 IS CODE = 81

-----

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.064  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8264

SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 1.95 SUBAREA RUNOFF(CFS) = 4.94  
TOTAL AREA(ACRES) = 3.1 TOTAL RUNOFF(CFS) = 8.08  
TC(MIN.) = 11.64

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.20 TO NODE 2.30 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1670.30 DOWNSTREAM(FEET) = 1669.60  
FLOW LENGTH(FEET) = 114.00 MANNING'S N = 0.013  
ASSUME FULL-FLOWING PIPELINE  
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.58  
PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)  
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1  
PIPE-FLOW(CFS) = 8.08  
PIPE TRAVEL TIME(MIN.) = 0.42 Tc(MIN.) = 12.06  
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.30 = 814.00 FEET.

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.011  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8253  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 1.34 SUBAREA RUNOFF(CFS) = 3.33  
TOTAL AREA(ACRES) = 4.5 TOTAL RUNOFF(CFS) = 11.41  
TC(MIN.) = 12.06

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.30 IS CODE = 81

-----  
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.011  
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8253  
SOIL CLASSIFICATION IS "C"  
SUBAREA AREA(ACRES) = 1.42 SUBAREA RUNOFF(CFS) = 3.53  
TOTAL AREA(ACRES) = 5.9 TOTAL RUNOFF(CFS) = 14.94  
TC(MIN.) = 12.06

\*\*\*\*\*

FLOW PROCESS FROM NODE 2.30 TO NODE 2.40 IS CODE = 41

-----  
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<  
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====
ELEVATION DATA: UPSTREAM(FEET) = 1669.60 DOWNSTREAM(FEET) = 1669.00
FLOW LENGTH(FEET) = 116.00 MANNING'S N = 0.013
ASSUME FULL-FLOWING PIPELINE
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.46
PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)
GIVEN PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 14.94
PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 12.29
LONGEST FLOWPATH FROM NODE 2.00 TO NODE 2.40 = 930.00 FEET.

\*\*\*\*\*
FLOW PROCESS FROM NODE 2.40 TO NODE 2.40 IS CODE = 81

-----
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.983
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8247
SOIL CLASSIFICATION IS "C"
SUBAREA AREA(ACRES) = 2.85 SUBAREA RUNOFF(CFS) = 7.01
TOTAL AREA(ACRES) = 8.7 TOTAL RUNOFF(CFS) = 21.96
TC(MIN.) = 12.29

=====
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 8.7 TC(MIN.) = 12.29
PEAK FLOW RATE(CFS) = 21.96

=====
END OF RATIONAL METHOD ANALYSIS





**APPENDIX D**  
**Synthetic Unit Hydrograph**

# **Pre-Development & Post-Development Condition CivilDesign Input & Output (2-year Storm Event)**

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0  
Study date 02/22/21 File: CC02XHYDA242.out

+++++

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

Program License Serial Number 6473

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

-----  
KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
EXISTING CONDITION - DMA A  
2YR, 24-HOUR STORM

-----  
Drainage Area = 8.36(Ac.) = 0.013 Sq. Mi.  
Drainage Area for Depth-Area Areal Adjustment = 8.36(Ac.) =  
0.013 Sq. Mi.  
Length along longest watercourse = 764.00(Ft.)  
Length along longest watercourse measured to centroid = 382.00(Ft.)  
Length along longest watercourse = 0.145 Mi.  
Length along longest watercourse measured to centroid = 0.072 Mi.  
Difference in elevation = 16.60(Ft.)  
Slope along watercourse = 114.7225 Ft./Mi.  
Average Manning's 'N' = 0.040  
Lag time = 0.069 Hr.  
Lag time = 4.14 Min.  
25% of lag time = 1.03 Min.  
40% of lag time = 1.65 Min.  
Unit time = 5.00 Min.  
Duration of storm = 24 Hour(s)  
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.36	1.60	13.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.36	4.30	35.95

STORM EVENT (YEAR) = 2.00  
 Area Averaged 2-Year Rainfall = 1.600(In)  
 Area Averaged 100-Year Rainfall = 4.300(In)

Point rain (area averaged) = 1.600(In)  
 Areal adjustment factor = 100.00 %  
 Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.360	74.00	0.000
Total Area Entered = 8.36(Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
74.0	55.8	0.513	0.000	0.513	1.000	0.513
Sum (F) =						0.513

Area averaged mean soil loss (F) (In/Hr) = 0.513  
 Minimum soil loss rate ((In/Hr)) = 0.256  
 (for 24 hour storm duration)  
 Soil low loss rate (decimal) = 0.900

-----  
 U n i t H y d r o g r a p h  
 MOUNTAIN S-Curve  
 -----

Unit Hydrograph Data  
 -----

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	120.871	28.024
2	0.167	241.742	38.056
3	0.250	362.614	12.807
4	0.333	483.485	6.815
5	0.417	604.356	4.571
6	0.500	725.227	3.356
7	0.583	846.099	2.510
8	0.667	966.970	2.181

9	0.750	1087.841	1.682	0.142
			Sum = 100.000	Sum= 8.425

---

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.013	( 0.909)	0.012	0.001
2	0.17	0.07	0.013	( 0.906)	0.012	0.001
3	0.25	0.07	0.013	( 0.902)	0.012	0.001
4	0.33	0.10	0.019	( 0.899)	0.017	0.002
5	0.42	0.10	0.019	( 0.895)	0.017	0.002
6	0.50	0.10	0.019	( 0.892)	0.017	0.002
7	0.58	0.10	0.019	( 0.888)	0.017	0.002
8	0.67	0.10	0.019	( 0.885)	0.017	0.002
9	0.75	0.10	0.019	( 0.881)	0.017	0.002
10	0.83	0.13	0.026	( 0.878)	0.023	0.003
11	0.92	0.13	0.026	( 0.874)	0.023	0.003
12	1.00	0.13	0.026	( 0.871)	0.023	0.003
13	1.08	0.10	0.019	( 0.867)	0.017	0.002
14	1.17	0.10	0.019	( 0.864)	0.017	0.002
15	1.25	0.10	0.019	( 0.861)	0.017	0.002
16	1.33	0.10	0.019	( 0.857)	0.017	0.002
17	1.42	0.10	0.019	( 0.854)	0.017	0.002
18	1.50	0.10	0.019	( 0.850)	0.017	0.002
19	1.58	0.10	0.019	( 0.847)	0.017	0.002
20	1.67	0.10	0.019	( 0.843)	0.017	0.002
21	1.75	0.10	0.019	( 0.840)	0.017	0.002
22	1.83	0.13	0.026	( 0.837)	0.023	0.003
23	1.92	0.13	0.026	( 0.833)	0.023	0.003
24	2.00	0.13	0.026	( 0.830)	0.023	0.003
25	2.08	0.13	0.026	( 0.827)	0.023	0.003
26	2.17	0.13	0.026	( 0.823)	0.023	0.003
27	2.25	0.13	0.026	( 0.820)	0.023	0.003
28	2.33	0.13	0.026	( 0.817)	0.023	0.003
29	2.42	0.13	0.026	( 0.813)	0.023	0.003
30	2.50	0.13	0.026	( 0.810)	0.023	0.003
31	2.58	0.17	0.032	( 0.807)	0.029	0.003
32	2.67	0.17	0.032	( 0.803)	0.029	0.003
33	2.75	0.17	0.032	( 0.800)	0.029	0.003
34	2.83	0.17	0.032	( 0.797)	0.029	0.003
35	2.92	0.17	0.032	( 0.793)	0.029	0.003
36	3.00	0.17	0.032	( 0.790)	0.029	0.003
37	3.08	0.17	0.032	( 0.787)	0.029	0.003
38	3.17	0.17	0.032	( 0.784)	0.029	0.003
39	3.25	0.17	0.032	( 0.780)	0.029	0.003
40	3.33	0.17	0.032	( 0.777)	0.029	0.003

41	3.42	0.17	0.032	( 0.774)	0.029	0.003
42	3.50	0.17	0.032	( 0.771)	0.029	0.003
43	3.58	0.17	0.032	( 0.767)	0.029	0.003
44	3.67	0.17	0.032	( 0.764)	0.029	0.003
45	3.75	0.17	0.032	( 0.761)	0.029	0.003
46	3.83	0.20	0.038	( 0.758)	0.035	0.004
47	3.92	0.20	0.038	( 0.755)	0.035	0.004
48	4.00	0.20	0.038	( 0.751)	0.035	0.004
49	4.08	0.20	0.038	( 0.748)	0.035	0.004
50	4.17	0.20	0.038	( 0.745)	0.035	0.004
51	4.25	0.20	0.038	( 0.742)	0.035	0.004
52	4.33	0.23	0.045	( 0.739)	0.040	0.004
53	4.42	0.23	0.045	( 0.736)	0.040	0.004
54	4.50	0.23	0.045	( 0.732)	0.040	0.004
55	4.58	0.23	0.045	( 0.729)	0.040	0.004
56	4.67	0.23	0.045	( 0.726)	0.040	0.004
57	4.75	0.23	0.045	( 0.723)	0.040	0.004
58	4.83	0.27	0.051	( 0.720)	0.046	0.005
59	4.92	0.27	0.051	( 0.717)	0.046	0.005
60	5.00	0.27	0.051	( 0.714)	0.046	0.005
61	5.08	0.20	0.038	( 0.711)	0.035	0.004
62	5.17	0.20	0.038	( 0.707)	0.035	0.004
63	5.25	0.20	0.038	( 0.704)	0.035	0.004
64	5.33	0.23	0.045	( 0.701)	0.040	0.004
65	5.42	0.23	0.045	( 0.698)	0.040	0.004
66	5.50	0.23	0.045	( 0.695)	0.040	0.004
67	5.58	0.27	0.051	( 0.692)	0.046	0.005
68	5.67	0.27	0.051	( 0.689)	0.046	0.005
69	5.75	0.27	0.051	( 0.686)	0.046	0.005
70	5.83	0.27	0.051	( 0.683)	0.046	0.005
71	5.92	0.27	0.051	( 0.680)	0.046	0.005
72	6.00	0.27	0.051	( 0.677)	0.046	0.005
73	6.08	0.30	0.058	( 0.674)	0.052	0.006
74	6.17	0.30	0.058	( 0.671)	0.052	0.006
75	6.25	0.30	0.058	( 0.668)	0.052	0.006
76	6.33	0.30	0.058	( 0.665)	0.052	0.006
77	6.42	0.30	0.058	( 0.662)	0.052	0.006
78	6.50	0.30	0.058	( 0.659)	0.052	0.006
79	6.58	0.33	0.064	( 0.656)	0.058	0.006
80	6.67	0.33	0.064	( 0.653)	0.058	0.006
81	6.75	0.33	0.064	( 0.650)	0.058	0.006
82	6.83	0.33	0.064	( 0.647)	0.058	0.006
83	6.92	0.33	0.064	( 0.644)	0.058	0.006
84	7.00	0.33	0.064	( 0.641)	0.058	0.006
85	7.08	0.33	0.064	( 0.638)	0.058	0.006
86	7.17	0.33	0.064	( 0.636)	0.058	0.006
87	7.25	0.33	0.064	( 0.633)	0.058	0.006
88	7.33	0.37	0.070	( 0.630)	0.063	0.007
89	7.42	0.37	0.070	( 0.627)	0.063	0.007
90	7.50	0.37	0.070	( 0.624)	0.063	0.007

91	7.58	0.40	0.077	( 0.621)	0.069	0.008
92	7.67	0.40	0.077	( 0.618)	0.069	0.008
93	7.75	0.40	0.077	( 0.615)	0.069	0.008
94	7.83	0.43	0.083	( 0.613)	0.075	0.008
95	7.92	0.43	0.083	( 0.610)	0.075	0.008
96	8.00	0.43	0.083	( 0.607)	0.075	0.008
97	8.08	0.50	0.096	( 0.604)	0.086	0.010
98	8.17	0.50	0.096	( 0.601)	0.086	0.010
99	8.25	0.50	0.096	( 0.598)	0.086	0.010
100	8.33	0.50	0.096	( 0.596)	0.086	0.010
101	8.42	0.50	0.096	( 0.593)	0.086	0.010
102	8.50	0.50	0.096	( 0.590)	0.086	0.010
103	8.58	0.53	0.102	( 0.587)	0.092	0.010
104	8.67	0.53	0.102	( 0.585)	0.092	0.010
105	8.75	0.53	0.102	( 0.582)	0.092	0.010
106	8.83	0.57	0.109	( 0.579)	0.098	0.011
107	8.92	0.57	0.109	( 0.576)	0.098	0.011
108	9.00	0.57	0.109	( 0.574)	0.098	0.011
109	9.08	0.63	0.122	( 0.571)	0.109	0.012
110	9.17	0.63	0.122	( 0.568)	0.109	0.012
111	9.25	0.63	0.122	( 0.566)	0.109	0.012
112	9.33	0.67	0.128	( 0.563)	0.115	0.013
113	9.42	0.67	0.128	( 0.560)	0.115	0.013
114	9.50	0.67	0.128	( 0.557)	0.115	0.013
115	9.58	0.70	0.134	( 0.555)	0.121	0.013
116	9.67	0.70	0.134	( 0.552)	0.121	0.013
117	9.75	0.70	0.134	( 0.549)	0.121	0.013
118	9.83	0.73	0.141	( 0.547)	0.127	0.014
119	9.92	0.73	0.141	( 0.544)	0.127	0.014
120	10.00	0.73	0.141	( 0.542)	0.127	0.014
121	10.08	0.50	0.096	( 0.539)	0.086	0.010
122	10.17	0.50	0.096	( 0.536)	0.086	0.010
123	10.25	0.50	0.096	( 0.534)	0.086	0.010
124	10.33	0.50	0.096	( 0.531)	0.086	0.010
125	10.42	0.50	0.096	( 0.529)	0.086	0.010
126	10.50	0.50	0.096	( 0.526)	0.086	0.010
127	10.58	0.67	0.128	( 0.523)	0.115	0.013
128	10.67	0.67	0.128	( 0.521)	0.115	0.013
129	10.75	0.67	0.128	( 0.518)	0.115	0.013
130	10.83	0.67	0.128	( 0.516)	0.115	0.013
131	10.92	0.67	0.128	( 0.513)	0.115	0.013
132	11.00	0.67	0.128	( 0.511)	0.115	0.013
133	11.08	0.63	0.122	( 0.508)	0.109	0.012
134	11.17	0.63	0.122	( 0.506)	0.109	0.012
135	11.25	0.63	0.122	( 0.503)	0.109	0.012
136	11.33	0.63	0.122	( 0.501)	0.109	0.012
137	11.42	0.63	0.122	( 0.498)	0.109	0.012
138	11.50	0.63	0.122	( 0.496)	0.109	0.012
139	11.58	0.57	0.109	( 0.493)	0.098	0.011
140	11.67	0.57	0.109	( 0.491)	0.098	0.011

141	11.75	0.57	0.109	( 0.488)	0.098	0.011
142	11.83	0.60	0.115	( 0.486)	0.104	0.012
143	11.92	0.60	0.115	( 0.484)	0.104	0.012
144	12.00	0.60	0.115	( 0.481)	0.104	0.012
145	12.08	0.83	0.160	( 0.479)	0.144	0.016
146	12.17	0.83	0.160	( 0.476)	0.144	0.016
147	12.25	0.83	0.160	( 0.474)	0.144	0.016
148	12.33	0.87	0.166	( 0.472)	0.150	0.017
149	12.42	0.87	0.166	( 0.469)	0.150	0.017
150	12.50	0.87	0.166	( 0.467)	0.150	0.017
151	12.58	0.93	0.179	( 0.464)	0.161	0.018
152	12.67	0.93	0.179	( 0.462)	0.161	0.018
153	12.75	0.93	0.179	( 0.460)	0.161	0.018
154	12.83	0.97	0.186	( 0.457)	0.167	0.019
155	12.92	0.97	0.186	( 0.455)	0.167	0.019
156	13.00	0.97	0.186	( 0.453)	0.167	0.019
157	13.08	1.13	0.218	( 0.451)	0.196	0.022
158	13.17	1.13	0.218	( 0.448)	0.196	0.022
159	13.25	1.13	0.218	( 0.446)	0.196	0.022
160	13.33	1.13	0.218	( 0.444)	0.196	0.022
161	13.42	1.13	0.218	( 0.442)	0.196	0.022
162	13.50	1.13	0.218	( 0.439)	0.196	0.022
163	13.58	0.77	0.147	( 0.437)	0.132	0.015
164	13.67	0.77	0.147	( 0.435)	0.132	0.015
165	13.75	0.77	0.147	( 0.433)	0.132	0.015
166	13.83	0.77	0.147	( 0.430)	0.132	0.015
167	13.92	0.77	0.147	( 0.428)	0.132	0.015
168	14.00	0.77	0.147	( 0.426)	0.132	0.015
169	14.08	0.90	0.173	( 0.424)	0.156	0.017
170	14.17	0.90	0.173	( 0.422)	0.156	0.017
171	14.25	0.90	0.173	( 0.419)	0.156	0.017
172	14.33	0.87	0.166	( 0.417)	0.150	0.017
173	14.42	0.87	0.166	( 0.415)	0.150	0.017
174	14.50	0.87	0.166	( 0.413)	0.150	0.017
175	14.58	0.87	0.166	( 0.411)	0.150	0.017
176	14.67	0.87	0.166	( 0.409)	0.150	0.017
177	14.75	0.87	0.166	( 0.407)	0.150	0.017
178	14.83	0.83	0.160	( 0.405)	0.144	0.016
179	14.92	0.83	0.160	( 0.403)	0.144	0.016
180	15.00	0.83	0.160	( 0.401)	0.144	0.016
181	15.08	0.80	0.154	( 0.398)	0.138	0.015
182	15.17	0.80	0.154	( 0.396)	0.138	0.015
183	15.25	0.80	0.154	( 0.394)	0.138	0.015
184	15.33	0.77	0.147	( 0.392)	0.132	0.015
185	15.42	0.77	0.147	( 0.390)	0.132	0.015
186	15.50	0.77	0.147	( 0.388)	0.132	0.015
187	15.58	0.63	0.122	( 0.386)	0.109	0.012
188	15.67	0.63	0.122	( 0.384)	0.109	0.012
189	15.75	0.63	0.122	( 0.382)	0.109	0.012
190	15.83	0.63	0.122	( 0.380)	0.109	0.012



191	15.92	0.63	0.122	( 0.379)	0.109	0.012
192	16.00	0.63	0.122	( 0.377)	0.109	0.012
193	16.08	0.13	0.026	( 0.375)	0.023	0.003
194	16.17	0.13	0.026	( 0.373)	0.023	0.003
195	16.25	0.13	0.026	( 0.371)	0.023	0.003
196	16.33	0.13	0.026	( 0.369)	0.023	0.003
197	16.42	0.13	0.026	( 0.367)	0.023	0.003
198	16.50	0.13	0.026	( 0.365)	0.023	0.003
199	16.58	0.10	0.019	( 0.363)	0.017	0.002
200	16.67	0.10	0.019	( 0.362)	0.017	0.002
201	16.75	0.10	0.019	( 0.360)	0.017	0.002
202	16.83	0.10	0.019	( 0.358)	0.017	0.002
203	16.92	0.10	0.019	( 0.356)	0.017	0.002
204	17.00	0.10	0.019	( 0.354)	0.017	0.002
205	17.08	0.17	0.032	( 0.352)	0.029	0.003
206	17.17	0.17	0.032	( 0.351)	0.029	0.003
207	17.25	0.17	0.032	( 0.349)	0.029	0.003
208	17.33	0.17	0.032	( 0.347)	0.029	0.003
209	17.42	0.17	0.032	( 0.345)	0.029	0.003
210	17.50	0.17	0.032	( 0.344)	0.029	0.003
211	17.58	0.17	0.032	( 0.342)	0.029	0.003
212	17.67	0.17	0.032	( 0.340)	0.029	0.003
213	17.75	0.17	0.032	( 0.339)	0.029	0.003
214	17.83	0.13	0.026	( 0.337)	0.023	0.003
215	17.92	0.13	0.026	( 0.335)	0.023	0.003
216	18.00	0.13	0.026	( 0.334)	0.023	0.003
217	18.08	0.13	0.026	( 0.332)	0.023	0.003
218	18.17	0.13	0.026	( 0.330)	0.023	0.003
219	18.25	0.13	0.026	( 0.329)	0.023	0.003
220	18.33	0.13	0.026	( 0.327)	0.023	0.003
221	18.42	0.13	0.026	( 0.325)	0.023	0.003
222	18.50	0.13	0.026	( 0.324)	0.023	0.003
223	18.58	0.10	0.019	( 0.322)	0.017	0.002
224	18.67	0.10	0.019	( 0.321)	0.017	0.002
225	18.75	0.10	0.019	( 0.319)	0.017	0.002
226	18.83	0.07	0.013	( 0.318)	0.012	0.001
227	18.92	0.07	0.013	( 0.316)	0.012	0.001
228	19.00	0.07	0.013	( 0.315)	0.012	0.001
229	19.08	0.10	0.019	( 0.313)	0.017	0.002
230	19.17	0.10	0.019	( 0.312)	0.017	0.002
231	19.25	0.10	0.019	( 0.310)	0.017	0.002
232	19.33	0.13	0.026	( 0.309)	0.023	0.003
233	19.42	0.13	0.026	( 0.307)	0.023	0.003
234	19.50	0.13	0.026	( 0.306)	0.023	0.003
235	19.58	0.10	0.019	( 0.305)	0.017	0.002
236	19.67	0.10	0.019	( 0.303)	0.017	0.002
237	19.75	0.10	0.019	( 0.302)	0.017	0.002
238	19.83	0.07	0.013	( 0.300)	0.012	0.001
239	19.92	0.07	0.013	( 0.299)	0.012	0.001
240	20.00	0.07	0.013	( 0.298)	0.012	0.001

241	20.08	0.10	0.019	( 0.296)	0.017	0.002
242	20.17	0.10	0.019	( 0.295)	0.017	0.002
243	20.25	0.10	0.019	( 0.294)	0.017	0.002
244	20.33	0.10	0.019	( 0.293)	0.017	0.002
245	20.42	0.10	0.019	( 0.291)	0.017	0.002
246	20.50	0.10	0.019	( 0.290)	0.017	0.002
247	20.58	0.10	0.019	( 0.289)	0.017	0.002
248	20.67	0.10	0.019	( 0.288)	0.017	0.002
249	20.75	0.10	0.019	( 0.287)	0.017	0.002
250	20.83	0.07	0.013	( 0.285)	0.012	0.001
251	20.92	0.07	0.013	( 0.284)	0.012	0.001
252	21.00	0.07	0.013	( 0.283)	0.012	0.001
253	21.08	0.10	0.019	( 0.282)	0.017	0.002
254	21.17	0.10	0.019	( 0.281)	0.017	0.002
255	21.25	0.10	0.019	( 0.280)	0.017	0.002
256	21.33	0.07	0.013	( 0.279)	0.012	0.001
257	21.42	0.07	0.013	( 0.278)	0.012	0.001
258	21.50	0.07	0.013	( 0.277)	0.012	0.001
259	21.58	0.10	0.019	( 0.276)	0.017	0.002
260	21.67	0.10	0.019	( 0.275)	0.017	0.002
261	21.75	0.10	0.019	( 0.274)	0.017	0.002
262	21.83	0.07	0.013	( 0.273)	0.012	0.001
263	21.92	0.07	0.013	( 0.272)	0.012	0.001
264	22.00	0.07	0.013	( 0.271)	0.012	0.001
265	22.08	0.10	0.019	( 0.270)	0.017	0.002
266	22.17	0.10	0.019	( 0.269)	0.017	0.002
267	22.25	0.10	0.019	( 0.268)	0.017	0.002
268	22.33	0.07	0.013	( 0.267)	0.012	0.001
269	22.42	0.07	0.013	( 0.266)	0.012	0.001
270	22.50	0.07	0.013	( 0.266)	0.012	0.001
271	22.58	0.07	0.013	( 0.265)	0.012	0.001
272	22.67	0.07	0.013	( 0.264)	0.012	0.001
273	22.75	0.07	0.013	( 0.263)	0.012	0.001
274	22.83	0.07	0.013	( 0.263)	0.012	0.001
275	22.92	0.07	0.013	( 0.262)	0.012	0.001
276	23.00	0.07	0.013	( 0.261)	0.012	0.001
277	23.08	0.07	0.013	( 0.261)	0.012	0.001
278	23.17	0.07	0.013	( 0.260)	0.012	0.001
279	23.25	0.07	0.013	( 0.260)	0.012	0.001
280	23.33	0.07	0.013	( 0.259)	0.012	0.001
281	23.42	0.07	0.013	( 0.259)	0.012	0.001
282	23.50	0.07	0.013	( 0.258)	0.012	0.001
283	23.58	0.07	0.013	( 0.258)	0.012	0.001
284	23.67	0.07	0.013	( 0.257)	0.012	0.001
285	23.75	0.07	0.013	( 0.257)	0.012	0.001
286	23.83	0.07	0.013	( 0.257)	0.012	0.001
287	23.92	0.07	0.013	( 0.257)	0.012	0.001
288	24.00	0.07	0.013	( 0.256)	0.012	0.001

(Loss Rate Not Used)

Sum = 100.0

Sum = 1.9

Flood volume = Effective rainfall 0.16(In)  
 times area 8.4(Ac.)/[ (In)/(Ft.) ] = 0.1(Ac.Ft)  
 Total soil loss = 1.44(In)  
 Total soil loss = 1.003(Ac.Ft)  
 Total rainfall = 1.60(In)  
 Flood volume = 4855.4 Cubic Feet  
 Total soil loss = 43698.7 Cubic Feet

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 Peak flow rate of this hydrograph = 0.182(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	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.01	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.01	Q				
0+25	0.0003	0.01	Q				
0+30	0.0004	0.01	Q				
0+35	0.0005	0.01	Q				
0+40	0.0006	0.02	Q				
0+45	0.0007	0.02	Q				
0+50	0.0008	0.02	Q				
0+55	0.0010	0.02	Q				
1+ 0	0.0011	0.02	Q				
1+ 5	0.0012	0.02	Q				
1+10	0.0014	0.02	Q				
1+15	0.0015	0.02	Q				
1+20	0.0016	0.02	Q				
1+25	0.0017	0.02	Q				
1+30	0.0018	0.02	Q				
1+35	0.0019	0.02	Q				
1+40	0.0020	0.02	Q				
1+45	0.0022	0.02	Q				
1+50	0.0023	0.02	Q				
1+55	0.0024	0.02	Q				
2+ 0	0.0026	0.02	Q				
2+ 5	0.0027	0.02	Q				
2+10	0.0028	0.02	QV				
2+15	0.0030	0.02	QV				
2+20	0.0031	0.02	QV				
2+25	0.0033	0.02	QV				
2+30	0.0034	0.02	QV				
2+35	0.0036	0.02	QV				

2+40	0.0038	0.03	QV
2+45	0.0039	0.03	QV
2+50	0.0041	0.03	QV
2+55	0.0043	0.03	QV
3+ 0	0.0045	0.03	QV
3+ 5	0.0047	0.03	QV
3+10	0.0049	0.03	QV
3+15	0.0050	0.03	QV
3+20	0.0052	0.03	QV
3+25	0.0054	0.03	QV
3+30	0.0056	0.03	Q V
3+35	0.0058	0.03	Q V
3+40	0.0060	0.03	Q V
3+45	0.0062	0.03	Q V
3+50	0.0064	0.03	Q V
3+55	0.0066	0.03	Q V
4+ 0	0.0068	0.03	Q V
4+ 5	0.0070	0.03	Q V
4+10	0.0072	0.03	Q V
4+15	0.0074	0.03	Q V
4+20	0.0077	0.03	Q V
4+25	0.0079	0.04	Q V
4+30	0.0082	0.04	Q V
4+35	0.0084	0.04	Q V
4+40	0.0087	0.04	Q V
4+45	0.0089	0.04	Q V
4+50	0.0092	0.04	Q V
4+55	0.0095	0.04	Q V
5+ 0	0.0098	0.04	Q V
5+ 5	0.0101	0.04	Q V
5+10	0.0103	0.04	Q V
5+15	0.0105	0.03	Q V
5+20	0.0108	0.04	Q V
5+25	0.0110	0.04	Q V
5+30	0.0113	0.04	Q V
5+35	0.0116	0.04	Q V
5+40	0.0118	0.04	Q V
5+45	0.0121	0.04	Q V
5+50	0.0124	0.04	Q V
5+55	0.0127	0.04	Q V
6+ 0	0.0130	0.04	Q V
6+ 5	0.0133	0.04	Q V
6+10	0.0136	0.05	Q V
6+15	0.0140	0.05	Q V
6+20	0.0143	0.05	Q V
6+25	0.0146	0.05	Q V
6+30	0.0150	0.05	Q V
6+35	0.0153	0.05	Q V
6+40	0.0157	0.05	Q V
6+45	0.0160	0.05	Q V

6+50	0.0164	0.05	Q	V				
6+55	0.0168	0.05	Q	V				
7+ 0	0.0171	0.05	Q	V				
7+ 5	0.0175	0.05	Q	V				
7+10	0.0179	0.05	Q	V				
7+15	0.0182	0.05	Q	V				
7+20	0.0186	0.06	Q	V				
7+25	0.0190	0.06	Q	V				
7+30	0.0194	0.06	Q	V				
7+35	0.0198	0.06	Q	V				
7+40	0.0203	0.06	Q	V				
7+45	0.0207	0.06	Q	V				
7+50	0.0211	0.07	Q	V				
7+55	0.0216	0.07	Q	V				
8+ 0	0.0221	0.07	Q	V				
8+ 5	0.0226	0.07	Q	V				
8+10	0.0231	0.08	Q	V				
8+15	0.0236	0.08	Q	V				
8+20	0.0242	0.08	Q	V				
8+25	0.0247	0.08	Q	V				
8+30	0.0253	0.08	Q	V				
8+35	0.0259	0.08	Q	V				
8+40	0.0264	0.08	Q	V				
8+45	0.0270	0.09	Q	V				
8+50	0.0276	0.09	Q	V				
8+55	0.0282	0.09	Q	V				
9+ 0	0.0289	0.09	Q	V				
9+ 5	0.0295	0.09	Q	V				
9+10	0.0302	0.10	Q	V				
9+15	0.0309	0.10	Q	V				
9+20	0.0316	0.10	Q	V				
9+25	0.0323	0.10	Q	V				
9+30	0.0330	0.11	Q	V				
9+35	0.0338	0.11	Q	V				
9+40	0.0345	0.11	Q	V				
9+45	0.0353	0.11	Q	V				
9+50	0.0361	0.11	Q	V				
9+55	0.0369	0.12	Q	V				
10+ 0	0.0377	0.12	Q	V				
10+ 5	0.0384	0.11	Q	V				
10+10	0.0391	0.09	Q	V				
10+15	0.0397	0.09	Q	V				
10+20	0.0403	0.09	Q	V				
10+25	0.0409	0.08	Q	V				
10+30	0.0414	0.08	Q	V				
10+35	0.0421	0.09	Q	V				
10+40	0.0427	0.10	Q	V				
10+45	0.0434	0.10	Q	V				
10+50	0.0442	0.10	Q	V				
10+55	0.0449	0.11	Q	V				



15+10	0.0916	0.13	Q			V
15+15	0.0925	0.13	Q			V
15+20	0.0934	0.13	Q			V
15+25	0.0943	0.13	Q			V
15+30	0.0951	0.13	Q			V
15+35	0.0959	0.12	Q			V
15+40	0.0967	0.11	Q			V
15+45	0.0974	0.11	Q			V
15+50	0.0982	0.11	Q			V
15+55	0.0989	0.10	Q			V
16+ 0	0.0996	0.10	Q			V
16+ 5	0.1002	0.08	Q			V
16+10	0.1005	0.05	Q			V
16+15	0.1008	0.04	Q			V
16+20	0.1010	0.03	Q			V
16+25	0.1012	0.03	Q			V
16+30	0.1014	0.03	Q			V
16+35	0.1015	0.02	Q			V
16+40	0.1017	0.02	Q			V
16+45	0.1018	0.02	Q			V
16+50	0.1019	0.02	Q			V
16+55	0.1020	0.02	Q			V
17+ 0	0.1021	0.02	Q			V
17+ 5	0.1023	0.02	Q			V
17+10	0.1024	0.02	Q			V
17+15	0.1026	0.02	Q			V
17+20	0.1028	0.03	Q			V
17+25	0.1030	0.03	Q			V
17+30	0.1031	0.03	Q			V
17+35	0.1033	0.03	Q			V
17+40	0.1035	0.03	Q			V
17+45	0.1037	0.03	Q			V
17+50	0.1039	0.03	Q			V
17+55	0.1040	0.02	Q			V
18+ 0	0.1042	0.02	Q			V
18+ 5	0.1043	0.02	Q			V
18+10	0.1045	0.02	Q			V
18+15	0.1046	0.02	Q			V
18+20	0.1048	0.02	Q			V
18+25	0.1049	0.02	Q			V
18+30	0.1051	0.02	Q			V
18+35	0.1052	0.02	Q			V
18+40	0.1054	0.02	Q			V
18+45	0.1055	0.02	Q			V
18+50	0.1056	0.02	Q			V
18+55	0.1057	0.01	Q			V
19+ 0	0.1058	0.01	Q			V
19+ 5	0.1058	0.01	Q			V
19+10	0.1059	0.01	Q			V
19+15	0.1061	0.02	Q			V

19+20	0.1062	0.02	Q	V
19+25	0.1063	0.02	Q	V
19+30	0.1064	0.02	Q	V
19+35	0.1066	0.02	Q	V
19+40	0.1067	0.02	Q	V
19+45	0.1068	0.02	Q	V
19+50	0.1069	0.02	Q	V
19+55	0.1070	0.01	Q	V
20+ 0	0.1071	0.01	Q	V
20+ 5	0.1072	0.01	Q	V
20+10	0.1073	0.01	Q	V
20+15	0.1074	0.02	Q	V
20+20	0.1075	0.02	Q	V
20+25	0.1076	0.02	Q	V
20+30	0.1077	0.02	Q	V
20+35	0.1078	0.02	Q	V
20+40	0.1079	0.02	Q	V
20+45	0.1081	0.02	Q	V
20+50	0.1082	0.01	Q	V
20+55	0.1082	0.01	Q	V
21+ 0	0.1083	0.01	Q	V
21+ 5	0.1084	0.01	Q	V
21+10	0.1085	0.01	Q	V
21+15	0.1086	0.02	Q	V
21+20	0.1087	0.01	Q	V
21+25	0.1088	0.01	Q	V
21+30	0.1089	0.01	Q	V
21+35	0.1090	0.01	Q	V
21+40	0.1091	0.01	Q	V
21+45	0.1092	0.02	Q	V
21+50	0.1093	0.01	Q	V
21+55	0.1094	0.01	Q	V
22+ 0	0.1094	0.01	Q	V
22+ 5	0.1095	0.01	Q	V
22+10	0.1096	0.01	Q	V
22+15	0.1097	0.02	Q	V
22+20	0.1098	0.01	Q	V
22+25	0.1099	0.01	Q	V
22+30	0.1100	0.01	Q	V
22+35	0.1101	0.01	Q	V
22+40	0.1102	0.01	Q	V
22+45	0.1102	0.01	Q	V
22+50	0.1103	0.01	Q	V
22+55	0.1104	0.01	Q	V
23+ 0	0.1105	0.01	Q	V
23+ 5	0.1105	0.01	Q	V
23+10	0.1106	0.01	Q	V
23+15	0.1107	0.01	Q	V
23+20	0.1107	0.01	Q	V
23+25	0.1108	0.01	Q	V



23+30	0.1109	0.01	Q				V
23+35	0.1110	0.01	Q				V
23+40	0.1110	0.01	Q				V
23+45	0.1111	0.01	Q				V
23+50	0.1112	0.01	Q				V
23+55	0.1113	0.01	Q				V
24+ 0	0.1113	0.01	Q				V
24+ 5	0.1114	0.01	Q				V
24+10	0.1114	0.00	Q				V
24+15	0.1114	0.00	Q				V
24+20	0.1114	0.00	Q				V
24+25	0.1115	0.00	Q				V
24+30	0.1115	0.00	Q				V
24+35	0.1115	0.00	Q				V
24+40	0.1115	0.00	Q				V

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Unit Hydrograph Analysis

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Study date 02/22/21 File: CC02XHYDB242.out

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

Program License Serial Number 6473

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

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
EXISTING CONDITION - DMA B  
2YR, 24-HOUR STORM

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Drainage Area = 8.73(Ac.) = 0.014 Sq. Mi.  
Drainage Area for Depth-Area Areal Adjustment = 8.73(Ac.) =  
0.014 Sq. Mi.  
Length along longest watercourse = 1076.00(Ft.)  
Length along longest watercourse measured to centroid = 538.00(Ft.)  
Length along longest watercourse = 0.204 Mi.  
Length along longest watercourse measured to centroid = 0.102 Mi.  
Difference in elevation = 14.10(Ft.)  
Slope along watercourse = 69.1896 Ft./Mi.  
Average Manning's 'N' = 0.040  
Lag time = 0.098 Hr.  
Lag time = 5.91 Min.  
25% of lag time = 1.48 Min.  
40% of lag time = 2.36 Min.  
Unit time = 5.00 Min.  
Duration of storm = 24 Hour(s)  
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.73	1.60	13.97

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.73	4.30	37.54

STORM EVENT (YEAR) = 2.00  
 Area Averaged 2-Year Rainfall = 1.600(In)  
 Area Averaged 100-Year Rainfall = 4.300(In)

Point rain (area averaged) = 1.600(In)  
 Areal adjustment factor = 100.00 %  
 Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.730	74.00	0.000
Total Area Entered = 8.73(Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
74.0	55.8	0.513	0.000	0.513	1.000	0.513
Sum (F) =						0.513

Area averaged mean soil loss (F) (In/Hr) = 0.513  
 Minimum soil loss rate ((In/Hr)) = 0.256  
 (for 24 hour storm duration)  
 Soil low loss rate (decimal) = 0.900

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 U n i t H y d r o g r a p h  
 MOUNTAIN S-Curve  
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Unit Hydrograph Data  
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Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	84.639	18.434
2	0.167	169.278	37.827
3	0.250	253.917	14.156
4	0.333	338.556	8.146
5	0.417	423.196	5.204
6	0.500	507.835	3.742
7	0.583	592.474	2.974
8	0.667	677.113	2.411

9	0.750	761.752	1.980	0.174
10	0.833	846.391	1.599	0.141
11	0.917	931.030	1.524	0.134
12	1.000	1015.669	2.003	0.176
			Sum = 100.000	Sum= 8.798

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.013	( 0.909)	0.012	0.001
2	0.17	0.07	0.013	( 0.906)	0.012	0.001
3	0.25	0.07	0.013	( 0.902)	0.012	0.001
4	0.33	0.10	0.019	( 0.899)	0.017	0.002
5	0.42	0.10	0.019	( 0.895)	0.017	0.002
6	0.50	0.10	0.019	( 0.892)	0.017	0.002
7	0.58	0.10	0.019	( 0.888)	0.017	0.002
8	0.67	0.10	0.019	( 0.885)	0.017	0.002
9	0.75	0.10	0.019	( 0.881)	0.017	0.002
10	0.83	0.13	0.026	( 0.878)	0.023	0.003
11	0.92	0.13	0.026	( 0.874)	0.023	0.003
12	1.00	0.13	0.026	( 0.871)	0.023	0.003
13	1.08	0.10	0.019	( 0.867)	0.017	0.002
14	1.17	0.10	0.019	( 0.864)	0.017	0.002
15	1.25	0.10	0.019	( 0.861)	0.017	0.002
16	1.33	0.10	0.019	( 0.857)	0.017	0.002
17	1.42	0.10	0.019	( 0.854)	0.017	0.002
18	1.50	0.10	0.019	( 0.850)	0.017	0.002
19	1.58	0.10	0.019	( 0.847)	0.017	0.002
20	1.67	0.10	0.019	( 0.843)	0.017	0.002
21	1.75	0.10	0.019	( 0.840)	0.017	0.002
22	1.83	0.13	0.026	( 0.837)	0.023	0.003
23	1.92	0.13	0.026	( 0.833)	0.023	0.003
24	2.00	0.13	0.026	( 0.830)	0.023	0.003
25	2.08	0.13	0.026	( 0.827)	0.023	0.003
26	2.17	0.13	0.026	( 0.823)	0.023	0.003
27	2.25	0.13	0.026	( 0.820)	0.023	0.003
28	2.33	0.13	0.026	( 0.817)	0.023	0.003
29	2.42	0.13	0.026	( 0.813)	0.023	0.003
30	2.50	0.13	0.026	( 0.810)	0.023	0.003
31	2.58	0.17	0.032	( 0.807)	0.029	0.003
32	2.67	0.17	0.032	( 0.803)	0.029	0.003
33	2.75	0.17	0.032	( 0.800)	0.029	0.003
34	2.83	0.17	0.032	( 0.797)	0.029	0.003
35	2.92	0.17	0.032	( 0.793)	0.029	0.003
36	3.00	0.17	0.032	( 0.790)	0.029	0.003
37	3.08	0.17	0.032	( 0.787)	0.029	0.003

38	3.17	0.17	0.032	( 0.784)	0.029	0.003
39	3.25	0.17	0.032	( 0.780)	0.029	0.003
40	3.33	0.17	0.032	( 0.777)	0.029	0.003
41	3.42	0.17	0.032	( 0.774)	0.029	0.003
42	3.50	0.17	0.032	( 0.771)	0.029	0.003
43	3.58	0.17	0.032	( 0.767)	0.029	0.003
44	3.67	0.17	0.032	( 0.764)	0.029	0.003
45	3.75	0.17	0.032	( 0.761)	0.029	0.003
46	3.83	0.20	0.038	( 0.758)	0.035	0.004
47	3.92	0.20	0.038	( 0.755)	0.035	0.004
48	4.00	0.20	0.038	( 0.751)	0.035	0.004
49	4.08	0.20	0.038	( 0.748)	0.035	0.004
50	4.17	0.20	0.038	( 0.745)	0.035	0.004
51	4.25	0.20	0.038	( 0.742)	0.035	0.004
52	4.33	0.23	0.045	( 0.739)	0.040	0.004
53	4.42	0.23	0.045	( 0.736)	0.040	0.004
54	4.50	0.23	0.045	( 0.732)	0.040	0.004
55	4.58	0.23	0.045	( 0.729)	0.040	0.004
56	4.67	0.23	0.045	( 0.726)	0.040	0.004
57	4.75	0.23	0.045	( 0.723)	0.040	0.004
58	4.83	0.27	0.051	( 0.720)	0.046	0.005
59	4.92	0.27	0.051	( 0.717)	0.046	0.005
60	5.00	0.27	0.051	( 0.714)	0.046	0.005
61	5.08	0.20	0.038	( 0.711)	0.035	0.004
62	5.17	0.20	0.038	( 0.707)	0.035	0.004
63	5.25	0.20	0.038	( 0.704)	0.035	0.004
64	5.33	0.23	0.045	( 0.701)	0.040	0.004
65	5.42	0.23	0.045	( 0.698)	0.040	0.004
66	5.50	0.23	0.045	( 0.695)	0.040	0.004
67	5.58	0.27	0.051	( 0.692)	0.046	0.005
68	5.67	0.27	0.051	( 0.689)	0.046	0.005
69	5.75	0.27	0.051	( 0.686)	0.046	0.005
70	5.83	0.27	0.051	( 0.683)	0.046	0.005
71	5.92	0.27	0.051	( 0.680)	0.046	0.005
72	6.00	0.27	0.051	( 0.677)	0.046	0.005
73	6.08	0.30	0.058	( 0.674)	0.052	0.006
74	6.17	0.30	0.058	( 0.671)	0.052	0.006
75	6.25	0.30	0.058	( 0.668)	0.052	0.006
76	6.33	0.30	0.058	( 0.665)	0.052	0.006
77	6.42	0.30	0.058	( 0.662)	0.052	0.006
78	6.50	0.30	0.058	( 0.659)	0.052	0.006
79	6.58	0.33	0.064	( 0.656)	0.058	0.006
80	6.67	0.33	0.064	( 0.653)	0.058	0.006
81	6.75	0.33	0.064	( 0.650)	0.058	0.006
82	6.83	0.33	0.064	( 0.647)	0.058	0.006
83	6.92	0.33	0.064	( 0.644)	0.058	0.006
84	7.00	0.33	0.064	( 0.641)	0.058	0.006
85	7.08	0.33	0.064	( 0.638)	0.058	0.006
86	7.17	0.33	0.064	( 0.636)	0.058	0.006
87	7.25	0.33	0.064	( 0.633)	0.058	0.006

88	7.33	0.37	0.070	( 0.630)	0.063	0.007
89	7.42	0.37	0.070	( 0.627)	0.063	0.007
90	7.50	0.37	0.070	( 0.624)	0.063	0.007
91	7.58	0.40	0.077	( 0.621)	0.069	0.008
92	7.67	0.40	0.077	( 0.618)	0.069	0.008
93	7.75	0.40	0.077	( 0.615)	0.069	0.008
94	7.83	0.43	0.083	( 0.613)	0.075	0.008
95	7.92	0.43	0.083	( 0.610)	0.075	0.008
96	8.00	0.43	0.083	( 0.607)	0.075	0.008
97	8.08	0.50	0.096	( 0.604)	0.086	0.010
98	8.17	0.50	0.096	( 0.601)	0.086	0.010
99	8.25	0.50	0.096	( 0.598)	0.086	0.010
100	8.33	0.50	0.096	( 0.596)	0.086	0.010
101	8.42	0.50	0.096	( 0.593)	0.086	0.010
102	8.50	0.50	0.096	( 0.590)	0.086	0.010
103	8.58	0.53	0.102	( 0.587)	0.092	0.010
104	8.67	0.53	0.102	( 0.585)	0.092	0.010
105	8.75	0.53	0.102	( 0.582)	0.092	0.010
106	8.83	0.57	0.109	( 0.579)	0.098	0.011
107	8.92	0.57	0.109	( 0.576)	0.098	0.011
108	9.00	0.57	0.109	( 0.574)	0.098	0.011
109	9.08	0.63	0.122	( 0.571)	0.109	0.012
110	9.17	0.63	0.122	( 0.568)	0.109	0.012
111	9.25	0.63	0.122	( 0.566)	0.109	0.012
112	9.33	0.67	0.128	( 0.563)	0.115	0.013
113	9.42	0.67	0.128	( 0.560)	0.115	0.013
114	9.50	0.67	0.128	( 0.557)	0.115	0.013
115	9.58	0.70	0.134	( 0.555)	0.121	0.013
116	9.67	0.70	0.134	( 0.552)	0.121	0.013
117	9.75	0.70	0.134	( 0.549)	0.121	0.013
118	9.83	0.73	0.141	( 0.547)	0.127	0.014
119	9.92	0.73	0.141	( 0.544)	0.127	0.014
120	10.00	0.73	0.141	( 0.542)	0.127	0.014
121	10.08	0.50	0.096	( 0.539)	0.086	0.010
122	10.17	0.50	0.096	( 0.536)	0.086	0.010
123	10.25	0.50	0.096	( 0.534)	0.086	0.010
124	10.33	0.50	0.096	( 0.531)	0.086	0.010
125	10.42	0.50	0.096	( 0.529)	0.086	0.010
126	10.50	0.50	0.096	( 0.526)	0.086	0.010
127	10.58	0.67	0.128	( 0.523)	0.115	0.013
128	10.67	0.67	0.128	( 0.521)	0.115	0.013
129	10.75	0.67	0.128	( 0.518)	0.115	0.013
130	10.83	0.67	0.128	( 0.516)	0.115	0.013
131	10.92	0.67	0.128	( 0.513)	0.115	0.013
132	11.00	0.67	0.128	( 0.511)	0.115	0.013
133	11.08	0.63	0.122	( 0.508)	0.109	0.012
134	11.17	0.63	0.122	( 0.506)	0.109	0.012
135	11.25	0.63	0.122	( 0.503)	0.109	0.012
136	11.33	0.63	0.122	( 0.501)	0.109	0.012
137	11.42	0.63	0.122	( 0.498)	0.109	0.012

138	11.50	0.63	0.122	( 0.496)	0.109	0.012
139	11.58	0.57	0.109	( 0.493)	0.098	0.011
140	11.67	0.57	0.109	( 0.491)	0.098	0.011
141	11.75	0.57	0.109	( 0.488)	0.098	0.011
142	11.83	0.60	0.115	( 0.486)	0.104	0.012
143	11.92	0.60	0.115	( 0.484)	0.104	0.012
144	12.00	0.60	0.115	( 0.481)	0.104	0.012
145	12.08	0.83	0.160	( 0.479)	0.144	0.016
146	12.17	0.83	0.160	( 0.476)	0.144	0.016
147	12.25	0.83	0.160	( 0.474)	0.144	0.016
148	12.33	0.87	0.166	( 0.472)	0.150	0.017
149	12.42	0.87	0.166	( 0.469)	0.150	0.017
150	12.50	0.87	0.166	( 0.467)	0.150	0.017
151	12.58	0.93	0.179	( 0.464)	0.161	0.018
152	12.67	0.93	0.179	( 0.462)	0.161	0.018
153	12.75	0.93	0.179	( 0.460)	0.161	0.018
154	12.83	0.97	0.186	( 0.457)	0.167	0.019
155	12.92	0.97	0.186	( 0.455)	0.167	0.019
156	13.00	0.97	0.186	( 0.453)	0.167	0.019
157	13.08	1.13	0.218	( 0.451)	0.196	0.022
158	13.17	1.13	0.218	( 0.448)	0.196	0.022
159	13.25	1.13	0.218	( 0.446)	0.196	0.022
160	13.33	1.13	0.218	( 0.444)	0.196	0.022
161	13.42	1.13	0.218	( 0.442)	0.196	0.022
162	13.50	1.13	0.218	( 0.439)	0.196	0.022
163	13.58	0.77	0.147	( 0.437)	0.132	0.015
164	13.67	0.77	0.147	( 0.435)	0.132	0.015
165	13.75	0.77	0.147	( 0.433)	0.132	0.015
166	13.83	0.77	0.147	( 0.430)	0.132	0.015
167	13.92	0.77	0.147	( 0.428)	0.132	0.015
168	14.00	0.77	0.147	( 0.426)	0.132	0.015
169	14.08	0.90	0.173	( 0.424)	0.156	0.017
170	14.17	0.90	0.173	( 0.422)	0.156	0.017
171	14.25	0.90	0.173	( 0.419)	0.156	0.017
172	14.33	0.87	0.166	( 0.417)	0.150	0.017
173	14.42	0.87	0.166	( 0.415)	0.150	0.017
174	14.50	0.87	0.166	( 0.413)	0.150	0.017
175	14.58	0.87	0.166	( 0.411)	0.150	0.017
176	14.67	0.87	0.166	( 0.409)	0.150	0.017
177	14.75	0.87	0.166	( 0.407)	0.150	0.017
178	14.83	0.83	0.160	( 0.405)	0.144	0.016
179	14.92	0.83	0.160	( 0.403)	0.144	0.016
180	15.00	0.83	0.160	( 0.401)	0.144	0.016
181	15.08	0.80	0.154	( 0.398)	0.138	0.015
182	15.17	0.80	0.154	( 0.396)	0.138	0.015
183	15.25	0.80	0.154	( 0.394)	0.138	0.015
184	15.33	0.77	0.147	( 0.392)	0.132	0.015
185	15.42	0.77	0.147	( 0.390)	0.132	0.015
186	15.50	0.77	0.147	( 0.388)	0.132	0.015
187	15.58	0.63	0.122	( 0.386)	0.109	0.012

188	15.67	0.63	0.122	( 0.384)	0.109	0.012
189	15.75	0.63	0.122	( 0.382)	0.109	0.012
190	15.83	0.63	0.122	( 0.380)	0.109	0.012
191	15.92	0.63	0.122	( 0.379)	0.109	0.012
192	16.00	0.63	0.122	( 0.377)	0.109	0.012
193	16.08	0.13	0.026	( 0.375)	0.023	0.003
194	16.17	0.13	0.026	( 0.373)	0.023	0.003
195	16.25	0.13	0.026	( 0.371)	0.023	0.003
196	16.33	0.13	0.026	( 0.369)	0.023	0.003
197	16.42	0.13	0.026	( 0.367)	0.023	0.003
198	16.50	0.13	0.026	( 0.365)	0.023	0.003
199	16.58	0.10	0.019	( 0.363)	0.017	0.002
200	16.67	0.10	0.019	( 0.362)	0.017	0.002
201	16.75	0.10	0.019	( 0.360)	0.017	0.002
202	16.83	0.10	0.019	( 0.358)	0.017	0.002
203	16.92	0.10	0.019	( 0.356)	0.017	0.002
204	17.00	0.10	0.019	( 0.354)	0.017	0.002
205	17.08	0.17	0.032	( 0.352)	0.029	0.003
206	17.17	0.17	0.032	( 0.351)	0.029	0.003
207	17.25	0.17	0.032	( 0.349)	0.029	0.003
208	17.33	0.17	0.032	( 0.347)	0.029	0.003
209	17.42	0.17	0.032	( 0.345)	0.029	0.003
210	17.50	0.17	0.032	( 0.344)	0.029	0.003
211	17.58	0.17	0.032	( 0.342)	0.029	0.003
212	17.67	0.17	0.032	( 0.340)	0.029	0.003
213	17.75	0.17	0.032	( 0.339)	0.029	0.003
214	17.83	0.13	0.026	( 0.337)	0.023	0.003
215	17.92	0.13	0.026	( 0.335)	0.023	0.003
216	18.00	0.13	0.026	( 0.334)	0.023	0.003
217	18.08	0.13	0.026	( 0.332)	0.023	0.003
218	18.17	0.13	0.026	( 0.330)	0.023	0.003
219	18.25	0.13	0.026	( 0.329)	0.023	0.003
220	18.33	0.13	0.026	( 0.327)	0.023	0.003
221	18.42	0.13	0.026	( 0.325)	0.023	0.003
222	18.50	0.13	0.026	( 0.324)	0.023	0.003
223	18.58	0.10	0.019	( 0.322)	0.017	0.002
224	18.67	0.10	0.019	( 0.321)	0.017	0.002
225	18.75	0.10	0.019	( 0.319)	0.017	0.002
226	18.83	0.07	0.013	( 0.318)	0.012	0.001
227	18.92	0.07	0.013	( 0.316)	0.012	0.001
228	19.00	0.07	0.013	( 0.315)	0.012	0.001
229	19.08	0.10	0.019	( 0.313)	0.017	0.002
230	19.17	0.10	0.019	( 0.312)	0.017	0.002
231	19.25	0.10	0.019	( 0.310)	0.017	0.002
232	19.33	0.13	0.026	( 0.309)	0.023	0.003
233	19.42	0.13	0.026	( 0.307)	0.023	0.003
234	19.50	0.13	0.026	( 0.306)	0.023	0.003
235	19.58	0.10	0.019	( 0.305)	0.017	0.002
236	19.67	0.10	0.019	( 0.303)	0.017	0.002
237	19.75	0.10	0.019	( 0.302)	0.017	0.002



238	19.83	0.07	0.013	( 0.300)	0.012	0.001
239	19.92	0.07	0.013	( 0.299)	0.012	0.001
240	20.00	0.07	0.013	( 0.298)	0.012	0.001
241	20.08	0.10	0.019	( 0.296)	0.017	0.002
242	20.17	0.10	0.019	( 0.295)	0.017	0.002
243	20.25	0.10	0.019	( 0.294)	0.017	0.002
244	20.33	0.10	0.019	( 0.293)	0.017	0.002
245	20.42	0.10	0.019	( 0.291)	0.017	0.002
246	20.50	0.10	0.019	( 0.290)	0.017	0.002
247	20.58	0.10	0.019	( 0.289)	0.017	0.002
248	20.67	0.10	0.019	( 0.288)	0.017	0.002
249	20.75	0.10	0.019	( 0.287)	0.017	0.002
250	20.83	0.07	0.013	( 0.285)	0.012	0.001
251	20.92	0.07	0.013	( 0.284)	0.012	0.001
252	21.00	0.07	0.013	( 0.283)	0.012	0.001
253	21.08	0.10	0.019	( 0.282)	0.017	0.002
254	21.17	0.10	0.019	( 0.281)	0.017	0.002
255	21.25	0.10	0.019	( 0.280)	0.017	0.002
256	21.33	0.07	0.013	( 0.279)	0.012	0.001
257	21.42	0.07	0.013	( 0.278)	0.012	0.001
258	21.50	0.07	0.013	( 0.277)	0.012	0.001
259	21.58	0.10	0.019	( 0.276)	0.017	0.002
260	21.67	0.10	0.019	( 0.275)	0.017	0.002
261	21.75	0.10	0.019	( 0.274)	0.017	0.002
262	21.83	0.07	0.013	( 0.273)	0.012	0.001
263	21.92	0.07	0.013	( 0.272)	0.012	0.001
264	22.00	0.07	0.013	( 0.271)	0.012	0.001
265	22.08	0.10	0.019	( 0.270)	0.017	0.002
266	22.17	0.10	0.019	( 0.269)	0.017	0.002
267	22.25	0.10	0.019	( 0.268)	0.017	0.002
268	22.33	0.07	0.013	( 0.267)	0.012	0.001
269	22.42	0.07	0.013	( 0.266)	0.012	0.001
270	22.50	0.07	0.013	( 0.266)	0.012	0.001
271	22.58	0.07	0.013	( 0.265)	0.012	0.001
272	22.67	0.07	0.013	( 0.264)	0.012	0.001
273	22.75	0.07	0.013	( 0.263)	0.012	0.001
274	22.83	0.07	0.013	( 0.263)	0.012	0.001
275	22.92	0.07	0.013	( 0.262)	0.012	0.001
276	23.00	0.07	0.013	( 0.261)	0.012	0.001
277	23.08	0.07	0.013	( 0.261)	0.012	0.001
278	23.17	0.07	0.013	( 0.260)	0.012	0.001
279	23.25	0.07	0.013	( 0.260)	0.012	0.001
280	23.33	0.07	0.013	( 0.259)	0.012	0.001
281	23.42	0.07	0.013	( 0.259)	0.012	0.001
282	23.50	0.07	0.013	( 0.258)	0.012	0.001
283	23.58	0.07	0.013	( 0.258)	0.012	0.001
284	23.67	0.07	0.013	( 0.257)	0.012	0.001
285	23.75	0.07	0.013	( 0.257)	0.012	0.001
286	23.83	0.07	0.013	( 0.257)	0.012	0.001
287	23.92	0.07	0.013	( 0.257)	0.012	0.001

288 24.00 0.07 0.013 ( 0.256) 0.012 0.001  
 (Loss Rate Not Used)

Sum = 100.0 Sum = 1.9

Flood volume = Effective rainfall 0.16(In)  
 times area 8.7(Ac.)/[ (In)/(Ft.) ] = 0.1(Ac.Ft)  
 Total soil loss = 1.44(In)  
 Total soil loss = 1.048(Ac.Ft)  
 Total rainfall = 1.60(In)  
 Flood volume = 5070.3 Cubic Feet  
 Total soil loss = 45632.7 Cubic Feet

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 Peak flow rate of this hydrograph = 0.188(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))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.01	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.01	Q				
0+25	0.0003	0.01	Q				
0+30	0.0004	0.01	Q				
0+35	0.0005	0.01	Q				
0+40	0.0006	0.02	Q				
0+45	0.0007	0.02	Q				
0+50	0.0008	0.02	Q				
0+55	0.0009	0.02	Q				
1+ 0	0.0011	0.02	Q				
1+ 5	0.0012	0.02	Q				
1+10	0.0013	0.02	Q				
1+15	0.0015	0.02	Q				
1+20	0.0016	0.02	Q				
1+25	0.0017	0.02	Q				
1+30	0.0018	0.02	Q				
1+35	0.0019	0.02	Q				
1+40	0.0021	0.02	Q				
1+45	0.0022	0.02	Q				
1+50	0.0023	0.02	Q				
1+55	0.0024	0.02	Q				
2+ 0	0.0026	0.02	Q				
2+ 5	0.0027	0.02	Q				
2+10	0.0029	0.02	Q				
2+15	0.0030	0.02	QV				
2+20	0.0032	0.02	QV				

2+25	0.0033	0.02	QV
2+30	0.0035	0.02	QV
2+35	0.0036	0.02	QV
2+40	0.0038	0.03	QV
2+45	0.0040	0.03	QV
2+50	0.0042	0.03	QV
2+55	0.0044	0.03	QV
3+ 0	0.0046	0.03	QV
3+ 5	0.0048	0.03	QV
3+10	0.0049	0.03	QV
3+15	0.0051	0.03	QV
3+20	0.0053	0.03	QV
3+25	0.0055	0.03	QV
3+30	0.0057	0.03	QV
3+35	0.0059	0.03	Q V
3+40	0.0061	0.03	Q V
3+45	0.0063	0.03	Q V
3+50	0.0065	0.03	Q V
3+55	0.0067	0.03	Q V
4+ 0	0.0069	0.03	Q V
4+ 5	0.0072	0.03	Q V
4+10	0.0074	0.03	Q V
4+15	0.0076	0.03	Q V
4+20	0.0079	0.03	Q V
4+25	0.0081	0.04	Q V
4+30	0.0084	0.04	Q V
4+35	0.0086	0.04	Q V
4+40	0.0089	0.04	Q V
4+45	0.0092	0.04	Q V
4+50	0.0094	0.04	Q V
4+55	0.0097	0.04	Q V
5+ 0	0.0100	0.04	Q V
5+ 5	0.0103	0.04	Q V
5+10	0.0106	0.04	Q V
5+15	0.0108	0.04	Q V
5+20	0.0111	0.04	Q V
5+25	0.0113	0.04	Q V
5+30	0.0116	0.04	Q V
5+35	0.0119	0.04	Q V
5+40	0.0122	0.04	Q V
5+45	0.0125	0.04	Q V
5+50	0.0128	0.04	Q V
5+55	0.0131	0.04	Q V
6+ 0	0.0134	0.04	Q V
6+ 5	0.0137	0.05	Q V
6+10	0.0140	0.05	Q V
6+15	0.0144	0.05	Q V
6+20	0.0147	0.05	Q V
6+25	0.0150	0.05	Q V
6+30	0.0154	0.05	Q V

6+35	0.0157	0.05	Q	V				
6+40	0.0161	0.05	Q	V				
6+45	0.0165	0.05	Q	V				
6+50	0.0169	0.05	Q	V				
6+55	0.0172	0.06	Q	V				
7+ 0	0.0176	0.06	Q	V				
7+ 5	0.0180	0.06	Q	V				
7+10	0.0184	0.06	Q	V				
7+15	0.0188	0.06	Q	V				
7+20	0.0192	0.06	Q	V				
7+25	0.0196	0.06	Q	V				
7+30	0.0200	0.06	Q	V				
7+35	0.0204	0.06	Q	V				
7+40	0.0209	0.06	Q	V				
7+45	0.0213	0.07	Q	V				
7+50	0.0218	0.07	Q	V				
7+55	0.0222	0.07	Q	V				
8+ 0	0.0227	0.07	Q	V				
8+ 5	0.0232	0.07	Q	V				
8+10	0.0238	0.08	Q	V				
8+15	0.0243	0.08	Q	V				
8+20	0.0249	0.08	Q	V				
8+25	0.0255	0.08	Q	V				
8+30	0.0260	0.08	Q	V				
8+35	0.0266	0.08	Q	V				
8+40	0.0272	0.09	Q	V				
8+45	0.0278	0.09	Q	V				
8+50	0.0284	0.09	Q	V				
8+55	0.0291	0.09	Q	V				
9+ 0	0.0297	0.09	Q	V				
9+ 5	0.0304	0.10	Q	V				
9+10	0.0311	0.10	Q	V				
9+15	0.0318	0.10	Q	V				
9+20	0.0325	0.10	Q	V				
9+25	0.0332	0.11	Q	V				
9+30	0.0340	0.11	Q	V				
9+35	0.0348	0.11	Q	V				
9+40	0.0355	0.11	Q	V				
9+45	0.0363	0.12	Q	V				
9+50	0.0371	0.12	Q	V				
9+55	0.0380	0.12	Q	V				
10+ 0	0.0388	0.12	Q	V				
10+ 5	0.0396	0.11	Q	V				
10+10	0.0403	0.10	Q	V				
10+15	0.0409	0.10	Q	V				
10+20	0.0416	0.09	Q	V				
10+25	0.0422	0.09	Q	V				
10+30	0.0428	0.09	Q	V				
10+35	0.0434	0.09	Q	V				
10+40	0.0442	0.10	Q	V				



14+55	0.0921	0.14	Q	V
15+ 0	0.0930	0.14	Q	V
15+ 5	0.0940	0.14	Q	V
15+10	0.0950	0.14	Q	V
15+15	0.0959	0.14	Q	V
15+20	0.0969	0.14	Q	V
15+25	0.0978	0.13	Q	V
15+30	0.0987	0.13	Q	V
15+35	0.0996	0.13	Q	V
15+40	0.1004	0.12	Q	V
15+45	0.1012	0.11	Q	V
15+50	0.1019	0.11	Q	V
15+55	0.1027	0.11	Q	V
16+ 0	0.1035	0.11	Q	V
16+ 5	0.1041	0.09	Q	V
16+10	0.1045	0.06	Q	V
16+15	0.1049	0.05	Q	V
16+20	0.1052	0.04	Q	V
16+25	0.1054	0.04	Q	V
16+30	0.1056	0.03	Q	V
16+35	0.1058	0.03	Q	V
16+40	0.1060	0.03	Q	V
16+45	0.1062	0.02	Q	V
16+50	0.1063	0.02	Q	V
16+55	0.1065	0.02	Q	V
17+ 0	0.1066	0.02	Q	V
17+ 5	0.1067	0.02	Q	V
17+10	0.1069	0.02	Q	V
17+15	0.1070	0.03	Q	V
17+20	0.1072	0.03	Q	V
17+25	0.1074	0.03	Q	V
17+30	0.1076	0.03	Q	V
17+35	0.1078	0.03	Q	V
17+40	0.1080	0.03	Q	V
17+45	0.1082	0.03	Q	V
17+50	0.1083	0.03	Q	V
17+55	0.1085	0.02	Q	V
18+ 0	0.1087	0.02	Q	V
18+ 5	0.1088	0.02	Q	V
18+10	0.1090	0.02	Q	V
18+15	0.1092	0.02	Q	V
18+20	0.1093	0.02	Q	V
18+25	0.1095	0.02	Q	V
18+30	0.1096	0.02	Q	V
18+35	0.1098	0.02	Q	V
18+40	0.1099	0.02	Q	V
18+45	0.1100	0.02	Q	V
18+50	0.1102	0.02	Q	V
18+55	0.1103	0.01	Q	V
19+ 0	0.1104	0.01	Q	V

19+ 5	0.1105	0.01	Q				V
19+10	0.1106	0.02	Q				V
19+15	0.1107	0.02	Q				V
19+20	0.1108	0.02	Q				V
19+25	0.1109	0.02	Q				V
19+30	0.1111	0.02	Q				V
19+35	0.1112	0.02	Q				V
19+40	0.1113	0.02	Q				V
19+45	0.1115	0.02	Q				V
19+50	0.1116	0.02	Q				V
19+55	0.1117	0.01	Q				V
20+ 0	0.1118	0.01	Q				V
20+ 5	0.1119	0.01	Q				V
20+10	0.1120	0.02	Q				V
20+15	0.1121	0.02	Q				V
20+20	0.1122	0.02	Q				V
20+25	0.1123	0.02	Q				V
20+30	0.1124	0.02	Q				V
20+35	0.1125	0.02	Q				V
20+40	0.1126	0.02	Q				V
20+45	0.1128	0.02	Q				V
20+50	0.1129	0.02	Q				V
20+55	0.1130	0.01	Q				V
21+ 0	0.1130	0.01	Q				V
21+ 5	0.1131	0.01	Q				V
21+10	0.1132	0.02	Q				V
21+15	0.1134	0.02	Q				V
21+20	0.1135	0.02	Q				V
21+25	0.1135	0.01	Q				V
21+30	0.1136	0.01	Q				V
21+35	0.1137	0.01	Q				V
21+40	0.1138	0.02	Q				V
21+45	0.1139	0.02	Q				V
21+50	0.1140	0.01	Q				V
21+55	0.1141	0.01	Q				V
22+ 0	0.1142	0.01	Q				V
22+ 5	0.1143	0.01	Q				V
22+10	0.1144	0.02	Q				V
22+15	0.1145	0.02	Q				V
22+20	0.1146	0.01	Q				V
22+25	0.1147	0.01	Q				V
22+30	0.1148	0.01	Q				V
22+35	0.1149	0.01	Q				V
22+40	0.1150	0.01	Q				V
22+45	0.1150	0.01	Q				V
22+50	0.1151	0.01	Q				V
22+55	0.1152	0.01	Q				V
23+ 0	0.1153	0.01	Q				V
23+ 5	0.1154	0.01	Q				V
23+10	0.1154	0.01	Q				V

23+15	0.1155	0.01	Q				V
23+20	0.1156	0.01	Q				V
23+25	0.1157	0.01	Q				V
23+30	0.1158	0.01	Q				V
23+35	0.1158	0.01	Q				V
23+40	0.1159	0.01	Q				V
23+45	0.1160	0.01	Q				V
23+50	0.1161	0.01	Q				V
23+55	0.1161	0.01	Q				V
24+ 0	0.1162	0.01	Q				V
24+ 5	0.1163	0.01	Q				V
24+10	0.1163	0.00	Q				V
24+15	0.1163	0.00	Q				V
24+20	0.1164	0.00	Q				V
24+25	0.1164	0.00	Q				V
24+30	0.1164	0.00	Q				V
24+35	0.1164	0.00	Q				V
24+40	0.1164	0.00	Q				V
24+45	0.1164	0.00	Q				V
24+50	0.1164	0.00	Q				V
24+55	0.1164	0.00	Q				V

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Unit Hydrograph Analysis

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Study date 02/22/21 File: CC02PHYDA242.out

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

Program License Serial Number 6473

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

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
PROPOSED CONDITION - DMA A  
2YR, 24-HOUR STORM

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Drainage Area = 8.36(Ac.) = 0.013 Sq. Mi.  
Drainage Area for Depth-Area Areal Adjustment = 8.36(Ac.) =  
0.013 Sq. Mi.  
Length along longest watercourse = 1228.00(Ft.)  
Length along longest watercourse measured to centroid = 614.00(Ft.)  
Length along longest watercourse = 0.233 Mi.  
Length along longest watercourse measured to centroid = 0.116 Mi.  
Difference in elevation = 16.80(Ft.)  
Slope along watercourse = 72.2345 Ft./Mi.  
Average Manning's 'N' = 0.015  
Lag time = 0.040 Hr.  
Lag time = 2.43 Min.  
25% of lag time = 0.61 Min.  
40% of lag time = 0.97 Min.  
Unit time = 5.00 Min.  
Duration of storm = 24 Hour(s)  
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.36	1.60	13.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.36	4.30	35.95

STORM EVENT (YEAR) = 2.00  
 Area Averaged 2-Year Rainfall = 1.600(In)  
 Area Averaged 100-Year Rainfall = 4.300(In)

Point rain (area averaged) = 1.600(In)  
 Areal adjustment factor = 100.00 %  
 Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.360	69.00	0.500
Total Area Entered = 8.36(Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
69.0	49.8	0.574	0.500	0.316	1.000	0.316
Sum (F) =						0.316

Area averaged mean soil loss (F) (In/Hr) = 0.316  
 Minimum soil loss rate ((In/Hr)) = 0.158  
 (for 24 hour storm duration)  
 Soil low loss rate (decimal) = 0.500

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 U n i t H y d r o g r a p h  
 MOUNTAIN S-Curve  
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Unit Hydrograph Data  
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Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)	
1	0.083	205.817	42.698	3.597
2	0.167	411.633	36.230	3.053
3	0.250	617.450	10.253	0.864
4	0.333	823.266	5.628	0.474
5	0.417	1029.083	5.190	0.437
Sum = 100.000			Sum=	8.425

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.013	( 0.560)	0.006	0.006
2	0.17	0.07	0.013	( 0.557)	0.006	0.006
3	0.25	0.07	0.013	( 0.555)	0.006	0.006
4	0.33	0.10	0.019	( 0.553)	0.010	0.010
5	0.42	0.10	0.019	( 0.551)	0.010	0.010
6	0.50	0.10	0.019	( 0.549)	0.010	0.010
7	0.58	0.10	0.019	( 0.547)	0.010	0.010
8	0.67	0.10	0.019	( 0.545)	0.010	0.010
9	0.75	0.10	0.019	( 0.542)	0.010	0.010
10	0.83	0.13	0.026	( 0.540)	0.013	0.013
11	0.92	0.13	0.026	( 0.538)	0.013	0.013
12	1.00	0.13	0.026	( 0.536)	0.013	0.013
13	1.08	0.10	0.019	( 0.534)	0.010	0.010
14	1.17	0.10	0.019	( 0.532)	0.010	0.010
15	1.25	0.10	0.019	( 0.530)	0.010	0.010
16	1.33	0.10	0.019	( 0.528)	0.010	0.010
17	1.42	0.10	0.019	( 0.525)	0.010	0.010
18	1.50	0.10	0.019	( 0.523)	0.010	0.010
19	1.58	0.10	0.019	( 0.521)	0.010	0.010
20	1.67	0.10	0.019	( 0.519)	0.010	0.010
21	1.75	0.10	0.019	( 0.517)	0.010	0.010
22	1.83	0.13	0.026	( 0.515)	0.013	0.013
23	1.92	0.13	0.026	( 0.513)	0.013	0.013
24	2.00	0.13	0.026	( 0.511)	0.013	0.013
25	2.08	0.13	0.026	( 0.509)	0.013	0.013
26	2.17	0.13	0.026	( 0.507)	0.013	0.013
27	2.25	0.13	0.026	( 0.505)	0.013	0.013
28	2.33	0.13	0.026	( 0.503)	0.013	0.013
29	2.42	0.13	0.026	( 0.501)	0.013	0.013
30	2.50	0.13	0.026	( 0.499)	0.013	0.013
31	2.58	0.17	0.032	( 0.497)	0.016	0.016
32	2.67	0.17	0.032	( 0.494)	0.016	0.016
33	2.75	0.17	0.032	( 0.492)	0.016	0.016
34	2.83	0.17	0.032	( 0.490)	0.016	0.016
35	2.92	0.17	0.032	( 0.488)	0.016	0.016
36	3.00	0.17	0.032	( 0.486)	0.016	0.016
37	3.08	0.17	0.032	( 0.484)	0.016	0.016
38	3.17	0.17	0.032	( 0.482)	0.016	0.016
39	3.25	0.17	0.032	( 0.480)	0.016	0.016
40	3.33	0.17	0.032	( 0.478)	0.016	0.016
41	3.42	0.17	0.032	( 0.476)	0.016	0.016
42	3.50	0.17	0.032	( 0.474)	0.016	0.016
43	3.58	0.17	0.032	( 0.472)	0.016	0.016
44	3.67	0.17	0.032	( 0.470)	0.016	0.016

45	3.75	0.17	0.032	( 0.468)	0.016	0.016
46	3.83	0.20	0.038	( 0.466)	0.019	0.019
47	3.92	0.20	0.038	( 0.464)	0.019	0.019
48	4.00	0.20	0.038	( 0.463)	0.019	0.019
49	4.08	0.20	0.038	( 0.461)	0.019	0.019
50	4.17	0.20	0.038	( 0.459)	0.019	0.019
51	4.25	0.20	0.038	( 0.457)	0.019	0.019
52	4.33	0.23	0.045	( 0.455)	0.022	0.022
53	4.42	0.23	0.045	( 0.453)	0.022	0.022
54	4.50	0.23	0.045	( 0.451)	0.022	0.022
55	4.58	0.23	0.045	( 0.449)	0.022	0.022
56	4.67	0.23	0.045	( 0.447)	0.022	0.022
57	4.75	0.23	0.045	( 0.445)	0.022	0.022
58	4.83	0.27	0.051	( 0.443)	0.026	0.026
59	4.92	0.27	0.051	( 0.441)	0.026	0.026
60	5.00	0.27	0.051	( 0.439)	0.026	0.026
61	5.08	0.20	0.038	( 0.437)	0.019	0.019
62	5.17	0.20	0.038	( 0.435)	0.019	0.019
63	5.25	0.20	0.038	( 0.434)	0.019	0.019
64	5.33	0.23	0.045	( 0.432)	0.022	0.022
65	5.42	0.23	0.045	( 0.430)	0.022	0.022
66	5.50	0.23	0.045	( 0.428)	0.022	0.022
67	5.58	0.27	0.051	( 0.426)	0.026	0.026
68	5.67	0.27	0.051	( 0.424)	0.026	0.026
69	5.75	0.27	0.051	( 0.422)	0.026	0.026
70	5.83	0.27	0.051	( 0.420)	0.026	0.026
71	5.92	0.27	0.051	( 0.419)	0.026	0.026
72	6.00	0.27	0.051	( 0.417)	0.026	0.026
73	6.08	0.30	0.058	( 0.415)	0.029	0.029
74	6.17	0.30	0.058	( 0.413)	0.029	0.029
75	6.25	0.30	0.058	( 0.411)	0.029	0.029
76	6.33	0.30	0.058	( 0.409)	0.029	0.029
77	6.42	0.30	0.058	( 0.407)	0.029	0.029
78	6.50	0.30	0.058	( 0.406)	0.029	0.029
79	6.58	0.33	0.064	( 0.404)	0.032	0.032
80	6.67	0.33	0.064	( 0.402)	0.032	0.032
81	6.75	0.33	0.064	( 0.400)	0.032	0.032
82	6.83	0.33	0.064	( 0.398)	0.032	0.032
83	6.92	0.33	0.064	( 0.397)	0.032	0.032
84	7.00	0.33	0.064	( 0.395)	0.032	0.032
85	7.08	0.33	0.064	( 0.393)	0.032	0.032
86	7.17	0.33	0.064	( 0.391)	0.032	0.032
87	7.25	0.33	0.064	( 0.389)	0.032	0.032
88	7.33	0.37	0.070	( 0.388)	0.035	0.035
89	7.42	0.37	0.070	( 0.386)	0.035	0.035
90	7.50	0.37	0.070	( 0.384)	0.035	0.035
91	7.58	0.40	0.077	( 0.382)	0.038	0.038
92	7.67	0.40	0.077	( 0.381)	0.038	0.038
93	7.75	0.40	0.077	( 0.379)	0.038	0.038
94	7.83	0.43	0.083	( 0.377)	0.042	0.042

95	7.92	0.43	0.083	( 0.375)	0.042	0.042
96	8.00	0.43	0.083	( 0.374)	0.042	0.042
97	8.08	0.50	0.096	( 0.372)	0.048	0.048
98	8.17	0.50	0.096	( 0.370)	0.048	0.048
99	8.25	0.50	0.096	( 0.368)	0.048	0.048
100	8.33	0.50	0.096	( 0.367)	0.048	0.048
101	8.42	0.50	0.096	( 0.365)	0.048	0.048
102	8.50	0.50	0.096	( 0.363)	0.048	0.048
103	8.58	0.53	0.102	( 0.362)	0.051	0.051
104	8.67	0.53	0.102	( 0.360)	0.051	0.051
105	8.75	0.53	0.102	( 0.358)	0.051	0.051
106	8.83	0.57	0.109	( 0.356)	0.054	0.054
107	8.92	0.57	0.109	( 0.355)	0.054	0.054
108	9.00	0.57	0.109	( 0.353)	0.054	0.054
109	9.08	0.63	0.122	( 0.351)	0.061	0.061
110	9.17	0.63	0.122	( 0.350)	0.061	0.061
111	9.25	0.63	0.122	( 0.348)	0.061	0.061
112	9.33	0.67	0.128	( 0.346)	0.064	0.064
113	9.42	0.67	0.128	( 0.345)	0.064	0.064
114	9.50	0.67	0.128	( 0.343)	0.064	0.064
115	9.58	0.70	0.134	( 0.341)	0.067	0.067
116	9.67	0.70	0.134	( 0.340)	0.067	0.067
117	9.75	0.70	0.134	( 0.338)	0.067	0.067
118	9.83	0.73	0.141	( 0.337)	0.070	0.070
119	9.92	0.73	0.141	( 0.335)	0.070	0.070
120	10.00	0.73	0.141	( 0.333)	0.070	0.070
121	10.08	0.50	0.096	( 0.332)	0.048	0.048
122	10.17	0.50	0.096	( 0.330)	0.048	0.048
123	10.25	0.50	0.096	( 0.329)	0.048	0.048
124	10.33	0.50	0.096	( 0.327)	0.048	0.048
125	10.42	0.50	0.096	( 0.325)	0.048	0.048
126	10.50	0.50	0.096	( 0.324)	0.048	0.048
127	10.58	0.67	0.128	( 0.322)	0.064	0.064
128	10.67	0.67	0.128	( 0.321)	0.064	0.064
129	10.75	0.67	0.128	( 0.319)	0.064	0.064
130	10.83	0.67	0.128	( 0.317)	0.064	0.064
131	10.92	0.67	0.128	( 0.316)	0.064	0.064
132	11.00	0.67	0.128	( 0.314)	0.064	0.064
133	11.08	0.63	0.122	( 0.313)	0.061	0.061
134	11.17	0.63	0.122	( 0.311)	0.061	0.061
135	11.25	0.63	0.122	( 0.310)	0.061	0.061
136	11.33	0.63	0.122	( 0.308)	0.061	0.061
137	11.42	0.63	0.122	( 0.307)	0.061	0.061
138	11.50	0.63	0.122	( 0.305)	0.061	0.061
139	11.58	0.57	0.109	( 0.304)	0.054	0.054
140	11.67	0.57	0.109	( 0.302)	0.054	0.054
141	11.75	0.57	0.109	( 0.301)	0.054	0.054
142	11.83	0.60	0.115	( 0.299)	0.058	0.058
143	11.92	0.60	0.115	( 0.298)	0.058	0.058
144	12.00	0.60	0.115	( 0.296)	0.058	0.058

145	12.08	0.83	0.160	( 0.295)	0.080	0.080
146	12.17	0.83	0.160	( 0.293)	0.080	0.080
147	12.25	0.83	0.160	( 0.292)	0.080	0.080
148	12.33	0.87	0.166	( 0.290)	0.083	0.083
149	12.42	0.87	0.166	( 0.289)	0.083	0.083
150	12.50	0.87	0.166	( 0.287)	0.083	0.083
151	12.58	0.93	0.179	( 0.286)	0.090	0.090
152	12.67	0.93	0.179	( 0.284)	0.090	0.090
153	12.75	0.93	0.179	( 0.283)	0.090	0.090
154	12.83	0.97	0.186	( 0.282)	0.093	0.093
155	12.92	0.97	0.186	( 0.280)	0.093	0.093
156	13.00	0.97	0.186	( 0.279)	0.093	0.093
157	13.08	1.13	0.218	( 0.277)	0.109	0.109
158	13.17	1.13	0.218	( 0.276)	0.109	0.109
159	13.25	1.13	0.218	( 0.275)	0.109	0.109
160	13.33	1.13	0.218	( 0.273)	0.109	0.109
161	13.42	1.13	0.218	( 0.272)	0.109	0.109
162	13.50	1.13	0.218	( 0.270)	0.109	0.109
163	13.58	0.77	0.147	( 0.269)	0.074	0.074
164	13.67	0.77	0.147	( 0.268)	0.074	0.074
165	13.75	0.77	0.147	( 0.266)	0.074	0.074
166	13.83	0.77	0.147	( 0.265)	0.074	0.074
167	13.92	0.77	0.147	( 0.264)	0.074	0.074
168	14.00	0.77	0.147	( 0.262)	0.074	0.074
169	14.08	0.90	0.173	( 0.261)	0.086	0.086
170	14.17	0.90	0.173	( 0.260)	0.086	0.086
171	14.25	0.90	0.173	( 0.258)	0.086	0.086
172	14.33	0.87	0.166	( 0.257)	0.083	0.083
173	14.42	0.87	0.166	( 0.256)	0.083	0.083
174	14.50	0.87	0.166	( 0.254)	0.083	0.083
175	14.58	0.87	0.166	( 0.253)	0.083	0.083
176	14.67	0.87	0.166	( 0.252)	0.083	0.083
177	14.75	0.87	0.166	( 0.250)	0.083	0.083
178	14.83	0.83	0.160	( 0.249)	0.080	0.080
179	14.92	0.83	0.160	( 0.248)	0.080	0.080
180	15.00	0.83	0.160	( 0.247)	0.080	0.080
181	15.08	0.80	0.154	( 0.245)	0.077	0.077
182	15.17	0.80	0.154	( 0.244)	0.077	0.077
183	15.25	0.80	0.154	( 0.243)	0.077	0.077
184	15.33	0.77	0.147	( 0.242)	0.074	0.074
185	15.42	0.77	0.147	( 0.240)	0.074	0.074
186	15.50	0.77	0.147	( 0.239)	0.074	0.074
187	15.58	0.63	0.122	( 0.238)	0.061	0.061
188	15.67	0.63	0.122	( 0.237)	0.061	0.061
189	15.75	0.63	0.122	( 0.235)	0.061	0.061
190	15.83	0.63	0.122	( 0.234)	0.061	0.061
191	15.92	0.63	0.122	( 0.233)	0.061	0.061
192	16.00	0.63	0.122	( 0.232)	0.061	0.061
193	16.08	0.13	0.026	( 0.231)	0.013	0.013
194	16.17	0.13	0.026	( 0.229)	0.013	0.013

195	16.25	0.13	0.026	( 0.228)	0.013	0.013
196	16.33	0.13	0.026	( 0.227)	0.013	0.013
197	16.42	0.13	0.026	( 0.226)	0.013	0.013
198	16.50	0.13	0.026	( 0.225)	0.013	0.013
199	16.58	0.10	0.019	( 0.224)	0.010	0.010
200	16.67	0.10	0.019	( 0.223)	0.010	0.010
201	16.75	0.10	0.019	( 0.221)	0.010	0.010
202	16.83	0.10	0.019	( 0.220)	0.010	0.010
203	16.92	0.10	0.019	( 0.219)	0.010	0.010
204	17.00	0.10	0.019	( 0.218)	0.010	0.010
205	17.08	0.17	0.032	( 0.217)	0.016	0.016
206	17.17	0.17	0.032	( 0.216)	0.016	0.016
207	17.25	0.17	0.032	( 0.215)	0.016	0.016
208	17.33	0.17	0.032	( 0.214)	0.016	0.016
209	17.42	0.17	0.032	( 0.213)	0.016	0.016
210	17.50	0.17	0.032	( 0.212)	0.016	0.016
211	17.58	0.17	0.032	( 0.211)	0.016	0.016
212	17.67	0.17	0.032	( 0.209)	0.016	0.016
213	17.75	0.17	0.032	( 0.208)	0.016	0.016
214	17.83	0.13	0.026	( 0.207)	0.013	0.013
215	17.92	0.13	0.026	( 0.206)	0.013	0.013
216	18.00	0.13	0.026	( 0.205)	0.013	0.013
217	18.08	0.13	0.026	( 0.204)	0.013	0.013
218	18.17	0.13	0.026	( 0.203)	0.013	0.013
219	18.25	0.13	0.026	( 0.202)	0.013	0.013
220	18.33	0.13	0.026	( 0.201)	0.013	0.013
221	18.42	0.13	0.026	( 0.200)	0.013	0.013
222	18.50	0.13	0.026	( 0.199)	0.013	0.013
223	18.58	0.10	0.019	( 0.198)	0.010	0.010
224	18.67	0.10	0.019	( 0.197)	0.010	0.010
225	18.75	0.10	0.019	( 0.197)	0.010	0.010
226	18.83	0.07	0.013	( 0.196)	0.006	0.006
227	18.92	0.07	0.013	( 0.195)	0.006	0.006
228	19.00	0.07	0.013	( 0.194)	0.006	0.006
229	19.08	0.10	0.019	( 0.193)	0.010	0.010
230	19.17	0.10	0.019	( 0.192)	0.010	0.010
231	19.25	0.10	0.019	( 0.191)	0.010	0.010
232	19.33	0.13	0.026	( 0.190)	0.013	0.013
233	19.42	0.13	0.026	( 0.189)	0.013	0.013
234	19.50	0.13	0.026	( 0.188)	0.013	0.013
235	19.58	0.10	0.019	( 0.187)	0.010	0.010
236	19.67	0.10	0.019	( 0.187)	0.010	0.010
237	19.75	0.10	0.019	( 0.186)	0.010	0.010
238	19.83	0.07	0.013	( 0.185)	0.006	0.006
239	19.92	0.07	0.013	( 0.184)	0.006	0.006
240	20.00	0.07	0.013	( 0.183)	0.006	0.006
241	20.08	0.10	0.019	( 0.182)	0.010	0.010
242	20.17	0.10	0.019	( 0.182)	0.010	0.010
243	20.25	0.10	0.019	( 0.181)	0.010	0.010
244	20.33	0.10	0.019	( 0.180)	0.010	0.010

245	20.42	0.10	0.019	( 0.179)	0.010	0.010
246	20.50	0.10	0.019	( 0.179)	0.010	0.010
247	20.58	0.10	0.019	( 0.178)	0.010	0.010
248	20.67	0.10	0.019	( 0.177)	0.010	0.010
249	20.75	0.10	0.019	( 0.176)	0.010	0.010
250	20.83	0.07	0.013	( 0.176)	0.006	0.006
251	20.92	0.07	0.013	( 0.175)	0.006	0.006
252	21.00	0.07	0.013	( 0.174)	0.006	0.006
253	21.08	0.10	0.019	( 0.174)	0.010	0.010
254	21.17	0.10	0.019	( 0.173)	0.010	0.010
255	21.25	0.10	0.019	( 0.172)	0.010	0.010
256	21.33	0.07	0.013	( 0.172)	0.006	0.006
257	21.42	0.07	0.013	( 0.171)	0.006	0.006
258	21.50	0.07	0.013	( 0.170)	0.006	0.006
259	21.58	0.10	0.019	( 0.170)	0.010	0.010
260	21.67	0.10	0.019	( 0.169)	0.010	0.010
261	21.75	0.10	0.019	( 0.168)	0.010	0.010
262	21.83	0.07	0.013	( 0.168)	0.006	0.006
263	21.92	0.07	0.013	( 0.167)	0.006	0.006
264	22.00	0.07	0.013	( 0.167)	0.006	0.006
265	22.08	0.10	0.019	( 0.166)	0.010	0.010
266	22.17	0.10	0.019	( 0.166)	0.010	0.010
267	22.25	0.10	0.019	( 0.165)	0.010	0.010
268	22.33	0.07	0.013	( 0.165)	0.006	0.006
269	22.42	0.07	0.013	( 0.164)	0.006	0.006
270	22.50	0.07	0.013	( 0.164)	0.006	0.006
271	22.58	0.07	0.013	( 0.163)	0.006	0.006
272	22.67	0.07	0.013	( 0.163)	0.006	0.006
273	22.75	0.07	0.013	( 0.162)	0.006	0.006
274	22.83	0.07	0.013	( 0.162)	0.006	0.006
275	22.92	0.07	0.013	( 0.161)	0.006	0.006
276	23.00	0.07	0.013	( 0.161)	0.006	0.006
277	23.08	0.07	0.013	( 0.161)	0.006	0.006
278	23.17	0.07	0.013	( 0.160)	0.006	0.006
279	23.25	0.07	0.013	( 0.160)	0.006	0.006
280	23.33	0.07	0.013	( 0.160)	0.006	0.006
281	23.42	0.07	0.013	( 0.159)	0.006	0.006
282	23.50	0.07	0.013	( 0.159)	0.006	0.006
283	23.58	0.07	0.013	( 0.159)	0.006	0.006
284	23.67	0.07	0.013	( 0.158)	0.006	0.006
285	23.75	0.07	0.013	( 0.158)	0.006	0.006
286	23.83	0.07	0.013	( 0.158)	0.006	0.006
287	23.92	0.07	0.013	( 0.158)	0.006	0.006
288	24.00	0.07	0.013	( 0.158)	0.006	0.006

(Loss Rate Not Used)

Sum = 100.0

Sum = 9.6

Flood volume = Effective rainfall 0.80(In)

times area 8.4(Ac.)/[ (In)/(Ft.) ] = 0.6(Ac.Ft)

Total soil loss = 0.80(In)

Total soil loss = 0.557(Ac.Ft)



Total rainfall = 1.60(In)  
 Flood volume = 24277.0 Cubic Feet  
 Total soil loss = 24277.0 Cubic Feet

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 Peak flow rate of this hydrograph = 0.917(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	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.02	Q				
0+10	0.0005	0.04	Q				
0+15	0.0008	0.05	Q				
0+20	0.0012	0.06	Q				
0+25	0.0017	0.08	Q				
0+30	0.0023	0.08	Q				
0+35	0.0028	0.08	Q				
0+40	0.0034	0.08	Q				
0+45	0.0039	0.08	Q				
0+50	0.0046	0.09	Q				
0+55	0.0053	0.10	Q				
1+ 0	0.0060	0.10	Q				
1+ 5	0.0067	0.09	Q				
1+10	0.0072	0.09	Q				
1+15	0.0078	0.08	Q				
1+20	0.0084	0.08	Q				
1+25	0.0089	0.08	Q				
1+30	0.0095	0.08	Q				
1+35	0.0101	0.08	Q				
1+40	0.0106	0.08	Q				
1+45	0.0112	0.08	Q				
1+50	0.0118	0.09	Q				
1+55	0.0125	0.10	Q				
2+ 0	0.0132	0.10	Q				
2+ 5	0.0140	0.11	QV				
2+10	0.0147	0.11	QV				
2+15	0.0155	0.11	QV				
2+20	0.0162	0.11	QV				
2+25	0.0169	0.11	QV				
2+30	0.0177	0.11	QV				
2+35	0.0185	0.12	QV				
2+40	0.0194	0.13	QV				
2+45	0.0203	0.13	QV				
2+50	0.0212	0.13	QV				
2+55	0.0222	0.13	QV				

3+ 0	0.0231	0.13	QV				
3+ 5	0.0240	0.13	QV				
3+10	0.0249	0.13	QV				
3+15	0.0259	0.13	QV				
3+20	0.0268	0.13	QV				
3+25	0.0277	0.13	QV				
3+30	0.0287	0.13	Q V				
3+35	0.0296	0.13	Q V				
3+40	0.0305	0.13	Q V				
3+45	0.0314	0.13	Q V				
3+50	0.0325	0.15	Q V				
3+55	0.0335	0.16	Q V				
4+ 0	0.0346	0.16	Q V				
4+ 5	0.0357	0.16	Q V				
4+10	0.0368	0.16	Q V				
4+15	0.0380	0.16	Q V				
4+20	0.0392	0.17	Q V				
4+25	0.0404	0.18	Q V				
4+30	0.0417	0.19	Q V				
4+35	0.0430	0.19	Q V				
4+40	0.0443	0.19	Q V				
4+45	0.0456	0.19	Q V				
4+50	0.0470	0.20	Q V				
4+55	0.0484	0.21	Q V				
5+ 0	0.0499	0.21	Q V				
5+ 5	0.0512	0.19	Q V				
5+10	0.0524	0.17	Q V				
5+15	0.0535	0.17	Q V				
5+20	0.0548	0.18	Q V				
5+25	0.0560	0.18	Q V				
5+30	0.0573	0.19	Q V				
5+35	0.0587	0.20	Q V				
5+40	0.0601	0.21	Q V				
5+45	0.0616	0.21	Q V				
5+50	0.0631	0.21	Q V				
5+55	0.0645	0.22	Q V				
6+ 0	0.0660	0.22	Q V				
6+ 5	0.0676	0.23	Q V				
6+10	0.0692	0.24	Q V				
6+15	0.0709	0.24	Q V				
6+20	0.0725	0.24	Q V				
6+25	0.0742	0.24	Q V				
6+30	0.0759	0.24	Q V				
6+35	0.0776	0.25	Q V				
6+40	0.0795	0.26	Q V				
6+45	0.0813	0.27	Q V				
6+50	0.0831	0.27	Q V				
6+55	0.0850	0.27	Q V				
7+ 0	0.0869	0.27	Q V				
7+ 5	0.0887	0.27	Q V				

7+10	0.0906	0.27	Q	V				
7+15	0.0924	0.27	Q	V				
7+20	0.0944	0.28	Q	V				
7+25	0.0964	0.29	Q	V				
7+30	0.0984	0.29	Q	V				
7+35	0.1005	0.31	Q	V				
7+40	0.1027	0.32	Q	V				
7+45	0.1049	0.32	Q	V				
7+50	0.1072	0.33	Q	V				
7+55	0.1096	0.34	Q	V				
8+ 0	0.1120	0.35	Q	V				
8+ 5	0.1145	0.37	Q	V				
8+10	0.1173	0.39	Q	V				
8+15	0.1200	0.40	Q	V				
8+20	0.1228	0.40	Q	V				
8+25	0.1256	0.40	Q	V				
8+30	0.1283	0.40	Q	V				
8+35	0.1312	0.42	Q	V				
8+40	0.1341	0.43	Q	V				
8+45	0.1371	0.43	Q	V				
8+50	0.1401	0.44	Q	V				
8+55	0.1433	0.45	Q	V				
9+ 0	0.1464	0.46	Q	V				
9+ 5	0.1497	0.48	Q	V				
9+10	0.1532	0.50	Q	V				
9+15	0.1566	0.51	Q	V				
9+20	0.1602	0.52	Q	V				
9+25	0.1639	0.53	Q	V				
9+30	0.1676	0.54	Q	V				
9+35	0.1714	0.55	Q	V				
9+40	0.1752	0.56	Q	V				
9+45	0.1791	0.56	Q	V				
9+50	0.1831	0.58	Q	V				
9+55	0.1871	0.59	Q	V				
10+ 0	0.1912	0.59	Q	V				
10+ 5	0.1947	0.51	Q	V				
10+10	0.1978	0.44	Q	V				
10+15	0.2007	0.43	Q	V				
10+20	0.2036	0.41	Q	V				
10+25	0.2064	0.40	Q	V				
10+30	0.2092	0.40	Q	V				
10+35	0.2123	0.46	Q	V				
10+40	0.2159	0.51	Q	V				
10+45	0.2195	0.52	Q	V				
10+50	0.2231	0.53	Q	V				
10+55	0.2269	0.54	Q	V				
11+ 0	0.2306	0.54	Q	V				
11+ 5	0.2342	0.53	Q	V				
11+10	0.2378	0.52	Q	V				
11+15	0.2413	0.52	Q	V				

11+20	0.2449	0.51	Q	V			
11+25	0.2484	0.51	Q	V			
11+30	0.2519	0.51	Q	V			
11+35	0.2553	0.49	Q	V			
11+40	0.2585	0.47	Q	V			
11+45	0.2617	0.46	Q	V			
11+50	0.2650	0.47	Q	V			
11+55	0.2683	0.48	Q	V			
12+ 0	0.2716	0.48	Q	V			
12+ 5	0.2755	0.56	Q	V			
12+10	0.2799	0.63	Q	V			
12+15	0.2844	0.65	Q	V			
12+20	0.2890	0.68	Q	V			
12+25	0.2938	0.70	Q	V			
12+30	0.2986	0.70	Q	V			
12+35	0.3036	0.72	Q	V			
12+40	0.3087	0.74	Q	V			
12+45	0.3139	0.75	Q	V			
12+50	0.3192	0.76	Q	V			
12+55	0.3245	0.78	Q	V			
13+ 0	0.3299	0.78	Q	V			
13+ 5	0.3357	0.84	Q	V			
13+10	0.3418	0.89	Q	V			
13+15	0.3480	0.90	Q	V			
13+20	0.3543	0.91	Q	V			
13+25	0.3606	0.92	Q	V			
13+30	0.3669	0.92	Q	V			
13+35	0.3723	0.79	Q	V			
13+40	0.3770	0.68	Q	V			
13+45	0.3815	0.65	Q	V			
13+50	0.3859	0.64	Q	V			
13+55	0.3902	0.62	Q	V			
14+ 0	0.3945	0.62	Q	V			
14+ 5	0.3990	0.67	Q	V			
14+10	0.4039	0.71	Q	V			
14+15	0.4088	0.72	Q	V			
14+20	0.4137	0.71	Q	V			
14+25	0.4186	0.71	Q	V			
14+30	0.4235	0.70	Q	V			
14+35	0.4283	0.70	Q	V			
14+40	0.4331	0.70	Q	V			
14+45	0.4380	0.70	Q	V			
14+50	0.4427	0.69	Q	V			
14+55	0.4474	0.68	Q	V			
15+ 0	0.4521	0.68	Q	V			
15+ 5	0.4566	0.66	Q	V			
15+10	0.4611	0.65	Q	V			
15+15	0.4656	0.65	Q	V			
15+20	0.4700	0.64	Q	V			
15+25	0.4743	0.63	Q	V			

15+30	0.4786	0.62	Q				V
15+35	0.4826	0.58	Q				V
15+40	0.4863	0.54	Q				V
15+45	0.4899	0.52	Q				V
15+50	0.4934	0.52	Q				V
15+55	0.4970	0.51	Q				V
16+ 0	0.5005	0.51	Q				V
16+ 5	0.5028	0.34	Q				V
16+10	0.5042	0.19	Q				V
16+15	0.5052	0.15	Q				V
16+20	0.5061	0.13	Q				V
16+25	0.5068	0.11	Q				V
16+30	0.5076	0.11	Q				V
16+35	0.5082	0.10	Q				V
16+40	0.5088	0.09	Q				V
16+45	0.5094	0.08	Q				V
16+50	0.5100	0.08	Q				V
16+55	0.5105	0.08	Q				V
17+ 0	0.5111	0.08	Q				V
17+ 5	0.5118	0.10	Q				V
17+10	0.5127	0.12	Q				V
17+15	0.5136	0.13	Q				V
17+20	0.5145	0.13	Q				V
17+25	0.5154	0.13	Q				V
17+30	0.5163	0.13	Q				V
17+35	0.5172	0.13	Q				V
17+40	0.5182	0.13	Q				V
17+45	0.5191	0.13	Q				V
17+50	0.5200	0.12	Q				V
17+55	0.5207	0.11	Q				V
18+ 0	0.5215	0.11	Q				V
18+ 5	0.5223	0.11	Q				V
18+10	0.5230	0.11	Q				V
18+15	0.5237	0.11	Q				V
18+20	0.5245	0.11	Q				V
18+25	0.5252	0.11	Q				V
18+30	0.5260	0.11	Q				V
18+35	0.5266	0.10	Q				V
18+40	0.5272	0.09	Q				V
18+45	0.5278	0.08	Q				V
18+50	0.5283	0.07	Q				V
18+55	0.5287	0.06	Q				V
19+ 0	0.5291	0.06	Q				V
19+ 5	0.5296	0.07	Q				V
19+10	0.5301	0.08	Q				V
19+15	0.5306	0.08	Q				V
19+20	0.5312	0.09	Q				V
19+25	0.5319	0.10	Q				V
19+30	0.5327	0.10	Q				V
19+35	0.5333	0.09	Q				V

19+40	0.5339	0.09	Q				V
19+45	0.5345	0.08	Q				V
19+50	0.5350	0.07	Q				V
19+55	0.5354	0.06	Q				V
20+ 0	0.5358	0.06	Q				V
20+ 5	0.5362	0.07	Q				V
20+10	0.5368	0.08	Q				V
20+15	0.5373	0.08	Q				V
20+20	0.5378	0.08	Q				V
20+25	0.5384	0.08	Q				V
20+30	0.5390	0.08	Q				V
20+35	0.5395	0.08	Q				V
20+40	0.5401	0.08	Q				V
20+45	0.5406	0.08	Q				V
20+50	0.5411	0.07	Q				V
20+55	0.5415	0.06	Q				V
21+ 0	0.5419	0.06	Q				V
21+ 5	0.5424	0.07	Q				V
21+10	0.5429	0.08	Q				V
21+15	0.5434	0.08	Q				V
21+20	0.5439	0.07	Q				V
21+25	0.5443	0.06	Q				V
21+30	0.5447	0.06	Q				V
21+35	0.5452	0.07	Q				V
21+40	0.5457	0.08	Q				V
21+45	0.5462	0.08	Q				V
21+50	0.5467	0.07	Q				V
21+55	0.5471	0.06	Q				V
22+ 0	0.5475	0.06	Q				V
22+ 5	0.5479	0.07	Q				V
22+10	0.5485	0.08	Q				V
22+15	0.5490	0.08	Q				V
22+20	0.5495	0.07	Q				V
22+25	0.5499	0.06	Q				V
22+30	0.5503	0.06	Q				V
22+35	0.5507	0.06	Q				V
22+40	0.5510	0.05	Q				V
22+45	0.5514	0.05	Q				V
22+50	0.5518	0.05	Q				V
22+55	0.5521	0.05	Q				V
23+ 0	0.5525	0.05	Q				V
23+ 5	0.5529	0.05	Q				V
23+10	0.5533	0.05	Q				V
23+15	0.5536	0.05	Q				V
23+20	0.5540	0.05	Q				V
23+25	0.5544	0.05	Q				V
23+30	0.5547	0.05	Q				V
23+35	0.5551	0.05	Q				V
23+40	0.5555	0.05	Q				V
23+45	0.5559	0.05	Q				V

23+50	0.5562	0.05	Q				V
23+55	0.5566	0.05	Q				V
24+ 0	0.5570	0.05	Q				V
24+ 5	0.5572	0.03	Q				V
24+10	0.5573	0.01	Q				V
24+15	0.5573	0.01	Q				V
24+20	0.5573	0.00	Q				V

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Unit Hydrograph Analysis

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Study date 02/22/21 File: CC02PHYDB242.out

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

Program License Serial Number 6473

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

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
PROPOSED CONDITION - DMA B  
2YR, 24-HOUR STORM

-----  
Drainage Area = 8.73(Ac.) = 0.014 Sq. Mi.  
Drainage Area for Depth-Area Areal Adjustment = 8.73(Ac.) =  
0.014 Sq. Mi.  
Length along longest watercourse = 930.00(Ft.)  
Length along longest watercourse measured to centroid = 465.00(Ft.)  
Length along longest watercourse = 0.176 Mi.  
Length along longest watercourse measured to centroid = 0.088 Mi.  
Difference in elevation = 14.00(Ft.)  
Slope along watercourse = 79.4839 Ft./Mi.  
Average Manning's 'N' = 0.015  
Lag time = 0.032 Hr.  
Lag time = 1.93 Min.  
25% of lag time = 0.48 Min.  
40% of lag time = 0.77 Min.  
Unit time = 5.00 Min.  
Duration of storm = 24 Hour(s)  
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:



Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.73	1.60	13.97

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.73	4.30	37.54

STORM EVENT (YEAR) = 2.00  
 Area Averaged 2-Year Rainfall = 1.600(In)  
 Area Averaged 100-Year Rainfall = 4.300(In)

Point rain (area averaged) = 1.600(In)  
 Areal adjustment factor = 100.00 %  
 Adjusted average point rain = 1.600(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.730	69.00	0.500
Total Area Entered = 8.73(Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
69.0	49.8	0.574	0.500	0.316	1.000	0.316
Sum (F) =						0.316

Area averaged mean soil loss (F) (In/Hr) = 0.316  
 Minimum soil loss rate ((In/Hr)) = 0.158  
 (for 24 hour storm duration)  
 Soil low loss rate (decimal) = 0.500

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 U n i t H y d r o g r a p h  
 MOUNTAIN S-Curve  
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Unit Hydrograph Data  
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Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	258.890	48.889
2	0.167	517.780	34.775
3	0.250	776.670	9.398
4	0.333	1035.560	6.939
		Sum = 100.000	Sum= 8.798

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.013	( 0.560)	0.006	0.006
2	0.17	0.07	0.013	( 0.557)	0.006	0.006
3	0.25	0.07	0.013	( 0.555)	0.006	0.006
4	0.33	0.10	0.019	( 0.553)	0.010	0.010
5	0.42	0.10	0.019	( 0.551)	0.010	0.010
6	0.50	0.10	0.019	( 0.549)	0.010	0.010
7	0.58	0.10	0.019	( 0.547)	0.010	0.010
8	0.67	0.10	0.019	( 0.545)	0.010	0.010
9	0.75	0.10	0.019	( 0.542)	0.010	0.010
10	0.83	0.13	0.026	( 0.540)	0.013	0.013
11	0.92	0.13	0.026	( 0.538)	0.013	0.013
12	1.00	0.13	0.026	( 0.536)	0.013	0.013
13	1.08	0.10	0.019	( 0.534)	0.010	0.010
14	1.17	0.10	0.019	( 0.532)	0.010	0.010
15	1.25	0.10	0.019	( 0.530)	0.010	0.010
16	1.33	0.10	0.019	( 0.528)	0.010	0.010
17	1.42	0.10	0.019	( 0.525)	0.010	0.010
18	1.50	0.10	0.019	( 0.523)	0.010	0.010
19	1.58	0.10	0.019	( 0.521)	0.010	0.010
20	1.67	0.10	0.019	( 0.519)	0.010	0.010
21	1.75	0.10	0.019	( 0.517)	0.010	0.010
22	1.83	0.13	0.026	( 0.515)	0.013	0.013
23	1.92	0.13	0.026	( 0.513)	0.013	0.013
24	2.00	0.13	0.026	( 0.511)	0.013	0.013
25	2.08	0.13	0.026	( 0.509)	0.013	0.013
26	2.17	0.13	0.026	( 0.507)	0.013	0.013
27	2.25	0.13	0.026	( 0.505)	0.013	0.013
28	2.33	0.13	0.026	( 0.503)	0.013	0.013
29	2.42	0.13	0.026	( 0.501)	0.013	0.013
30	2.50	0.13	0.026	( 0.499)	0.013	0.013
31	2.58	0.17	0.032	( 0.497)	0.016	0.016
32	2.67	0.17	0.032	( 0.494)	0.016	0.016
33	2.75	0.17	0.032	( 0.492)	0.016	0.016
34	2.83	0.17	0.032	( 0.490)	0.016	0.016
35	2.92	0.17	0.032	( 0.488)	0.016	0.016
36	3.00	0.17	0.032	( 0.486)	0.016	0.016
37	3.08	0.17	0.032	( 0.484)	0.016	0.016
38	3.17	0.17	0.032	( 0.482)	0.016	0.016
39	3.25	0.17	0.032	( 0.480)	0.016	0.016
40	3.33	0.17	0.032	( 0.478)	0.016	0.016
41	3.42	0.17	0.032	( 0.476)	0.016	0.016
42	3.50	0.17	0.032	( 0.474)	0.016	0.016
43	3.58	0.17	0.032	( 0.472)	0.016	0.016
44	3.67	0.17	0.032	( 0.470)	0.016	0.016
45	3.75	0.17	0.032	( 0.468)	0.016	0.016

46	3.83	0.20	0.038	( 0.466)	0.019	0.019
47	3.92	0.20	0.038	( 0.464)	0.019	0.019
48	4.00	0.20	0.038	( 0.463)	0.019	0.019
49	4.08	0.20	0.038	( 0.461)	0.019	0.019
50	4.17	0.20	0.038	( 0.459)	0.019	0.019
51	4.25	0.20	0.038	( 0.457)	0.019	0.019
52	4.33	0.23	0.045	( 0.455)	0.022	0.022
53	4.42	0.23	0.045	( 0.453)	0.022	0.022
54	4.50	0.23	0.045	( 0.451)	0.022	0.022
55	4.58	0.23	0.045	( 0.449)	0.022	0.022
56	4.67	0.23	0.045	( 0.447)	0.022	0.022
57	4.75	0.23	0.045	( 0.445)	0.022	0.022
58	4.83	0.27	0.051	( 0.443)	0.026	0.026
59	4.92	0.27	0.051	( 0.441)	0.026	0.026
60	5.00	0.27	0.051	( 0.439)	0.026	0.026
61	5.08	0.20	0.038	( 0.437)	0.019	0.019
62	5.17	0.20	0.038	( 0.435)	0.019	0.019
63	5.25	0.20	0.038	( 0.434)	0.019	0.019
64	5.33	0.23	0.045	( 0.432)	0.022	0.022
65	5.42	0.23	0.045	( 0.430)	0.022	0.022
66	5.50	0.23	0.045	( 0.428)	0.022	0.022
67	5.58	0.27	0.051	( 0.426)	0.026	0.026
68	5.67	0.27	0.051	( 0.424)	0.026	0.026
69	5.75	0.27	0.051	( 0.422)	0.026	0.026
70	5.83	0.27	0.051	( 0.420)	0.026	0.026
71	5.92	0.27	0.051	( 0.419)	0.026	0.026
72	6.00	0.27	0.051	( 0.417)	0.026	0.026
73	6.08	0.30	0.058	( 0.415)	0.029	0.029
74	6.17	0.30	0.058	( 0.413)	0.029	0.029
75	6.25	0.30	0.058	( 0.411)	0.029	0.029
76	6.33	0.30	0.058	( 0.409)	0.029	0.029
77	6.42	0.30	0.058	( 0.407)	0.029	0.029
78	6.50	0.30	0.058	( 0.406)	0.029	0.029
79	6.58	0.33	0.064	( 0.404)	0.032	0.032
80	6.67	0.33	0.064	( 0.402)	0.032	0.032
81	6.75	0.33	0.064	( 0.400)	0.032	0.032
82	6.83	0.33	0.064	( 0.398)	0.032	0.032
83	6.92	0.33	0.064	( 0.397)	0.032	0.032
84	7.00	0.33	0.064	( 0.395)	0.032	0.032
85	7.08	0.33	0.064	( 0.393)	0.032	0.032
86	7.17	0.33	0.064	( 0.391)	0.032	0.032
87	7.25	0.33	0.064	( 0.389)	0.032	0.032
88	7.33	0.37	0.070	( 0.388)	0.035	0.035
89	7.42	0.37	0.070	( 0.386)	0.035	0.035
90	7.50	0.37	0.070	( 0.384)	0.035	0.035
91	7.58	0.40	0.077	( 0.382)	0.038	0.038
92	7.67	0.40	0.077	( 0.381)	0.038	0.038
93	7.75	0.40	0.077	( 0.379)	0.038	0.038
94	7.83	0.43	0.083	( 0.377)	0.042	0.042
95	7.92	0.43	0.083	( 0.375)	0.042	0.042

96	8.00	0.43	0.083	( 0.374)	0.042	0.042
97	8.08	0.50	0.096	( 0.372)	0.048	0.048
98	8.17	0.50	0.096	( 0.370)	0.048	0.048
99	8.25	0.50	0.096	( 0.368)	0.048	0.048
100	8.33	0.50	0.096	( 0.367)	0.048	0.048
101	8.42	0.50	0.096	( 0.365)	0.048	0.048
102	8.50	0.50	0.096	( 0.363)	0.048	0.048
103	8.58	0.53	0.102	( 0.362)	0.051	0.051
104	8.67	0.53	0.102	( 0.360)	0.051	0.051
105	8.75	0.53	0.102	( 0.358)	0.051	0.051
106	8.83	0.57	0.109	( 0.356)	0.054	0.054
107	8.92	0.57	0.109	( 0.355)	0.054	0.054
108	9.00	0.57	0.109	( 0.353)	0.054	0.054
109	9.08	0.63	0.122	( 0.351)	0.061	0.061
110	9.17	0.63	0.122	( 0.350)	0.061	0.061
111	9.25	0.63	0.122	( 0.348)	0.061	0.061
112	9.33	0.67	0.128	( 0.346)	0.064	0.064
113	9.42	0.67	0.128	( 0.345)	0.064	0.064
114	9.50	0.67	0.128	( 0.343)	0.064	0.064
115	9.58	0.70	0.134	( 0.341)	0.067	0.067
116	9.67	0.70	0.134	( 0.340)	0.067	0.067
117	9.75	0.70	0.134	( 0.338)	0.067	0.067
118	9.83	0.73	0.141	( 0.337)	0.070	0.070
119	9.92	0.73	0.141	( 0.335)	0.070	0.070
120	10.00	0.73	0.141	( 0.333)	0.070	0.070
121	10.08	0.50	0.096	( 0.332)	0.048	0.048
122	10.17	0.50	0.096	( 0.330)	0.048	0.048
123	10.25	0.50	0.096	( 0.329)	0.048	0.048
124	10.33	0.50	0.096	( 0.327)	0.048	0.048
125	10.42	0.50	0.096	( 0.325)	0.048	0.048
126	10.50	0.50	0.096	( 0.324)	0.048	0.048
127	10.58	0.67	0.128	( 0.322)	0.064	0.064
128	10.67	0.67	0.128	( 0.321)	0.064	0.064
129	10.75	0.67	0.128	( 0.319)	0.064	0.064
130	10.83	0.67	0.128	( 0.317)	0.064	0.064
131	10.92	0.67	0.128	( 0.316)	0.064	0.064
132	11.00	0.67	0.128	( 0.314)	0.064	0.064
133	11.08	0.63	0.122	( 0.313)	0.061	0.061
134	11.17	0.63	0.122	( 0.311)	0.061	0.061
135	11.25	0.63	0.122	( 0.310)	0.061	0.061
136	11.33	0.63	0.122	( 0.308)	0.061	0.061
137	11.42	0.63	0.122	( 0.307)	0.061	0.061
138	11.50	0.63	0.122	( 0.305)	0.061	0.061
139	11.58	0.57	0.109	( 0.304)	0.054	0.054
140	11.67	0.57	0.109	( 0.302)	0.054	0.054
141	11.75	0.57	0.109	( 0.301)	0.054	0.054
142	11.83	0.60	0.115	( 0.299)	0.058	0.058
143	11.92	0.60	0.115	( 0.298)	0.058	0.058
144	12.00	0.60	0.115	( 0.296)	0.058	0.058
145	12.08	0.83	0.160	( 0.295)	0.080	0.080

146	12.17	0.83	0.160	( 0.293)	0.080	0.080
147	12.25	0.83	0.160	( 0.292)	0.080	0.080
148	12.33	0.87	0.166	( 0.290)	0.083	0.083
149	12.42	0.87	0.166	( 0.289)	0.083	0.083
150	12.50	0.87	0.166	( 0.287)	0.083	0.083
151	12.58	0.93	0.179	( 0.286)	0.090	0.090
152	12.67	0.93	0.179	( 0.284)	0.090	0.090
153	12.75	0.93	0.179	( 0.283)	0.090	0.090
154	12.83	0.97	0.186	( 0.282)	0.093	0.093
155	12.92	0.97	0.186	( 0.280)	0.093	0.093
156	13.00	0.97	0.186	( 0.279)	0.093	0.093
157	13.08	1.13	0.218	( 0.277)	0.109	0.109
158	13.17	1.13	0.218	( 0.276)	0.109	0.109
159	13.25	1.13	0.218	( 0.275)	0.109	0.109
160	13.33	1.13	0.218	( 0.273)	0.109	0.109
161	13.42	1.13	0.218	( 0.272)	0.109	0.109
162	13.50	1.13	0.218	( 0.270)	0.109	0.109
163	13.58	0.77	0.147	( 0.269)	0.074	0.074
164	13.67	0.77	0.147	( 0.268)	0.074	0.074
165	13.75	0.77	0.147	( 0.266)	0.074	0.074
166	13.83	0.77	0.147	( 0.265)	0.074	0.074
167	13.92	0.77	0.147	( 0.264)	0.074	0.074
168	14.00	0.77	0.147	( 0.262)	0.074	0.074
169	14.08	0.90	0.173	( 0.261)	0.086	0.086
170	14.17	0.90	0.173	( 0.260)	0.086	0.086
171	14.25	0.90	0.173	( 0.258)	0.086	0.086
172	14.33	0.87	0.166	( 0.257)	0.083	0.083
173	14.42	0.87	0.166	( 0.256)	0.083	0.083
174	14.50	0.87	0.166	( 0.254)	0.083	0.083
175	14.58	0.87	0.166	( 0.253)	0.083	0.083
176	14.67	0.87	0.166	( 0.252)	0.083	0.083
177	14.75	0.87	0.166	( 0.250)	0.083	0.083
178	14.83	0.83	0.160	( 0.249)	0.080	0.080
179	14.92	0.83	0.160	( 0.248)	0.080	0.080
180	15.00	0.83	0.160	( 0.247)	0.080	0.080
181	15.08	0.80	0.154	( 0.245)	0.077	0.077
182	15.17	0.80	0.154	( 0.244)	0.077	0.077
183	15.25	0.80	0.154	( 0.243)	0.077	0.077
184	15.33	0.77	0.147	( 0.242)	0.074	0.074
185	15.42	0.77	0.147	( 0.240)	0.074	0.074
186	15.50	0.77	0.147	( 0.239)	0.074	0.074
187	15.58	0.63	0.122	( 0.238)	0.061	0.061
188	15.67	0.63	0.122	( 0.237)	0.061	0.061
189	15.75	0.63	0.122	( 0.235)	0.061	0.061
190	15.83	0.63	0.122	( 0.234)	0.061	0.061
191	15.92	0.63	0.122	( 0.233)	0.061	0.061
192	16.00	0.63	0.122	( 0.232)	0.061	0.061
193	16.08	0.13	0.026	( 0.231)	0.013	0.013
194	16.17	0.13	0.026	( 0.229)	0.013	0.013
195	16.25	0.13	0.026	( 0.228)	0.013	0.013

196	16.33	0.13	0.026	( 0.227)	0.013	0.013
197	16.42	0.13	0.026	( 0.226)	0.013	0.013
198	16.50	0.13	0.026	( 0.225)	0.013	0.013
199	16.58	0.10	0.019	( 0.224)	0.010	0.010
200	16.67	0.10	0.019	( 0.223)	0.010	0.010
201	16.75	0.10	0.019	( 0.221)	0.010	0.010
202	16.83	0.10	0.019	( 0.220)	0.010	0.010
203	16.92	0.10	0.019	( 0.219)	0.010	0.010
204	17.00	0.10	0.019	( 0.218)	0.010	0.010
205	17.08	0.17	0.032	( 0.217)	0.016	0.016
206	17.17	0.17	0.032	( 0.216)	0.016	0.016
207	17.25	0.17	0.032	( 0.215)	0.016	0.016
208	17.33	0.17	0.032	( 0.214)	0.016	0.016
209	17.42	0.17	0.032	( 0.213)	0.016	0.016
210	17.50	0.17	0.032	( 0.212)	0.016	0.016
211	17.58	0.17	0.032	( 0.211)	0.016	0.016
212	17.67	0.17	0.032	( 0.209)	0.016	0.016
213	17.75	0.17	0.032	( 0.208)	0.016	0.016
214	17.83	0.13	0.026	( 0.207)	0.013	0.013
215	17.92	0.13	0.026	( 0.206)	0.013	0.013
216	18.00	0.13	0.026	( 0.205)	0.013	0.013
217	18.08	0.13	0.026	( 0.204)	0.013	0.013
218	18.17	0.13	0.026	( 0.203)	0.013	0.013
219	18.25	0.13	0.026	( 0.202)	0.013	0.013
220	18.33	0.13	0.026	( 0.201)	0.013	0.013
221	18.42	0.13	0.026	( 0.200)	0.013	0.013
222	18.50	0.13	0.026	( 0.199)	0.013	0.013
223	18.58	0.10	0.019	( 0.198)	0.010	0.010
224	18.67	0.10	0.019	( 0.197)	0.010	0.010
225	18.75	0.10	0.019	( 0.197)	0.010	0.010
226	18.83	0.07	0.013	( 0.196)	0.006	0.006
227	18.92	0.07	0.013	( 0.195)	0.006	0.006
228	19.00	0.07	0.013	( 0.194)	0.006	0.006
229	19.08	0.10	0.019	( 0.193)	0.010	0.010
230	19.17	0.10	0.019	( 0.192)	0.010	0.010
231	19.25	0.10	0.019	( 0.191)	0.010	0.010
232	19.33	0.13	0.026	( 0.190)	0.013	0.013
233	19.42	0.13	0.026	( 0.189)	0.013	0.013
234	19.50	0.13	0.026	( 0.188)	0.013	0.013
235	19.58	0.10	0.019	( 0.187)	0.010	0.010
236	19.67	0.10	0.019	( 0.187)	0.010	0.010
237	19.75	0.10	0.019	( 0.186)	0.010	0.010
238	19.83	0.07	0.013	( 0.185)	0.006	0.006
239	19.92	0.07	0.013	( 0.184)	0.006	0.006
240	20.00	0.07	0.013	( 0.183)	0.006	0.006
241	20.08	0.10	0.019	( 0.182)	0.010	0.010
242	20.17	0.10	0.019	( 0.182)	0.010	0.010
243	20.25	0.10	0.019	( 0.181)	0.010	0.010
244	20.33	0.10	0.019	( 0.180)	0.010	0.010
245	20.42	0.10	0.019	( 0.179)	0.010	0.010



Flood volume = 25351.5 Cubic Feet  
 Total soil loss = 25351.5 Cubic Feet

-----  
 Peak flow rate of this hydrograph = 0.958(CFS)  
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24 - H O U R S T O R M  
 R u n o f f H y d r o g r a p h

-----  
 Hydrograph in 5 Minute intervals ((CFS))  
 -----

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.03	Q				
0+10	0.0005	0.05	Q				
0+15	0.0009	0.05	Q				
0+20	0.0014	0.07	Q				
0+25	0.0019	0.08	Q				
0+30	0.0025	0.08	Q				
0+35	0.0031	0.08	Q				
0+40	0.0036	0.08	Q				
0+45	0.0042	0.08	Q				
0+50	0.0049	0.10	Q				
0+55	0.0056	0.11	Q				
1+ 0	0.0064	0.11	Q				
1+ 5	0.0071	0.10	Q				
1+10	0.0077	0.09	Q				
1+15	0.0083	0.09	Q				
1+20	0.0089	0.08	Q				
1+25	0.0095	0.08	Q				
1+30	0.0100	0.08	Q				
1+35	0.0106	0.08	Q				
1+40	0.0112	0.08	Q				
1+45	0.0118	0.08	Q				
1+50	0.0125	0.10	Q				
1+55	0.0132	0.11	Q				
2+ 0	0.0140	0.11	Q				
2+ 5	0.0147	0.11	QV				
2+10	0.0155	0.11	QV				
2+15	0.0163	0.11	QV				
2+20	0.0171	0.11	QV				
2+25	0.0179	0.11	QV				
2+30	0.0186	0.11	QV				
2+35	0.0195	0.13	QV				
2+40	0.0204	0.14	QV				
2+45	0.0214	0.14	QV				
2+50	0.0224	0.14	QV				
2+55	0.0233	0.14	QV				
3+ 0	0.0243	0.14	QV				



3+ 5	0.0253	0.14	QV				
3+10	0.0262	0.14	QV				
3+15	0.0272	0.14	QV				
3+20	0.0282	0.14	QV				
3+25	0.0292	0.14	Q V				
3+30	0.0301	0.14	Q V				
3+35	0.0311	0.14	Q V				
3+40	0.0321	0.14	Q V				
3+45	0.0330	0.14	Q V				
3+50	0.0341	0.15	Q V				
3+55	0.0352	0.16	Q V				
4+ 0	0.0364	0.17	Q V				
4+ 5	0.0375	0.17	Q V				
4+10	0.0387	0.17	Q V				
4+15	0.0399	0.17	Q V				
4+20	0.0411	0.18	Q V				
4+25	0.0425	0.19	Q V				
4+30	0.0438	0.20	Q V				
4+35	0.0452	0.20	Q V				
4+40	0.0465	0.20	Q V				
4+45	0.0479	0.20	Q V				
4+50	0.0493	0.21	Q V				
4+55	0.0509	0.22	Q V				
5+ 0	0.0524	0.22	Q V				
5+ 5	0.0538	0.20	Q V				
5+10	0.0550	0.18	Q V				
5+15	0.0562	0.17	Q V				
5+20	0.0574	0.18	Q V				
5+25	0.0588	0.19	Q V				
5+30	0.0601	0.20	Q V				
5+35	0.0616	0.21	Q V				
5+40	0.0631	0.22	Q V				
5+45	0.0646	0.22	Q V				
5+50	0.0662	0.23	Q V				
5+55	0.0677	0.23	Q V				
6+ 0	0.0693	0.23	Q V				
6+ 5	0.0709	0.24	Q V				
6+10	0.0726	0.25	Q V				
6+15	0.0744	0.25	Q V				
6+20	0.0761	0.25	Q V				
6+25	0.0779	0.25	Q V				
6+30	0.0796	0.25	Q V				
6+35	0.0814	0.27	Q V				
6+40	0.0833	0.28	Q V				
6+45	0.0853	0.28	Q V				
6+50	0.0872	0.28	Q V				
6+55	0.0892	0.28	Q V				
7+ 0	0.0911	0.28	Q V				
7+ 5	0.0930	0.28	Q V				
7+10	0.0950	0.28	Q V				

7+15	0.0969	0.28	Q	V				
7+20	0.0989	0.30	Q	V				
7+25	0.1011	0.31	Q	V				
7+30	0.1032	0.31	Q	V				
7+35	0.1054	0.32	Q	V				
7+40	0.1077	0.33	Q	V				
7+45	0.1100	0.34	Q	V				
7+50	0.1124	0.35	Q	V				
7+55	0.1149	0.36	Q	V				
8+ 0	0.1174	0.36	Q	V				
8+ 5	0.1201	0.39	Q	V				
8+10	0.1230	0.41	Q	V				
8+15	0.1259	0.42	Q	V				
8+20	0.1288	0.42	Q	V				
8+25	0.1317	0.42	Q	V				
8+30	0.1346	0.42	Q	V				
8+35	0.1376	0.44	Q	V				
8+40	0.1407	0.45	Q	V				
8+45	0.1438	0.45	Q	V				
8+50	0.1470	0.46	Q	V				
8+55	0.1502	0.47	Q	V				
9+ 0	0.1535	0.48	Q	V				
9+ 5	0.1570	0.51	Q	V				
9+10	0.1606	0.53	Q	V				
9+15	0.1643	0.53	Q	V				
9+20	0.1681	0.55	Q	V				
9+25	0.1719	0.56	Q	V				
9+30	0.1758	0.56	Q	V				
9+35	0.1798	0.58	Q	V				
9+40	0.1838	0.59	Q	V				
9+45	0.1879	0.59	Q	V				
9+50	0.1920	0.61	Q	V				
9+55	0.1963	0.62	Q	V				
10+ 0	0.2005	0.62	Q	V				
10+ 5	0.2041	0.52	Q	V				
10+10	0.2073	0.45	Q	V				
10+15	0.2103	0.44	Q	V				
10+20	0.2132	0.42	Q	V				
10+25	0.2161	0.42	Q	V				
10+30	0.2190	0.42	Q	V				
10+35	0.2224	0.49	Q	V				
10+40	0.2261	0.54	Q	V				
10+45	0.2299	0.55	Q	V				
10+50	0.2338	0.56	Q	V				
10+55	0.2377	0.56	Q	V				
11+ 0	0.2415	0.56	Q	V				
11+ 5	0.2453	0.55	Q	V				
11+10	0.2491	0.54	Q	V				
11+15	0.2528	0.54	Q	V				
11+20	0.2564	0.54	Q	V				

11+25	0.2601	0.54	Q	V			
11+30	0.2638	0.54	Q	V			
11+35	0.2673	0.51	Q	V			
11+40	0.2707	0.49	Q	V			
11+45	0.2740	0.48	Q	V			
11+50	0.2774	0.49	Q	V			
11+55	0.2808	0.50	Q	V			
12+ 0	0.2843	0.51	Q	V			
12+ 5	0.2885	0.60	Q	V			
12+10	0.2931	0.67	Q	V			
12+15	0.2979	0.69	Q	V			
12+20	0.3028	0.72	Q	V			
12+25	0.3078	0.73	Q	V			
12+30	0.3129	0.73	Q	V			
12+35	0.3181	0.76	Q	V			
12+40	0.3235	0.78	Q	V			
12+45	0.3289	0.78	Q	V			
12+50	0.3344	0.80	Q	V			
12+55	0.3400	0.81	Q	V			
13+ 0	0.3456	0.81	Q	V			
13+ 5	0.3517	0.89	Q	V			
13+10	0.3581	0.93	Q	V			
13+15	0.3647	0.95	Q	V			
13+20	0.3713	0.96	Q	V			
13+25	0.3778	0.96	Q	V			
13+30	0.3844	0.96	Q	V			
13+35	0.3900	0.81	Q	V			
13+40	0.3948	0.70	Q	V			
13+45	0.3994	0.67	Q	V			
13+50	0.4039	0.65	Q	V			
13+55	0.4083	0.65	Q	V			
14+ 0	0.4128	0.65	Q	V			
14+ 5	0.4176	0.70	Q	V			
14+10	0.4228	0.74	Q	V			
14+15	0.4279	0.75	Q	V			
14+20	0.4331	0.75	Q	V			
14+25	0.4382	0.74	Q	V			
14+30	0.4432	0.73	Q	V			
14+35	0.4483	0.73	Q	V			
14+40	0.4533	0.73	Q	V			
14+45	0.4583	0.73	Q	V			
14+50	0.4633	0.72	Q	V			
14+55	0.4682	0.71	Q	V			
15+ 0	0.4730	0.71	Q	V			
15+ 5	0.4778	0.69	Q	V			
15+10	0.4825	0.68	Q	V			
15+15	0.4872	0.68	Q	V			
15+20	0.4917	0.66	Q	V			
15+25	0.4962	0.65	Q	V			
15+30	0.5007	0.65	Q	V			

15+35	0.5048	0.59	Q				V
15+40	0.5086	0.55	Q				V
15+45	0.5123	0.54	Q				V
15+50	0.5160	0.54	Q				V
15+55	0.5197	0.54	Q				V
16+ 0	0.5234	0.54	Q				V
16+ 5	0.5256	0.33	Q				V
16+10	0.5269	0.18	Q				V
16+15	0.5279	0.14	Q				V
16+20	0.5286	0.11	Q				V
16+25	0.5294	0.11	Q				V
16+30	0.5302	0.11	Q				V
16+35	0.5309	0.10	Q				V
16+40	0.5315	0.09	Q				V
16+45	0.5321	0.09	Q				V
16+50	0.5327	0.08	Q				V
16+55	0.5333	0.08	Q				V
17+ 0	0.5338	0.08	Q				V
17+ 5	0.5346	0.11	Q				V
17+10	0.5355	0.13	Q				V
17+15	0.5365	0.14	Q				V
17+20	0.5374	0.14	Q				V
17+25	0.5384	0.14	Q				V
17+30	0.5394	0.14	Q				V
17+35	0.5403	0.14	Q				V
17+40	0.5413	0.14	Q				V
17+45	0.5423	0.14	Q				V
17+50	0.5432	0.13	Q				V
17+55	0.5440	0.12	Q				V
18+ 0	0.5447	0.11	Q				V
18+ 5	0.5455	0.11	Q				V
18+10	0.5463	0.11	Q				V
18+15	0.5471	0.11	Q				V
18+20	0.5479	0.11	Q				V
18+25	0.5486	0.11	Q				V
18+30	0.5494	0.11	Q				V
18+35	0.5501	0.10	Q				V
18+40	0.5507	0.09	Q				V
18+45	0.5513	0.09	Q				V
18+50	0.5518	0.07	Q				V
18+55	0.5522	0.06	Q				V
19+ 0	0.5526	0.06	Q				V
19+ 5	0.5531	0.07	Q				V
19+10	0.5536	0.08	Q				V
19+15	0.5542	0.08	Q				V
19+20	0.5549	0.10	Q				V
19+25	0.5556	0.11	Q				V
19+30	0.5564	0.11	Q				V
19+35	0.5571	0.10	Q				V
19+40	0.5577	0.09	Q				V

19+45	0.5583	0.09	Q				V
19+50	0.5588	0.07	Q				V
19+55	0.5592	0.06	Q				V
20+ 0	0.5596	0.06	Q				V
20+ 5	0.5601	0.07	Q				V
20+10	0.5606	0.08	Q				V
20+15	0.5612	0.08	Q				V
20+20	0.5618	0.08	Q				V
20+25	0.5624	0.08	Q				V
20+30	0.5629	0.08	Q				V
20+35	0.5635	0.08	Q				V
20+40	0.5641	0.08	Q				V
20+45	0.5647	0.08	Q				V
20+50	0.5652	0.07	Q				V
20+55	0.5656	0.06	Q				V
21+ 0	0.5660	0.06	Q				V
21+ 5	0.5665	0.07	Q				V
21+10	0.5670	0.08	Q				V
21+15	0.5676	0.08	Q				V
21+20	0.5681	0.07	Q				V
21+25	0.5685	0.06	Q				V
21+30	0.5689	0.06	Q				V
21+35	0.5694	0.07	Q				V
21+40	0.5699	0.08	Q				V
21+45	0.5705	0.08	Q				V
21+50	0.5710	0.07	Q				V
21+55	0.5714	0.06	Q				V
22+ 0	0.5718	0.06	Q				V
22+ 5	0.5723	0.07	Q				V
22+10	0.5728	0.08	Q				V
22+15	0.5734	0.08	Q				V
22+20	0.5739	0.07	Q				V
22+25	0.5743	0.06	Q				V
22+30	0.5747	0.06	Q				V
22+35	0.5751	0.06	Q				V
22+40	0.5755	0.06	Q				V
22+45	0.5759	0.06	Q				V
22+50	0.5763	0.06	Q				V
22+55	0.5767	0.06	Q				V
23+ 0	0.5770	0.06	Q				V
23+ 5	0.5774	0.06	Q				V
23+10	0.5778	0.06	Q				V
23+15	0.5782	0.06	Q				V
23+20	0.5786	0.06	Q				V
23+25	0.5790	0.06	Q				V
23+30	0.5794	0.06	Q				V
23+35	0.5798	0.06	Q				V
23+40	0.5801	0.06	Q				V
23+45	0.5805	0.06	Q				V
23+50	0.5809	0.06	Q				V

23+55	0.5813	0.06	Q				V
24+ 0	0.5817	0.06	Q				V
24+ 5	0.5819	0.03	Q				V
24+10	0.5820	0.01	Q				V
24+15	0.5820	0.00	Q				V

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# **Pre-Development & Post-Development Condition CivilDesign Input & Output (100-year Storm Event)**

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0  
Study date 02/22/21 File: CC02XHYDA24100.out

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

Program License Serial Number 6473

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

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
EXISTING CONDITION - DMA A  
100YR, 24-HOUR STORM

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Drainage Area = 8.36(Ac.) = 0.013 Sq. Mi.  
Drainage Area for Depth-Area Areal Adjustment = 8.36(Ac.) =  
0.013 Sq. Mi.  
Length along longest watercourse = 764.00(Ft.)  
Length along longest watercourse measured to centroid = 382.00(Ft.)  
Length along longest watercourse = 0.145 Mi.  
Length along longest watercourse measured to centroid = 0.072 Mi.  
Difference in elevation = 16.60(Ft.)  
Slope along watercourse = 114.7225 Ft./Mi.  
Average Manning's 'N' = 0.040  
Lag time = 0.069 Hr.  
Lag time = 4.14 Min.  
25% of lag time = 1.03 Min.  
40% of lag time = 1.65 Min.  
Unit time = 5.00 Min.  
Duration of storm = 24 Hour(s)  
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:



Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.36	1.60	13.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.36	4.30	35.95

STORM EVENT (YEAR) = 100.00  
 Area Averaged 2-Year Rainfall = 1.600(In)  
 Area Averaged 100-Year Rainfall = 4.300(In)

Point rain (area averaged) = 4.300(In)  
 Areal adjustment factor = 100.00 %  
 Adjusted average point rain = 4.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.360	74.00	0.000
Total Area Entered = 8.36(Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-3	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
74.0	87.4	0.160	0.000	0.160	1.000	0.160
Sum (F) =						0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160  
 Minimum soil loss rate ((In/Hr)) = 0.080  
 (for 24 hour storm duration)  
 Soil low loss rate (decimal) = 0.900

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 U n i t H y d r o g r a p h  
 MOUNTAIN S-Curve  
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Unit Hydrograph Data  
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Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	120.871	28.024
2	0.167	241.742	38.056
3	0.250	362.614	12.807
4	0.333	483.485	6.815
5	0.417	604.356	4.571
6	0.500	725.227	3.356
7	0.583	846.099	2.510
8	0.667	966.970	2.181

9	0.750	1087.841	1.682	0.142
			Sum = 100.000	Sum= 8.425

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.034	( 0.283)	0.031	0.003
2	0.17	0.07	0.034	( 0.282)	0.031	0.003
3	0.25	0.07	0.034	( 0.281)	0.031	0.003
4	0.33	0.10	0.052	( 0.280)	0.046	0.005
5	0.42	0.10	0.052	( 0.279)	0.046	0.005
6	0.50	0.10	0.052	( 0.278)	0.046	0.005
7	0.58	0.10	0.052	( 0.276)	0.046	0.005
8	0.67	0.10	0.052	( 0.275)	0.046	0.005
9	0.75	0.10	0.052	( 0.274)	0.046	0.005
10	0.83	0.13	0.069	( 0.273)	0.062	0.007
11	0.92	0.13	0.069	( 0.272)	0.062	0.007
12	1.00	0.13	0.069	( 0.271)	0.062	0.007
13	1.08	0.10	0.052	( 0.270)	0.046	0.005
14	1.17	0.10	0.052	( 0.269)	0.046	0.005
15	1.25	0.10	0.052	( 0.268)	0.046	0.005
16	1.33	0.10	0.052	( 0.267)	0.046	0.005
17	1.42	0.10	0.052	( 0.266)	0.046	0.005
18	1.50	0.10	0.052	( 0.265)	0.046	0.005
19	1.58	0.10	0.052	( 0.264)	0.046	0.005
20	1.67	0.10	0.052	( 0.263)	0.046	0.005
21	1.75	0.10	0.052	( 0.262)	0.046	0.005
22	1.83	0.13	0.069	( 0.260)	0.062	0.007
23	1.92	0.13	0.069	( 0.259)	0.062	0.007
24	2.00	0.13	0.069	( 0.258)	0.062	0.007
25	2.08	0.13	0.069	( 0.257)	0.062	0.007
26	2.17	0.13	0.069	( 0.256)	0.062	0.007
27	2.25	0.13	0.069	( 0.255)	0.062	0.007
28	2.33	0.13	0.069	( 0.254)	0.062	0.007
29	2.42	0.13	0.069	( 0.253)	0.062	0.007
30	2.50	0.13	0.069	( 0.252)	0.062	0.007
31	2.58	0.17	0.086	( 0.251)	0.077	0.009
32	2.67	0.17	0.086	( 0.250)	0.077	0.009
33	2.75	0.17	0.086	( 0.249)	0.077	0.009
34	2.83	0.17	0.086	( 0.248)	0.077	0.009
35	2.92	0.17	0.086	( 0.247)	0.077	0.009
36	3.00	0.17	0.086	( 0.246)	0.077	0.009
37	3.08	0.17	0.086	( 0.245)	0.077	0.009
38	3.17	0.17	0.086	( 0.244)	0.077	0.009
39	3.25	0.17	0.086	( 0.243)	0.077	0.009
40	3.33	0.17	0.086	( 0.242)	0.077	0.009

41	3.42	0.17	0.086	( 0.241)	0.077	0.009
42	3.50	0.17	0.086	( 0.240)	0.077	0.009
43	3.58	0.17	0.086	( 0.239)	0.077	0.009
44	3.67	0.17	0.086	( 0.238)	0.077	0.009
45	3.75	0.17	0.086	( 0.237)	0.077	0.009
46	3.83	0.20	0.103	( 0.236)	0.093	0.010
47	3.92	0.20	0.103	( 0.235)	0.093	0.010
48	4.00	0.20	0.103	( 0.234)	0.093	0.010
49	4.08	0.20	0.103	( 0.233)	0.093	0.010
50	4.17	0.20	0.103	( 0.232)	0.093	0.010
51	4.25	0.20	0.103	( 0.231)	0.093	0.010
52	4.33	0.23	0.120	( 0.230)	0.108	0.012
53	4.42	0.23	0.120	( 0.229)	0.108	0.012
54	4.50	0.23	0.120	( 0.228)	0.108	0.012
55	4.58	0.23	0.120	( 0.227)	0.108	0.012
56	4.67	0.23	0.120	( 0.226)	0.108	0.012
57	4.75	0.23	0.120	( 0.225)	0.108	0.012
58	4.83	0.27	0.138	( 0.224)	0.124	0.014
59	4.92	0.27	0.138	( 0.223)	0.124	0.014
60	5.00	0.27	0.138	( 0.222)	0.124	0.014
61	5.08	0.20	0.103	( 0.221)	0.093	0.010
62	5.17	0.20	0.103	( 0.220)	0.093	0.010
63	5.25	0.20	0.103	( 0.219)	0.093	0.010
64	5.33	0.23	0.120	( 0.218)	0.108	0.012
65	5.42	0.23	0.120	( 0.217)	0.108	0.012
66	5.50	0.23	0.120	( 0.216)	0.108	0.012
67	5.58	0.27	0.138	( 0.215)	0.124	0.014
68	5.67	0.27	0.138	( 0.214)	0.124	0.014
69	5.75	0.27	0.138	( 0.214)	0.124	0.014
70	5.83	0.27	0.138	( 0.213)	0.124	0.014
71	5.92	0.27	0.138	( 0.212)	0.124	0.014
72	6.00	0.27	0.138	( 0.211)	0.124	0.014
73	6.08	0.30	0.155	( 0.210)	0.139	0.015
74	6.17	0.30	0.155	( 0.209)	0.139	0.015
75	6.25	0.30	0.155	( 0.208)	0.139	0.015
76	6.33	0.30	0.155	( 0.207)	0.139	0.015
77	6.42	0.30	0.155	( 0.206)	0.139	0.015
78	6.50	0.30	0.155	( 0.205)	0.139	0.015
79	6.58	0.33	0.172	( 0.204)	0.155	0.017
80	6.67	0.33	0.172	( 0.203)	0.155	0.017
81	6.75	0.33	0.172	( 0.202)	0.155	0.017
82	6.83	0.33	0.172	( 0.201)	0.155	0.017
83	6.92	0.33	0.172	( 0.201)	0.155	0.017
84	7.00	0.33	0.172	( 0.200)	0.155	0.017
85	7.08	0.33	0.172	( 0.199)	0.155	0.017
86	7.17	0.33	0.172	( 0.198)	0.155	0.017
87	7.25	0.33	0.172	( 0.197)	0.155	0.017
88	7.33	0.37	0.189	( 0.196)	0.170	0.019
89	7.42	0.37	0.189	( 0.195)	0.170	0.019
90	7.50	0.37	0.189	( 0.194)	0.170	0.019

91	7.58	0.40	0.206	( 0.193)	0.186	0.021
92	7.67	0.40	0.206	( 0.192)	0.186	0.021
93	7.75	0.40	0.206	( 0.192)	0.186	0.021
94	7.83	0.43	0.224	0.191	( 0.201)	0.033
95	7.92	0.43	0.224	0.190	( 0.201)	0.034
96	8.00	0.43	0.224	0.189	( 0.201)	0.035
97	8.08	0.50	0.258	0.188	( 0.232)	0.070
98	8.17	0.50	0.258	0.187	( 0.232)	0.071
99	8.25	0.50	0.258	0.186	( 0.232)	0.072
100	8.33	0.50	0.258	0.185	( 0.232)	0.073
101	8.42	0.50	0.258	0.185	( 0.232)	0.073
102	8.50	0.50	0.258	0.184	( 0.232)	0.074
103	8.58	0.53	0.275	0.183	( 0.248)	0.092
104	8.67	0.53	0.275	0.182	( 0.248)	0.093
105	8.75	0.53	0.275	0.181	( 0.248)	0.094
106	8.83	0.57	0.292	0.180	( 0.263)	0.112
107	8.92	0.57	0.292	0.179	( 0.263)	0.113
108	9.00	0.57	0.292	0.179	( 0.263)	0.114
109	9.08	0.63	0.327	0.178	( 0.294)	0.149
110	9.17	0.63	0.327	0.177	( 0.294)	0.150
111	9.25	0.63	0.327	0.176	( 0.294)	0.151
112	9.33	0.67	0.344	0.175	( 0.310)	0.169
113	9.42	0.67	0.344	0.174	( 0.310)	0.170
114	9.50	0.67	0.344	0.174	( 0.310)	0.170
115	9.58	0.70	0.361	0.173	( 0.325)	0.188
116	9.67	0.70	0.361	0.172	( 0.325)	0.189
117	9.75	0.70	0.361	0.171	( 0.325)	0.190
118	9.83	0.73	0.378	0.170	( 0.341)	0.208
119	9.92	0.73	0.378	0.169	( 0.341)	0.209
120	10.00	0.73	0.378	0.169	( 0.341)	0.210
121	10.08	0.50	0.258	0.168	( 0.232)	0.090
122	10.17	0.50	0.258	0.167	( 0.232)	0.091
123	10.25	0.50	0.258	0.166	( 0.232)	0.092
124	10.33	0.50	0.258	0.165	( 0.232)	0.093
125	10.42	0.50	0.258	0.165	( 0.232)	0.093
126	10.50	0.50	0.258	0.164	( 0.232)	0.094
127	10.58	0.67	0.344	0.163	( 0.310)	0.181
128	10.67	0.67	0.344	0.162	( 0.310)	0.182
129	10.75	0.67	0.344	0.161	( 0.310)	0.183
130	10.83	0.67	0.344	0.161	( 0.310)	0.183
131	10.92	0.67	0.344	0.160	( 0.310)	0.184
132	11.00	0.67	0.344	0.159	( 0.310)	0.185
133	11.08	0.63	0.327	0.158	( 0.294)	0.169
134	11.17	0.63	0.327	0.157	( 0.294)	0.169
135	11.25	0.63	0.327	0.157	( 0.294)	0.170
136	11.33	0.63	0.327	0.156	( 0.294)	0.171
137	11.42	0.63	0.327	0.155	( 0.294)	0.172
138	11.50	0.63	0.327	0.154	( 0.294)	0.172
139	11.58	0.57	0.292	0.154	( 0.263)	0.139
140	11.67	0.57	0.292	0.153	( 0.263)	0.140

141	11.75	0.57	0.292	0.152	( 0.263)	0.140
142	11.83	0.60	0.310	0.151	( 0.279)	0.158
143	11.92	0.60	0.310	0.151	( 0.279)	0.159
144	12.00	0.60	0.310	0.150	( 0.279)	0.160
145	12.08	0.83	0.430	0.149	( 0.387)	0.281
146	12.17	0.83	0.430	0.148	( 0.387)	0.282
147	12.25	0.83	0.430	0.148	( 0.387)	0.282
148	12.33	0.87	0.447	0.147	( 0.402)	0.300
149	12.42	0.87	0.447	0.146	( 0.402)	0.301
150	12.50	0.87	0.447	0.145	( 0.402)	0.302
151	12.58	0.93	0.482	0.145	( 0.433)	0.337
152	12.67	0.93	0.482	0.144	( 0.433)	0.338
153	12.75	0.93	0.482	0.143	( 0.433)	0.338
154	12.83	0.97	0.499	0.142	( 0.449)	0.356
155	12.92	0.97	0.499	0.142	( 0.449)	0.357
156	13.00	0.97	0.499	0.141	( 0.449)	0.358
157	13.08	1.13	0.585	0.140	( 0.526)	0.445
158	13.17	1.13	0.585	0.140	( 0.526)	0.445
159	13.25	1.13	0.585	0.139	( 0.526)	0.446
160	13.33	1.13	0.585	0.138	( 0.526)	0.447
161	13.42	1.13	0.585	0.137	( 0.526)	0.447
162	13.50	1.13	0.585	0.137	( 0.526)	0.448
163	13.58	0.77	0.396	0.136	( 0.356)	0.260
164	13.67	0.77	0.396	0.135	( 0.356)	0.260
165	13.75	0.77	0.396	0.135	( 0.356)	0.261
166	13.83	0.77	0.396	0.134	( 0.356)	0.262
167	13.92	0.77	0.396	0.133	( 0.356)	0.262
168	14.00	0.77	0.396	0.133	( 0.356)	0.263
169	14.08	0.90	0.464	0.132	( 0.418)	0.332
170	14.17	0.90	0.464	0.131	( 0.418)	0.333
171	14.25	0.90	0.464	0.131	( 0.418)	0.334
172	14.33	0.87	0.447	0.130	( 0.402)	0.317
173	14.42	0.87	0.447	0.129	( 0.402)	0.318
174	14.50	0.87	0.447	0.129	( 0.402)	0.319
175	14.58	0.87	0.447	0.128	( 0.402)	0.319
176	14.67	0.87	0.447	0.127	( 0.402)	0.320
177	14.75	0.87	0.447	0.127	( 0.402)	0.321
178	14.83	0.83	0.430	0.126	( 0.387)	0.304
179	14.92	0.83	0.430	0.125	( 0.387)	0.305
180	15.00	0.83	0.430	0.125	( 0.387)	0.305
181	15.08	0.80	0.413	0.124	( 0.372)	0.289
182	15.17	0.80	0.413	0.123	( 0.372)	0.289
183	15.25	0.80	0.413	0.123	( 0.372)	0.290
184	15.33	0.77	0.396	0.122	( 0.356)	0.273
185	15.42	0.77	0.396	0.122	( 0.356)	0.274
186	15.50	0.77	0.396	0.121	( 0.356)	0.275
187	15.58	0.63	0.327	0.120	( 0.294)	0.207
188	15.67	0.63	0.327	0.120	( 0.294)	0.207
189	15.75	0.63	0.327	0.119	( 0.294)	0.208
190	15.83	0.63	0.327	0.118	( 0.294)	0.208

191	15.92	0.63	0.327	0.118	( 0.294)	0.209
192	16.00	0.63	0.327	0.117	( 0.294)	0.210
193	16.08	0.13	0.069	( 0.117)	0.062	0.007
194	16.17	0.13	0.069	( 0.116)	0.062	0.007
195	16.25	0.13	0.069	( 0.115)	0.062	0.007
196	16.33	0.13	0.069	( 0.115)	0.062	0.007
197	16.42	0.13	0.069	( 0.114)	0.062	0.007
198	16.50	0.13	0.069	( 0.114)	0.062	0.007
199	16.58	0.10	0.052	( 0.113)	0.046	0.005
200	16.67	0.10	0.052	( 0.113)	0.046	0.005
201	16.75	0.10	0.052	( 0.112)	0.046	0.005
202	16.83	0.10	0.052	( 0.111)	0.046	0.005
203	16.92	0.10	0.052	( 0.111)	0.046	0.005
204	17.00	0.10	0.052	( 0.110)	0.046	0.005
205	17.08	0.17	0.086	( 0.110)	0.077	0.009
206	17.17	0.17	0.086	( 0.109)	0.077	0.009
207	17.25	0.17	0.086	( 0.109)	0.077	0.009
208	17.33	0.17	0.086	( 0.108)	0.077	0.009
209	17.42	0.17	0.086	( 0.108)	0.077	0.009
210	17.50	0.17	0.086	( 0.107)	0.077	0.009
211	17.58	0.17	0.086	( 0.106)	0.077	0.009
212	17.67	0.17	0.086	( 0.106)	0.077	0.009
213	17.75	0.17	0.086	( 0.105)	0.077	0.009
214	17.83	0.13	0.069	( 0.105)	0.062	0.007
215	17.92	0.13	0.069	( 0.104)	0.062	0.007
216	18.00	0.13	0.069	( 0.104)	0.062	0.007
217	18.08	0.13	0.069	( 0.103)	0.062	0.007
218	18.17	0.13	0.069	( 0.103)	0.062	0.007
219	18.25	0.13	0.069	( 0.102)	0.062	0.007
220	18.33	0.13	0.069	( 0.102)	0.062	0.007
221	18.42	0.13	0.069	( 0.101)	0.062	0.007
222	18.50	0.13	0.069	( 0.101)	0.062	0.007
223	18.58	0.10	0.052	( 0.100)	0.046	0.005
224	18.67	0.10	0.052	( 0.100)	0.046	0.005
225	18.75	0.10	0.052	( 0.099)	0.046	0.005
226	18.83	0.07	0.034	( 0.099)	0.031	0.003
227	18.92	0.07	0.034	( 0.098)	0.031	0.003
228	19.00	0.07	0.034	( 0.098)	0.031	0.003
229	19.08	0.10	0.052	( 0.098)	0.046	0.005
230	19.17	0.10	0.052	( 0.097)	0.046	0.005
231	19.25	0.10	0.052	( 0.097)	0.046	0.005
232	19.33	0.13	0.069	( 0.096)	0.062	0.007
233	19.42	0.13	0.069	( 0.096)	0.062	0.007
234	19.50	0.13	0.069	( 0.095)	0.062	0.007
235	19.58	0.10	0.052	( 0.095)	0.046	0.005
236	19.67	0.10	0.052	( 0.094)	0.046	0.005
237	19.75	0.10	0.052	( 0.094)	0.046	0.005
238	19.83	0.07	0.034	( 0.094)	0.031	0.003
239	19.92	0.07	0.034	( 0.093)	0.031	0.003
240	20.00	0.07	0.034	( 0.093)	0.031	0.003

241	20.08	0.10	0.052	( 0.092)	0.046	0.005
242	20.17	0.10	0.052	( 0.092)	0.046	0.005
243	20.25	0.10	0.052	( 0.091)	0.046	0.005
244	20.33	0.10	0.052	( 0.091)	0.046	0.005
245	20.42	0.10	0.052	( 0.091)	0.046	0.005
246	20.50	0.10	0.052	( 0.090)	0.046	0.005
247	20.58	0.10	0.052	( 0.090)	0.046	0.005
248	20.67	0.10	0.052	( 0.090)	0.046	0.005
249	20.75	0.10	0.052	( 0.089)	0.046	0.005
250	20.83	0.07	0.034	( 0.089)	0.031	0.003
251	20.92	0.07	0.034	( 0.088)	0.031	0.003
252	21.00	0.07	0.034	( 0.088)	0.031	0.003
253	21.08	0.10	0.052	( 0.088)	0.046	0.005
254	21.17	0.10	0.052	( 0.087)	0.046	0.005
255	21.25	0.10	0.052	( 0.087)	0.046	0.005
256	21.33	0.07	0.034	( 0.087)	0.031	0.003
257	21.42	0.07	0.034	( 0.086)	0.031	0.003
258	21.50	0.07	0.034	( 0.086)	0.031	0.003
259	21.58	0.10	0.052	( 0.086)	0.046	0.005
260	21.67	0.10	0.052	( 0.085)	0.046	0.005
261	21.75	0.10	0.052	( 0.085)	0.046	0.005
262	21.83	0.07	0.034	( 0.085)	0.031	0.003
263	21.92	0.07	0.034	( 0.085)	0.031	0.003
264	22.00	0.07	0.034	( 0.084)	0.031	0.003
265	22.08	0.10	0.052	( 0.084)	0.046	0.005
266	22.17	0.10	0.052	( 0.084)	0.046	0.005
267	22.25	0.10	0.052	( 0.083)	0.046	0.005
268	22.33	0.07	0.034	( 0.083)	0.031	0.003
269	22.42	0.07	0.034	( 0.083)	0.031	0.003
270	22.50	0.07	0.034	( 0.083)	0.031	0.003
271	22.58	0.07	0.034	( 0.082)	0.031	0.003
272	22.67	0.07	0.034	( 0.082)	0.031	0.003
273	22.75	0.07	0.034	( 0.082)	0.031	0.003
274	22.83	0.07	0.034	( 0.082)	0.031	0.003
275	22.92	0.07	0.034	( 0.082)	0.031	0.003
276	23.00	0.07	0.034	( 0.081)	0.031	0.003
277	23.08	0.07	0.034	( 0.081)	0.031	0.003
278	23.17	0.07	0.034	( 0.081)	0.031	0.003
279	23.25	0.07	0.034	( 0.081)	0.031	0.003
280	23.33	0.07	0.034	( 0.081)	0.031	0.003
281	23.42	0.07	0.034	( 0.081)	0.031	0.003
282	23.50	0.07	0.034	( 0.080)	0.031	0.003
283	23.58	0.07	0.034	( 0.080)	0.031	0.003
284	23.67	0.07	0.034	( 0.080)	0.031	0.003
285	23.75	0.07	0.034	( 0.080)	0.031	0.003
286	23.83	0.07	0.034	( 0.080)	0.031	0.003
287	23.92	0.07	0.034	( 0.080)	0.031	0.003
288	24.00	0.07	0.034	( 0.080)	0.031	0.003

(Loss Rate Not Used)

Sum = 100.0

Sum = 23.2

Flood volume = Effective rainfall 1.93(In)  
 times area 8.4(Ac.)/[ (In)/(Ft.) ] = 1.3(Ac.Ft)  
 Total soil loss = 2.37(In)  
 Total soil loss = 1.648(Ac.Ft)  
 Total rainfall = 4.30(In)  
 Flood volume = 58689.6 Cubic Feet  
 Total soil loss = 71799.5 Cubic Feet

-----  
 Peak flow rate of this hydrograph = 3.721(CFS)  
 -----

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

-----  
 Hydrograph in 5 Minute intervals ((CFS))  
 -----

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q				
0+10	0.0002	0.02	Q				
0+15	0.0003	0.02	Q				
0+20	0.0005	0.03	Q				
0+25	0.0008	0.04	Q				
0+30	0.0011	0.04	Q				
0+35	0.0013	0.04	Q				
0+40	0.0016	0.04	Q				
0+45	0.0019	0.04	Q				
0+50	0.0022	0.05	Q				
0+55	0.0026	0.05	Q				
1+ 0	0.0030	0.05	Q				
1+ 5	0.0033	0.05	Q				
1+10	0.0037	0.05	Q				
1+15	0.0040	0.05	Q				
1+20	0.0043	0.05	Q				
1+25	0.0046	0.04	Q				
1+30	0.0049	0.04	Q				
1+35	0.0052	0.04	Q				
1+40	0.0055	0.04	Q				
1+45	0.0058	0.04	Q				
1+50	0.0061	0.05	Q				
1+55	0.0065	0.05	Q				
2+ 0	0.0069	0.05	Q				
2+ 5	0.0073	0.06	Q				
2+10	0.0076	0.06	Q				
2+15	0.0080	0.06	Q				
2+20	0.0084	0.06	Q				
2+25	0.0088	0.06	Q				
2+30	0.0092	0.06	Q				
2+35	0.0097	0.06	Q				



2+40	0.0101	0.07	Q
2+45	0.0106	0.07	Q
2+50	0.0111	0.07	Q
2+55	0.0116	0.07	Q
3+ 0	0.0121	0.07	Q
3+ 5	0.0126	0.07	Q
3+10	0.0131	0.07	Q
3+15	0.0136	0.07	Q
3+20	0.0141	0.07	Q
3+25	0.0146	0.07	Q
3+30	0.0151	0.07	Q
3+35	0.0156	0.07	Q
3+40	0.0161	0.07	Q
3+45	0.0166	0.07	Q
3+50	0.0171	0.08	Q
3+55	0.0177	0.08	Q
4+ 0	0.0182	0.08	Q
4+ 5	0.0188	0.08	Q
4+10	0.0194	0.09	Q
4+15	0.0200	0.09	Q
4+20	0.0206	0.09	Q
4+25	0.0213	0.10	Q
4+30	0.0220	0.10	Q
4+35	0.0226	0.10	Q
4+40	0.0233	0.10	Q
4+45	0.0240	0.10	Q
4+50	0.0248	0.10	Q
4+55	0.0255	0.11	Q
5+ 0	0.0263	0.11	Q
5+ 5	0.0270	0.11	Q
5+10	0.0277	0.10	Q
5+15	0.0283	0.09	Q
5+20	0.0290	0.09	Q
5+25	0.0296	0.10	Q
5+30	0.0303	0.10	Q
5+35	0.0311	0.10	Q
5+40	0.0318	0.11	Q
5+45	0.0326	0.11	Q
5+50	0.0334	0.11	Q
5+55	0.0342	0.11	QV
6+ 0	0.0350	0.12	QV
6+ 5	0.0358	0.12	QV
6+10	0.0366	0.13	QV
6+15	0.0375	0.13	QV
6+20	0.0384	0.13	QV
6+25	0.0393	0.13	QV
6+30	0.0402	0.13	QV
6+35	0.0411	0.13	QV
6+40	0.0421	0.14	QV
6+45	0.0430	0.14	QV

6+50	0.0440	0.14	QV				
6+55	0.0450	0.14	QV				
7+ 0	0.0460	0.14	QV				
7+ 5	0.0470	0.14	QV				
7+10	0.0480	0.14	QV				
7+15	0.0490	0.14	QV				
7+20	0.0500	0.15	QV				
7+25	0.0511	0.15	QV				
7+30	0.0522	0.16	QV				
7+35	0.0533	0.16	QV				
7+40	0.0544	0.17	QV				
7+45	0.0556	0.17	QV				
7+50	0.0570	0.20	QV				
7+55	0.0587	0.24	QV				
8+ 0	0.0605	0.26	Q				
8+ 5	0.0629	0.36	Q				
8+10	0.0662	0.48	Q				
8+15	0.0698	0.53	Q				
8+20	0.0736	0.55	Q				
8+25	0.0776	0.58	Q				
8+30	0.0817	0.60	Q				
8+35	0.0862	0.65	Q				
8+40	0.0912	0.72	Q				
8+45	0.0963	0.75	VQ				
8+50	0.1019	0.81	Q				
8+55	0.1079	0.88	Q				
9+ 0	0.1142	0.91	Q				
9+ 5	0.1211	1.01	VQ				
9+10	0.1290	1.14	VQ				
9+15	0.1372	1.19	Q				
9+20	0.1458	1.26	VQ				
9+25	0.1551	1.34	VQ				
9+30	0.1645	1.38	VQ				
9+35	0.1745	1.44	Q				
9+40	0.1849	1.52	VQ				
9+45	0.1956	1.55	VQ				
9+50	0.2067	1.61	Q				
9+55	0.2183	1.68	Q				
10+ 0	0.2301	1.72	Q				
10+ 5	0.2401	1.45	Q V				
10+10	0.2476	1.08	Q V				
10+15	0.2543	0.97	Q V				
10+20	0.2605	0.91	Q V				
10+25	0.2666	0.87	Q V				
10+30	0.2724	0.85	Q V				
10+35	0.2795	1.03	Q V				
10+40	0.2884	1.29	Q V				
10+45	0.2979	1.38	Q V				
10+50	0.3078	1.43	Q V				
10+55	0.3179	1.47	Q V				

11+ 0	0.3282	1.50	Q	V				
11+ 5	0.3385	1.49	Q	V				
11+10	0.3485	1.45	Q	V				
11+15	0.3585	1.45	Q	V				
11+20	0.3685	1.45	Q	V				
11+25	0.3785	1.45	Q	V				
11+30	0.3885	1.45	Q	V				
11+35	0.3980	1.37	Q	V				
11+40	0.4067	1.27	Q	V				
11+45	0.4152	1.23	Q	V				
11+50	0.4239	1.26	Q	V				
11+55	0.4329	1.31	Q	V				
12+ 0	0.4420	1.32	Q	V				
12+ 5	0.4532	1.62	Q	V				
12+10	0.4670	2.01	Q	V				
12+15	0.4818	2.15	Q	V				
12+20	0.4974	2.27	Q	V				
12+25	0.5138	2.38	Q	V				
12+30	0.5306	2.44	Q	V				
12+35	0.5482	2.56	Q	V				
12+40	0.5669	2.71	Q	V				
12+45	0.5860	2.77	Q	V				
12+50	0.6055	2.84	Q	V				
12+55	0.6257	2.92	Q	V				
13+ 0	0.6460	2.96	Q	V				
13+ 5	0.6680	3.18	Q	V				
13+10	0.6919	3.48	Q	V				
13+15	0.7166	3.59	Q	V				
13+20	0.7417	3.65	Q	V				
13+25	0.7671	3.69	Q	V				
13+30	0.7928	3.72	Q	V				
13+35	0.8155	3.30	Q	V				
13+40	0.8342	2.71	Q	V				
13+45	0.8516	2.53	Q	V				
13+50	0.8683	2.42	Q	V				
13+55	0.8845	2.36	Q	V				
14+ 0	0.9004	2.31	Q	V				
14+ 5	0.9172	2.44	Q	V				
14+10	0.9353	2.63	Q	V				
14+15	0.9538	2.68	Q	V				
14+20	0.9723	2.69	Q	V				
14+25	0.9906	2.66	Q	V				
14+30	1.0090	2.67	Q	V				
14+35	1.0275	2.68	Q	V				
14+40	1.0460	2.69	Q	V				
14+45	1.0646	2.70	Q	V				
14+50	1.0830	2.66	Q	V				
14+55	1.1009	2.61	Q	V				
15+ 0	1.1188	2.60	Q	V				
15+ 5	1.1364	2.55	Q	V				

15+10	1.1535	2.49		Q		V
15+15	1.1706	2.48		Q		V
15+20	1.1873	2.43		Q		V
15+25	1.2036	2.37		Q		V
15+30	1.2198	2.35		Q		V
15+35	1.2348	2.18		Q		V
15+40	1.2482	1.95		Q		V
15+45	1.2611	1.87		Q		V
15+50	1.2738	1.84		Q		V
15+55	1.2862	1.81		Q		V
16+ 0	1.2986	1.80		Q		V
16+ 5	1.3076	1.31		Q		V
16+10	1.3120	0.64	Q			V
16+15	1.3149	0.42	Q			V
16+20	1.3170	0.30	Q			V
16+25	1.3185	0.22	Q			V
16+30	1.3197	0.17	Q			V
16+35	1.3205	0.12	Q			V
16+40	1.3210	0.08	Q			V
16+45	1.3213	0.05	Q			V
16+50	1.3217	0.05	Q			V
16+55	1.3220	0.04	Q			V
17+ 0	1.3223	0.04	Q			V
17+ 5	1.3226	0.05	Q			V
17+10	1.3231	0.06	Q			V
17+15	1.3235	0.07	Q			V
17+20	1.3240	0.07	Q			V
17+25	1.3245	0.07	Q			V
17+30	1.3250	0.07	Q			V
17+35	1.3254	0.07	Q			V
17+40	1.3259	0.07	Q			V
17+45	1.3264	0.07	Q			V
17+50	1.3269	0.07	Q			V
17+55	1.3273	0.06	Q			V
18+ 0	1.3278	0.06	Q			V
18+ 5	1.3282	0.06	Q			V
18+10	1.3286	0.06	Q			V
18+15	1.3290	0.06	Q			V
18+20	1.3294	0.06	Q			V
18+25	1.3298	0.06	Q			V
18+30	1.3302	0.06	Q			V
18+35	1.3306	0.05	Q			V
18+40	1.3309	0.05	Q			V
18+45	1.3312	0.05	Q			V
18+50	1.3315	0.04	Q			V
18+55	1.3318	0.04	Q			V
19+ 0	1.3320	0.03	Q			V
19+ 5	1.3322	0.04	Q			V
19+10	1.3325	0.04	Q			V
19+15	1.3328	0.04	Q			V

19+20	1.3331	0.05	Q				V
19+25	1.3335	0.05	Q				V
19+30	1.3338	0.05	Q				V
19+35	1.3342	0.05	Q				V
19+40	1.3345	0.05	Q				V
19+45	1.3348	0.05	Q				V
19+50	1.3351	0.04	Q				V
19+55	1.3354	0.04	Q				V
20+ 0	1.3356	0.03	Q				V
20+ 5	1.3358	0.04	Q				V
20+10	1.3361	0.04	Q				V
20+15	1.3364	0.04	Q				V
20+20	1.3367	0.04	Q				V
20+25	1.3370	0.04	Q				V
20+30	1.3373	0.04	Q				V
20+35	1.3376	0.04	Q				V
20+40	1.3379	0.04	Q				V
20+45	1.3382	0.04	Q				V
20+50	1.3384	0.04	Q				V
20+55	1.3387	0.03	Q				V
21+ 0	1.3389	0.03	Q				V
21+ 5	1.3391	0.04	Q				V
21+10	1.3394	0.04	Q				V
21+15	1.3397	0.04	Q				V
21+20	1.3399	0.04	Q				V
21+25	1.3402	0.03	Q				V
21+30	1.3404	0.03	Q				V
21+35	1.3406	0.03	Q				V
21+40	1.3409	0.04	Q				V
21+45	1.3412	0.04	Q				V
21+50	1.3414	0.04	Q				V
21+55	1.3417	0.03	Q				V
22+ 0	1.3419	0.03	Q				V
22+ 5	1.3421	0.03	Q				V
22+10	1.3424	0.04	Q				V
22+15	1.3427	0.04	Q				V
22+20	1.3429	0.04	Q				V
22+25	1.3432	0.03	Q				V
22+30	1.3434	0.03	Q				V
22+35	1.3436	0.03	Q				V
22+40	1.3438	0.03	Q				V
22+45	1.3440	0.03	Q				V
22+50	1.3442	0.03	Q				V
22+55	1.3444	0.03	Q				V
23+ 0	1.3446	0.03	Q				V
23+ 5	1.3448	0.03	Q				V
23+10	1.3450	0.03	Q				V
23+15	1.3452	0.03	Q				V
23+20	1.3454	0.03	Q				V
23+25	1.3456	0.03	Q				V

23+30	1.3458	0.03	Q				V
23+35	1.3460	0.03	Q				V
23+40	1.3462	0.03	Q				V
23+45	1.3464	0.03	Q				V
23+50	1.3466	0.03	Q				V
23+55	1.3468	0.03	Q				V
24+ 0	1.3470	0.03	Q				V
24+ 5	1.3471	0.02	Q				V
24+10	1.3472	0.01	Q				V
24+15	1.3473	0.01	Q				V
24+20	1.3473	0.00	Q				V
24+25	1.3473	0.00	Q				V
24+30	1.3473	0.00	Q				V
24+35	1.3473	0.00	Q				V
24+40	1.3473	0.00	Q				V

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Unit Hydrograph Analysis

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Study date 02/22/21 File: CC02XHYDB24100.out

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

Program License Serial Number 6473

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

-----  
KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
EXISTING CONDITION - DMA B  
100YR, 24-HOUR STORM

-----  
Drainage Area = 8.73(Ac.) = 0.014 Sq. Mi.  
Drainage Area for Depth-Area Areal Adjustment = 8.73(Ac.) =  
0.014 Sq. Mi.  
Length along longest watercourse = 1076.00(Ft.)  
Length along longest watercourse measured to centroid = 538.00(Ft.)  
Length along longest watercourse = 0.204 Mi.  
Length along longest watercourse measured to centroid = 0.102 Mi.  
Difference in elevation = 14.10(Ft.)  
Slope along watercourse = 69.1896 Ft./Mi.  
Average Manning's 'N' = 0.040  
Lag time = 0.098 Hr.  
Lag time = 5.91 Min.  
25% of lag time = 1.48 Min.  
40% of lag time = 2.36 Min.  
Unit time = 5.00 Min.  
Duration of storm = 24 Hour(s)  
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.73	1.60	13.97

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.73	4.30	37.54

STORM EVENT (YEAR) = 100.00  
 Area Averaged 2-Year Rainfall = 1.600(In)  
 Area Averaged 100-Year Rainfall = 4.300(In)

Point rain (area averaged) = 4.300(In)  
 Areal adjustment factor = 100.00 %  
 Adjusted average point rain = 4.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.730	74.00	0.000
Total Area Entered =		8.73(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-3	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
74.0	87.4	0.160	0.000	0.160	1.000	0.160
Sum (F) =						0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160  
 Minimum soil loss rate ((In/Hr)) = 0.080  
 (for 24 hour storm duration)  
 Soil low loss rate (decimal) = 0.900

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 U n i t H y d r o g r a p h  
 MOUNTAIN S-Curve  
 -----

Unit Hydrograph Data  
 -----

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	84.639	18.434
2	0.167	169.278	37.827
3	0.250	253.917	14.156
4	0.333	338.556	8.146
5	0.417	423.196	5.204
6	0.500	507.835	3.742
7	0.583	592.474	2.974
8	0.667	677.113	2.411



9	0.750	761.752	1.980	0.174
10	0.833	846.391	1.599	0.141
11	0.917	931.030	1.524	0.134
12	1.000	1015.669	2.003	0.176
			Sum = 100.000	Sum= 8.798

-----

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.034	( 0.283)	0.031	0.003
2	0.17	0.07	0.034	( 0.282)	0.031	0.003
3	0.25	0.07	0.034	( 0.281)	0.031	0.003
4	0.33	0.10	0.052	( 0.280)	0.046	0.005
5	0.42	0.10	0.052	( 0.279)	0.046	0.005
6	0.50	0.10	0.052	( 0.278)	0.046	0.005
7	0.58	0.10	0.052	( 0.276)	0.046	0.005
8	0.67	0.10	0.052	( 0.275)	0.046	0.005
9	0.75	0.10	0.052	( 0.274)	0.046	0.005
10	0.83	0.13	0.069	( 0.273)	0.062	0.007
11	0.92	0.13	0.069	( 0.272)	0.062	0.007
12	1.00	0.13	0.069	( 0.271)	0.062	0.007
13	1.08	0.10	0.052	( 0.270)	0.046	0.005
14	1.17	0.10	0.052	( 0.269)	0.046	0.005
15	1.25	0.10	0.052	( 0.268)	0.046	0.005
16	1.33	0.10	0.052	( 0.267)	0.046	0.005
17	1.42	0.10	0.052	( 0.266)	0.046	0.005
18	1.50	0.10	0.052	( 0.265)	0.046	0.005
19	1.58	0.10	0.052	( 0.264)	0.046	0.005
20	1.67	0.10	0.052	( 0.263)	0.046	0.005
21	1.75	0.10	0.052	( 0.262)	0.046	0.005
22	1.83	0.13	0.069	( 0.260)	0.062	0.007
23	1.92	0.13	0.069	( 0.259)	0.062	0.007
24	2.00	0.13	0.069	( 0.258)	0.062	0.007
25	2.08	0.13	0.069	( 0.257)	0.062	0.007
26	2.17	0.13	0.069	( 0.256)	0.062	0.007
27	2.25	0.13	0.069	( 0.255)	0.062	0.007
28	2.33	0.13	0.069	( 0.254)	0.062	0.007
29	2.42	0.13	0.069	( 0.253)	0.062	0.007
30	2.50	0.13	0.069	( 0.252)	0.062	0.007
31	2.58	0.17	0.086	( 0.251)	0.077	0.009
32	2.67	0.17	0.086	( 0.250)	0.077	0.009
33	2.75	0.17	0.086	( 0.249)	0.077	0.009
34	2.83	0.17	0.086	( 0.248)	0.077	0.009
35	2.92	0.17	0.086	( 0.247)	0.077	0.009
36	3.00	0.17	0.086	( 0.246)	0.077	0.009
37	3.08	0.17	0.086	( 0.245)	0.077	0.009

38	3.17	0.17	0.086	( 0.244)	0.077	0.009
39	3.25	0.17	0.086	( 0.243)	0.077	0.009
40	3.33	0.17	0.086	( 0.242)	0.077	0.009
41	3.42	0.17	0.086	( 0.241)	0.077	0.009
42	3.50	0.17	0.086	( 0.240)	0.077	0.009
43	3.58	0.17	0.086	( 0.239)	0.077	0.009
44	3.67	0.17	0.086	( 0.238)	0.077	0.009
45	3.75	0.17	0.086	( 0.237)	0.077	0.009
46	3.83	0.20	0.103	( 0.236)	0.093	0.010
47	3.92	0.20	0.103	( 0.235)	0.093	0.010
48	4.00	0.20	0.103	( 0.234)	0.093	0.010
49	4.08	0.20	0.103	( 0.233)	0.093	0.010
50	4.17	0.20	0.103	( 0.232)	0.093	0.010
51	4.25	0.20	0.103	( 0.231)	0.093	0.010
52	4.33	0.23	0.120	( 0.230)	0.108	0.012
53	4.42	0.23	0.120	( 0.229)	0.108	0.012
54	4.50	0.23	0.120	( 0.228)	0.108	0.012
55	4.58	0.23	0.120	( 0.227)	0.108	0.012
56	4.67	0.23	0.120	( 0.226)	0.108	0.012
57	4.75	0.23	0.120	( 0.225)	0.108	0.012
58	4.83	0.27	0.138	( 0.224)	0.124	0.014
59	4.92	0.27	0.138	( 0.223)	0.124	0.014
60	5.00	0.27	0.138	( 0.222)	0.124	0.014
61	5.08	0.20	0.103	( 0.221)	0.093	0.010
62	5.17	0.20	0.103	( 0.220)	0.093	0.010
63	5.25	0.20	0.103	( 0.219)	0.093	0.010
64	5.33	0.23	0.120	( 0.218)	0.108	0.012
65	5.42	0.23	0.120	( 0.217)	0.108	0.012
66	5.50	0.23	0.120	( 0.216)	0.108	0.012
67	5.58	0.27	0.138	( 0.215)	0.124	0.014
68	5.67	0.27	0.138	( 0.214)	0.124	0.014
69	5.75	0.27	0.138	( 0.214)	0.124	0.014
70	5.83	0.27	0.138	( 0.213)	0.124	0.014
71	5.92	0.27	0.138	( 0.212)	0.124	0.014
72	6.00	0.27	0.138	( 0.211)	0.124	0.014
73	6.08	0.30	0.155	( 0.210)	0.139	0.015
74	6.17	0.30	0.155	( 0.209)	0.139	0.015
75	6.25	0.30	0.155	( 0.208)	0.139	0.015
76	6.33	0.30	0.155	( 0.207)	0.139	0.015
77	6.42	0.30	0.155	( 0.206)	0.139	0.015
78	6.50	0.30	0.155	( 0.205)	0.139	0.015
79	6.58	0.33	0.172	( 0.204)	0.155	0.017
80	6.67	0.33	0.172	( 0.203)	0.155	0.017
81	6.75	0.33	0.172	( 0.202)	0.155	0.017
82	6.83	0.33	0.172	( 0.201)	0.155	0.017
83	6.92	0.33	0.172	( 0.201)	0.155	0.017
84	7.00	0.33	0.172	( 0.200)	0.155	0.017
85	7.08	0.33	0.172	( 0.199)	0.155	0.017
86	7.17	0.33	0.172	( 0.198)	0.155	0.017
87	7.25	0.33	0.172	( 0.197)	0.155	0.017

88	7.33	0.37	0.189	( 0.196)	0.170	0.019
89	7.42	0.37	0.189	( 0.195)	0.170	0.019
90	7.50	0.37	0.189	( 0.194)	0.170	0.019
91	7.58	0.40	0.206	( 0.193)	0.186	0.021
92	7.67	0.40	0.206	( 0.192)	0.186	0.021
93	7.75	0.40	0.206	( 0.192)	0.186	0.021
94	7.83	0.43	0.224	0.191 ( 0.201)		0.033
95	7.92	0.43	0.224	0.190 ( 0.201)		0.034
96	8.00	0.43	0.224	0.189 ( 0.201)		0.035
97	8.08	0.50	0.258	0.188 ( 0.232)		0.070
98	8.17	0.50	0.258	0.187 ( 0.232)		0.071
99	8.25	0.50	0.258	0.186 ( 0.232)		0.072
100	8.33	0.50	0.258	0.185 ( 0.232)		0.073
101	8.42	0.50	0.258	0.185 ( 0.232)		0.073
102	8.50	0.50	0.258	0.184 ( 0.232)		0.074
103	8.58	0.53	0.275	0.183 ( 0.248)		0.092
104	8.67	0.53	0.275	0.182 ( 0.248)		0.093
105	8.75	0.53	0.275	0.181 ( 0.248)		0.094
106	8.83	0.57	0.292	0.180 ( 0.263)		0.112
107	8.92	0.57	0.292	0.179 ( 0.263)		0.113
108	9.00	0.57	0.292	0.179 ( 0.263)		0.114
109	9.08	0.63	0.327	0.178 ( 0.294)		0.149
110	9.17	0.63	0.327	0.177 ( 0.294)		0.150
111	9.25	0.63	0.327	0.176 ( 0.294)		0.151
112	9.33	0.67	0.344	0.175 ( 0.310)		0.169
113	9.42	0.67	0.344	0.174 ( 0.310)		0.170
114	9.50	0.67	0.344	0.174 ( 0.310)		0.170
115	9.58	0.70	0.361	0.173 ( 0.325)		0.188
116	9.67	0.70	0.361	0.172 ( 0.325)		0.189
117	9.75	0.70	0.361	0.171 ( 0.325)		0.190
118	9.83	0.73	0.378	0.170 ( 0.341)		0.208
119	9.92	0.73	0.378	0.169 ( 0.341)		0.209
120	10.00	0.73	0.378	0.169 ( 0.341)		0.210
121	10.08	0.50	0.258	0.168 ( 0.232)		0.090
122	10.17	0.50	0.258	0.167 ( 0.232)		0.091
123	10.25	0.50	0.258	0.166 ( 0.232)		0.092
124	10.33	0.50	0.258	0.165 ( 0.232)		0.093
125	10.42	0.50	0.258	0.165 ( 0.232)		0.093
126	10.50	0.50	0.258	0.164 ( 0.232)		0.094
127	10.58	0.67	0.344	0.163 ( 0.310)		0.181
128	10.67	0.67	0.344	0.162 ( 0.310)		0.182
129	10.75	0.67	0.344	0.161 ( 0.310)		0.183
130	10.83	0.67	0.344	0.161 ( 0.310)		0.183
131	10.92	0.67	0.344	0.160 ( 0.310)		0.184
132	11.00	0.67	0.344	0.159 ( 0.310)		0.185
133	11.08	0.63	0.327	0.158 ( 0.294)		0.169
134	11.17	0.63	0.327	0.157 ( 0.294)		0.169
135	11.25	0.63	0.327	0.157 ( 0.294)		0.170
136	11.33	0.63	0.327	0.156 ( 0.294)		0.171
137	11.42	0.63	0.327	0.155 ( 0.294)		0.172

138	11.50	0.63	0.327	0.154	( 0.294)	0.172
139	11.58	0.57	0.292	0.154	( 0.263)	0.139
140	11.67	0.57	0.292	0.153	( 0.263)	0.140
141	11.75	0.57	0.292	0.152	( 0.263)	0.140
142	11.83	0.60	0.310	0.151	( 0.279)	0.158
143	11.92	0.60	0.310	0.151	( 0.279)	0.159
144	12.00	0.60	0.310	0.150	( 0.279)	0.160
145	12.08	0.83	0.430	0.149	( 0.387)	0.281
146	12.17	0.83	0.430	0.148	( 0.387)	0.282
147	12.25	0.83	0.430	0.148	( 0.387)	0.282
148	12.33	0.87	0.447	0.147	( 0.402)	0.300
149	12.42	0.87	0.447	0.146	( 0.402)	0.301
150	12.50	0.87	0.447	0.145	( 0.402)	0.302
151	12.58	0.93	0.482	0.145	( 0.433)	0.337
152	12.67	0.93	0.482	0.144	( 0.433)	0.338
153	12.75	0.93	0.482	0.143	( 0.433)	0.338
154	12.83	0.97	0.499	0.142	( 0.449)	0.356
155	12.92	0.97	0.499	0.142	( 0.449)	0.357
156	13.00	0.97	0.499	0.141	( 0.449)	0.358
157	13.08	1.13	0.585	0.140	( 0.526)	0.445
158	13.17	1.13	0.585	0.140	( 0.526)	0.445
159	13.25	1.13	0.585	0.139	( 0.526)	0.446
160	13.33	1.13	0.585	0.138	( 0.526)	0.447
161	13.42	1.13	0.585	0.137	( 0.526)	0.447
162	13.50	1.13	0.585	0.137	( 0.526)	0.448
163	13.58	0.77	0.396	0.136	( 0.356)	0.260
164	13.67	0.77	0.396	0.135	( 0.356)	0.260
165	13.75	0.77	0.396	0.135	( 0.356)	0.261
166	13.83	0.77	0.396	0.134	( 0.356)	0.262
167	13.92	0.77	0.396	0.133	( 0.356)	0.262
168	14.00	0.77	0.396	0.133	( 0.356)	0.263
169	14.08	0.90	0.464	0.132	( 0.418)	0.332
170	14.17	0.90	0.464	0.131	( 0.418)	0.333
171	14.25	0.90	0.464	0.131	( 0.418)	0.334
172	14.33	0.87	0.447	0.130	( 0.402)	0.317
173	14.42	0.87	0.447	0.129	( 0.402)	0.318
174	14.50	0.87	0.447	0.129	( 0.402)	0.319
175	14.58	0.87	0.447	0.128	( 0.402)	0.319
176	14.67	0.87	0.447	0.127	( 0.402)	0.320
177	14.75	0.87	0.447	0.127	( 0.402)	0.321
178	14.83	0.83	0.430	0.126	( 0.387)	0.304
179	14.92	0.83	0.430	0.125	( 0.387)	0.305
180	15.00	0.83	0.430	0.125	( 0.387)	0.305
181	15.08	0.80	0.413	0.124	( 0.372)	0.289
182	15.17	0.80	0.413	0.123	( 0.372)	0.289
183	15.25	0.80	0.413	0.123	( 0.372)	0.290
184	15.33	0.77	0.396	0.122	( 0.356)	0.273
185	15.42	0.77	0.396	0.122	( 0.356)	0.274
186	15.50	0.77	0.396	0.121	( 0.356)	0.275
187	15.58	0.63	0.327	0.120	( 0.294)	0.207

188	15.67	0.63	0.327	0.120	( 0.294)	0.207
189	15.75	0.63	0.327	0.119	( 0.294)	0.208
190	15.83	0.63	0.327	0.118	( 0.294)	0.208
191	15.92	0.63	0.327	0.118	( 0.294)	0.209
192	16.00	0.63	0.327	0.117	( 0.294)	0.210
193	16.08	0.13	0.069	( 0.117)	0.062	0.007
194	16.17	0.13	0.069	( 0.116)	0.062	0.007
195	16.25	0.13	0.069	( 0.115)	0.062	0.007
196	16.33	0.13	0.069	( 0.115)	0.062	0.007
197	16.42	0.13	0.069	( 0.114)	0.062	0.007
198	16.50	0.13	0.069	( 0.114)	0.062	0.007
199	16.58	0.10	0.052	( 0.113)	0.046	0.005
200	16.67	0.10	0.052	( 0.113)	0.046	0.005
201	16.75	0.10	0.052	( 0.112)	0.046	0.005
202	16.83	0.10	0.052	( 0.111)	0.046	0.005
203	16.92	0.10	0.052	( 0.111)	0.046	0.005
204	17.00	0.10	0.052	( 0.110)	0.046	0.005
205	17.08	0.17	0.086	( 0.110)	0.077	0.009
206	17.17	0.17	0.086	( 0.109)	0.077	0.009
207	17.25	0.17	0.086	( 0.109)	0.077	0.009
208	17.33	0.17	0.086	( 0.108)	0.077	0.009
209	17.42	0.17	0.086	( 0.108)	0.077	0.009
210	17.50	0.17	0.086	( 0.107)	0.077	0.009
211	17.58	0.17	0.086	( 0.106)	0.077	0.009
212	17.67	0.17	0.086	( 0.106)	0.077	0.009
213	17.75	0.17	0.086	( 0.105)	0.077	0.009
214	17.83	0.13	0.069	( 0.105)	0.062	0.007
215	17.92	0.13	0.069	( 0.104)	0.062	0.007
216	18.00	0.13	0.069	( 0.104)	0.062	0.007
217	18.08	0.13	0.069	( 0.103)	0.062	0.007
218	18.17	0.13	0.069	( 0.103)	0.062	0.007
219	18.25	0.13	0.069	( 0.102)	0.062	0.007
220	18.33	0.13	0.069	( 0.102)	0.062	0.007
221	18.42	0.13	0.069	( 0.101)	0.062	0.007
222	18.50	0.13	0.069	( 0.101)	0.062	0.007
223	18.58	0.10	0.052	( 0.100)	0.046	0.005
224	18.67	0.10	0.052	( 0.100)	0.046	0.005
225	18.75	0.10	0.052	( 0.099)	0.046	0.005
226	18.83	0.07	0.034	( 0.099)	0.031	0.003
227	18.92	0.07	0.034	( 0.098)	0.031	0.003
228	19.00	0.07	0.034	( 0.098)	0.031	0.003
229	19.08	0.10	0.052	( 0.098)	0.046	0.005
230	19.17	0.10	0.052	( 0.097)	0.046	0.005
231	19.25	0.10	0.052	( 0.097)	0.046	0.005
232	19.33	0.13	0.069	( 0.096)	0.062	0.007
233	19.42	0.13	0.069	( 0.096)	0.062	0.007
234	19.50	0.13	0.069	( 0.095)	0.062	0.007
235	19.58	0.10	0.052	( 0.095)	0.046	0.005
236	19.67	0.10	0.052	( 0.094)	0.046	0.005
237	19.75	0.10	0.052	( 0.094)	0.046	0.005

238	19.83	0.07	0.034	( 0.094)	0.031	0.003
239	19.92	0.07	0.034	( 0.093)	0.031	0.003
240	20.00	0.07	0.034	( 0.093)	0.031	0.003
241	20.08	0.10	0.052	( 0.092)	0.046	0.005
242	20.17	0.10	0.052	( 0.092)	0.046	0.005
243	20.25	0.10	0.052	( 0.091)	0.046	0.005
244	20.33	0.10	0.052	( 0.091)	0.046	0.005
245	20.42	0.10	0.052	( 0.091)	0.046	0.005
246	20.50	0.10	0.052	( 0.090)	0.046	0.005
247	20.58	0.10	0.052	( 0.090)	0.046	0.005
248	20.67	0.10	0.052	( 0.090)	0.046	0.005
249	20.75	0.10	0.052	( 0.089)	0.046	0.005
250	20.83	0.07	0.034	( 0.089)	0.031	0.003
251	20.92	0.07	0.034	( 0.088)	0.031	0.003
252	21.00	0.07	0.034	( 0.088)	0.031	0.003
253	21.08	0.10	0.052	( 0.088)	0.046	0.005
254	21.17	0.10	0.052	( 0.087)	0.046	0.005
255	21.25	0.10	0.052	( 0.087)	0.046	0.005
256	21.33	0.07	0.034	( 0.087)	0.031	0.003
257	21.42	0.07	0.034	( 0.086)	0.031	0.003
258	21.50	0.07	0.034	( 0.086)	0.031	0.003
259	21.58	0.10	0.052	( 0.086)	0.046	0.005
260	21.67	0.10	0.052	( 0.085)	0.046	0.005
261	21.75	0.10	0.052	( 0.085)	0.046	0.005
262	21.83	0.07	0.034	( 0.085)	0.031	0.003
263	21.92	0.07	0.034	( 0.085)	0.031	0.003
264	22.00	0.07	0.034	( 0.084)	0.031	0.003
265	22.08	0.10	0.052	( 0.084)	0.046	0.005
266	22.17	0.10	0.052	( 0.084)	0.046	0.005
267	22.25	0.10	0.052	( 0.083)	0.046	0.005
268	22.33	0.07	0.034	( 0.083)	0.031	0.003
269	22.42	0.07	0.034	( 0.083)	0.031	0.003
270	22.50	0.07	0.034	( 0.083)	0.031	0.003
271	22.58	0.07	0.034	( 0.082)	0.031	0.003
272	22.67	0.07	0.034	( 0.082)	0.031	0.003
273	22.75	0.07	0.034	( 0.082)	0.031	0.003
274	22.83	0.07	0.034	( 0.082)	0.031	0.003
275	22.92	0.07	0.034	( 0.082)	0.031	0.003
276	23.00	0.07	0.034	( 0.081)	0.031	0.003
277	23.08	0.07	0.034	( 0.081)	0.031	0.003
278	23.17	0.07	0.034	( 0.081)	0.031	0.003
279	23.25	0.07	0.034	( 0.081)	0.031	0.003
280	23.33	0.07	0.034	( 0.081)	0.031	0.003
281	23.42	0.07	0.034	( 0.081)	0.031	0.003
282	23.50	0.07	0.034	( 0.080)	0.031	0.003
283	23.58	0.07	0.034	( 0.080)	0.031	0.003
284	23.67	0.07	0.034	( 0.080)	0.031	0.003
285	23.75	0.07	0.034	( 0.080)	0.031	0.003
286	23.83	0.07	0.034	( 0.080)	0.031	0.003
287	23.92	0.07	0.034	( 0.080)	0.031	0.003

288 24.00 0.07 0.034 ( 0.080) 0.031 0.003  
 (Loss Rate Not Used)

Sum = 100.0 Sum = 23.2

Flood volume = Effective rainfall 1.93(In)  
 times area 8.7(Ac.)/[ (In)/(Ft.) ] = 1.4(Ac.Ft)  
 Total soil loss = 2.37(In)  
 Total soil loss = 1.721(Ac.Ft)  
 Total rainfall = 4.30(In)  
 Flood volume = 61287.0 Cubic Feet  
 Total soil loss = 74977.2 Cubic Feet

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 Peak flow rate of this hydrograph = 3.827(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))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01	Q				
0+10	0.0002	0.02	Q				
0+15	0.0003	0.02	Q				
0+20	0.0005	0.03	Q				
0+25	0.0007	0.03	Q				
0+30	0.0010	0.04	Q				
0+35	0.0012	0.04	Q				
0+40	0.0015	0.04	Q				
0+45	0.0018	0.04	Q				
0+50	0.0021	0.05	Q				
0+55	0.0025	0.05	Q				
1+ 0	0.0029	0.06	Q				
1+ 5	0.0032	0.05	Q				
1+10	0.0036	0.05	Q				
1+15	0.0039	0.05	Q				
1+20	0.0042	0.05	Q				
1+25	0.0046	0.05	Q				
1+30	0.0049	0.05	Q				
1+35	0.0052	0.05	Q				
1+40	0.0055	0.05	Q				
1+45	0.0058	0.05	Q				
1+50	0.0062	0.05	Q				
1+55	0.0065	0.05	Q				
2+ 0	0.0069	0.06	Q				
2+ 5	0.0073	0.06	Q				
2+10	0.0077	0.06	Q				
2+15	0.0081	0.06	Q				
2+20	0.0085	0.06	Q				

2+25	0.0089	0.06	Q
2+30	0.0094	0.06	Q
2+35	0.0098	0.06	Q
2+40	0.0103	0.07	Q
2+45	0.0108	0.07	Q
2+50	0.0113	0.07	Q
2+55	0.0118	0.07	Q
3+ 0	0.0123	0.07	Q
3+ 5	0.0128	0.07	Q
3+10	0.0133	0.07	Q
3+15	0.0138	0.07	Q
3+20	0.0143	0.08	Q
3+25	0.0148	0.08	Q
3+30	0.0154	0.08	Q
3+35	0.0159	0.08	Q
3+40	0.0164	0.08	Q
3+45	0.0169	0.08	Q
3+50	0.0175	0.08	Q
3+55	0.0181	0.08	Q
4+ 0	0.0186	0.09	Q
4+ 5	0.0193	0.09	Q
4+10	0.0199	0.09	Q
4+15	0.0205	0.09	Q
4+20	0.0211	0.09	Q
4+25	0.0218	0.10	Q
4+30	0.0225	0.10	Q
4+35	0.0232	0.10	Q
4+40	0.0239	0.10	Q
4+45	0.0246	0.10	Q
4+50	0.0253	0.11	Q
4+55	0.0261	0.11	Q
5+ 0	0.0269	0.12	Q
5+ 5	0.0277	0.11	Q
5+10	0.0284	0.10	Q
5+15	0.0291	0.10	Q
5+20	0.0297	0.10	Q
5+25	0.0305	0.10	Q
5+30	0.0312	0.10	Q
5+35	0.0319	0.11	Q
5+40	0.0327	0.11	Q
5+45	0.0335	0.12	Q
5+50	0.0343	0.12	Q
5+55	0.0351	0.12	Q
6+ 0	0.0359	0.12	QV
6+ 5	0.0368	0.12	QV
6+10	0.0377	0.13	QV
6+15	0.0386	0.13	QV
6+20	0.0395	0.13	QV
6+25	0.0404	0.13	QV
6+30	0.0413	0.13	QV



6+35	0.0423	0.14	QV				
6+40	0.0433	0.14	QV				
6+45	0.0443	0.15	QV				
6+50	0.0453	0.15	QV				
6+55	0.0463	0.15	QV				
7+ 0	0.0473	0.15	QV				
7+ 5	0.0484	0.15	QV				
7+10	0.0494	0.15	QV				
7+15	0.0504	0.15	QV				
7+20	0.0515	0.15	QV				
7+25	0.0526	0.16	QV				
7+30	0.0537	0.16	QV				
7+35	0.0549	0.17	QV				
7+40	0.0561	0.17	QV				
7+45	0.0573	0.18	QV				
7+50	0.0586	0.20	QV				
7+55	0.0603	0.24	QV				
8+ 0	0.0621	0.26	Q				
8+ 5	0.0644	0.33	Q				
8+10	0.0675	0.46	Q				
8+15	0.0710	0.51	Q				
8+20	0.0748	0.55	Q				
8+25	0.0788	0.57	Q				
8+30	0.0828	0.59	Q				
8+35	0.0872	0.64	Q				
8+40	0.0922	0.71	Q				
8+45	0.0973	0.75	VQ				
8+50	0.1029	0.80	VQ				
8+55	0.1089	0.88	Q				
9+ 0	0.1153	0.92	Q				
9+ 5	0.1222	1.00	VQ				
9+10	0.1300	1.13	VQ				
9+15	0.1382	1.19	VQ				
9+20	0.1469	1.26	VQ				
9+25	0.1561	1.35	VQ				
9+30	0.1657	1.39	VQ				
9+35	0.1757	1.45	VQ				
9+40	0.1863	1.53	VQ				
9+45	0.1972	1.58	VQ				
9+50	0.2084	1.63	VQ				
9+55	0.2202	1.72	Q				
10+ 0	0.2324	1.76	VQ				
10+ 5	0.2433	1.59	Q				
10+10	0.2516	1.21	Q V				
10+15	0.2591	1.08	Q V				
10+20	0.2660	1.01	Q V				
10+25	0.2726	0.96	Q V				
10+30	0.2791	0.94	Q V				
10+35	0.2864	1.06	Q V				
10+40	0.2955	1.33	Q V				

10+45	0.3053	1.42	Q	V				
10+50	0.3154	1.47	Q	V				
10+55	0.3258	1.50	Q	V				
11+ 0	0.3362	1.52	Q	V				
11+ 5	0.3467	1.52	Q	V				
11+10	0.3570	1.49	Q	V				
11+15	0.3672	1.49	Q	V				
11+20	0.3775	1.49	Q	V				
11+25	0.3879	1.50	Q	V				
11+30	0.3983	1.52	Q	V				
11+35	0.4084	1.47	Q	V				
11+40	0.4178	1.36	Q	V				
11+45	0.4269	1.32	Q	V				
11+50	0.4360	1.32	Q	V				
11+55	0.4454	1.37	Q	V				
12+ 0	0.4550	1.38	Q	V				
12+ 5	0.4659	1.59	Q	V				
12+10	0.4797	2.00	Q	V				
12+15	0.4945	2.15	Q	V				
12+20	0.5102	2.27	Q	V				
12+25	0.5266	2.39	Q	V				
12+30	0.5436	2.46	Q	V				
12+35	0.5612	2.57	Q	V				
12+40	0.5800	2.72	Q	V				
12+45	0.5993	2.80	Q	V				
12+50	0.6191	2.88	Q	V				
12+55	0.6397	2.98	Q	V				
13+ 0	0.6606	3.04	Q	V				
13+ 5	0.6828	3.21	Q	V				
13+10	0.7070	3.52	Q	V				
13+15	0.7322	3.65	Q	V				
13+20	0.7579	3.73	Q	V				
13+25	0.7839	3.78	Q	V				
13+30	0.8103	3.83	Q	V				
13+35	0.8348	3.55	Q	V				
13+40	0.8551	2.95	Q	V				
13+45	0.8739	2.74	Q	V				
13+50	0.8920	2.62	Q	V				
13+55	0.9095	2.55	Q	V				
14+ 0	0.9268	2.51	Q	V				
14+ 5	0.9445	2.58	Q	V				
14+10	0.9636	2.77	Q	V				
14+15	0.9831	2.83	Q	V				
14+20	1.0026	2.83	Q	V				
14+25	1.0218	2.79	Q	V				
14+30	1.0408	2.76	Q	V				
14+35	1.0599	2.77	Q	V				
14+40	1.0791	2.78	Q	V				
14+45	1.0984	2.80	Q	V				
14+50	1.1175	2.78	Q	V				

14+55	1.1363	2.73		Q		V
15+ 0	1.1551	2.73		Q		V
15+ 5	1.1736	2.69		Q		V
15+10	1.1917	2.63		Q		V
15+15	1.2097	2.60		Q		V
15+20	1.2273	2.56		Q		V
15+25	1.2445	2.50		Q		V
15+30	1.2616	2.48		Q		V
15+35	1.2778	2.35		Q		V
15+40	1.2923	2.11		Q		V
15+45	1.3063	2.02		Q		V
15+50	1.3198	1.97		Q		V
15+55	1.3332	1.94		Q		V
16+ 0	1.3464	1.92		Q		V
16+ 5	1.3572	1.57		Q		V
16+10	1.3633	0.88	Q			V
16+15	1.3675	0.62	Q			V
16+20	1.3707	0.46	Q			V
16+25	1.3732	0.36	Q			V
16+30	1.3751	0.28	Q			V
16+35	1.3767	0.23	Q			V
16+40	1.3779	0.18	Q			V
16+45	1.3789	0.14	Q			V
16+50	1.3796	0.11	Q			V
16+55	1.3802	0.08	Q			V
17+ 0	1.3805	0.05	Q			V
17+ 5	1.3809	0.05	Q			V
17+10	1.3813	0.06	Q			V
17+15	1.3818	0.07	Q			V
17+20	1.3823	0.07	Q			V
17+25	1.3828	0.07	Q			V
17+30	1.3833	0.07	Q			V
17+35	1.3838	0.07	Q			V
17+40	1.3843	0.07	Q			V
17+45	1.3848	0.07	Q			V
17+50	1.3853	0.07	Q			V
17+55	1.3858	0.07	Q			V
18+ 0	1.3862	0.07	Q			V
18+ 5	1.3866	0.06	Q			V
18+10	1.3871	0.06	Q			V
18+15	1.3875	0.06	Q			V
18+20	1.3879	0.06	Q			V
18+25	1.3884	0.06	Q			V
18+30	1.3888	0.06	Q			V
18+35	1.3892	0.06	Q			V
18+40	1.3895	0.05	Q			V
18+45	1.3899	0.05	Q			V
18+50	1.3902	0.05	Q			V
18+55	1.3905	0.04	Q			V
19+ 0	1.3907	0.04	Q			V

19+ 5	1.3910	0.04	Q				V
19+10	1.3913	0.04	Q				V
19+15	1.3916	0.04	Q				V
19+20	1.3919	0.05	Q				V
19+25	1.3923	0.05	Q				V
19+30	1.3926	0.05	Q				V
19+35	1.3930	0.05	Q				V
19+40	1.3933	0.05	Q				V
19+45	1.3937	0.05	Q				V
19+50	1.3940	0.04	Q				V
19+55	1.3942	0.04	Q				V
20+ 0	1.3945	0.04	Q				V
20+ 5	1.3947	0.04	Q				V
20+10	1.3950	0.04	Q				V
20+15	1.3953	0.04	Q				V
20+20	1.3956	0.04	Q				V
20+25	1.3959	0.04	Q				V
20+30	1.3962	0.04	Q				V
20+35	1.3965	0.04	Q				V
20+40	1.3969	0.04	Q				V
20+45	1.3972	0.04	Q				V
20+50	1.3975	0.04	Q				V
20+55	1.3977	0.04	Q				V
21+ 0	1.3979	0.03	Q				V
21+ 5	1.3982	0.04	Q				V
21+10	1.3985	0.04	Q				V
21+15	1.3988	0.04	Q				V
21+20	1.3991	0.04	Q				V
21+25	1.3993	0.04	Q				V
21+30	1.3995	0.03	Q				V
21+35	1.3998	0.04	Q				V
21+40	1.4001	0.04	Q				V
21+45	1.4003	0.04	Q				V
21+50	1.4006	0.04	Q				V
21+55	1.4009	0.04	Q				V
22+ 0	1.4011	0.03	Q				V
22+ 5	1.4013	0.04	Q				V
22+10	1.4016	0.04	Q				V
22+15	1.4019	0.04	Q				V
22+20	1.4022	0.04	Q				V
22+25	1.4024	0.04	Q				V
22+30	1.4027	0.03	Q				V
22+35	1.4029	0.03	Q				V
22+40	1.4031	0.03	Q				V
22+45	1.4033	0.03	Q				V
22+50	1.4035	0.03	Q				V
22+55	1.4037	0.03	Q				V
23+ 0	1.4040	0.03	Q				V
23+ 5	1.4042	0.03	Q				V
23+10	1.4044	0.03	Q				V

23+15	1.4046	0.03	Q				V
23+20	1.4048	0.03	Q				V
23+25	1.4050	0.03	Q				V
23+30	1.4052	0.03	Q				V
23+35	1.4054	0.03	Q				V
23+40	1.4056	0.03	Q				V
23+45	1.4058	0.03	Q				V
23+50	1.4061	0.03	Q				V
23+55	1.4063	0.03	Q				V
24+ 0	1.4065	0.03	Q				V
24+ 5	1.4066	0.02	Q				V
24+10	1.4067	0.01	Q				V
24+15	1.4068	0.01	Q				V
24+20	1.4068	0.01	Q				V
24+25	1.4069	0.00	Q				V
24+30	1.4069	0.00	Q				V
24+35	1.4069	0.00	Q				V
24+40	1.4069	0.00	Q				V
24+45	1.4069	0.00	Q				V
24+50	1.4070	0.00	Q				V
24+55	1.4070	0.00	Q				V

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Unit Hydrograph Analysis

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Study date 02/22/21 File: CC02PHYDA24100.out

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

Program License Serial Number 6473

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

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
PROPOSED CONDITION - DMA A  
100YR, 24-HOUR STORM

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Drainage Area = 8.36(Ac.) = 0.013 Sq. Mi.  
Drainage Area for Depth-Area Areal Adjustment = 8.36(Ac.) =  
0.013 Sq. Mi.  
Length along longest watercourse = 1228.00(Ft.)  
Length along longest watercourse measured to centroid = 614.00(Ft.)  
Length along longest watercourse = 0.233 Mi.  
Length along longest watercourse measured to centroid = 0.116 Mi.  
Difference in elevation = 16.80(Ft.)  
Slope along watercourse = 72.2345 Ft./Mi.  
Average Manning's 'N' = 0.015  
Lag time = 0.040 Hr.  
Lag time = 2.43 Min.  
25% of lag time = 0.61 Min.  
40% of lag time = 0.97 Min.  
Unit time = 5.00 Min.  
Duration of storm = 24 Hour(s)  
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.36	1.60	13.38

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.36	4.30	35.95

STORM EVENT (YEAR) = 100.00  
 Area Averaged 2-Year Rainfall = 1.600(In)  
 Area Averaged 100-Year Rainfall = 4.300(In)

Point rain (area averaged) = 4.300(In)  
 Areal adjustment factor = 100.00 %  
 Adjusted average point rain = 4.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.360	69.00	0.500
Total Area Entered = 8.36(Ac.)		

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-3	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
69.0	84.4	0.194	0.500	0.107	1.000	0.107
Sum (F) =						0.107

Area averaged mean soil loss (F) (In/Hr) = 0.107  
 Minimum soil loss rate ((In/Hr)) = 0.053  
 (for 24 hour storm duration)  
 Soil low loss rate (decimal) = 0.500

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 U n i t H y d r o g r a p h  
 MOUNTAIN S-Curve  
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Unit Hydrograph Data  
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Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	205.817	42.698
2	0.167	411.633	36.230
3	0.250	617.450	10.253
4	0.333	823.266	5.628
5	0.417	1029.083	5.190
Sum = 100.000			Sum= 8.425

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.034	( 0.189)	0.017	0.017
2	0.17	0.07	0.034	( 0.188)	0.017	0.017
3	0.25	0.07	0.034	( 0.188)	0.017	0.017
4	0.33	0.10	0.052	( 0.187)	0.026	0.026
5	0.42	0.10	0.052	( 0.186)	0.026	0.026
6	0.50	0.10	0.052	( 0.185)	0.026	0.026
7	0.58	0.10	0.052	( 0.185)	0.026	0.026
8	0.67	0.10	0.052	( 0.184)	0.026	0.026
9	0.75	0.10	0.052	( 0.183)	0.026	0.026
10	0.83	0.13	0.069	( 0.182)	0.034	0.034
11	0.92	0.13	0.069	( 0.182)	0.034	0.034
12	1.00	0.13	0.069	( 0.181)	0.034	0.034
13	1.08	0.10	0.052	( 0.180)	0.026	0.026
14	1.17	0.10	0.052	( 0.180)	0.026	0.026
15	1.25	0.10	0.052	( 0.179)	0.026	0.026
16	1.33	0.10	0.052	( 0.178)	0.026	0.026
17	1.42	0.10	0.052	( 0.177)	0.026	0.026
18	1.50	0.10	0.052	( 0.177)	0.026	0.026
19	1.58	0.10	0.052	( 0.176)	0.026	0.026
20	1.67	0.10	0.052	( 0.175)	0.026	0.026
21	1.75	0.10	0.052	( 0.175)	0.026	0.026
22	1.83	0.13	0.069	( 0.174)	0.034	0.034
23	1.92	0.13	0.069	( 0.173)	0.034	0.034
24	2.00	0.13	0.069	( 0.173)	0.034	0.034
25	2.08	0.13	0.069	( 0.172)	0.034	0.034
26	2.17	0.13	0.069	( 0.171)	0.034	0.034
27	2.25	0.13	0.069	( 0.170)	0.034	0.034
28	2.33	0.13	0.069	( 0.170)	0.034	0.034
29	2.42	0.13	0.069	( 0.169)	0.034	0.034
30	2.50	0.13	0.069	( 0.168)	0.034	0.034
31	2.58	0.17	0.086	( 0.168)	0.043	0.043
32	2.67	0.17	0.086	( 0.167)	0.043	0.043
33	2.75	0.17	0.086	( 0.166)	0.043	0.043
34	2.83	0.17	0.086	( 0.166)	0.043	0.043
35	2.92	0.17	0.086	( 0.165)	0.043	0.043
36	3.00	0.17	0.086	( 0.164)	0.043	0.043
37	3.08	0.17	0.086	( 0.164)	0.043	0.043
38	3.17	0.17	0.086	( 0.163)	0.043	0.043
39	3.25	0.17	0.086	( 0.162)	0.043	0.043
40	3.33	0.17	0.086	( 0.162)	0.043	0.043
41	3.42	0.17	0.086	( 0.161)	0.043	0.043
42	3.50	0.17	0.086	( 0.160)	0.043	0.043
43	3.58	0.17	0.086	( 0.160)	0.043	0.043
44	3.67	0.17	0.086	( 0.159)	0.043	0.043



45	3.75	0.17	0.086	( 0.158)	0.043	0.043
46	3.83	0.20	0.103	( 0.158)	0.052	0.052
47	3.92	0.20	0.103	( 0.157)	0.052	0.052
48	4.00	0.20	0.103	( 0.156)	0.052	0.052
49	4.08	0.20	0.103	( 0.156)	0.052	0.052
50	4.17	0.20	0.103	( 0.155)	0.052	0.052
51	4.25	0.20	0.103	( 0.154)	0.052	0.052
52	4.33	0.23	0.120	( 0.154)	0.060	0.060
53	4.42	0.23	0.120	( 0.153)	0.060	0.060
54	4.50	0.23	0.120	( 0.152)	0.060	0.060
55	4.58	0.23	0.120	( 0.152)	0.060	0.060
56	4.67	0.23	0.120	( 0.151)	0.060	0.060
57	4.75	0.23	0.120	( 0.150)	0.060	0.060
58	4.83	0.27	0.138	( 0.150)	0.069	0.069
59	4.92	0.27	0.138	( 0.149)	0.069	0.069
60	5.00	0.27	0.138	( 0.148)	0.069	0.069
61	5.08	0.20	0.103	( 0.148)	0.052	0.052
62	5.17	0.20	0.103	( 0.147)	0.052	0.052
63	5.25	0.20	0.103	( 0.146)	0.052	0.052
64	5.33	0.23	0.120	( 0.146)	0.060	0.060
65	5.42	0.23	0.120	( 0.145)	0.060	0.060
66	5.50	0.23	0.120	( 0.145)	0.060	0.060
67	5.58	0.27	0.138	( 0.144)	0.069	0.069
68	5.67	0.27	0.138	( 0.143)	0.069	0.069
69	5.75	0.27	0.138	( 0.143)	0.069	0.069
70	5.83	0.27	0.138	( 0.142)	0.069	0.069
71	5.92	0.27	0.138	( 0.141)	0.069	0.069
72	6.00	0.27	0.138	( 0.141)	0.069	0.069
73	6.08	0.30	0.155	( 0.140)	0.077	0.077
74	6.17	0.30	0.155	( 0.139)	0.077	0.077
75	6.25	0.30	0.155	( 0.139)	0.077	0.077
76	6.33	0.30	0.155	( 0.138)	0.077	0.077
77	6.42	0.30	0.155	( 0.138)	0.077	0.077
78	6.50	0.30	0.155	( 0.137)	0.077	0.077
79	6.58	0.33	0.172	( 0.136)	0.086	0.086
80	6.67	0.33	0.172	( 0.136)	0.086	0.086
81	6.75	0.33	0.172	( 0.135)	0.086	0.086
82	6.83	0.33	0.172	( 0.135)	0.086	0.086
83	6.92	0.33	0.172	( 0.134)	0.086	0.086
84	7.00	0.33	0.172	( 0.133)	0.086	0.086
85	7.08	0.33	0.172	( 0.133)	0.086	0.086
86	7.17	0.33	0.172	( 0.132)	0.086	0.086
87	7.25	0.33	0.172	( 0.132)	0.086	0.086
88	7.33	0.37	0.189	( 0.131)	0.095	0.095
89	7.42	0.37	0.189	( 0.130)	0.095	0.095
90	7.50	0.37	0.189	( 0.130)	0.095	0.095
91	7.58	0.40	0.206	( 0.129)	0.103	0.103
92	7.67	0.40	0.206	( 0.129)	0.103	0.103
93	7.75	0.40	0.206	( 0.128)	0.103	0.103
94	7.83	0.43	0.224	( 0.127)	0.112	0.112

95	7.92	0.43	0.224	( 0.127)	0.112	0.112
96	8.00	0.43	0.224	( 0.126)	0.112	0.112
97	8.08	0.50	0.258	0.126	( 0.129)	0.132
98	8.17	0.50	0.258	0.125	( 0.129)	0.133
99	8.25	0.50	0.258	0.124	( 0.129)	0.134
100	8.33	0.50	0.258	0.124	( 0.129)	0.134
101	8.42	0.50	0.258	0.123	( 0.129)	0.135
102	8.50	0.50	0.258	0.123	( 0.129)	0.135
103	8.58	0.53	0.275	0.122	( 0.138)	0.153
104	8.67	0.53	0.275	0.122	( 0.138)	0.154
105	8.75	0.53	0.275	0.121	( 0.138)	0.154
106	8.83	0.57	0.292	0.120	( 0.146)	0.172
107	8.92	0.57	0.292	0.120	( 0.146)	0.173
108	9.00	0.57	0.292	0.119	( 0.146)	0.173
109	9.08	0.63	0.327	0.119	( 0.163)	0.208
110	9.17	0.63	0.327	0.118	( 0.163)	0.209
111	9.25	0.63	0.327	0.118	( 0.163)	0.209
112	9.33	0.67	0.344	0.117	( 0.172)	0.227
113	9.42	0.67	0.344	0.116	( 0.172)	0.228
114	9.50	0.67	0.344	0.116	( 0.172)	0.228
115	9.58	0.70	0.361	0.115	( 0.181)	0.246
116	9.67	0.70	0.361	0.115	( 0.181)	0.246
117	9.75	0.70	0.361	0.114	( 0.181)	0.247
118	9.83	0.73	0.378	0.114	( 0.189)	0.265
119	9.92	0.73	0.378	0.113	( 0.189)	0.265
120	10.00	0.73	0.378	0.113	( 0.189)	0.266
121	10.08	0.50	0.258	0.112	( 0.129)	0.146
122	10.17	0.50	0.258	0.111	( 0.129)	0.147
123	10.25	0.50	0.258	0.111	( 0.129)	0.147
124	10.33	0.50	0.258	0.110	( 0.129)	0.148
125	10.42	0.50	0.258	0.110	( 0.129)	0.148
126	10.50	0.50	0.258	0.109	( 0.129)	0.149
127	10.58	0.67	0.344	0.109	( 0.172)	0.235
128	10.67	0.67	0.344	0.108	( 0.172)	0.236
129	10.75	0.67	0.344	0.108	( 0.172)	0.236
130	10.83	0.67	0.344	0.107	( 0.172)	0.237
131	10.92	0.67	0.344	0.107	( 0.172)	0.237
132	11.00	0.67	0.344	0.106	( 0.172)	0.238
133	11.08	0.63	0.327	0.106	( 0.163)	0.221
134	11.17	0.63	0.327	0.105	( 0.163)	0.222
135	11.25	0.63	0.327	0.105	( 0.163)	0.222
136	11.33	0.63	0.327	0.104	( 0.163)	0.223
137	11.42	0.63	0.327	0.104	( 0.163)	0.223
138	11.50	0.63	0.327	0.103	( 0.163)	0.224
139	11.58	0.57	0.292	0.103	( 0.146)	0.190
140	11.67	0.57	0.292	0.102	( 0.146)	0.190
141	11.75	0.57	0.292	0.102	( 0.146)	0.191
142	11.83	0.60	0.310	0.101	( 0.155)	0.209
143	11.92	0.60	0.310	0.101	( 0.155)	0.209
144	12.00	0.60	0.310	0.100	( 0.155)	0.210

145	12.08	0.83	0.430	0.100	( 0.215)	0.330
146	12.17	0.83	0.430	0.099	( 0.215)	0.331
147	12.25	0.83	0.430	0.099	( 0.215)	0.331
148	12.33	0.87	0.447	0.098	( 0.224)	0.349
149	12.42	0.87	0.447	0.098	( 0.224)	0.350
150	12.50	0.87	0.447	0.097	( 0.224)	0.350
151	12.58	0.93	0.482	0.097	( 0.241)	0.385
152	12.67	0.93	0.482	0.096	( 0.241)	0.386
153	12.75	0.93	0.482	0.096	( 0.241)	0.386
154	12.83	0.97	0.499	0.095	( 0.249)	0.404
155	12.92	0.97	0.499	0.095	( 0.249)	0.404
156	13.00	0.97	0.499	0.094	( 0.249)	0.405
157	13.08	1.13	0.585	0.094	( 0.292)	0.491
158	13.17	1.13	0.585	0.093	( 0.292)	0.492
159	13.25	1.13	0.585	0.093	( 0.292)	0.492
160	13.33	1.13	0.585	0.092	( 0.292)	0.493
161	13.42	1.13	0.585	0.092	( 0.292)	0.493
162	13.50	1.13	0.585	0.091	( 0.292)	0.493
163	13.58	0.77	0.396	0.091	( 0.198)	0.305
164	13.67	0.77	0.396	0.090	( 0.198)	0.305
165	13.75	0.77	0.396	0.090	( 0.198)	0.306
166	13.83	0.77	0.396	0.089	( 0.198)	0.306
167	13.92	0.77	0.396	0.089	( 0.198)	0.307
168	14.00	0.77	0.396	0.089	( 0.198)	0.307
169	14.08	0.90	0.464	0.088	( 0.232)	0.376
170	14.17	0.90	0.464	0.088	( 0.232)	0.377
171	14.25	0.90	0.464	0.087	( 0.232)	0.377
172	14.33	0.87	0.447	0.087	( 0.224)	0.360
173	14.42	0.87	0.447	0.086	( 0.224)	0.361
174	14.50	0.87	0.447	0.086	( 0.224)	0.361
175	14.58	0.87	0.447	0.085	( 0.224)	0.362
176	14.67	0.87	0.447	0.085	( 0.224)	0.362
177	14.75	0.87	0.447	0.085	( 0.224)	0.363
178	14.83	0.83	0.430	0.084	( 0.215)	0.346
179	14.92	0.83	0.430	0.084	( 0.215)	0.346
180	15.00	0.83	0.430	0.083	( 0.215)	0.347
181	15.08	0.80	0.413	0.083	( 0.206)	0.330
182	15.17	0.80	0.413	0.082	( 0.206)	0.330
183	15.25	0.80	0.413	0.082	( 0.206)	0.331
184	15.33	0.77	0.396	0.082	( 0.198)	0.314
185	15.42	0.77	0.396	0.081	( 0.198)	0.314
186	15.50	0.77	0.396	0.081	( 0.198)	0.315
187	15.58	0.63	0.327	0.080	( 0.163)	0.246
188	15.67	0.63	0.327	0.080	( 0.163)	0.247
189	15.75	0.63	0.327	0.080	( 0.163)	0.247
190	15.83	0.63	0.327	0.079	( 0.163)	0.248
191	15.92	0.63	0.327	0.079	( 0.163)	0.248
192	16.00	0.63	0.327	0.078	( 0.163)	0.249
193	16.08	0.13	0.069	( 0.078)	0.034	0.034
194	16.17	0.13	0.069	( 0.077)	0.034	0.034

195	16.25	0.13	0.069	( 0.077)	0.034	0.034
196	16.33	0.13	0.069	( 0.077)	0.034	0.034
197	16.42	0.13	0.069	( 0.076)	0.034	0.034
198	16.50	0.13	0.069	( 0.076)	0.034	0.034
199	16.58	0.10	0.052	( 0.076)	0.026	0.026
200	16.67	0.10	0.052	( 0.075)	0.026	0.026
201	16.75	0.10	0.052	( 0.075)	0.026	0.026
202	16.83	0.10	0.052	( 0.074)	0.026	0.026
203	16.92	0.10	0.052	( 0.074)	0.026	0.026
204	17.00	0.10	0.052	( 0.074)	0.026	0.026
205	17.08	0.17	0.086	( 0.073)	0.043	0.043
206	17.17	0.17	0.086	( 0.073)	0.043	0.043
207	17.25	0.17	0.086	( 0.073)	0.043	0.043
208	17.33	0.17	0.086	( 0.072)	0.043	0.043
209	17.42	0.17	0.086	( 0.072)	0.043	0.043
210	17.50	0.17	0.086	( 0.071)	0.043	0.043
211	17.58	0.17	0.086	( 0.071)	0.043	0.043
212	17.67	0.17	0.086	( 0.071)	0.043	0.043
213	17.75	0.17	0.086	( 0.070)	0.043	0.043
214	17.83	0.13	0.069	( 0.070)	0.034	0.034
215	17.92	0.13	0.069	( 0.070)	0.034	0.034
216	18.00	0.13	0.069	( 0.069)	0.034	0.034
217	18.08	0.13	0.069	( 0.069)	0.034	0.034
218	18.17	0.13	0.069	( 0.069)	0.034	0.034
219	18.25	0.13	0.069	( 0.068)	0.034	0.034
220	18.33	0.13	0.069	( 0.068)	0.034	0.034
221	18.42	0.13	0.069	( 0.068)	0.034	0.034
222	18.50	0.13	0.069	( 0.067)	0.034	0.034
223	18.58	0.10	0.052	( 0.067)	0.026	0.026
224	18.67	0.10	0.052	( 0.067)	0.026	0.026
225	18.75	0.10	0.052	( 0.066)	0.026	0.026
226	18.83	0.07	0.034	( 0.066)	0.017	0.017
227	18.92	0.07	0.034	( 0.066)	0.017	0.017
228	19.00	0.07	0.034	( 0.065)	0.017	0.017
229	19.08	0.10	0.052	( 0.065)	0.026	0.026
230	19.17	0.10	0.052	( 0.065)	0.026	0.026
231	19.25	0.10	0.052	( 0.065)	0.026	0.026
232	19.33	0.13	0.069	( 0.064)	0.034	0.034
233	19.42	0.13	0.069	( 0.064)	0.034	0.034
234	19.50	0.13	0.069	( 0.064)	0.034	0.034
235	19.58	0.10	0.052	( 0.063)	0.026	0.026
236	19.67	0.10	0.052	( 0.063)	0.026	0.026
237	19.75	0.10	0.052	( 0.063)	0.026	0.026
238	19.83	0.07	0.034	( 0.062)	0.017	0.017
239	19.92	0.07	0.034	( 0.062)	0.017	0.017
240	20.00	0.07	0.034	( 0.062)	0.017	0.017
241	20.08	0.10	0.052	( 0.062)	0.026	0.026
242	20.17	0.10	0.052	( 0.061)	0.026	0.026
243	20.25	0.10	0.052	( 0.061)	0.026	0.026
244	20.33	0.10	0.052	( 0.061)	0.026	0.026

245	20.42	0.10	0.052	( 0.061)	0.026	0.026
246	20.50	0.10	0.052	( 0.060)	0.026	0.026
247	20.58	0.10	0.052	( 0.060)	0.026	0.026
248	20.67	0.10	0.052	( 0.060)	0.026	0.026
249	20.75	0.10	0.052	( 0.060)	0.026	0.026
250	20.83	0.07	0.034	( 0.059)	0.017	0.017
251	20.92	0.07	0.034	( 0.059)	0.017	0.017
252	21.00	0.07	0.034	( 0.059)	0.017	0.017
253	21.08	0.10	0.052	( 0.059)	0.026	0.026
254	21.17	0.10	0.052	( 0.058)	0.026	0.026
255	21.25	0.10	0.052	( 0.058)	0.026	0.026
256	21.33	0.07	0.034	( 0.058)	0.017	0.017
257	21.42	0.07	0.034	( 0.058)	0.017	0.017
258	21.50	0.07	0.034	( 0.057)	0.017	0.017
259	21.58	0.10	0.052	( 0.057)	0.026	0.026
260	21.67	0.10	0.052	( 0.057)	0.026	0.026
261	21.75	0.10	0.052	( 0.057)	0.026	0.026
262	21.83	0.07	0.034	( 0.057)	0.017	0.017
263	21.92	0.07	0.034	( 0.056)	0.017	0.017
264	22.00	0.07	0.034	( 0.056)	0.017	0.017
265	22.08	0.10	0.052	( 0.056)	0.026	0.026
266	22.17	0.10	0.052	( 0.056)	0.026	0.026
267	22.25	0.10	0.052	( 0.056)	0.026	0.026
268	22.33	0.07	0.034	( 0.056)	0.017	0.017
269	22.42	0.07	0.034	( 0.055)	0.017	0.017
270	22.50	0.07	0.034	( 0.055)	0.017	0.017
271	22.58	0.07	0.034	( 0.055)	0.017	0.017
272	22.67	0.07	0.034	( 0.055)	0.017	0.017
273	22.75	0.07	0.034	( 0.055)	0.017	0.017
274	22.83	0.07	0.034	( 0.055)	0.017	0.017
275	22.92	0.07	0.034	( 0.054)	0.017	0.017
276	23.00	0.07	0.034	( 0.054)	0.017	0.017
277	23.08	0.07	0.034	( 0.054)	0.017	0.017
278	23.17	0.07	0.034	( 0.054)	0.017	0.017
279	23.25	0.07	0.034	( 0.054)	0.017	0.017
280	23.33	0.07	0.034	( 0.054)	0.017	0.017
281	23.42	0.07	0.034	( 0.054)	0.017	0.017
282	23.50	0.07	0.034	( 0.054)	0.017	0.017
283	23.58	0.07	0.034	( 0.054)	0.017	0.017
284	23.67	0.07	0.034	( 0.054)	0.017	0.017
285	23.75	0.07	0.034	( 0.053)	0.017	0.017
286	23.83	0.07	0.034	( 0.053)	0.017	0.017
287	23.92	0.07	0.034	( 0.053)	0.017	0.017
288	24.00	0.07	0.034	( 0.053)	0.017	0.017

(Loss Rate Not Used)

Sum = 100.0

Sum = 34.2

Flood volume = Effective rainfall 2.85(In)

times area 8.4(Ac.)/[ (In)/(Ft.) ] = 2.0(Ac.Ft)

Total soil loss = 1.45(In)

Total soil loss = 1.011(Ac.Ft)

Total rainfall = 4.30(In)  
 Flood volume = 86450.3 Cubic Feet  
 Total soil loss = 44038.8 Cubic Feet

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 Peak flow rate of this hydrograph = 4.156(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	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.06	Q				
0+10	0.0012	0.11	Q				
0+15	0.0021	0.13	Q				
0+20	0.0033	0.17	Q				
0+25	0.0047	0.20	Q				
0+30	0.0061	0.21	Q				
0+35	0.0076	0.21	Q				
0+40	0.0091	0.22	Q				
0+45	0.0106	0.22	Q				
0+50	0.0123	0.25	Q				
0+55	0.0142	0.27	VQ				
1+ 0	0.0161	0.28	VQ				
1+ 5	0.0179	0.26	VQ				
1+10	0.0195	0.23	Q				
1+15	0.0210	0.23	Q				
1+20	0.0226	0.22	Q				
1+25	0.0240	0.22	Q				
1+30	0.0255	0.22	Q				
1+35	0.0270	0.22	Q				
1+40	0.0285	0.22	Q				
1+45	0.0300	0.22	Q				
1+50	0.0318	0.25	Q				
1+55	0.0336	0.27	VQ				
2+ 0	0.0356	0.28	VQ				
2+ 5	0.0376	0.29	VQ				
2+10	0.0396	0.29	VQ				
2+15	0.0416	0.29	VQ				
2+20	0.0435	0.29	VQ				
2+25	0.0455	0.29	VQ				
2+30	0.0475	0.29	VQ				
2+35	0.0498	0.32	Q				
2+40	0.0521	0.35	Q				
2+45	0.0546	0.35	Q				
2+50	0.0571	0.36	Q				
2+55	0.0596	0.36	Q				

3+ 0	0.0620	0.36	Q				
3+ 5	0.0645	0.36	Q				
3+10	0.0670	0.36	Q				
3+15	0.0695	0.36	Q				
3+20	0.0720	0.36	Q				
3+25	0.0745	0.36	Q				
3+30	0.0770	0.36	Q				
3+35	0.0795	0.36	Q				
3+40	0.0820	0.36	Q				
3+45	0.0845	0.36	Q				
3+50	0.0872	0.39	Q				
3+55	0.0901	0.42	Q				
4+ 0	0.0931	0.43	Q				
4+ 5	0.0960	0.43	Q				
4+10	0.0990	0.43	Q				
4+15	0.1020	0.43	QV				
4+20	0.1052	0.47	QV				
4+25	0.1086	0.49	QV				
4+30	0.1121	0.50	QV				
4+35	0.1155	0.50	Q				
4+40	0.1190	0.51	Q				
4+45	0.1225	0.51	Q				
4+50	0.1262	0.54	Q				
4+55	0.1301	0.56	Q				
5+ 0	0.1341	0.57	Q				
5+ 5	0.1376	0.51	Q				
5+10	0.1408	0.47	QV				
5+15	0.1439	0.45	QV				
5+20	0.1472	0.47	QV				
5+25	0.1506	0.49	Q V				
5+30	0.1540	0.50	Q V				
5+35	0.1577	0.53	QV				
5+40	0.1616	0.56	QV				
5+45	0.1655	0.57	QV				
5+50	0.1695	0.58	QV				
5+55	0.1735	0.58	QV				
6+ 0	0.1775	0.58	QV				
6+ 5	0.1817	0.61	QV				
6+10	0.1861	0.64	QV				
6+15	0.1905	0.64	QV				
6+20	0.1950	0.65	QV				
6+25	0.1995	0.65	Q V				
6+30	0.2040	0.65	Q V				
6+35	0.2087	0.68	Q V				
6+40	0.2135	0.71	Q V				
6+45	0.2185	0.72	Q V				
6+50	0.2235	0.72	Q V				
6+55	0.2284	0.72	Q V				
7+ 0	0.2334	0.72	Q V				
7+ 5	0.2384	0.72	Q V				

7+10	0.2434	0.72	Q V			
7+15	0.2484	0.72	Q V			
7+20	0.2536	0.76	Q V			
7+25	0.2590	0.78	Q V			
7+30	0.2644	0.79	Q V			
7+35	0.2701	0.82	Q V			
7+40	0.2760	0.85	Q V			
7+45	0.2820	0.86	Q V			
7+50	0.2881	0.90	Q V			
7+55	0.2945	0.93	Q V			
8+ 0	0.3010	0.93	Q V			
8+ 5	0.3079	1.01	Q V			
8+10	0.3154	1.08	Q V			
8+15	0.3230	1.10	Q V			
8+20	0.3307	1.12	Q V			
8+25	0.3385	1.13	Q V			
8+30	0.3463	1.14	Q V			
8+35	0.3546	1.20	Q V			
8+40	0.3632	1.26	Q V			
8+45	0.3721	1.28	Q V			
8+50	0.3814	1.35	Q V			
8+55	0.3912	1.42	Q V			
9+ 0	0.4011	1.44	Q V			
9+ 5	0.4119	1.58	Q V			
9+10	0.4236	1.69	Q V			
9+15	0.4355	1.73	Q V			
9+20	0.4480	1.81	Q V			
9+25	0.4609	1.88	Q V			
9+30	0.4740	1.90	Q V			
9+35	0.4877	1.98	Q V			
9+40	0.5017	2.04	Q V			
9+45	0.5159	2.06	Q V			
9+50	0.5306	2.14	Q V			
9+55	0.5458	2.20	Q V			
10+ 0	0.5611	2.22	Q V			
10+ 5	0.5735	1.80	Q V			
10+10	0.5834	1.44	Q V			
10+15	0.5927	1.34	Q V			
10+20	0.6016	1.29	Q V			
10+25	0.6102	1.24	Q V			
10+30	0.6188	1.25	Q V			
10+35	0.6295	1.56	Q V			
10+40	0.6421	1.83	Q V			
10+45	0.6553	1.91	Q V			
10+50	0.6688	1.95	Q V			
10+55	0.6825	2.00	Q V			
11+ 0	0.6963	2.00	Q V			
11+ 5	0.7097	1.94	Q V			
11+10	0.7227	1.89	Q V			
11+15	0.7357	1.88	Q V			



11+20	0.7486	1.88	Q	V		
11+25	0.7616	1.88	Q	V		
11+30	0.7745	1.88	Q	V		
11+35	0.7867	1.76	Q	V		
11+40	0.7981	1.66	Q	V		
11+45	0.8094	1.64	Q	V		
11+50	0.8210	1.69	Q	V		
11+55	0.8329	1.73	Q	V		
12+ 0	0.8449	1.75	Q	V		
12+ 5	0.8600	2.19	Q	V		
12+10	0.8777	2.57	Q	V		
12+15	0.8962	2.68	Q	V		
12+20	0.9155	2.80	Q	V		
12+25	0.9356	2.91	Q	V		
12+30	0.9558	2.93	Q	V		
12+35	0.9769	3.07	Q	V		
12+40	0.9988	3.18	Q	V		
12+45	1.0210	3.22	Q	V		
12+50	1.0437	3.30	Q	V		
12+55	1.0670	3.37	Q	V		
13+ 0	1.0903	3.39	Q	V		
13+ 5	1.1159	3.71	Q	V		
13+10	1.1434	3.99	Q	V		
13+15	1.1714	4.07	Q	V		
13+20	1.1997	4.11	Q	V		
13+25	1.2283	4.15	Q	V		
13+30	1.2569	4.16	Q	V		
13+35	1.2808	3.48	Q	V		
13+40	1.3009	2.91	Q	V		
13+45	1.3198	2.75	Q	V		
13+50	1.3381	2.66	Q	V		
13+55	1.3558	2.58	Q	V		
14+ 0	1.3736	2.58	Q	V		
14+ 5	1.3932	2.84	Q	V		
14+10	1.4142	3.05	Q	V		
14+15	1.4356	3.11	Q	V		
14+20	1.4569	3.09	Q	V		
14+25	1.4780	3.07	Q	V		
14+30	1.4991	3.06	Q	V		
14+35	1.5201	3.05	Q	V		
14+40	1.5411	3.05	Q	V		
14+45	1.5622	3.05	Q	V		
14+50	1.5828	3.00	Q	V		
14+55	1.6031	2.95	Q	V		
15+ 0	1.6233	2.94	Q	V		
15+ 5	1.6430	2.87	Q	V		
15+10	1.6624	2.81	Q	V		
15+15	1.6817	2.80	Q	V		
15+20	1.7005	2.73	Q	V		
15+25	1.7190	2.68	Q	V		

15+30	1.7373	2.67					V
15+35	1.7540	2.41			Q		V
15+40	1.7691	2.20			Q		V
15+45	1.7839	2.14			Q		V
15+50	1.7984	2.11			Q		V
15+55	1.8128	2.09			Q		V
16+ 0	1.8272	2.09			Q		V
16+ 5	1.8363	1.32		Q			V
16+10	1.8410	0.67	Q				V
16+15	1.8443	0.49	Q				V
16+20	1.8469	0.38	Q				V
16+25	1.8489	0.29	Q				V
16+30	1.8509	0.29	Q				V
16+35	1.8527	0.26	Q				V
16+40	1.8543	0.23	Q				V
16+45	1.8559	0.23	Q				V
16+50	1.8574	0.22	Q				V
16+55	1.8589	0.22	Q				V
17+ 0	1.8604	0.22	Q				V
17+ 5	1.8623	0.28	Q				V
17+10	1.8646	0.33	Q				V
17+15	1.8670	0.35	Q				V
17+20	1.8694	0.35	Q				V
17+25	1.8719	0.36	Q				V
17+30	1.8744	0.36	Q				V
17+35	1.8769	0.36	Q				V
17+40	1.8794	0.36	Q				V
17+45	1.8819	0.36	Q				V
17+50	1.8842	0.33	Q				V
17+55	1.8863	0.31	Q				V
18+ 0	1.8884	0.30	Q				V
18+ 5	1.8904	0.29	Q				V
18+10	1.8924	0.29	Q				V
18+15	1.8944	0.29	Q				V
18+20	1.8964	0.29	Q				V
18+25	1.8984	0.29	Q				V
18+30	1.9004	0.29	Q				V
18+35	1.9021	0.26	Q				V
18+40	1.9037	0.23	Q				V
18+45	1.9053	0.23	Q				V
18+50	1.9066	0.19	Q				V
18+55	1.9077	0.16	Q				V
19+ 0	1.9088	0.15	Q				V
19+ 5	1.9100	0.18	Q				V
19+10	1.9114	0.20	Q				V
19+15	1.9128	0.21	Q				V
19+20	1.9145	0.24	Q				V
19+25	1.9164	0.27	Q				V
19+30	1.9184	0.28	Q				V
19+35	1.9201	0.26	Q				V

19+40	1.9217	0.23	Q				V
19+45	1.9233	0.23	Q				V
19+50	1.9246	0.19	Q				V
19+55	1.9257	0.16	Q				V
20+ 0	1.9267	0.15	Q				V
20+ 5	1.9280	0.18	Q				V
20+10	1.9294	0.20	Q				V
20+15	1.9308	0.21	Q				V
20+20	1.9323	0.21	Q				V
20+25	1.9338	0.22	Q				V
20+30	1.9353	0.22	Q				V
20+35	1.9368	0.22	Q				V
20+40	1.9383	0.22	Q				V
20+45	1.9398	0.22	Q				V
20+50	1.9411	0.19	Q				V
20+55	1.9422	0.16	Q				V
21+ 0	1.9432	0.15	Q				V
21+ 5	1.9445	0.18	Q				V
21+10	1.9458	0.20	Q				V
21+15	1.9473	0.21	Q				V
21+20	1.9485	0.18	Q				V
21+25	1.9497	0.16	Q				V
21+30	1.9507	0.15	Q				V
21+35	1.9519	0.18	Q				V
21+40	1.9533	0.20	Q				V
21+45	1.9548	0.21	Q				V
21+50	1.9560	0.18	Q				V
21+55	1.9571	0.16	Q				V
22+ 0	1.9582	0.15	Q				V
22+ 5	1.9594	0.18	Q				V
22+10	1.9608	0.20	Q				V
22+15	1.9623	0.21	Q				V
22+20	1.9635	0.18	Q				V
22+25	1.9646	0.16	Q				V
22+30	1.9657	0.15	Q				V
22+35	1.9667	0.15	Q				V
22+40	1.9677	0.14	Q				V
22+45	1.9687	0.14	Q				V
22+50	1.9697	0.14	Q				V
22+55	1.9707	0.14	Q				V
23+ 0	1.9717	0.14	Q				V
23+ 5	1.9727	0.14	Q				V
23+10	1.9737	0.14	Q				V
23+15	1.9747	0.14	Q				V
23+20	1.9757	0.14	Q				V
23+25	1.9767	0.14	Q				V
23+30	1.9777	0.14	Q				V
23+35	1.9787	0.14	Q				V
23+40	1.9797	0.14	Q				V
23+45	1.9807	0.14	Q				V

23+50	1.9817	0.14	Q				V
23+55	1.9827	0.14	Q				V
24+ 0	1.9837	0.14	Q				V
24+ 5	1.9843	0.08	Q				V
24+10	1.9845	0.03	Q				V
24+15	1.9846	0.02	Q				V
24+20	1.9846	0.01	Q				V

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Unit Hydrograph Analysis

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Study date 02/22/21 File: CC02PHYDB24100.out

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

Program License Serial Number 6473

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

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
PROPOSED CONDITION - DMA B  
100YR, 24-HOUR STORM

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Drainage Area = 8.73(Ac.) = 0.014 Sq. Mi.  
Drainage Area for Depth-Area Areal Adjustment = 8.73(Ac.) =  
0.014 Sq. Mi.  
Length along longest watercourse = 930.00(Ft.)  
Length along longest watercourse measured to centroid = 465.00(Ft.)  
Length along longest watercourse = 0.176 Mi.  
Length along longest watercourse measured to centroid = 0.088 Mi.  
Difference in elevation = 14.00(Ft.)  
Slope along watercourse = 79.4839 Ft./Mi.  
Average Manning's 'N' = 0.015  
Lag time = 0.032 Hr.  
Lag time = 1.93 Min.  
25% of lag time = 0.48 Min.  
40% of lag time = 0.77 Min.  
Unit time = 5.00 Min.  
Duration of storm = 24 Hour(s)  
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.73	1.60	13.97

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
8.73	4.30	37.54

STORM EVENT (YEAR) = 100.00  
 Area Averaged 2-Year Rainfall = 1.600(In)  
 Area Averaged 100-Year Rainfall = 4.300(In)

Point rain (area averaged) = 4.300(In)  
 Areal adjustment factor = 100.00 %  
 Adjusted average point rain = 4.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
8.730	69.00	0.500
Total Area Entered =		8.73(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-3	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
69.0	84.4	0.194	0.500	0.107	1.000	0.107
Sum (F) =						0.107

Area averaged mean soil loss (F) (In/Hr) = 0.107  
 Minimum soil loss rate ((In/Hr)) = 0.053  
 (for 24 hour storm duration)  
 Soil low loss rate (decimal) = 0.500

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 U n i t H y d r o g r a p h  
 MOUNTAIN S-Curve  
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Unit Hydrograph Data  
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Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	258.890	48.889
2	0.167	517.780	34.775
3	0.250	776.670	9.398
4	0.333	1035.560	6.939
		Sum = 100.000	Sum= 8.798

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.07	0.034	( 0.189)	0.017	0.017
2	0.17	0.07	0.034	( 0.188)	0.017	0.017
3	0.25	0.07	0.034	( 0.188)	0.017	0.017
4	0.33	0.10	0.052	( 0.187)	0.026	0.026
5	0.42	0.10	0.052	( 0.186)	0.026	0.026
6	0.50	0.10	0.052	( 0.185)	0.026	0.026
7	0.58	0.10	0.052	( 0.185)	0.026	0.026
8	0.67	0.10	0.052	( 0.184)	0.026	0.026
9	0.75	0.10	0.052	( 0.183)	0.026	0.026
10	0.83	0.13	0.069	( 0.182)	0.034	0.034
11	0.92	0.13	0.069	( 0.182)	0.034	0.034
12	1.00	0.13	0.069	( 0.181)	0.034	0.034
13	1.08	0.10	0.052	( 0.180)	0.026	0.026
14	1.17	0.10	0.052	( 0.180)	0.026	0.026
15	1.25	0.10	0.052	( 0.179)	0.026	0.026
16	1.33	0.10	0.052	( 0.178)	0.026	0.026
17	1.42	0.10	0.052	( 0.177)	0.026	0.026
18	1.50	0.10	0.052	( 0.177)	0.026	0.026
19	1.58	0.10	0.052	( 0.176)	0.026	0.026
20	1.67	0.10	0.052	( 0.175)	0.026	0.026
21	1.75	0.10	0.052	( 0.175)	0.026	0.026
22	1.83	0.13	0.069	( 0.174)	0.034	0.034
23	1.92	0.13	0.069	( 0.173)	0.034	0.034
24	2.00	0.13	0.069	( 0.173)	0.034	0.034
25	2.08	0.13	0.069	( 0.172)	0.034	0.034
26	2.17	0.13	0.069	( 0.171)	0.034	0.034
27	2.25	0.13	0.069	( 0.170)	0.034	0.034
28	2.33	0.13	0.069	( 0.170)	0.034	0.034
29	2.42	0.13	0.069	( 0.169)	0.034	0.034
30	2.50	0.13	0.069	( 0.168)	0.034	0.034
31	2.58	0.17	0.086	( 0.168)	0.043	0.043
32	2.67	0.17	0.086	( 0.167)	0.043	0.043
33	2.75	0.17	0.086	( 0.166)	0.043	0.043
34	2.83	0.17	0.086	( 0.166)	0.043	0.043
35	2.92	0.17	0.086	( 0.165)	0.043	0.043
36	3.00	0.17	0.086	( 0.164)	0.043	0.043
37	3.08	0.17	0.086	( 0.164)	0.043	0.043
38	3.17	0.17	0.086	( 0.163)	0.043	0.043
39	3.25	0.17	0.086	( 0.162)	0.043	0.043
40	3.33	0.17	0.086	( 0.162)	0.043	0.043
41	3.42	0.17	0.086	( 0.161)	0.043	0.043
42	3.50	0.17	0.086	( 0.160)	0.043	0.043
43	3.58	0.17	0.086	( 0.160)	0.043	0.043
44	3.67	0.17	0.086	( 0.159)	0.043	0.043
45	3.75	0.17	0.086	( 0.158)	0.043	0.043

46	3.83	0.20	0.103	( 0.158)	0.052	0.052
47	3.92	0.20	0.103	( 0.157)	0.052	0.052
48	4.00	0.20	0.103	( 0.156)	0.052	0.052
49	4.08	0.20	0.103	( 0.156)	0.052	0.052
50	4.17	0.20	0.103	( 0.155)	0.052	0.052
51	4.25	0.20	0.103	( 0.154)	0.052	0.052
52	4.33	0.23	0.120	( 0.154)	0.060	0.060
53	4.42	0.23	0.120	( 0.153)	0.060	0.060
54	4.50	0.23	0.120	( 0.152)	0.060	0.060
55	4.58	0.23	0.120	( 0.152)	0.060	0.060
56	4.67	0.23	0.120	( 0.151)	0.060	0.060
57	4.75	0.23	0.120	( 0.150)	0.060	0.060
58	4.83	0.27	0.138	( 0.150)	0.069	0.069
59	4.92	0.27	0.138	( 0.149)	0.069	0.069
60	5.00	0.27	0.138	( 0.148)	0.069	0.069
61	5.08	0.20	0.103	( 0.148)	0.052	0.052
62	5.17	0.20	0.103	( 0.147)	0.052	0.052
63	5.25	0.20	0.103	( 0.146)	0.052	0.052
64	5.33	0.23	0.120	( 0.146)	0.060	0.060
65	5.42	0.23	0.120	( 0.145)	0.060	0.060
66	5.50	0.23	0.120	( 0.145)	0.060	0.060
67	5.58	0.27	0.138	( 0.144)	0.069	0.069
68	5.67	0.27	0.138	( 0.143)	0.069	0.069
69	5.75	0.27	0.138	( 0.143)	0.069	0.069
70	5.83	0.27	0.138	( 0.142)	0.069	0.069
71	5.92	0.27	0.138	( 0.141)	0.069	0.069
72	6.00	0.27	0.138	( 0.141)	0.069	0.069
73	6.08	0.30	0.155	( 0.140)	0.077	0.077
74	6.17	0.30	0.155	( 0.139)	0.077	0.077
75	6.25	0.30	0.155	( 0.139)	0.077	0.077
76	6.33	0.30	0.155	( 0.138)	0.077	0.077
77	6.42	0.30	0.155	( 0.138)	0.077	0.077
78	6.50	0.30	0.155	( 0.137)	0.077	0.077
79	6.58	0.33	0.172	( 0.136)	0.086	0.086
80	6.67	0.33	0.172	( 0.136)	0.086	0.086
81	6.75	0.33	0.172	( 0.135)	0.086	0.086
82	6.83	0.33	0.172	( 0.135)	0.086	0.086
83	6.92	0.33	0.172	( 0.134)	0.086	0.086
84	7.00	0.33	0.172	( 0.133)	0.086	0.086
85	7.08	0.33	0.172	( 0.133)	0.086	0.086
86	7.17	0.33	0.172	( 0.132)	0.086	0.086
87	7.25	0.33	0.172	( 0.132)	0.086	0.086
88	7.33	0.37	0.189	( 0.131)	0.095	0.095
89	7.42	0.37	0.189	( 0.130)	0.095	0.095
90	7.50	0.37	0.189	( 0.130)	0.095	0.095
91	7.58	0.40	0.206	( 0.129)	0.103	0.103
92	7.67	0.40	0.206	( 0.129)	0.103	0.103
93	7.75	0.40	0.206	( 0.128)	0.103	0.103
94	7.83	0.43	0.224	( 0.127)	0.112	0.112
95	7.92	0.43	0.224	( 0.127)	0.112	0.112



96	8.00	0.43	0.224	( 0.126)	0.112	0.112
97	8.08	0.50	0.258	0.126	( 0.129)	0.132
98	8.17	0.50	0.258	0.125	( 0.129)	0.133
99	8.25	0.50	0.258	0.124	( 0.129)	0.134
100	8.33	0.50	0.258	0.124	( 0.129)	0.134
101	8.42	0.50	0.258	0.123	( 0.129)	0.135
102	8.50	0.50	0.258	0.123	( 0.129)	0.135
103	8.58	0.53	0.275	0.122	( 0.138)	0.153
104	8.67	0.53	0.275	0.122	( 0.138)	0.154
105	8.75	0.53	0.275	0.121	( 0.138)	0.154
106	8.83	0.57	0.292	0.120	( 0.146)	0.172
107	8.92	0.57	0.292	0.120	( 0.146)	0.173
108	9.00	0.57	0.292	0.119	( 0.146)	0.173
109	9.08	0.63	0.327	0.119	( 0.163)	0.208
110	9.17	0.63	0.327	0.118	( 0.163)	0.209
111	9.25	0.63	0.327	0.118	( 0.163)	0.209
112	9.33	0.67	0.344	0.117	( 0.172)	0.227
113	9.42	0.67	0.344	0.116	( 0.172)	0.228
114	9.50	0.67	0.344	0.116	( 0.172)	0.228
115	9.58	0.70	0.361	0.115	( 0.181)	0.246
116	9.67	0.70	0.361	0.115	( 0.181)	0.246
117	9.75	0.70	0.361	0.114	( 0.181)	0.247
118	9.83	0.73	0.378	0.114	( 0.189)	0.265
119	9.92	0.73	0.378	0.113	( 0.189)	0.265
120	10.00	0.73	0.378	0.113	( 0.189)	0.266
121	10.08	0.50	0.258	0.112	( 0.129)	0.146
122	10.17	0.50	0.258	0.111	( 0.129)	0.147
123	10.25	0.50	0.258	0.111	( 0.129)	0.147
124	10.33	0.50	0.258	0.110	( 0.129)	0.148
125	10.42	0.50	0.258	0.110	( 0.129)	0.148
126	10.50	0.50	0.258	0.109	( 0.129)	0.149
127	10.58	0.67	0.344	0.109	( 0.172)	0.235
128	10.67	0.67	0.344	0.108	( 0.172)	0.236
129	10.75	0.67	0.344	0.108	( 0.172)	0.236
130	10.83	0.67	0.344	0.107	( 0.172)	0.237
131	10.92	0.67	0.344	0.107	( 0.172)	0.237
132	11.00	0.67	0.344	0.106	( 0.172)	0.238
133	11.08	0.63	0.327	0.106	( 0.163)	0.221
134	11.17	0.63	0.327	0.105	( 0.163)	0.222
135	11.25	0.63	0.327	0.105	( 0.163)	0.222
136	11.33	0.63	0.327	0.104	( 0.163)	0.223
137	11.42	0.63	0.327	0.104	( 0.163)	0.223
138	11.50	0.63	0.327	0.103	( 0.163)	0.224
139	11.58	0.57	0.292	0.103	( 0.146)	0.190
140	11.67	0.57	0.292	0.102	( 0.146)	0.190
141	11.75	0.57	0.292	0.102	( 0.146)	0.191
142	11.83	0.60	0.310	0.101	( 0.155)	0.209
143	11.92	0.60	0.310	0.101	( 0.155)	0.209
144	12.00	0.60	0.310	0.100	( 0.155)	0.210
145	12.08	0.83	0.430	0.100	( 0.215)	0.330

146	12.17	0.83	0.430	0.099	( 0.215)	0.331
147	12.25	0.83	0.430	0.099	( 0.215)	0.331
148	12.33	0.87	0.447	0.098	( 0.224)	0.349
149	12.42	0.87	0.447	0.098	( 0.224)	0.350
150	12.50	0.87	0.447	0.097	( 0.224)	0.350
151	12.58	0.93	0.482	0.097	( 0.241)	0.385
152	12.67	0.93	0.482	0.096	( 0.241)	0.386
153	12.75	0.93	0.482	0.096	( 0.241)	0.386
154	12.83	0.97	0.499	0.095	( 0.249)	0.404
155	12.92	0.97	0.499	0.095	( 0.249)	0.404
156	13.00	0.97	0.499	0.094	( 0.249)	0.405
157	13.08	1.13	0.585	0.094	( 0.292)	0.491
158	13.17	1.13	0.585	0.093	( 0.292)	0.492
159	13.25	1.13	0.585	0.093	( 0.292)	0.492
160	13.33	1.13	0.585	0.092	( 0.292)	0.493
161	13.42	1.13	0.585	0.092	( 0.292)	0.493
162	13.50	1.13	0.585	0.091	( 0.292)	0.493
163	13.58	0.77	0.396	0.091	( 0.198)	0.305
164	13.67	0.77	0.396	0.090	( 0.198)	0.305
165	13.75	0.77	0.396	0.090	( 0.198)	0.306
166	13.83	0.77	0.396	0.089	( 0.198)	0.306
167	13.92	0.77	0.396	0.089	( 0.198)	0.307
168	14.00	0.77	0.396	0.089	( 0.198)	0.307
169	14.08	0.90	0.464	0.088	( 0.232)	0.376
170	14.17	0.90	0.464	0.088	( 0.232)	0.377
171	14.25	0.90	0.464	0.087	( 0.232)	0.377
172	14.33	0.87	0.447	0.087	( 0.224)	0.360
173	14.42	0.87	0.447	0.086	( 0.224)	0.361
174	14.50	0.87	0.447	0.086	( 0.224)	0.361
175	14.58	0.87	0.447	0.085	( 0.224)	0.362
176	14.67	0.87	0.447	0.085	( 0.224)	0.362
177	14.75	0.87	0.447	0.085	( 0.224)	0.363
178	14.83	0.83	0.430	0.084	( 0.215)	0.346
179	14.92	0.83	0.430	0.084	( 0.215)	0.346
180	15.00	0.83	0.430	0.083	( 0.215)	0.347
181	15.08	0.80	0.413	0.083	( 0.206)	0.330
182	15.17	0.80	0.413	0.082	( 0.206)	0.330
183	15.25	0.80	0.413	0.082	( 0.206)	0.331
184	15.33	0.77	0.396	0.082	( 0.198)	0.314
185	15.42	0.77	0.396	0.081	( 0.198)	0.314
186	15.50	0.77	0.396	0.081	( 0.198)	0.315
187	15.58	0.63	0.327	0.080	( 0.163)	0.246
188	15.67	0.63	0.327	0.080	( 0.163)	0.247
189	15.75	0.63	0.327	0.080	( 0.163)	0.247
190	15.83	0.63	0.327	0.079	( 0.163)	0.248
191	15.92	0.63	0.327	0.079	( 0.163)	0.248
192	16.00	0.63	0.327	0.078	( 0.163)	0.249
193	16.08	0.13	0.069	( 0.078)	0.034	0.034
194	16.17	0.13	0.069	( 0.077)	0.034	0.034
195	16.25	0.13	0.069	( 0.077)	0.034	0.034

196	16.33	0.13	0.069	( 0.077)	0.034	0.034
197	16.42	0.13	0.069	( 0.076)	0.034	0.034
198	16.50	0.13	0.069	( 0.076)	0.034	0.034
199	16.58	0.10	0.052	( 0.076)	0.026	0.026
200	16.67	0.10	0.052	( 0.075)	0.026	0.026
201	16.75	0.10	0.052	( 0.075)	0.026	0.026
202	16.83	0.10	0.052	( 0.074)	0.026	0.026
203	16.92	0.10	0.052	( 0.074)	0.026	0.026
204	17.00	0.10	0.052	( 0.074)	0.026	0.026
205	17.08	0.17	0.086	( 0.073)	0.043	0.043
206	17.17	0.17	0.086	( 0.073)	0.043	0.043
207	17.25	0.17	0.086	( 0.073)	0.043	0.043
208	17.33	0.17	0.086	( 0.072)	0.043	0.043
209	17.42	0.17	0.086	( 0.072)	0.043	0.043
210	17.50	0.17	0.086	( 0.071)	0.043	0.043
211	17.58	0.17	0.086	( 0.071)	0.043	0.043
212	17.67	0.17	0.086	( 0.071)	0.043	0.043
213	17.75	0.17	0.086	( 0.070)	0.043	0.043
214	17.83	0.13	0.069	( 0.070)	0.034	0.034
215	17.92	0.13	0.069	( 0.070)	0.034	0.034
216	18.00	0.13	0.069	( 0.069)	0.034	0.034
217	18.08	0.13	0.069	( 0.069)	0.034	0.034
218	18.17	0.13	0.069	( 0.069)	0.034	0.034
219	18.25	0.13	0.069	( 0.068)	0.034	0.034
220	18.33	0.13	0.069	( 0.068)	0.034	0.034
221	18.42	0.13	0.069	( 0.068)	0.034	0.034
222	18.50	0.13	0.069	( 0.067)	0.034	0.034
223	18.58	0.10	0.052	( 0.067)	0.026	0.026
224	18.67	0.10	0.052	( 0.067)	0.026	0.026
225	18.75	0.10	0.052	( 0.066)	0.026	0.026
226	18.83	0.07	0.034	( 0.066)	0.017	0.017
227	18.92	0.07	0.034	( 0.066)	0.017	0.017
228	19.00	0.07	0.034	( 0.065)	0.017	0.017
229	19.08	0.10	0.052	( 0.065)	0.026	0.026
230	19.17	0.10	0.052	( 0.065)	0.026	0.026
231	19.25	0.10	0.052	( 0.065)	0.026	0.026
232	19.33	0.13	0.069	( 0.064)	0.034	0.034
233	19.42	0.13	0.069	( 0.064)	0.034	0.034
234	19.50	0.13	0.069	( 0.064)	0.034	0.034
235	19.58	0.10	0.052	( 0.063)	0.026	0.026
236	19.67	0.10	0.052	( 0.063)	0.026	0.026
237	19.75	0.10	0.052	( 0.063)	0.026	0.026
238	19.83	0.07	0.034	( 0.062)	0.017	0.017
239	19.92	0.07	0.034	( 0.062)	0.017	0.017
240	20.00	0.07	0.034	( 0.062)	0.017	0.017
241	20.08	0.10	0.052	( 0.062)	0.026	0.026
242	20.17	0.10	0.052	( 0.061)	0.026	0.026
243	20.25	0.10	0.052	( 0.061)	0.026	0.026
244	20.33	0.10	0.052	( 0.061)	0.026	0.026
245	20.42	0.10	0.052	( 0.061)	0.026	0.026



Flood volume = 90276.3 Cubic Feet  
 Total soil loss = 45987.9 Cubic Feet

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 Peak flow rate of this hydrograph = 4.341(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	2.5	5.0	7.5	10.0
0+ 5	0.0005	0.07	Q				
0+10	0.0014	0.13	Q				
0+15	0.0024	0.14	Q				
0+20	0.0037	0.19	Q				
0+25	0.0051	0.21	Q				
0+30	0.0067	0.22	Q				
0+35	0.0082	0.23	Q				
0+40	0.0098	0.23	Q				
0+45	0.0113	0.23	Q				
0+50	0.0132	0.26	VQ				
0+55	0.0152	0.29	VQ				
1+ 0	0.0172	0.30	VQ				
1+ 5	0.0190	0.27	VQ				
1+10	0.0207	0.24	Q				
1+15	0.0223	0.23	Q				
1+20	0.0239	0.23	Q				
1+25	0.0254	0.23	Q				
1+30	0.0270	0.23	Q				
1+35	0.0286	0.23	Q				
1+40	0.0301	0.23	Q				
1+45	0.0317	0.23	Q				
1+50	0.0335	0.26	VQ				
1+55	0.0355	0.29	VQ				
2+ 0	0.0376	0.30	VQ				
2+ 5	0.0396	0.30	VQ				
2+10	0.0417	0.30	VQ				
2+15	0.0438	0.30	VQ				
2+20	0.0459	0.30	VQ				
2+25	0.0480	0.30	VQ				
2+30	0.0501	0.30	VQ				
2+35	0.0524	0.34	Q				
2+40	0.0549	0.37	Q				
2+45	0.0575	0.37	Q				
2+50	0.0601	0.38	Q				
2+55	0.0627	0.38	Q				
3+ 0	0.0653	0.38	Q				

3+ 5	0.0679	0.38	Q				
3+10	0.0705	0.38	Q				
3+15	0.0731	0.38	Q				
3+20	0.0757	0.38	Q				
3+25	0.0784	0.38	Q				
3+30	0.0810	0.38	Q				
3+35	0.0836	0.38	Q				
3+40	0.0862	0.38	Q				
3+45	0.0888	0.38	Q				
3+50	0.0916	0.42	Q				
3+55	0.0947	0.44	Q				
4+ 0	0.0978	0.45	Q				
4+ 5	0.1009	0.45	Q				
4+10	0.1040	0.45	QV				
4+15	0.1072	0.45	QV				
4+20	0.1105	0.49	QV				
4+25	0.1141	0.52	Q				
4+30	0.1177	0.52	Q				
4+35	0.1214	0.53	Q				
4+40	0.1250	0.53	Q				
4+45	0.1287	0.53	Q				
4+50	0.1326	0.57	Q				
4+55	0.1367	0.59	Q				
5+ 0	0.1408	0.60	Q				
5+ 5	0.1445	0.53	Q				
5+10	0.1478	0.48	QV				
5+15	0.1510	0.46	QV				
5+20	0.1543	0.49	QV				
5+25	0.1579	0.52	QV				
5+30	0.1615	0.52	QV				
5+35	0.1654	0.57	QV				
5+40	0.1695	0.59	QV				
5+45	0.1736	0.60	QV				
5+50	0.1778	0.61	QV				
5+55	0.1820	0.61	QV				
6+ 0	0.1862	0.61	QV				
6+ 5	0.1906	0.64	QV				
6+10	0.1952	0.67	QV				
6+15	0.1998	0.68	QV				
6+20	0.2045	0.68	QV				
6+25	0.2092	0.68	Q V				
6+30	0.2139	0.68	Q V				
6+35	0.2189	0.72	Q V				
6+40	0.2240	0.74	Q V				
6+45	0.2292	0.75	QV				
6+50	0.2344	0.76	QV				
6+55	0.2396	0.76	QV				
7+ 0	0.2448	0.76	QV				
7+ 5	0.2500	0.76	QV				
7+10	0.2552	0.76	QV				

7+15	0.2605	0.76	Q V			
7+20	0.2659	0.79	Q V			
7+25	0.2716	0.82	Q V			
7+30	0.2773	0.83	Q V			
7+35	0.2833	0.87	Q V			
7+40	0.2894	0.90	Q V			
7+45	0.2957	0.90	Q V			
7+50	0.3022	0.95	Q V			
7+55	0.3089	0.97	Q V			
8+ 0	0.3156	0.98	Q V			
8+ 5	0.3230	1.07	Q V			
8+10	0.3308	1.14	Q V			
8+15	0.3388	1.16	Q V			
8+20	0.3469	1.18	Q V			
8+25	0.3551	1.18	Q V			
8+30	0.3632	1.19	Q V			
8+35	0.3720	1.27	Q V			
8+40	0.3811	1.32	Q V			
8+45	0.3903	1.34	Q V			
8+50	0.4002	1.43	Q V			
8+55	0.4105	1.49	Q V			
9+ 0	0.4209	1.51	Q V			
9+ 5	0.4324	1.67	Q V			
9+10	0.4447	1.78	QV			
9+15	0.4572	1.82	QV			
9+20	0.4704	1.92	Q V			
9+25	0.4840	1.97	Q V			
9+30	0.4977	1.99	Q V			
9+35	0.5121	2.08	QV			
9+40	0.5268	2.14	Q V			
9+45	0.5417	2.16	Q V			
9+50	0.5572	2.25	Q V			
9+55	0.5731	2.31	Q V			
10+ 0	0.5891	2.33	Q V			
10+ 5	0.6016	1.82	Q	V		
10+10	0.6117	1.46	Q	V		
10+15	0.6211	1.36	Q	V		
10+20	0.6300	1.30	Q	V		
10+25	0.6390	1.30	Q	V		
10+30	0.6480	1.31	Q	V		
10+35	0.6595	1.68	Q	V		
10+40	0.6729	1.95	Q	V		
10+45	0.6869	2.02	Q	V		
10+50	0.7012	2.08	Q	V		
10+55	0.7156	2.09	Q	V		
11+ 0	0.7300	2.09	Q	V		
11+ 5	0.7439	2.02	Q	V		
11+10	0.7575	1.97	Q	V		
11+15	0.7710	1.96	Q	V		
11+20	0.7845	1.96	Q	V		

11+25	0.7980	1.96	Q	V		
11+30	0.8115	1.97	Q	V		
11+35	0.8241	1.82	Q	V		
11+40	0.8359	1.72	Q	V		
11+45	0.8476	1.70	Q	V		
11+50	0.8597	1.76	Q	V		
11+55	0.8722	1.81	Q	V		
12+ 0	0.8848	1.83	Q	V		
12+ 5	0.9011	2.36	Q	V		
12+10	0.9199	2.74	Q	V		
12+15	0.9395	2.84	Q	V		
12+20	0.9601	2.99	Q	V		
12+25	0.9811	3.05	Q	V		
12+30	1.0022	3.07	Q	V		
12+35	1.0245	3.23	Q	V		
12+40	1.0475	3.34	Q	V		
12+45	1.0707	3.37	Q	V		
12+50	1.0947	3.47	Q	V		
12+55	1.1190	3.53	Q	V		
13+ 0	1.1434	3.55	Q	V		
13+ 5	1.1705	3.93	Q	V		
13+10	1.1994	4.20	Q	V		
13+15	1.2289	4.28	Q	V		
13+20	1.2587	4.33	Q	V		
13+25	1.2886	4.34	Q	V		
13+30	1.3185	4.34	Q	V		
13+35	1.3428	3.53	Q	V		
13+40	1.3632	2.96	Q	V		
13+45	1.3825	2.80	Q	V		
13+50	1.4010	2.69	Q	V		
13+55	1.4196	2.70	Q	V		
14+ 0	1.4382	2.70	Q	V		
14+ 5	1.4588	3.00	Q	V		
14+10	1.4810	3.21	Q	V		
14+15	1.5035	3.28	Q	V		
14+20	1.5259	3.25	Q	V		
14+25	1.5479	3.20	Q	V		
14+30	1.5699	3.19	Q	V		
14+35	1.5918	3.18	Q	V		
14+40	1.6137	3.19	Q	V		
14+45	1.6357	3.19	Q	V		
14+50	1.6572	3.12	Q	V		
14+55	1.6783	3.07	Q	V		
15+ 0	1.6994	3.06	Q	V		
15+ 5	1.7199	2.98	Q	V		
15+10	1.7401	2.93	Q	V		
15+15	1.7602	2.92	Q	V		
15+20	1.7797	2.84	Q	V		
15+25	1.7989	2.79	Q	V		
15+30	1.8181	2.78	Q	V		



15+35	1.8351	2.48		Q		V
15+40	1.8508	2.27		Q		V
15+45	1.8660	2.22		Q		V
15+50	1.8810	2.18		Q		V
15+55	1.8961	2.18		Q		V
16+ 0	1.9111	2.18		Q		V
16+ 5	1.9198	1.27	Q			V
16+10	1.9240	0.61	Q			V
16+15	1.9270	0.43	Q			V
16+20	1.9291	0.30	Q			V
16+25	1.9312	0.30	Q			V
16+30	1.9333	0.30	Q			V
16+35	1.9351	0.27	Q			V
16+40	1.9367	0.24	Q			V
16+45	1.9383	0.23	Q			V
16+50	1.9399	0.23	Q			V
16+55	1.9415	0.23	Q			V
17+ 0	1.9430	0.23	Q			V
17+ 5	1.9451	0.30	Q			V
17+10	1.9476	0.35	Q			V
17+15	1.9501	0.37	Q			V
17+20	1.9527	0.38	Q			V
17+25	1.9553	0.38	Q			V
17+30	1.9579	0.38	Q			V
17+35	1.9605	0.38	Q			V
17+40	1.9631	0.38	Q			V
17+45	1.9657	0.38	Q			V
17+50	1.9681	0.34	Q			V
17+55	1.9702	0.32	Q			V
18+ 0	1.9724	0.31	Q			V
18+ 5	1.9745	0.30	Q			V
18+10	1.9765	0.30	Q			V
18+15	1.9786	0.30	Q			V
18+20	1.9807	0.30	Q			V
18+25	1.9828	0.30	Q			V
18+30	1.9849	0.30	Q			V
18+35	1.9867	0.27	Q			V
18+40	1.9884	0.24	Q			V
18+45	1.9900	0.23	Q			V
18+50	1.9913	0.19	Q			V
18+55	1.9924	0.16	Q			V
19+ 0	1.9935	0.16	Q			V
19+ 5	1.9948	0.19	Q			V
19+10	1.9963	0.21	Q			V
19+15	1.9978	0.22	Q			V
19+20	1.9996	0.26	Q			V
19+25	2.0016	0.29	Q			V
19+30	2.0037	0.30	Q			V
19+35	2.0055	0.27	Q			V
19+40	2.0071	0.24	Q			V

19+45	2.0087	0.23	Q				V
19+50	2.0100	0.19	Q				V
19+55	2.0112	0.16	Q				V
20+ 0	2.0122	0.16	Q				V
20+ 5	2.0135	0.19	Q				V
20+10	2.0150	0.21	Q				V
20+15	2.0166	0.22	Q				V
20+20	2.0181	0.23	Q				V
20+25	2.0197	0.23	Q				V
20+30	2.0212	0.23	Q				V
20+35	2.0228	0.23	Q				V
20+40	2.0244	0.23	Q				V
20+45	2.0259	0.23	Q				V
20+50	2.0272	0.19	Q				V
20+55	2.0284	0.16	Q				V
21+ 0	2.0295	0.16	Q				V
21+ 5	2.0308	0.19	Q				V
21+10	2.0322	0.21	Q				V
21+15	2.0338	0.22	Q				V
21+20	2.0351	0.19	Q				V
21+25	2.0362	0.16	Q				V
21+30	2.0373	0.16	Q				V
21+35	2.0386	0.19	Q				V
21+40	2.0401	0.21	Q				V
21+45	2.0416	0.22	Q				V
21+50	2.0429	0.19	Q				V
21+55	2.0440	0.16	Q				V
22+ 0	2.0451	0.16	Q				V
22+ 5	2.0464	0.19	Q				V
22+10	2.0479	0.21	Q				V
22+15	2.0494	0.22	Q				V
22+20	2.0507	0.19	Q				V
22+25	2.0518	0.16	Q				V
22+30	2.0529	0.16	Q				V
22+35	2.0540	0.15	Q				V
22+40	2.0550	0.15	Q				V
22+45	2.0560	0.15	Q				V
22+50	2.0571	0.15	Q				V
22+55	2.0581	0.15	Q				V
23+ 0	2.0592	0.15	Q				V
23+ 5	2.0602	0.15	Q				V
23+10	2.0613	0.15	Q				V
23+15	2.0623	0.15	Q				V
23+20	2.0633	0.15	Q				V
23+25	2.0644	0.15	Q				V
23+30	2.0654	0.15	Q				V
23+35	2.0665	0.15	Q				V
23+40	2.0675	0.15	Q				V
23+45	2.0686	0.15	Q				V
23+50	2.0696	0.15	Q				V

23+55	2.0706	0.15	Q				V
24+ 0	2.0717	0.15	Q				V
24+ 5	2.0722	0.08	Q				V
24+10	2.0724	0.02	Q				V
24+15	2.0725	0.01	Q				V

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# **APPENDIX E**

## **Basin Routing Calculations**

**Basin A**

Depth	Storage	Orifice #1 Outflow	Orifice #2 Outflow	Weir Outflow	Total Outflow
1660.0	0	0	0	0	0
1660.5	0.0762	0.0735			0.0735
1661.0	0.1515	0.1090			0.1090
1661.5	0.2244	0.1354			0.1354
1662.0	0.2938	0.1575			0.1575
1662.5	0.3581	0.1769			0.1769
1663.0	0.4154	0.1944			0.1944
1663.5	0.4630	0.2104			0.2104
1664.0	0.4957	0.2252			0.2252
1664.5	0.5005	0.2392			0.2392
1165.0	0.5238	0.2523	0.8213		1.0736
1665.5	0.5471	0.2649	2.1729		2.4378
1666.0	0.5705	0.2768	2.9612		3.2380
1666.5	0.5938	0.2883	3.5799		3.8682
1667.0	0.6171	0.2993	4.1064		4.4057
1667.5	0.6405	0.3099	4.5727		4.8826
1668.0	0.6638	0.3202	4.9957	9.4190	14.7349
1668.5	0.6871	0.3302	5.3855	26.6400	32.3557

	Size	Elev.
Bio-Retention /Detention Pipe	800 LF	1660.0
Orifice #1	2" dia	1660.0
Orifice #2	10" dia	1664.5
Weir	8' length	1667.0

**Basin B**

Depth	Storage	Orifice #1 Outflow	Orifice #2 Outflow	Weir Outflow	Total Outflow
1664.0	0	0	0	0	0
1664.5	0.0762	0.0735			0.0735
1665.0	0.1515	0.1090			0.1090
1665.5	0.2244	0.1354			0.1354
1666.0	0.2938	0.1575			0.1575
1666.5	0.3581	0.1769			0.1769
1667.0	0.4154	0.1944			0.1944
1667.5	0.4630	0.2104			0.2104
1668.0	0.4957	0.2252			0.2252
1668.5	0.5005	0.2392			0.2392
1669.0	0.5329	0.2523	0.8213		1.0736
1669.5	0.5562	0.2649	2.1729		2.4378
1670.0	0.5796	0.2768	2.9612		3.2380
1670.5	0.6029	0.2883	3.5799		3.8682
1671.0	0.6263	0.2993	4.1064		4.4057
1671.5	0.6496	0.3099	4.5727		4.8826
1672.0	0.6729	0.3202	4.9957	9.4190	14.7349
1672.5	0.6963	0.3302	5.3855	26.6400	32.3557

	Size	Elev.
Bio-Retention /Detention	800 LF	1664.0
Orifice #1	2" dia	1664.0
Orifice #2	10" dia	1668.5
Weir	8' length	1671.5

FLOOD HYDROGRAPH ROUTING PROGRAM  
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Study date: 02/23/21

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
ROUTING BASIN A  
2YR, 24-HOUR STORM  
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Program License Serial Number 6473

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\*\*\*\*\* HYDROGRAPH INFORMATION \*\*\*\*\*

From study/file name: CC02PHYDA242.rte  
\*\*\*\*\*HYDROGRAPH DATA\*\*\*\*\*  
Number of intervals = 292  
Time interval = 5.0 (Min.)  
Maximum/Peak flow rate = 0.917 (CFS)  
Total volume = 0.557 (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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Process from Point/Station 1.000 to Point/Station 2.000  
\*\*\*\* RETARDING BASIN ROUTING \*\*\*\*

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User entry of depth-outflow-storage data  
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Total number of inflow hydrograph intervals = 292  
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 (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.500	0.076	0.073	0.076	0.076
1.000	0.152	0.109	0.152	0.152
1.500	0.224	0.135	0.224	0.224
2.000	0.294	0.158	0.293	0.295
2.500	0.358	0.177	0.357	0.359
3.000	0.415	0.194	0.414	0.416
3.500	0.463	0.210	0.462	0.464
4.000	0.496	0.225	0.495	0.497
4.500	0.500	0.239	0.499	0.501
5.000	0.524	1.074	0.520	0.528
5.500	0.547	2.438	0.539	0.555
6.000	0.571	3.238	0.560	0.582
6.500	0.594	3.868	0.581	0.607
7.000	0.617	4.406	0.602	0.632
7.500	0.640	4.883	0.623	0.657
8.000	0.664	14.735	0.613	0.715
8.500	0.687	32.356	0.576	0.798

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 Hydrograph Detention Basin Routing  
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Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	Depth (Ft.)					
				.0	0.2	0.46	0.69	0.92	
0.083	0.02	0.00	0.000	0					0.00
0.167	0.04	0.00	0.000	OI					0.00
0.250	0.05	0.00	0.001	OI					0.00
0.333	0.06	0.00	0.001	O I					0.01
0.417	0.08	0.00	0.001	O I					0.01
0.500	0.08	0.00	0.002	O I					0.01
0.583	0.08	0.00	0.003	O I					0.02
0.667	0.08	0.00	0.003	O I					0.02
0.750	0.08	0.00	0.004	O I					0.02
0.833	0.09	0.00	0.004	O I					0.03
0.917	0.10	0.00	0.005	O I					0.03
1.000	0.10	0.01	0.005	O I					0.04
1.083	0.09	0.01	0.006	O I					0.04
1.167	0.09	0.01	0.007	O I					0.04
1.250	0.08	0.01	0.007	O I					0.05
1.333	0.08	0.01	0.008	O I					0.05
1.417	0.08	0.01	0.008	O I					0.05
1.500	0.08	0.01	0.009	O I					0.06



1.583	0.08	0.01	0.009	0	I					0.06
1.667	0.08	0.01	0.010	0	I					0.06
1.750	0.08	0.01	0.010	0	I					0.07
1.833	0.09	0.01	0.011	0	I					0.07
1.917	0.10	0.01	0.011	0	I					0.07
2.000	0.10	0.01	0.012	0	I					0.08
2.083	0.11	0.01	0.013	0	I					0.08
2.167	0.11	0.01	0.013	0	I					0.09
2.250	0.11	0.01	0.014	0	I					0.09
2.333	0.11	0.01	0.015	0	I					0.10
2.417	0.11	0.01	0.015	0	I					0.10
2.500	0.11	0.02	0.016	0	I					0.10
2.583	0.12	0.02	0.017	0	I					0.11
2.667	0.13	0.02	0.017	0	I					0.11
2.750	0.13	0.02	0.018	0	I					0.12
2.833	0.13	0.02	0.019	0	I					0.12
2.917	0.13	0.02	0.020	0	I					0.13
3.000	0.13	0.02	0.020	0	I					0.13
3.083	0.13	0.02	0.021	0	I					0.14
3.167	0.13	0.02	0.022	0	I					0.15
3.250	0.13	0.02	0.023	0	I					0.15
3.333	0.13	0.02	0.024	0	I					0.16
3.417	0.13	0.02	0.024	0	I					0.16
3.500	0.13	0.02	0.025	0	I					0.17
3.583	0.13	0.02	0.026	0	I					0.17
3.667	0.13	0.03	0.027	0	I					0.18
3.750	0.13	0.03	0.027	0	I					0.18
3.833	0.15	0.03	0.028	0	I					0.19
3.917	0.16	0.03	0.029	0	I					0.19
4.000	0.16	0.03	0.030	0	I					0.20
4.083	0.16	0.03	0.031	0	I					0.20
4.167	0.16	0.03	0.032	0	I					0.21
4.250	0.16	0.03	0.033	0	I					0.21
4.333	0.17	0.03	0.034	0	I					0.22
4.417	0.18	0.03	0.035	0	I					0.23
4.500	0.19	0.03	0.036	0	I					0.23
4.583	0.19	0.04	0.037	0	I					0.24
4.667	0.19	0.04	0.038	0	I					0.25
4.750	0.19	0.04	0.039	0	I					0.26
4.833	0.20	0.04	0.040	0	I					0.26
4.917	0.21	0.04	0.041	0	I					0.27
5.000	0.21	0.04	0.042	0	I					0.28
5.083	0.19	0.04	0.043	0	I					0.28
5.167	0.17	0.04	0.044	0	I					0.29
5.250	0.17	0.04	0.045	0	I					0.30
5.333	0.18	0.04	0.046	0	I					0.30
5.417	0.18	0.05	0.047	0	I					0.31
5.500	0.19	0.05	0.048	0	I					0.32
5.583	0.20	0.05	0.049	0	I					0.32
5.667	0.21	0.05	0.050	0	I					0.33

5.750	0.21	0.05	0.051	0	I					0.34
5.833	0.21	0.05	0.052	0	I					0.34
5.917	0.22	0.05	0.053	0	I					0.35
6.000	0.22	0.05	0.054	0	I					0.36
6.083	0.23	0.05	0.056	0	I					0.37
6.167	0.24	0.05	0.057	0	I					0.37
6.250	0.24	0.06	0.058	0	I					0.38
6.333	0.24	0.06	0.059	0	I					0.39
6.417	0.24	0.06	0.061	0	I					0.40
6.500	0.24	0.06	0.062	0	I					0.41
6.583	0.25	0.06	0.063	0	I					0.42
6.667	0.26	0.06	0.065	0	I					0.43
6.750	0.27	0.06	0.066	0	I					0.43
6.833	0.27	0.06	0.067	0	I					0.44
6.917	0.27	0.07	0.069	0	I					0.45
7.000	0.27	0.07	0.070	0	I					0.46
7.083	0.27	0.07	0.072	0	I					0.47
7.167	0.27	0.07	0.073	0	I					0.48
7.250	0.27	0.07	0.074	0	I					0.49
7.333	0.28	0.07	0.076	0	I					0.50
7.417	0.29	0.07	0.077	0	I					0.51
7.500	0.29	0.07	0.079	0	I					0.52
7.583	0.31	0.08	0.080	0	I					0.53
7.667	0.32	0.08	0.082	0	I					0.54
7.750	0.32	0.08	0.084	0	I					0.55
7.833	0.33	0.08	0.085	0	I					0.56
7.917	0.34	0.08	0.087	0	I					0.57
8.000	0.35	0.08	0.089	0	I					0.59
8.083	0.37	0.08	0.091	0	I					0.60
8.167	0.39	0.08	0.093	0	I					0.61
8.250	0.40	0.08	0.095	0	I					0.63
8.333	0.40	0.08	0.097	0	I					0.64
8.417	0.40	0.08	0.100	0	I					0.65
8.500	0.40	0.09	0.102	0	I					0.67
8.583	0.42	0.09	0.104	0	I					0.68
8.667	0.43	0.09	0.106	0	I					0.70
8.750	0.43	0.09	0.109	0	I					0.71
8.833	0.44	0.09	0.111	0	I					0.73
8.917	0.45	0.09	0.113	0	I					0.75
9.000	0.46	0.09	0.116	0	I					0.76
9.083	0.48	0.09	0.119	0	I					0.78
9.167	0.50	0.09	0.121	0	I					0.80
9.250	0.51	0.10	0.124	0	I					0.82
9.333	0.52	0.10	0.127	0	I					0.84
9.417	0.53	0.10	0.130	0	I					0.85
9.500	0.54	0.10	0.133	0	I					0.87
9.583	0.55	0.10	0.136	0	I					0.89
9.667	0.56	0.10	0.139	0	I					0.91
9.750	0.56	0.10	0.142	0	I					0.94
9.833	0.58	0.11	0.145	0	I					0.96

9.917	0.59	0.11	0.149	0			I		0.98
10.000	0.59	0.11	0.152	0			I		1.00
10.083	0.51	0.11	0.155	0			I		1.02
10.167	0.44	0.11	0.158	0			I		1.04
10.250	0.43	0.11	0.160	0			I		1.05
10.333	0.41	0.11	0.162	0			I		1.07
10.417	0.40	0.11	0.164	0			I		1.08
10.500	0.40	0.11	0.166	0			I		1.10
10.583	0.46	0.11	0.168	0			I		1.11
10.667	0.51	0.12	0.171	0			I		1.13
10.750	0.52	0.12	0.174	0			I		1.15
10.833	0.53	0.12	0.176	0			I		1.17
10.917	0.54	0.12	0.179	0			I		1.19
11.000	0.54	0.12	0.182	0			I		1.21
11.083	0.53	0.12	0.185	0			I		1.23
11.167	0.52	0.12	0.188	0			I		1.25
11.250	0.52	0.12	0.190	0			I		1.27
11.333	0.51	0.12	0.193	0			I		1.29
11.417	0.51	0.12	0.196	0			I		1.30
11.500	0.51	0.13	0.198	0			I		1.32
11.583	0.49	0.13	0.201	0			I		1.34
11.667	0.47	0.13	0.203	0			I		1.36
11.750	0.46	0.13	0.206	0			I		1.37
11.833	0.47	0.13	0.208	0			I		1.39
11.917	0.48	0.13	0.211	0			I		1.41
12.000	0.48	0.13	0.213	0			I		1.42
12.083	0.56	0.13	0.216	0			I		1.44
12.167	0.63	0.13	0.219	0			I		1.46
12.250	0.65	0.13	0.222	0			I		1.49
12.333	0.68	0.14	0.226	0			I		1.51
12.417	0.70	0.14	0.230	0			I		1.54
12.500	0.70	0.14	0.234	0			I		1.57
12.583	0.72	0.14	0.238	0			I		1.60
12.667	0.74	0.14	0.242	0			I		1.63
12.750	0.75	0.14	0.246	0			I		1.66
12.833	0.76	0.14	0.250	0			I		1.69
12.917	0.78	0.14	0.254	0			I		1.72
13.000	0.78	0.15	0.259	0			I		1.75
13.083	0.84	0.15	0.263	0			I		1.78
13.167	0.89	0.15	0.268	0			I		1.82
13.250	0.90	0.15	0.273	0			I		1.85
13.333	0.91	0.15	0.279	0			I		1.89
13.417	0.92	0.15	0.284	0			I		1.93
13.500	0.92	0.16	0.289	0			I		1.96
13.583	0.79	0.16	0.294	0			I		2.00
13.667	0.68	0.16	0.298	0			I		2.03
13.750	0.65	0.16	0.301	0			I		2.06
13.833	0.64	0.16	0.305	0			I		2.08
13.917	0.62	0.16	0.308	0			I		2.11
14.000	0.62	0.16	0.311	0			I		2.13

14.083	0.67	0.16	0.314	0		I	2.16
14.167	0.71	0.17	0.318	0		I	2.19
14.250	0.72	0.17	0.322	0		I	2.22
14.333	0.71	0.17	0.325	0		I	2.25
14.417	0.71	0.17	0.329	0		I	2.27
14.500	0.70	0.17	0.333	0		I	2.30
14.583	0.70	0.17	0.337	0		I	2.33
14.667	0.70	0.17	0.340	0		I	2.36
14.750	0.70	0.17	0.344	0		I	2.39
14.833	0.69	0.17	0.347	0		I	2.42
14.917	0.68	0.17	0.351	0		I	2.45
15.000	0.68	0.18	0.354	0		I	2.47
15.083	0.66	0.18	0.358	0		I	2.50
15.167	0.65	0.18	0.361	0		I	2.53
15.250	0.65	0.18	0.364	0		I	2.56
15.333	0.64	0.18	0.368	0		I	2.58
15.417	0.63	0.18	0.371	0		I	2.61
15.500	0.62	0.18	0.374	0		I	2.64
15.583	0.58	0.18	0.377	0		I	2.66
15.667	0.54	0.18	0.379	0		I	2.69
15.750	0.52	0.18	0.382	0		I	2.71
15.833	0.52	0.18	0.384	0		I	2.73
15.917	0.51	0.19	0.386	0		I	2.75
16.000	0.51	0.19	0.388	0		I	2.77
16.083	0.34	0.19	0.390	0	I		2.78
16.167	0.19	0.19	0.391	0			2.79
16.250	0.15	0.19	0.391	IO			2.79
16.333	0.13	0.19	0.390	I 0			2.78
16.417	0.11	0.19	0.390	I 0			2.78
16.500	0.11	0.19	0.389	I 0			2.77
16.583	0.10	0.19	0.389	I 0			2.77
16.667	0.09	0.19	0.388	I 0			2.76
16.750	0.08	0.19	0.387	I 0			2.76
16.833	0.08	0.19	0.387	I 0			2.75
16.917	0.08	0.19	0.386	I 0			2.74
17.000	0.08	0.19	0.385	I 0			2.74
17.083	0.10	0.18	0.385	I 0			2.73
17.167	0.12	0.18	0.384	I 0			2.73
17.250	0.13	0.18	0.384	I 0			2.72
17.333	0.13	0.18	0.383	I 0			2.72
17.417	0.13	0.18	0.383	I 0			2.72
17.500	0.13	0.18	0.383	I 0			2.72
17.583	0.13	0.18	0.382	I 0			2.71
17.667	0.13	0.18	0.382	I 0			2.71
17.750	0.13	0.18	0.382	I 0			2.71
17.833	0.12	0.18	0.381	I 0			2.70
17.917	0.11	0.18	0.381	I 0			2.70
18.000	0.11	0.18	0.380	I 0			2.69
18.083	0.11	0.18	0.380	I 0			2.69
18.167	0.11	0.18	0.379	I 0			2.69

18.250	0.11	0.18	0.379	I	0					2.68
18.333	0.11	0.18	0.378	I	0					2.68
18.417	0.11	0.18	0.378	I	0					2.67
18.500	0.11	0.18	0.377	I	0					2.67
18.583	0.10	0.18	0.377	I	0					2.66
18.667	0.09	0.18	0.376	I	0					2.66
18.750	0.08	0.18	0.375	I	0					2.65
18.833	0.07	0.18	0.375	I	0					2.65
18.917	0.06	0.18	0.374	I	0					2.64
19.000	0.06	0.18	0.373	I	0					2.63
19.083	0.07	0.18	0.372	I	0					2.62
19.167	0.08	0.18	0.371	I	0					2.62
19.250	0.08	0.18	0.371	I	0					2.61
19.333	0.09	0.18	0.370	I	0					2.60
19.417	0.10	0.18	0.369	I	0					2.60
19.500	0.10	0.18	0.369	I	0					2.60
19.583	0.09	0.18	0.368	I	0					2.59
19.667	0.09	0.18	0.368	I	0					2.58
19.750	0.08	0.18	0.367	I	0					2.58
19.833	0.07	0.18	0.366	I	0					2.57
19.917	0.06	0.18	0.366	I	0					2.57
20.000	0.06	0.18	0.365	I	0					2.56
20.083	0.07	0.18	0.364	I	0					2.55
20.167	0.08	0.18	0.363	I	0					2.55
20.250	0.08	0.18	0.362	I	0					2.54
20.333	0.08	0.18	0.362	I	0					2.53
20.417	0.08	0.18	0.361	I	0					2.53
20.500	0.08	0.18	0.360	I	0					2.52
20.583	0.08	0.18	0.360	I	0					2.52
20.667	0.08	0.18	0.359	I	0					2.51
20.750	0.08	0.18	0.358	I	0					2.50
20.833	0.07	0.18	0.358	I	0					2.50
20.917	0.06	0.18	0.357	I	0					2.49
21.000	0.06	0.18	0.356	I	0					2.49
21.083	0.07	0.18	0.355	I	0					2.48
21.167	0.08	0.18	0.355	I	0					2.47
21.250	0.08	0.18	0.354	I	0					2.47
21.333	0.07	0.18	0.353	I	0					2.46
21.417	0.06	0.18	0.352	I	0					2.46
21.500	0.06	0.18	0.352	I	0					2.45
21.583	0.07	0.17	0.351	I	0					2.44
21.667	0.08	0.17	0.350	I	0					2.44
21.750	0.08	0.17	0.349	I	0					2.43
21.833	0.07	0.17	0.349	I	0					2.43
21.917	0.06	0.17	0.348	I	0					2.42
22.000	0.06	0.17	0.347	I	0					2.42
22.083	0.07	0.17	0.346	I	0					2.41
22.167	0.08	0.17	0.346	I	0					2.40
22.250	0.08	0.17	0.345	I	0					2.40
22.333	0.07	0.17	0.344	I	0					2.39

22.417	0.06	0.17	0.344	I	0					2.39
22.500	0.06	0.17	0.343	I	0					2.38
22.583	0.06	0.17	0.342	I	0					2.38
22.667	0.05	0.17	0.341	I	0					2.37
22.750	0.05	0.17	0.340	I	0					2.36
22.833	0.05	0.17	0.340	I	0					2.36
22.917	0.05	0.17	0.339	I	0					2.35
23.000	0.05	0.17	0.338	I	0					2.34
23.083	0.05	0.17	0.337	I	0					2.34
23.167	0.05	0.17	0.336	I	0					2.33
23.250	0.05	0.17	0.336	I	0					2.33
23.333	0.05	0.17	0.335	I	0					2.32
23.417	0.05	0.17	0.334	I	0					2.31
23.500	0.05	0.17	0.333	I	0					2.31
23.583	0.05	0.17	0.332	I	0					2.30
23.667	0.05	0.17	0.332	I	0					2.29
23.750	0.05	0.17	0.331	I	0					2.29
23.833	0.05	0.17	0.330	I	0					2.28
23.917	0.05	0.17	0.329	I	0					2.28
24.000	0.05	0.17	0.328	I	0					2.27
24.083	0.03	0.17	0.328	I	0					2.26
24.167	0.01	0.17	0.327	I	0					2.25
24.250	0.01	0.17	0.325	I	0					2.25
24.333	0.00	0.17	0.324	I	0					2.24
24.417	0.00	0.17	0.323	I	0					2.23
24.500	0.00	0.17	0.322	I	0					2.22
24.583	0.00	0.17	0.321	I	0					2.21
24.667	0.00	0.17	0.320	I	0					2.20
24.750	0.00	0.17	0.319	I	0					2.19
24.833	0.00	0.16	0.318	I	0					2.18
24.917	0.00	0.16	0.316	I	0					2.17
25.000	0.00	0.16	0.315	I	0					2.17
25.083	0.00	0.16	0.314	I	0					2.16
25.167	0.00	0.16	0.313	I	0					2.15
25.250	0.00	0.16	0.312	I	0					2.14
25.333	0.00	0.16	0.311	I	0					2.13
25.417	0.00	0.16	0.310	I	0					2.12
25.500	0.00	0.16	0.308	I	0					2.11
25.583	0.00	0.16	0.307	I	0					2.10
25.667	0.00	0.16	0.306	I	0					2.10
25.750	0.00	0.16	0.305	I	0					2.09
25.833	0.00	0.16	0.304	I	0					2.08
25.917	0.00	0.16	0.303	I	0					2.07
26.000	0.00	0.16	0.302	I	0					2.06
26.083	0.00	0.16	0.301	I	0					2.05
26.167	0.00	0.16	0.300	I	0					2.04
26.250	0.00	0.16	0.299	I	0					2.04
26.333	0.00	0.16	0.297	I	0					2.03
26.417	0.00	0.16	0.296	I	0					2.02
26.500	0.00	0.16	0.295	I	0					2.01

26.583	0.00	0.16	0.294	I	0					2.00
26.667	0.00	0.16	0.293	I	0					1.99
26.750	0.00	0.16	0.292	I	0					1.99
26.833	0.00	0.16	0.291	I	0					1.98
26.917	0.00	0.16	0.290	I	0					1.97
27.000	0.00	0.16	0.289	I	0					1.96
27.083	0.00	0.16	0.288	I	0					1.95
27.167	0.00	0.16	0.287	I	0					1.95
27.250	0.00	0.16	0.286	I	0					1.94
27.333	0.00	0.15	0.284	I	0					1.93
27.417	0.00	0.15	0.283	I	0					1.92
27.500	0.00	0.15	0.282	I	0					1.92
27.583	0.00	0.15	0.281	I	0					1.91
27.667	0.00	0.15	0.280	I	0					1.90
27.750	0.00	0.15	0.279	I	0					1.89
27.833	0.00	0.15	0.278	I	0					1.89
27.917	0.00	0.15	0.277	I	0					1.88
28.000	0.00	0.15	0.276	I	0					1.87
28.083	0.00	0.15	0.275	I	0					1.86
28.167	0.00	0.15	0.274	I	0					1.86
28.250	0.00	0.15	0.273	I	0					1.85
28.333	0.00	0.15	0.272	I	0					1.84
28.417	0.00	0.15	0.271	I	0					1.83
28.500	0.00	0.15	0.270	I	0					1.83
28.583	0.00	0.15	0.269	I	0					1.82
28.667	0.00	0.15	0.268	I	0					1.81
28.750	0.00	0.15	0.267	I	0					1.80
28.833	0.00	0.15	0.266	I	0					1.80
28.917	0.00	0.15	0.265	I	0					1.79
29.000	0.00	0.15	0.264	I	0					1.78
29.083	0.00	0.15	0.263	I	0					1.78
29.167	0.00	0.15	0.262	I	0					1.77
29.250	0.00	0.15	0.261	I	0					1.76
29.333	0.00	0.15	0.260	I	0					1.75
29.417	0.00	0.15	0.259	I	0					1.75
29.500	0.00	0.15	0.258	I	0					1.74
29.583	0.00	0.15	0.257	I	0					1.73
29.667	0.00	0.15	0.256	I	0					1.73
29.750	0.00	0.15	0.255	I	0					1.72
29.833	0.00	0.14	0.254	I	0					1.71
29.917	0.00	0.14	0.253	I	0					1.70
30.000	0.00	0.14	0.252	I	0					1.70
30.083	0.00	0.14	0.251	I	0					1.69
30.167	0.00	0.14	0.250	I	0					1.68
30.250	0.00	0.14	0.249	I	0					1.68
30.333	0.00	0.14	0.248	I	0					1.67
30.417	0.00	0.14	0.247	I	0					1.66
30.500	0.00	0.14	0.246	I	0					1.65
30.583	0.00	0.14	0.245	I	0					1.65
30.667	0.00	0.14	0.244	I	0					1.64

30.750	0.00	0.14	0.243	I	0					1.63
30.833	0.00	0.14	0.242	I	0					1.63
30.917	0.00	0.14	0.241	I	0					1.62
31.000	0.00	0.14	0.240	I	0					1.61
31.083	0.00	0.14	0.239	I	0					1.61
31.167	0.00	0.14	0.238	I	0					1.60
31.250	0.00	0.14	0.237	I	0					1.59
31.333	0.00	0.14	0.236	I	0					1.59
31.417	0.00	0.14	0.235	I	0					1.58
31.500	0.00	0.14	0.234	I	0					1.57
31.583	0.00	0.14	0.233	I	0					1.56
31.667	0.00	0.14	0.232	I	0					1.56
31.750	0.00	0.14	0.231	I	0					1.55
31.833	0.00	0.14	0.230	I	0					1.54
31.917	0.00	0.14	0.229	I	0					1.54
32.000	0.00	0.14	0.228	I	0					1.53
32.083	0.00	0.14	0.227	I	0					1.52
32.167	0.00	0.14	0.226	I	0					1.52
32.250	0.00	0.14	0.226	I	0					1.51
32.333	0.00	0.14	0.225	I	0					1.50
32.417	0.00	0.13	0.224	I	0					1.50
32.500	0.00	0.13	0.223	I	0					1.49
32.583	0.00	0.13	0.222	I	0					1.48
32.667	0.00	0.13	0.221	I	0					1.48
32.750	0.00	0.13	0.220	I	0					1.47
32.833	0.00	0.13	0.219	I	0					1.47
32.917	0.00	0.13	0.218	I	0					1.46
33.000	0.00	0.13	0.217	I	0					1.45
33.083	0.00	0.13	0.216	I	0					1.45
33.167	0.00	0.13	0.215	I	0					1.44
33.250	0.00	0.13	0.215	I	0					1.43
33.333	0.00	0.13	0.214	I	0					1.43
33.417	0.00	0.13	0.213	I	0					1.42
33.500	0.00	0.13	0.212	I	0					1.42
33.583	0.00	0.13	0.211	I	0					1.41
33.667	0.00	0.13	0.210	I	0					1.40
33.750	0.00	0.13	0.209	I	0					1.40
33.833	0.00	0.13	0.208	I	0					1.39
33.917	0.00	0.13	0.207	I	0					1.38
34.000	0.00	0.13	0.206	I	0					1.38
34.083	0.00	0.13	0.206	I	0					1.37
34.167	0.00	0.13	0.205	I	0					1.37
34.250	0.00	0.13	0.204	I	0					1.36
34.333	0.00	0.13	0.203	I	0					1.35
34.417	0.00	0.13	0.202	I	0					1.35
34.500	0.00	0.13	0.201	I	0					1.34
34.583	0.00	0.13	0.200	I	0					1.34
34.667	0.00	0.13	0.199	I	0					1.33
34.750	0.00	0.13	0.199	I	0					1.32
34.833	0.00	0.13	0.198	I	0					1.32



34.917	0.00	0.13	0.197	I	0					1.31
35.000	0.00	0.12	0.196	I	0					1.31
35.083	0.00	0.12	0.195	I	0					1.30
35.167	0.00	0.12	0.194	I	0					1.29
35.250	0.00	0.12	0.193	I	0					1.29
35.333	0.00	0.12	0.193	I	0					1.28
35.417	0.00	0.12	0.192	I	0					1.28
35.500	0.00	0.12	0.191	I	0					1.27
35.583	0.00	0.12	0.190	I	0					1.26
35.667	0.00	0.12	0.189	I	0					1.26
35.750	0.00	0.12	0.188	I	0					1.25
35.833	0.00	0.12	0.187	I	0					1.25
35.917	0.00	0.12	0.187	I	0					1.24
36.000	0.00	0.12	0.186	I	0					1.23
36.083	0.00	0.12	0.185	I	0					1.23
36.167	0.00	0.12	0.184	I	0					1.22
36.250	0.00	0.12	0.183	I	0					1.22
36.333	0.00	0.12	0.182	I	0					1.21
36.417	0.00	0.12	0.182	I	0					1.21
36.500	0.00	0.12	0.181	I	0					1.20
36.583	0.00	0.12	0.180	I	0					1.19
36.667	0.00	0.12	0.179	I	0					1.19
36.750	0.00	0.12	0.178	I	0					1.18
36.833	0.00	0.12	0.178	I	0					1.18
36.917	0.00	0.12	0.177	I	0					1.17
37.000	0.00	0.12	0.176	I	0					1.17
37.083	0.00	0.12	0.175	I	0					1.16
37.167	0.00	0.12	0.174	I	0					1.16
37.250	0.00	0.12	0.174	I	0					1.15
37.333	0.00	0.12	0.173	I	0					1.14
37.417	0.00	0.12	0.172	I	0					1.14
37.500	0.00	0.12	0.171	I	0					1.13
37.583	0.00	0.12	0.170	I	0					1.13
37.667	0.00	0.12	0.170	I	0					1.12
37.750	0.00	0.12	0.169	I	0					1.12
37.833	0.00	0.11	0.168	I	0					1.11
37.917	0.00	0.11	0.167	I	0					1.11
38.000	0.00	0.11	0.166	I	0					1.10
38.083	0.00	0.11	0.166	I	0					1.09
38.167	0.00	0.11	0.165	I	0					1.09
38.250	0.00	0.11	0.164	I	0					1.08
38.333	0.00	0.11	0.163	I	0					1.08
38.417	0.00	0.11	0.162	I	0					1.07
38.500	0.00	0.11	0.162	I	0					1.07
38.583	0.00	0.11	0.161	I	0					1.06
38.667	0.00	0.11	0.160	I	0					1.06
38.750	0.00	0.11	0.159	I	0					1.05
38.833	0.00	0.11	0.159	I	0					1.05
38.917	0.00	0.11	0.158	I	0					1.04
39.000	0.00	0.11	0.157	I	0					1.04

39.083	0.00	0.11	0.156	I	0					1.03
39.167	0.00	0.11	0.156	I	0					1.02
39.250	0.00	0.11	0.155	I	0					1.02
39.333	0.00	0.11	0.154	I	0					1.01
39.417	0.00	0.11	0.153	I	0					1.01
39.500	0.00	0.11	0.153	I	0					1.00
39.583	0.00	0.11	0.152	I	0					1.00
39.667	0.00	0.11	0.151	I	0					0.99
39.750	0.00	0.11	0.150	I	0					0.99
39.833	0.00	0.11	0.150	I	0					0.98
39.917	0.00	0.11	0.149	I	0					0.98
40.000	0.00	0.11	0.148	I	0					0.97
40.083	0.00	0.11	0.147	I	0					0.97
40.167	0.00	0.11	0.147	I	0					0.96
40.250	0.00	0.11	0.146	I	0					0.96
40.333	0.00	0.11	0.145	I	0					0.95
40.417	0.00	0.11	0.144	I	0					0.95
40.500	0.00	0.11	0.144	I	0					0.95
40.583	0.00	0.10	0.143	I	0					0.94
40.667	0.00	0.10	0.142	I	0					0.94
40.750	0.00	0.10	0.142	I	0					0.93
40.833	0.00	0.10	0.141	I	0					0.93
40.917	0.00	0.10	0.140	I	0					0.92
41.000	0.00	0.10	0.139	I	0					0.92
41.083	0.00	0.10	0.139	I	0					0.91
41.167	0.00	0.10	0.138	I	0					0.91
41.250	0.00	0.10	0.137	I	0					0.90
41.333	0.00	0.10	0.137	I	0					0.90
41.417	0.00	0.10	0.136	I	0					0.89
41.500	0.00	0.10	0.135	I	0					0.89
41.583	0.00	0.10	0.134	I	0					0.88
41.667	0.00	0.10	0.134	I	0					0.88
41.750	0.00	0.10	0.133	I	0					0.88
41.833	0.00	0.10	0.132	I	0					0.87
41.917	0.00	0.10	0.132	I	0					0.87
42.000	0.00	0.10	0.131	I	0					0.86
42.083	0.00	0.10	0.130	I	0					0.86
42.167	0.00	0.10	0.130	I	0					0.85
42.250	0.00	0.10	0.129	I	0					0.85
42.333	0.00	0.10	0.128	I	0					0.84
42.417	0.00	0.10	0.128	I	0					0.84
42.500	0.00	0.10	0.127	I	0					0.84
42.583	0.00	0.10	0.126	I	0					0.83
42.667	0.00	0.10	0.126	I	0					0.83
42.750	0.00	0.10	0.125	I	0					0.82
42.833	0.00	0.10	0.124	I	0					0.82
42.917	0.00	0.10	0.124	I	0					0.81
43.000	0.00	0.10	0.123	I	0					0.81
43.083	0.00	0.09	0.122	I	0					0.80
43.167	0.00	0.09	0.122	I	0					0.80

43.250	0.00	0.09	0.121	I	0	0.80
43.333	0.00	0.09	0.120	I	0	0.79
43.417	0.00	0.09	0.120	I	0	0.79
43.500	0.00	0.09	0.119	I	0	0.78
43.583	0.00	0.09	0.118	I	0	0.78
43.667	0.00	0.09	0.118	I	0	0.78
43.750	0.00	0.09	0.117	I	0	0.77
43.833	0.00	0.09	0.117	I	0	0.77
43.917	0.00	0.09	0.116	I	0	0.76
44.000	0.00	0.09	0.115	I	0	0.76
44.083	0.00	0.09	0.115	I	0	0.75
44.167	0.00	0.09	0.114	I	0	0.75
44.250	0.00	0.09	0.113	I	0	0.75
44.333	0.00	0.09	0.113	I	0	0.74
44.417	0.00	0.09	0.112	I	0	0.74
44.500	0.00	0.09	0.112	I	0	0.73
44.583	0.00	0.09	0.111	I	0	0.73
44.667	0.00	0.09	0.110	I	0	0.73
44.750	0.00	0.09	0.110	I	0	0.72
44.833	0.00	0.09	0.109	I	0	0.72
44.917	0.00	0.09	0.108	I	0	0.71
45.000	0.00	0.09	0.108	I	0	0.71
45.083	0.00	0.09	0.107	I	0	0.71
45.167	0.00	0.09	0.107	I	0	0.70
45.250	0.00	0.09	0.106	I	0	0.70
45.333	0.00	0.09	0.105	I	0	0.69
45.417	0.00	0.09	0.105	I	0	0.69
45.500	0.00	0.09	0.104	I	0	0.69
45.583	0.00	0.09	0.104	I	0	0.68
45.667	0.00	0.09	0.103	I	0	0.68
45.750	0.00	0.09	0.102	I	0	0.67
45.833	0.00	0.09	0.102	I	0	0.67
45.917	0.00	0.08	0.101	I	0	0.67
46.000	0.00	0.08	0.101	I	0	0.66
46.083	0.00	0.08	0.100	I	0	0.66
46.167	0.00	0.08	0.100	I	0	0.65
46.250	0.00	0.08	0.099	I	0	0.65
46.333	0.00	0.08	0.098	I	0	0.65
46.417	0.00	0.08	0.098	I	0	0.64
46.500	0.00	0.08	0.097	I	0	0.64
46.583	0.00	0.08	0.097	I	0	0.64
46.667	0.00	0.08	0.096	I	0	0.63
46.750	0.00	0.08	0.096	I	0	0.63
46.833	0.00	0.08	0.095	I	0	0.62
46.917	0.00	0.08	0.094	I	0	0.62
47.000	0.00	0.08	0.094	I	0	0.62
47.083	0.00	0.08	0.093	I	0	0.61
47.167	0.00	0.08	0.093	I	0	0.61
47.250	0.00	0.08	0.092	I	0	0.61
47.333	0.00	0.08	0.092	I	0	0.60

47.417	0.00	0.08	0.091	I 0					0.60
47.500	0.00	0.08	0.091	I 0					0.60
47.583	0.00	0.08	0.090	I 0					0.59
47.667	0.00	0.08	0.089	I 0					0.59
47.750	0.00	0.08	0.089	I 0					0.58
47.833	0.00	0.08	0.088	I 0					0.58
47.917	0.00	0.08	0.088	I 0					0.58
48.000	0.00	0.08	0.087	I 0					0.57
48.083	0.00	0.08	0.087	I 0					0.57
48.167	0.00	0.08	0.086	I 0					0.57
48.250	0.00	0.08	0.086	I 0					0.56
48.333	0.00	0.08	0.085	I 0					0.56
48.417	0.00	0.08	0.085	I 0					0.56
48.500	0.00	0.08	0.084	I 0					0.55
48.583	0.00	0.08	0.084	I 0					0.55
48.667	0.00	0.08	0.083	I 0					0.55
48.750	0.00	0.08	0.082	I 0					0.54
48.833	0.00	0.08	0.082	I 0					0.54
48.917	0.00	0.08	0.081	I 0					0.54
49.000	0.00	0.08	0.081	I 0					0.53
49.083	0.00	0.08	0.080	I 0					0.53
49.167	0.00	0.07	0.080	I 0					0.53
49.250	0.00	0.07	0.079	I 0					0.52
49.333	0.00	0.07	0.079	I 0					0.52
49.417	0.00	0.07	0.078	I 0					0.52
49.500	0.00	0.07	0.078	I 0					0.51
49.583	0.00	0.07	0.077	I 0					0.51
49.667	0.00	0.07	0.077	I 0					0.51
49.750	0.00	0.07	0.076	I 0					0.50
49.833	0.00	0.07	0.076	I 0					0.50
49.917	0.00	0.07	0.075	I 0					0.50
50.000	0.00	0.07	0.075	I 0					0.49
50.083	0.00	0.07	0.074	I 0					0.49
50.167	0.00	0.07	0.074	I 0					0.49
50.250	0.00	0.07	0.073	I 0					0.48
50.333	0.00	0.07	0.073	I 0					0.48
50.417	0.00	0.07	0.072	I 0					0.48
50.500	0.00	0.07	0.072	I 0					0.47
50.583	0.00	0.07	0.071	I 0					0.47
50.667	0.00	0.07	0.071	I 0					0.47
50.750	0.00	0.07	0.070	I 0					0.46
50.833	0.00	0.07	0.070	I 0					0.46
50.917	0.00	0.07	0.070	I 0					0.46
51.000	0.00	0.07	0.069	I 0					0.45
51.083	0.00	0.07	0.069	I 0					0.45
51.167	0.00	0.07	0.068	I 0					0.45
51.250	0.00	0.07	0.068	I 0					0.45
51.333	0.00	0.06	0.067	I 0					0.44
51.417	0.00	0.06	0.067	I 0					0.44
51.500	0.00	0.06	0.066	I 0					0.44

51.583	0.00	0.06	0.066	I 0					0.43
51.667	0.00	0.06	0.066	I 0					0.43
51.750	0.00	0.06	0.065	I 0					0.43
51.833	0.00	0.06	0.065	I 0					0.43
51.917	0.00	0.06	0.064	I 0					0.42
52.000	0.00	0.06	0.064	I 0					0.42
52.083	0.00	0.06	0.063	I 0					0.42
52.167	0.00	0.06	0.063	I 0					0.41
52.250	0.00	0.06	0.063	I 0					0.41
52.333	0.00	0.06	0.062	I 0					0.41
52.417	0.00	0.06	0.062	I 0					0.41
52.500	0.00	0.06	0.061	I 0					0.40
52.583	0.00	0.06	0.061	I 0					0.40
52.667	0.00	0.06	0.061	I 0					0.40
52.750	0.00	0.06	0.060	I 0					0.40
52.833	0.00	0.06	0.060	I 0					0.39
52.917	0.00	0.06	0.059	IO					0.39
53.000	0.00	0.06	0.059	IO					0.39
53.083	0.00	0.06	0.059	IO					0.39
53.167	0.00	0.06	0.058	IO					0.38
53.250	0.00	0.06	0.058	IO					0.38
53.333	0.00	0.06	0.057	IO					0.38
53.417	0.00	0.05	0.057	IO					0.38
53.500	0.00	0.05	0.057	IO					0.37
53.583	0.00	0.05	0.056	IO					0.37
53.667	0.00	0.05	0.056	IO					0.37
53.750	0.00	0.05	0.056	IO					0.37
53.833	0.00	0.05	0.055	IO					0.36
53.917	0.00	0.05	0.055	IO					0.36
54.000	0.00	0.05	0.054	IO					0.36
54.083	0.00	0.05	0.054	IO					0.36
54.167	0.00	0.05	0.054	IO					0.35
54.250	0.00	0.05	0.053	IO					0.35
54.333	0.00	0.05	0.053	IO					0.35
54.417	0.00	0.05	0.053	IO					0.35
54.500	0.00	0.05	0.052	IO					0.34
54.583	0.00	0.05	0.052	IO					0.34
54.667	0.00	0.05	0.052	IO					0.34
54.750	0.00	0.05	0.051	IO					0.34
54.833	0.00	0.05	0.051	IO					0.34
54.917	0.00	0.05	0.051	IO					0.33
55.000	0.00	0.05	0.050	IO					0.33
55.083	0.00	0.05	0.050	IO					0.33
55.167	0.00	0.05	0.050	IO					0.33
55.250	0.00	0.05	0.049	IO					0.32
55.333	0.00	0.05	0.049	IO					0.32
55.417	0.00	0.05	0.049	IO					0.32
55.500	0.00	0.05	0.048	IO					0.32
55.583	0.00	0.05	0.048	IO					0.32
55.667	0.00	0.05	0.048	IO					0.31

55.750	0.00	0.05	0.047	IO					0.31
55.833	0.00	0.05	0.047	IO					0.31
55.917	0.00	0.04	0.047	IO					0.31
56.000	0.00	0.04	0.046	IO					0.31
56.083	0.00	0.04	0.046	IO					0.30
56.167	0.00	0.04	0.046	IO					0.30
56.250	0.00	0.04	0.046	IO					0.30
56.333	0.00	0.04	0.045	IO					0.30
56.417	0.00	0.04	0.045	IO					0.30
56.500	0.00	0.04	0.045	IO					0.29
56.583	0.00	0.04	0.044	IO					0.29
56.667	0.00	0.04	0.044	IO					0.29
56.750	0.00	0.04	0.044	IO					0.29
56.833	0.00	0.04	0.043	IO					0.29
56.917	0.00	0.04	0.043	IO					0.28
57.000	0.00	0.04	0.043	IO					0.28
57.083	0.00	0.04	0.043	IO					0.28
57.167	0.00	0.04	0.042	IO					0.28
57.250	0.00	0.04	0.042	IO					0.28
57.333	0.00	0.04	0.042	IO					0.27
57.417	0.00	0.04	0.042	IO					0.27
57.500	0.00	0.04	0.041	IO					0.27
57.583	0.00	0.04	0.041	IO					0.27
57.667	0.00	0.04	0.041	IO					0.27
57.750	0.00	0.04	0.040	IO					0.27
57.833	0.00	0.04	0.040	IO					0.26
57.917	0.00	0.04	0.040	IO					0.26
58.000	0.00	0.04	0.040	IO					0.26
58.083	0.00	0.04	0.039	IO					0.26
58.167	0.00	0.04	0.039	IO					0.26
58.250	0.00	0.04	0.039	IO					0.26
58.333	0.00	0.04	0.039	IO					0.25
58.417	0.00	0.04	0.038	IO					0.25
58.500	0.00	0.04	0.038	IO					0.25
58.583	0.00	0.04	0.038	IO					0.25
58.667	0.00	0.04	0.038	IO					0.25
58.750	0.00	0.04	0.037	IO					0.25
58.833	0.00	0.04	0.037	IO					0.24
58.917	0.00	0.04	0.037	IO					0.24
59.000	0.00	0.04	0.037	IO					0.24
59.083	0.00	0.03	0.036	IO					0.24
59.167	0.00	0.03	0.036	IO					0.24
59.250	0.00	0.03	0.036	IO					0.24
59.333	0.00	0.03	0.036	IO					0.23
59.417	0.00	0.03	0.035	IO					0.23
59.500	0.00	0.03	0.035	IO					0.23
59.583	0.00	0.03	0.035	IO					0.23
59.667	0.00	0.03	0.035	IO					0.23
59.750	0.00	0.03	0.034	IO					0.23
59.833	0.00	0.03	0.034	IO					0.23

59.917	0.00	0.03	0.034	IO					0.22
60.000	0.00	0.03	0.034	IO					0.22
60.083	0.00	0.03	0.034	IO					0.22
60.167	0.00	0.03	0.033	IO					0.22
60.250	0.00	0.03	0.033	IO					0.22
60.333	0.00	0.03	0.033	IO					0.22
60.417	0.00	0.03	0.033	IO					0.22
60.500	0.00	0.03	0.032	IO					0.21
60.583	0.00	0.03	0.032	IO					0.21
60.667	0.00	0.03	0.032	IO					0.21
60.750	0.00	0.03	0.032	IO					0.21
60.833	0.00	0.03	0.032	IO					0.21
60.917	0.00	0.03	0.031	IO					0.21
61.000	0.00	0.03	0.031	IO					0.21
61.083	0.00	0.03	0.031	IO					0.20
61.167	0.00	0.03	0.031	IO					0.20
61.250	0.00	0.03	0.031	IO					0.20
61.333	0.00	0.03	0.030	IO					0.20
61.417	0.00	0.03	0.030	IO					0.20
61.500	0.00	0.03	0.030	IO					0.20
61.583	0.00	0.03	0.030	0					0.20
61.667	0.00	0.03	0.030	0					0.19
61.750	0.00	0.03	0.029	0					0.19
61.833	0.00	0.03	0.029	0					0.19
61.917	0.00	0.03	0.029	0					0.19
62.000	0.00	0.03	0.029	0					0.19
62.083	0.00	0.03	0.029	0					0.19
62.167	0.00	0.03	0.028	0					0.19
62.250	0.00	0.03	0.028	0					0.19
62.333	0.00	0.03	0.028	0					0.18
62.417	0.00	0.03	0.028	0					0.18
62.500	0.00	0.03	0.028	0					0.18
62.583	0.00	0.03	0.028	0					0.18
62.667	0.00	0.03	0.027	0					0.18
62.750	0.00	0.03	0.027	0					0.18
62.833	0.00	0.03	0.027	0					0.18
62.917	0.00	0.03	0.027	0					0.18
63.000	0.00	0.03	0.027	0					0.18
63.083	0.00	0.03	0.026	0					0.17
63.167	0.00	0.03	0.026	0					0.17
63.250	0.00	0.03	0.026	0					0.17
63.333	0.00	0.02	0.026	0					0.17
63.417	0.00	0.02	0.026	0					0.17
63.500	0.00	0.02	0.026	0					0.17
63.583	0.00	0.02	0.025	0					0.17
63.667	0.00	0.02	0.025	0					0.17
63.750	0.00	0.02	0.025	0					0.17
63.833	0.00	0.02	0.025	0					0.16
63.917	0.00	0.02	0.025	0					0.16
64.000	0.00	0.02	0.025	0					0.16

64.083	0.00	0.02	0.024	0					0.16
64.167	0.00	0.02	0.024	0					0.16
64.250	0.00	0.02	0.024	0					0.16
64.333	0.00	0.02	0.024	0					0.16
64.417	0.00	0.02	0.024	0					0.16
64.500	0.00	0.02	0.024	0					0.16
64.583	0.00	0.02	0.024	0					0.15
64.667	0.00	0.02	0.023	0					0.15
64.750	0.00	0.02	0.023	0					0.15
64.833	0.00	0.02	0.023	0					0.15
64.917	0.00	0.02	0.023	0					0.15
65.000	0.00	0.02	0.023	0					0.15
65.083	0.00	0.02	0.023	0					0.15
65.167	0.00	0.02	0.022	0					0.15
65.250	0.00	0.02	0.022	0					0.15
65.333	0.00	0.02	0.022	0					0.15
65.417	0.00	0.02	0.022	0					0.14
65.500	0.00	0.02	0.022	0					0.14
65.583	0.00	0.02	0.022	0					0.14
65.667	0.00	0.02	0.022	0					0.14
65.750	0.00	0.02	0.021	0					0.14
65.833	0.00	0.02	0.021	0					0.14
65.917	0.00	0.02	0.021	0					0.14
66.000	0.00	0.02	0.021	0					0.14
66.083	0.00	0.02	0.021	0					0.14
66.167	0.00	0.02	0.021	0					0.14
66.250	0.00	0.02	0.021	0					0.14
66.333	0.00	0.02	0.020	0					0.13
66.417	0.00	0.02	0.020	0					0.13
66.500	0.00	0.02	0.020	0					0.13
66.583	0.00	0.02	0.020	0					0.13
66.667	0.00	0.02	0.020	0					0.13
66.750	0.00	0.02	0.020	0					0.13
66.833	0.00	0.02	0.020	0					0.13
66.917	0.00	0.02	0.020	0					0.13
67.000	0.00	0.02	0.019	0					0.13
67.083	0.00	0.02	0.019	0					0.13
67.167	0.00	0.02	0.019	0					0.13
67.250	0.00	0.02	0.019	0					0.13
67.333	0.00	0.02	0.019	0					0.12
67.417	0.00	0.02	0.019	0					0.12
67.500	0.00	0.02	0.019	0					0.12
67.583	0.00	0.02	0.019	0					0.12
67.667	0.00	0.02	0.018	0					0.12
67.750	0.00	0.02	0.018	0					0.12
67.833	0.00	0.02	0.018	0					0.12
67.917	0.00	0.02	0.018	0					0.12
68.000	0.00	0.02	0.018	0					0.12
68.083	0.00	0.02	0.018	0					0.12
68.167	0.00	0.02	0.018	0					0.12



68.250	0.00	0.02	0.018	0				0.12
68.333	0.00	0.02	0.017	0				0.11
68.417	0.00	0.02	0.017	0				0.11
68.500	0.00	0.02	0.017	0				0.11
68.583	0.00	0.02	0.017	0				0.11
68.667	0.00	0.02	0.017	0				0.11
68.750	0.00	0.02	0.017	0				0.11
68.833	0.00	0.02	0.017	0				0.11
68.917	0.00	0.02	0.017	0				0.11
69.000	0.00	0.02	0.017	0				0.11
69.083	0.00	0.02	0.016	0				0.11
69.167	0.00	0.02	0.016	0				0.11
69.250	0.00	0.02	0.016	0				0.11
69.333	0.00	0.02	0.016	0				0.11
69.417	0.00	0.02	0.016	0				0.11
69.500	0.00	0.02	0.016	0				0.10
69.583	0.00	0.02	0.016	0				0.10
69.667	0.00	0.02	0.016	0				0.10
69.750	0.00	0.01	0.016	0				0.10
69.833	0.00	0.01	0.015	0				0.10
69.917	0.00	0.01	0.015	0				0.10
70.000	0.00	0.01	0.015	0				0.10
70.083	0.00	0.01	0.015	0				0.10
70.167	0.00	0.01	0.015	0				0.10
70.250	0.00	0.01	0.015	0				0.10
70.333	0.00	0.01	0.015	0				0.10
70.417	0.00	0.01	0.015	0				0.10
70.500	0.00	0.01	0.015	0				0.10
70.583	0.00	0.01	0.015	0				0.10
70.667	0.00	0.01	0.014	0				0.10
70.750	0.00	0.01	0.014	0				0.09
70.833	0.00	0.01	0.014	0				0.09
70.917	0.00	0.01	0.014	0				0.09
71.000	0.00	0.01	0.014	0				0.09
71.083	0.00	0.01	0.014	0				0.09
71.167	0.00	0.01	0.014	0				0.09
71.250	0.00	0.01	0.014	0				0.09
71.333	0.00	0.01	0.014	0				0.09
71.417	0.00	0.01	0.014	0				0.09
71.500	0.00	0.01	0.014	0				0.09
71.583	0.00	0.01	0.013	0				0.09
71.667	0.00	0.01	0.013	0				0.09
71.750	0.00	0.01	0.013	0				0.09
71.833	0.00	0.01	0.013	0				0.09
71.917	0.00	0.01	0.013	0				0.09
72.000	0.00	0.01	0.013	0				0.09
72.083	0.00	0.01	0.013	0				0.09
72.167	0.00	0.01	0.013	0				0.08
72.250	0.00	0.01	0.013	0				0.08
72.333	0.00	0.01	0.013	0				0.08

72.417	0.00	0.01	0.013	0					0.08
72.500	0.00	0.01	0.013	0					0.08
72.583	0.00	0.01	0.012	0					0.08
72.667	0.00	0.01	0.012	0					0.08
72.750	0.00	0.01	0.012	0					0.08
72.833	0.00	0.01	0.012	0					0.08
72.917	0.00	0.01	0.012	0					0.08
73.000	0.00	0.01	0.012	0					0.08
73.083	0.00	0.01	0.012	0					0.08
73.167	0.00	0.01	0.012	0					0.08
73.250	0.00	0.01	0.012	0					0.08
73.333	0.00	0.01	0.012	0					0.08
73.417	0.00	0.01	0.012	0					0.08
73.500	0.00	0.01	0.012	0					0.08
73.583	0.00	0.01	0.012	0					0.08
73.667	0.00	0.01	0.011	0					0.08
73.750	0.00	0.01	0.011	0					0.07
73.833	0.00	0.01	0.011	0					0.07
73.917	0.00	0.01	0.011	0					0.07
74.000	0.00	0.01	0.011	0					0.07
74.083	0.00	0.01	0.011	0					0.07
74.167	0.00	0.01	0.011	0					0.07
74.250	0.00	0.01	0.011	0					0.07
74.333	0.00	0.01	0.011	0					0.07
74.417	0.00	0.01	0.011	0					0.07
74.500	0.00	0.01	0.011	0					0.07
74.583	0.00	0.01	0.011	0					0.07
74.667	0.00	0.01	0.011	0					0.07
74.750	0.00	0.01	0.010	0					0.07
74.833	0.00	0.01	0.010	0					0.07
74.917	0.00	0.01	0.010	0					0.07
75.000	0.00	0.01	0.010	0					0.07
75.083	0.00	0.01	0.010	0					0.07
75.167	0.00	0.01	0.010	0					0.07
75.250	0.00	0.01	0.010	0					0.07
75.333	0.00	0.01	0.010	0					0.07
75.417	0.00	0.01	0.010	0					0.07
75.500	0.00	0.01	0.010	0					0.06
75.583	0.00	0.01	0.010	0					0.06
75.667	0.00	0.01	0.010	0					0.06
75.750	0.00	0.01	0.010	0					0.06
75.833	0.00	0.01	0.010	0					0.06
75.917	0.00	0.01	0.010	0					0.06
76.000	0.00	0.01	0.009	0					0.06
76.083	0.00	0.01	0.009	0					0.06
76.167	0.00	0.01	0.009	0					0.06
76.250	0.00	0.01	0.009	0					0.06
76.333	0.00	0.01	0.009	0					0.06
76.417	0.00	0.01	0.009	0					0.06
76.500	0.00	0.01	0.009	0					0.06

76.583	0.00	0.01	0.009	0					0.06
76.667	0.00	0.01	0.009	0					0.06
76.750	0.00	0.01	0.009	0					0.06
76.833	0.00	0.01	0.009	0					0.06
76.917	0.00	0.01	0.009	0					0.06
77.000	0.00	0.01	0.009	0					0.06
77.083	0.00	0.01	0.009	0					0.06
77.167	0.00	0.01	0.009	0					0.06
77.250	0.00	0.01	0.009	0					0.06
77.333	0.00	0.01	0.009	0					0.06
77.417	0.00	0.01	0.008	0					0.06
77.500	0.00	0.01	0.008	0					0.06
77.583	0.00	0.01	0.008	0					0.06
77.667	0.00	0.01	0.008	0					0.05
77.750	0.00	0.01	0.008	0					0.05
77.833	0.00	0.01	0.008	0					0.05
77.917	0.00	0.01	0.008	0					0.05
78.000	0.00	0.01	0.008	0					0.05
78.083	0.00	0.01	0.008	0					0.05
78.167	0.00	0.01	0.008	0					0.05
78.250	0.00	0.01	0.008	0					0.05
78.333	0.00	0.01	0.008	0					0.05
78.417	0.00	0.01	0.008	0					0.05
78.500	0.00	0.01	0.008	0					0.05
78.583	0.00	0.01	0.008	0					0.05
78.667	0.00	0.01	0.008	0					0.05
78.750	0.00	0.01	0.008	0					0.05
78.833	0.00	0.01	0.008	0					0.05
78.917	0.00	0.01	0.008	0					0.05
79.000	0.00	0.01	0.007	0					0.05
79.083	0.00	0.01	0.007	0					0.05
79.167	0.00	0.01	0.007	0					0.05
79.250	0.00	0.01	0.007	0					0.05
79.333	0.00	0.01	0.007	0					0.05
79.417	0.00	0.01	0.007	0					0.05
79.500	0.00	0.01	0.007	0					0.05
79.583	0.00	0.01	0.007	0					0.05
79.667	0.00	0.01	0.007	0					0.05
79.750	0.00	0.01	0.007	0					0.05
79.833	0.00	0.01	0.007	0					0.05
79.917	0.00	0.01	0.007	0					0.05
80.000	0.00	0.01	0.007	0					0.05
80.083	0.00	0.01	0.007	0					0.05
80.167	0.00	0.01	0.007	0					0.04
80.250	0.00	0.01	0.007	0					0.04
80.333	0.00	0.01	0.007	0					0.04
80.417	0.00	0.01	0.007	0					0.04
80.500	0.00	0.01	0.007	0					0.04
80.583	0.00	0.01	0.007	0					0.04
80.667	0.00	0.01	0.007	0					0.04

80.750	0.00	0.01	0.007	0					0.04
80.833	0.00	0.01	0.006	0					0.04
80.917	0.00	0.01	0.006	0					0.04
81.000	0.00	0.01	0.006	0					0.04
81.083	0.00	0.01	0.006	0					0.04
81.167	0.00	0.01	0.006	0					0.04
81.250	0.00	0.01	0.006	0					0.04
81.333	0.00	0.01	0.006	0					0.04
81.417	0.00	0.01	0.006	0					0.04
81.500	0.00	0.01	0.006	0					0.04
81.583	0.00	0.01	0.006	0					0.04
81.667	0.00	0.01	0.006	0					0.04
81.750	0.00	0.01	0.006	0					0.04
81.833	0.00	0.01	0.006	0					0.04
81.917	0.00	0.01	0.006	0					0.04
82.000	0.00	0.01	0.006	0					0.04
82.083	0.00	0.01	0.006	0					0.04
82.167	0.00	0.01	0.006	0					0.04
82.250	0.00	0.01	0.006	0					0.04
82.333	0.00	0.01	0.006	0					0.04
82.417	0.00	0.01	0.006	0					0.04
82.500	0.00	0.01	0.006	0					0.04
82.583	0.00	0.01	0.006	0					0.04
82.667	0.00	0.01	0.006	0					0.04
82.750	0.00	0.01	0.006	0					0.04
82.833	0.00	0.01	0.006	0					0.04
82.917	0.00	0.01	0.005	0					0.04
83.000	0.00	0.01	0.005	0					0.04
83.083	0.00	0.01	0.005	0					0.04
83.167	0.00	0.01	0.005	0					0.04
83.250	0.00	0.01	0.005	0					0.04
83.333	0.00	0.01	0.005	0					0.03
83.417	0.00	0.01	0.005	0					0.03
83.500	0.00	0.01	0.005	0					0.03
83.583	0.00	0.00	0.005	0					0.03
83.667	0.00	0.00	0.005	0					0.03
83.750	0.00	0.00	0.005	0					0.03
83.833	0.00	0.00	0.005	0					0.03
83.917	0.00	0.00	0.005	0					0.03
84.000	0.00	0.00	0.005	0					0.03
84.083	0.00	0.00	0.005	0					0.03
84.167	0.00	0.00	0.005	0					0.03
84.250	0.00	0.00	0.005	0					0.03
84.333	0.00	0.00	0.005	0					0.03
84.417	0.00	0.00	0.005	0					0.03
84.500	0.00	0.00	0.005	0					0.03
84.583	0.00	0.00	0.005	0					0.03
84.667	0.00	0.00	0.005	0					0.03
84.750	0.00	0.00	0.005	0					0.03
84.833	0.00	0.00	0.005	0					0.03

84.917	0.00	0.00	0.005	0					0.03
85.000	0.00	0.00	0.005	0					0.03
85.083	0.00	0.00	0.005	0					0.03
85.167	0.00	0.00	0.005	0					0.03
85.250	0.00	0.00	0.005	0					0.03
85.333	0.00	0.00	0.005	0					0.03
85.417	0.00	0.00	0.004	0					0.03
85.500	0.00	0.00	0.004	0					0.03
85.583	0.00	0.00	0.004	0					0.03
85.667	0.00	0.00	0.004	0					0.03
85.750	0.00	0.00	0.004	0					0.03
85.833	0.00	0.00	0.004	0					0.03
85.917	0.00	0.00	0.004	0					0.03
86.000	0.00	0.00	0.004	0					0.03
86.083	0.00	0.00	0.004	0					0.03
86.167	0.00	0.00	0.004	0					0.03
86.250	0.00	0.00	0.004	0					0.03
86.333	0.00	0.00	0.004	0					0.03
86.417	0.00	0.00	0.004	0					0.03
86.500	0.00	0.00	0.004	0					0.03
86.583	0.00	0.00	0.004	0					0.03
86.667	0.00	0.00	0.004	0					0.03
86.750	0.00	0.00	0.004	0					0.03
86.833	0.00	0.00	0.004	0					0.03
86.917	0.00	0.00	0.004	0					0.03
87.000	0.00	0.00	0.004	0					0.03
87.083	0.00	0.00	0.004	0					0.03
87.167	0.00	0.00	0.004	0					0.03
87.250	0.00	0.00	0.004	0					0.03
87.333	0.00	0.00	0.004	0					0.03
87.417	0.00	0.00	0.004	0					0.03
87.500	0.00	0.00	0.004	0					0.03
87.583	0.00	0.00	0.004	0					0.02
87.667	0.00	0.00	0.004	0					0.02
87.750	0.00	0.00	0.004	0					0.02
87.833	0.00	0.00	0.004	0					0.02
87.917	0.00	0.00	0.004	0					0.02
88.000	0.00	0.00	0.004	0					0.02
88.083	0.00	0.00	0.004	0					0.02
88.167	0.00	0.00	0.004	0					0.02
88.250	0.00	0.00	0.004	0					0.02
88.333	0.00	0.00	0.004	0					0.02
88.417	0.00	0.00	0.004	0					0.02
88.500	0.00	0.00	0.004	0					0.02
88.583	0.00	0.00	0.003	0					0.02
88.667	0.00	0.00	0.003	0					0.02
88.750	0.00	0.00	0.003	0					0.02
88.833	0.00	0.00	0.003	0					0.02
88.917	0.00	0.00	0.003	0					0.02
89.000	0.00	0.00	0.003	0					0.02

89.083	0.00	0.00	0.003	0					0.02
89.167	0.00	0.00	0.003	0					0.02
89.250	0.00	0.00	0.003	0					0.02
89.333	0.00	0.00	0.003	0					0.02
89.417	0.00	0.00	0.003	0					0.02
89.500	0.00	0.00	0.003	0					0.02
89.583	0.00	0.00	0.003	0					0.02
89.667	0.00	0.00	0.003	0					0.02
89.750	0.00	0.00	0.003	0					0.02
89.833	0.00	0.00	0.003	0					0.02
89.917	0.00	0.00	0.003	0					0.02
90.000	0.00	0.00	0.003	0					0.02
90.083	0.00	0.00	0.003	0					0.02
90.167	0.00	0.00	0.003	0					0.02
90.250	0.00	0.00	0.003	0					0.02
90.333	0.00	0.00	0.003	0					0.02
90.417	0.00	0.00	0.003	0					0.02
90.500	0.00	0.00	0.003	0					0.02
90.583	0.00	0.00	0.003	0					0.02
90.667	0.00	0.00	0.003	0					0.02
90.750	0.00	0.00	0.003	0					0.02
90.833	0.00	0.00	0.003	0					0.02
90.917	0.00	0.00	0.003	0					0.02
91.000	0.00	0.00	0.003	0					0.02
91.083	0.00	0.00	0.003	0					0.02
91.167	0.00	0.00	0.003	0					0.02
91.250	0.00	0.00	0.003	0					0.02
91.333	0.00	0.00	0.003	0					0.02
91.417	0.00	0.00	0.003	0					0.02
91.500	0.00	0.00	0.003	0					0.02
91.583	0.00	0.00	0.003	0					0.02
91.667	0.00	0.00	0.003	0					0.02
91.750	0.00	0.00	0.003	0					0.02
91.833	0.00	0.00	0.003	0					0.02
91.917	0.00	0.00	0.003	0					0.02
92.000	0.00	0.00	0.003	0					0.02
92.083	0.00	0.00	0.003	0					0.02
92.167	0.00	0.00	0.003	0					0.02
92.250	0.00	0.00	0.003	0					0.02
92.333	0.00	0.00	0.003	0					0.02
92.417	0.00	0.00	0.003	0					0.02
92.500	0.00	0.00	0.003	0					0.02
92.583	0.00	0.00	0.003	0					0.02
92.667	0.00	0.00	0.003	0					0.02
92.750	0.00	0.00	0.003	0					0.02
92.833	0.00	0.00	0.002	0					0.02
92.917	0.00	0.00	0.002	0					0.02
93.000	0.00	0.00	0.002	0					0.02
93.083	0.00	0.00	0.002	0					0.02
93.167	0.00	0.00	0.002	0					0.02

93.250	0.00	0.00	0.002	0					0.02
93.333	0.00	0.00	0.002	0					0.02
93.417	0.00	0.00	0.002	0					0.02
93.500	0.00	0.00	0.002	0					0.02
93.583	0.00	0.00	0.002	0					0.02
93.667	0.00	0.00	0.002	0					0.02
93.750	0.00	0.00	0.002	0					0.02
93.833	0.00	0.00	0.002	0					0.02
93.917	0.00	0.00	0.002	0					0.02
94.000	0.00	0.00	0.002	0					0.01
94.083	0.00	0.00	0.002	0					0.01
94.167	0.00	0.00	0.002	0					0.01
94.250	0.00	0.00	0.002	0					0.01
94.333	0.00	0.00	0.002	0					0.01
94.417	0.00	0.00	0.002	0					0.01
94.500	0.00	0.00	0.002	0					0.01
94.583	0.00	0.00	0.002	0					0.01
94.667	0.00	0.00	0.002	0					0.01
94.750	0.00	0.00	0.002	0					0.01
94.833	0.00	0.00	0.002	0					0.01
94.917	0.00	0.00	0.002	0					0.01
95.000	0.00	0.00	0.002	0					0.01
95.083	0.00	0.00	0.002	0					0.01
95.167	0.00	0.00	0.002	0					0.01
95.250	0.00	0.00	0.002	0					0.01
95.333	0.00	0.00	0.002	0					0.01
95.417	0.00	0.00	0.002	0					0.01
95.500	0.00	0.00	0.002	0					0.01
95.583	0.00	0.00	0.002	0					0.01
95.667	0.00	0.00	0.002	0					0.01
95.750	0.00	0.00	0.002	0					0.01
95.833	0.00	0.00	0.002	0					0.01
95.917	0.00	0.00	0.002	0					0.01
96.000	0.00	0.00	0.002	0					0.01
96.083	0.00	0.00	0.002	0					0.01
96.167	0.00	0.00	0.002	0					0.01
96.250	0.00	0.00	0.002	0					0.01
96.333	0.00	0.00	0.002	0					0.01
96.417	0.00	0.00	0.002	0					0.01
96.500	0.00	0.00	0.002	0					0.01
96.583	0.00	0.00	0.002	0					0.01
96.667	0.00	0.00	0.002	0					0.01
96.750	0.00	0.00	0.002	0					0.01
96.833	0.00	0.00	0.002	0					0.01
96.917	0.00	0.00	0.002	0					0.01
97.000	0.00	0.00	0.002	0					0.01
97.083	0.00	0.00	0.002	0					0.01
97.167	0.00	0.00	0.002	0					0.01
97.250	0.00	0.00	0.002	0					0.01
97.333	0.00	0.00	0.002	0					0.01

97.417	0.00	0.00	0.002	0					0.01
97.500	0.00	0.00	0.002	0					0.01
97.583	0.00	0.00	0.002	0					0.01
97.667	0.00	0.00	0.002	0					0.01
97.750	0.00	0.00	0.002	0					0.01
97.833	0.00	0.00	0.002	0					0.01
97.917	0.00	0.00	0.002	0					0.01
98.000	0.00	0.00	0.002	0					0.01
98.083	0.00	0.00	0.002	0					0.01
98.167	0.00	0.00	0.002	0					0.01
98.250	0.00	0.00	0.002	0					0.01
98.333	0.00	0.00	0.002	0					0.01
98.417	0.00	0.00	0.002	0					0.01
98.500	0.00	0.00	0.002	0					0.01
98.583	0.00	0.00	0.002	0					0.01
98.667	0.00	0.00	0.002	0					0.01
98.750	0.00	0.00	0.002	0					0.01
98.833	0.00	0.00	0.002	0					0.01
98.917	0.00	0.00	0.002	0					0.01
99.000	0.00	0.00	0.002	0					0.01
99.083	0.00	0.00	0.002	0					0.01
99.167	0.00	0.00	0.002	0					0.01
99.250	0.00	0.00	0.001	0					0.01
99.333	0.00	0.00	0.001	0					0.01
99.417	0.00	0.00	0.001	0					0.01
99.500	0.00	0.00	0.001	0					0.01
99.583	0.00	0.00	0.001	0					0.01
99.667	0.00	0.00	0.001	0					0.01
99.750	0.00	0.00	0.001	0					0.01
99.833	0.00	0.00	0.001	0					0.01
99.917	0.00	0.00	0.001	0					0.01
100.000	0.00	0.00	0.001	0					0.01
100.083	0.00	0.00	0.001	0					0.01
100.167	0.00	0.00	0.001	0					0.01
100.250	0.00	0.00	0.001	0					0.01
100.333	0.00	0.00	0.001	0					0.01
100.417	0.00	0.00	0.001	0					0.01
100.500	0.00	0.00	0.001	0					0.01
100.583	0.00	0.00	0.001	0					0.01
100.667	0.00	0.00	0.001	0					0.01
100.750	0.00	0.00	0.001	0					0.01
100.833	0.00	0.00	0.001	0					0.01
100.917	0.00	0.00	0.001	0					0.01
101.000	0.00	0.00	0.001	0					0.01
101.083	0.00	0.00	0.001	0					0.01
101.167	0.00	0.00	0.001	0					0.01
101.250	0.00	0.00	0.001	0					0.01
101.333	0.00	0.00	0.001	0					0.01
101.417	0.00	0.00	0.001	0					0.01
101.500	0.00	0.00	0.001	0					0.01



101.583	0.00	0.00	0.001	0					0.01
101.667	0.00	0.00	0.001	0					0.01
101.750	0.00	0.00	0.001	0					0.01
101.833	0.00	0.00	0.001	0					0.01
101.917	0.00	0.00	0.001	0					0.01
102.000	0.00	0.00	0.001	0					0.01
102.083	0.00	0.00	0.001	0					0.01
102.167	0.00	0.00	0.001	0					0.01
102.250	0.00	0.00	0.001	0					0.01
102.333	0.00	0.00	0.001	0					0.01
102.417	0.00	0.00	0.001	0					0.01
102.500	0.00	0.00	0.001	0					0.01
102.583	0.00	0.00	0.001	0					0.01
102.667	0.00	0.00	0.001	0					0.01
102.750	0.00	0.00	0.001	0					0.01
102.833	0.00	0.00	0.001	0					0.01
102.917	0.00	0.00	0.001	0					0.01
103.000	0.00	0.00	0.001	0					0.01
103.083	0.00	0.00	0.001	0					0.01
103.167	0.00	0.00	0.001	0					0.01
103.250	0.00	0.00	0.001	0					0.01
103.333	0.00	0.00	0.001	0					0.01
103.417	0.00	0.00	0.001	0					0.01
103.500	0.00	0.00	0.001	0					0.01
103.583	0.00	0.00	0.001	0					0.01
103.667	0.00	0.00	0.001	0					0.01
103.750	0.00	0.00	0.001	0					0.01
103.833	0.00	0.00	0.001	0					0.01
103.917	0.00	0.00	0.001	0					0.01

Remaining water in basin = 0.00 (Ac.Ft)

\*\*\*\*\*HYDROGRAPH DATA\*\*\*\*\*

Number of intervals = 1247

Time interval = 5.0 (Min.)

Maximum/Peak flow rate = 0.187 (CFS)

Total volume = 0.556 (Ac.Ft)

Status of hydrographs being held in storage

Stream 1 Stream 2 Stream 3 Stream 4 Stream 5

Peak (CFS) 0.000 0.000 0.000 0.000 0.000

Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM  
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018  
Study date: 02/23/21

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
ROUTING BASIN B  
2YR, 24-HOUR STORM  
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Program License Serial Number 6473

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\*\*\*\*\* HYDROGRAPH INFORMATION \*\*\*\*\*

From study/file name: CC02PHYDB242.rte  
\*\*\*\*\*HYDROGRAPH DATA\*\*\*\*\*  
Number of intervals = 291  
Time interval = 5.0 (Min.)  
Maximum/Peak flow rate = 0.958 (CFS)  
Total volume = 0.582 (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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Process from Point/Station 1.000 to Point/Station 2.000  
\*\*\*\* RETARDING BASIN ROUTING \*\*\*\*

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User entry of depth-outflow-storage data  
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Total number of inflow hydrograph intervals = 291  
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 (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.500	0.076	0.073	0.076	0.076
1.000	0.152	0.109	0.152	0.152
1.500	0.224	0.135	0.224	0.224
2.000	0.294	0.158	0.293	0.295
2.500	0.358	0.177	0.357	0.359
3.000	0.415	0.194	0.414	0.416
3.500	0.463	0.210	0.462	0.464
4.000	0.496	0.225	0.495	0.497
4.500	0.500	0.239	0.499	0.501
5.000	0.533	1.074	0.529	0.537
5.500	0.556	2.438	0.548	0.564
6.000	0.580	3.238	0.569	0.591
6.500	0.603	3.868	0.590	0.616
7.000	0.626	4.406	0.611	0.641
7.500	0.650	4.883	0.633	0.667
8.000	0.673	14.735	0.622	0.724
8.500	0.696	32.356	0.585	0.807

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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 (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	Depth (Ft.)					
				.0	0.2	0.48	0.72	0.96	
0.083	0.03	0.00	0.000	0					0.00
0.167	0.05	0.00	0.000	OI					0.00
0.250	0.05	0.00	0.001	OI					0.00
0.333	0.07	0.00	0.001	O I					0.01
0.417	0.08	0.00	0.002	O I					0.01
0.500	0.08	0.00	0.002	O I					0.01
0.583	0.08	0.00	0.003	O I					0.02
0.667	0.08	0.00	0.003	O I					0.02
0.750	0.08	0.00	0.004	O I					0.03
0.833	0.10	0.00	0.004	O I					0.03
0.917	0.11	0.00	0.005	O I					0.03
1.000	0.11	0.01	0.006	O I					0.04
1.083	0.10	0.01	0.007	O I					0.04
1.167	0.09	0.01	0.007	O I					0.05
1.250	0.09	0.01	0.008	O I					0.05
1.333	0.08	0.01	0.008	O I					0.05
1.417	0.08	0.01	0.009	O I					0.06
1.500	0.08	0.01	0.009	O I					0.06

1.583	0.08	0.01	0.010	0	I					0.06
1.667	0.08	0.01	0.010	0	I					0.07
1.750	0.08	0.01	0.011	0	I					0.07
1.833	0.10	0.01	0.011	0	I					0.07
1.917	0.11	0.01	0.012	0	I					0.08
2.000	0.11	0.01	0.013	0	I					0.08
2.083	0.11	0.01	0.013	0	I					0.09
2.167	0.11	0.01	0.014	0	I					0.09
2.250	0.11	0.01	0.015	0	I					0.10
2.333	0.11	0.01	0.015	0	I					0.10
2.417	0.11	0.02	0.016	0	I					0.11
2.500	0.11	0.02	0.017	0	I					0.11
2.583	0.13	0.02	0.017	0	I					0.11
2.667	0.14	0.02	0.018	0	I					0.12
2.750	0.14	0.02	0.019	0	I					0.13
2.833	0.14	0.02	0.020	0	I					0.13
2.917	0.14	0.02	0.021	0	I					0.14
3.000	0.14	0.02	0.022	0	I					0.14
3.083	0.14	0.02	0.022	0	I					0.15
3.167	0.14	0.02	0.023	0	I					0.15
3.250	0.14	0.02	0.024	0	I					0.16
3.333	0.14	0.02	0.025	0	I					0.16
3.417	0.14	0.02	0.026	0	I					0.17
3.500	0.14	0.03	0.026	0	I					0.17
3.583	0.14	0.03	0.027	0	I					0.18
3.667	0.14	0.03	0.028	0	I					0.18
3.750	0.14	0.03	0.029	0	I					0.19
3.833	0.15	0.03	0.030	0	I					0.19
3.917	0.16	0.03	0.031	0	I					0.20
4.000	0.17	0.03	0.031	0	I					0.21
4.083	0.17	0.03	0.032	0	I					0.21
4.167	0.17	0.03	0.033	0	I					0.22
4.250	0.17	0.03	0.034	0	I					0.23
4.333	0.18	0.03	0.035	0	I					0.23
4.417	0.19	0.03	0.036	0	I					0.24
4.500	0.20	0.04	0.037	0	I					0.25
4.583	0.20	0.04	0.039	0	I					0.25
4.667	0.20	0.04	0.040	0	I					0.26
4.750	0.20	0.04	0.041	0	I					0.27
4.833	0.21	0.04	0.042	0	I					0.28
4.917	0.22	0.04	0.043	0	I					0.28
5.000	0.22	0.04	0.044	0	I					0.29
5.083	0.20	0.04	0.045	0	I					0.30
5.167	0.18	0.04	0.046	0	I					0.31
5.250	0.17	0.05	0.047	0	I					0.31
5.333	0.18	0.05	0.048	0	I					0.32
5.417	0.19	0.05	0.049	0	I					0.32
5.500	0.20	0.05	0.050	0	I					0.33
5.583	0.21	0.05	0.051	0	I					0.34
5.667	0.22	0.05	0.052	0	I					0.34

5.750	0.22	0.05	0.054	0	I				0.35
5.833	0.23	0.05	0.055	0	I				0.36
5.917	0.23	0.05	0.056	0	I				0.37
6.000	0.23	0.05	0.057	0	I				0.38
6.083	0.24	0.06	0.058	0	I				0.38
6.167	0.25	0.06	0.060	0	I				0.39
6.250	0.25	0.06	0.061	0	I				0.40
6.333	0.25	0.06	0.062	0	I				0.41
6.417	0.25	0.06	0.064	0	I				0.42
6.500	0.25	0.06	0.065	0	I				0.43
6.583	0.27	0.06	0.066	0	I				0.44
6.667	0.28	0.07	0.068	0	I				0.45
6.750	0.28	0.07	0.069	0	I				0.46
6.833	0.28	0.07	0.071	0	I				0.47
6.917	0.28	0.07	0.072	0	I				0.47
7.000	0.28	0.07	0.074	0	I				0.48
7.083	0.28	0.07	0.075	0	I				0.49
7.167	0.28	0.07	0.076	0	I				0.50
7.250	0.28	0.07	0.078	0	I				0.51
7.333	0.30	0.07	0.079	0	I				0.52
7.417	0.31	0.08	0.081	0	I				0.53
7.500	0.31	0.08	0.083	0	I				0.54
7.583	0.32	0.08	0.084	0	I				0.55
7.667	0.33	0.08	0.086	0	I				0.57
7.750	0.34	0.08	0.088	0	I				0.58
7.833	0.35	0.08	0.090	0	I				0.59
7.917	0.36	0.08	0.091	0	I				0.60
8.000	0.36	0.08	0.093	0	I				0.61
8.083	0.39	0.08	0.095	0	I				0.63
8.167	0.41	0.08	0.098	0	I				0.64
8.250	0.42	0.08	0.100	0	I				0.66
8.333	0.42	0.09	0.102	0	I				0.67
8.417	0.42	0.09	0.105	0	I				0.69
8.500	0.42	0.09	0.107	0	I				0.70
8.583	0.44	0.09	0.109	0	I				0.72
8.667	0.45	0.09	0.112	0	I				0.73
8.750	0.45	0.09	0.114	0	I				0.75
8.833	0.46	0.09	0.117	0	I				0.77
8.917	0.47	0.09	0.119	0	I				0.78
9.000	0.48	0.09	0.122	0	I				0.80
9.083	0.51	0.10	0.125	0	I				0.82
9.167	0.53	0.10	0.127	0	I				0.84
9.250	0.53	0.10	0.130	0	I				0.86
9.333	0.55	0.10	0.133	0	I				0.88
9.417	0.56	0.10	0.137	0	I				0.90
9.500	0.56	0.10	0.140	0	I				0.92
9.583	0.58	0.10	0.143	0	I				0.94
9.667	0.59	0.11	0.146	0	I				0.96
9.750	0.59	0.11	0.150	0	I				0.98
9.833	0.61	0.11	0.153	0	I				1.01

9.917	0.62	0.11	0.156	0			I		1.03
10.000	0.62	0.11	0.160	0			I		1.05
10.083	0.52	0.11	0.163	0			I		1.08
10.167	0.45	0.11	0.166	0			I		1.09
10.250	0.44	0.11	0.168	0			I		1.11
10.333	0.42	0.12	0.170	0			I		1.12
10.417	0.42	0.12	0.172	0			I		1.14
10.500	0.42	0.12	0.174	0			I		1.15
10.583	0.49	0.12	0.177	0			I		1.17
10.667	0.54	0.12	0.179	0			I		1.19
10.750	0.55	0.12	0.182	0			I		1.21
10.833	0.56	0.12	0.185	0			I		1.23
10.917	0.56	0.12	0.188	0			I		1.25
11.000	0.56	0.12	0.191	0			I		1.27
11.083	0.55	0.12	0.194	0			I		1.29
11.167	0.54	0.13	0.197	0			I		1.31
11.250	0.54	0.13	0.200	0			I		1.33
11.333	0.54	0.13	0.203	0			I		1.35
11.417	0.54	0.13	0.206	0			I		1.37
11.500	0.54	0.13	0.208	0			I		1.39
11.583	0.51	0.13	0.211	0			I		1.41
11.667	0.49	0.13	0.214	0			I		1.43
11.750	0.48	0.13	0.216	0			I		1.45
11.833	0.49	0.13	0.219	0			I		1.46
11.917	0.50	0.13	0.221	0			I		1.48
12.000	0.51	0.13	0.224	0			I		1.50
12.083	0.60	0.14	0.226	0			I		1.52
12.167	0.67	0.14	0.230	0			I		1.54
12.250	0.69	0.14	0.234	0			I		1.57
12.333	0.72	0.14	0.238	0			I		1.60
12.417	0.73	0.14	0.242	0			I		1.63
12.500	0.73	0.14	0.246	0			I		1.65
12.583	0.76	0.14	0.250	0			I		1.68
12.667	0.78	0.14	0.254	0			I		1.72
12.750	0.78	0.15	0.258	0			I		1.75
12.833	0.80	0.15	0.263	0			I		1.78
12.917	0.81	0.15	0.267	0			I		1.81
13.000	0.81	0.15	0.272	0			I		1.84
13.083	0.89	0.15	0.277	0			I		1.88
13.167	0.93	0.15	0.282	0			I		1.91
13.250	0.95	0.16	0.287	0			I		1.95
13.333	0.96	0.16	0.293	0			I		1.99
13.417	0.96	0.16	0.298	0			I		2.04
13.500	0.96	0.16	0.304	0			I		2.08
13.583	0.81	0.16	0.309	0			I		2.12
13.667	0.70	0.16	0.313	0			I		2.15
13.750	0.67	0.16	0.317	0			I		2.18
13.833	0.65	0.17	0.320	0			I		2.20
13.917	0.65	0.17	0.323	0			I		2.23
14.000	0.65	0.17	0.327	0			I		2.25

14.083	0.70	0.17	0.330	0		I	2.28
14.167	0.74	0.17	0.334	0		I	2.31
14.250	0.75	0.17	0.338	0		I	2.34
14.333	0.75	0.17	0.342	0		I	2.37
14.417	0.74	0.17	0.346	0		I	2.40
14.500	0.73	0.17	0.350	0		I	2.43
14.583	0.73	0.18	0.353	0		I	2.46
14.667	0.73	0.18	0.357	0		I	2.49
14.750	0.73	0.18	0.361	0		I	2.53
14.833	0.72	0.18	0.365	0		I	2.56
14.917	0.71	0.18	0.369	0		I	2.59
15.000	0.71	0.18	0.372	0		I	2.62
15.083	0.69	0.18	0.376	0		I	2.66
15.167	0.68	0.18	0.379	0		I	2.69
15.250	0.68	0.18	0.383	0		I	2.72
15.333	0.66	0.19	0.386	0		I	2.75
15.417	0.65	0.19	0.389	0		I	2.77
15.500	0.65	0.19	0.392	0		I	2.80
15.583	0.59	0.19	0.395	0		I	2.83
15.667	0.55	0.19	0.398	0		I	2.85
15.750	0.54	0.19	0.401	0		I	2.87
15.833	0.54	0.19	0.403	0		I	2.89
15.917	0.54	0.19	0.405	0		I	2.92
16.000	0.54	0.19	0.408	0		I	2.94
16.083	0.33	0.19	0.409	0	I		2.95
16.167	0.18	0.19	0.410	0			2.95
16.250	0.14	0.19	0.410	I 0			2.95
16.333	0.11	0.19	0.409	I 0			2.95
16.417	0.11	0.19	0.409	I 0			2.94
16.500	0.11	0.19	0.408	I 0			2.94
16.583	0.10	0.19	0.407	I 0			2.93
16.667	0.09	0.19	0.407	I 0			2.93
16.750	0.09	0.19	0.406	I 0			2.92
16.833	0.08	0.19	0.405	I 0			2.92
16.917	0.08	0.19	0.405	I 0			2.91
17.000	0.08	0.19	0.404	I 0			2.90
17.083	0.11	0.19	0.403	I 0			2.90
17.167	0.13	0.19	0.403	I 0			2.89
17.250	0.14	0.19	0.402	I 0			2.89
17.333	0.14	0.19	0.402	I 0			2.89
17.417	0.14	0.19	0.402	I 0			2.88
17.500	0.14	0.19	0.401	I 0			2.88
17.583	0.14	0.19	0.401	I 0			2.88
17.667	0.14	0.19	0.401	I 0			2.87
17.750	0.14	0.19	0.400	I 0			2.87
17.833	0.13	0.19	0.400	I 0			2.87
17.917	0.12	0.19	0.399	I 0			2.86
18.000	0.11	0.19	0.399	I 0			2.86
18.083	0.11	0.19	0.398	I 0			2.85
18.167	0.11	0.19	0.398	I 0			2.85

18.250	0.11	0.19	0.397	I	0					2.85
18.333	0.11	0.19	0.397	I	0					2.84
18.417	0.11	0.19	0.396	I	0					2.84
18.500	0.11	0.19	0.396	I	0					2.83
18.583	0.10	0.19	0.395	I	0					2.83
18.667	0.09	0.19	0.395	I	0					2.82
18.750	0.09	0.19	0.394	I	0					2.82
18.833	0.07	0.19	0.393	I	0					2.81
18.917	0.06	0.19	0.392	I	0					2.80
19.000	0.06	0.19	0.391	I	0					2.79
19.083	0.07	0.19	0.391	I	0					2.79
19.167	0.08	0.19	0.390	I	0					2.78
19.250	0.08	0.19	0.389	I	0					2.77
19.333	0.10	0.19	0.388	I	0					2.77
19.417	0.11	0.19	0.388	I	0					2.76
19.500	0.11	0.19	0.387	I	0					2.76
19.583	0.10	0.19	0.387	I	0					2.75
19.667	0.09	0.19	0.386	I	0					2.75
19.750	0.09	0.19	0.386	I	0					2.74
19.833	0.07	0.18	0.385	I	0					2.73
19.917	0.06	0.18	0.384	I	0					2.73
20.000	0.06	0.18	0.383	I	0					2.72
20.083	0.07	0.18	0.382	I	0					2.71
20.167	0.08	0.18	0.382	I	0					2.71
20.250	0.08	0.18	0.381	I	0					2.70
20.333	0.08	0.18	0.380	I	0					2.69
20.417	0.08	0.18	0.379	I	0					2.69
20.500	0.08	0.18	0.379	I	0					2.68
20.583	0.08	0.18	0.378	I	0					2.68
20.667	0.08	0.18	0.377	I	0					2.67
20.750	0.08	0.18	0.377	I	0					2.66
20.833	0.07	0.18	0.376	I	0					2.66
20.917	0.06	0.18	0.375	I	0					2.65
21.000	0.06	0.18	0.374	I	0					2.64
21.083	0.07	0.18	0.374	I	0					2.64
21.167	0.08	0.18	0.373	I	0					2.63
21.250	0.08	0.18	0.372	I	0					2.62
21.333	0.07	0.18	0.371	I	0					2.62
21.417	0.06	0.18	0.371	I	0					2.61
21.500	0.06	0.18	0.370	I	0					2.60
21.583	0.07	0.18	0.369	I	0					2.60
21.667	0.08	0.18	0.368	I	0					2.59
21.750	0.08	0.18	0.368	I	0					2.58
21.833	0.07	0.18	0.367	I	0					2.58
21.917	0.06	0.18	0.366	I	0					2.57
22.000	0.06	0.18	0.365	I	0					2.56
22.083	0.07	0.18	0.364	I	0					2.56
22.167	0.08	0.18	0.364	I	0					2.55
22.250	0.08	0.18	0.363	I	0					2.54
22.333	0.07	0.18	0.362	I	0					2.54



22.417	0.06	0.18	0.362	I	0					2.53
22.500	0.06	0.18	0.361	I	0					2.52
22.583	0.06	0.18	0.360	I	0					2.52
22.667	0.06	0.18	0.359	I	0					2.51
22.750	0.06	0.18	0.358	I	0					2.50
22.833	0.06	0.18	0.357	I	0					2.50
22.917	0.06	0.18	0.357	I	0					2.49
23.000	0.06	0.18	0.356	I	0					2.48
23.083	0.06	0.18	0.355	I	0					2.48
23.167	0.06	0.18	0.354	I	0					2.47
23.250	0.06	0.18	0.353	I	0					2.46
23.333	0.06	0.18	0.353	I	0					2.46
23.417	0.06	0.18	0.352	I	0					2.45
23.500	0.06	0.17	0.351	I	0					2.44
23.583	0.06	0.17	0.350	I	0					2.44
23.667	0.06	0.17	0.349	I	0					2.43
23.750	0.06	0.17	0.348	I	0					2.43
23.833	0.06	0.17	0.348	I	0					2.42
23.917	0.06	0.17	0.347	I	0					2.41
24.000	0.06	0.17	0.346	I	0					2.41
24.083	0.03	0.17	0.345	I	0					2.40
24.167	0.01	0.17	0.344	I	0					2.39
24.250	0.00	0.17	0.343	I	0					2.38
24.333	0.00	0.17	0.342	I	0					2.37
24.417	0.00	0.17	0.341	I	0					2.36
24.500	0.00	0.17	0.339	I	0					2.35
24.583	0.00	0.17	0.338	I	0					2.35
24.667	0.00	0.17	0.337	I	0					2.34
24.750	0.00	0.17	0.336	I	0					2.33
24.833	0.00	0.17	0.335	I	0					2.32
24.917	0.00	0.17	0.333	I	0					2.31
25.000	0.00	0.17	0.332	I	0					2.30
25.083	0.00	0.17	0.331	I	0					2.29
25.167	0.00	0.17	0.330	I	0					2.28
25.250	0.00	0.17	0.329	I	0					2.27
25.333	0.00	0.17	0.328	I	0					2.26
25.417	0.00	0.17	0.327	I	0					2.25
25.500	0.00	0.17	0.325	I	0					2.25
25.583	0.00	0.17	0.324	I	0					2.24
25.667	0.00	0.17	0.323	I	0					2.23
25.750	0.00	0.17	0.322	I	0					2.22
25.833	0.00	0.17	0.321	I	0					2.21
25.917	0.00	0.17	0.320	I	0					2.20
26.000	0.00	0.17	0.318	I	0					2.19
26.083	0.00	0.16	0.317	I	0					2.18
26.167	0.00	0.16	0.316	I	0					2.17
26.250	0.00	0.16	0.315	I	0					2.16
26.333	0.00	0.16	0.314	I	0					2.16
26.417	0.00	0.16	0.313	I	0					2.15
26.500	0.00	0.16	0.312	I	0					2.14

26.583	0.00	0.16	0.311	I	0					2.13
26.667	0.00	0.16	0.309	I	0					2.12
26.750	0.00	0.16	0.308	I	0					2.11
26.833	0.00	0.16	0.307	I	0					2.10
26.917	0.00	0.16	0.306	I	0					2.09
27.000	0.00	0.16	0.305	I	0					2.09
27.083	0.00	0.16	0.304	I	0					2.08
27.167	0.00	0.16	0.303	I	0					2.07
27.250	0.00	0.16	0.302	I	0					2.06
27.333	0.00	0.16	0.301	I	0					2.05
27.417	0.00	0.16	0.299	I	0					2.04
27.500	0.00	0.16	0.298	I	0					2.03
27.583	0.00	0.16	0.297	I	0					2.03
27.667	0.00	0.16	0.296	I	0					2.02
27.750	0.00	0.16	0.295	I	0					2.01
27.833	0.00	0.16	0.294	I	0					2.00
27.917	0.00	0.16	0.293	I	0					1.99
28.000	0.00	0.16	0.292	I	0					1.98
28.083	0.00	0.16	0.291	I	0					1.98
28.167	0.00	0.16	0.290	I	0					1.97
28.250	0.00	0.16	0.289	I	0					1.96
28.333	0.00	0.16	0.288	I	0					1.95
28.417	0.00	0.16	0.286	I	0					1.95
28.500	0.00	0.16	0.285	I	0					1.94
28.583	0.00	0.15	0.284	I	0					1.93
28.667	0.00	0.15	0.283	I	0					1.92
28.750	0.00	0.15	0.282	I	0					1.92
28.833	0.00	0.15	0.281	I	0					1.91
28.917	0.00	0.15	0.280	I	0					1.90
29.000	0.00	0.15	0.279	I	0					1.89
29.083	0.00	0.15	0.278	I	0					1.89
29.167	0.00	0.15	0.277	I	0					1.88
29.250	0.00	0.15	0.276	I	0					1.87
29.333	0.00	0.15	0.275	I	0					1.86
29.417	0.00	0.15	0.274	I	0					1.86
29.500	0.00	0.15	0.273	I	0					1.85
29.583	0.00	0.15	0.272	I	0					1.84
29.667	0.00	0.15	0.271	I	0					1.83
29.750	0.00	0.15	0.270	I	0					1.83
29.833	0.00	0.15	0.269	I	0					1.82
29.917	0.00	0.15	0.268	I	0					1.81
30.000	0.00	0.15	0.267	I	0					1.80
30.083	0.00	0.15	0.266	I	0					1.80
30.167	0.00	0.15	0.264	I	0					1.79
30.250	0.00	0.15	0.263	I	0					1.78
30.333	0.00	0.15	0.262	I	0					1.77
30.417	0.00	0.15	0.261	I	0					1.77
30.500	0.00	0.15	0.260	I	0					1.76
30.583	0.00	0.15	0.259	I	0					1.75
30.667	0.00	0.15	0.258	I	0					1.75

30.750	0.00	0.15	0.257	I	0					1.74
30.833	0.00	0.15	0.256	I	0					1.73
30.917	0.00	0.15	0.255	I	0					1.72
31.000	0.00	0.14	0.254	I	0					1.72
31.083	0.00	0.14	0.253	I	0					1.71
31.167	0.00	0.14	0.252	I	0					1.70
31.250	0.00	0.14	0.251	I	0					1.70
31.333	0.00	0.14	0.250	I	0					1.69
31.417	0.00	0.14	0.249	I	0					1.68
31.500	0.00	0.14	0.248	I	0					1.67
31.583	0.00	0.14	0.247	I	0					1.67
31.667	0.00	0.14	0.246	I	0					1.66
31.750	0.00	0.14	0.245	I	0					1.65
31.833	0.00	0.14	0.245	I	0					1.65
31.917	0.00	0.14	0.244	I	0					1.64
32.000	0.00	0.14	0.243	I	0					1.63
32.083	0.00	0.14	0.242	I	0					1.63
32.167	0.00	0.14	0.241	I	0					1.62
32.250	0.00	0.14	0.240	I	0					1.61
32.333	0.00	0.14	0.239	I	0					1.60
32.417	0.00	0.14	0.238	I	0					1.60
32.500	0.00	0.14	0.237	I	0					1.59
32.583	0.00	0.14	0.236	I	0					1.58
32.667	0.00	0.14	0.235	I	0					1.58
32.750	0.00	0.14	0.234	I	0					1.57
32.833	0.00	0.14	0.233	I	0					1.56
32.917	0.00	0.14	0.232	I	0					1.56
33.000	0.00	0.14	0.231	I	0					1.55
33.083	0.00	0.14	0.230	I	0					1.54
33.167	0.00	0.14	0.229	I	0					1.54
33.250	0.00	0.14	0.228	I	0					1.53
33.333	0.00	0.14	0.227	I	0					1.52
33.417	0.00	0.14	0.226	I	0					1.52
33.500	0.00	0.14	0.225	I	0					1.51
33.583	0.00	0.14	0.224	I	0					1.50
33.667	0.00	0.13	0.224	I	0					1.50
33.750	0.00	0.13	0.223	I	0					1.49
33.833	0.00	0.13	0.222	I	0					1.48
33.917	0.00	0.13	0.221	I	0					1.48
34.000	0.00	0.13	0.220	I	0					1.47
34.083	0.00	0.13	0.219	I	0					1.46
34.167	0.00	0.13	0.218	I	0					1.46
34.250	0.00	0.13	0.217	I	0					1.45
34.333	0.00	0.13	0.216	I	0					1.45
34.417	0.00	0.13	0.215	I	0					1.44
34.500	0.00	0.13	0.214	I	0					1.43
34.583	0.00	0.13	0.213	I	0					1.43
34.667	0.00	0.13	0.213	I	0					1.42
34.750	0.00	0.13	0.212	I	0					1.41
34.833	0.00	0.13	0.211	I	0					1.41

34.917	0.00	0.13	0.210	I	0					1.40
35.000	0.00	0.13	0.209	I	0					1.40
35.083	0.00	0.13	0.208	I	0					1.39
35.167	0.00	0.13	0.207	I	0					1.38
35.250	0.00	0.13	0.206	I	0					1.38
35.333	0.00	0.13	0.205	I	0					1.37
35.417	0.00	0.13	0.205	I	0					1.36
35.500	0.00	0.13	0.204	I	0					1.36
35.583	0.00	0.13	0.203	I	0					1.35
35.667	0.00	0.13	0.202	I	0					1.35
35.750	0.00	0.13	0.201	I	0					1.34
35.833	0.00	0.13	0.200	I	0					1.33
35.917	0.00	0.13	0.199	I	0					1.33
36.000	0.00	0.13	0.198	I	0					1.32
36.083	0.00	0.13	0.198	I	0					1.32
36.167	0.00	0.13	0.197	I	0					1.31
36.250	0.00	0.12	0.196	I	0					1.30
36.333	0.00	0.12	0.195	I	0					1.30
36.417	0.00	0.12	0.194	I	0					1.29
36.500	0.00	0.12	0.193	I	0					1.29
36.583	0.00	0.12	0.192	I	0					1.28
36.667	0.00	0.12	0.192	I	0					1.27
36.750	0.00	0.12	0.191	I	0					1.27
36.833	0.00	0.12	0.190	I	0					1.26
36.917	0.00	0.12	0.189	I	0					1.26
37.000	0.00	0.12	0.188	I	0					1.25
37.083	0.00	0.12	0.187	I	0					1.25
37.167	0.00	0.12	0.187	I	0					1.24
37.250	0.00	0.12	0.186	I	0					1.23
37.333	0.00	0.12	0.185	I	0					1.23
37.417	0.00	0.12	0.184	I	0					1.22
37.500	0.00	0.12	0.183	I	0					1.22
37.583	0.00	0.12	0.182	I	0					1.21
37.667	0.00	0.12	0.182	I	0					1.21
37.750	0.00	0.12	0.181	I	0					1.20
37.833	0.00	0.12	0.180	I	0					1.19
37.917	0.00	0.12	0.179	I	0					1.19
38.000	0.00	0.12	0.178	I	0					1.18
38.083	0.00	0.12	0.177	I	0					1.18
38.167	0.00	0.12	0.177	I	0					1.17
38.250	0.00	0.12	0.176	I	0					1.17
38.333	0.00	0.12	0.175	I	0					1.16
38.417	0.00	0.12	0.174	I	0					1.15
38.500	0.00	0.12	0.173	I	0					1.15
38.583	0.00	0.12	0.173	I	0					1.14
38.667	0.00	0.12	0.172	I	0					1.14
38.750	0.00	0.12	0.171	I	0					1.13
38.833	0.00	0.12	0.170	I	0					1.13
38.917	0.00	0.12	0.169	I	0					1.12
39.000	0.00	0.11	0.169	I	0					1.12

39.083	0.00	0.11	0.168	I	0					1.11
39.167	0.00	0.11	0.167	I	0					1.10
39.250	0.00	0.11	0.166	I	0					1.10
39.333	0.00	0.11	0.165	I	0					1.09
39.417	0.00	0.11	0.165	I	0					1.09
39.500	0.00	0.11	0.164	I	0					1.08
39.583	0.00	0.11	0.163	I	0					1.08
39.667	0.00	0.11	0.162	I	0					1.07
39.750	0.00	0.11	0.162	I	0					1.07
39.833	0.00	0.11	0.161	I	0					1.06
39.917	0.00	0.11	0.160	I	0					1.06
40.000	0.00	0.11	0.159	I	0					1.05
40.083	0.00	0.11	0.158	I	0					1.05
40.167	0.00	0.11	0.158	I	0					1.04
40.250	0.00	0.11	0.157	I	0					1.03
40.333	0.00	0.11	0.156	I	0					1.03
40.417	0.00	0.11	0.155	I	0					1.02
40.500	0.00	0.11	0.155	I	0					1.02
40.583	0.00	0.11	0.154	I	0					1.01
40.667	0.00	0.11	0.153	I	0					1.01
40.750	0.00	0.11	0.152	I	0					1.00
40.833	0.00	0.11	0.152	I	0					1.00
40.917	0.00	0.11	0.151	I	0					0.99
41.000	0.00	0.11	0.150	I	0					0.99
41.083	0.00	0.11	0.149	I	0					0.98
41.167	0.00	0.11	0.149	I	0					0.98
41.250	0.00	0.11	0.148	I	0					0.97
41.333	0.00	0.11	0.147	I	0					0.97
41.417	0.00	0.11	0.146	I	0					0.96
41.500	0.00	0.11	0.146	I	0					0.96
41.583	0.00	0.11	0.145	I	0					0.95
41.667	0.00	0.11	0.144	I	0					0.95
41.750	0.00	0.11	0.144	I	0					0.94
41.833	0.00	0.10	0.143	I	0					0.94
41.917	0.00	0.10	0.142	I	0					0.93
42.000	0.00	0.10	0.141	I	0					0.93
42.083	0.00	0.10	0.141	I	0					0.93
42.167	0.00	0.10	0.140	I	0					0.92
42.250	0.00	0.10	0.139	I	0					0.92
42.333	0.00	0.10	0.139	I	0					0.91
42.417	0.00	0.10	0.138	I	0					0.91
42.500	0.00	0.10	0.137	I	0					0.90
42.583	0.00	0.10	0.136	I	0					0.90
42.667	0.00	0.10	0.136	I	0					0.89
42.750	0.00	0.10	0.135	I	0					0.89
42.833	0.00	0.10	0.134	I	0					0.88
42.917	0.00	0.10	0.134	I	0					0.88
43.000	0.00	0.10	0.133	I	0					0.87
43.083	0.00	0.10	0.132	I	0					0.87
43.167	0.00	0.10	0.132	I	0					0.87

43.250	0.00	0.10	0.131	I	0	0.86
43.333	0.00	0.10	0.130	I	0	0.86
43.417	0.00	0.10	0.130	I	0	0.85
43.500	0.00	0.10	0.129	I	0	0.85
43.583	0.00	0.10	0.128	I	0	0.84
43.667	0.00	0.10	0.128	I	0	0.84
43.750	0.00	0.10	0.127	I	0	0.83
43.833	0.00	0.10	0.126	I	0	0.83
43.917	0.00	0.10	0.126	I	0	0.83
44.000	0.00	0.10	0.125	I	0	0.82
44.083	0.00	0.10	0.124	I	0	0.82
44.167	0.00	0.10	0.124	I	0	0.81
44.250	0.00	0.10	0.123	I	0	0.81
44.333	0.00	0.09	0.122	I	0	0.80
44.417	0.00	0.09	0.122	I	0	0.80
44.500	0.00	0.09	0.121	I	0	0.80
44.583	0.00	0.09	0.120	I	0	0.79
44.667	0.00	0.09	0.120	I	0	0.79
44.750	0.00	0.09	0.119	I	0	0.78
44.833	0.00	0.09	0.118	I	0	0.78
44.917	0.00	0.09	0.118	I	0	0.77
45.000	0.00	0.09	0.117	I	0	0.77
45.083	0.00	0.09	0.116	I	0	0.77
45.167	0.00	0.09	0.116	I	0	0.76
45.250	0.00	0.09	0.115	I	0	0.76
45.333	0.00	0.09	0.115	I	0	0.75
45.417	0.00	0.09	0.114	I	0	0.75
45.500	0.00	0.09	0.113	I	0	0.75
45.583	0.00	0.09	0.113	I	0	0.74
45.667	0.00	0.09	0.112	I	0	0.74
45.750	0.00	0.09	0.111	I	0	0.73
45.833	0.00	0.09	0.111	I	0	0.73
45.917	0.00	0.09	0.110	I	0	0.72
46.000	0.00	0.09	0.110	I	0	0.72
46.083	0.00	0.09	0.109	I	0	0.72
46.167	0.00	0.09	0.108	I	0	0.71
46.250	0.00	0.09	0.108	I	0	0.71
46.333	0.00	0.09	0.107	I	0	0.70
46.417	0.00	0.09	0.107	I	0	0.70
46.500	0.00	0.09	0.106	I	0	0.70
46.583	0.00	0.09	0.105	I	0	0.69
46.667	0.00	0.09	0.105	I	0	0.69
46.750	0.00	0.09	0.104	I	0	0.69
46.833	0.00	0.09	0.104	I	0	0.68
46.917	0.00	0.09	0.103	I	0	0.68
47.000	0.00	0.09	0.102	I	0	0.67
47.083	0.00	0.09	0.102	I	0	0.67
47.167	0.00	0.08	0.101	I	0	0.67
47.250	0.00	0.08	0.101	I	0	0.66
47.333	0.00	0.08	0.100	I	0	0.66

47.417	0.00	0.08	0.099	I 0				0.65
47.500	0.00	0.08	0.099	I 0				0.65
47.583	0.00	0.08	0.098	I 0				0.65
47.667	0.00	0.08	0.098	I 0				0.64
47.750	0.00	0.08	0.097	I 0				0.64
47.833	0.00	0.08	0.097	I 0				0.64
47.917	0.00	0.08	0.096	I 0				0.63
48.000	0.00	0.08	0.095	I 0				0.63
48.083	0.00	0.08	0.095	I 0				0.62
48.167	0.00	0.08	0.094	I 0				0.62
48.250	0.00	0.08	0.094	I 0				0.62
48.333	0.00	0.08	0.093	I 0				0.61
48.417	0.00	0.08	0.093	I 0				0.61
48.500	0.00	0.08	0.092	I 0				0.61
48.583	0.00	0.08	0.092	I 0				0.60
48.667	0.00	0.08	0.091	I 0				0.60
48.750	0.00	0.08	0.090	I 0				0.59
48.833	0.00	0.08	0.090	I 0				0.59
48.917	0.00	0.08	0.089	I 0				0.59
49.000	0.00	0.08	0.089	I 0				0.58
49.083	0.00	0.08	0.088	I 0				0.58
49.167	0.00	0.08	0.088	I 0				0.58
49.250	0.00	0.08	0.087	I 0				0.57
49.333	0.00	0.08	0.087	I 0				0.57
49.417	0.00	0.08	0.086	I 0				0.57
49.500	0.00	0.08	0.086	I 0				0.56
49.583	0.00	0.08	0.085	I 0				0.56
49.667	0.00	0.08	0.084	I 0				0.56
49.750	0.00	0.08	0.084	I 0				0.55
49.833	0.00	0.08	0.083	I 0				0.55
49.917	0.00	0.08	0.083	I 0				0.55
50.000	0.00	0.08	0.082	I 0				0.54
50.083	0.00	0.08	0.082	I 0				0.54
50.167	0.00	0.08	0.081	I 0				0.54
50.250	0.00	0.08	0.081	I 0				0.53
50.333	0.00	0.08	0.080	I 0				0.53
50.417	0.00	0.07	0.080	I 0				0.52
50.500	0.00	0.07	0.079	I 0				0.52
50.583	0.00	0.07	0.079	I 0				0.52
50.667	0.00	0.07	0.078	I 0				0.51
50.750	0.00	0.07	0.078	I 0				0.51
50.833	0.00	0.07	0.077	I 0				0.51
50.917	0.00	0.07	0.077	I 0				0.50
51.000	0.00	0.07	0.076	I 0				0.50
51.083	0.00	0.07	0.076	I 0				0.50
51.167	0.00	0.07	0.075	I 0				0.49
51.250	0.00	0.07	0.075	I 0				0.49
51.333	0.00	0.07	0.074	I 0				0.49
51.417	0.00	0.07	0.074	I 0				0.49
51.500	0.00	0.07	0.073	I 0				0.48

51.583	0.00	0.07	0.073	I 0					0.48
51.667	0.00	0.07	0.072	I 0					0.48
51.750	0.00	0.07	0.072	I 0					0.47
51.833	0.00	0.07	0.071	I 0					0.47
51.917	0.00	0.07	0.071	I 0					0.47
52.000	0.00	0.07	0.070	I 0					0.46
52.083	0.00	0.07	0.070	I 0					0.46
52.167	0.00	0.07	0.069	I 0					0.46
52.250	0.00	0.07	0.069	I 0					0.45
52.333	0.00	0.07	0.069	I 0					0.45
52.417	0.00	0.07	0.068	I 0					0.45
52.500	0.00	0.06	0.068	I 0					0.45
52.583	0.00	0.06	0.067	I 0					0.44
52.667	0.00	0.06	0.067	I 0					0.44
52.750	0.00	0.06	0.066	I 0					0.44
52.833	0.00	0.06	0.066	I 0					0.43
52.917	0.00	0.06	0.065	I 0					0.43
53.000	0.00	0.06	0.065	I 0					0.43
53.083	0.00	0.06	0.065	I 0					0.42
53.167	0.00	0.06	0.064	I 0					0.42
53.250	0.00	0.06	0.064	I 0					0.42
53.333	0.00	0.06	0.063	I 0					0.42
53.417	0.00	0.06	0.063	I 0					0.41
53.500	0.00	0.06	0.062	I 0					0.41
53.583	0.00	0.06	0.062	IO					0.41
53.667	0.00	0.06	0.062	IO					0.41
53.750	0.00	0.06	0.061	IO					0.40
53.833	0.00	0.06	0.061	IO					0.40
53.917	0.00	0.06	0.060	IO					0.40
54.000	0.00	0.06	0.060	IO					0.40
54.083	0.00	0.06	0.060	IO					0.39
54.167	0.00	0.06	0.059	IO					0.39
54.250	0.00	0.06	0.059	IO					0.39
54.333	0.00	0.06	0.058	IO					0.38
54.417	0.00	0.06	0.058	IO					0.38
54.500	0.00	0.06	0.058	IO					0.38
54.583	0.00	0.06	0.057	IO					0.38
54.667	0.00	0.05	0.057	IO					0.37
54.750	0.00	0.05	0.057	IO					0.37
54.833	0.00	0.05	0.056	IO					0.37
54.917	0.00	0.05	0.056	IO					0.37
55.000	0.00	0.05	0.055	IO					0.37
55.083	0.00	0.05	0.055	IO					0.36
55.167	0.00	0.05	0.055	IO					0.36
55.250	0.00	0.05	0.054	IO					0.36
55.333	0.00	0.05	0.054	IO					0.36
55.417	0.00	0.05	0.054	IO					0.35
55.500	0.00	0.05	0.053	IO					0.35
55.583	0.00	0.05	0.053	IO					0.35
55.667	0.00	0.05	0.053	IO					0.35



55.750	0.00	0.05	0.052	IO					0.34
55.833	0.00	0.05	0.052	IO					0.34
55.917	0.00	0.05	0.052	IO					0.34
56.000	0.00	0.05	0.051	IO					0.34
56.083	0.00	0.05	0.051	IO					0.33
56.167	0.00	0.05	0.051	IO					0.33
56.250	0.00	0.05	0.050	IO					0.33
56.333	0.00	0.05	0.050	IO					0.33
56.417	0.00	0.05	0.050	IO					0.33
56.500	0.00	0.05	0.049	IO					0.32
56.583	0.00	0.05	0.049	IO					0.32
56.667	0.00	0.05	0.049	IO					0.32
56.750	0.00	0.05	0.048	IO					0.32
56.833	0.00	0.05	0.048	IO					0.32
56.917	0.00	0.05	0.048	IO					0.31
57.000	0.00	0.05	0.047	IO					0.31
57.083	0.00	0.05	0.047	IO					0.31
57.167	0.00	0.04	0.047	IO					0.31
57.250	0.00	0.04	0.046	IO					0.31
57.333	0.00	0.04	0.046	IO					0.30
57.417	0.00	0.04	0.046	IO					0.30
57.500	0.00	0.04	0.045	IO					0.30
57.583	0.00	0.04	0.045	IO					0.30
57.667	0.00	0.04	0.045	IO					0.30
57.750	0.00	0.04	0.045	IO					0.29
57.833	0.00	0.04	0.044	IO					0.29
57.917	0.00	0.04	0.044	IO					0.29
58.000	0.00	0.04	0.044	IO					0.29
58.083	0.00	0.04	0.043	IO					0.29
58.167	0.00	0.04	0.043	IO					0.28
58.250	0.00	0.04	0.043	IO					0.28
58.333	0.00	0.04	0.043	IO					0.28
58.417	0.00	0.04	0.042	IO					0.28
58.500	0.00	0.04	0.042	IO					0.28
58.583	0.00	0.04	0.042	IO					0.27
58.667	0.00	0.04	0.041	IO					0.27
58.750	0.00	0.04	0.041	IO					0.27
58.833	0.00	0.04	0.041	IO					0.27
58.917	0.00	0.04	0.041	IO					0.27
59.000	0.00	0.04	0.040	IO					0.27
59.083	0.00	0.04	0.040	IO					0.26
59.167	0.00	0.04	0.040	IO					0.26
59.250	0.00	0.04	0.040	IO					0.26
59.333	0.00	0.04	0.039	IO					0.26
59.417	0.00	0.04	0.039	IO					0.26
59.500	0.00	0.04	0.039	IO					0.26
59.583	0.00	0.04	0.039	IO					0.25
59.667	0.00	0.04	0.038	IO					0.25
59.750	0.00	0.04	0.038	IO					0.25
59.833	0.00	0.04	0.038	IO					0.25

59.917	0.00	0.04	0.038	IO					0.25
60.000	0.00	0.04	0.037	IO					0.25
60.083	0.00	0.04	0.037	IO					0.24
60.167	0.00	0.04	0.037	IO					0.24
60.250	0.00	0.04	0.037	IO					0.24
60.333	0.00	0.03	0.036	IO					0.24
60.417	0.00	0.03	0.036	IO					0.24
60.500	0.00	0.03	0.036	IO					0.24
60.583	0.00	0.03	0.036	IO					0.23
60.667	0.00	0.03	0.035	IO					0.23
60.750	0.00	0.03	0.035	IO					0.23
60.833	0.00	0.03	0.035	IO					0.23
60.917	0.00	0.03	0.035	IO					0.23
61.000	0.00	0.03	0.034	IO					0.23
61.083	0.00	0.03	0.034	IO					0.23
61.167	0.00	0.03	0.034	IO					0.22
61.250	0.00	0.03	0.034	IO					0.22
61.333	0.00	0.03	0.034	IO					0.22
61.417	0.00	0.03	0.033	IO					0.22
61.500	0.00	0.03	0.033	IO					0.22
61.583	0.00	0.03	0.033	IO					0.22
61.667	0.00	0.03	0.033	IO					0.22
61.750	0.00	0.03	0.032	IO					0.21
61.833	0.00	0.03	0.032	IO					0.21
61.917	0.00	0.03	0.032	IO					0.21
62.000	0.00	0.03	0.032	IO					0.21
62.083	0.00	0.03	0.032	IO					0.21
62.167	0.00	0.03	0.031	IO					0.21
62.250	0.00	0.03	0.031	IO					0.21
62.333	0.00	0.03	0.031	0					0.20
62.417	0.00	0.03	0.031	0					0.20
62.500	0.00	0.03	0.031	0					0.20
62.583	0.00	0.03	0.030	0					0.20
62.667	0.00	0.03	0.030	0					0.20
62.750	0.00	0.03	0.030	0					0.20
62.833	0.00	0.03	0.030	0					0.20
62.917	0.00	0.03	0.030	0					0.19
63.000	0.00	0.03	0.029	0					0.19
63.083	0.00	0.03	0.029	0					0.19
63.167	0.00	0.03	0.029	0					0.19
63.250	0.00	0.03	0.029	0					0.19
63.333	0.00	0.03	0.029	0					0.19
63.417	0.00	0.03	0.028	0					0.19
63.500	0.00	0.03	0.028	0					0.19
63.583	0.00	0.03	0.028	0					0.18
63.667	0.00	0.03	0.028	0					0.18
63.750	0.00	0.03	0.028	0					0.18
63.833	0.00	0.03	0.028	0					0.18
63.917	0.00	0.03	0.027	0					0.18
64.000	0.00	0.03	0.027	0					0.18

64.083	0.00	0.03	0.027	0					0.18
64.167	0.00	0.03	0.027	0					0.18
64.250	0.00	0.03	0.027	0					0.18
64.333	0.00	0.03	0.026	0					0.17
64.417	0.00	0.03	0.026	0					0.17
64.500	0.00	0.03	0.026	0					0.17
64.583	0.00	0.02	0.026	0					0.17
64.667	0.00	0.02	0.026	0					0.17
64.750	0.00	0.02	0.026	0					0.17
64.833	0.00	0.02	0.025	0					0.17
64.917	0.00	0.02	0.025	0					0.17
65.000	0.00	0.02	0.025	0					0.17
65.083	0.00	0.02	0.025	0					0.16
65.167	0.00	0.02	0.025	0					0.16
65.250	0.00	0.02	0.025	0					0.16
65.333	0.00	0.02	0.024	0					0.16
65.417	0.00	0.02	0.024	0					0.16
65.500	0.00	0.02	0.024	0					0.16
65.583	0.00	0.02	0.024	0					0.16
65.667	0.00	0.02	0.024	0					0.16
65.750	0.00	0.02	0.024	0					0.16
65.833	0.00	0.02	0.023	0					0.15
65.917	0.00	0.02	0.023	0					0.15
66.000	0.00	0.02	0.023	0					0.15
66.083	0.00	0.02	0.023	0					0.15
66.167	0.00	0.02	0.023	0					0.15
66.250	0.00	0.02	0.023	0					0.15
66.333	0.00	0.02	0.023	0					0.15
66.417	0.00	0.02	0.022	0					0.15
66.500	0.00	0.02	0.022	0					0.15
66.583	0.00	0.02	0.022	0					0.15
66.667	0.00	0.02	0.022	0					0.14
66.750	0.00	0.02	0.022	0					0.14
66.833	0.00	0.02	0.022	0					0.14
66.917	0.00	0.02	0.022	0					0.14
67.000	0.00	0.02	0.021	0					0.14
67.083	0.00	0.02	0.021	0					0.14
67.167	0.00	0.02	0.021	0					0.14
67.250	0.00	0.02	0.021	0					0.14
67.333	0.00	0.02	0.021	0					0.14
67.417	0.00	0.02	0.021	0					0.14
67.500	0.00	0.02	0.021	0					0.14
67.583	0.00	0.02	0.020	0					0.13
67.667	0.00	0.02	0.020	0					0.13
67.750	0.00	0.02	0.020	0					0.13
67.833	0.00	0.02	0.020	0					0.13
67.917	0.00	0.02	0.020	0					0.13
68.000	0.00	0.02	0.020	0					0.13
68.083	0.00	0.02	0.020	0					0.13
68.167	0.00	0.02	0.020	0					0.13

68.250	0.00	0.02	0.019	0				0.13
68.333	0.00	0.02	0.019	0				0.13
68.417	0.00	0.02	0.019	0				0.13
68.500	0.00	0.02	0.019	0				0.12
68.583	0.00	0.02	0.019	0				0.12
68.667	0.00	0.02	0.019	0				0.12
68.750	0.00	0.02	0.019	0				0.12
68.833	0.00	0.02	0.019	0				0.12
68.917	0.00	0.02	0.018	0				0.12
69.000	0.00	0.02	0.018	0				0.12
69.083	0.00	0.02	0.018	0				0.12
69.167	0.00	0.02	0.018	0				0.12
69.250	0.00	0.02	0.018	0				0.12
69.333	0.00	0.02	0.018	0				0.12
69.417	0.00	0.02	0.018	0				0.12
69.500	0.00	0.02	0.018	0				0.12
69.583	0.00	0.02	0.017	0				0.11
69.667	0.00	0.02	0.017	0				0.11
69.750	0.00	0.02	0.017	0				0.11
69.833	0.00	0.02	0.017	0				0.11
69.917	0.00	0.02	0.017	0				0.11
70.000	0.00	0.02	0.017	0				0.11
70.083	0.00	0.02	0.017	0				0.11
70.167	0.00	0.02	0.017	0				0.11
70.250	0.00	0.02	0.017	0				0.11
70.333	0.00	0.02	0.016	0				0.11
70.417	0.00	0.02	0.016	0				0.11
70.500	0.00	0.02	0.016	0				0.11
70.583	0.00	0.02	0.016	0				0.11
70.667	0.00	0.02	0.016	0				0.11
70.750	0.00	0.02	0.016	0				0.10
70.833	0.00	0.02	0.016	0				0.10
70.917	0.00	0.02	0.016	0				0.10
71.000	0.00	0.01	0.016	0				0.10
71.083	0.00	0.01	0.015	0				0.10
71.167	0.00	0.01	0.015	0				0.10
71.250	0.00	0.01	0.015	0				0.10
71.333	0.00	0.01	0.015	0				0.10
71.417	0.00	0.01	0.015	0				0.10
71.500	0.00	0.01	0.015	0				0.10
71.583	0.00	0.01	0.015	0				0.10
71.667	0.00	0.01	0.015	0				0.10
71.750	0.00	0.01	0.015	0				0.10
71.833	0.00	0.01	0.015	0				0.10
71.917	0.00	0.01	0.014	0				0.10
72.000	0.00	0.01	0.014	0				0.09
72.083	0.00	0.01	0.014	0				0.09
72.167	0.00	0.01	0.014	0				0.09
72.250	0.00	0.01	0.014	0				0.09
72.333	0.00	0.01	0.014	0				0.09

72.417	0.00	0.01	0.014	0					0.09
72.500	0.00	0.01	0.014	0					0.09
72.583	0.00	0.01	0.014	0					0.09
72.667	0.00	0.01	0.014	0					0.09
72.750	0.00	0.01	0.014	0					0.09
72.833	0.00	0.01	0.013	0					0.09
72.917	0.00	0.01	0.013	0					0.09
73.000	0.00	0.01	0.013	0					0.09
73.083	0.00	0.01	0.013	0					0.09
73.167	0.00	0.01	0.013	0					0.09
73.250	0.00	0.01	0.013	0					0.09
73.333	0.00	0.01	0.013	0					0.09
73.417	0.00	0.01	0.013	0					0.08
73.500	0.00	0.01	0.013	0					0.08
73.583	0.00	0.01	0.013	0					0.08
73.667	0.00	0.01	0.013	0					0.08
73.750	0.00	0.01	0.013	0					0.08
73.833	0.00	0.01	0.012	0					0.08
73.917	0.00	0.01	0.012	0					0.08
74.000	0.00	0.01	0.012	0					0.08
74.083	0.00	0.01	0.012	0					0.08
74.167	0.00	0.01	0.012	0					0.08
74.250	0.00	0.01	0.012	0					0.08
74.333	0.00	0.01	0.012	0					0.08
74.417	0.00	0.01	0.012	0					0.08
74.500	0.00	0.01	0.012	0					0.08
74.583	0.00	0.01	0.012	0					0.08
74.667	0.00	0.01	0.012	0					0.08
74.750	0.00	0.01	0.012	0					0.08
74.833	0.00	0.01	0.011	0					0.08
74.917	0.00	0.01	0.011	0					0.08
75.000	0.00	0.01	0.011	0					0.07
75.083	0.00	0.01	0.011	0					0.07
75.167	0.00	0.01	0.011	0					0.07
75.250	0.00	0.01	0.011	0					0.07
75.333	0.00	0.01	0.011	0					0.07
75.417	0.00	0.01	0.011	0					0.07
75.500	0.00	0.01	0.011	0					0.07
75.583	0.00	0.01	0.011	0					0.07
75.667	0.00	0.01	0.011	0					0.07
75.750	0.00	0.01	0.011	0					0.07
75.833	0.00	0.01	0.011	0					0.07
75.917	0.00	0.01	0.011	0					0.07
76.000	0.00	0.01	0.010	0					0.07
76.083	0.00	0.01	0.010	0					0.07
76.167	0.00	0.01	0.010	0					0.07
76.250	0.00	0.01	0.010	0					0.07
76.333	0.00	0.01	0.010	0					0.07
76.417	0.00	0.01	0.010	0					0.07
76.500	0.00	0.01	0.010	0					0.07

76.583	0.00	0.01	0.010	0					0.07
76.667	0.00	0.01	0.010	0					0.07
76.750	0.00	0.01	0.010	0					0.06
76.833	0.00	0.01	0.010	0					0.06
76.917	0.00	0.01	0.010	0					0.06
77.000	0.00	0.01	0.010	0					0.06
77.083	0.00	0.01	0.010	0					0.06
77.167	0.00	0.01	0.010	0					0.06
77.250	0.00	0.01	0.009	0					0.06
77.333	0.00	0.01	0.009	0					0.06
77.417	0.00	0.01	0.009	0					0.06
77.500	0.00	0.01	0.009	0					0.06
77.583	0.00	0.01	0.009	0					0.06
77.667	0.00	0.01	0.009	0					0.06
77.750	0.00	0.01	0.009	0					0.06
77.833	0.00	0.01	0.009	0					0.06
77.917	0.00	0.01	0.009	0					0.06
78.000	0.00	0.01	0.009	0					0.06
78.083	0.00	0.01	0.009	0					0.06
78.167	0.00	0.01	0.009	0					0.06
78.250	0.00	0.01	0.009	0					0.06
78.333	0.00	0.01	0.009	0					0.06
78.417	0.00	0.01	0.009	0					0.06
78.500	0.00	0.01	0.009	0					0.06
78.583	0.00	0.01	0.009	0					0.06
78.667	0.00	0.01	0.008	0					0.06
78.750	0.00	0.01	0.008	0					0.06
78.833	0.00	0.01	0.008	0					0.06
78.917	0.00	0.01	0.008	0					0.05
79.000	0.00	0.01	0.008	0					0.05
79.083	0.00	0.01	0.008	0					0.05
79.167	0.00	0.01	0.008	0					0.05
79.250	0.00	0.01	0.008	0					0.05
79.333	0.00	0.01	0.008	0					0.05
79.417	0.00	0.01	0.008	0					0.05
79.500	0.00	0.01	0.008	0					0.05
79.583	0.00	0.01	0.008	0					0.05
79.667	0.00	0.01	0.008	0					0.05
79.750	0.00	0.01	0.008	0					0.05
79.833	0.00	0.01	0.008	0					0.05
79.917	0.00	0.01	0.008	0					0.05
80.000	0.00	0.01	0.008	0					0.05
80.083	0.00	0.01	0.008	0					0.05
80.167	0.00	0.01	0.008	0					0.05
80.250	0.00	0.01	0.007	0					0.05
80.333	0.00	0.01	0.007	0					0.05
80.417	0.00	0.01	0.007	0					0.05
80.500	0.00	0.01	0.007	0					0.05
80.583	0.00	0.01	0.007	0					0.05
80.667	0.00	0.01	0.007	0					0.05

80.750	0.00	0.01	0.007	0					0.05
80.833	0.00	0.01	0.007	0					0.05
80.917	0.00	0.01	0.007	0					0.05
81.000	0.00	0.01	0.007	0					0.05
81.083	0.00	0.01	0.007	0					0.05
81.167	0.00	0.01	0.007	0					0.05
81.250	0.00	0.01	0.007	0					0.05
81.333	0.00	0.01	0.007	0					0.05
81.417	0.00	0.01	0.007	0					0.04
81.500	0.00	0.01	0.007	0					0.04
81.583	0.00	0.01	0.007	0					0.04
81.667	0.00	0.01	0.007	0					0.04
81.750	0.00	0.01	0.007	0					0.04
81.833	0.00	0.01	0.007	0					0.04
81.917	0.00	0.01	0.007	0					0.04
82.000	0.00	0.01	0.007	0					0.04
82.083	0.00	0.01	0.006	0					0.04
82.167	0.00	0.01	0.006	0					0.04
82.250	0.00	0.01	0.006	0					0.04
82.333	0.00	0.01	0.006	0					0.04
82.417	0.00	0.01	0.006	0					0.04
82.500	0.00	0.01	0.006	0					0.04
82.583	0.00	0.01	0.006	0					0.04
82.667	0.00	0.01	0.006	0					0.04
82.750	0.00	0.01	0.006	0					0.04
82.833	0.00	0.01	0.006	0					0.04
82.917	0.00	0.01	0.006	0					0.04
83.000	0.00	0.01	0.006	0					0.04
83.083	0.00	0.01	0.006	0					0.04
83.167	0.00	0.01	0.006	0					0.04
83.250	0.00	0.01	0.006	0					0.04
83.333	0.00	0.01	0.006	0					0.04
83.417	0.00	0.01	0.006	0					0.04
83.500	0.00	0.01	0.006	0					0.04
83.583	0.00	0.01	0.006	0					0.04
83.667	0.00	0.01	0.006	0					0.04
83.750	0.00	0.01	0.006	0					0.04
83.833	0.00	0.01	0.006	0					0.04
83.917	0.00	0.01	0.006	0					0.04
84.000	0.00	0.01	0.006	0					0.04
84.083	0.00	0.01	0.006	0					0.04
84.167	0.00	0.01	0.005	0					0.04
84.250	0.00	0.01	0.005	0					0.04
84.333	0.00	0.01	0.005	0					0.04
84.417	0.00	0.01	0.005	0					0.04
84.500	0.00	0.01	0.005	0					0.04
84.583	0.00	0.01	0.005	0					0.03
84.667	0.00	0.01	0.005	0					0.03
84.750	0.00	0.01	0.005	0					0.03
84.833	0.00	0.00	0.005	0					0.03

84.917	0.00	0.00	0.005	0					0.03
85.000	0.00	0.00	0.005	0					0.03
85.083	0.00	0.00	0.005	0					0.03
85.167	0.00	0.00	0.005	0					0.03
85.250	0.00	0.00	0.005	0					0.03
85.333	0.00	0.00	0.005	0					0.03
85.417	0.00	0.00	0.005	0					0.03
85.500	0.00	0.00	0.005	0					0.03
85.583	0.00	0.00	0.005	0					0.03
85.667	0.00	0.00	0.005	0					0.03
85.750	0.00	0.00	0.005	0					0.03
85.833	0.00	0.00	0.005	0					0.03
85.917	0.00	0.00	0.005	0					0.03
86.000	0.00	0.00	0.005	0					0.03
86.083	0.00	0.00	0.005	0					0.03
86.167	0.00	0.00	0.005	0					0.03
86.250	0.00	0.00	0.005	0					0.03
86.333	0.00	0.00	0.005	0					0.03
86.417	0.00	0.00	0.005	0					0.03
86.500	0.00	0.00	0.005	0					0.03
86.583	0.00	0.00	0.005	0					0.03
86.667	0.00	0.00	0.004	0					0.03
86.750	0.00	0.00	0.004	0					0.03
86.833	0.00	0.00	0.004	0					0.03
86.917	0.00	0.00	0.004	0					0.03
87.000	0.00	0.00	0.004	0					0.03
87.083	0.00	0.00	0.004	0					0.03
87.167	0.00	0.00	0.004	0					0.03
87.250	0.00	0.00	0.004	0					0.03
87.333	0.00	0.00	0.004	0					0.03
87.417	0.00	0.00	0.004	0					0.03
87.500	0.00	0.00	0.004	0					0.03
87.583	0.00	0.00	0.004	0					0.03
87.667	0.00	0.00	0.004	0					0.03
87.750	0.00	0.00	0.004	0					0.03
87.833	0.00	0.00	0.004	0					0.03
87.917	0.00	0.00	0.004	0					0.03
88.000	0.00	0.00	0.004	0					0.03
88.083	0.00	0.00	0.004	0					0.03
88.167	0.00	0.00	0.004	0					0.03
88.250	0.00	0.00	0.004	0					0.03
88.333	0.00	0.00	0.004	0					0.03
88.417	0.00	0.00	0.004	0					0.03
88.500	0.00	0.00	0.004	0					0.03
88.583	0.00	0.00	0.004	0					0.03
88.667	0.00	0.00	0.004	0					0.03
88.750	0.00	0.00	0.004	0					0.03
88.833	0.00	0.00	0.004	0					0.02
88.917	0.00	0.00	0.004	0					0.02
89.000	0.00	0.00	0.004	0					0.02



89.083	0.00	0.00	0.004	0					0.02
89.167	0.00	0.00	0.004	0					0.02
89.250	0.00	0.00	0.004	0					0.02
89.333	0.00	0.00	0.004	0					0.02
89.417	0.00	0.00	0.004	0					0.02
89.500	0.00	0.00	0.004	0					0.02
89.583	0.00	0.00	0.004	0					0.02
89.667	0.00	0.00	0.004	0					0.02
89.750	0.00	0.00	0.004	0					0.02
89.833	0.00	0.00	0.003	0					0.02
89.917	0.00	0.00	0.003	0					0.02
90.000	0.00	0.00	0.003	0					0.02
90.083	0.00	0.00	0.003	0					0.02
90.167	0.00	0.00	0.003	0					0.02
90.250	0.00	0.00	0.003	0					0.02
90.333	0.00	0.00	0.003	0					0.02
90.417	0.00	0.00	0.003	0					0.02
90.500	0.00	0.00	0.003	0					0.02
90.583	0.00	0.00	0.003	0					0.02
90.667	0.00	0.00	0.003	0					0.02
90.750	0.00	0.00	0.003	0					0.02
90.833	0.00	0.00	0.003	0					0.02
90.917	0.00	0.00	0.003	0					0.02
91.000	0.00	0.00	0.003	0					0.02
91.083	0.00	0.00	0.003	0					0.02
91.167	0.00	0.00	0.003	0					0.02
91.250	0.00	0.00	0.003	0					0.02
91.333	0.00	0.00	0.003	0					0.02
91.417	0.00	0.00	0.003	0					0.02
91.500	0.00	0.00	0.003	0					0.02
91.583	0.00	0.00	0.003	0					0.02
91.667	0.00	0.00	0.003	0					0.02
91.750	0.00	0.00	0.003	0					0.02
91.833	0.00	0.00	0.003	0					0.02
91.917	0.00	0.00	0.003	0					0.02
92.000	0.00	0.00	0.003	0					0.02
92.083	0.00	0.00	0.003	0					0.02
92.167	0.00	0.00	0.003	0					0.02
92.250	0.00	0.00	0.003	0					0.02
92.333	0.00	0.00	0.003	0					0.02
92.417	0.00	0.00	0.003	0					0.02
92.500	0.00	0.00	0.003	0					0.02
92.583	0.00	0.00	0.003	0					0.02
92.667	0.00	0.00	0.003	0					0.02
92.750	0.00	0.00	0.003	0					0.02
92.833	0.00	0.00	0.003	0					0.02
92.917	0.00	0.00	0.003	0					0.02
93.000	0.00	0.00	0.003	0					0.02
93.083	0.00	0.00	0.003	0					0.02
93.167	0.00	0.00	0.003	0					0.02

93.250	0.00	0.00	0.003	0					0.02
93.333	0.00	0.00	0.003	0					0.02
93.417	0.00	0.00	0.003	0					0.02
93.500	0.00	0.00	0.003	0					0.02
93.583	0.00	0.00	0.003	0					0.02
93.667	0.00	0.00	0.003	0					0.02
93.750	0.00	0.00	0.003	0					0.02
93.833	0.00	0.00	0.003	0					0.02
93.917	0.00	0.00	0.003	0					0.02
94.000	0.00	0.00	0.003	0					0.02
94.083	0.00	0.00	0.002	0					0.02
94.167	0.00	0.00	0.002	0					0.02
94.250	0.00	0.00	0.002	0					0.02
94.333	0.00	0.00	0.002	0					0.02
94.417	0.00	0.00	0.002	0					0.02
94.500	0.00	0.00	0.002	0					0.02
94.583	0.00	0.00	0.002	0					0.02
94.667	0.00	0.00	0.002	0					0.02
94.750	0.00	0.00	0.002	0					0.02
94.833	0.00	0.00	0.002	0					0.02
94.917	0.00	0.00	0.002	0					0.02
95.000	0.00	0.00	0.002	0					0.02
95.083	0.00	0.00	0.002	0					0.02
95.167	0.00	0.00	0.002	0					0.02
95.250	0.00	0.00	0.002	0					0.01
95.333	0.00	0.00	0.002	0					0.01
95.417	0.00	0.00	0.002	0					0.01
95.500	0.00	0.00	0.002	0					0.01
95.583	0.00	0.00	0.002	0					0.01
95.667	0.00	0.00	0.002	0					0.01
95.750	0.00	0.00	0.002	0					0.01
95.833	0.00	0.00	0.002	0					0.01
95.917	0.00	0.00	0.002	0					0.01
96.000	0.00	0.00	0.002	0					0.01
96.083	0.00	0.00	0.002	0					0.01
96.167	0.00	0.00	0.002	0					0.01
96.250	0.00	0.00	0.002	0					0.01
96.333	0.00	0.00	0.002	0					0.01
96.417	0.00	0.00	0.002	0					0.01
96.500	0.00	0.00	0.002	0					0.01
96.583	0.00	0.00	0.002	0					0.01
96.667	0.00	0.00	0.002	0					0.01
96.750	0.00	0.00	0.002	0					0.01
96.833	0.00	0.00	0.002	0					0.01
96.917	0.00	0.00	0.002	0					0.01
97.000	0.00	0.00	0.002	0					0.01
97.083	0.00	0.00	0.002	0					0.01
97.167	0.00	0.00	0.002	0					0.01
97.250	0.00	0.00	0.002	0					0.01
97.333	0.00	0.00	0.002	0					0.01

97.417	0.00	0.00	0.002	0					0.01
97.500	0.00	0.00	0.002	0					0.01
97.583	0.00	0.00	0.002	0					0.01
97.667	0.00	0.00	0.002	0					0.01
97.750	0.00	0.00	0.002	0					0.01
97.833	0.00	0.00	0.002	0					0.01
97.917	0.00	0.00	0.002	0					0.01
98.000	0.00	0.00	0.002	0					0.01
98.083	0.00	0.00	0.002	0					0.01
98.167	0.00	0.00	0.002	0					0.01
98.250	0.00	0.00	0.002	0					0.01
98.333	0.00	0.00	0.002	0					0.01
98.417	0.00	0.00	0.002	0					0.01
98.500	0.00	0.00	0.002	0					0.01
98.583	0.00	0.00	0.002	0					0.01
98.667	0.00	0.00	0.002	0					0.01
98.750	0.00	0.00	0.002	0					0.01
98.833	0.00	0.00	0.002	0					0.01
98.917	0.00	0.00	0.002	0					0.01
99.000	0.00	0.00	0.002	0					0.01
99.083	0.00	0.00	0.002	0					0.01
99.167	0.00	0.00	0.002	0					0.01
99.250	0.00	0.00	0.002	0					0.01
99.333	0.00	0.00	0.002	0					0.01
99.417	0.00	0.00	0.002	0					0.01
99.500	0.00	0.00	0.002	0					0.01
99.583	0.00	0.00	0.002	0					0.01
99.667	0.00	0.00	0.002	0					0.01
99.750	0.00	0.00	0.002	0					0.01
99.833	0.00	0.00	0.002	0					0.01
99.917	0.00	0.00	0.002	0					0.01
100.000	0.00	0.00	0.002	0					0.01
100.083	0.00	0.00	0.002	0					0.01
100.167	0.00	0.00	0.002	0					0.01
100.250	0.00	0.00	0.002	0					0.01
100.333	0.00	0.00	0.002	0					0.01
100.417	0.00	0.00	0.002	0					0.01
100.500	0.00	0.00	0.001	0					0.01
100.583	0.00	0.00	0.001	0					0.01
100.667	0.00	0.00	0.001	0					0.01
100.750	0.00	0.00	0.001	0					0.01
100.833	0.00	0.00	0.001	0					0.01
100.917	0.00	0.00	0.001	0					0.01
101.000	0.00	0.00	0.001	0					0.01
101.083	0.00	0.00	0.001	0					0.01
101.167	0.00	0.00	0.001	0					0.01
101.250	0.00	0.00	0.001	0					0.01
101.333	0.00	0.00	0.001	0					0.01
101.417	0.00	0.00	0.001	0					0.01
101.500	0.00	0.00	0.001	0					0.01

101.583	0.00	0.00	0.001	0					0.01
101.667	0.00	0.00	0.001	0					0.01
101.750	0.00	0.00	0.001	0					0.01
101.833	0.00	0.00	0.001	0					0.01
101.917	0.00	0.00	0.001	0					0.01
102.000	0.00	0.00	0.001	0					0.01
102.083	0.00	0.00	0.001	0					0.01
102.167	0.00	0.00	0.001	0					0.01
102.250	0.00	0.00	0.001	0					0.01
102.333	0.00	0.00	0.001	0					0.01
102.417	0.00	0.00	0.001	0					0.01
102.500	0.00	0.00	0.001	0					0.01
102.583	0.00	0.00	0.001	0					0.01
102.667	0.00	0.00	0.001	0					0.01
102.750	0.00	0.00	0.001	0					0.01
102.833	0.00	0.00	0.001	0					0.01
102.917	0.00	0.00	0.001	0					0.01
103.000	0.00	0.00	0.001	0					0.01
103.083	0.00	0.00	0.001	0					0.01
103.167	0.00	0.00	0.001	0					0.01
103.250	0.00	0.00	0.001	0					0.01
103.333	0.00	0.00	0.001	0					0.01
103.417	0.00	0.00	0.001	0					0.01
103.500	0.00	0.00	0.001	0					0.01
103.583	0.00	0.00	0.001	0					0.01
103.667	0.00	0.00	0.001	0					0.01
103.750	0.00	0.00	0.001	0					0.01
103.833	0.00	0.00	0.001	0					0.01
103.917	0.00	0.00	0.001	0					0.01
104.000	0.00	0.00	0.001	0					0.01
104.083	0.00	0.00	0.001	0					0.01
104.167	0.00	0.00	0.001	0					0.01
104.250	0.00	0.00	0.001	0					0.01
104.333	0.00	0.00	0.001	0					0.01
104.417	0.00	0.00	0.001	0					0.01
104.500	0.00	0.00	0.001	0					0.01
104.583	0.00	0.00	0.001	0					0.01
104.667	0.00	0.00	0.001	0					0.01
104.750	0.00	0.00	0.001	0					0.01
104.833	0.00	0.00	0.001	0					0.01
104.917	0.00	0.00	0.001	0					0.01
105.000	0.00	0.00	0.001	0					0.01
105.083	0.00	0.00	0.001	0					0.01
105.167	0.00	0.00	0.001	0					0.01

Remaining water in basin = 0.00 (Ac.Ft)

\*\*\*\*\*HYDROGRAPH DATA\*\*\*\*\*

Number of intervals = 1262  
Time interval = 5.0 (Min.)  
Maximum/Peak flow rate = 0.192 (CFS)  
Total volume = 0.581 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM  
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018  
Study date: 02/23/21

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
ROUTING BASIN A  
100YR, 24-HOUR STORM  
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Program License Serial Number 6473

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\*\*\*\*\* HYDROGRAPH INFORMATION \*\*\*\*\*

From study/file name: CC02PHYDA24100.rte  
\*\*\*\*\*HYDROGRAPH DATA\*\*\*\*\*  
Number of intervals = 292  
Time interval = 5.0 (Min.)  
Maximum/Peak flow rate = 4.156 (CFS)  
Total volume = 1.985 (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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Process from Point/Station 1.000 to Point/Station 2.000  
\*\*\*\* RETARDING BASIN ROUTING \*\*\*\*

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User entry of depth-outflow-storage data  
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Total number of inflow hydrograph intervals = 292  
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 (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.500	0.076	0.073	0.076	0.076
1.000	0.152	0.109	0.152	0.152
1.500	0.224	0.135	0.224	0.224
2.000	0.294	0.158	0.293	0.295
2.500	0.358	0.177	0.357	0.359
3.000	0.415	0.194	0.414	0.416
3.500	0.463	0.210	0.462	0.464
4.000	0.496	0.225	0.495	0.497
4.500	0.500	0.239	0.499	0.501
5.000	0.524	1.074	0.520	0.528
5.500	0.547	2.438	0.539	0.555
6.000	0.571	3.238	0.560	0.582
6.500	0.594	3.868	0.581	0.607
7.000	0.617	4.406	0.602	0.632
7.500	0.640	4.883	0.623	0.657
8.000	0.664	14.735	0.613	0.715
8.500	0.687	32.356	0.576	0.798

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 Hydrograph Detention Basin Routing  
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Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	Depth (Ft.)					
				.0	1.0	2.08	3.12	4.16	
0.083	0.06	0.00	0.000	0					0.00
0.167	0.11	0.00	0.001	0					0.01
0.250	0.13	0.00	0.002	0					0.01
0.333	0.17	0.00	0.003	OI					0.02
0.417	0.20	0.00	0.004	OI					0.03
0.500	0.21	0.01	0.005	OI					0.03
0.583	0.21	0.01	0.007	OI					0.04
0.667	0.22	0.01	0.008	OI					0.05
0.750	0.22	0.01	0.010	OI					0.06
0.833	0.25	0.01	0.011	OI					0.07
0.917	0.27	0.01	0.013	O I					0.08
1.000	0.28	0.01	0.015	O I					0.10
1.083	0.26	0.02	0.016	OI					0.11
1.167	0.23	0.02	0.018	OI					0.12
1.250	0.23	0.02	0.019	OI					0.13
1.333	0.22	0.02	0.021	OI					0.14
1.417	0.22	0.02	0.022	OI					0.15
1.500	0.22	0.02	0.024	OI					0.16

1.583	0.22	0.02	0.025	OI					0.16
1.667	0.22	0.03	0.026	OI					0.17
1.750	0.22	0.03	0.028	OI					0.18
1.833	0.25	0.03	0.029	OI					0.19
1.917	0.27	0.03	0.031	O I					0.20
2.000	0.28	0.03	0.032	O I					0.21
2.083	0.29	0.03	0.034	O I					0.22
2.167	0.29	0.03	0.036	O I					0.24
2.250	0.29	0.04	0.038	O I					0.25
2.333	0.29	0.04	0.039	O I					0.26
2.417	0.29	0.04	0.041	O I					0.27
2.500	0.29	0.04	0.043	O I					0.28
2.583	0.32	0.04	0.045	O I					0.29
2.667	0.35	0.04	0.047	O I					0.31
2.750	0.35	0.05	0.049	O I					0.32
2.833	0.36	0.05	0.051	O I					0.33
2.917	0.36	0.05	0.053	O I					0.35
3.000	0.36	0.05	0.055	O I					0.36
3.083	0.36	0.05	0.057	O I					0.38
3.167	0.36	0.06	0.059	O I					0.39
3.250	0.36	0.06	0.061	O I					0.40
3.333	0.36	0.06	0.063	O I					0.42
3.417	0.36	0.06	0.066	O I					0.43
3.500	0.36	0.06	0.068	O I					0.44
3.583	0.36	0.07	0.070	O I					0.46
3.667	0.36	0.07	0.072	O I					0.47
3.750	0.36	0.07	0.074	O I					0.48
3.833	0.39	0.07	0.076	O I					0.50
3.917	0.42	0.07	0.078	O I					0.51
4.000	0.43	0.08	0.080	O I					0.53
4.083	0.43	0.08	0.083	O I					0.55
4.167	0.43	0.08	0.085	O I					0.56
4.250	0.43	0.08	0.088	O I					0.58
4.333	0.47	0.08	0.090	O I					0.59
4.417	0.49	0.08	0.093	O I					0.61
4.500	0.50	0.08	0.096	O I					0.63
4.583	0.50	0.08	0.099	O I					0.65
4.667	0.51	0.09	0.102	O I					0.67
4.750	0.51	0.09	0.105	O I					0.69
4.833	0.54	0.09	0.108	O I					0.71
4.917	0.56	0.09	0.111	O I					0.73
5.000	0.57	0.09	0.114	O I					0.75
5.083	0.51	0.09	0.117	O I					0.77
5.167	0.47	0.09	0.120	O I					0.79
5.250	0.45	0.10	0.122	O I					0.81
5.333	0.47	0.10	0.125	O I					0.82
5.417	0.49	0.10	0.128	O I					0.84
5.500	0.50	0.10	0.130	O I					0.86
5.583	0.53	0.10	0.133	O I					0.88
5.667	0.56	0.10	0.136	O I					0.90



5.750	0.57	0.10	0.140	0	I					0.92
5.833	0.58	0.10	0.143	0	I					0.94
5.917	0.58	0.11	0.146	0	I					0.96
6.000	0.58	0.11	0.149	0	I					0.98
6.083	0.61	0.11	0.153	0	I					1.00
6.167	0.64	0.11	0.156	0	I					1.03
6.250	0.64	0.11	0.160	0	I					1.05
6.333	0.65	0.11	0.164	0	I					1.08
6.417	0.65	0.11	0.167	0	I					1.11
6.500	0.65	0.12	0.171	0	I					1.13
6.583	0.68	0.12	0.175	0	I					1.16
6.667	0.71	0.12	0.179	0	I					1.19
6.750	0.72	0.12	0.183	0	I					1.21
6.833	0.72	0.12	0.187	0	I					1.24
6.917	0.72	0.12	0.191	0	I					1.27
7.000	0.72	0.12	0.195	0	I					1.30
7.083	0.72	0.13	0.199	0	I					1.33
7.167	0.72	0.13	0.203	0	I					1.36
7.250	0.72	0.13	0.208	0	I					1.39
7.333	0.76	0.13	0.212	0	I					1.42
7.417	0.78	0.13	0.216	0	I					1.45
7.500	0.79	0.13	0.221	0	I					1.48
7.583	0.82	0.14	0.225	0	I					1.51
7.667	0.85	0.14	0.230	0	I					1.54
7.750	0.86	0.14	0.235	0	I					1.58
7.833	0.90	0.14	0.240	0	I					1.62
7.917	0.93	0.14	0.246	0	I					1.65
8.000	0.93	0.14	0.251	0	I					1.69
8.083	1.01	0.15	0.257	0	I					1.73
8.167	1.08	0.15	0.263	0	I					1.78
8.250	1.10	0.15	0.269	0	I					1.82
8.333	1.12	0.15	0.276	0	I					1.87
8.417	1.13	0.15	0.283	0	I					1.92
8.500	1.14	0.16	0.289	0	I					1.97
8.583	1.20	0.16	0.296	0	I					2.02
8.667	1.26	0.16	0.304	0	I					2.08
8.750	1.28	0.16	0.311	0	I					2.14
8.833	1.35	0.17	0.319	0	I					2.20
8.917	1.42	0.17	0.328	0	I					2.26
9.000	1.44	0.17	0.336	0	I					2.33
9.083	1.58	0.17	0.346	0	I					2.40
9.167	1.69	0.18	0.356	0	I					2.48
9.250	1.73	0.18	0.366	0	I					2.57
9.333	1.81	0.18	0.377	0	I					2.67
9.417	1.88	0.19	0.389	0	I					2.77
9.500	1.90	0.19	0.400	0	I					2.87
9.583	1.98	0.19	0.412	0	I					2.98
9.667	2.04	0.20	0.425	0	I					3.10
9.750	2.06	0.20	0.438	0	I					3.24
9.833	2.14	0.21	0.451	0	I					3.37

9.917	2.20	0.21	0.464	0			I			3.52
10.000	2.22	0.22	0.478	0			I			3.73
10.083	1.80	0.22	0.490	0			I			3.91
10.167	1.44	0.24	0.500	0			I			4.48
10.250	1.34	0.48	0.507	0			I			4.65
10.333	1.29	0.66	0.512	0			I			4.75
10.417	1.24	0.79	0.516	0			I			4.83
10.500	1.25	0.89	0.519	0			I			4.89
10.583	1.56	1.00	0.522	0			I			4.96
10.667	1.83	1.19	0.526	0			I			5.04
10.750	1.91	1.42	0.530	0			I			5.13
10.833	1.95	1.59	0.533				0	I		5.19
10.917	2.00	1.72	0.535				0	I		5.24
11.000	2.00	1.82	0.537				0	I		5.27
11.083	1.94	1.87	0.537				0			5.29
11.167	1.89	1.89	0.538				0			5.30
11.250	1.88	1.89	0.538				0			5.30
11.333	1.88	1.89	0.538				0			5.30
11.417	1.88	1.88	0.538				0			5.30
11.500	1.88	1.88	0.538				0			5.30
11.583	1.76	1.86	0.537				IO			5.29
11.667	1.66	1.81	0.536				IO			5.27
11.750	1.64	1.76	0.536				IO			5.25
11.833	1.69	1.72	0.535				IO			5.24
11.917	1.73	1.72	0.535				0			5.24
12.000	1.75	1.72	0.535				0			5.24
12.083	2.19	1.81	0.536				0	I		5.27
12.167	2.57	2.00	0.540				0	I		5.34
12.250	2.68	2.21	0.543				0	I		5.42
12.333	2.80	2.39	0.546				0	I		5.48
12.417	2.91	2.51	0.549				0	I		5.54
12.500	2.93	2.59	0.552				0	I		5.60
12.583	3.07	2.68	0.554				0	I		5.65
12.667	3.18	2.77	0.557				0	I		5.71
12.750	3.22	2.86	0.560				0	I		5.76
12.833	3.30	2.94	0.562				0	I		5.81
12.917	3.37	3.02	0.565				0	I		5.87
13.000	3.39	3.10	0.567				0	I		5.91
13.083	3.71	3.19	0.570				0	I		5.97
13.167	3.99	3.31	0.574				0	I		6.06
13.250	4.07	3.44	0.578				0	I		6.16
13.333	4.11	3.55	0.582				0	I		6.25
13.417	4.15	3.65	0.586				0	I		6.33
13.500	4.16	3.74	0.589				0	I		6.39
13.583	3.48	3.75	0.590				I	0		6.41
13.667	2.91	3.65	0.586				I	0		6.33
13.750	2.75	3.51	0.581				I	0		6.22
13.833	2.66	3.37	0.576				I	0		6.11
13.917	2.58	3.24	0.571				I	0		6.00
14.000	2.58	3.11	0.567				I	0		5.92

14.083	2.84	3.03	0.565				I 0	5.87
14.167	3.05	3.01	0.564				0	5.86
14.250	3.11	3.02	0.565				0	5.87
14.333	3.09	3.04	0.565				0	5.88
14.417	3.07	3.05	0.565				0	5.88
14.500	3.06	3.05	0.565				0	5.88
14.583	3.05	3.05	0.565				0	5.88
14.667	3.05	3.05	0.565				0	5.88
14.750	3.05	3.05	0.565				0	5.88
14.833	3.00	3.05	0.565				0	5.88
14.917	2.95	3.03	0.565				IO	5.87
15.000	2.94	3.01	0.564				IO	5.86
15.083	2.87	2.99	0.564				IO	5.84
15.167	2.81	2.96	0.563				IO	5.83
15.250	2.80	2.93	0.562				IO	5.81
15.333	2.73	2.89	0.561				IO	5.79
15.417	2.68	2.86	0.560				IO	5.76
15.500	2.67	2.82	0.558				IO	5.74
15.583	2.41	2.76	0.557				I 0	5.70
15.667	2.20	2.67	0.554				I 0	5.64
15.750	2.14	2.57	0.551				I 0	5.58
15.833	2.11	2.48	0.548				I 0	5.52
15.917	2.09	2.37	0.546				I 0	5.48
16.000	2.09	2.28	0.544				IO	5.44
16.083	1.32	2.08	0.541		I		0	5.37
16.167	0.67	1.71	0.535		I	0		5.23
16.250	0.49	1.33	0.528		I	0		5.09
16.333	0.38	1.04	0.523		I	0		4.98
16.417	0.29	0.89	0.519		I	0		4.89
16.500	0.29	0.76	0.515		I	0		4.81
16.583	0.26	0.66	0.512		I	0		4.75
16.667	0.23	0.57	0.510		I	0		4.70
16.750	0.23	0.50	0.507		I	0		4.65
16.833	0.22	0.44	0.506		I	0		4.62
16.917	0.22	0.39	0.504		I	0		4.59
17.000	0.22	0.35	0.503		IO			4.57
17.083	0.28	0.33	0.503		0			4.56
17.167	0.33	0.33	0.503		0			4.55
17.250	0.35	0.33	0.503		0			4.55
17.333	0.35	0.33	0.503		0			4.56
17.417	0.36	0.34	0.503		0			4.56
17.500	0.36	0.34	0.503		0			4.56
17.583	0.36	0.35	0.503		0			4.57
17.667	0.36	0.35	0.503		0			4.57
17.750	0.36	0.35	0.503		0			4.57
17.833	0.33	0.35	0.503		0			4.57
17.917	0.31	0.34	0.503		0			4.56
18.000	0.30	0.34	0.503		0			4.56
18.083	0.29	0.33	0.503		0			4.55
18.167	0.29	0.32	0.502		0			4.55

18.250	0.29	0.31	0.502	0					4.54
18.333	0.29	0.31	0.502	0					4.54
18.417	0.29	0.30	0.502	0					4.54
18.500	0.29	0.30	0.502	0					4.54
18.583	0.26	0.30	0.502	IO					4.53
18.667	0.23	0.28	0.501	IO					4.53
18.750	0.23	0.27	0.501	IO					4.52
18.833	0.19	0.26	0.501	0					4.51
18.917	0.16	0.24	0.500	0					4.50
19.000	0.15	0.24	0.499	0					4.44
19.083	0.18	0.24	0.499	0					4.38
19.167	0.20	0.23	0.499	0					4.34
19.250	0.21	0.23	0.499	0					4.31
19.333	0.24	0.23	0.498	0					4.31
19.417	0.27	0.23	0.499	OI					4.33
19.500	0.28	0.24	0.499	OI					4.37
19.583	0.26	0.24	0.499	0					4.40
19.667	0.23	0.24	0.499	0					4.40
19.750	0.23	0.24	0.499	0					4.40
19.833	0.19	0.24	0.499	0					4.37
19.917	0.16	0.23	0.499	0					4.32
20.000	0.15	0.23	0.498	0					4.26
20.083	0.18	0.23	0.498	0					4.20
20.167	0.20	0.23	0.497	0					4.17
20.250	0.21	0.23	0.497	0					4.15
20.333	0.21	0.23	0.497	0					4.13
20.417	0.22	0.23	0.497	0					4.12
20.500	0.22	0.23	0.497	0					4.11
20.583	0.22	0.23	0.497	0					4.10
20.667	0.22	0.23	0.497	0					4.09
20.750	0.22	0.23	0.497	0					4.08
20.833	0.19	0.23	0.497	0					4.06
20.917	0.16	0.23	0.496	0					4.02
21.000	0.15	0.22	0.496	0					3.99
21.083	0.18	0.22	0.495	0					3.99
21.167	0.20	0.22	0.495	0					3.99
21.250	0.21	0.22	0.495	0					3.98
21.333	0.18	0.22	0.495	0					3.98
21.417	0.16	0.22	0.494	0					3.97
21.500	0.15	0.22	0.494	0					3.97
21.583	0.18	0.22	0.493	0					3.96
21.667	0.20	0.22	0.493	0					3.96
21.750	0.21	0.22	0.493	0					3.96
21.833	0.18	0.22	0.493	0					3.95
21.917	0.16	0.22	0.493	0					3.95
22.000	0.15	0.22	0.492	0					3.94
22.083	0.18	0.22	0.492	0					3.94
22.167	0.20	0.22	0.492	0					3.93
22.250	0.21	0.22	0.491	0					3.93
22.333	0.18	0.22	0.491	0					3.93

22.417	0.16	0.22	0.491	0					3.92
22.500	0.15	0.22	0.490	0					3.92
22.583	0.15	0.22	0.490	0					3.91
22.667	0.14	0.22	0.489	0					3.90
22.750	0.14	0.22	0.489	0					3.89
22.833	0.14	0.22	0.488	0					3.88
22.917	0.14	0.22	0.488	0					3.88
23.000	0.14	0.22	0.487	0					3.87
23.083	0.14	0.22	0.487	0					3.86
23.167	0.14	0.22	0.486	0					3.85
23.250	0.14	0.22	0.486	0					3.84
23.333	0.14	0.22	0.485	0					3.84
23.417	0.14	0.22	0.485	0					3.83
23.500	0.14	0.22	0.484	0					3.82
23.583	0.14	0.22	0.484	0					3.81
23.667	0.14	0.22	0.483	0					3.81
23.750	0.14	0.22	0.483	0					3.80
23.833	0.14	0.22	0.482	0					3.79
23.917	0.14	0.22	0.482	0					3.78
24.000	0.14	0.22	0.481	0					3.77
24.083	0.08	0.22	0.480	IO					3.76
24.167	0.03	0.22	0.479	IO					3.75
24.250	0.02	0.22	0.478	IO					3.73
24.333	0.01	0.22	0.477	IO					3.71
24.417	0.00	0.22	0.475	IO					3.68
24.500	0.00	0.21	0.474	IO					3.66
24.583	0.00	0.21	0.472	IO					3.64
24.667	0.00	0.21	0.471	IO					3.62
24.750	0.00	0.21	0.469	IO					3.59
24.833	0.00	0.21	0.468	IO					3.57
24.917	0.00	0.21	0.466	IO					3.55
25.000	0.00	0.21	0.465	IO					3.53
25.083	0.00	0.21	0.463	IO					3.51
25.167	0.00	0.21	0.462	IO					3.49
25.250	0.00	0.21	0.460	IO					3.47
25.333	0.00	0.21	0.459	IO					3.46
25.417	0.00	0.21	0.458	IO					3.44
25.500	0.00	0.21	0.456	IO					3.43
25.583	0.00	0.21	0.455	IO					3.41
25.667	0.00	0.21	0.453	IO					3.40
25.750	0.00	0.21	0.452	IO					3.38
25.833	0.00	0.21	0.450	IO					3.37
25.917	0.00	0.21	0.449	IO					3.35
26.000	0.00	0.20	0.448	IO					3.34
26.083	0.00	0.20	0.446	IO					3.33
26.167	0.00	0.20	0.445	IO					3.31
26.250	0.00	0.20	0.443	IO					3.30
26.333	0.00	0.20	0.442	IO					3.28
26.417	0.00	0.20	0.441	IO					3.27
26.500	0.00	0.20	0.439	IO					3.25

26.583	0.00	0.20	0.438	IO	3.24
26.667	0.00	0.20	0.436	IO	3.22
26.750	0.00	0.20	0.435	IO	3.21
26.833	0.00	0.20	0.434	IO	3.19
26.917	0.00	0.20	0.432	IO	3.18
27.000	0.00	0.20	0.431	IO	3.17
27.083	0.00	0.20	0.430	IO	3.15
27.167	0.00	0.20	0.428	IO	3.14
27.250	0.00	0.20	0.427	IO	3.12
27.333	0.00	0.20	0.425	IO	3.11
27.417	0.00	0.20	0.424	IO	3.09
27.500	0.00	0.20	0.423	IO	3.08
27.583	0.00	0.20	0.421	IO	3.07
27.667	0.00	0.20	0.420	IO	3.05
27.750	0.00	0.20	0.419	IO	3.04
27.833	0.00	0.19	0.417	IO	3.02
27.917	0.00	0.19	0.416	IO	3.01
28.000	0.00	0.19	0.415	IO	3.00
28.083	0.00	0.19	0.413	IO	2.99
28.167	0.00	0.19	0.412	IO	2.97
28.250	0.00	0.19	0.411	IO	2.96
28.333	0.00	0.19	0.409	IO	2.95
28.417	0.00	0.19	0.408	IO	2.94
28.500	0.00	0.19	0.407	IO	2.93
28.583	0.00	0.19	0.405	IO	2.92
28.667	0.00	0.19	0.404	IO	2.90
28.750	0.00	0.19	0.403	IO	2.89
28.833	0.00	0.19	0.401	IO	2.88
28.917	0.00	0.19	0.400	IO	2.87
29.000	0.00	0.19	0.399	IO	2.86
29.083	0.00	0.19	0.398	IO	2.85
29.167	0.00	0.19	0.396	IO	2.84
29.250	0.00	0.19	0.395	IO	2.82
29.333	0.00	0.19	0.394	IO	2.81
29.417	0.00	0.19	0.392	IO	2.80
29.500	0.00	0.19	0.391	IO	2.79
29.583	0.00	0.19	0.390	IO	2.78
29.667	0.00	0.19	0.389	IO	2.77
29.750	0.00	0.19	0.387	IO	2.76
29.833	0.00	0.19	0.386	IO	2.75
29.917	0.00	0.18	0.385	IO	2.73
30.000	0.00	0.18	0.383	IO	2.72
30.083	0.00	0.18	0.382	IO	2.71
30.167	0.00	0.18	0.381	IO	2.70
30.250	0.00	0.18	0.380	IO	2.69
30.333	0.00	0.18	0.378	IO	2.68
30.417	0.00	0.18	0.377	IO	2.67
30.500	0.00	0.18	0.376	IO	2.66
30.583	0.00	0.18	0.375	IO	2.65
30.667	0.00	0.18	0.373	IO	2.63

30.750	0.00	0.18	0.372	IO					2.62
30.833	0.00	0.18	0.371	IO					2.61
30.917	0.00	0.18	0.370	IO					2.60
31.000	0.00	0.18	0.368	IO					2.59
31.083	0.00	0.18	0.367	IO					2.58
31.167	0.00	0.18	0.366	IO					2.57
31.250	0.00	0.18	0.365	IO					2.56
31.333	0.00	0.18	0.363	IO					2.55
31.417	0.00	0.18	0.362	IO					2.54
31.500	0.00	0.18	0.361	IO					2.53
31.583	0.00	0.18	0.360	IO					2.52
31.667	0.00	0.18	0.359	IO					2.50
31.750	0.00	0.18	0.357	IO					2.49
31.833	0.00	0.18	0.356	IO					2.48
31.917	0.00	0.18	0.355	IO					2.48
32.000	0.00	0.18	0.354	IO					2.47
32.083	0.00	0.18	0.352	IO					2.46
32.167	0.00	0.17	0.351	IO					2.45
32.250	0.00	0.17	0.350	IO					2.44
32.333	0.00	0.17	0.349	IO					2.43
32.417	0.00	0.17	0.348	IO					2.42
32.500	0.00	0.17	0.346	IO					2.41
32.583	0.00	0.17	0.345	IO					2.40
32.667	0.00	0.17	0.344	IO					2.39
32.750	0.00	0.17	0.343	IO					2.38
32.833	0.00	0.17	0.342	IO					2.37
32.917	0.00	0.17	0.340	IO					2.36
33.000	0.00	0.17	0.339	IO					2.35
33.083	0.00	0.17	0.338	IO					2.34
33.167	0.00	0.17	0.337	IO					2.34
33.250	0.00	0.17	0.336	IO					2.33
33.333	0.00	0.17	0.335	IO					2.32
33.417	0.00	0.17	0.333	IO					2.31
33.500	0.00	0.17	0.332	IO					2.30
33.583	0.00	0.17	0.331	IO					2.29
33.667	0.00	0.17	0.330	IO					2.28
33.750	0.00	0.17	0.329	IO					2.27
33.833	0.00	0.17	0.328	IO					2.26
33.917	0.00	0.17	0.326	IO					2.25
34.000	0.00	0.17	0.325	IO					2.24
34.083	0.00	0.17	0.324	IO					2.24
34.167	0.00	0.17	0.323	IO					2.23
34.250	0.00	0.17	0.322	IO					2.22
34.333	0.00	0.17	0.321	IO					2.21
34.417	0.00	0.17	0.320	IO					2.20
34.500	0.00	0.17	0.318	IO					2.19
34.583	0.00	0.16	0.317	IO					2.18
34.667	0.00	0.16	0.316	IO					2.17
34.750	0.00	0.16	0.315	IO					2.16
34.833	0.00	0.16	0.314	IO					2.16

34.917	0.00	0.16	0.313	IO					2.15
35.000	0.00	0.16	0.312	IO					2.14
35.083	0.00	0.16	0.311	IO					2.13
35.167	0.00	0.16	0.309	IO					2.12
35.250	0.00	0.16	0.308	IO					2.11
35.333	0.00	0.16	0.307	IO					2.10
35.417	0.00	0.16	0.306	IO					2.09
35.500	0.00	0.16	0.305	IO					2.09
35.583	0.00	0.16	0.304	IO					2.08
35.667	0.00	0.16	0.303	IO					2.07
35.750	0.00	0.16	0.302	IO					2.06
35.833	0.00	0.16	0.301	IO					2.05
35.917	0.00	0.16	0.299	IO					2.04
36.000	0.00	0.16	0.298	IO					2.03
36.083	0.00	0.16	0.297	IO					2.03
36.167	0.00	0.16	0.296	IO					2.02
36.250	0.00	0.16	0.295	IO					2.01
36.333	0.00	0.16	0.294	IO					2.00
36.417	0.00	0.16	0.293	IO					1.99
36.500	0.00	0.16	0.292	IO					1.98
36.583	0.00	0.16	0.291	IO					1.98
36.667	0.00	0.16	0.290	IO					1.97
36.750	0.00	0.16	0.289	IO					1.96
36.833	0.00	0.16	0.287	IO					1.95
36.917	0.00	0.16	0.286	IO					1.95
37.000	0.00	0.16	0.285	IO					1.94
37.083	0.00	0.15	0.284	IO					1.93
37.167	0.00	0.15	0.283	IO					1.92
37.250	0.00	0.15	0.282	IO					1.92
37.333	0.00	0.15	0.281	IO					1.91
37.417	0.00	0.15	0.280	IO					1.90
37.500	0.00	0.15	0.279	IO					1.89
37.583	0.00	0.15	0.278	IO					1.89
37.667	0.00	0.15	0.277	IO					1.88
37.750	0.00	0.15	0.276	IO					1.87
37.833	0.00	0.15	0.275	IO					1.86
37.917	0.00	0.15	0.274	IO					1.86
38.000	0.00	0.15	0.273	IO					1.85
38.083	0.00	0.15	0.272	IO					1.84
38.167	0.00	0.15	0.271	IO					1.83
38.250	0.00	0.15	0.270	IO					1.83
38.333	0.00	0.15	0.269	IO					1.82
38.417	0.00	0.15	0.268	IO					1.81
38.500	0.00	0.15	0.266	IO					1.80
38.583	0.00	0.15	0.265	IO					1.80
38.667	0.00	0.15	0.264	IO					1.79
38.750	0.00	0.15	0.263	IO					1.78
38.833	0.00	0.15	0.262	IO					1.77
38.917	0.00	0.15	0.261	IO					1.77
39.000	0.00	0.15	0.260	IO					1.76



39.083	0.00	0.15	0.259	IO	1.75
39.167	0.00	0.15	0.258	IO	1.75
39.250	0.00	0.15	0.257	IO	1.74
39.333	0.00	0.15	0.256	IO	1.73
39.417	0.00	0.15	0.255	IO	1.72
39.500	0.00	0.14	0.254	IO	1.72
39.583	0.00	0.14	0.253	IO	1.71
39.667	0.00	0.14	0.252	IO	1.70
39.750	0.00	0.14	0.251	IO	1.70
39.833	0.00	0.14	0.250	IO	1.69
39.917	0.00	0.14	0.249	IO	1.68
40.000	0.00	0.14	0.248	IO	1.67
40.083	0.00	0.14	0.247	IO	1.67
40.167	0.00	0.14	0.246	IO	1.66
40.250	0.00	0.14	0.245	IO	1.65
40.333	0.00	0.14	0.244	IO	1.65
40.417	0.00	0.14	0.243	IO	1.64
40.500	0.00	0.14	0.243	IO	1.63
40.583	0.00	0.14	0.242	IO	1.63
40.667	0.00	0.14	0.241	IO	1.62
40.750	0.00	0.14	0.240	IO	1.61
40.833	0.00	0.14	0.239	IO	1.60
40.917	0.00	0.14	0.238	IO	1.60
41.000	0.00	0.14	0.237	IO	1.59
41.083	0.00	0.14	0.236	IO	1.58
41.167	0.00	0.14	0.235	IO	1.58
41.250	0.00	0.14	0.234	IO	1.57
41.333	0.00	0.14	0.233	IO	1.56
41.417	0.00	0.14	0.232	IO	1.56
41.500	0.00	0.14	0.231	IO	1.55
41.583	0.00	0.14	0.230	IO	1.54
41.667	0.00	0.14	0.229	IO	1.54
41.750	0.00	0.14	0.228	IO	1.53
41.833	0.00	0.14	0.227	IO	1.52
41.917	0.00	0.14	0.226	IO	1.52
42.000	0.00	0.14	0.225	IO	1.51
42.083	0.00	0.14	0.224	IO	1.50
42.167	0.00	0.13	0.224	IO	1.50
42.250	0.00	0.13	0.223	IO	1.49
42.333	0.00	0.13	0.222	IO	1.48
42.417	0.00	0.13	0.221	IO	1.48
42.500	0.00	0.13	0.220	IO	1.47
42.583	0.00	0.13	0.219	IO	1.46
42.667	0.00	0.13	0.218	IO	1.46
42.750	0.00	0.13	0.217	IO	1.45
42.833	0.00	0.13	0.216	IO	1.45
42.917	0.00	0.13	0.215	IO	1.44
43.000	0.00	0.13	0.214	IO	1.43
43.083	0.00	0.13	0.213	IO	1.43
43.167	0.00	0.13	0.213	IO	1.42

43.250	0.00	0.13	0.212	IO					1.41
43.333	0.00	0.13	0.211	IO					1.41
43.417	0.00	0.13	0.210	IO					1.40
43.500	0.00	0.13	0.209	0					1.40
43.583	0.00	0.13	0.208	0					1.39
43.667	0.00	0.13	0.207	0					1.38
43.750	0.00	0.13	0.206	0					1.38
43.833	0.00	0.13	0.205	0					1.37
43.917	0.00	0.13	0.205	0					1.36
44.000	0.00	0.13	0.204	0					1.36
44.083	0.00	0.13	0.203	0					1.35
44.167	0.00	0.13	0.202	0					1.35
44.250	0.00	0.13	0.201	0					1.34
44.333	0.00	0.13	0.200	0					1.33
44.417	0.00	0.13	0.199	0					1.33
44.500	0.00	0.13	0.198	0					1.32
44.583	0.00	0.13	0.198	0					1.32
44.667	0.00	0.13	0.197	0					1.31
44.750	0.00	0.12	0.196	0					1.30
44.833	0.00	0.12	0.195	0					1.30
44.917	0.00	0.12	0.194	0					1.29
45.000	0.00	0.12	0.193	0					1.29
45.083	0.00	0.12	0.192	0					1.28
45.167	0.00	0.12	0.192	0					1.27
45.250	0.00	0.12	0.191	0					1.27
45.333	0.00	0.12	0.190	0					1.26
45.417	0.00	0.12	0.189	0					1.26
45.500	0.00	0.12	0.188	0					1.25
45.583	0.00	0.12	0.187	0					1.25
45.667	0.00	0.12	0.186	0					1.24
45.750	0.00	0.12	0.186	0					1.23
45.833	0.00	0.12	0.185	0					1.23
45.917	0.00	0.12	0.184	0					1.22
46.000	0.00	0.12	0.183	0					1.22
46.083	0.00	0.12	0.182	0					1.21
46.167	0.00	0.12	0.182	0					1.20
46.250	0.00	0.12	0.181	0					1.20
46.333	0.00	0.12	0.180	0					1.19
46.417	0.00	0.12	0.179	0					1.19
46.500	0.00	0.12	0.178	0					1.18
46.583	0.00	0.12	0.177	0					1.18
46.667	0.00	0.12	0.177	0					1.17
46.750	0.00	0.12	0.176	0					1.17
46.833	0.00	0.12	0.175	0					1.16
46.917	0.00	0.12	0.174	0					1.15
47.000	0.00	0.12	0.173	0					1.15
47.083	0.00	0.12	0.173	0					1.14
47.167	0.00	0.12	0.172	0					1.14
47.250	0.00	0.12	0.171	0					1.13
47.333	0.00	0.12	0.170	0					1.13

47.417	0.00	0.12	0.169	0					1.12
47.500	0.00	0.11	0.169	0					1.12
47.583	0.00	0.11	0.168	0					1.11
47.667	0.00	0.11	0.167	0					1.10
47.750	0.00	0.11	0.166	0					1.10
47.833	0.00	0.11	0.165	0					1.09
47.917	0.00	0.11	0.165	0					1.09
48.000	0.00	0.11	0.164	0					1.08
48.083	0.00	0.11	0.163	0					1.08
48.167	0.00	0.11	0.162	0					1.07
48.250	0.00	0.11	0.162	0					1.07
48.333	0.00	0.11	0.161	0					1.06
48.417	0.00	0.11	0.160	0					1.06
48.500	0.00	0.11	0.159	0					1.05
48.583	0.00	0.11	0.158	0					1.04
48.667	0.00	0.11	0.158	0					1.04
48.750	0.00	0.11	0.157	0					1.03
48.833	0.00	0.11	0.156	0					1.03
48.917	0.00	0.11	0.155	0					1.02
49.000	0.00	0.11	0.155	0					1.02
49.083	0.00	0.11	0.154	0					1.01
49.167	0.00	0.11	0.153	0					1.01
49.250	0.00	0.11	0.152	0					1.00
49.333	0.00	0.11	0.152	0					1.00
49.417	0.00	0.11	0.151	0					0.99
49.500	0.00	0.11	0.150	0					0.99
49.583	0.00	0.11	0.149	0					0.98
49.667	0.00	0.11	0.149	0					0.98
49.750	0.00	0.11	0.148	0					0.97
49.833	0.00	0.11	0.147	0					0.97
49.917	0.00	0.11	0.146	0					0.96
50.000	0.00	0.11	0.146	0					0.96
50.083	0.00	0.11	0.145	0					0.95
50.167	0.00	0.11	0.144	0					0.95
50.250	0.00	0.10	0.144	0					0.94
50.333	0.00	0.10	0.143	0					0.94
50.417	0.00	0.10	0.142	0					0.93
50.500	0.00	0.10	0.141	0					0.93
50.583	0.00	0.10	0.141	0					0.93
50.667	0.00	0.10	0.140	0					0.92
50.750	0.00	0.10	0.139	0					0.92
50.833	0.00	0.10	0.139	0					0.91
50.917	0.00	0.10	0.138	0					0.91
51.000	0.00	0.10	0.137	0					0.90
51.083	0.00	0.10	0.136	0					0.90
51.167	0.00	0.10	0.136	0					0.89
51.250	0.00	0.10	0.135	0					0.89
51.333	0.00	0.10	0.134	0					0.88
51.417	0.00	0.10	0.134	0					0.88
51.500	0.00	0.10	0.133	0					0.87

51.583	0.00	0.10	0.132	0					0.87
51.667	0.00	0.10	0.132	0					0.87
51.750	0.00	0.10	0.131	0					0.86
51.833	0.00	0.10	0.130	0					0.86
51.917	0.00	0.10	0.130	0					0.85
52.000	0.00	0.10	0.129	0					0.85
52.083	0.00	0.10	0.128	0					0.84
52.167	0.00	0.10	0.128	0					0.84
52.250	0.00	0.10	0.127	0					0.83
52.333	0.00	0.10	0.126	0					0.83
52.417	0.00	0.10	0.126	0					0.83
52.500	0.00	0.10	0.125	0					0.82
52.583	0.00	0.10	0.124	0					0.82
52.667	0.00	0.10	0.124	0					0.81
52.750	0.00	0.10	0.123	0					0.81
52.833	0.00	0.09	0.122	0					0.80
52.917	0.00	0.09	0.122	0					0.80
53.000	0.00	0.09	0.121	0					0.80
53.083	0.00	0.09	0.120	0					0.79
53.167	0.00	0.09	0.120	0					0.79
53.250	0.00	0.09	0.119	0					0.78
53.333	0.00	0.09	0.118	0					0.78
53.417	0.00	0.09	0.118	0					0.77
53.500	0.00	0.09	0.117	0					0.77
53.583	0.00	0.09	0.116	0					0.77
53.667	0.00	0.09	0.116	0					0.76
53.750	0.00	0.09	0.115	0					0.76
53.833	0.00	0.09	0.115	0					0.75
53.917	0.00	0.09	0.114	0					0.75
54.000	0.00	0.09	0.113	0					0.75
54.083	0.00	0.09	0.113	0					0.74
54.167	0.00	0.09	0.112	0					0.74
54.250	0.00	0.09	0.111	0					0.73
54.333	0.00	0.09	0.111	0					0.73
54.417	0.00	0.09	0.110	0					0.72
54.500	0.00	0.09	0.110	0					0.72
54.583	0.00	0.09	0.109	0					0.72
54.667	0.00	0.09	0.108	0					0.71
54.750	0.00	0.09	0.108	0					0.71
54.833	0.00	0.09	0.107	0					0.70
54.917	0.00	0.09	0.107	0					0.70
55.000	0.00	0.09	0.106	0					0.70
55.083	0.00	0.09	0.105	0					0.69
55.167	0.00	0.09	0.105	0					0.69
55.250	0.00	0.09	0.104	0					0.69
55.333	0.00	0.09	0.104	0					0.68
55.417	0.00	0.09	0.103	0					0.68
55.500	0.00	0.09	0.102	0					0.67
55.583	0.00	0.09	0.102	0					0.67
55.667	0.00	0.08	0.101	0					0.67

55.750	0.00	0.08	0.101	0					0.66
55.833	0.00	0.08	0.100	0					0.66
55.917	0.00	0.08	0.099	0					0.65
56.000	0.00	0.08	0.099	0					0.65
56.083	0.00	0.08	0.098	0					0.65
56.167	0.00	0.08	0.098	0					0.64
56.250	0.00	0.08	0.097	0					0.64
56.333	0.00	0.08	0.097	0					0.64
56.417	0.00	0.08	0.096	0					0.63
56.500	0.00	0.08	0.095	0					0.63
56.583	0.00	0.08	0.095	0					0.62
56.667	0.00	0.08	0.094	0					0.62
56.750	0.00	0.08	0.094	0					0.62
56.833	0.00	0.08	0.093	0					0.61
56.917	0.00	0.08	0.093	0					0.61
57.000	0.00	0.08	0.092	0					0.61
57.083	0.00	0.08	0.092	0					0.60
57.167	0.00	0.08	0.091	0					0.60
57.250	0.00	0.08	0.090	0					0.59
57.333	0.00	0.08	0.090	0					0.59
57.417	0.00	0.08	0.089	0					0.59
57.500	0.00	0.08	0.089	0					0.58
57.583	0.00	0.08	0.088	0					0.58
57.667	0.00	0.08	0.088	0					0.58
57.750	0.00	0.08	0.087	0					0.57
57.833	0.00	0.08	0.087	0					0.57
57.917	0.00	0.08	0.086	0					0.57
58.000	0.00	0.08	0.086	0					0.56
58.083	0.00	0.08	0.085	0					0.56
58.167	0.00	0.08	0.084	0					0.56
58.250	0.00	0.08	0.084	0					0.55
58.333	0.00	0.08	0.083	0					0.55
58.417	0.00	0.08	0.083	0					0.55
58.500	0.00	0.08	0.082	0					0.54
58.583	0.00	0.08	0.082	0					0.54
58.667	0.00	0.08	0.081	0					0.53
58.750	0.00	0.08	0.081	0					0.53
58.833	0.00	0.08	0.080	0					0.53
58.917	0.00	0.07	0.080	0					0.52
59.000	0.00	0.07	0.079	0					0.52
59.083	0.00	0.07	0.079	0					0.52
59.167	0.00	0.07	0.078	0					0.51
59.250	0.00	0.07	0.078	0					0.51
59.333	0.00	0.07	0.077	0					0.51
59.417	0.00	0.07	0.077	0					0.50
59.500	0.00	0.07	0.076	0					0.50
59.583	0.00	0.07	0.076	0					0.50
59.667	0.00	0.07	0.075	0					0.49
59.750	0.00	0.07	0.075	0					0.49
59.833	0.00	0.07	0.074	0					0.49

59.917	0.00	0.07	0.074	0					0.48
60.000	0.00	0.07	0.073	0					0.48
60.083	0.00	0.07	0.073	0					0.48
60.167	0.00	0.07	0.072	0					0.48
60.250	0.00	0.07	0.072	0					0.47
60.333	0.00	0.07	0.071	0					0.47
60.417	0.00	0.07	0.071	0					0.47
60.500	0.00	0.07	0.070	0					0.46
60.583	0.00	0.07	0.070	0					0.46
60.667	0.00	0.07	0.069	0					0.46
60.750	0.00	0.07	0.069	0					0.45
60.833	0.00	0.07	0.069	0					0.45
60.917	0.00	0.07	0.068	0					0.45
61.000	0.00	0.06	0.068	0					0.44
61.083	0.00	0.06	0.067	0					0.44
61.167	0.00	0.06	0.067	0					0.44
61.250	0.00	0.06	0.066	0					0.44
61.333	0.00	0.06	0.066	0					0.43
61.417	0.00	0.06	0.065	0					0.43
61.500	0.00	0.06	0.065	0					0.43
61.583	0.00	0.06	0.065	0					0.42
61.667	0.00	0.06	0.064	0					0.42
61.750	0.00	0.06	0.064	0					0.42
61.833	0.00	0.06	0.063	0					0.42
61.917	0.00	0.06	0.063	0					0.41
62.000	0.00	0.06	0.062	0					0.41
62.083	0.00	0.06	0.062	0					0.41
62.167	0.00	0.06	0.062	0					0.41
62.250	0.00	0.06	0.061	0					0.40
62.333	0.00	0.06	0.061	0					0.40
62.417	0.00	0.06	0.060	0					0.40
62.500	0.00	0.06	0.060	0					0.40
62.583	0.00	0.06	0.060	0					0.39
62.667	0.00	0.06	0.059	0					0.39
62.750	0.00	0.06	0.059	0					0.39
62.833	0.00	0.06	0.058	0					0.38
62.917	0.00	0.06	0.058	0					0.38
63.000	0.00	0.06	0.058	0					0.38
63.083	0.00	0.06	0.057	0					0.38
63.167	0.00	0.05	0.057	0					0.37
63.250	0.00	0.05	0.057	0					0.37
63.333	0.00	0.05	0.056	0					0.37
63.417	0.00	0.05	0.056	0					0.37
63.500	0.00	0.05	0.055	0					0.36
63.583	0.00	0.05	0.055	0					0.36
63.667	0.00	0.05	0.055	0					0.36
63.750	0.00	0.05	0.054	0					0.36
63.833	0.00	0.05	0.054	0					0.36
63.917	0.00	0.05	0.054	0					0.35
64.000	0.00	0.05	0.053	0					0.35

64.083	0.00	0.05	0.053	0					0.35
64.167	0.00	0.05	0.053	0					0.35
64.250	0.00	0.05	0.052	0					0.34
64.333	0.00	0.05	0.052	0					0.34
64.417	0.00	0.05	0.052	0					0.34
64.500	0.00	0.05	0.051	0					0.34
64.583	0.00	0.05	0.051	0					0.33
64.667	0.00	0.05	0.051	0					0.33
64.750	0.00	0.05	0.050	0					0.33
64.833	0.00	0.05	0.050	0					0.33
64.917	0.00	0.05	0.050	0					0.33
65.000	0.00	0.05	0.049	0					0.32
65.083	0.00	0.05	0.049	0					0.32
65.167	0.00	0.05	0.049	0					0.32
65.250	0.00	0.05	0.048	0					0.32
65.333	0.00	0.05	0.048	0					0.32
65.417	0.00	0.05	0.048	0					0.31
65.500	0.00	0.05	0.047	0					0.31
65.583	0.00	0.05	0.047	0					0.31
65.667	0.00	0.04	0.047	0					0.31
65.750	0.00	0.04	0.046	0					0.31
65.833	0.00	0.04	0.046	0					0.30
65.917	0.00	0.04	0.046	0					0.30
66.000	0.00	0.04	0.045	0					0.30
66.083	0.00	0.04	0.045	0					0.30
66.167	0.00	0.04	0.045	0					0.30
66.250	0.00	0.04	0.045	0					0.29
66.333	0.00	0.04	0.044	0					0.29
66.417	0.00	0.04	0.044	0					0.29
66.500	0.00	0.04	0.044	0					0.29
66.583	0.00	0.04	0.043	0					0.29
66.667	0.00	0.04	0.043	0					0.28
66.750	0.00	0.04	0.043	0					0.28
66.833	0.00	0.04	0.043	0					0.28
66.917	0.00	0.04	0.042	0					0.28
67.000	0.00	0.04	0.042	0					0.28
67.083	0.00	0.04	0.042	0					0.27
67.167	0.00	0.04	0.041	0					0.27
67.250	0.00	0.04	0.041	0					0.27
67.333	0.00	0.04	0.041	0					0.27
67.417	0.00	0.04	0.041	0					0.27
67.500	0.00	0.04	0.040	0					0.27
67.583	0.00	0.04	0.040	0					0.26
67.667	0.00	0.04	0.040	0					0.26
67.750	0.00	0.04	0.040	0					0.26
67.833	0.00	0.04	0.039	0					0.26
67.917	0.00	0.04	0.039	0					0.26
68.000	0.00	0.04	0.039	0					0.26
68.083	0.00	0.04	0.039	0					0.25
68.167	0.00	0.04	0.038	0					0.25

68.250	0.00	0.04	0.038	0					0.25
68.333	0.00	0.04	0.038	0					0.25
68.417	0.00	0.04	0.038	0					0.25
68.500	0.00	0.04	0.037	0					0.25
68.583	0.00	0.04	0.037	0					0.24
68.667	0.00	0.04	0.037	0					0.24
68.750	0.00	0.04	0.037	0					0.24
68.833	0.00	0.03	0.036	0					0.24
68.917	0.00	0.03	0.036	0					0.24
69.000	0.00	0.03	0.036	0					0.24
69.083	0.00	0.03	0.036	0					0.23
69.167	0.00	0.03	0.035	0					0.23
69.250	0.00	0.03	0.035	0					0.23
69.333	0.00	0.03	0.035	0					0.23
69.417	0.00	0.03	0.035	0					0.23
69.500	0.00	0.03	0.034	0					0.23
69.583	0.00	0.03	0.034	0					0.23
69.667	0.00	0.03	0.034	0					0.22
69.750	0.00	0.03	0.034	0					0.22
69.833	0.00	0.03	0.034	0					0.22
69.917	0.00	0.03	0.033	0					0.22
70.000	0.00	0.03	0.033	0					0.22
70.083	0.00	0.03	0.033	0					0.22
70.167	0.00	0.03	0.033	0					0.21
70.250	0.00	0.03	0.032	0					0.21
70.333	0.00	0.03	0.032	0					0.21
70.417	0.00	0.03	0.032	0					0.21
70.500	0.00	0.03	0.032	0					0.21
70.583	0.00	0.03	0.032	0					0.21
70.667	0.00	0.03	0.031	0					0.21
70.750	0.00	0.03	0.031	0					0.21
70.833	0.00	0.03	0.031	0					0.20
70.917	0.00	0.03	0.031	0					0.20
71.000	0.00	0.03	0.031	0					0.20
71.083	0.00	0.03	0.030	0					0.20
71.167	0.00	0.03	0.030	0					0.20
71.250	0.00	0.03	0.030	0					0.20
71.333	0.00	0.03	0.030	0					0.20
71.417	0.00	0.03	0.030	0					0.19
71.500	0.00	0.03	0.029	0					0.19
71.583	0.00	0.03	0.029	0					0.19
71.667	0.00	0.03	0.029	0					0.19
71.750	0.00	0.03	0.029	0					0.19
71.833	0.00	0.03	0.029	0					0.19
71.917	0.00	0.03	0.028	0					0.19
72.000	0.00	0.03	0.028	0					0.19
72.083	0.00	0.03	0.028	0					0.18
72.167	0.00	0.03	0.028	0					0.18
72.250	0.00	0.03	0.028	0					0.18
72.333	0.00	0.03	0.028	0					0.18



72.417	0.00	0.03	0.027	0					0.18
72.500	0.00	0.03	0.027	0					0.18
72.583	0.00	0.03	0.027	0					0.18
72.667	0.00	0.03	0.027	0					0.18
72.750	0.00	0.03	0.027	0					0.18
72.833	0.00	0.03	0.026	0					0.17
72.917	0.00	0.03	0.026	0					0.17
73.000	0.00	0.03	0.026	0					0.17
73.083	0.00	0.02	0.026	0					0.17
73.167	0.00	0.02	0.026	0					0.17
73.250	0.00	0.02	0.026	0					0.17
73.333	0.00	0.02	0.025	0					0.17
73.417	0.00	0.02	0.025	0					0.17
73.500	0.00	0.02	0.025	0					0.16
73.583	0.00	0.02	0.025	0					0.16
73.667	0.00	0.02	0.025	0					0.16
73.750	0.00	0.02	0.025	0					0.16
73.833	0.00	0.02	0.024	0					0.16
73.917	0.00	0.02	0.024	0					0.16
74.000	0.00	0.02	0.024	0					0.16
74.083	0.00	0.02	0.024	0					0.16
74.167	0.00	0.02	0.024	0					0.16
74.250	0.00	0.02	0.024	0					0.16
74.333	0.00	0.02	0.023	0					0.15
74.417	0.00	0.02	0.023	0					0.15
74.500	0.00	0.02	0.023	0					0.15
74.583	0.00	0.02	0.023	0					0.15
74.667	0.00	0.02	0.023	0					0.15
74.750	0.00	0.02	0.023	0					0.15
74.833	0.00	0.02	0.023	0					0.15
74.917	0.00	0.02	0.022	0					0.15
75.000	0.00	0.02	0.022	0					0.15
75.083	0.00	0.02	0.022	0					0.15
75.167	0.00	0.02	0.022	0					0.14
75.250	0.00	0.02	0.022	0					0.14
75.333	0.00	0.02	0.022	0					0.14
75.417	0.00	0.02	0.022	0					0.14
75.500	0.00	0.02	0.021	0					0.14
75.583	0.00	0.02	0.021	0					0.14
75.667	0.00	0.02	0.021	0					0.14
75.750	0.00	0.02	0.021	0					0.14
75.833	0.00	0.02	0.021	0					0.14
75.917	0.00	0.02	0.021	0					0.14
76.000	0.00	0.02	0.021	0					0.14
76.083	0.00	0.02	0.020	0					0.13
76.167	0.00	0.02	0.020	0					0.13
76.250	0.00	0.02	0.020	0					0.13
76.333	0.00	0.02	0.020	0					0.13
76.417	0.00	0.02	0.020	0					0.13
76.500	0.00	0.02	0.020	0					0.13

76.583	0.00	0.02	0.020	0					0.13
76.667	0.00	0.02	0.020	0					0.13
76.750	0.00	0.02	0.019	0					0.13
76.833	0.00	0.02	0.019	0					0.13
76.917	0.00	0.02	0.019	0					0.13
77.000	0.00	0.02	0.019	0					0.12
77.083	0.00	0.02	0.019	0					0.12
77.167	0.00	0.02	0.019	0					0.12
77.250	0.00	0.02	0.019	0					0.12
77.333	0.00	0.02	0.018	0					0.12
77.417	0.00	0.02	0.018	0					0.12
77.500	0.00	0.02	0.018	0					0.12
77.583	0.00	0.02	0.018	0					0.12
77.667	0.00	0.02	0.018	0					0.12
77.750	0.00	0.02	0.018	0					0.12
77.833	0.00	0.02	0.018	0					0.12
77.917	0.00	0.02	0.018	0					0.12
78.000	0.00	0.02	0.018	0					0.12
78.083	0.00	0.02	0.017	0					0.11
78.167	0.00	0.02	0.017	0					0.11
78.250	0.00	0.02	0.017	0					0.11
78.333	0.00	0.02	0.017	0					0.11
78.417	0.00	0.02	0.017	0					0.11
78.500	0.00	0.02	0.017	0					0.11
78.583	0.00	0.02	0.017	0					0.11
78.667	0.00	0.02	0.017	0					0.11
78.750	0.00	0.02	0.017	0					0.11
78.833	0.00	0.02	0.016	0					0.11
78.917	0.00	0.02	0.016	0					0.11
79.000	0.00	0.02	0.016	0					0.11
79.083	0.00	0.02	0.016	0					0.11
79.167	0.00	0.02	0.016	0					0.11
79.250	0.00	0.02	0.016	0					0.10
79.333	0.00	0.02	0.016	0					0.10
79.417	0.00	0.02	0.016	0					0.10
79.500	0.00	0.01	0.016	0					0.10
79.583	0.00	0.01	0.015	0					0.10
79.667	0.00	0.01	0.015	0					0.10
79.750	0.00	0.01	0.015	0					0.10
79.833	0.00	0.01	0.015	0					0.10
79.917	0.00	0.01	0.015	0					0.10
80.000	0.00	0.01	0.015	0					0.10
80.083	0.00	0.01	0.015	0					0.10
80.167	0.00	0.01	0.015	0					0.10
80.250	0.00	0.01	0.015	0					0.10
80.333	0.00	0.01	0.015	0					0.10
80.417	0.00	0.01	0.014	0					0.10
80.500	0.00	0.01	0.014	0					0.09
80.583	0.00	0.01	0.014	0					0.09
80.667	0.00	0.01	0.014	0					0.09

80.750	0.00	0.01	0.014	0					0.09
80.833	0.00	0.01	0.014	0					0.09
80.917	0.00	0.01	0.014	0					0.09
81.000	0.00	0.01	0.014	0					0.09
81.083	0.00	0.01	0.014	0					0.09
81.167	0.00	0.01	0.014	0					0.09
81.250	0.00	0.01	0.014	0					0.09
81.333	0.00	0.01	0.013	0					0.09
81.417	0.00	0.01	0.013	0					0.09
81.500	0.00	0.01	0.013	0					0.09
81.583	0.00	0.01	0.013	0					0.09
81.667	0.00	0.01	0.013	0					0.09
81.750	0.00	0.01	0.013	0					0.09
81.833	0.00	0.01	0.013	0					0.09
81.917	0.00	0.01	0.013	0					0.08
82.000	0.00	0.01	0.013	0					0.08
82.083	0.00	0.01	0.013	0					0.08
82.167	0.00	0.01	0.013	0					0.08
82.250	0.00	0.01	0.013	0					0.08
82.333	0.00	0.01	0.012	0					0.08
82.417	0.00	0.01	0.012	0					0.08
82.500	0.00	0.01	0.012	0					0.08
82.583	0.00	0.01	0.012	0					0.08
82.667	0.00	0.01	0.012	0					0.08
82.750	0.00	0.01	0.012	0					0.08
82.833	0.00	0.01	0.012	0					0.08
82.917	0.00	0.01	0.012	0					0.08
83.000	0.00	0.01	0.012	0					0.08
83.083	0.00	0.01	0.012	0					0.08
83.167	0.00	0.01	0.012	0					0.08
83.250	0.00	0.01	0.012	0					0.08
83.333	0.00	0.01	0.011	0					0.08
83.417	0.00	0.01	0.011	0					0.08
83.500	0.00	0.01	0.011	0					0.07
83.583	0.00	0.01	0.011	0					0.07
83.667	0.00	0.01	0.011	0					0.07
83.750	0.00	0.01	0.011	0					0.07
83.833	0.00	0.01	0.011	0					0.07
83.917	0.00	0.01	0.011	0					0.07
84.000	0.00	0.01	0.011	0					0.07
84.083	0.00	0.01	0.011	0					0.07
84.167	0.00	0.01	0.011	0					0.07
84.250	0.00	0.01	0.011	0					0.07
84.333	0.00	0.01	0.011	0					0.07
84.417	0.00	0.01	0.011	0					0.07
84.500	0.00	0.01	0.010	0					0.07
84.583	0.00	0.01	0.010	0					0.07
84.667	0.00	0.01	0.010	0					0.07
84.750	0.00	0.01	0.010	0					0.07
84.833	0.00	0.01	0.010	0					0.07

84.917	0.00	0.01	0.010	0					0.07
85.000	0.00	0.01	0.010	0					0.07
85.083	0.00	0.01	0.010	0					0.07
85.167	0.00	0.01	0.010	0					0.07
85.250	0.00	0.01	0.010	0					0.06
85.333	0.00	0.01	0.010	0					0.06
85.417	0.00	0.01	0.010	0					0.06
85.500	0.00	0.01	0.010	0					0.06
85.583	0.00	0.01	0.010	0					0.06
85.667	0.00	0.01	0.010	0					0.06
85.750	0.00	0.01	0.009	0					0.06
85.833	0.00	0.01	0.009	0					0.06
85.917	0.00	0.01	0.009	0					0.06
86.000	0.00	0.01	0.009	0					0.06
86.083	0.00	0.01	0.009	0					0.06
86.167	0.00	0.01	0.009	0					0.06
86.250	0.00	0.01	0.009	0					0.06
86.333	0.00	0.01	0.009	0					0.06
86.417	0.00	0.01	0.009	0					0.06
86.500	0.00	0.01	0.009	0					0.06
86.583	0.00	0.01	0.009	0					0.06
86.667	0.00	0.01	0.009	0					0.06
86.750	0.00	0.01	0.009	0					0.06
86.833	0.00	0.01	0.009	0					0.06
86.917	0.00	0.01	0.009	0					0.06
87.000	0.00	0.01	0.009	0					0.06
87.083	0.00	0.01	0.009	0					0.06
87.167	0.00	0.01	0.008	0					0.06
87.250	0.00	0.01	0.008	0					0.06
87.333	0.00	0.01	0.008	0					0.06
87.417	0.00	0.01	0.008	0					0.05
87.500	0.00	0.01	0.008	0					0.05
87.583	0.00	0.01	0.008	0					0.05
87.667	0.00	0.01	0.008	0					0.05
87.750	0.00	0.01	0.008	0					0.05
87.833	0.00	0.01	0.008	0					0.05
87.917	0.00	0.01	0.008	0					0.05
88.000	0.00	0.01	0.008	0					0.05
88.083	0.00	0.01	0.008	0					0.05
88.167	0.00	0.01	0.008	0					0.05
88.250	0.00	0.01	0.008	0					0.05
88.333	0.00	0.01	0.008	0					0.05
88.417	0.00	0.01	0.008	0					0.05
88.500	0.00	0.01	0.008	0					0.05
88.583	0.00	0.01	0.008	0					0.05
88.667	0.00	0.01	0.008	0					0.05
88.750	0.00	0.01	0.007	0					0.05
88.833	0.00	0.01	0.007	0					0.05
88.917	0.00	0.01	0.007	0					0.05
89.000	0.00	0.01	0.007	0					0.05

89.083	0.00	0.01	0.007	0					0.05
89.167	0.00	0.01	0.007	0					0.05
89.250	0.00	0.01	0.007	0					0.05
89.333	0.00	0.01	0.007	0					0.05
89.417	0.00	0.01	0.007	0					0.05
89.500	0.00	0.01	0.007	0					0.05
89.583	0.00	0.01	0.007	0					0.05
89.667	0.00	0.01	0.007	0					0.05
89.750	0.00	0.01	0.007	0					0.05
89.833	0.00	0.01	0.007	0					0.05
89.917	0.00	0.01	0.007	0					0.04
90.000	0.00	0.01	0.007	0					0.04
90.083	0.00	0.01	0.007	0					0.04
90.167	0.00	0.01	0.007	0					0.04
90.250	0.00	0.01	0.007	0					0.04
90.333	0.00	0.01	0.007	0					0.04
90.417	0.00	0.01	0.007	0					0.04
90.500	0.00	0.01	0.007	0					0.04
90.583	0.00	0.01	0.006	0					0.04
90.667	0.00	0.01	0.006	0					0.04
90.750	0.00	0.01	0.006	0					0.04
90.833	0.00	0.01	0.006	0					0.04
90.917	0.00	0.01	0.006	0					0.04
91.000	0.00	0.01	0.006	0					0.04
91.083	0.00	0.01	0.006	0					0.04
91.167	0.00	0.01	0.006	0					0.04
91.250	0.00	0.01	0.006	0					0.04
91.333	0.00	0.01	0.006	0					0.04
91.417	0.00	0.01	0.006	0					0.04
91.500	0.00	0.01	0.006	0					0.04
91.583	0.00	0.01	0.006	0					0.04
91.667	0.00	0.01	0.006	0					0.04
91.750	0.00	0.01	0.006	0					0.04
91.833	0.00	0.01	0.006	0					0.04
91.917	0.00	0.01	0.006	0					0.04
92.000	0.00	0.01	0.006	0					0.04
92.083	0.00	0.01	0.006	0					0.04
92.167	0.00	0.01	0.006	0					0.04
92.250	0.00	0.01	0.006	0					0.04
92.333	0.00	0.01	0.006	0					0.04
92.417	0.00	0.01	0.006	0					0.04
92.500	0.00	0.01	0.006	0					0.04
92.583	0.00	0.01	0.006	0					0.04
92.667	0.00	0.01	0.005	0					0.04
92.750	0.00	0.01	0.005	0					0.04
92.833	0.00	0.01	0.005	0					0.04
92.917	0.00	0.01	0.005	0					0.04
93.000	0.00	0.01	0.005	0					0.04
93.083	0.00	0.01	0.005	0					0.03
93.167	0.00	0.01	0.005	0					0.03

93.250	0.00	0.01	0.005	0					0.03
93.333	0.00	0.00	0.005	0					0.03
93.417	0.00	0.00	0.005	0					0.03
93.500	0.00	0.00	0.005	0					0.03
93.583	0.00	0.00	0.005	0					0.03
93.667	0.00	0.00	0.005	0					0.03
93.750	0.00	0.00	0.005	0					0.03
93.833	0.00	0.00	0.005	0					0.03
93.917	0.00	0.00	0.005	0					0.03
94.000	0.00	0.00	0.005	0					0.03
94.083	0.00	0.00	0.005	0					0.03
94.167	0.00	0.00	0.005	0					0.03
94.250	0.00	0.00	0.005	0					0.03
94.333	0.00	0.00	0.005	0					0.03
94.417	0.00	0.00	0.005	0					0.03
94.500	0.00	0.00	0.005	0					0.03
94.583	0.00	0.00	0.005	0					0.03
94.667	0.00	0.00	0.005	0					0.03
94.750	0.00	0.00	0.005	0					0.03
94.833	0.00	0.00	0.005	0					0.03
94.917	0.00	0.00	0.005	0					0.03
95.000	0.00	0.00	0.005	0					0.03
95.083	0.00	0.00	0.005	0					0.03
95.167	0.00	0.00	0.004	0					0.03
95.250	0.00	0.00	0.004	0					0.03
95.333	0.00	0.00	0.004	0					0.03
95.417	0.00	0.00	0.004	0					0.03
95.500	0.00	0.00	0.004	0					0.03
95.583	0.00	0.00	0.004	0					0.03
95.667	0.00	0.00	0.004	0					0.03
95.750	0.00	0.00	0.004	0					0.03
95.833	0.00	0.00	0.004	0					0.03
95.917	0.00	0.00	0.004	0					0.03
96.000	0.00	0.00	0.004	0					0.03
96.083	0.00	0.00	0.004	0					0.03
96.167	0.00	0.00	0.004	0					0.03
96.250	0.00	0.00	0.004	0					0.03
96.333	0.00	0.00	0.004	0					0.03
96.417	0.00	0.00	0.004	0					0.03
96.500	0.00	0.00	0.004	0					0.03
96.583	0.00	0.00	0.004	0					0.03
96.667	0.00	0.00	0.004	0					0.03
96.750	0.00	0.00	0.004	0					0.03
96.833	0.00	0.00	0.004	0					0.03
96.917	0.00	0.00	0.004	0					0.03
97.000	0.00	0.00	0.004	0					0.03
97.083	0.00	0.00	0.004	0					0.03
97.167	0.00	0.00	0.004	0					0.03
97.250	0.00	0.00	0.004	0					0.03
97.333	0.00	0.00	0.004	0					0.02

97.417	0.00	0.00	0.004	0					0.02
97.500	0.00	0.00	0.004	0					0.02
97.583	0.00	0.00	0.004	0					0.02
97.667	0.00	0.00	0.004	0					0.02
97.750	0.00	0.00	0.004	0					0.02
97.833	0.00	0.00	0.004	0					0.02
97.917	0.00	0.00	0.004	0					0.02
98.000	0.00	0.00	0.004	0					0.02
98.083	0.00	0.00	0.004	0					0.02
98.167	0.00	0.00	0.004	0					0.02
98.250	0.00	0.00	0.004	0					0.02
98.333	0.00	0.00	0.003	0					0.02
98.417	0.00	0.00	0.003	0					0.02
98.500	0.00	0.00	0.003	0					0.02
98.583	0.00	0.00	0.003	0					0.02
98.667	0.00	0.00	0.003	0					0.02
98.750	0.00	0.00	0.003	0					0.02
98.833	0.00	0.00	0.003	0					0.02
98.917	0.00	0.00	0.003	0					0.02
99.000	0.00	0.00	0.003	0					0.02
99.083	0.00	0.00	0.003	0					0.02
99.167	0.00	0.00	0.003	0					0.02
99.250	0.00	0.00	0.003	0					0.02
99.333	0.00	0.00	0.003	0					0.02
99.417	0.00	0.00	0.003	0					0.02
99.500	0.00	0.00	0.003	0					0.02
99.583	0.00	0.00	0.003	0					0.02
99.667	0.00	0.00	0.003	0					0.02
99.750	0.00	0.00	0.003	0					0.02
99.833	0.00	0.00	0.003	0					0.02
99.917	0.00	0.00	0.003	0					0.02
100.000	0.00	0.00	0.003	0					0.02
100.083	0.00	0.00	0.003	0					0.02
100.167	0.00	0.00	0.003	0					0.02
100.250	0.00	0.00	0.003	0					0.02
100.333	0.00	0.00	0.003	0					0.02
100.417	0.00	0.00	0.003	0					0.02
100.500	0.00	0.00	0.003	0					0.02
100.583	0.00	0.00	0.003	0					0.02
100.667	0.00	0.00	0.003	0					0.02
100.750	0.00	0.00	0.003	0					0.02
100.833	0.00	0.00	0.003	0					0.02
100.917	0.00	0.00	0.003	0					0.02
101.000	0.00	0.00	0.003	0					0.02
101.083	0.00	0.00	0.003	0					0.02
101.167	0.00	0.00	0.003	0					0.02
101.250	0.00	0.00	0.003	0					0.02
101.333	0.00	0.00	0.003	0					0.02
101.417	0.00	0.00	0.003	0					0.02
101.500	0.00	0.00	0.003	0					0.02

101.583	0.00	0.00	0.003	0					0.02
101.667	0.00	0.00	0.003	0					0.02
101.750	0.00	0.00	0.003	0					0.02
101.833	0.00	0.00	0.003	0					0.02
101.917	0.00	0.00	0.003	0					0.02
102.000	0.00	0.00	0.003	0					0.02
102.083	0.00	0.00	0.003	0					0.02
102.167	0.00	0.00	0.003	0					0.02
102.250	0.00	0.00	0.003	0					0.02
102.333	0.00	0.00	0.003	0					0.02
102.417	0.00	0.00	0.003	0					0.02
102.500	0.00	0.00	0.003	0					0.02
102.583	0.00	0.00	0.002	0					0.02
102.667	0.00	0.00	0.002	0					0.02
102.750	0.00	0.00	0.002	0					0.02
102.833	0.00	0.00	0.002	0					0.02
102.917	0.00	0.00	0.002	0					0.02
103.000	0.00	0.00	0.002	0					0.02
103.083	0.00	0.00	0.002	0					0.02
103.167	0.00	0.00	0.002	0					0.02
103.250	0.00	0.00	0.002	0					0.02
103.333	0.00	0.00	0.002	0					0.02
103.417	0.00	0.00	0.002	0					0.02
103.500	0.00	0.00	0.002	0					0.02
103.583	0.00	0.00	0.002	0					0.02
103.667	0.00	0.00	0.002	0					0.02
103.750	0.00	0.00	0.002	0					0.01
103.833	0.00	0.00	0.002	0					0.01
103.917	0.00	0.00	0.002	0					0.01
104.000	0.00	0.00	0.002	0					0.01
104.083	0.00	0.00	0.002	0					0.01
104.167	0.00	0.00	0.002	0					0.01
104.250	0.00	0.00	0.002	0					0.01
104.333	0.00	0.00	0.002	0					0.01
104.417	0.00	0.00	0.002	0					0.01
104.500	0.00	0.00	0.002	0					0.01
104.583	0.00	0.00	0.002	0					0.01
104.667	0.00	0.00	0.002	0					0.01
104.750	0.00	0.00	0.002	0					0.01
104.833	0.00	0.00	0.002	0					0.01
104.917	0.00	0.00	0.002	0					0.01
105.000	0.00	0.00	0.002	0					0.01
105.083	0.00	0.00	0.002	0					0.01
105.167	0.00	0.00	0.002	0					0.01
105.250	0.00	0.00	0.002	0					0.01
105.333	0.00	0.00	0.002	0					0.01
105.417	0.00	0.00	0.002	0					0.01
105.500	0.00	0.00	0.002	0					0.01
105.583	0.00	0.00	0.002	0					0.01
105.667	0.00	0.00	0.002	0					0.01



105.750	0.00	0.00	0.002	0					0.01
105.833	0.00	0.00	0.002	0					0.01
105.917	0.00	0.00	0.002	0					0.01
106.000	0.00	0.00	0.002	0					0.01
106.083	0.00	0.00	0.002	0					0.01
106.167	0.00	0.00	0.002	0					0.01
106.250	0.00	0.00	0.002	0					0.01
106.333	0.00	0.00	0.002	0					0.01
106.417	0.00	0.00	0.002	0					0.01
106.500	0.00	0.00	0.002	0					0.01
106.583	0.00	0.00	0.002	0					0.01
106.667	0.00	0.00	0.002	0					0.01
106.750	0.00	0.00	0.002	0					0.01
106.833	0.00	0.00	0.002	0					0.01
106.917	0.00	0.00	0.002	0					0.01
107.000	0.00	0.00	0.002	0					0.01
107.083	0.00	0.00	0.002	0					0.01
107.167	0.00	0.00	0.002	0					0.01
107.250	0.00	0.00	0.002	0					0.01
107.333	0.00	0.00	0.002	0					0.01
107.417	0.00	0.00	0.002	0					0.01
107.500	0.00	0.00	0.002	0					0.01
107.583	0.00	0.00	0.002	0					0.01
107.667	0.00	0.00	0.002	0					0.01
107.750	0.00	0.00	0.002	0					0.01
107.833	0.00	0.00	0.002	0					0.01
107.917	0.00	0.00	0.002	0					0.01
108.000	0.00	0.00	0.002	0					0.01
108.083	0.00	0.00	0.002	0					0.01
108.167	0.00	0.00	0.002	0					0.01
108.250	0.00	0.00	0.002	0					0.01
108.333	0.00	0.00	0.002	0					0.01
108.417	0.00	0.00	0.002	0					0.01
108.500	0.00	0.00	0.002	0					0.01
108.583	0.00	0.00	0.002	0					0.01
108.667	0.00	0.00	0.002	0					0.01
108.750	0.00	0.00	0.002	0					0.01
108.833	0.00	0.00	0.002	0					0.01
108.917	0.00	0.00	0.002	0					0.01
109.000	0.00	0.00	0.001	0					0.01
109.083	0.00	0.00	0.001	0					0.01
109.167	0.00	0.00	0.001	0					0.01
109.250	0.00	0.00	0.001	0					0.01
109.333	0.00	0.00	0.001	0					0.01
109.417	0.00	0.00	0.001	0					0.01
109.500	0.00	0.00	0.001	0					0.01
109.583	0.00	0.00	0.001	0					0.01
109.667	0.00	0.00	0.001	0					0.01
109.750	0.00	0.00	0.001	0					0.01
109.833	0.00	0.00	0.001	0					0.01

109.917	0.00	0.00	0.001	0					0.01
110.000	0.00	0.00	0.001	0					0.01
110.083	0.00	0.00	0.001	0					0.01
110.167	0.00	0.00	0.001	0					0.01
110.250	0.00	0.00	0.001	0					0.01
110.333	0.00	0.00	0.001	0					0.01
110.417	0.00	0.00	0.001	0					0.01
110.500	0.00	0.00	0.001	0					0.01
110.583	0.00	0.00	0.001	0					0.01
110.667	0.00	0.00	0.001	0					0.01
110.750	0.00	0.00	0.001	0					0.01
110.833	0.00	0.00	0.001	0					0.01
110.917	0.00	0.00	0.001	0					0.01
111.000	0.00	0.00	0.001	0					0.01
111.083	0.00	0.00	0.001	0					0.01
111.167	0.00	0.00	0.001	0					0.01
111.250	0.00	0.00	0.001	0					0.01
111.333	0.00	0.00	0.001	0					0.01
111.417	0.00	0.00	0.001	0					0.01
111.500	0.00	0.00	0.001	0					0.01
111.583	0.00	0.00	0.001	0					0.01
111.667	0.00	0.00	0.001	0					0.01
111.750	0.00	0.00	0.001	0					0.01
111.833	0.00	0.00	0.001	0					0.01
111.917	0.00	0.00	0.001	0					0.01
112.000	0.00	0.00	0.001	0					0.01
112.083	0.00	0.00	0.001	0					0.01
112.167	0.00	0.00	0.001	0					0.01
112.250	0.00	0.00	0.001	0					0.01
112.333	0.00	0.00	0.001	0					0.01
112.417	0.00	0.00	0.001	0					0.01
112.500	0.00	0.00	0.001	0					0.01
112.583	0.00	0.00	0.001	0					0.01
112.667	0.00	0.00	0.001	0					0.01
112.750	0.00	0.00	0.001	0					0.01
112.833	0.00	0.00	0.001	0					0.01
112.917	0.00	0.00	0.001	0					0.01
113.000	0.00	0.00	0.001	0					0.01
113.083	0.00	0.00	0.001	0					0.01
113.167	0.00	0.00	0.001	0					0.01
113.250	0.00	0.00	0.001	0					0.01
113.333	0.00	0.00	0.001	0					0.01
113.417	0.00	0.00	0.001	0					0.01
113.500	0.00	0.00	0.001	0					0.01
113.583	0.00	0.00	0.001	0					0.01

Remaining water in basin = 0.00 (Ac.Ft)

\*\*\*\*\*HYDROGRAPH DATA\*\*\*\*\*

Number of intervals = 1363  
Time interval = 5.0 (Min.)  
Maximum/Peak flow rate = 3.750 (CFS)  
Total volume = 1.984 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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FLOOD HYDROGRAPH ROUTING PROGRAM  
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018  
Study date: 02/23/21

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KRAMERIA AVENUE PROJECT  
TTM NO. 38094  
ROUTING BASIN B  
100YR, 24-HOUR STORM  
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Program License Serial Number 6473

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\*\*\*\*\* HYDROGRAPH INFORMATION \*\*\*\*\*

From study/file name: CC02PHYDB24100.rte  
\*\*\*\*\*HYDROGRAPH DATA\*\*\*\*\*  
Number of intervals = 291  
Time interval = 5.0 (Min.)  
Maximum/Peak flow rate = 4.341 (CFS)  
Total volume = 2.072 (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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Process from Point/Station 1.000 to Point/Station 2.000  
\*\*\*\* RETARDING BASIN ROUTING \*\*\*\*

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User entry of depth-outflow-storage data  
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Total number of inflow hydrograph intervals = 291  
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 (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.500	0.076	0.073	0.076	0.076
1.000	0.152	0.109	0.152	0.152
1.500	0.224	0.135	0.224	0.224
2.000	0.294	0.158	0.293	0.295
2.500	0.358	0.177	0.357	0.359
3.000	0.415	0.194	0.414	0.416
3.500	0.463	0.210	0.462	0.464
4.000	0.496	0.225	0.495	0.497
4.500	0.500	0.239	0.499	0.501
5.000	0.533	1.074	0.529	0.537
5.500	0.556	2.438	0.548	0.564
6.000	0.580	3.238	0.569	0.591
6.500	0.603	3.868	0.590	0.616
7.000	0.626	4.406	0.611	0.641
7.500	0.650	4.883	0.633	0.667
8.000	0.673	14.735	0.622	0.724
8.500	0.696	32.356	0.585	0.807

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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 (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.1	2.17	3.26	4.34	Depth (Ft.)
0.083	0.07	0.00	0.000	O					0.00
0.167	0.13	0.00	0.001	O					0.01
0.250	0.14	0.00	0.002	OI					0.01
0.333	0.19	0.00	0.003	OI					0.02
0.417	0.21	0.00	0.004	OI					0.03
0.500	0.22	0.01	0.006	OI					0.04
0.583	0.23	0.01	0.007	OI					0.05
0.667	0.23	0.01	0.009	OI					0.06
0.750	0.23	0.01	0.010	OI					0.07
0.833	0.26	0.01	0.012	OI					0.08
0.917	0.29	0.01	0.014	O I					0.09
1.000	0.30	0.02	0.016	O I					0.10
1.083	0.27	0.02	0.018	OI					0.12
1.167	0.24	0.02	0.019	OI					0.13
1.250	0.23	0.02	0.021	OI					0.14
1.333	0.23	0.02	0.022	OI					0.15
1.417	0.23	0.02	0.023	OI					0.15
1.500	0.23	0.02	0.025	OI					0.16

1.583	0.23	0.03	0.026	OI					0.17
1.667	0.23	0.03	0.028	OI					0.18
1.750	0.23	0.03	0.029	OI					0.19
1.833	0.26	0.03	0.031	OI					0.20
1.917	0.29	0.03	0.032	O I					0.21
2.000	0.30	0.03	0.034	O I					0.22
2.083	0.30	0.03	0.036	O I					0.24
2.167	0.30	0.04	0.038	O I					0.25
2.250	0.30	0.04	0.040	O I					0.26
2.333	0.30	0.04	0.041	O I					0.27
2.417	0.30	0.04	0.043	O I					0.28
2.500	0.30	0.04	0.045	O I					0.30
2.583	0.34	0.05	0.047	O I					0.31
2.667	0.37	0.05	0.049	O I					0.32
2.750	0.37	0.05	0.051	O I					0.34
2.833	0.38	0.05	0.053	O I					0.35
2.917	0.38	0.05	0.056	O I					0.37
3.000	0.38	0.06	0.058	O I					0.38
3.083	0.38	0.06	0.060	O I					0.40
3.167	0.38	0.06	0.062	O I					0.41
3.250	0.38	0.06	0.065	O I					0.42
3.333	0.38	0.06	0.067	O I					0.44
3.417	0.38	0.07	0.069	O I					0.45
3.500	0.38	0.07	0.071	O I					0.47
3.583	0.38	0.07	0.073	O I					0.48
3.667	0.38	0.07	0.075	O I					0.50
3.750	0.38	0.07	0.077	O I					0.51
3.833	0.42	0.07	0.080	O I					0.52
3.917	0.44	0.08	0.082	O I					0.54
4.000	0.45	0.08	0.085	O I					0.56
4.083	0.45	0.08	0.087	O I					0.57
4.167	0.45	0.08	0.090	O I					0.59
4.250	0.45	0.08	0.092	O I					0.61
4.333	0.49	0.08	0.095	O I					0.62
4.417	0.52	0.08	0.098	O I					0.64
4.500	0.52	0.08	0.101	O I					0.66
4.583	0.53	0.09	0.104	O I					0.68
4.667	0.53	0.09	0.107	O I					0.70
4.750	0.53	0.09	0.110	O I					0.72
4.833	0.57	0.09	0.113	O I					0.74
4.917	0.59	0.09	0.117	O I					0.77
5.000	0.60	0.09	0.120	O I					0.79
5.083	0.53	0.10	0.123	O I					0.81
5.167	0.48	0.10	0.126	O I					0.83
5.250	0.46	0.10	0.129	O I					0.85
5.333	0.49	0.10	0.131	O I					0.86
5.417	0.52	0.10	0.134	O I					0.88
5.500	0.52	0.10	0.137	O I					0.90
5.583	0.57	0.10	0.140	O I					0.92
5.667	0.59	0.10	0.143	O I					0.94

5.750	0.60	0.11	0.147	0	I					0.97
5.833	0.61	0.11	0.150	0	I					0.99
5.917	0.61	0.11	0.154	0	I					1.01
6.000	0.61	0.11	0.157	0	I					1.03
6.083	0.64	0.11	0.160	0	I					1.06
6.167	0.67	0.11	0.164	0	I					1.08
6.250	0.68	0.11	0.168	0	I					1.11
6.333	0.68	0.12	0.172	0	I					1.14
6.417	0.68	0.12	0.176	0	I					1.17
6.500	0.68	0.12	0.180	0	I					1.19
6.583	0.72	0.12	0.184	0	I					1.22
6.667	0.74	0.12	0.188	0	I					1.25
6.750	0.75	0.12	0.192	0	I					1.28
6.833	0.76	0.13	0.197	0	I					1.31
6.917	0.76	0.13	0.201	0	I					1.34
7.000	0.76	0.13	0.205	0	I					1.37
7.083	0.76	0.13	0.210	0	I					1.40
7.167	0.76	0.13	0.214	0	I					1.43
7.250	0.76	0.13	0.218	0	I					1.46
7.333	0.79	0.13	0.223	0	I					1.49
7.417	0.82	0.14	0.227	0	I					1.52
7.500	0.83	0.14	0.232	0	I					1.56
7.583	0.87	0.14	0.237	0	I					1.59
7.667	0.90	0.14	0.242	0	I					1.63
7.750	0.90	0.14	0.247	0	I					1.67
7.833	0.95	0.14	0.253	0	I					1.70
7.917	0.97	0.15	0.258	0	I					1.74
8.000	0.98	0.15	0.264	0	I					1.78
8.083	1.07	0.15	0.270	0	I					1.83
8.167	1.14	0.15	0.276	0	I					1.87
8.250	1.16	0.15	0.283	0	I					1.92
8.333	1.18	0.16	0.290	0	I					1.97
8.417	1.18	0.16	0.297	0	I					2.03
8.500	1.19	0.16	0.304	0	I					2.08
8.583	1.27	0.16	0.312	0	I					2.14
8.667	1.32	0.17	0.320	0	I					2.20
8.750	1.34	0.17	0.328	0	I					2.26
8.833	1.43	0.17	0.336	0	I					2.33
8.917	1.49	0.17	0.345	0	I					2.40
9.000	1.51	0.18	0.354	0	I					2.47
9.083	1.67	0.18	0.364	0	I					2.55
9.167	1.78	0.18	0.374	0	I					2.64
9.250	1.82	0.19	0.386	0	I					2.74
9.333	1.92	0.19	0.397	0	I					2.84
9.417	1.97	0.19	0.409	0	I					2.95
9.500	1.99	0.20	0.421	0	I					3.07
9.583	2.08	0.20	0.434	0	I					3.20
9.667	2.14	0.20	0.447	0	I					3.34
9.750	2.16	0.21	0.461	0	I					3.48
9.833	2.25	0.22	0.474	0	I					3.67

9.917	2.31	0.22	0.489	0			I			3.89
10.000	2.33	0.31	0.503	0			I			4.54
10.083	1.82	0.59	0.514	0		I				4.71
10.167	1.46	0.76	0.521	0		I				4.81
10.250	1.36	0.86	0.525	0		I				4.87
10.333	1.30	0.94	0.528	0		I				4.92
10.417	1.30	1.00	0.530	0		I				4.95
10.500	1.31	1.05	0.532	0		I				4.98
10.583	1.68	1.17	0.535	0		I				5.03
10.667	1.95	1.39	0.538		0	I				5.11
10.750	2.02	1.59	0.542		0	I				5.19
10.833	2.08	1.75	0.544			0	I			5.25
10.917	2.09	1.86	0.546			0	I			5.29
11.000	2.09	1.94	0.548				0	I		5.32
11.083	2.02	1.98	0.548					0		5.33
11.167	1.97	1.98	0.548					0		5.33
11.250	1.96	1.98	0.548					0		5.33
11.333	1.96	1.97	0.548					0		5.33
11.417	1.96	1.97	0.548					0		5.33
11.500	1.97	1.97	0.548					0		5.33
11.583	1.82	1.94	0.548					0		5.32
11.667	1.72	1.88	0.547					0		5.30
11.750	1.70	1.83	0.546					0		5.28
11.833	1.76	1.79	0.545					0		5.26
11.917	1.81	1.79	0.545					0		5.26
12.000	1.83	1.80	0.545					0		5.27
12.083	2.36	1.90	0.547					0	I	5.30
12.167	2.74	2.12	0.551					0	I	5.38
12.250	2.84	2.35	0.554					0	I	5.47
12.333	2.99	2.50	0.558					0	I	5.54
12.417	3.05	2.61	0.561					0	I	5.61
12.500	3.07	2.70	0.564					0	I	5.66
12.583	3.23	2.79	0.567					0	I	5.72
12.667	3.34	2.89	0.570					0	I	5.79
12.750	3.37	2.99	0.573					0	I	5.84
12.833	3.47	3.08	0.575					0	I	5.90
12.917	3.53	3.17	0.578					0	I	5.96
13.000	3.55	3.24	0.580					0	I	6.00
13.083	3.93	3.33	0.583					0	I	6.07
13.167	4.20	3.46	0.588					0	I	6.17
13.250	4.28	3.59	0.593					0	I	6.28
13.333	4.33	3.71	0.597					0	I	6.38
13.417	4.34	3.82	0.601					0	I	6.46
13.500	4.34	3.90	0.605					0	I	6.53
13.583	3.53	3.91	0.605					I	0	6.54
13.667	2.96	3.80	0.601					I	0	6.45
13.750	2.80	3.64	0.595					I	0	6.32
13.833	2.69	3.49	0.589					I	0	6.20
13.917	2.70	3.35	0.584					I	0	6.09
14.000	2.70	3.24	0.580					I	0	6.00



14.083	3.00	3.16	0.578				IO	5.95
14.167	3.21	3.15	0.577				0	5.94
14.250	3.28	3.17	0.578				0I	5.96
14.333	3.25	3.19	0.578				0	5.97
14.417	3.20	3.19	0.579				0	5.97
14.500	3.19	3.19	0.579				0	5.97
14.583	3.18	3.19	0.579				0	5.97
14.667	3.19	3.19	0.579				0	5.97
14.750	3.19	3.19	0.579				0	5.97
14.833	3.12	3.18	0.578				IO	5.97
14.917	3.07	3.16	0.578				IO	5.95
15.000	3.06	3.14	0.577				IO	5.94
15.083	2.98	3.12	0.576				IO	5.93
15.167	2.93	3.08	0.575				IO	5.90
15.250	2.92	3.05	0.574				IO	5.88
15.333	2.84	3.02	0.573				I 0	5.86
15.417	2.79	2.97	0.572				IO	5.84
15.500	2.78	2.94	0.571				IO	5.81
15.583	2.48	2.87	0.569				I 0	5.77
15.667	2.27	2.77	0.566				I 0	5.71
15.750	2.22	2.66	0.563				I 0	5.64
15.833	2.18	2.57	0.560				I 0	5.58
15.917	2.18	2.49	0.557				I 0	5.53
16.000	2.18	2.41	0.556				IO	5.49
16.083	1.27	2.18	0.552		I		0	5.41
16.167	0.61	1.76	0.545		I	0		5.25
16.250	0.43	1.34	0.537		I	0		5.10
16.333	0.30	1.04	0.532		I	0		4.98
16.417	0.30	0.92	0.527		I	0		4.91
16.500	0.30	0.83	0.523		I	0		4.85
16.583	0.27	0.74	0.520		I	0		4.80
16.667	0.24	0.66	0.517		I	0		4.75
16.750	0.23	0.59	0.514		I	0		4.71
16.833	0.23	0.53	0.512		I	0		4.68
16.917	0.23	0.49	0.510		I	0		4.65
17.000	0.23	0.44	0.508		I	0		4.62
17.083	0.30	0.41	0.507		IO			4.61
17.167	0.35	0.40	0.506		0			4.60
17.250	0.37	0.39	0.506		0			4.59
17.333	0.38	0.39	0.506		0			4.59
17.417	0.38	0.39	0.506		0			4.59
17.500	0.38	0.39	0.506		0			4.59
17.583	0.38	0.39	0.506		0			4.59
17.667	0.38	0.38	0.506		0			4.59
17.750	0.38	0.38	0.506		0			4.59
17.833	0.34	0.38	0.506		0			4.58
17.917	0.32	0.37	0.505		0			4.58
18.000	0.31	0.36	0.505		0			4.57
18.083	0.30	0.35	0.505		0			4.57
18.167	0.30	0.34	0.504		0			4.56

18.250	0.30	0.34	0.504	0					4.56
18.333	0.30	0.33	0.504	0					4.56
18.417	0.30	0.33	0.504	0					4.55
18.500	0.30	0.32	0.503	0					4.55
18.583	0.27	0.32	0.503	IO					4.55
18.667	0.24	0.31	0.503	IO					4.54
18.750	0.23	0.30	0.502	IO					4.53
18.833	0.19	0.28	0.502	IO					4.53
18.917	0.16	0.27	0.501	0					4.52
19.000	0.16	0.25	0.500	0					4.51
19.083	0.19	0.24	0.500	0					4.49
19.167	0.21	0.24	0.500	0					4.45
19.250	0.22	0.24	0.499	0					4.44
19.333	0.26	0.24	0.500	0					4.44
19.417	0.29	0.24	0.500	OI					4.48
19.500	0.30	0.24	0.500	OI					4.50
19.583	0.27	0.25	0.500	0					4.51
19.667	0.24	0.25	0.500	0					4.51
19.750	0.23	0.25	0.500	0					4.51
19.833	0.19	0.24	0.500	0					4.50
19.917	0.16	0.24	0.500	0					4.46
20.000	0.16	0.24	0.499	0					4.39
20.083	0.19	0.23	0.499	0					4.34
20.167	0.21	0.23	0.498	0					4.31
20.250	0.22	0.23	0.498	0					4.30
20.333	0.23	0.23	0.498	0					4.29
20.417	0.23	0.23	0.498	0					4.29
20.500	0.23	0.23	0.498	0					4.28
20.583	0.23	0.23	0.498	0					4.28
20.667	0.23	0.23	0.498	0					4.27
20.750	0.23	0.23	0.498	0					4.27
20.833	0.19	0.23	0.498	0					4.25
20.917	0.16	0.23	0.498	0					4.20
21.000	0.16	0.23	0.497	0					4.14
21.083	0.19	0.23	0.497	0					4.09
21.167	0.21	0.23	0.497	0					4.07
21.250	0.22	0.23	0.497	0					4.06
21.333	0.19	0.23	0.496	0					4.04
21.417	0.16	0.23	0.496	0					4.00
21.500	0.16	0.22	0.496	0					3.99
21.583	0.19	0.22	0.495	0					3.99
21.667	0.21	0.22	0.495	0					3.99
21.750	0.22	0.22	0.495	0					3.99
21.833	0.19	0.22	0.495	0					3.98
21.917	0.16	0.22	0.495	0					3.98
22.000	0.16	0.22	0.494	0					3.97
22.083	0.19	0.22	0.494	0					3.97
22.167	0.21	0.22	0.494	0					3.96
22.250	0.22	0.22	0.494	0					3.96
22.333	0.19	0.22	0.493	0					3.96

22.417	0.16	0.22	0.493	0					3.96
22.500	0.16	0.22	0.493	0					3.95
22.583	0.15	0.22	0.492	0					3.94
22.667	0.15	0.22	0.492	0					3.94
22.750	0.15	0.22	0.491	0					3.93
22.833	0.15	0.22	0.491	0					3.92
22.917	0.15	0.22	0.490	0					3.91
23.000	0.15	0.22	0.490	0					3.91
23.083	0.15	0.22	0.489	0					3.90
23.167	0.15	0.22	0.489	0					3.89
23.250	0.15	0.22	0.488	0					3.88
23.333	0.15	0.22	0.488	0					3.88
23.417	0.15	0.22	0.487	0					3.87
23.500	0.15	0.22	0.487	0					3.86
23.583	0.15	0.22	0.486	0					3.85
23.667	0.15	0.22	0.486	0					3.85
23.750	0.15	0.22	0.485	0					3.84
23.833	0.15	0.22	0.485	0					3.83
23.917	0.15	0.22	0.484	0					3.83
24.000	0.15	0.22	0.484	0					3.82
24.083	0.08	0.22	0.483	IO					3.81
24.167	0.02	0.22	0.482	IO					3.79
24.250	0.01	0.22	0.481	IO					3.77
24.333	0.00	0.22	0.479	IO					3.75
24.417	0.00	0.22	0.478	IO					3.72
24.500	0.00	0.22	0.476	IO					3.70
24.583	0.00	0.22	0.475	IO					3.68
24.667	0.00	0.21	0.473	IO					3.66
24.750	0.00	0.21	0.472	IO					3.63
24.833	0.00	0.21	0.470	IO					3.61
24.917	0.00	0.21	0.469	IO					3.59
25.000	0.00	0.21	0.467	IO					3.57
25.083	0.00	0.21	0.466	IO					3.55
25.167	0.00	0.21	0.465	IO					3.52
25.250	0.00	0.21	0.463	IO					3.50
25.333	0.00	0.21	0.462	IO					3.49
25.417	0.00	0.21	0.460	IO					3.47
25.500	0.00	0.21	0.459	IO					3.46
25.583	0.00	0.21	0.457	IO					3.44
25.667	0.00	0.21	0.456	IO					3.43
25.750	0.00	0.21	0.454	IO					3.41
25.833	0.00	0.21	0.453	IO					3.40
25.917	0.00	0.21	0.452	IO					3.38
26.000	0.00	0.21	0.450	IO					3.37
26.083	0.00	0.21	0.449	IO					3.35
26.167	0.00	0.20	0.447	IO					3.34
26.250	0.00	0.20	0.446	IO					3.32
26.333	0.00	0.20	0.445	IO					3.31
26.417	0.00	0.20	0.443	IO					3.29
26.500	0.00	0.20	0.442	IO					3.28

26.583	0.00	0.20	0.440	IO					3.26
26.667	0.00	0.20	0.439	IO					3.25
26.750	0.00	0.20	0.438	IO					3.24
26.833	0.00	0.20	0.436	IO					3.22
26.917	0.00	0.20	0.435	IO					3.21
27.000	0.00	0.20	0.433	IO					3.19
27.083	0.00	0.20	0.432	IO					3.18
27.167	0.00	0.20	0.431	IO					3.16
27.250	0.00	0.20	0.429	IO					3.15
27.333	0.00	0.20	0.428	IO					3.13
27.417	0.00	0.20	0.427	IO					3.12
27.500	0.00	0.20	0.425	IO					3.11
27.583	0.00	0.20	0.424	IO					3.09
27.667	0.00	0.20	0.423	IO					3.08
27.750	0.00	0.20	0.421	IO					3.06
27.833	0.00	0.20	0.420	IO					3.05
27.917	0.00	0.20	0.418	IO					3.04
28.000	0.00	0.19	0.417	IO					3.02
28.083	0.00	0.19	0.416	IO					3.01
28.167	0.00	0.19	0.414	IO					3.00
28.250	0.00	0.19	0.413	IO					2.98
28.333	0.00	0.19	0.412	IO					2.97
28.417	0.00	0.19	0.410	IO					2.96
28.500	0.00	0.19	0.409	IO					2.95
28.583	0.00	0.19	0.408	IO					2.94
28.667	0.00	0.19	0.406	IO					2.93
28.750	0.00	0.19	0.405	IO					2.91
28.833	0.00	0.19	0.404	IO					2.90
28.917	0.00	0.19	0.403	IO					2.89
29.000	0.00	0.19	0.401	IO					2.88
29.083	0.00	0.19	0.400	IO					2.87
29.167	0.00	0.19	0.399	IO					2.86
29.250	0.00	0.19	0.397	IO					2.85
29.333	0.00	0.19	0.396	IO					2.83
29.417	0.00	0.19	0.395	IO					2.82
29.500	0.00	0.19	0.393	IO					2.81
29.583	0.00	0.19	0.392	IO					2.80
29.667	0.00	0.19	0.391	IO					2.79
29.750	0.00	0.19	0.390	IO					2.78
29.833	0.00	0.19	0.388	IO					2.77
29.917	0.00	0.19	0.387	IO					2.75
30.000	0.00	0.19	0.386	IO					2.74
30.083	0.00	0.18	0.384	IO					2.73
30.167	0.00	0.18	0.383	IO					2.72
30.250	0.00	0.18	0.382	IO					2.71
30.333	0.00	0.18	0.381	IO					2.70
30.417	0.00	0.18	0.379	IO					2.69
30.500	0.00	0.18	0.378	IO					2.68
30.583	0.00	0.18	0.377	IO					2.67
30.667	0.00	0.18	0.376	IO					2.65

30.750	0.00	0.18	0.374	IO					2.64
30.833	0.00	0.18	0.373	IO					2.63
30.917	0.00	0.18	0.372	IO					2.62
31.000	0.00	0.18	0.371	IO					2.61
31.083	0.00	0.18	0.369	IO					2.60
31.167	0.00	0.18	0.368	IO					2.59
31.250	0.00	0.18	0.367	IO					2.58
31.333	0.00	0.18	0.366	IO					2.57
31.417	0.00	0.18	0.364	IO					2.56
31.500	0.00	0.18	0.363	IO					2.55
31.583	0.00	0.18	0.362	IO					2.53
31.667	0.00	0.18	0.361	IO					2.52
31.750	0.00	0.18	0.360	IO					2.51
31.833	0.00	0.18	0.358	IO					2.50
31.917	0.00	0.18	0.357	IO					2.49
32.000	0.00	0.18	0.356	IO					2.48
32.083	0.00	0.18	0.355	IO					2.47
32.167	0.00	0.18	0.353	IO					2.46
32.250	0.00	0.18	0.352	IO					2.45
32.333	0.00	0.17	0.351	IO					2.45
32.417	0.00	0.17	0.350	IO					2.44
32.500	0.00	0.17	0.349	IO					2.43
32.583	0.00	0.17	0.347	IO					2.42
32.667	0.00	0.17	0.346	IO					2.41
32.750	0.00	0.17	0.345	IO					2.40
32.833	0.00	0.17	0.344	IO					2.39
32.917	0.00	0.17	0.343	IO					2.38
33.000	0.00	0.17	0.341	IO					2.37
33.083	0.00	0.17	0.340	IO					2.36
33.167	0.00	0.17	0.339	IO					2.35
33.250	0.00	0.17	0.338	IO					2.34
33.333	0.00	0.17	0.337	IO					2.33
33.417	0.00	0.17	0.336	IO					2.32
33.500	0.00	0.17	0.334	IO					2.32
33.583	0.00	0.17	0.333	IO					2.31
33.667	0.00	0.17	0.332	IO					2.30
33.750	0.00	0.17	0.331	IO					2.29
33.833	0.00	0.17	0.330	IO					2.28
33.917	0.00	0.17	0.329	IO					2.27
34.000	0.00	0.17	0.327	IO					2.26
34.083	0.00	0.17	0.326	IO					2.25
34.167	0.00	0.17	0.325	IO					2.24
34.250	0.00	0.17	0.324	IO					2.23
34.333	0.00	0.17	0.323	IO					2.23
34.417	0.00	0.17	0.322	IO					2.22
34.500	0.00	0.17	0.321	IO					2.21
34.583	0.00	0.17	0.319	IO					2.20
34.667	0.00	0.17	0.318	IO					2.19
34.750	0.00	0.16	0.317	IO					2.18
34.833	0.00	0.16	0.316	IO					2.17

34.917	0.00	0.16	0.315	IO	2.16
35.000	0.00	0.16	0.314	IO	2.15
35.083	0.00	0.16	0.313	IO	2.15
35.167	0.00	0.16	0.311	IO	2.14
35.250	0.00	0.16	0.310	IO	2.13
35.333	0.00	0.16	0.309	IO	2.12
35.417	0.00	0.16	0.308	IO	2.11
35.500	0.00	0.16	0.307	IO	2.10
35.583	0.00	0.16	0.306	IO	2.09
35.667	0.00	0.16	0.305	IO	2.08
35.750	0.00	0.16	0.304	IO	2.08
35.833	0.00	0.16	0.303	IO	2.07
35.917	0.00	0.16	0.301	IO	2.06
36.000	0.00	0.16	0.300	IO	2.05
36.083	0.00	0.16	0.299	IO	2.04
36.167	0.00	0.16	0.298	IO	2.03
36.250	0.00	0.16	0.297	IO	2.02
36.333	0.00	0.16	0.296	IO	2.02
36.417	0.00	0.16	0.295	IO	2.01
36.500	0.00	0.16	0.294	IO	2.00
36.583	0.00	0.16	0.293	IO	1.99
36.667	0.00	0.16	0.292	IO	1.98
36.750	0.00	0.16	0.291	IO	1.98
36.833	0.00	0.16	0.289	IO	1.97
36.917	0.00	0.16	0.288	IO	1.96
37.000	0.00	0.16	0.287	IO	1.95
37.083	0.00	0.16	0.286	IO	1.94
37.167	0.00	0.16	0.285	IO	1.94
37.250	0.00	0.15	0.284	IO	1.93
37.333	0.00	0.15	0.283	IO	1.92
37.417	0.00	0.15	0.282	IO	1.91
37.500	0.00	0.15	0.281	IO	1.91
37.583	0.00	0.15	0.280	IO	1.90
37.667	0.00	0.15	0.279	IO	1.89
37.750	0.00	0.15	0.278	IO	1.88
37.833	0.00	0.15	0.277	IO	1.88
37.917	0.00	0.15	0.276	IO	1.87
38.000	0.00	0.15	0.275	IO	1.86
38.083	0.00	0.15	0.274	IO	1.85
38.167	0.00	0.15	0.272	IO	1.85
38.250	0.00	0.15	0.271	IO	1.84
38.333	0.00	0.15	0.270	IO	1.83
38.417	0.00	0.15	0.269	IO	1.82
38.500	0.00	0.15	0.268	IO	1.82
38.583	0.00	0.15	0.267	IO	1.81
38.667	0.00	0.15	0.266	IO	1.80
38.750	0.00	0.15	0.265	IO	1.79
38.833	0.00	0.15	0.264	IO	1.79
38.917	0.00	0.15	0.263	IO	1.78
39.000	0.00	0.15	0.262	IO	1.77

39.083	0.00	0.15	0.261	IO					1.77
39.167	0.00	0.15	0.260	IO					1.76
39.250	0.00	0.15	0.259	IO					1.75
39.333	0.00	0.15	0.258	IO					1.74
39.417	0.00	0.15	0.257	IO					1.74
39.500	0.00	0.15	0.256	IO					1.73
39.583	0.00	0.15	0.255	IO					1.72
39.667	0.00	0.14	0.254	IO					1.72
39.750	0.00	0.14	0.253	IO					1.71
39.833	0.00	0.14	0.252	IO					1.70
39.917	0.00	0.14	0.251	IO					1.69
40.000	0.00	0.14	0.250	IO					1.69
40.083	0.00	0.14	0.249	IO					1.68
40.167	0.00	0.14	0.248	IO					1.67
40.250	0.00	0.14	0.247	IO					1.67
40.333	0.00	0.14	0.246	IO					1.66
40.417	0.00	0.14	0.245	IO					1.65
40.500	0.00	0.14	0.244	IO					1.64
40.583	0.00	0.14	0.243	IO					1.64
40.667	0.00	0.14	0.242	IO					1.63
40.750	0.00	0.14	0.241	IO					1.62
40.833	0.00	0.14	0.240	IO					1.62
40.917	0.00	0.14	0.239	IO					1.61
41.000	0.00	0.14	0.238	IO					1.60
41.083	0.00	0.14	0.238	IO					1.60
41.167	0.00	0.14	0.237	IO					1.59
41.250	0.00	0.14	0.236	IO					1.58
41.333	0.00	0.14	0.235	IO					1.58
41.417	0.00	0.14	0.234	IO					1.57
41.500	0.00	0.14	0.233	IO					1.56
41.583	0.00	0.14	0.232	IO					1.56
41.667	0.00	0.14	0.231	IO					1.55
41.750	0.00	0.14	0.230	IO					1.54
41.833	0.00	0.14	0.229	IO					1.54
41.917	0.00	0.14	0.228	IO					1.53
42.000	0.00	0.14	0.227	IO					1.52
42.083	0.00	0.14	0.226	IO					1.52
42.167	0.00	0.14	0.225	0					1.51
42.250	0.00	0.14	0.224	0					1.50
42.333	0.00	0.13	0.223	0					1.50
42.417	0.00	0.13	0.222	0					1.49
42.500	0.00	0.13	0.221	0					1.48
42.583	0.00	0.13	0.221	0					1.48
42.667	0.00	0.13	0.220	0					1.47
42.750	0.00	0.13	0.219	0					1.46
42.833	0.00	0.13	0.218	0					1.46
42.917	0.00	0.13	0.217	0					1.45
43.000	0.00	0.13	0.216	0					1.44
43.083	0.00	0.13	0.215	0					1.44
43.167	0.00	0.13	0.214	0					1.43

43.250	0.00	0.13	0.213	0					1.43
43.333	0.00	0.13	0.212	0					1.42
43.417	0.00	0.13	0.211	0					1.41
43.500	0.00	0.13	0.211	0					1.41
43.583	0.00	0.13	0.210	0					1.40
43.667	0.00	0.13	0.209	0					1.39
43.750	0.00	0.13	0.208	0					1.39
43.833	0.00	0.13	0.207	0					1.38
43.917	0.00	0.13	0.206	0					1.38
44.000	0.00	0.13	0.205	0					1.37
44.083	0.00	0.13	0.204	0					1.36
44.167	0.00	0.13	0.203	0					1.36
44.250	0.00	0.13	0.203	0					1.35
44.333	0.00	0.13	0.202	0					1.35
44.417	0.00	0.13	0.201	0					1.34
44.500	0.00	0.13	0.200	0					1.33
44.583	0.00	0.13	0.199	0					1.33
44.667	0.00	0.13	0.198	0					1.32
44.750	0.00	0.13	0.197	0					1.32
44.833	0.00	0.13	0.197	0					1.31
44.917	0.00	0.12	0.196	0					1.30
45.000	0.00	0.12	0.195	0					1.30
45.083	0.00	0.12	0.194	0					1.29
45.167	0.00	0.12	0.193	0					1.29
45.250	0.00	0.12	0.192	0					1.28
45.333	0.00	0.12	0.191	0					1.27
45.417	0.00	0.12	0.191	0					1.27
45.500	0.00	0.12	0.190	0					1.26
45.583	0.00	0.12	0.189	0					1.26
45.667	0.00	0.12	0.188	0					1.25
45.750	0.00	0.12	0.187	0					1.24
45.833	0.00	0.12	0.186	0					1.24
45.917	0.00	0.12	0.186	0					1.23
46.000	0.00	0.12	0.185	0					1.23
46.083	0.00	0.12	0.184	0					1.22
46.167	0.00	0.12	0.183	0					1.22
46.250	0.00	0.12	0.182	0					1.21
46.333	0.00	0.12	0.181	0					1.20
46.417	0.00	0.12	0.181	0					1.20
46.500	0.00	0.12	0.180	0					1.19
46.583	0.00	0.12	0.179	0					1.19
46.667	0.00	0.12	0.178	0					1.18
46.750	0.00	0.12	0.177	0					1.18
46.833	0.00	0.12	0.176	0					1.17
46.917	0.00	0.12	0.176	0					1.16
47.000	0.00	0.12	0.175	0					1.16
47.083	0.00	0.12	0.174	0					1.15
47.167	0.00	0.12	0.173	0					1.15
47.250	0.00	0.12	0.172	0					1.14
47.333	0.00	0.12	0.172	0					1.14



47.417	0.00	0.12	0.171	0					1.13
47.500	0.00	0.12	0.170	0					1.13
47.583	0.00	0.12	0.169	0					1.12
47.667	0.00	0.11	0.168	0					1.11
47.750	0.00	0.11	0.168	0					1.11
47.833	0.00	0.11	0.167	0					1.10
47.917	0.00	0.11	0.166	0					1.10
48.000	0.00	0.11	0.165	0					1.09
48.083	0.00	0.11	0.165	0					1.09
48.167	0.00	0.11	0.164	0					1.08
48.250	0.00	0.11	0.163	0					1.08
48.333	0.00	0.11	0.162	0					1.07
48.417	0.00	0.11	0.161	0					1.07
48.500	0.00	0.11	0.161	0					1.06
48.583	0.00	0.11	0.160	0					1.05
48.667	0.00	0.11	0.159	0					1.05
48.750	0.00	0.11	0.158	0					1.04
48.833	0.00	0.11	0.158	0					1.04
48.917	0.00	0.11	0.157	0					1.03
49.000	0.00	0.11	0.156	0					1.03
49.083	0.00	0.11	0.155	0					1.02
49.167	0.00	0.11	0.155	0					1.02
49.250	0.00	0.11	0.154	0					1.01
49.333	0.00	0.11	0.153	0					1.01
49.417	0.00	0.11	0.152	0					1.00
49.500	0.00	0.11	0.151	0					1.00
49.583	0.00	0.11	0.151	0					0.99
49.667	0.00	0.11	0.150	0					0.99
49.750	0.00	0.11	0.149	0					0.98
49.833	0.00	0.11	0.149	0					0.98
49.917	0.00	0.11	0.148	0					0.97
50.000	0.00	0.11	0.147	0					0.97
50.083	0.00	0.11	0.146	0					0.96
50.167	0.00	0.11	0.146	0					0.96
50.250	0.00	0.11	0.145	0					0.95
50.333	0.00	0.11	0.144	0					0.95
50.417	0.00	0.10	0.143	0					0.94
50.500	0.00	0.10	0.143	0					0.94
50.583	0.00	0.10	0.142	0					0.93
50.667	0.00	0.10	0.141	0					0.93
50.750	0.00	0.10	0.141	0					0.92
50.833	0.00	0.10	0.140	0					0.92
50.917	0.00	0.10	0.139	0					0.92
51.000	0.00	0.10	0.138	0					0.91
51.083	0.00	0.10	0.138	0					0.91
51.167	0.00	0.10	0.137	0					0.90
51.250	0.00	0.10	0.136	0					0.90
51.333	0.00	0.10	0.136	0					0.89
51.417	0.00	0.10	0.135	0					0.89
51.500	0.00	0.10	0.134	0					0.88

51.583	0.00	0.10	0.134	0					0.88
51.667	0.00	0.10	0.133	0					0.87
51.750	0.00	0.10	0.132	0					0.87
51.833	0.00	0.10	0.131	0					0.86
51.917	0.00	0.10	0.131	0					0.86
52.000	0.00	0.10	0.130	0					0.86
52.083	0.00	0.10	0.129	0					0.85
52.167	0.00	0.10	0.129	0					0.85
52.250	0.00	0.10	0.128	0					0.84
52.333	0.00	0.10	0.127	0					0.84
52.417	0.00	0.10	0.127	0					0.83
52.500	0.00	0.10	0.126	0					0.83
52.583	0.00	0.10	0.125	0					0.82
52.667	0.00	0.10	0.125	0					0.82
52.750	0.00	0.10	0.124	0					0.82
52.833	0.00	0.10	0.123	0					0.81
52.917	0.00	0.10	0.123	0					0.81
53.000	0.00	0.09	0.122	0					0.80
53.083	0.00	0.09	0.121	0					0.80
53.167	0.00	0.09	0.121	0					0.79
53.250	0.00	0.09	0.120	0					0.79
53.333	0.00	0.09	0.119	0					0.79
53.417	0.00	0.09	0.119	0					0.78
53.500	0.00	0.09	0.118	0					0.78
53.583	0.00	0.09	0.118	0					0.77
53.667	0.00	0.09	0.117	0					0.77
53.750	0.00	0.09	0.116	0					0.77
53.833	0.00	0.09	0.116	0					0.76
53.917	0.00	0.09	0.115	0					0.76
54.000	0.00	0.09	0.114	0					0.75
54.083	0.00	0.09	0.114	0					0.75
54.167	0.00	0.09	0.113	0					0.74
54.250	0.00	0.09	0.113	0					0.74
54.333	0.00	0.09	0.112	0					0.74
54.417	0.00	0.09	0.111	0					0.73
54.500	0.00	0.09	0.111	0					0.73
54.583	0.00	0.09	0.110	0					0.72
54.667	0.00	0.09	0.109	0					0.72
54.750	0.00	0.09	0.109	0					0.72
54.833	0.00	0.09	0.108	0					0.71
54.917	0.00	0.09	0.108	0					0.71
55.000	0.00	0.09	0.107	0					0.70
55.083	0.00	0.09	0.106	0					0.70
55.167	0.00	0.09	0.106	0					0.70
55.250	0.00	0.09	0.105	0					0.69
55.333	0.00	0.09	0.105	0					0.69
55.417	0.00	0.09	0.104	0					0.68
55.500	0.00	0.09	0.103	0					0.68
55.583	0.00	0.09	0.103	0					0.68
55.667	0.00	0.09	0.102	0					0.67

55.750	0.00	0.09	0.102	0					0.67
55.833	0.00	0.08	0.101	0					0.66
55.917	0.00	0.08	0.100	0					0.66
56.000	0.00	0.08	0.100	0					0.66
56.083	0.00	0.08	0.099	0					0.65
56.167	0.00	0.08	0.099	0					0.65
56.250	0.00	0.08	0.098	0					0.65
56.333	0.00	0.08	0.098	0					0.64
56.417	0.00	0.08	0.097	0					0.64
56.500	0.00	0.08	0.096	0					0.63
56.583	0.00	0.08	0.096	0					0.63
56.667	0.00	0.08	0.095	0					0.63
56.750	0.00	0.08	0.095	0					0.62
56.833	0.00	0.08	0.094	0					0.62
56.917	0.00	0.08	0.094	0					0.62
57.000	0.00	0.08	0.093	0					0.61
57.083	0.00	0.08	0.093	0					0.61
57.167	0.00	0.08	0.092	0					0.60
57.250	0.00	0.08	0.091	0					0.60
57.333	0.00	0.08	0.091	0					0.60
57.417	0.00	0.08	0.090	0					0.59
57.500	0.00	0.08	0.090	0					0.59
57.583	0.00	0.08	0.089	0					0.59
57.667	0.00	0.08	0.089	0					0.58
57.750	0.00	0.08	0.088	0					0.58
57.833	0.00	0.08	0.088	0					0.58
57.917	0.00	0.08	0.087	0					0.57
58.000	0.00	0.08	0.087	0					0.57
58.083	0.00	0.08	0.086	0					0.57
58.167	0.00	0.08	0.085	0					0.56
58.250	0.00	0.08	0.085	0					0.56
58.333	0.00	0.08	0.084	0					0.56
58.417	0.00	0.08	0.084	0					0.55
58.500	0.00	0.08	0.083	0					0.55
58.583	0.00	0.08	0.083	0					0.54
58.667	0.00	0.08	0.082	0					0.54
58.750	0.00	0.08	0.082	0					0.54
58.833	0.00	0.08	0.081	0					0.53
58.917	0.00	0.08	0.081	0					0.53
59.000	0.00	0.07	0.080	0					0.53
59.083	0.00	0.07	0.080	0					0.52
59.167	0.00	0.07	0.079	0					0.52
59.250	0.00	0.07	0.079	0					0.52
59.333	0.00	0.07	0.078	0					0.51
59.417	0.00	0.07	0.078	0					0.51
59.500	0.00	0.07	0.077	0					0.51
59.583	0.00	0.07	0.077	0					0.50
59.667	0.00	0.07	0.076	0					0.50
59.750	0.00	0.07	0.076	0					0.50
59.833	0.00	0.07	0.075	0					0.49

59.917	0.00	0.07	0.075	0					0.49
60.000	0.00	0.07	0.074	0					0.49
60.083	0.00	0.07	0.074	0					0.48
60.167	0.00	0.07	0.073	0					0.48
60.250	0.00	0.07	0.073	0					0.48
60.333	0.00	0.07	0.072	0					0.47
60.417	0.00	0.07	0.072	0					0.47
60.500	0.00	0.07	0.071	0					0.47
60.583	0.00	0.07	0.071	0					0.47
60.667	0.00	0.07	0.070	0					0.46
60.750	0.00	0.07	0.070	0					0.46
60.833	0.00	0.07	0.069	0					0.46
60.917	0.00	0.07	0.069	0					0.45
61.000	0.00	0.07	0.068	0					0.45
61.083	0.00	0.07	0.068	0					0.45
61.167	0.00	0.06	0.068	0					0.44
61.250	0.00	0.06	0.067	0					0.44
61.333	0.00	0.06	0.067	0					0.44
61.417	0.00	0.06	0.066	0					0.44
61.500	0.00	0.06	0.066	0					0.43
61.583	0.00	0.06	0.065	0					0.43
61.667	0.00	0.06	0.065	0					0.43
61.750	0.00	0.06	0.065	0					0.42
61.833	0.00	0.06	0.064	0					0.42
61.917	0.00	0.06	0.064	0					0.42
62.000	0.00	0.06	0.063	0					0.42
62.083	0.00	0.06	0.063	0					0.41
62.167	0.00	0.06	0.062	0					0.41
62.250	0.00	0.06	0.062	0					0.41
62.333	0.00	0.06	0.062	0					0.41
62.417	0.00	0.06	0.061	0					0.40
62.500	0.00	0.06	0.061	0					0.40
62.583	0.00	0.06	0.060	0					0.40
62.667	0.00	0.06	0.060	0					0.39
62.750	0.00	0.06	0.060	0					0.39
62.833	0.00	0.06	0.059	0					0.39
62.917	0.00	0.06	0.059	0					0.39
63.000	0.00	0.06	0.058	0					0.38
63.083	0.00	0.06	0.058	0					0.38
63.167	0.00	0.06	0.058	0					0.38
63.250	0.00	0.06	0.057	0					0.38
63.333	0.00	0.05	0.057	0					0.37
63.417	0.00	0.05	0.057	0					0.37
63.500	0.00	0.05	0.056	0					0.37
63.583	0.00	0.05	0.056	0					0.37
63.667	0.00	0.05	0.055	0					0.36
63.750	0.00	0.05	0.055	0					0.36
63.833	0.00	0.05	0.055	0					0.36
63.917	0.00	0.05	0.054	0					0.36
64.000	0.00	0.05	0.054	0					0.35

64.083	0.00	0.05	0.054	0					0.35
64.167	0.00	0.05	0.053	0					0.35
64.250	0.00	0.05	0.053	0					0.35
64.333	0.00	0.05	0.053	0					0.35
64.417	0.00	0.05	0.052	0					0.34
64.500	0.00	0.05	0.052	0					0.34
64.583	0.00	0.05	0.052	0					0.34
64.667	0.00	0.05	0.051	0					0.34
64.750	0.00	0.05	0.051	0					0.33
64.833	0.00	0.05	0.050	0					0.33
64.917	0.00	0.05	0.050	0					0.33
65.000	0.00	0.05	0.050	0					0.33
65.083	0.00	0.05	0.050	0					0.33
65.167	0.00	0.05	0.049	0					0.32
65.250	0.00	0.05	0.049	0					0.32
65.333	0.00	0.05	0.049	0					0.32
65.417	0.00	0.05	0.048	0					0.32
65.500	0.00	0.05	0.048	0					0.32
65.583	0.00	0.05	0.048	0					0.31
65.667	0.00	0.05	0.047	0					0.31
65.750	0.00	0.05	0.047	0					0.31
65.833	0.00	0.04	0.047	0					0.31
65.917	0.00	0.04	0.046	0					0.30
66.000	0.00	0.04	0.046	0					0.30
66.083	0.00	0.04	0.046	0					0.30
66.167	0.00	0.04	0.045	0					0.30
66.250	0.00	0.04	0.045	0					0.30
66.333	0.00	0.04	0.045	0					0.29
66.417	0.00	0.04	0.045	0					0.29
66.500	0.00	0.04	0.044	0					0.29
66.583	0.00	0.04	0.044	0					0.29
66.667	0.00	0.04	0.044	0					0.29
66.750	0.00	0.04	0.043	0					0.29
66.833	0.00	0.04	0.043	0					0.28
66.917	0.00	0.04	0.043	0					0.28
67.000	0.00	0.04	0.043	0					0.28
67.083	0.00	0.04	0.042	0					0.28
67.167	0.00	0.04	0.042	0					0.28
67.250	0.00	0.04	0.042	0					0.27
67.333	0.00	0.04	0.041	0					0.27
67.417	0.00	0.04	0.041	0					0.27
67.500	0.00	0.04	0.041	0					0.27
67.583	0.00	0.04	0.041	0					0.27
67.667	0.00	0.04	0.040	0					0.27
67.750	0.00	0.04	0.040	0					0.26
67.833	0.00	0.04	0.040	0					0.26
67.917	0.00	0.04	0.040	0					0.26
68.000	0.00	0.04	0.039	0					0.26
68.083	0.00	0.04	0.039	0					0.26
68.167	0.00	0.04	0.039	0					0.25

68.250	0.00	0.04	0.039	0					0.25
68.333	0.00	0.04	0.038	0					0.25
68.417	0.00	0.04	0.038	0					0.25
68.500	0.00	0.04	0.038	0					0.25
68.583	0.00	0.04	0.037	0					0.25
68.667	0.00	0.04	0.037	0					0.25
68.750	0.00	0.04	0.037	0					0.24
68.833	0.00	0.04	0.037	0					0.24
68.917	0.00	0.04	0.037	0					0.24
69.000	0.00	0.03	0.036	0					0.24
69.083	0.00	0.03	0.036	0					0.24
69.167	0.00	0.03	0.036	0					0.24
69.250	0.00	0.03	0.036	0					0.23
69.333	0.00	0.03	0.035	0					0.23
69.417	0.00	0.03	0.035	0					0.23
69.500	0.00	0.03	0.035	0					0.23
69.583	0.00	0.03	0.035	0					0.23
69.667	0.00	0.03	0.034	0					0.23
69.750	0.00	0.03	0.034	0					0.22
69.833	0.00	0.03	0.034	0					0.22
69.917	0.00	0.03	0.034	0					0.22
70.000	0.00	0.03	0.034	0					0.22
70.083	0.00	0.03	0.033	0					0.22
70.167	0.00	0.03	0.033	0					0.22
70.250	0.00	0.03	0.033	0					0.22
70.333	0.00	0.03	0.033	0					0.21
70.417	0.00	0.03	0.032	0					0.21
70.500	0.00	0.03	0.032	0					0.21
70.583	0.00	0.03	0.032	0					0.21
70.667	0.00	0.03	0.032	0					0.21
70.750	0.00	0.03	0.032	0					0.21
70.833	0.00	0.03	0.031	0					0.21
70.917	0.00	0.03	0.031	0					0.20
71.000	0.00	0.03	0.031	0					0.20
71.083	0.00	0.03	0.031	0					0.20
71.167	0.00	0.03	0.031	0					0.20
71.250	0.00	0.03	0.030	0					0.20
71.333	0.00	0.03	0.030	0					0.20
71.417	0.00	0.03	0.030	0					0.20
71.500	0.00	0.03	0.030	0					0.20
71.583	0.00	0.03	0.030	0					0.19
71.667	0.00	0.03	0.029	0					0.19
71.750	0.00	0.03	0.029	0					0.19
71.833	0.00	0.03	0.029	0					0.19
71.917	0.00	0.03	0.029	0					0.19
72.000	0.00	0.03	0.029	0					0.19
72.083	0.00	0.03	0.028	0					0.19
72.167	0.00	0.03	0.028	0					0.19
72.250	0.00	0.03	0.028	0					0.18
72.333	0.00	0.03	0.028	0					0.18

72.417	0.00	0.03	0.028	0					0.18
72.500	0.00	0.03	0.027	0					0.18
72.583	0.00	0.03	0.027	0					0.18
72.667	0.00	0.03	0.027	0					0.18
72.750	0.00	0.03	0.027	0					0.18
72.833	0.00	0.03	0.027	0					0.18
72.917	0.00	0.03	0.027	0					0.17
73.000	0.00	0.03	0.026	0					0.17
73.083	0.00	0.03	0.026	0					0.17
73.167	0.00	0.03	0.026	0					0.17
73.250	0.00	0.02	0.026	0					0.17
73.333	0.00	0.02	0.026	0					0.17
73.417	0.00	0.02	0.026	0					0.17
73.500	0.00	0.02	0.025	0					0.17
73.583	0.00	0.02	0.025	0					0.17
73.667	0.00	0.02	0.025	0					0.16
73.750	0.00	0.02	0.025	0					0.16
73.833	0.00	0.02	0.025	0					0.16
73.917	0.00	0.02	0.025	0					0.16
74.000	0.00	0.02	0.024	0					0.16
74.083	0.00	0.02	0.024	0					0.16
74.167	0.00	0.02	0.024	0					0.16
74.250	0.00	0.02	0.024	0					0.16
74.333	0.00	0.02	0.024	0					0.16
74.417	0.00	0.02	0.024	0					0.16
74.500	0.00	0.02	0.023	0					0.15
74.583	0.00	0.02	0.023	0					0.15
74.667	0.00	0.02	0.023	0					0.15
74.750	0.00	0.02	0.023	0					0.15
74.833	0.00	0.02	0.023	0					0.15
74.917	0.00	0.02	0.023	0					0.15
75.000	0.00	0.02	0.023	0					0.15
75.083	0.00	0.02	0.022	0					0.15
75.167	0.00	0.02	0.022	0					0.15
75.250	0.00	0.02	0.022	0					0.15
75.333	0.00	0.02	0.022	0					0.14
75.417	0.00	0.02	0.022	0					0.14
75.500	0.00	0.02	0.022	0					0.14
75.583	0.00	0.02	0.022	0					0.14
75.667	0.00	0.02	0.021	0					0.14
75.750	0.00	0.02	0.021	0					0.14
75.833	0.00	0.02	0.021	0					0.14
75.917	0.00	0.02	0.021	0					0.14
76.000	0.00	0.02	0.021	0					0.14
76.083	0.00	0.02	0.021	0					0.14
76.167	0.00	0.02	0.021	0					0.14
76.250	0.00	0.02	0.020	0					0.13
76.333	0.00	0.02	0.020	0					0.13
76.417	0.00	0.02	0.020	0					0.13
76.500	0.00	0.02	0.020	0					0.13

76.583	0.00	0.02	0.020	0					0.13
76.667	0.00	0.02	0.020	0					0.13
76.750	0.00	0.02	0.020	0					0.13
76.833	0.00	0.02	0.019	0					0.13
76.917	0.00	0.02	0.019	0					0.13
77.000	0.00	0.02	0.019	0					0.13
77.083	0.00	0.02	0.019	0					0.13
77.167	0.00	0.02	0.019	0					0.12
77.250	0.00	0.02	0.019	0					0.12
77.333	0.00	0.02	0.019	0					0.12
77.417	0.00	0.02	0.019	0					0.12
77.500	0.00	0.02	0.018	0					0.12
77.583	0.00	0.02	0.018	0					0.12
77.667	0.00	0.02	0.018	0					0.12
77.750	0.00	0.02	0.018	0					0.12
77.833	0.00	0.02	0.018	0					0.12
77.917	0.00	0.02	0.018	0					0.12
78.000	0.00	0.02	0.018	0					0.12
78.083	0.00	0.02	0.018	0					0.12
78.167	0.00	0.02	0.018	0					0.12
78.250	0.00	0.02	0.017	0					0.11
78.333	0.00	0.02	0.017	0					0.11
78.417	0.00	0.02	0.017	0					0.11
78.500	0.00	0.02	0.017	0					0.11
78.583	0.00	0.02	0.017	0					0.11
78.667	0.00	0.02	0.017	0					0.11
78.750	0.00	0.02	0.017	0					0.11
78.833	0.00	0.02	0.017	0					0.11
78.917	0.00	0.02	0.017	0					0.11
79.000	0.00	0.02	0.016	0					0.11
79.083	0.00	0.02	0.016	0					0.11
79.167	0.00	0.02	0.016	0					0.11
79.250	0.00	0.02	0.016	0					0.11
79.333	0.00	0.02	0.016	0					0.11
79.417	0.00	0.02	0.016	0					0.10
79.500	0.00	0.02	0.016	0					0.10
79.583	0.00	0.02	0.016	0					0.10
79.667	0.00	0.01	0.016	0					0.10
79.750	0.00	0.01	0.015	0					0.10
79.833	0.00	0.01	0.015	0					0.10
79.917	0.00	0.01	0.015	0					0.10
80.000	0.00	0.01	0.015	0					0.10
80.083	0.00	0.01	0.015	0					0.10
80.167	0.00	0.01	0.015	0					0.10
80.250	0.00	0.01	0.015	0					0.10
80.333	0.00	0.01	0.015	0					0.10
80.417	0.00	0.01	0.015	0					0.10
80.500	0.00	0.01	0.015	0					0.10
80.583	0.00	0.01	0.014	0					0.10
80.667	0.00	0.01	0.014	0					0.09



80.750	0.00	0.01	0.014	0					0.09
80.833	0.00	0.01	0.014	0					0.09
80.917	0.00	0.01	0.014	0					0.09
81.000	0.00	0.01	0.014	0					0.09
81.083	0.00	0.01	0.014	0					0.09
81.167	0.00	0.01	0.014	0					0.09
81.250	0.00	0.01	0.014	0					0.09
81.333	0.00	0.01	0.014	0					0.09
81.417	0.00	0.01	0.014	0					0.09
81.500	0.00	0.01	0.013	0					0.09
81.583	0.00	0.01	0.013	0					0.09
81.667	0.00	0.01	0.013	0					0.09
81.750	0.00	0.01	0.013	0					0.09
81.833	0.00	0.01	0.013	0					0.09
81.917	0.00	0.01	0.013	0					0.09
82.000	0.00	0.01	0.013	0					0.09
82.083	0.00	0.01	0.013	0					0.08
82.167	0.00	0.01	0.013	0					0.08
82.250	0.00	0.01	0.013	0					0.08
82.333	0.00	0.01	0.013	0					0.08
82.417	0.00	0.01	0.013	0					0.08
82.500	0.00	0.01	0.012	0					0.08
82.583	0.00	0.01	0.012	0					0.08
82.667	0.00	0.01	0.012	0					0.08
82.750	0.00	0.01	0.012	0					0.08
82.833	0.00	0.01	0.012	0					0.08
82.917	0.00	0.01	0.012	0					0.08
83.000	0.00	0.01	0.012	0					0.08
83.083	0.00	0.01	0.012	0					0.08
83.167	0.00	0.01	0.012	0					0.08
83.250	0.00	0.01	0.012	0					0.08
83.333	0.00	0.01	0.012	0					0.08
83.417	0.00	0.01	0.012	0					0.08
83.500	0.00	0.01	0.011	0					0.08
83.583	0.00	0.01	0.011	0					0.07
83.667	0.00	0.01	0.011	0					0.07
83.750	0.00	0.01	0.011	0					0.07
83.833	0.00	0.01	0.011	0					0.07
83.917	0.00	0.01	0.011	0					0.07
84.000	0.00	0.01	0.011	0					0.07
84.083	0.00	0.01	0.011	0					0.07
84.167	0.00	0.01	0.011	0					0.07
84.250	0.00	0.01	0.011	0					0.07
84.333	0.00	0.01	0.011	0					0.07
84.417	0.00	0.01	0.011	0					0.07
84.500	0.00	0.01	0.011	0					0.07
84.583	0.00	0.01	0.011	0					0.07
84.667	0.00	0.01	0.010	0					0.07
84.750	0.00	0.01	0.010	0					0.07
84.833	0.00	0.01	0.010	0					0.07

84.917	0.00	0.01	0.010	0					0.07
85.000	0.00	0.01	0.010	0					0.07
85.083	0.00	0.01	0.010	0					0.07
85.167	0.00	0.01	0.010	0					0.07
85.250	0.00	0.01	0.010	0					0.07
85.333	0.00	0.01	0.010	0					0.07
85.417	0.00	0.01	0.010	0					0.06
85.500	0.00	0.01	0.010	0					0.06
85.583	0.00	0.01	0.010	0					0.06
85.667	0.00	0.01	0.010	0					0.06
85.750	0.00	0.01	0.010	0					0.06
85.833	0.00	0.01	0.010	0					0.06
85.917	0.00	0.01	0.009	0					0.06
86.000	0.00	0.01	0.009	0					0.06
86.083	0.00	0.01	0.009	0					0.06
86.167	0.00	0.01	0.009	0					0.06
86.250	0.00	0.01	0.009	0					0.06
86.333	0.00	0.01	0.009	0					0.06
86.417	0.00	0.01	0.009	0					0.06
86.500	0.00	0.01	0.009	0					0.06
86.583	0.00	0.01	0.009	0					0.06
86.667	0.00	0.01	0.009	0					0.06
86.750	0.00	0.01	0.009	0					0.06
86.833	0.00	0.01	0.009	0					0.06
86.917	0.00	0.01	0.009	0					0.06
87.000	0.00	0.01	0.009	0					0.06
87.083	0.00	0.01	0.009	0					0.06
87.167	0.00	0.01	0.009	0					0.06
87.250	0.00	0.01	0.009	0					0.06
87.333	0.00	0.01	0.008	0					0.06
87.417	0.00	0.01	0.008	0					0.06
87.500	0.00	0.01	0.008	0					0.05
87.583	0.00	0.01	0.008	0					0.05
87.667	0.00	0.01	0.008	0					0.05
87.750	0.00	0.01	0.008	0					0.05
87.833	0.00	0.01	0.008	0					0.05
87.917	0.00	0.01	0.008	0					0.05
88.000	0.00	0.01	0.008	0					0.05
88.083	0.00	0.01	0.008	0					0.05
88.167	0.00	0.01	0.008	0					0.05
88.250	0.00	0.01	0.008	0					0.05
88.333	0.00	0.01	0.008	0					0.05
88.417	0.00	0.01	0.008	0					0.05
88.500	0.00	0.01	0.008	0					0.05
88.583	0.00	0.01	0.008	0					0.05
88.667	0.00	0.01	0.008	0					0.05
88.750	0.00	0.01	0.008	0					0.05
88.833	0.00	0.01	0.008	0					0.05
88.917	0.00	0.01	0.007	0					0.05
89.000	0.00	0.01	0.007	0					0.05

89.083	0.00	0.01	0.007	0					0.05
89.167	0.00	0.01	0.007	0					0.05
89.250	0.00	0.01	0.007	0					0.05
89.333	0.00	0.01	0.007	0					0.05
89.417	0.00	0.01	0.007	0					0.05
89.500	0.00	0.01	0.007	0					0.05
89.583	0.00	0.01	0.007	0					0.05
89.667	0.00	0.01	0.007	0					0.05
89.750	0.00	0.01	0.007	0					0.05
89.833	0.00	0.01	0.007	0					0.05
89.917	0.00	0.01	0.007	0					0.05
90.000	0.00	0.01	0.007	0					0.05
90.083	0.00	0.01	0.007	0					0.04
90.167	0.00	0.01	0.007	0					0.04
90.250	0.00	0.01	0.007	0					0.04
90.333	0.00	0.01	0.007	0					0.04
90.417	0.00	0.01	0.007	0					0.04
90.500	0.00	0.01	0.007	0					0.04
90.583	0.00	0.01	0.007	0					0.04
90.667	0.00	0.01	0.006	0					0.04
90.750	0.00	0.01	0.006	0					0.04
90.833	0.00	0.01	0.006	0					0.04
90.917	0.00	0.01	0.006	0					0.04
91.000	0.00	0.01	0.006	0					0.04
91.083	0.00	0.01	0.006	0					0.04
91.167	0.00	0.01	0.006	0					0.04
91.250	0.00	0.01	0.006	0					0.04
91.333	0.00	0.01	0.006	0					0.04
91.417	0.00	0.01	0.006	0					0.04
91.500	0.00	0.01	0.006	0					0.04
91.583	0.00	0.01	0.006	0					0.04
91.667	0.00	0.01	0.006	0					0.04
91.750	0.00	0.01	0.006	0					0.04
91.833	0.00	0.01	0.006	0					0.04
91.917	0.00	0.01	0.006	0					0.04
92.000	0.00	0.01	0.006	0					0.04
92.083	0.00	0.01	0.006	0					0.04
92.167	0.00	0.01	0.006	0					0.04
92.250	0.00	0.01	0.006	0					0.04
92.333	0.00	0.01	0.006	0					0.04
92.417	0.00	0.01	0.006	0					0.04
92.500	0.00	0.01	0.006	0					0.04
92.583	0.00	0.01	0.006	0					0.04
92.667	0.00	0.01	0.006	0					0.04
92.750	0.00	0.01	0.006	0					0.04
92.833	0.00	0.01	0.005	0					0.04
92.917	0.00	0.01	0.005	0					0.04
93.000	0.00	0.01	0.005	0					0.04
93.083	0.00	0.01	0.005	0					0.04
93.167	0.00	0.01	0.005	0					0.04

93.250	0.00	0.01	0.005	0					0.03
93.333	0.00	0.01	0.005	0					0.03
93.417	0.00	0.01	0.005	0					0.03
93.500	0.00	0.00	0.005	0					0.03
93.583	0.00	0.00	0.005	0					0.03
93.667	0.00	0.00	0.005	0					0.03
93.750	0.00	0.00	0.005	0					0.03
93.833	0.00	0.00	0.005	0					0.03
93.917	0.00	0.00	0.005	0					0.03
94.000	0.00	0.00	0.005	0					0.03
94.083	0.00	0.00	0.005	0					0.03
94.167	0.00	0.00	0.005	0					0.03
94.250	0.00	0.00	0.005	0					0.03
94.333	0.00	0.00	0.005	0					0.03
94.417	0.00	0.00	0.005	0					0.03
94.500	0.00	0.00	0.005	0					0.03
94.583	0.00	0.00	0.005	0					0.03
94.667	0.00	0.00	0.005	0					0.03
94.750	0.00	0.00	0.005	0					0.03
94.833	0.00	0.00	0.005	0					0.03
94.917	0.00	0.00	0.005	0					0.03
95.000	0.00	0.00	0.005	0					0.03
95.083	0.00	0.00	0.005	0					0.03
95.167	0.00	0.00	0.005	0					0.03
95.250	0.00	0.00	0.005	0					0.03
95.333	0.00	0.00	0.004	0					0.03
95.417	0.00	0.00	0.004	0					0.03
95.500	0.00	0.00	0.004	0					0.03
95.583	0.00	0.00	0.004	0					0.03
95.667	0.00	0.00	0.004	0					0.03
95.750	0.00	0.00	0.004	0					0.03
95.833	0.00	0.00	0.004	0					0.03
95.917	0.00	0.00	0.004	0					0.03
96.000	0.00	0.00	0.004	0					0.03
96.083	0.00	0.00	0.004	0					0.03
96.167	0.00	0.00	0.004	0					0.03
96.250	0.00	0.00	0.004	0					0.03
96.333	0.00	0.00	0.004	0					0.03
96.417	0.00	0.00	0.004	0					0.03
96.500	0.00	0.00	0.004	0					0.03
96.583	0.00	0.00	0.004	0					0.03
96.667	0.00	0.00	0.004	0					0.03
96.750	0.00	0.00	0.004	0					0.03
96.833	0.00	0.00	0.004	0					0.03
96.917	0.00	0.00	0.004	0					0.03
97.000	0.00	0.00	0.004	0					0.03
97.083	0.00	0.00	0.004	0					0.03
97.167	0.00	0.00	0.004	0					0.03
97.250	0.00	0.00	0.004	0					0.03
97.333	0.00	0.00	0.004	0					0.03

97.417	0.00	0.00	0.004	0					0.03
97.500	0.00	0.00	0.004	0					0.02
97.583	0.00	0.00	0.004	0					0.02
97.667	0.00	0.00	0.004	0					0.02
97.750	0.00	0.00	0.004	0					0.02
97.833	0.00	0.00	0.004	0					0.02
97.917	0.00	0.00	0.004	0					0.02
98.000	0.00	0.00	0.004	0					0.02
98.083	0.00	0.00	0.004	0					0.02
98.167	0.00	0.00	0.004	0					0.02
98.250	0.00	0.00	0.004	0					0.02
98.333	0.00	0.00	0.004	0					0.02
98.417	0.00	0.00	0.004	0					0.02
98.500	0.00	0.00	0.003	0					0.02
98.583	0.00	0.00	0.003	0					0.02
98.667	0.00	0.00	0.003	0					0.02
98.750	0.00	0.00	0.003	0					0.02
98.833	0.00	0.00	0.003	0					0.02
98.917	0.00	0.00	0.003	0					0.02
99.000	0.00	0.00	0.003	0					0.02
99.083	0.00	0.00	0.003	0					0.02
99.167	0.00	0.00	0.003	0					0.02
99.250	0.00	0.00	0.003	0					0.02
99.333	0.00	0.00	0.003	0					0.02
99.417	0.00	0.00	0.003	0					0.02
99.500	0.00	0.00	0.003	0					0.02
99.583	0.00	0.00	0.003	0					0.02
99.667	0.00	0.00	0.003	0					0.02
99.750	0.00	0.00	0.003	0					0.02
99.833	0.00	0.00	0.003	0					0.02
99.917	0.00	0.00	0.003	0					0.02
100.000	0.00	0.00	0.003	0					0.02
100.083	0.00	0.00	0.003	0					0.02
100.167	0.00	0.00	0.003	0					0.02
100.250	0.00	0.00	0.003	0					0.02
100.333	0.00	0.00	0.003	0					0.02
100.417	0.00	0.00	0.003	0					0.02
100.500	0.00	0.00	0.003	0					0.02
100.583	0.00	0.00	0.003	0					0.02
100.667	0.00	0.00	0.003	0					0.02
100.750	0.00	0.00	0.003	0					0.02
100.833	0.00	0.00	0.003	0					0.02
100.917	0.00	0.00	0.003	0					0.02
101.000	0.00	0.00	0.003	0					0.02
101.083	0.00	0.00	0.003	0					0.02
101.167	0.00	0.00	0.003	0					0.02
101.250	0.00	0.00	0.003	0					0.02
101.333	0.00	0.00	0.003	0					0.02
101.417	0.00	0.00	0.003	0					0.02
101.500	0.00	0.00	0.003	0					0.02

101.583	0.00	0.00	0.003	0					0.02
101.667	0.00	0.00	0.003	0					0.02
101.750	0.00	0.00	0.003	0					0.02
101.833	0.00	0.00	0.003	0					0.02
101.917	0.00	0.00	0.003	0					0.02
102.000	0.00	0.00	0.003	0					0.02
102.083	0.00	0.00	0.003	0					0.02
102.167	0.00	0.00	0.003	0					0.02
102.250	0.00	0.00	0.003	0					0.02
102.333	0.00	0.00	0.003	0					0.02
102.417	0.00	0.00	0.003	0					0.02
102.500	0.00	0.00	0.003	0					0.02
102.583	0.00	0.00	0.003	0					0.02
102.667	0.00	0.00	0.003	0					0.02
102.750	0.00	0.00	0.002	0					0.02
102.833	0.00	0.00	0.002	0					0.02
102.917	0.00	0.00	0.002	0					0.02
103.000	0.00	0.00	0.002	0					0.02
103.083	0.00	0.00	0.002	0					0.02
103.167	0.00	0.00	0.002	0					0.02
103.250	0.00	0.00	0.002	0					0.02
103.333	0.00	0.00	0.002	0					0.02
103.417	0.00	0.00	0.002	0					0.02
103.500	0.00	0.00	0.002	0					0.02
103.583	0.00	0.00	0.002	0					0.02
103.667	0.00	0.00	0.002	0					0.02
103.750	0.00	0.00	0.002	0					0.02
103.833	0.00	0.00	0.002	0					0.02
103.917	0.00	0.00	0.002	0					0.01
104.000	0.00	0.00	0.002	0					0.01
104.083	0.00	0.00	0.002	0					0.01
104.167	0.00	0.00	0.002	0					0.01
104.250	0.00	0.00	0.002	0					0.01
104.333	0.00	0.00	0.002	0					0.01
104.417	0.00	0.00	0.002	0					0.01
104.500	0.00	0.00	0.002	0					0.01
104.583	0.00	0.00	0.002	0					0.01
104.667	0.00	0.00	0.002	0					0.01
104.750	0.00	0.00	0.002	0					0.01
104.833	0.00	0.00	0.002	0					0.01
104.917	0.00	0.00	0.002	0					0.01
105.000	0.00	0.00	0.002	0					0.01
105.083	0.00	0.00	0.002	0					0.01
105.167	0.00	0.00	0.002	0					0.01
105.250	0.00	0.00	0.002	0					0.01
105.333	0.00	0.00	0.002	0					0.01
105.417	0.00	0.00	0.002	0					0.01
105.500	0.00	0.00	0.002	0					0.01
105.583	0.00	0.00	0.002	0					0.01
105.667	0.00	0.00	0.002	0					0.01

105.750	0.00	0.00	0.002	0					0.01
105.833	0.00	0.00	0.002	0					0.01
105.917	0.00	0.00	0.002	0					0.01
106.000	0.00	0.00	0.002	0					0.01
106.083	0.00	0.00	0.002	0					0.01
106.167	0.00	0.00	0.002	0					0.01
106.250	0.00	0.00	0.002	0					0.01
106.333	0.00	0.00	0.002	0					0.01
106.417	0.00	0.00	0.002	0					0.01
106.500	0.00	0.00	0.002	0					0.01
106.583	0.00	0.00	0.002	0					0.01
106.667	0.00	0.00	0.002	0					0.01
106.750	0.00	0.00	0.002	0					0.01
106.833	0.00	0.00	0.002	0					0.01
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107.167	0.00	0.00	0.002	0					0.01
107.250	0.00	0.00	0.002	0					0.01
107.333	0.00	0.00	0.002	0					0.01
107.417	0.00	0.00	0.002	0					0.01
107.500	0.00	0.00	0.002	0					0.01
107.583	0.00	0.00	0.002	0					0.01
107.667	0.00	0.00	0.002	0					0.01
107.750	0.00	0.00	0.002	0					0.01
107.833	0.00	0.00	0.002	0					0.01
107.917	0.00	0.00	0.002	0					0.01
108.000	0.00	0.00	0.002	0					0.01
108.083	0.00	0.00	0.002	0					0.01
108.167	0.00	0.00	0.002	0					0.01
108.250	0.00	0.00	0.002	0					0.01
108.333	0.00	0.00	0.002	0					0.01
108.417	0.00	0.00	0.002	0					0.01
108.500	0.00	0.00	0.002	0					0.01
108.583	0.00	0.00	0.002	0					0.01
108.667	0.00	0.00	0.002	0					0.01
108.750	0.00	0.00	0.002	0					0.01
108.833	0.00	0.00	0.002	0					0.01
108.917	0.00	0.00	0.002	0					0.01
109.000	0.00	0.00	0.002	0					0.01
109.083	0.00	0.00	0.002	0					0.01
109.167	0.00	0.00	0.001	0					0.01
109.250	0.00	0.00	0.001	0					0.01
109.333	0.00	0.00	0.001	0					0.01
109.417	0.00	0.00	0.001	0					0.01
109.500	0.00	0.00	0.001	0					0.01
109.583	0.00	0.00	0.001	0					0.01
109.667	0.00	0.00	0.001	0					0.01
109.750	0.00	0.00	0.001	0					0.01
109.833	0.00	0.00	0.001	0					0.01

109.917	0.00	0.00	0.001	0					0.01
110.000	0.00	0.00	0.001	0					0.01
110.083	0.00	0.00	0.001	0					0.01
110.167	0.00	0.00	0.001	0					0.01
110.250	0.00	0.00	0.001	0					0.01
110.333	0.00	0.00	0.001	0					0.01
110.417	0.00	0.00	0.001	0					0.01
110.500	0.00	0.00	0.001	0					0.01
110.583	0.00	0.00	0.001	0					0.01
110.667	0.00	0.00	0.001	0					0.01
110.750	0.00	0.00	0.001	0					0.01
110.833	0.00	0.00	0.001	0					0.01
110.917	0.00	0.00	0.001	0					0.01
111.000	0.00	0.00	0.001	0					0.01
111.083	0.00	0.00	0.001	0					0.01
111.167	0.00	0.00	0.001	0					0.01
111.250	0.00	0.00	0.001	0					0.01
111.333	0.00	0.00	0.001	0					0.01
111.417	0.00	0.00	0.001	0					0.01
111.500	0.00	0.00	0.001	0					0.01
111.583	0.00	0.00	0.001	0					0.01
111.667	0.00	0.00	0.001	0					0.01
111.750	0.00	0.00	0.001	0					0.01
111.833	0.00	0.00	0.001	0					0.01
111.917	0.00	0.00	0.001	0					0.01
112.000	0.00	0.00	0.001	0					0.01
112.083	0.00	0.00	0.001	0					0.01
112.167	0.00	0.00	0.001	0					0.01
112.250	0.00	0.00	0.001	0					0.01
112.333	0.00	0.00	0.001	0					0.01
112.417	0.00	0.00	0.001	0					0.01
112.500	0.00	0.00	0.001	0					0.01
112.583	0.00	0.00	0.001	0					0.01
112.667	0.00	0.00	0.001	0					0.01
112.750	0.00	0.00	0.001	0					0.01
112.833	0.00	0.00	0.001	0					0.01
112.917	0.00	0.00	0.001	0					0.01
113.000	0.00	0.00	0.001	0					0.01
113.083	0.00	0.00	0.001	0					0.01
113.167	0.00	0.00	0.001	0					0.01
113.250	0.00	0.00	0.001	0					0.01
113.333	0.00	0.00	0.001	0					0.01
113.417	0.00	0.00	0.001	0					0.01
113.500	0.00	0.00	0.001	0					0.01
113.583	0.00	0.00	0.001	0					0.01
113.667	0.00	0.00	0.001	0					0.01
113.750	0.00	0.00	0.001	0					0.01

Remaining water in basin = 0.00 (Ac.Ft)



\*\*\*\*\*HYDROGRAPH DATA\*\*\*\*\*

Number of intervals = 1365  
Time interval = 5.0 (Min.)  
Maximum/Peak flow rate = 3.909 (CFS)  
Total volume = 2.071 (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 F**

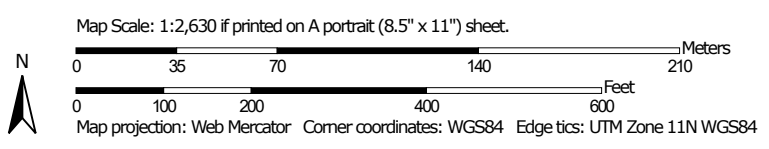
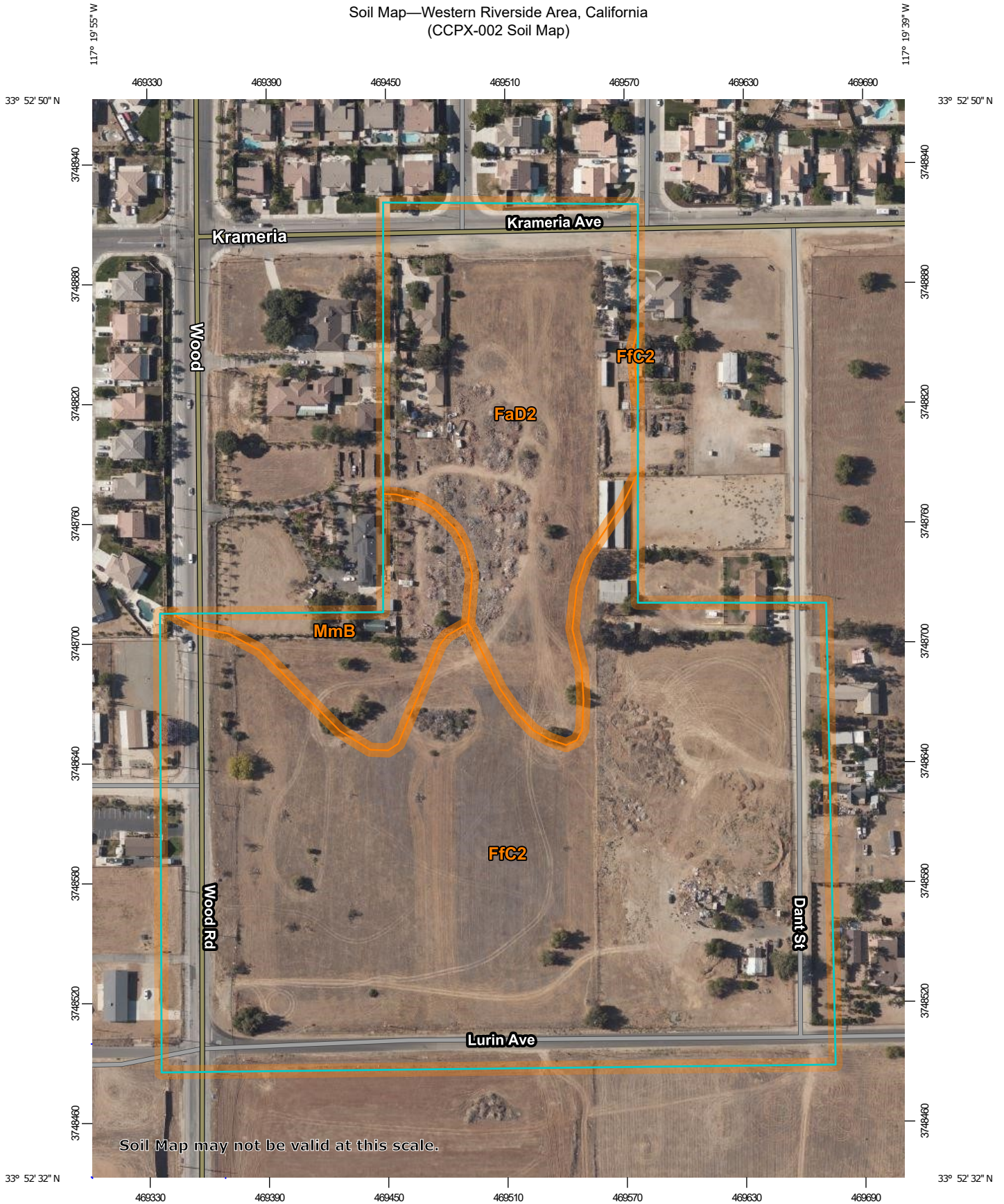
## **Hydraulic Calculations**

*(To be provided in final engineering)*

# **APPENDIX G**

## **USDA Soil Map**

Soil Map—Western Riverside Area, California  
(CCPX-002 Soil Map)




## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Western Riverside Area, California

Survey Area Data: Version 13, May 27, 2020

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

Date(s) aerial images were photographed: Apr 17, 2018—Jun 28, 2018

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
FaD2	Fallbrook sandy loam, 8 to 15 percent slopes, eroded	6.3	24.4%
FfC2	Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded	17.7	68.7%
MmB	Monserate sandy loam, 0 to 5 percent slopes	1.8	6.9%
<b>Totals for Area of Interest</b>		<b>25.7</b>	<b>100.0%</b>

## Western Riverside Area, California

### FfC2—Fallbrook fine sandy loam, 2 to 8 percent slopes, eroded

#### Map Unit Setting

*National map unit symbol:* hctw

*Elevation:* 300 to 2,000 feet

*Mean annual precipitation:* 12 to 25 inches

*Mean annual air temperature:* 59 to 64 degrees F

*Frost-free period:* 200 to 280 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Fallbrook and similar soils:* 85 percent

*Minor components:* 15 percent

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

#### Description of Fallbrook

##### Setting

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Residuum weathered from granodiorite and/or residuum weathered from tonalite

##### Typical profile

*H1 - 0 to 14 inches:* fine sandy loam

*H2 - 14 to 24 inches:* sandy clay loam

*H3 - 24 to 28 inches:* bedrock

##### Properties and qualities

*Slope:* 5 to 8 percent

*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock

*Drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Low (about 3.3 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 3e

*Land capability classification (nonirrigated):* 3e

**Hydrologic Soil Group: C**

*Ecological site:* R019XD029CA



*Hydric soil rating:* No

**Minor Components**

**Vista**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Bonsall**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Cieneba**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Data Source Information**

Soil Survey Area: Western Riverside Area, California  
Survey Area Data: Version 13, May 27, 2020

## Western Riverside Area, California

### FaD2—Fallbrook sandy loam, 8 to 15 percent slopes, eroded

#### Map Unit Setting

*National map unit symbol:* hctp

*Elevation:* 300 to 2,000 feet

*Mean annual precipitation:* 12 to 25 inches

*Mean annual air temperature:* 59 to 64 degrees F

*Frost-free period:* 200 to 280 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Fallbrook and similar soils:* 85 percent

*Minor components:* 15 percent

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

#### Description of Fallbrook

##### Setting

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Residuum weathered from granodiorite and/or  
residuum weathered from tonalite

##### Typical profile

*H1 - 0 to 14 inches:* sandy loam

*H2 - 14 to 24 inches:* sandy clay loam

*H3 - 24 to 28 inches:* bedrock

##### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 20 to 40 inches to paralithic bedrock

*Drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Very low  
to moderately low (0.00 to 0.06 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Low (about 3.3 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 4e

*Land capability classification (nonirrigated):* 4e

**Hydrologic Soil Group: C**

*Ecological site:* R019XD029CA

*Hydric soil rating:* No

### **Minor Components**

#### **Buren**

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

#### **Cieneba**

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

#### **Monserate**

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

#### **Bonsall**

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

#### **Vista**

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

## **Data Source Information**

Soil Survey Area: Western Riverside Area, California

Survey Area Data: Version 13, May 27, 2020

## Western Riverside Area, California

### MmB—Monserate sandy loam, 0 to 5 percent slopes

#### Map Unit Setting

*National map unit symbol:* hcx4

*Elevation:* 700 to 2,500 feet

*Mean annual precipitation:* 10 to 18 inches

*Mean annual air temperature:* 63 to 64 degrees F

*Frost-free period:* 220 to 280 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Monserate and similar soils:* 85 percent

*Minor components:* 15 percent

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

#### Description of Monserate

##### Setting

*Landform:* Alluvial fans

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Alluvium derived from granite

##### Typical profile

*H1 - 0 to 10 inches:* sandy loam

*H2 - 10 to 28 inches:* sandy clay loam

*H3 - 28 to 45 inches:* indurated

*H4 - 45 to 57 inches:* cemented

*H5 - 57 to 70 inches:* loamy coarse sand, coarse sandy loam

*H5 - 57 to 70 inches:*

##### Properties and qualities

*Slope:* 0 to 5 percent

*Depth to restrictive feature:* 20 to 39 inches to duripan

*Drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Very low  
(0.00 to 0.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water capacity:* Low (about 4.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 3e

*Land capability classification (nonirrigated):* 4e

**Hydrologic Soil Group: C**

*Ecological site:* R019XD029CA

*Hydric soil rating:* No

**Minor Components**

**Greenfield**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Hanford**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Tujunga**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Data Source Information**

Soil Survey Area: Western Riverside Area, California  
Survey Area Data: Version 13, May 27, 2020

# **APPENDIX H**

## **FEMA Flood Map and RCFC&WCD Hydrology Manual**

### **References**

# National Flood Hazard Layer FIRMette



117°20'6"W 33°52'55"N



## Legend

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

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

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

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>

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

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

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **2/19/2021 at 4:56 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

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

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

**RCFC & WCD**  
HYDROLOGY MANUAL

**RUNOFF INDEX NUMBERS  
FOR  
PERVIOUS AREAS**



ACTUAL IMPERVIOUS COVER

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

Notes:

1. Land use should be based on ultimate development of the watershed. Long range master plans for the County and incorporated cities should be reviewed to insure reasonable land use assumptions.
2. Recommended values are based on average conditions which may not apply to a particular study area. The percentage impervious may vary greatly even on comparable sized lots due to differences in dwelling size, improvements, etc. Landscape practices should also be considered as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. A field investigation of a study area should always be made, and a review of aerial photos, where available may assist in estimating the percentage of impervious cover in developed areas.
3. For typical horse ranch subdivisions increase impervious area 5 percent over the values recommended in the table above.

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HYDROLOGY MANUAL

**IMPERVIOUS COVER  
FOR  
DEVELOPED AREAS**

# **APPENDIX I**

## **Tentative Tract Map**