

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

**LDC SEATON COMMERCE CENTER
PERRY STREET AND SEATON AVENUE**

PREPARED FOR

**LDC INDUSTRIAL REALTY, LLC
115 AVENIDA SAN DIMAS
SAN CLEMENTE, CA 92672
PH. (949) 226-4601**

**OCTOBER 22, 2018
REVISED FEBRUARY 19, 2019
REVISED SEPTEMBER 5, 2019
REVISED DECEMBER 03, 2019
REVISED DECEMBER 20, 2019
REVISED JANUARY 17, 2020**

JOB NO. 2712

PREPARED BY

**THIENES ENGINEERING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
P. (714) 521-4811
FAX. (714) 521-4173**

**PRELIMINARY HYDROLOGY
CALCULATIONS**

FOR

LDC SEATON COMMERCE CENTER

**PREPARED UNDER THE
SUPERVISION OF:**

**REINHARD STENZEL DATE:
R.C.E. 56155 EXP. 12/31/20**

INTRODUCTION

A: PROJECT LOCATION

The project site is located at the southeast corner of Perry Street and Seaton Avenue in the County of Riverside, California. Please see next page for vicinity map.

B: STUDY PURPOSE

The purpose of this study is to determine proposed condition 100-year peak flow rates from the project site that drains to the proposed 66" storm drain in Perry Street.

C: PROJECT STAFF:

Thienes Engineering staff involved in this study include:

Reinhard Stenzel
Brian Weil



VICINITY MAP
FOR
LDC SEATON COMMERCE CENTER

Thiennes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

DISCUSSION

The project site encompasses approximately 9.15 acres. Proposed improvements to the site include a commercial type building of approximately 208,300 square feet. There will be a truck yard east of the building. Vehicle parking lots will be on the west side of site. Additionally, there will be landscaping around the perimeter of the project site.

Master Plan Storm Drain

The project is located within the Master Plan for the Wood Industrial Park. Included with this Master Plan, a 66" RCP storm drain was constructed in Perry Street near Harvill Avenue. The 66" storm drain is constructed to approximately 285 feet west of Harvill Avenue. The Master Plan shows this drain being extended westerly of Perry Street. The peak flow rate shown on the profile is 180 cfs, which is consistent with the Master Plan hydrology for this area. The project site is tabled to this drain.

As part of this project, the 66" storm drain will be extended to the intersection of Perry Street and Seaton Avenue. An additional public storm drain will be installed in Seaton Avenue to convey the runoff from the two existing low spot fronting the project site.

See Appendix "A" for portions of the Wood Industrial Park Master Plan and existing storm drain plans.

Existing Condition

Under existing conditions, the project site is a vacant undeveloped lot with natural grasses and some vegetation. The project site generally drains from west to east in existing natural drainage course that traverse through the site. The 100-year Rational Method peak flow rate for existing conditions is approximately 16.1 cfs (site only). Runoff continues easterly through the adjacent site, ultimately to the 66" public storm drain as described above. The project site currently accepts offsite drainage from areas west of Seaton Avenue as described below.

See Appendix "B" for existing condition hydrology calculations and Appendix "E" for existing condition hydrology map.

Offsite Drainage

The Master Plan of Drainage for the Perris Valley Area depicts several subareas west of the project site that is ultimately tributary to the proposed Master Plan storm drain system in Perry Street. However, it does not appear that all of the areas shown on the Master Plan of Drainage directly enter the project site. Areas A-1 through A-5 drain to Perry Street. Area A-6 is the subarea that drains through the project site via the existing low points in Seaton Avenue.

An updated hydrologic model for Area A-6 considers several smaller areas and current land use to determine a more accurate offsite peak flow rate (nodes 200-204 on offsite hydrology map). The overall drainage area is similar to that of the existing Master Plan of Drainage calculations. The updated model yields a 100-year peak flow rate of approximately 73.7 cfs. The proposed storm drain in Seaton Avenue will intercept and convey this flow to the proposed storm drain in Perry Street. The storm drain and proposed street improvements are adequate to intercept the offsite flow such that there is no impact adjacent properties.

An existing commercial development south of the project site and a portion of undeveloped area south of this site (nodes 210-211) drains towards the southeasterly corner of the project site. The 100-year peak flow rate at this location is approximately 16.9 cfs.

See Appendix "A" for reference Master Plan of Drainage calculations and hydrology map, Appendix "B" for offsite hydrology calculations and Appendix "E" for offsite hydrology map.

Proposed Condition

Runoff from the easterly portion of the proposed building and the easterly truck yard area (nodes 100-102) will be collected in grate inlets located in the truck yard area. Flow from the westerly portion of the building, the westerly parking area and the northerly parking lot (nodes 200-203) will be intercepted in catch basin in the parking areas. A storm drain will convey this flow around the building to the truck yard area (at node 204) and confluence with runoff from the easterly portion of the site (at node 205).

A proposed storm drain will convey runoff northerly to the proposed extension of the Master Plan storm drain in Perry Street. The 100-year Rational Method peak flow rate from the project site is approximately 25.6 cfs, undetained.

See Appendix "B" for proposed condition hydrology calculations and Appendix "E" for proposed condition hydrology map.

Detention

While the project site drains to an existing Master Plan storm drain system, peak flow mitigation for the site is required since there are downstream areas without adequate storm drain facilities. Riverside County Planning comments state "storms to be studied will include the 1-hour, 3-hour, 6-hour and 24-hour duration events for the 2-year, 5-year, and 10-year return frequencies. Detention basin and outlet sizing will ensure that none of these storm events has a higher peak discharge in the post-development condition than in the pre-development condition."

Hydrographs for the above described events were established for both existing (pre-developed) and proposed (commercial) development conditions. Hydrograph parameters are as follows:

- For the 2-year and 5-year events, the loss rate will be determined using an AMC I condition. For the 10-year event, AMC II was used.
- Undeveloped condition Low Loss=90%
- Basin site Low Loss=10%
- Rainfall values from the Riverside County Hydrology Manual

The following table summarizes pre- and post-development peak flow rates for the specified events:

Event	Pre-Development Peak Flow Rate	Post-Development Peak Flow Rate
2-Year 1-Hour	5.9 cfs	10.4 cfs
2-Year 3-Hour	2.1 cfs	6.1 cfs
2-Year 6-Hour	2.1 cfs	6.1 cfs
2-Year 24-Hour	0.3 cfs	2.3 cfs
5-Year 1-Hour	9.3 cfs	14.4 cfs
5-Year 3-Hour	4.3 cfs	8.2 cfs
5-Year 6-Hour	4.3 cfs	8.2 cfs
5-Year 24-Hour	0.4 cfs	3.2 cfs
10-Year 1-Hour	13.9 cfs	17.9 cfs
10-Year 3-Hour	7.8 cfs	10.3 cfs
10-Year 6-Hour	7.9 cfs	10.3 cfs
10-Year 24-Hour	2.1 cfs	3.9 cfs

To determine an approximate storage volume to limit runoff, basin routing was performed for the above storm events. Underground storage chambers are used for water quality purposes as well as the “basin” analysis. The required water quality volume is the lower portion of the chamber system which includes the rock base below the chambers. The required water quality volume is approximately 17,745 cubic feet. This volume occurs as a depth of about 2.25’ in the underground chamber system. The volume above the water quality volume (approximately 68,475 cubic feet) is available for peak flow storage.

The remaining storage will act as a detention basin with a controlled outlet (C.M.P. pipe with holes). Various depths of flow in the chambers yielded respective storage volumes. The incremental volumes used were provided from a Stormtech spreadsheet that accounts for chamber and rock volume in 1” increments. Discharge flows are based on the orifice equation with holes strategically placed at various elevations in the riser. The riser can be placed in a manhole or vault structure to be determined with precise grading and final

storm drain design. This establishes a depth, volume and outflow at various elevations of the storage used in the basin routing calculations.

The following table summarizes the basin routing for the specified storm events:

Event	Pre-Development Peak Flow Rate	Basin Discharge Peak Flow Rate	Difference
2-Year 1-Hour	5.9 cfs	0.0 cfs	-5.9 cfs
2-Year 3-Hour	2.1 cfs	0.1 cfs	-2.0 cfs
2-Year 6-Hour	2.1 cfs	0.2 cfs	-1.9 cfs
2-Year 24-Hour	0.3 cfs	0.3 cfs	0.0 cfs
5-Year 1-Hour	9.3 cfs	0.0 cfs	-9.3 cfs
5-Year 3-Hour	4.3 cfs	0.2 cfs	-4.1 cfs
5-Year 6-Hour	4.3 cfs	0.3 cfs	-4.0 cfs
5-Year 24-Hour	0.4 cfs	0.4 cfs	0.0 cfs
10-Year 1-Hour	13.9 cfs	0.1 cfs	-13.8 cfs
10-Year 3-Hour	7.8 cfs	0.2 cfs	-7.6 cfs
10-Year 6-Hour	7.9 cfs	0.3 cfs	-7.6 cfs
10-Year 24-Hour	2.1 cfs	0.7 cfs	-1.4 cfs

The table shows that in the 2-year 24-hour and 5-year 24-hour storm events the existing condition peak flow rate is matched. For all other storm durations, the peak flow discharge is significantly reduced from the existing condition peak flow rates.

By oversizing the underground storage above the required water quality treatment volume, the remaining storage can adequately contain enough volume to reduce post-development runoff to pre-development conditions for all storm events.

See Appendix "C" for hydrograph and basin routing calculations.

Hydraulics

Hydraulic calculations are provided for the proposed public storm drain systems. Peak flow rates for the Perry Street extension of the Master Plan Storm drain are taken from the Master Plan of Drainage, 145 cfs at Seaton Avenue and Perry Street and 180 cfs downstream in Perry Street. Conservatively, the hydraulic model includes the entire 180 cfs in the Master Plan storm drain downstream of the project site (the 180 cfs appears to include areas tributary to the intersection of Seaton Avenue and Harvill Avenue).

The hydraulic model for the proposed storm drain in Seaton Avenue uses the 100-year peak flow rates from the updated offsite drainage hydrology (73.7 cfs).

Note that the hydraulic calculations are based on a preliminary storm drain plans for the Master Plan storm drain systems and may change with final design. Hydraulic calculations for the onsite storm drain systems will be provided with final grading and storm drain plans.

See Appendix "D" for hydraulic calculations.

Methodology

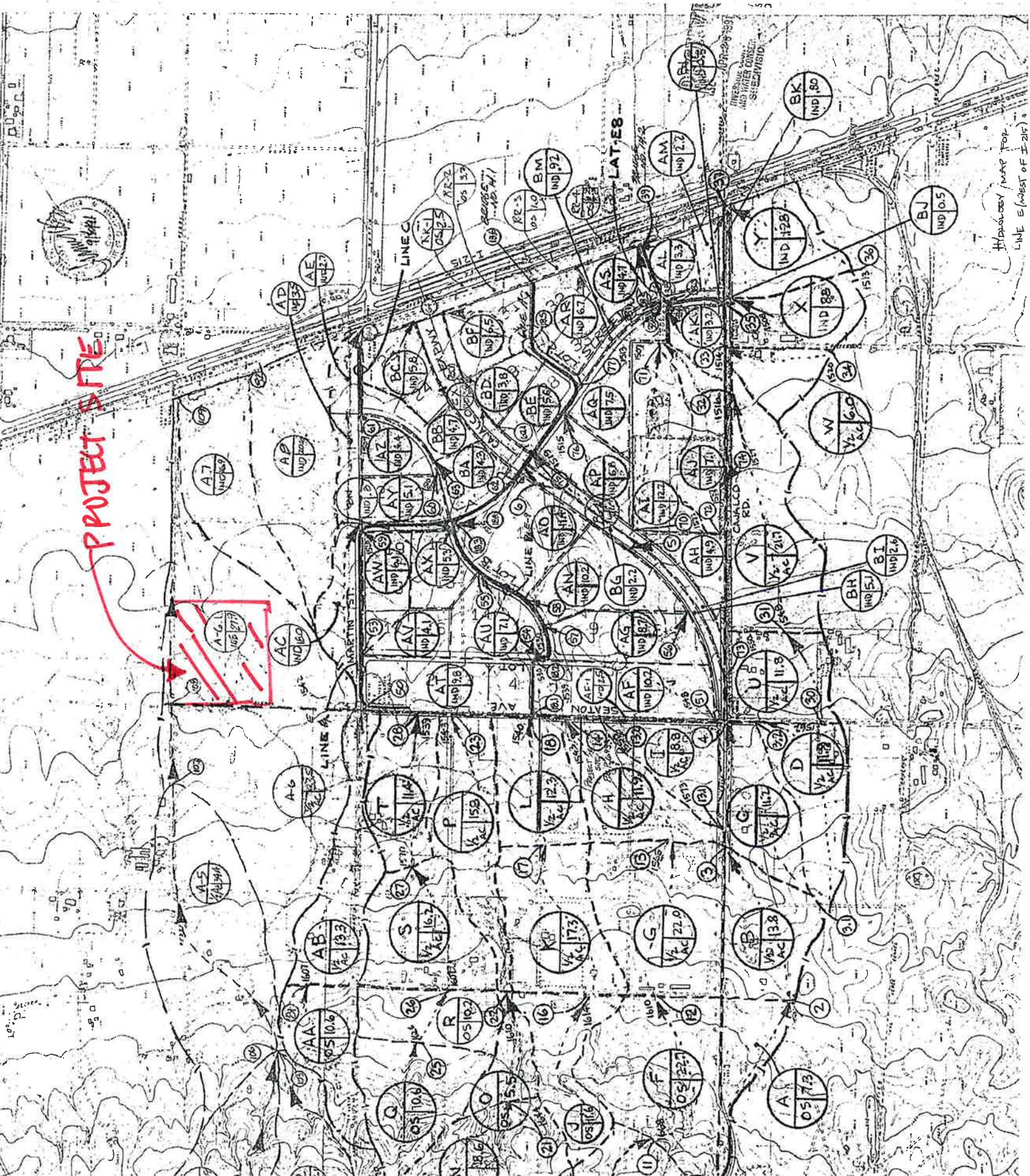
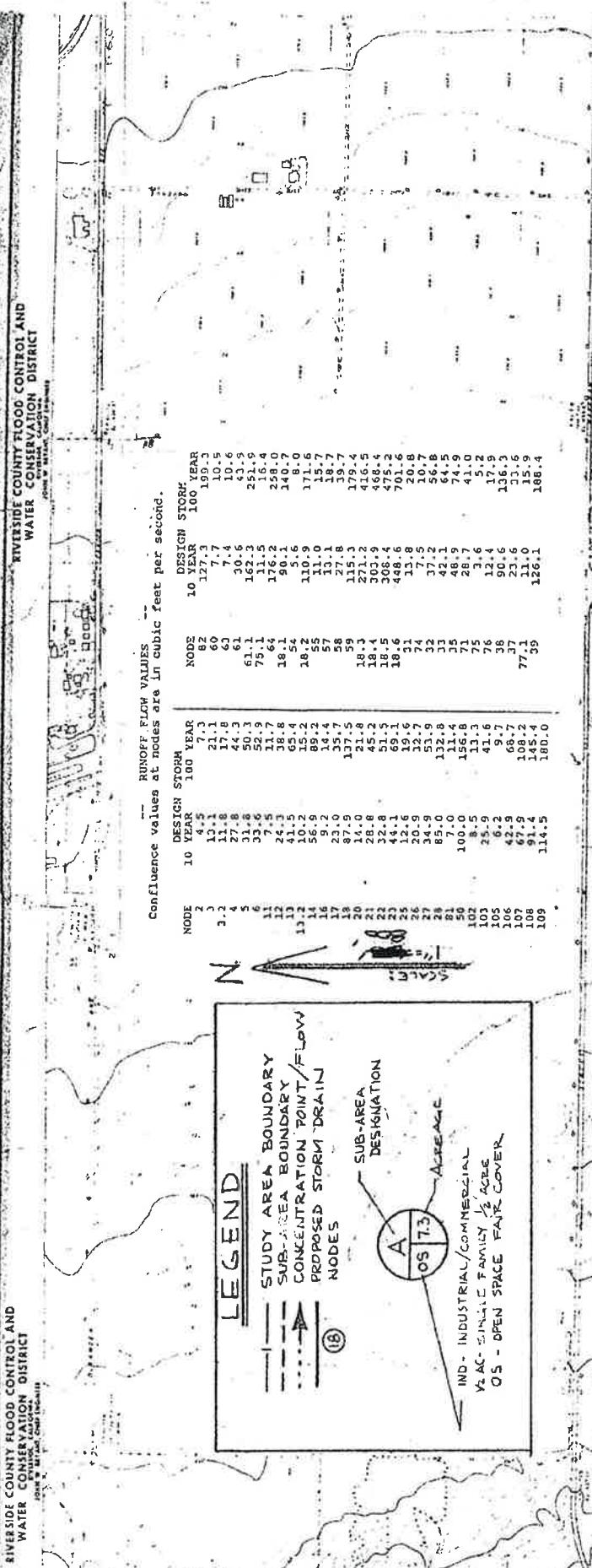
Hydrology calculations were computed using Riverside County's Rational Method Program (by AES Software). The soil types are "B" and "BC" and "C", per the Riverside County Hydrology Manual (see Appendix "A"). For conservative results, soil type "C" was used in Rational Method and hydrograph calculations. Hydrographs and basin routing were computed using CivilD Software. WSPG was used for the hydraulic calculations.

APPENDIX	DESCRIPTION
A	REFERENCE MATERIALS
B	HYDROLOGY CALCULATIONS
C	DETENTION CALCULATIONS
D	HYDRAULIC CALCULATIONS
E	HYDROLOGY MAPS

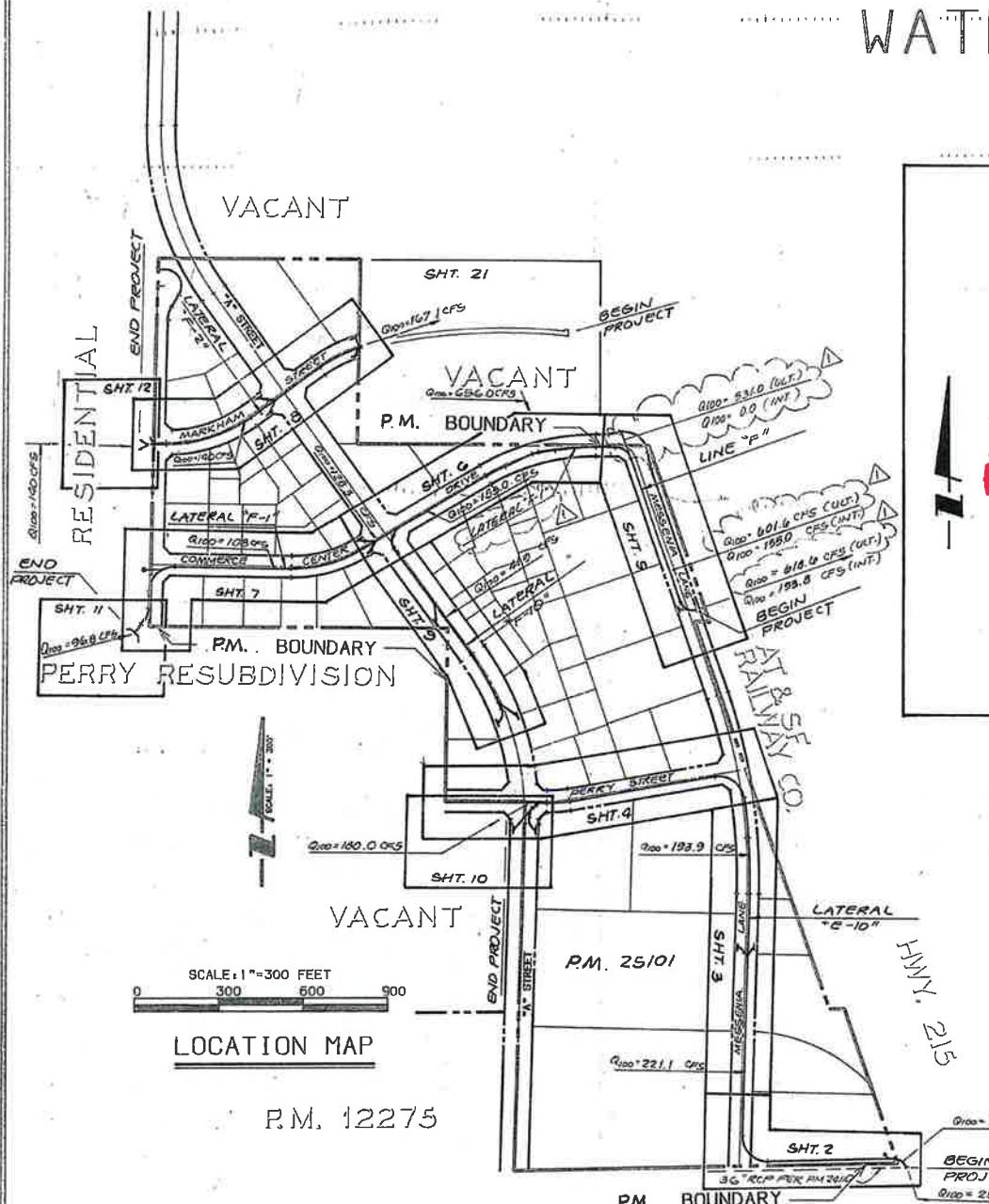
APPENDIX A

REFERENCE MATERIALS

8870829
Oakland S.O. Hydrology



RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT



THE KEITH COMPANIES
Inland Empire
2020 River Crest Drive, Ste K, Riverside, CA 92507 (714) 603-0234

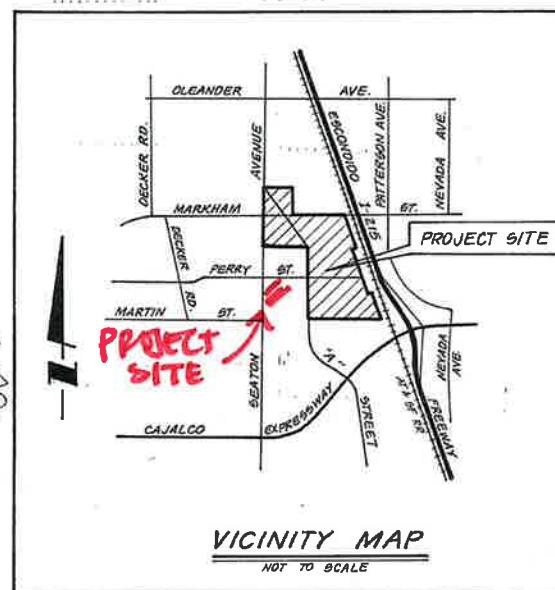
Planting
Civil
Engineering
Architects
Landscape
Architecture
Land
Development
Construction
Management

PLAN PREPARED UNDER SUPERVISION OF:
CEAZAR V. AGUILAR
REGISTERED CIVIL ENGINEER NO. 041679
DATE: 9/16/92
REGISTRATION EXPIRES 3/31/93

BENCH MARK
RIVERSIDE COUNTY B.M. 600-40-50
0.3 MILES SE ALONG I-215 FROM
MARSHALL RD & I-215. 32° 56' E
OF C.R. THE ROUND LANE OF
I-215, 7.0' NW OF VAL VERDE SIGN
20.0' NE OF THE ELY RAIL OF
AT 6 DEG RR TRACK. AN ALUMINUM
PLATE SET IN CONCRETE.
ELEVATION 1605.079

REVISIONS
REV. F6 F-1 AS SHOWN
REV. 5X15' RCB TO 6X14' RCB AND
REV. 5X9' RCB TO 5X10' RCB
RECOMMENDED FOR APPROVAL BY: APPROVED BY:
Frank J. Lewis, PE, C.E. Paul J. Lopez, PE
PLANNING ENGINEER APPROVED BY:
RECD. CHIEF ENGINEER DATE:
6/19/92
REF. DESCRIPTION APPR. DATE
DATE: 6/19/92
FOR TRANSPORTATION DEPT.
RIVERSIDE COUNTY, CALIF. DATE:

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
County of Riverside
PM 25101 CFD 88-8
PERRIS VALLEY ADP
STORM DRAIN IMPROVEMENT PLANS
TITLE SHEET
PROJECT NO.
4-0-492
DRAWING NO.
4 - 638
SHEET NO.
1 OF 24



GENERAL NOTES

- THE CONTRACTOR SHALL CONSTRUCT THE FLOOD CONTROL IMPROVEMENTS SHOWN ON THE DRAWINGS IN CONFORMANCE WITH THE REQUIREMENTS OF THE RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT'S SPECIAL PROVISIONS AND DETAILED SPECIFICATIONS DATED SEPTEMBER 1984 AND DESIGN MANUAL STANDARD DRAWINGS MAY, 1971.
- ALL CONSTRUCTION TO BE IN CONFORMANCE WITH THE REGULATION OF CAL-OSHA.
- CONSTRUCTION INSPECTION WILL BE PERFORMED BY RIVERSIDE COUNTY FLOOD CONTROL. CONTACT LEONARD DUNN AT (714) 275-1288. THE DISTRICT MUST BE NOTIFIED TWO WEEKS PRIOR TO CONSTRUCTION.
- ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE NOTED.
- STATIONING FOR LATERTALS AND CONNECTOR PIPES REFER TO THE CENTERLINE-CENTERLINE INTERSECTION.
- FOORTY-EIGHT HOURS BEFORE EXCAVATION, CALL UNDERGROUND SERVICE ALERT 1-800-422-4133.
- ALL ELEVATIONS ARE IN FEET AND DECIMALS THEREOF BASED ON U.S.C. AND G.S. DATUM.
- ALL CROSS-SECTIONS ARE TAKEN LOOKING DOWNSTREAM.
- ELEVATIONS OF UTILITIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
- NOTICE TO CONTRACTOR: THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT FOR THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT SHOWN ON THESE PLANS OR NOT RECORDED.
- OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES TO BE ABANDONED SHALL BE SEALED WITH 6" OF CLASS "B" CONCRETE.
- BEDDING PIPE WITH LESS THAN TWO FEET OF COVER SHALL CONFORM TO LOS ANGELES COUNTY FLOOD CONTROL DISTRICT STANDARD DRAWINGS 2-D213.3 AND 2-D177 FOR CONCRETE BACKFILL IN TRENCHES. ALL OTHER PIPE SHALL CONFORM TO RCFC & WCD STD. DWG. M816.
- "V" IS THE DEPTH OF INLET OF CATCH BASINS MEASURED FROM THE TOP OF CURB TO INVERT OF CONNECTOR PIPE.
- CATCH BASINS SHALL BE LOCATED SO THAT THE LOCAL DEPRESSION SHALL BEGIN AT EXISTING CURB RETURN JOINT, UNLESS OTHERWISE SPECIFIED.
- ALL CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED IN KIND AND AT THE SAME ELEVATION AND LOCATION AS THE EXISTING CURB RETURN JOINT, UNLESS OTHERWISE SPECIFIED.
- THE CONCRETE COVER ON THE INSIDE OF ALL REINFORCED CONCRETE PIPE MUST BE INCREASED TO PROVIDE A MINIMUM OF 1-1/2" OVER THE REINFORCING. WHEN THE DESIGN VELOCITIES EXCEED 20 FEET PER SECOND, THE CONCRETE DESIGN STRENGTH IN THESE REACHES SHALL BE $f_c = 4,000$ PSI FOR VELOCITIES EXCEEDING 20 FEET PER SECOND.
- FILTER BLANKET MATERIAL SHALL BE 12" THICK AND WELL GRADED WITHIN THE LIMITS SPECIFIED BELOW:

STONE SIZE (IN.)	% SMALLER (BY WEIGHT)
12	100
8	75-100
6	60-80
4	40-60
2	5-25
1	0-10

- THE FOLLOWING ITEMS ARE TO BE INSPECTED AND MAINTAINED BY RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT:
5-9" RCB FROM STA. 1-065.57 TO STA. 13-14.47 AS SHOWN ON SHEETS 2 AND 3
6-14" RCB FROM STA. 10-50.23 TO STA. 17-69.15 AS SHOWN ON SHEET 5
5-10" RCB FROM STA. 7-4-54 TO STA. 16-83.97 AS SHOWN ON SHEET 9 AND 4
6-6" RCP FROM STA. 13-14.48 TO STA. 30-00.08 AS SHOWN ON SHEETS 9 AND 4
6-6" RCP FROM STA. 1-00.00 TO STA. 2-07.00 AS SHOWN ON SHEET 14
60" RCP FROM STA. 10-00.00 TO STA. 13-66.67 AS SHOWN ON SHEET 8
48" RCP FROM STA. 16-83.97 TO STA. 27-1-02 AS SHOWN ON SHEETS 6 AND 7
48" RCP FROM STA. 16-66.68 TO STA. 16-51.05 AS SHOWN ON SHEET 8
OFFSITE INLETS/OUTLETS AS SHOWN ON SHEET 10, 15, 12 AND 21.
48" RCP FROM STA. 14-5-20 TO STA. 8-1-0.39 AS SHOWN ON SHEET 9
36" RCP FROM STA. 8-4-96.59 TO STA. 9-1-0.39 AS SHOWN ON SHEET 9
36" RCP FROM STA. 14-5-20 TO STA. 8-1-0.39 AS SHOWN ON SHEET 9

(10) - FILTER FABRIC SHALL BE MIRAFI 700 OR APPROVED EQUIVALENT.

AS BUILT
APPROVED BY: C.C.
DATE: 6-17-92

PM 25101 CFD 88-8
PERRIS VALLEY ADP
STORM DRAIN IMPROVEMENT PLANS
TITLE SHEET
PROJECT NO.
4-0-492
DRAWING NO.
4 - 638
SHEET NO.
1 OF 24

INDEX

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STRUCTURAL DETAIL SHEET	SHEET 19-20, 23-24
OUTLET DETAIL SHEET	SHEET 21 - 22

R.C.F.C.D. STANDARD DRAWINGS

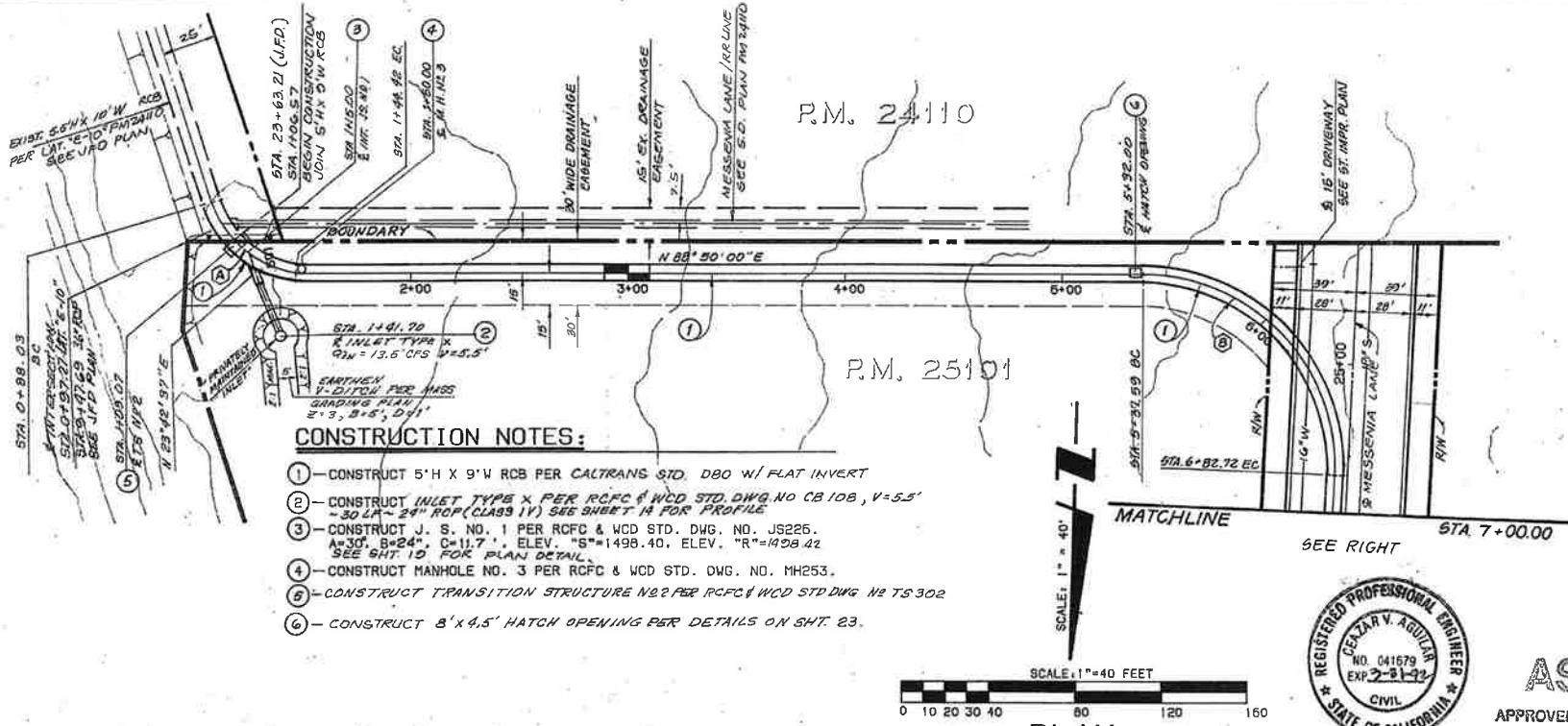
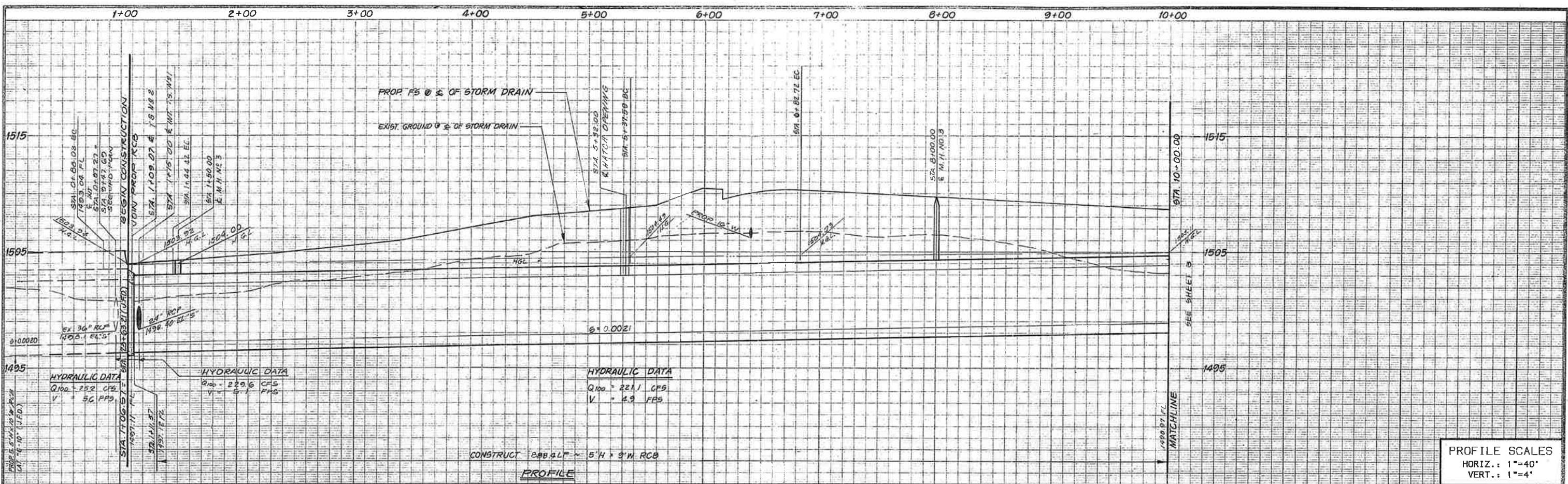
CB 100	CATCH BASIN NO. 1
LO 201	LOCAL DEPRESSION NO. 2
US 226	JUNCTION STRUCTURE NO. 1
US 227	JUNCTION STRUCTURE NO. 2
US 229	JUNCTION STRUCTURE NO. 4
MH 262	MANHOLE NO. 2
MH 253	MANHOLE NO. 3
MH 254	MANHOLE NO. 4
TS 303	TRANSITION STRUCTURE NO. 3
M 801	CHAIN LINK FENCE DETAILS
M 820	PIPE SWING GATE
M 816	CONCRETE BULKHEAD
TS 301	TRANSITION STRUCTURE NO. 1
M 803	CONCRETE COLLAR
CB 108	INLET TYPE Z
TS 302	TRANSITION STRUCTURE NO. 2

L.A.C.F.C.D. STANDARD DRAWING

ZDTRI TRASH RACK (INCLINED) FOR STORM DRAINS

CALTRANS STANDARD DRAWING

080	SINGLE BOX CULVERT
084	BOX CULVERT WINGWALLS TYPE "A", "B" & "C"
080	PIPE HEADWALLS AND STRUT DETAILS
A74-A	MARKERS AND DELINEATOR
090	PIPE CULVERT HEADWALL TYPE "A", "B" & "C"



AS BUILT

APPROVED BY: C.A.

PLAN

**THE
KEITH
COMPANIES**
Inland Empire

5050 River Crest Drive, Ste K, Riverside, CA 92507 (714) 863-0834

PLAN PREPARED UNDER SUPERVISION OF

CEAZAR V. AGUILAR WAG
REGISTERED CIVIL ENGINEER NO. 04162

DATE: 3/16/92 REGISTRATION EXPIRED 3/31

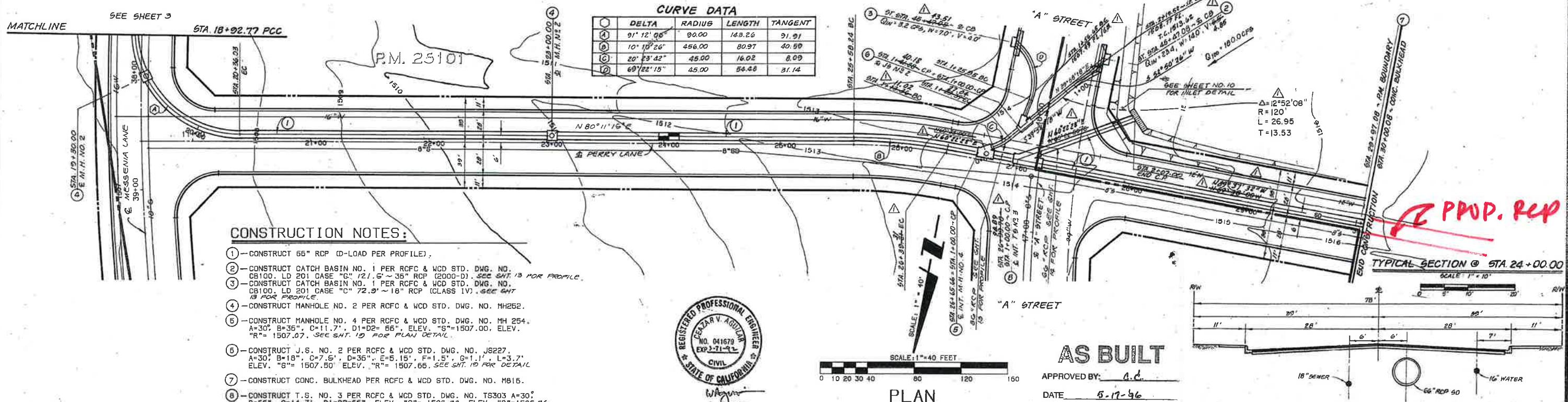
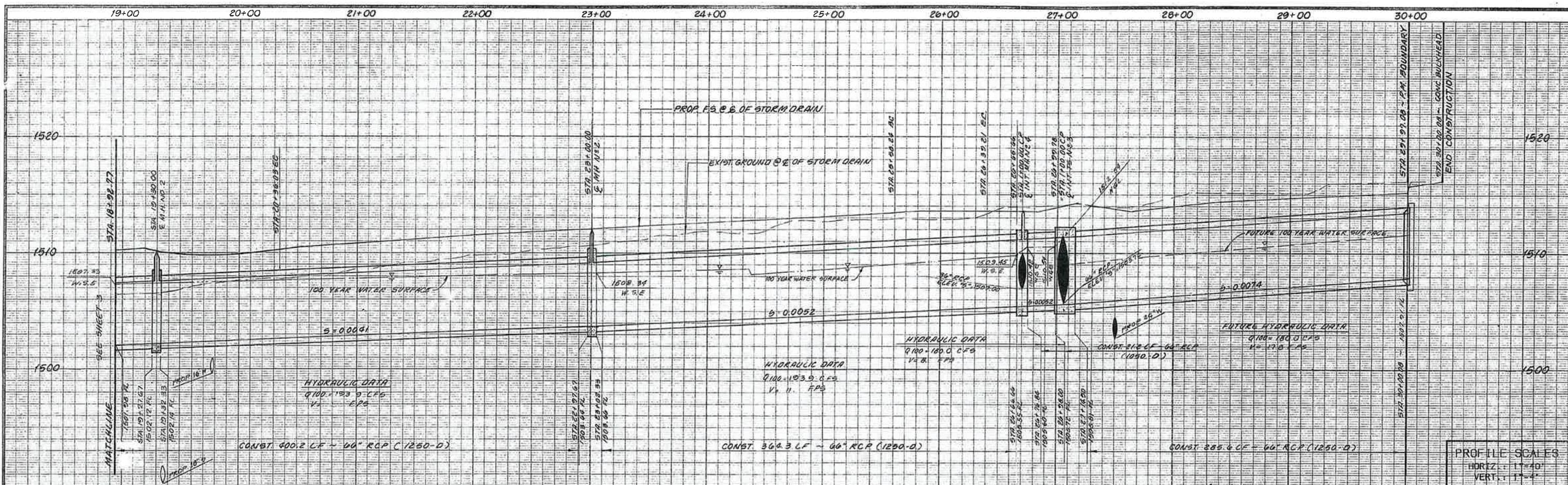
BENCH MARK
RIVERSIDE COUNTY B.M. 600-40-60
0.3 MILES BE ALONG I-215 FROM
MARCHAN ST. & I-215. 32°5' SW
OF EP OF THE BE BOUND LANE OF
I-215. 7.0' NW OF VAL VERDE SIGN
20.0' E OF THE ELY RAIL OF
AT & SF RR TRACK. AN ALUMINUM
DISK SET IN CONCRETE.
ELEVATION 1505.079

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

County of Riverside	
APPROVED BY:	<i>Don F. Baumgarten</i>
FOR TRANSPORTATION DEPT.	
RIVERSIDE COUNTY, CALIF.	
DATE: 3/20/14	

PM 25101 CFD 88-8
PERRIS VALLEY ADP
STORM DRAIN IMPROVEMENT PLANS
LATERAL "E-10"
STA. 1+00.57 TO STA 10+00.00

PROJECT NO.
4-0-492
DRAWING NO.
4 - 638
SHEET NO.
2 OF 24



AS BUILT

APPROVED BY: C.C.

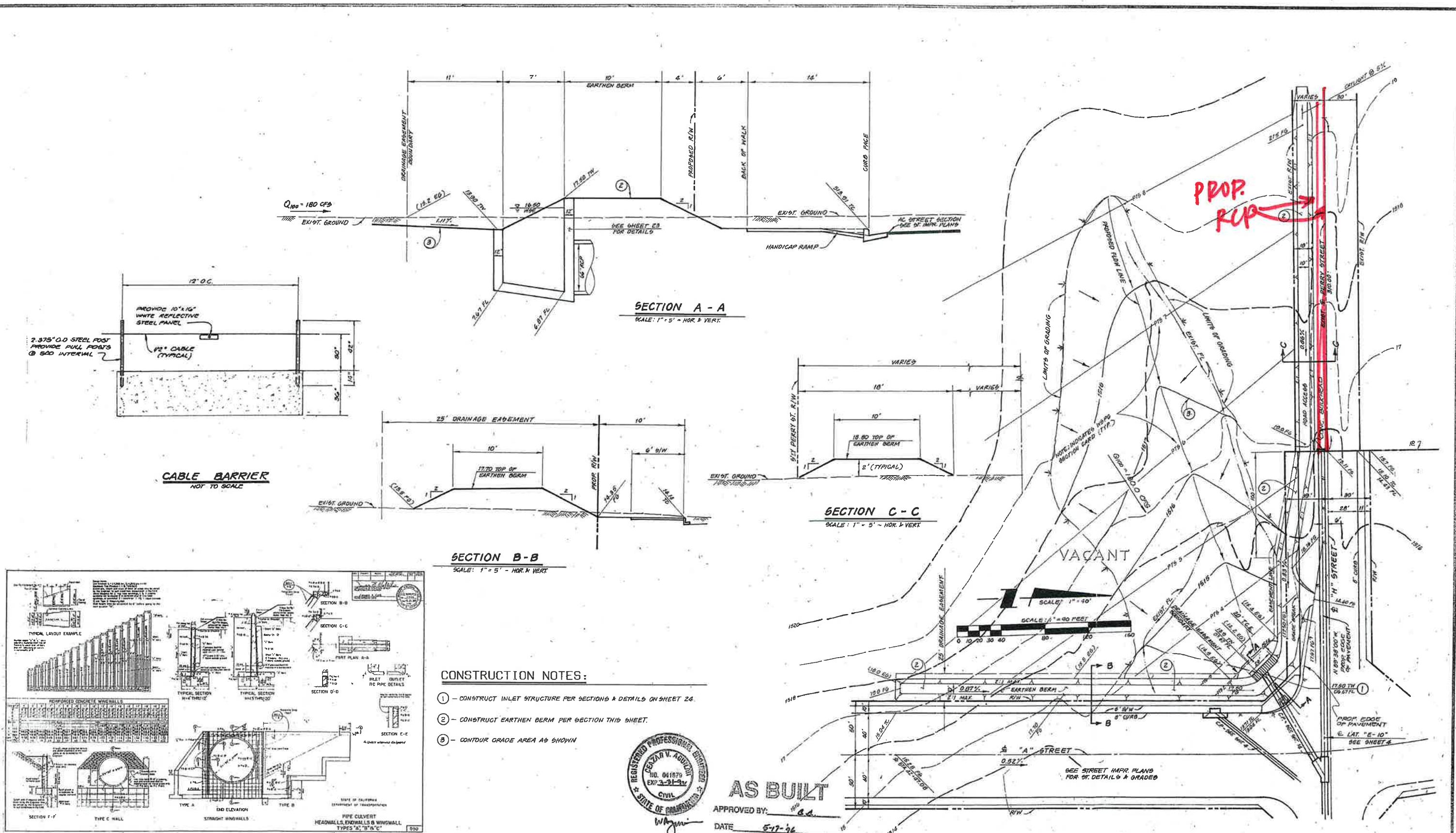
DATE 5-17-96

**RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT**

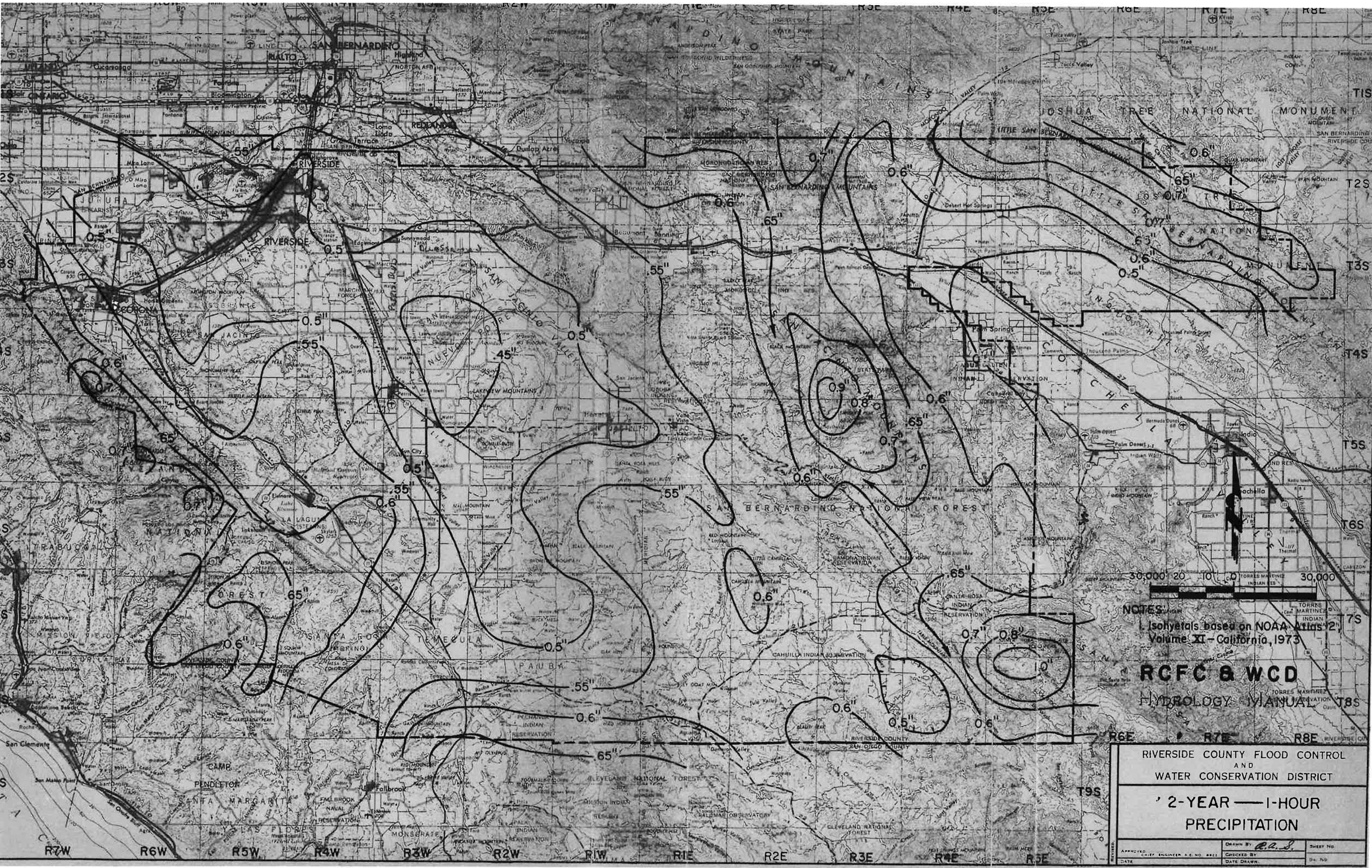
County of Riverside	
APPROVED BY <i>John B. Baumgarte</i>	STO
FOR TRANSPORTATION DEPT. RIVERSIDE COUNTY, CALIF.	DATE: 3/20/92

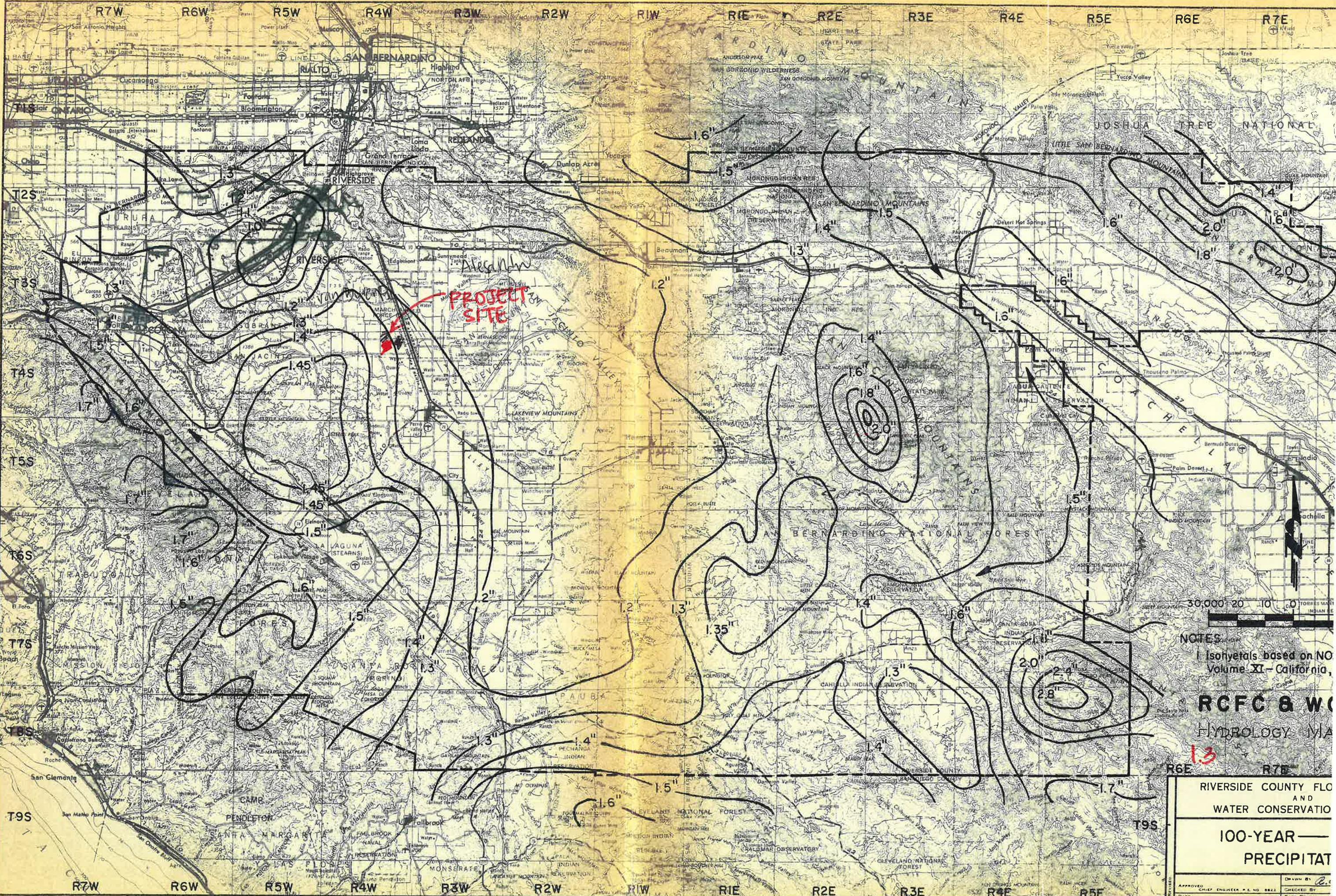
PM 25101 CFD 88-8
PERRIS VALLEY ADP
 CRM DRAIN IMPROVEMENT PLANS
 LATERAL "E-10"
 STA. 18+92.77 TO STA. 30+00.08

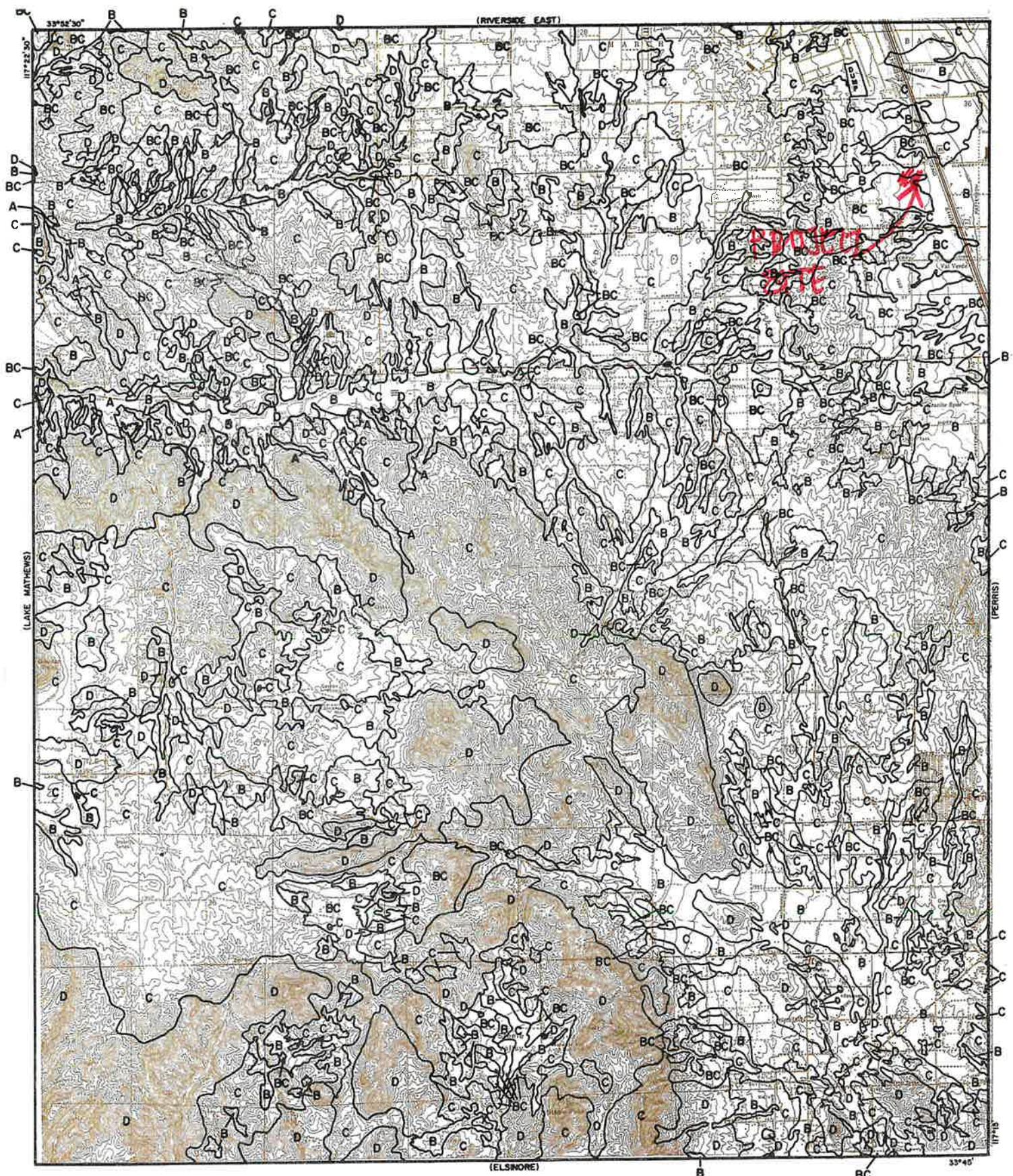
PROJECT NO.	4-0-492
DRAWING NO.	4 - 638
SHEET NO.	4 OF 24



THE KEITH COMPANIES Inland Empire 596 River Crest Drive, Ste K, Riverside, CA 92503 C141883-0234	PLAN PREPARED UNDER SUPERVISION OF: CEAZAR V. AGUILAR <i>[Signature]</i> REGISTERED CIVIL ENGINEER NO. 041879 DATE: 3/14/92 REGISTRATION OF SHEET 3/31/92	BENCH MARK RIVERSIDE COUNTY S.M. 600-40-80 0-0-0 ALONG I-215, 32.5' S/W OF EP OF THE SE BOUND LANE OF I-215, 7.0' N/W OF VAL VERDE SIGN 20.0' S/W OF THE ELY RAIL OF I-215, 8' S/W OF THE ELY RAIL OF I-215 SET IN CONCRETE. ELEVATION 1505.079	REVISIONS REF. DESCRIPTION APPR DATE 6/6/92	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT RECOMMENDED FOR APPROVAL BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> FIREL M. PLATZ PLANNING ENGINEER MST CHIEF ENGINEER E. L. ZEPPELIN APPROVED BY: <i>[Signature]</i> APPROVED BY: <i>[Signature]</i> FOR TRANSPORTATION DEPT. RIVERSIDE COUNTY, CALIF. DATE: 3/29/92
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LEGEND

— SOILS GROUP BOUNDARY
A SOILS GROUP DESIGNATION

RCFC & WCD

HYDROLOGY MANUAL



0 FEET 5000

**HYDROLOGIC SOILS GROUP MAP
FOR
STEELE PEAK**

THIS HYDROLOGY FROM PM 2410 (GARWOOD INDUSTRIAL PARK) J.F. DAVIDSON
SEE HYDROLOGY MAP IN LINE E BACKUP

STUDY NAME: 10829 MACKTRHY100.DAT CIRRIVERSIDE COUNTY

100.0 YEAR STORM 1-HOUR RAINFALL (inch)= 1.12; INTENSITY SLOPE = .489

CONCENTRATION!SOIL!DEV. I (c) 1982-1988 ADVANCED ENGINEERING SOFTWARE

POINT NUMBER!TYPE!TYPEI (ACRES) !in/h! (SUB) ! TOTAL ft/ft! Q !SLOPE!SECTION! V !PATH! T ! TC ! HYDRAULICS
! ft. ! min. ! min. ! AND NOTES

102.00	C	9	10.0	1.93	.687	13.3			1.0592		980	19.6	19.6	INITIAL SUBAREA!
103.00	C	8	25.1	1.70	.665	28.3			13.3	.0528	B=	0.0	5.1	1855
103.00			35.1	1.70			41.6							25.7
105.00	C	9	6.7	2.07	.698	9.7			1000			900	17.1	17.1
106.00	C	8	15.9	1.89	.683	20.5			9.7	.0618	B=	0.0	5.2	1100
106.00			68.7	1.0345	B=									20.6
CONFLUENCE ANALYSIS FOR POINT# 106.00	TC#1= 25.7 TC#2= 20.6 TC#3= 0.0 TC#4= 0.0 TC#5= 0.0 Q#1= 41.6 Q#2= 30.2 Q#3= 0.0 Q#4= 0.0 Q#5= 0.0 I#1= 1.70 I#2= 1.89 I#3= 0.00 I#4= 0.00 I#5= 0.00 Q1 = 68.7 Q2 = 63.6 Q3 = 0.0 Q4 = 0.0 Q5 = 0.0													LARGEST CONFLUENCE Q= 68.7
107.00	C	6	34.4	1.53	.748	39.5			108.2	.0133	B=	0.0	5.2	600
108.00	C	6	33.5	1.49	.745	37.2			145.4	.0193	B=	0.0	6.8	1350
109.00	C	1	27.9	1.42	.873	34.7								33.5
82.00	C	1	16.9	1.31	.872	19.3			180.0	.0047	B=	80.0	3.6	1500
61.10	C	1	20.6	1.25	.871	22.4			199.3	.0034	B=	80.0	3.5	890

*DEVELOPMENT TYPES: 1=COM, 2=APT, 3=COND, 5=MH, 4=UNDEV, 6=SF (1/4-AC), 6=SF (1/2-AC)
* 7=SF (1-AC), 8=UNDEV (FAIR COV), 9=UNDEV (GOOD COV) SOIL TYPE: USER-SPECIFIED
* RUNOFF COEFFICIENT *

MACK 100

26

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APPENDIX B

HYDROLOGY CALCULATIONS

OFFSITE HYDROLOGY

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
 RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
 (RCFC&WCD) 1978 HYDROLOGY MANUAL
 (c) Copyright 1982-2016 Advanced Engineering Software (aes)
 (Rational Tabling Version 23.0)
 Release Date: 07/01/2016 License ID 1435

Analysis prepared by:

THIENES ENGINEERING, INC.
 14349 FIRESTONE BLVD
 LA MIRADA, CA 90638
 714-521-4811

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

* TEI 2712 *
 * OFFSITE RUN-ON WEST OF PROJECT *
 * 100-YEAR EVENT *

FILE NAME: W:\2712\200X.DAT
 TIME/DATE OF STUDY: 07:42 01/17/2020

 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

USER SPECIFIED STORM EVENT(YEAR) = 100.00
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 12.00
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
 2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500
 100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.300
 COMPUTED RAINFALL INTENSITY DATA:
 STORM EVENT = 100.00 1-HOUR INTENSITY(INCH/HOUR) = 1.300
 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
 HALF- CROWN TO STREET-CROSSFALL: CURB GUTTER-GEOMETRIES: MANNING
 WIDTH CROSSFALL IN- / OUT-/PARK- HEIGHT WIDTH LIP HIKE FACTOR
 NO. (FT) (FT) SIDE / SIDE/ WAY (FT) (FT) (FT) (n)
 === ===== ===== ===== ===== ===== ===== =====
 1 30.0 20.0 0.018/0.018/0.020 0.67 2.00 0.0312 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 200.00 TO NODE 201.00 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) = 1000.00
 UPSTREAM ELEVATION(FEET) = 1620.00
 DOWNSTREAM ELEVATION(FEET) = 1575.00
 ELEVATION DIFFERENCE(FEET) = 45.00
 $TC = 0.393*[(1000.00^{**3})/(45.00)]^{**.2} = 11.569$
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.961
 SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8243

200X.RES

SOIL CLASSIFICATION IS "C"
SUBAREA RUNOFF(CFS) = 10.86
TOTAL AREA(ACRES) = 4.45 TOTAL RUNOFF(CFS) = 10.86

FLOW PROCESS FROM NODE 201.00 TO NODE 202.00 IS CODE = 52

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

=====
ELEVATION DATA: UPSTREAM(FEET) = 1575.00 DOWNSTREAM(FEET) = 1555.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 400.00 CHANNEL SLOPE = 0.0500
CHANNEL FLOW THRU SUBAREA(CFS) = 10.86
FLOW VELOCITY(FEET/SEC) = 5.71 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.17 Tc(MIN.) = 12.74
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 202.00 = 1400.00 FEET.

FLOW PROCESS FROM NODE 201.00 TO NODE 202.00 IS CODE = 81

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

=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.821
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8212
SOIL CLASSIFICATION IS "C"
SUBAREA AREA(ACRES) = 6.35 SUBAREA RUNOFF(CFS) = 14.71
TOTAL AREA(ACRES) = 10.8 TOTAL RUNOFF(CFS) = 25.57
TC(MIN.) = 12.74

FLOW PROCESS FROM NODE 202.00 TO NODE 203.00 IS CODE = 52

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

=====
ELEVATION DATA: UPSTREAM(FEET) = 1555.00 DOWNSTREAM(FEET) = 1550.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 400.00 CHANNEL SLOPE = 0.0125
CHANNEL FLOW THRU SUBAREA(CFS) = 25.57
FLOW VELOCITY(FEET/SEC) = 3.58 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.86 Tc(MIN.) = 14.60
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 203.00 = 1800.00 FEET.

FLOW PROCESS FROM NODE 202.00 TO NODE 203.00 IS CODE = 81

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

=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.636
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8167
SOIL CLASSIFICATION IS "C"
SUBAREA AREA(ACRES) = 8.20 SUBAREA RUNOFF(CFS) = 17.65
TOTAL AREA(ACRES) = 19.0 TOTAL RUNOFF(CFS) = 43.22
TC(MIN.) = 14.60

FLOW PROCESS FROM NODE 203.00 TO NODE 204.00 IS CODE = 52

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

=====
ELEVATION DATA: UPSTREAM(FEET) = 1550.00 DOWNSTREAM(FEET) = 1545.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 500.00 CHANNEL SLOPE = 0.0100
CHANNEL FLOW THRU SUBAREA(CFS) = 43.22
FLOW VELOCITY(FEET/SEC) = 3.71 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.24 Tc(MIN.) = 16.84
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 204.00 = 2300.00 FEET.

200X.RES

FLOW PROCESS FROM NODE 203.00 TO NODE 204.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.454
SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .8117
SOIL CLASSIFICATION IS "C"
SUBAREA AREA(ACRES) = 15.30 SUBAREA RUNOFF(CFS) = 30.47
TOTAL AREA(ACRES) = 34.3 TOTAL RUNOFF(CFS) = 73.69
TC(MIN.) = 16.84
=====
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 34.3 TC(MIN.) = 16.84
PEAK FLOW RATE(CFS) = 73.69
=====
END OF RATIONAL METHOD ANALYSIS

210X.RES

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
(RCFC&WCD) 1978 HYDROLOGY MANUAL
(c) Copyright 1982-2016 Advanced Engineering Software (aes)
(Rational Tabbing Version 23.0)
Release Date: 07/01/2016 License ID 1435

Analysis prepared by:

THIENES ENGINEERING, INC.
14349 FIRESTONE BLVD
LA MIRADA, CA 90638
714-521-4811

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

* TEI 2712 *
* OFFSITE RUN-ON FROM SOUTHERLY LOT *
* 100-YEAR EVENT *

FILE NAME: W:\2712\210X.DAT
TIME/DATE OF STUDY: 15:41 01/16/2020

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

USER SPECIFIED STORM EVENT(YEAR) = 100.00
SPECIFIED MINIMUM PIPE SIZE(INCH) = 12.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.300

COMPUTED RAINFALL INTENSITY DATA:

STORM EVENT = 100.00 1-HOUR INTENSITY(INCH/HOUR) = 1.300
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 (FT)	WIDTH CROSSFALL (FT)	IN- / OUT-/PARK- SIDE / SIDE/ WAY	HEIGHT (FT)	WIDTH LIP (FT)	HIKE FACTOR (FT)	(n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0312	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 210.00 TO NODE 211.00 IS CODE = 21

>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<

=====
ASSUMED INITIAL SUBAREA UNIFORM
DEVELOPMENT IS COMMERCIAL
TC = K*((LENGTH**3)/(ELEVATION CHANGE))**.2
INITIAL SUBAREA FLOW-LENGTH(FEET) = 860.00
UPSTREAM ELEVATION(FEET) = 1538.00
DOWNSTREAM ELEVATION(FEET) = 1532.60
ELEVATION DIFFERENCE(FEET) = 5.40
TC = 0.303*((860.00**3)/(5.40))**.2 = 12.468
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.852
COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8844

210X.RES

SOIL CLASSIFICATION IS "C"
SUBAREA RUNOFF(CFS) = 14.50
TOTAL AREA(ACRES) = 5.75 TOTAL RUNOFF(CFS) = 14.50

FLOW PROCESS FROM NODE 211.00 TO NODE 211.00 IS CODE = 81

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

=====>
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.852
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7438
SOIL CLASSIFICATION IS "C"
SUBAREA AREA(ACRES) = 1.15 SUBAREA RUNOFF(CFS) = 2.44
TOTAL AREA(ACRES) = 6.9 TOTAL RUNOFF(CFS) = 16.94
TC(MIN.) = 12.47

=====>
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 6.9 TC(MIN.) = 12.47
PEAK FLOW RATE(CFS) = 16.94

=====>
END OF RATIONAL METHOD ANALYSIS

^

EXISTING CONDITION HYDROLOGY

100X.RES

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
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(Rational Tabling Version 23.0)
Release Date: 07/01/2016 License ID 1435

Analysis prepared by:

THIENES ENGINEERING, INC.
14349 FIRESTONE BLVD
LA MIRADA, CA 90638
714-521-4811

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

* TEI 2712 *
* EXISTING CONDITION *
* 100-YEAR EVENT *

FILE NAME: W:\2712\100X.DAT
TIME/DATE OF STUDY: 11:09 09/03/2019

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

USER SPECIFIED STORM EVENT(YEAR) = 100.00
SPECIFIED MINIMUM PIPE SIZE(INCH) = 12.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.300

COMPUTED RAINFALL INTENSITY DATA:

STORM EVENT = 100.00 1-HOUR INTENSITY(INCH/HOUR) = 1.300
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 (FT)	WIDTH CROSSFALL (IN- / OUT-/PARK- SIDE / SIDE/ WAY)	HEIGHT (FT)	WIDTH LIP (FT)	HIKE FACTOR (FT)	FACTOR (n)
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 100.00 TO NODE 101.00 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) = 775.00
UPSTREAM ELEVATION(FEET) = 1533.00
DOWNSTREAM ELEVATION(FEET) = 1519.00
ELEVATION DIFFERENCE(FEET) = 14.00
TC = 0.533*[(775.00**3)/(14.00)]**.2 = 17.012
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.441
UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7227

100X.RES

SOIL CLASSIFICATION IS "C"
SUBAREA RUNOFF(CFS) = 16.14

TOTAL AREA(ACRES) = 9.15 TOTAL RUNOFF(CFS) = 16.14

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 9.1 TC(MIN.) = 17.01
PEAK FLOW RATE(CFS) = 16.14

=====

=====

END OF RATIONAL METHOD ANALYSIS

↑

PROPOSED CONDITION HYDROLOGY

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
(RCFC&WCD) 1978 HYDROLOGY MANUAL
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(Rational Tabling Version 23.0)
Release Date: 07/01/2016 License ID 1435

Analysis prepared by:

THIENES ENGINEERING INC.
14349 FIRESTONE BLVD
LA MIRADA, CA90638
714-521-4811

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

* TEI JOB NO 2712 *
* 100 YEAR STORM EVENT *
* PROPOSED CONDITION *

FILE NAME: W:\2712\100P.DAT
TIME/DATE OF STUDY: 09:57 01/19/2020

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

USER SPECIFIED STORM EVENT(YEAR) = 100.00
SPECIFIED MINIMUM PIPE SIZE(INCH) = 12.00
SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
2-YEAR, 1-HOUR PRECIPITATION(INCH) = 0.500
100-YEAR, 1-HOUR PRECIPITATION(INCH) = 1.300

COMPUTED RAINFALL INTENSITY DATA:

STORM EVENT = 100.00 1-HOUR INTENSITY(INCH/HOUR) = 1.300
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 FACTO
	WIDTH	CROSSFALL	IN- / OUT-/PARK-	HEIGHT	WIDTH	
1	(FT)	(FT)	SIDE / SIDE / WAY	(FT)	(FT)	(n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00	0.0312 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 100.00 TO NODE 101.00 IS CODE = 21

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

ASSUMED INITIAL SUBAREA UNIFORM
DEVELOPMENT IS COMMERCIAL
TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
INITIAL SUBAREA FLOW-LENGTH(FEET) = 750.00
UPSTREAM ELEVATION(FEET) = 1531.50
DOWNSTREAM ELEVATION(FEET) = 1523.89
ELEVATION DIFFERENCE(FEET) = 7.61
TC = 0.303*[(750.00**3)/(- 7.61)]**.2 = 10.724
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.075
COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8853
SOIL CLASSIFICATION IS "C"
SUBAREA RUNOFF(CFS) = 7.76
TOTAL AREA(ACRES) = 2.85 TOTAL RUNOFF(CFS) = 7.76

```
*****
FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  31
-----
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1519.00 DOWNSTREAM(FEET) = 1517.61
FLOW LENGTH(FEET) = 139.00 MANNING'S N = 0.012
DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.79
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.76
PIPE TRAVEL TIME(MIN.) = 0.34 Tc(MIN.) = 11.06
LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 = 889.00 FEET.

*****
FLOW PROCESS FROM NODE    102.00 TO NODE    102.00 IS CODE =  81
-----
>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.027
COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8851
SOIL CLASSIFICATION IS "C"
SUBAREA AREA(ACRES) = 3.05 SUBAREA RUNOFF(CFS) = 8.17
TOTAL AREA(ACRES) = 5.9 TOTAL RUNOFF(CFS) = 15.93
TC(MIN.) = 11.06

*****
FLOW PROCESS FROM NODE    102.00 TO NODE    204.00 IS CODE =  31
-----
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1517.56 DOWNSTREAM(FEET) = 1513.50
FLOW LENGTH(FEET) = 90.00 MANNING'S N = 0.012
DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 14.33
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 15.93
PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 11.17
LONGEST FLOWPATH FROM NODE    100.00 TO NODE    204.00 = 979.00 FEET.

*****
FLOW PROCESS FROM NODE    204.00 TO NODE    204.00 IS CODE =  1
-----
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.17
RAINFALL INTENSITY(INCH/HR) = 3.01
TOTAL STREAM AREA(ACRES) = 5.90
PEAK FLOW RATE(CFS) AT CONFLUENCE = 15.93

*****
FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
-----
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<
=====
ASSUMED INITIAL SUBAREA UNIFORM
DEVELOPMENT IS COMMERCIAL
TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
INITIAL SUBAREA FLOW-LENGTH(FEET) = 170.00
UPSTREAM ELEVATION(FEET) = 1531.50
DOWNSTREAM ELEVATION(FEET) = 1530.07
ELEVATION DIFFERENCE(FEET) = 1.43
TC = 0.303*[( 170.00**3)/( 1.43)]**.2 = 6.149
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.061
COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8884
SOIL CLASSIFICATION IS "C"
SUBAREA RUNOFF(CFS) = 4.51
```

TOTAL AREA(ACRES) = 1.25 TOTAL RUNOFF(CFS) = 4.51

FLOW PROCESS FROM NODE 201.00 TO NODE 202.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1524.58 DOWNSTREAM(FEET) = 1523.37
FLOW LENGTH(FEET) = 242.00 MANNING'S N = 0.012
DEPTH OF FLOW IN 15.0 INCH PIPE IS 11.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.47
ESTIMATED PIPE DIAMETER(INCH) = 15.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 4.51
PIPE TRAVEL TIME(MIN.) = 0.90 Tc(MIN.) = 7.05
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 202.00 = 412.00 FEET.

FLOW PROCESS FROM NODE 202.00 TO NODE 202.00 IS CODE = 81

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

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.792
COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8877
SOIL CLASSIFICATION IS "C"
SUBAREA AREA(ACRES) = 1.30 SUBAREA RUNOFF(CFS) = 4.38
TOTAL AREA(ACRES) = 2.5 TOTAL RUNOFF(CFS) = 8.89
TC(MIN.) = 7.05

FLOW PROCESS FROM NODE 202.00 TO NODE 203.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1523.37 DOWNSTREAM(FEET) = 1520.76
FLOW LENGTH(FEET) = 522.00 MANNING'S N = 0.012
DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.40
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.89
PIPE TRAVEL TIME(MIN.) = 1.61 Tc(MIN.) = 8.66
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 203.00 = 934.00 FEET.

FLOW PROCESS FROM NODE 203.00 TO NODE 203.00 IS CODE = 81

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

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.422
COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8866
SOIL CLASSIFICATION IS "C"
SUBAREA AREA(ACRES) = 0.60 SUBAREA RUNOFF(CFS) = 1.82
TOTAL AREA(ACRES) = 3.2 TOTAL RUNOFF(CFS) = 10.71
TC(MIN.) = 8.66

FLOW PROCESS FROM NODE 203.00 TO NODE 204.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1520.74 DOWNSTREAM(FEET) = 1513.10
FLOW LENGTH(FEET) = 242.00 MANNING'S N = 0.012
DEPTH OF FLOW IN 15.0 INCH PIPE IS 11.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.15
ESTIMATED PIPE DIAMETER(INCH) = 15.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 10.71
PIPE TRAVEL TIME(MIN.) = 0.36 Tc(MIN.) = 9.02
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 204.00 = 1176.00 FEET.

```
*****
FLOW PROCESS FROM NODE 204.00 TO NODE 204.00 IS CODE = 1
=====
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.02
RAINFALL INTENSITY(INCH/HR) = 3.35
TOTAL STREAM AREA(ACRES) = 3.15
PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.71

** CONFLUENCE DATA **
STREAM      RUNOFF      Tc      INTENSITY      AREA
NUMBER     (CFS)       (MIN.)   (INCH/HOUR)    (ACRE)
1          15.93       11.17    3.013        5.90
2          10.71       9.02     3.352        3.15
*****
*****WARNING*****
IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
*****
RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **
STREAM      RUNOFF      Tc      INTENSITY
NUMBER     (CFS)       (MIN.)   (INCH/HOUR)
1          23.58       9.02     3.352
2          25.55       11.17    3.013

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 25.55 Tc(MIN.) = 11.17
TOTAL AREA(ACRES) = 9.0
LONGEST FLOWPATH FROM NODE 200.00 TO NODE 204.00 = 1176.00 FEET.
=====
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 9.0 TC(MIN.) = 11.17
PEAK FLOW RATE(CFS) = 25.55
=====
END OF RATIONAL METHOD ANALYSIS
```

APPENDIX C

DETENTION CALCULATION

EXISTING CONDITION HYDROGRAPHS

Unit Hydrograph Analysis
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Study date 09/03/19 File: 2712EX212.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
2-YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

1 HOUR

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	0.50	4.58

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	1.30	11.90

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.500(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.500(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
77.0	59.4	0.476	0.000	0.476	1.000	0.476
Sum (F) =						0.476

Area averaged mean soil loss (F) (In/Hr) = 0.476
Minimum soil loss rate ((In/Hr)) = 0.238
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	149.774	3.054
2	0.167	299.549	4.337
3	0.250	449.323	1.032
4	0.333	599.098	0.451
5	0.417	748.872	0.228
6	0.500	898.646	0.119

Sum = 100.000 Sum= 9.221

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	4.20	0.252	(0.476)	0.227	0.025
2	0.17	4.30	0.258	(0.476)	0.232	0.026
3	0.25	5.00	0.300	(0.476)	0.270	0.030
4	0.33	5.00	0.300	(0.476)	0.270	0.030
5	0.42	5.80	0.348	(0.476)	0.313	0.035
6	0.50	6.50	0.390	(0.476)	0.351	0.039
7	0.58	7.40	0.444	(0.476)	0.400	0.044
8	0.67	8.60	0.516	(0.476)	0.464	0.052
9	0.75	12.30	0.738	0.476	(0.664)	0.262
10	0.83	29.10	1.746	0.476	(1.571)	1.270
11	0.92	6.80	0.408	(0.476)	0.367	0.041
12	1.00	5.00	0.300	(0.476)	0.270	0.030

(Loss Rate Not Used)

Sum = 100.0 Sum = 1.9

$$\text{Flood volume} = \text{Effective rainfall} \quad 0.16 \text{ (In)}$$

times area 9.2 (Ac.) / [(In)

Total soil loss = 0.34 (In)

Total rainfall = 0.50 (In)

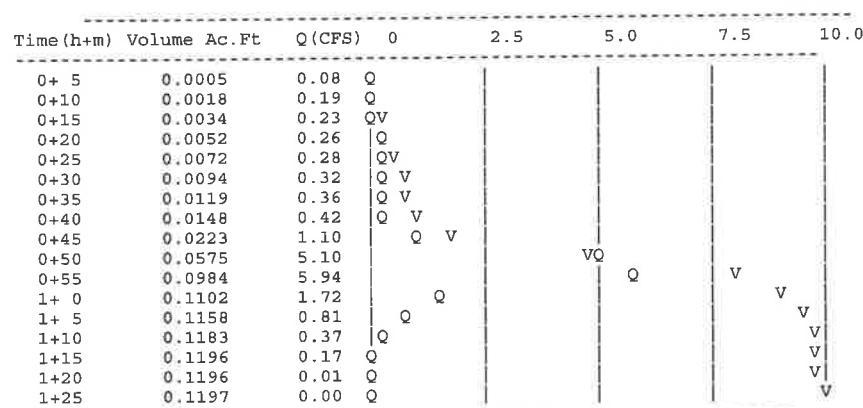
Flood volume = 5212.3 Cubic Feet

Flood volume = 5212.3 cubic feet
Total soil loss = 11393.6 Cubic Feet

Peak flow rate of this hydrograph = 5.942 (CFS)

1 - H O U R S T O R M

Document 7 - What is the result of ((CBA))



Unit Hydrograph Analysis

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Study date 09/03/19 File: 2712EX232.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
2-YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

3 HOUR

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	0.80	7.32

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	2.00	18.30

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.800(In)
Area Averaged 100-Year Rainfall = 2.000(In)

Point rain (area averaged) = 0.800(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.800(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
77.0	59.4	0.476	0.000	0.476	1.000	0.476
						Sum (F) = 0.476

Area averaged mean soil loss (F) (In/Hr) = 0.476
Minimum soil loss rate ((In/Hr)) = 0.238
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	149.774	33.120	3.054
2 0.167	299.549	47.027	4.337
3 0.250	449.323	11.195	1.032
4 0.333	599.098	4.890	0.451
5 0.417	748.872	2.473	0.228
6 0.500	898.646	1.295	0.119
Sum = 100.000		Sum=	9.221

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) Max | Low	Effective (In/Hr)
1	0.08	1.30	0.125	(0.476) | 0.476	0.112 | 0.012
2	0.17	1.30	0.125	(0.476) | 0.476	0.112 | 0.012
3	0.25	1.10	0.106	(0.476) | 0.476	0.095 | 0.011
4	0.33	1.50	0.144	(0.476) | 0.476	0.130 | 0.014
5	0.42	1.50	0.144	(0.476) | 0.476	0.130 | 0.014
6	0.50	1.80	0.173	(0.476) | 0.476	0.156 | 0.017
7	0.58	1.50	0.144	(0.476) | 0.476	0.130 | 0.014
8	0.67	1.80	0.173	(0.476) | 0.476	0.156 | 0.017
9	0.75	1.80	0.173	(0.476) | 0.476	0.156 | 0.017
10	0.83	1.50	0.144	(0.476) | 0.476	0.130 | 0.014
11	0.92	1.60	0.154	(0.476) | 0.476	0.138 | 0.015
12	1.00	1.80	0.173	(0.476) | 0.476	0.156 | 0.017
13	1.08	2.20	0.211	(0.476) | 0.476	0.190 | 0.021
14	1.17	2.20	0.211	(0.476) | 0.476	0.190 | 0.021
15	1.25	2.20	0.211	(0.476) | 0.476	0.190 | 0.021
16	1.33	2.00	0.192	(0.476) | 0.476	0.173 | 0.019
17	1.42	2.60	0.250	(0.476) | 0.476	0.225 | 0.025
18	1.50	2.70	0.259	(0.476) | 0.476	0.233 | 0.026
19	1.58	2.40	0.230	(0.476) | 0.476	0.207 | 0.023
20	1.67	2.70	0.259	(0.476) | 0.476	0.233 | 0.026
21	1.75	3.30	0.317	(0.476) | 0.476	0.285 | 0.032
22	1.83	3.10	0.298	(0.476) | 0.476	0.268 | 0.030
23	1.92	2.90	0.278	(0.476) | 0.476	0.251 | 0.028
24	2.00	3.00	0.288	(0.476) | 0.476	0.259 | 0.029
25	2.08	3.10	0.298	(0.476) | 0.476	0.268 | 0.030
26	2.17	4.20	0.403	(0.476) | 0.476	0.363 | 0.040
27	2.25	5.00	0.480	(0.476) | 0.476	0.432 | 0.048
28	2.33	3.50	0.336	(0.476) | 0.476	0.302 | 0.034
29	2.42	6.80	0.653	0.476 | ( 0.587)	0.177 | 0.177
30	2.50	7.30	0.701	0.476 | ( 0.631)	0.225 | 0.225
31	2.58	8.20	0.787	0.476 | ( 0.708)	0.311 | 0.311
32	2.67	5.90	0.566	0.476 | ( 0.510)	0.090 | 0.090
33	2.75	2.00	0.192	(0.476) | 0.476	0.173 | 0.019
34	2.83	1.80	0.173	(0.476) | 0.476	0.156 | 0.017
35	2.92	1.80	0.173	(0.476) | 0.476	0.156 | 0.017
36	3.00	0.60	0.058	(0.476) | 0.476	0.052 | 0.006

(Loss Rate Not Used)

Sum = 100.0 Sum = 1.5

Flood volume = Effective rainfall 0.12 (In)
times area 9.2 (Ac.)/[(In)/(Ft.)] = 0.1 (Ac.Ft)

Total soil loss = 0.68 (In)

Total soil loss = 0.515 (Ac.Ft)

Total rainfall = 0.80 (In)

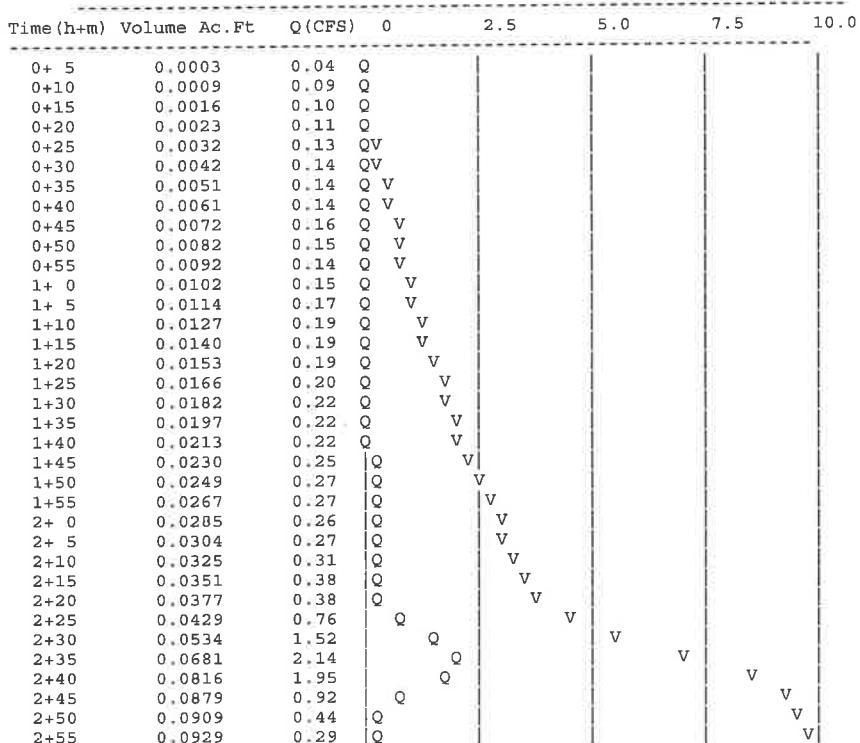
Flood volume = 4129.3 Cubic Feet

Total soil loss = 22441.2 Cubic Feet

Peak flow rate of this hydrograph = 2.139 (CFS)

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

Hydrograph in 5 Minute intervals ((CFS))



3+ 0	0.0941	0.18	Q				V
3+ 5	0.0946	0.07	Q				V
3+10	0.0947	0.02	Q				V
3+15	0.0948	0.01	Q				V
3+20	0.0948	0.00	Q				V
3+25	0.0948	0.00	Q				V

Unit Hydrograph Analysis
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Study date 09/03/19 File: 2712EX262.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
2-YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

6 HOUR

2 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 1.20 10.98

100 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 2.00 18.30

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.200 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 1.200 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.200 (In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-1 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
77.0 59.4 0.476 0.000 0.476 1.000 0.476
Sum (F) = 0.476

Area averaged mean soil loss (F) (In/Hr) = 0.476
Minimum soil loss rate ((In/Hr)) = 0.238
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag Graph %	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	149.774	33.120	3.054
2 0.167	299.549	47.027	4.337
3 0.250	449.323	11.195	1.032
4 0.333	599.098	4.890	0.451
5 0.417	748.872	2.473	0.228
6 0.500	898.646	1.295	0.119
	Sum = 100.000	Sum=	9.221

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 (In/Hr)	Loss rate (In./Hr)		Effective (In/Hr)
				Max	Low	
1	0.08	0.50	0.072	(0.476)	0.065	0.007
2	0.17	0.60	0.086	(0.476)	0.078	0.009
3	0.25	0.60	0.086	(0.476)	0.078	0.009
4	0.33	0.60	0.086	(0.476)	0.078	0.009
5	0.42	0.60	0.086	(0.476)	0.078	0.009
6	0.50	0.70	0.101	(0.476)	0.091	0.010
7	0.58	0.70	0.101	(0.476)	0.091	0.010
8	0.67	0.70	0.101	(0.476)	0.091	0.010
9	0.75	0.70	0.101	(0.476)	0.091	0.010
10	0.83	0.70	0.101	(0.476)	0.091	0.010
11	0.92	0.70	0.101	(0.476)	0.091	0.010
12	1.00	0.80	0.115	(0.476)	0.104	0.012
13	1.08	0.80	0.115	(0.476)	0.104	0.012
14	1.17	0.80	0.115	(0.476)	0.104	0.012
15	1.25	0.80	0.115	(0.476)	0.104	0.012
16	1.33	0.80	0.115	(0.476)	0.104	0.012
17	1.42	0.80	0.115	(0.476)	0.104	0.012
18	1.50	0.80	0.115	(0.476)	0.104	0.012
19	1.58	0.80	0.115	(0.476)	0.104	0.012
20	1.67	0.80	0.115	(0.476)	0.104	0.012
21	1.75	0.80	0.115	(0.476)	0.104	0.012
22	1.83	0.80	0.115	(0.476)	0.104	0.012
23	1.92	0.80	0.115	(0.476)	0.104	0.012
24	2.00	0.90	0.130	(0.476)	0.117	0.013
25	2.08	0.80	0.115	(0.476)	0.104	0.012
26	2.17	0.90	0.130	(0.476)	0.117	0.013
27	2.25	0.90	0.130	(0.476)	0.117	0.013
28	2.33	0.90	0.130	(0.476)	0.117	0.013
29	2.42	0.90	0.130	(0.476)	0.117	0.013
30	2.50	0.90	0.130	(0.476)	0.117	0.013
31	2.58	0.90	0.130	(0.476)	0.117	0.013
32	2.67	0.90	0.130	(0.476)	0.117	0.013
33	2.75	1.00	0.144	(0.476)	0.130	0.014
34	2.83	1.00	0.144	(0.476)	0.130	0.014
35	2.92	1.00	0.144	(0.476)	0.130	0.014
36	3.00	1.00	0.144	(0.476)	0.130	0.014
37	3.08	1.00	0.144	(0.476)	0.130	0.014
38	3.17	1.10	0.158	(0.476)	0.143	0.016
39	3.25	1.10	0.158	(0.476)	0.143	0.016
40	3.33	1.10	0.158	(0.476)	0.143	0.016
41	3.42	1.20	0.173	(0.476)	0.156	0.017
42	3.50	1.30	0.187	(0.476)	0.168	0.019
43	3.58	1.40	0.202	(0.476)	0.181	0.020
44	3.67	1.40	0.202	(0.476)	0.181	0.020
45	3.75	1.50	0.216	(0.476)	0.194	0.022
46	3.83	1.50	0.216	(0.476)	0.194	0.022
47	3.92	1.60	0.230	(0.476)	0.207	0.023
48	4.00	1.60	0.230	(0.476)	0.207	0.023
49	4.08	1.70	0.245	(0.476)	0.220	0.024
50	4.17	1.80	0.259	(0.476)	0.233	0.026
51	4.25	1.90	0.274	(0.476)	0.246	0.027
52	4.33	2.00	0.288	(0.476)	0.259	0.029
53	4.42	2.10	0.302	(0.476)	0.272	0.030
54	4.50	2.10	0.302	(0.476)	0.272	0.030
55	4.58	2.20	0.317	(0.476)	0.285	0.032
56	4.67	2.30	0.331	(0.476)	0.298	0.033
57	4.75	2.40	0.346	(0.476)	0.311	0.035
58	4.83	2.40	0.346	(0.476)	0.311	0.035
59	4.92	2.50	0.360	(0.476)	0.324	0.036
60	5.00	2.60	0.374	(0.476)	0.337	0.037
61	5.08	3.10	0.446	(0.476)	0.402	0.045
62	5.17	3.60	0.518	(0.476)	0.467	0.052
63	5.25	3.90	0.562	0.476	(0.505)	0.085
64	5.33	4.20	0.605	0.476	(0.544)	0.129
65	5.42	4.70	0.677	0.476	(0.609)	0.201
66	5.50	5.60	0.806	0.476	(0.726)	0.330
67	5.58	1.90	0.274	(0.476)	0.246	0.027
68	5.67	0.90	0.130	(0.476)	0.117	0.013
69	5.75	0.60	0.086	(0.476)	0.078	0.009
70	5.83	0.50	0.072	(0.476)	0.065	0.007
71	5.92	0.30	0.043	(0.476)	0.039	0.004
72	6.00	0.20	0.029	(0.476)	0.026	0.003

0.20 0.029
(Loss Rate Not Used)

SUM = 19

Flood volume = Effective rainfall $0.16(T_p)$

SUM =

$$\text{Flood volume} = \text{Effective rainfall} \times \text{area} = 0.18 \text{ (in)} \times 9.2 \text{ (Ac.)} / [(1\text{ in}) / (1\text{ ft.}^2)] = 0.1 \text{ (Ac. ft.)}$$

Total soil loss = 1.04 (Tn)

Total soil loss = 0.793 (Ac.Ft)

Total rainfall = 1.20 (In)

Flood volume = 5314.4 Cubic Feet

Total soil loss = 34541.7 Cubic Feet

Peak flow rate of this hydrograph =

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

РУНОГРН НУАГОГРАРН

Hydrograph in 5 Minute intervals ((CFS))

Time (h:m) Volume Ac.Ft Q(CFS) 0 2.5 5.0 7.5 10.0

0+ 5	0.0002	0.02	Q					
0+10	0.0005	0.06	Q					
0+15	0.0010	0.07	Q					
0+20	0.0016	0.08	Q					
0+25	0.0021	0.08	Q					
0+30	0.0027	0.08	Q					
0+35	0.0033	0.09	QV					
0+40	0.0039	0.09	QV					
0+45	0.0046	0.09	QV					
0+50	0.0052	0.09	QV					
0+55	0.0059	0.09	QV					
1+ 0	0.0065	0.10	Q V					
1+ 5	0.0072	0.10	Q V					
1+10	0.0080	0.11	Q V					
1+15	0.0087	0.11	Q V					
1+20	0.0094	0.11	Q V					
1+25	0.0102	0.11	Q V					
1+30	0.0109	0.11	Q V					
1+35	0.0116	0.11	Q V					
1+40	0.0123	0.11	Q V					
1+45	0.0131	0.11	Q V					
1+50	0.0138	0.11	Q V					
1+55	0.0145	0.11	Q V					
2+ 0	0.0153	0.11	Q V					
2+ 5	0.0161	0.11	Q V					
2+10	0.0169	0.11	Q V					
2+15	0.0177	0.12	Q V					
2+20	0.0185	0.12	Q V					
2+25	0.0193	0.12	Q V					
2+30	0.0201	0.12	Q V					
2+35	0.0209	0.12	Q V					
2+40	0.0218	0.12	Q V					
2+45	0.0226	0.12	Q V					
2+50	0.0235	0.13	Q V					
2+55	0.0244	0.13	Q V					
3+ 0	0.0253	0.13	Q V					
3+ 5	0.0263	0.13	Q V					
3+10	0.0272	0.14	Q V					
3+15	0.0282	0.14	Q V					
3+20	0.0292	0.14	Q V					
3+25	0.0302	0.15	Q V					
3+30	0.0313	0.16	Q V					
3+35	0.0325	0.17	Q V					
3+40	0.0338	0.18	Q V					
3+45	0.0351	0.19	Q V					
3+50	0.0364	0.20	Q V					
3+55	0.0378	0.20	Q V					
4+ 0	0.0393	0.21	Q V					
4+ 5	0.0407	0.22	Q V					
4+10	0.0423	0.23	Q V					
4+15	0.0440	0.24	Q V					
4+20	0.0457	0.25	Q V					
4+25	0.0475	0.27	Q V					
4+30	0.0494	0.27	Q V					
4+35	0.0514	0.28	Q V					
4+40	0.0534	0.29	Q V					
4+45	0.0555	0.31	Q V					
4+50	0.0577	0.31	Q V					
4+55	0.0599	0.32	Q V					
5+ 0	0.0622	0.33	Q V					
5+ 5	0.0647	0.36	Q V					
5+10	0.0675	0.42	Q V					
5+15	0.0714	0.56	Q V					
5+20	0.0773	0.85	Q V					
5+25	0.0862	1.30	Q V					
5+30	0.1005	2.07	Q V					
5+35	0.1129	1.81	Q V					
5+40	0.1172	0.63	Q V					
5+45	0.1195	0.32	Q V					
5+50	0.1207	0.18	Q V					
5+55	0.1214	0.10	Q V					
6+ 0	0.1218	0.05	Q V					
6+ 5	0.1219	0.02	Q V					
6+10	0.1220	0.01	Q V					
6+15	0.1220	0.00	Q V					
6+20	0.1220	0.00	Q V					
6+25	0.1220	0.00	Q V					

Unit Hydrograph Analysis

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Study date 09/03/19 File: 2712EX2242.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
2-YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 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]
9.15	2.00	18.30

24 HOUR

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	5.50	50.33

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.500(In)

Point rain (area averaged) = 2.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
77.0	59.4	0.476	0.000	0.476	1.000	0.476
						Sum (F) = 0.476

Area averaged mean soil loss (F) (In/Hr) = 0.476
Minimum soil loss rate ((In/Hr)) = 0.238
(for 24 hour storm duration)
Soil loss rate (decimal) = 0.900

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	149.774	3.054
2	0.167	299.549	4.337
3	0.250	449.323	1.032
4	0.333	599.098	0.451
5	0.417	748.872	0.228
6	0.500	898.646	0.119
Sum = 100.000 Sum=			9.221

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) Max | Low	Effective (In/Hr)
1	0.08	0.07	0.016	(0.844) | 0.014	0.002
2	0.17	0.07	0.016	(0.841) | 0.014	0.002
3	0.25	0.07	0.016	(0.838) | 0.014	0.002
4	0.33	0.10	0.024	(0.834) | 0.022	0.002
5	0.42	0.10	0.024	(0.831) | 0.022	0.002
6	0.50	0.10	0.024	(0.828) | 0.022	0.002
7	0.58	0.10	0.024	(0.825) | 0.022	0.002
8	0.67	0.10	0.024	(0.821) | 0.022	0.002
9	0.75	0.10	0.024	(0.818) | 0.022	0.002
10	0.83	0.13	0.032	(0.815) | 0.029	0.003
11	0.92	0.13	0.032	(0.812) | 0.029	0.003
12	1.00	0.13	0.032	(0.808) | 0.029	0.003
13	1.08	0.10	0.024	(0.805) | 0.022	0.002
14	1.17	0.10	0.024	(0.802) | 0.022	0.002
15	1.25	0.10	0.024	(0.799) | 0.022	0.002
16	1.33	0.10	0.024	(0.796) | 0.022	0.002
17	1.42	0.10	0.024	(0.793) | 0.022	0.002
18	1.50	0.10	0.024	(0.789) | 0.022	0.002
19	1.58	0.10	0.024	(0.786) | 0.022	0.002
20	1.67	0.10	0.024	(0.783) | 0.022	0.002
21	1.75	0.10	0.024	(0.780) | 0.022	0.002
22	1.83	0.13	0.032	(0.777) | 0.029	0.003
23	1.92	0.13	0.032	(0.774) | 0.029	0.003
24	2.00	0.13	0.032	(0.771) | 0.029	0.003
25	2.08	0.13	0.032	(0.767) | 0.029	0.003
26	2.17	0.13	0.032	(0.764) | 0.029	0.003
27	2.25	0.13	0.032	(0.761) | 0.029	0.003
28	2.33	0.13	0.032	(0.758) | 0.029	0.003
29	2.42	0.13	0.032	(0.755) | 0.029	0.003
30	2.50	0.13	0.032	(0.752) | 0.029	0.003
31	2.58	0.17	0.040	(0.749) | 0.036	0.004
32	2.67	0.17	0.040	(0.746) | 0.036	0.004
33	2.75	0.17	0.040	(0.743) | 0.036	0.004
34	2.83	0.17	0.040	(0.740) | 0.036	0.004
35	2.92	0.17	0.040	(0.737) | 0.036	0.004
36	3.00	0.17	0.040	(0.734) | 0.036	0.004
37	3.08	0.17	0.040	(0.731) | 0.036	0.004
38	3.17	0.17	0.040	(0.728) | 0.036	0.004
39	3.25	0.17	0.040	(0.724) | 0.036	0.004
40	3.33	0.17	0.040	(0.721) | 0.036	0.004
41	3.42	0.17	0.040	(0.718) | 0.036	0.004
42	3.50	0.17	0.040	(0.715) | 0.036	0.004
43	3.58	0.17	0.040	(0.712) | 0.036	0.004
44	3.67	0.17	0.040	(0.709) | 0.036	0.004
45	3.75	0.17	0.040	(0.706) | 0.036	0.004
46	3.83	0.20	0.048	(0.704) | 0.043	0.005
47	3.92	0.20	0.048	(0.701) | 0.043	0.005
48	4.00	0.20	0.048	(0.698) | 0.043	0.005
49	4.08	0.20	0.048	(0.695) | 0.043	0.005
50	4.17	0.20	0.048	(0.692) | 0.043	0.005
51	4.25	0.20	0.048	(0.689) | 0.043	0.005
52	4.33	0.23	0.056	(0.686) | 0.050	0.006
53	4.42	0.23	0.056	(0.683) | 0.050	0.006
54	4.50	0.23	0.056	(0.680) | 0.050	0.006
55	4.58	0.23	0.056	(0.677) | 0.050	0.006
56	4.67	0.23	0.056	(0.674) | 0.050	0.006
57	4.75	0.23	0.056	(0.671) | 0.050	0.006
58	4.83	0.27	0.064	(0.668) | 0.058	0.006
59	4.92	0.27	0.064	(0.665) | 0.058	0.006
60	5.00	0.27	0.064	(0.663) | 0.058	0.006
61	5.08	0.20	0.048	(0.660) | 0.043	0.005
62	5.17	0.20	0.048	(0.657) | 0.043	0.005
63	5.25	0.20	0.048	(0.654) | 0.043	0.005
64	5.33	0.23	0.056	(0.651) | 0.050	0.006
65	5.42	0.23	0.056	(0.648) | 0.050	0.006
66	5.50	0.23	0.056	(0.645) | 0.050	0.006
67	5.58	0.27	0.064	(0.643) | 0.058	0.006
68	5.67	0.27	0.064	(0.640) | 0.058	0.006
69	5.75	0.27	0.064	(0.637) | 0.058	0.006
70	5.83	0.27	0.064	(0.634) | 0.058	0.006
71	5.92	0.27	0.064	(0.631) | 0.058	0.006
72	6.00	0.27	0.064	(0.628) | 0.058	0.006
73	6.08	0.30	0.072	(0.626) | 0.065	0.007
74	6.17	0.30	0.072	(0.623) | 0.065	0.007
75	6.25	0.30	0.072	(0.620) | 0.065	0.007
76	6.33	0.30	0.072	(0.617) | 0.065	0.007
77	6.42	0.30	0.072	(0.615) | 0.065	0.007
78	6.50	0.30	0.072	(0.612) | 0.065	0.007
79	6.58	0.33	0.080	(0.609) | 0.072	0.008
80	6.67	0.33	0.080	(0.606) | 0.072	0.008
81	6.75	0.33	0.080	(0.604) | 0.072	0.008
82	6.83	0.33	0.080	(0.601) | 0.072	0.008
83	6.92	0.33	0.080	(0.598) | 0.072	0.008
84	7.00	0.33	0.080	(0.595) | 0.072	0.008
85	7.08	0.33	0.080	(0.593) | 0.072	0.008
86	7.17	0.33	0.080	(0.590) | 0.072	0.008
87	7.25	0.33	0.080	(0.587) | 0.072	0.008
88	7.33	0.37	0.088	(0.585) | 0.079	0.009
89	7.42	0.37	0.088	(0.582) | 0.079	0.009
90	7.50	0.37	0.088	(0.579) | 0.079	0.009
91	7.58	0.40	0.096	(0.577) | 0.086	0.010
92	7.67	0.40	0.096	(0.574) | 0.086	0.010

93	7.75	0.40	0.096	(0.571)	0.086	0.010
94	7.83	0.43	0.104	(0.569)	0.094	0.010
95	7.92	0.43	0.104	(0.566)	0.094	0.010
96	8.00	0.43	0.104	(0.563)	0.094	0.010
97	8.08	0.50	0.120	(0.561)	0.108	0.012
98	8.17	0.50	0.120	(0.558)	0.108	0.012
99	8.25	0.50	0.120	(0.556)	0.108	0.012
100	8.33	0.50	0.120	(0.553)	0.108	0.012
101	8.42	0.50	0.120	(0.550)	0.108	0.012
102	8.50	0.50	0.120	(0.548)	0.108	0.012
103	8.58	0.53	0.128	(0.545)	0.115	0.013
104	8.67	0.53	0.128	(0.543)	0.115	0.013
105	8.75	0.53	0.128	(0.540)	0.115	0.013
106	8.83	0.57	0.136	(0.538)	0.122	0.014
107	8.92	0.57	0.136	(0.535)	0.122	0.014
108	9.00	0.57	0.136	(0.533)	0.122	0.014
109	9.08	0.63	0.152	(0.530)	0.137	0.015
110	9.17	0.63	0.152	(0.528)	0.137	0.015
111	9.25	0.63	0.152	(0.525)	0.137	0.015
112	9.33	0.67	0.160	(0.523)	0.144	0.016
113	9.42	0.67	0.160	(0.520)	0.144	0.016
114	9.50	0.67	0.160	(0.518)	0.144	0.016
115	9.58	0.70	0.168	(0.515)	0.151	0.017
116	9.67	0.70	0.168	(0.513)	0.151	0.017
117	9.75	0.70	0.168	(0.510)	0.151	0.017
118	9.83	0.73	0.176	(0.508)	0.158	0.018
119	9.92	0.73	0.176	(0.505)	0.158	0.018
120	10.00	0.73	0.176	(0.503)	0.158	0.018
121	10.08	0.50	0.120	(0.500)	0.108	0.012
122	10.17	0.50	0.120	(0.498)	0.108	0.012
123	10.25	0.50	0.120	(0.496)	0.108	0.012
124	10.33	0.50	0.120	(0.493)	0.108	0.012
125	10.42	0.50	0.120	(0.491)	0.108	0.012
126	10.50	0.50	0.120	(0.488)	0.108	0.012
127	10.58	0.67	0.160	(0.486)	0.144	0.016
128	10.67	0.67	0.160	(0.484)	0.144	0.016
129	10.75	0.67	0.160	(0.481)	0.144	0.016
130	10.83	0.67	0.160	(0.479)	0.144	0.016
131	10.92	0.67	0.160	(0.476)	0.144	0.016
132	11.00	0.67	0.160	(0.474)	0.144	0.016
133	11.08	0.63	0.152	(0.472)	0.137	0.015
134	11.17	0.63	0.152	(0.469)	0.137	0.015
135	11.25	0.63	0.152	(0.467)	0.137	0.015
136	11.33	0.63	0.152	(0.465)	0.137	0.015
137	11.42	0.63	0.152	(0.463)	0.137	0.015
138	11.50	0.63	0.152	(0.460)	0.137	0.015
139	11.58	0.57	0.136	(0.458)	0.122	0.014
140	11.67	0.57	0.136	(0.456)	0.122	0.014
141	11.75	0.57	0.136	(0.453)	0.122	0.014
142	11.83	0.60	0.144	(0.451)	0.130	0.014
143	11.92	0.60	0.144	(0.449)	0.130	0.014
144	12.00	0.60	0.144	(0.447)	0.130	0.014
145	12.08	0.83	0.200	(0.444)	0.180	0.020
146	12.17	0.83	0.200	(0.442)	0.180	0.020
147	12.25	0.83	0.200	(0.440)	0.180	0.020
148	12.33	0.87	0.208	(0.438)	0.187	0.021
149	12.42	0.87	0.208	(0.436)	0.187	0.021
150	12.50	0.87	0.208	(0.433)	0.187	0.021
151	12.58	0.93	0.224	(0.431)	0.202	0.022
152	12.67	0.93	0.224	(0.429)	0.202	0.022
153	12.75	0.93	0.224	(0.427)	0.202	0.022
154	12.83	0.97	0.232	(0.425)	0.209	0.023
155	12.92	0.97	0.232	(0.423)	0.209	0.023
156	13.00	0.97	0.232	(0.420)	0.209	0.023
157	13.08	1.13	0.272	(0.418)	0.245	0.027
158	13.17	1.13	0.272	(0.416)	0.245	0.027
159	13.25	1.13	0.272	(0.414)	0.245	0.027
160	13.33	1.13	0.272	(0.412)	0.245	0.027
161	13.42	1.13	0.272	(0.410)	0.245	0.027
162	13.50	1.13	0.272	(0.408)	0.245	0.027
163	13.58	0.77	0.184	(0.406)	0.166	0.018
164	13.67	0.77	0.184	(0.404)	0.166	0.018
165	13.75	0.77	0.184	(0.402)	0.166	0.018
166	13.83	0.77	0.184	(0.400)	0.166	0.018
167	13.92	0.77	0.184	(0.398)	0.166	0.018
168	14.00	0.77	0.184	(0.395)	0.166	0.018
169	14.08	0.90	0.216	(0.393)	0.194	0.022
170	14.17	0.90	0.216	(0.391)	0.194	0.022
171	14.25	0.90	0.216	(0.389)	0.194	0.022
172	14.33	0.87	0.208	(0.387)	0.187	0.021
173	14.42	0.87	0.208	(0.385)	0.187	0.021
174	14.50	0.87	0.208	(0.384)	0.187	0.021
175	14.58	0.87	0.208	(0.382)	0.187	0.021
176	14.67	0.87	0.208	(0.380)	0.187	0.021
177	14.75	0.87	0.208	(0.378)	0.187	0.021
178	14.83	0.83	0.200	(0.376)	0.180	0.020
179	14.92	0.83	0.200	(0.374)	0.180	0.020
180	15.00	0.83	0.200	(0.372)	0.180	0.020
181	15.08	0.80	0.192	(0.370)	0.173	0.019
182	15.17	0.80	0.192	(0.368)	0.173	0.019
183	15.25	0.80	0.192	(0.366)	0.173	0.019
184	15.33	0.77	0.184	(0.364)	0.166	0.018
185	15.42	0.77	0.184	(0.362)	0.166	0.018
186	15.50	0.77	0.184	(0.361)	0.166	0.018
187	15.58	0.63	0.152	(0.359)	0.137	0.015
188	15.67	0.63	0.152	(0.357)	0.137	0.015
189	15.75	0.63	0.152	(0.355)	0.137	0.015
190	15.83	0.63	0.152	(0.353)	0.137	0.015
191	15.92	0.63	0.152	(0.351)	0.137	0.015

192	16.00	0.63	0.152	(-0.350)	0.137	0.015
193	16.08	0.13	0.032	(-0.348)	0.029	0.003
194	16.17	0.13	0.032	(-0.346)	0.029	0.003
195	16.25	0.13	0.032	(-0.344)	0.029	0.003
196	16.33	0.13	0.032	(-0.343)	0.029	0.003
197	16.42	0.13	0.032	(-0.341)	0.029	0.003
198	16.50	0.13	0.032	(-0.339)	0.029	0.003
199	16.58	0.10	0.024	(-0.337)	0.022	0.002
200	16.67	0.10	0.024	(-0.336)	0.022	0.002
201	16.75	0.10	0.024	(-0.334)	0.022	0.002
202	16.83	0.10	0.024	(-0.332)	0.022	0.002
203	16.92	0.10	0.024	(-0.331)	0.022	0.002
204	17.00	0.10	0.024	(-0.329)	0.022	0.002
205	17.08	0.17	0.040	(-0.327)	0.036	0.004
206	17.17	0.17	0.040	(-0.326)	0.036	0.004
207	17.25	0.17	0.040	(-0.324)	0.036	0.004
208	17.33	0.17	0.040	(-0.322)	0.036	0.004
209	17.42	0.17	0.040	(-0.321)	0.036	0.004
210	17.50	0.17	0.040	(-0.319)	0.036	0.004
211	17.58	0.17	0.040	(-0.317)	0.036	0.004
212	17.67	0.17	0.040	(-0.316)	0.036	0.004
213	17.75	0.17	0.040	(-0.314)	0.036	0.004
214	17.83	0.13	0.032	(-0.313)	0.029	0.003
215	17.92	0.13	0.032	(-0.311)	0.029	0.003
216	18.00	0.13	0.032	(-0.310)	0.029	0.003
217	18.08	0.13	0.032	(-0.308)	0.029	0.003
218	18.17	0.13	0.032	(-0.307)	0.029	0.003
219	18.25	0.13	0.032	(-0.305)	0.029	0.003
220	18.33	0.13	0.032	(-0.304)	0.029	0.003
221	18.42	0.13	0.032	(-0.302)	0.029	0.003
222	18.50	0.13	0.032	(-0.301)	0.029	0.003
223	18.58	0.10	0.024	(-0.299)	0.022	0.002
224	18.67	0.10	0.024	(-0.298)	0.022	0.002
225	18.75	0.10	0.024	(-0.296)	0.022	0.002
226	18.83	0.07	0.016	(-0.295)	0.014	0.002
227	18.92	0.07	0.016	(-0.294)	0.014	0.002
228	19.00	0.07	0.016	(-0.292)	0.014	0.002
229	19.08	0.10	0.024	(-0.291)	0.022	0.002
230	19.17	0.10	0.024	(-0.289)	0.022	0.002
231	19.25	0.10	0.024	(-0.288)	0.022	0.002
232	19.33	0.13	0.032	(-0.287)	0.029	0.003
233	19.42	0.13	0.032	(-0.285)	0.029	0.003
234	19.50	0.13	0.032	(-0.284)	0.029	0.003
235	19.58	0.10	0.024	(-0.283)	0.022	0.002
236	19.67	0.10	0.024	(-0.281)	0.022	0.002
237	19.75	0.10	0.024	(-0.280)	0.022	0.002
238	19.83	0.07	0.016	(-0.279)	0.014	0.002
239	19.92	0.07	0.016	(-0.278)	0.014	0.002
240	20.00	0.07	0.016	(-0.276)	0.014	0.002
241	20.08	0.10	0.024	(-0.275)	0.022	0.002
242	20.17	0.10	0.024	(-0.274)	0.022	0.002
243	20.25	0.10	0.024	(-0.273)	0.022	0.002
244	20.33	0.10	0.024	(-0.272)	0.022	0.002
245	20.42	0.10	0.024	(-0.271)	0.022	0.002
246	20.50	0.10	0.024	(-0.269)	0.022	0.002
247	20.58	0.10	0.024	(-0.268)	0.022	0.002
248	20.67	0.10	0.024	(-0.267)	0.022	0.002
249	20.75	0.10	0.024	(-0.266)	0.022	0.002
250	20.83	0.07	0.016	(-0.265)	0.014	0.002
251	20.92	0.07	0.016	(-0.264)	0.014	0.002
252	21.00	0.07	0.016	(-0.263)	0.014	0.002
253	21.08	0.10	0.024	(-0.262)	0.022	0.002
254	21.17	0.10	0.024	(-0.261)	0.022	0.002
255	21.25	0.10	0.024	(-0.260)	0.022	0.002
256	21.33	0.07	0.016	(-0.259)	0.014	0.002
257	21.42	0.07	0.016	(-0.258)	0.014	0.002
258	21.50	0.07	0.016	(-0.257)	0.014	0.002
259	21.58	0.10	0.024	(-0.256)	0.022	0.002
260	21.67	0.10	0.024	(-0.255)	0.022	0.002
261	21.75	0.10	0.024	(-0.254)	0.022	0.002
262	21.83	0.07	0.016	(-0.253)	0.014	0.002
263	21.92	0.07	0.016	(-0.252)	0.014	0.002
264	22.00	0.07	0.016	(-0.251)	0.014	0.002
265	22.08	0.10	0.024	(-0.251)	0.022	0.002
266	22.17	0.10	0.024	(-0.250)	0.022	0.002
267	22.25	0.10	0.024	(-0.249)	0.022	0.002
268	22.33	0.07	0.016	(-0.248)	0.014	0.002
269	22.42	0.07	0.016	(-0.247)	0.014	0.002
270	22.50	0.07	0.016	(-0.247)	0.014	0.002
271	22.58	0.07	0.016	(-0.246)	0.014	0.002
272	22.67	0.07	0.016	(-0.245)	0.014	0.002
273	22.75	0.07	0.016	(-0.245)	0.014	0.002
274	22.83	0.07	0.016	(-0.244)	0.014	0.002
275	22.92	0.07	0.016	(-0.243)	0.014	0.002
276	23.00	0.07	0.016	(-0.243)	0.014	0.002
277	23.08	0.07	0.016	(-0.242)	0.014	0.002
278	23.17	0.07	0.016	(-0.242)	0.014	0.002
279	23.25	0.07	0.016	(-0.241)	0.014	0.002
280	23.33	0.07	0.016	(-0.241)	0.014	0.002
281	23.42	0.07	0.016	(-0.240)	0.014	0.002
282	23.50	0.07	0.016	(-0.240)	0.014	0.002
283	23.58	0.07	0.016	(-0.239)	0.014	0.002
284	23.67	0.07	0.016	(-0.239)	0.014	0.002
285	23.75	0.07	0.016	(-0.239)	0.014	0.002
286	23.83	0.07	0.016	(-0.238)	0.014	0.002
287	23.92	0.07	0.016	(-0.238)	0.014	0.002
288	24.00	0.07	0.016	(-0.238)	0.014	0.002

(Loss Rate Not Used)

Sum = 100.0

Sum = 2.4

Flood volume = Effective rainfall 0.20 (In)
 times area 9.2(Ac.)/[(In)/(Ft.)] = 0.2 (Ac.Ft)
 Total soil loss = 1.80 (In)
 Total soil loss = 1.372 (Ac.Ft)
 Total rainfall = 2.00 (In)
 Flood volume = 6642.8 Cubic Feet
 Total soil loss = 59785.0 Cubic Feet

 Peak flow rate of this hydrograph = 0.251(CFS)

+++++
 24 - H O U R S T O R M
 Run off Hydrograph

 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	0.0002	0.01	Q				
0+20	0.0003	0.02	Q				
0+25	0.0005	0.02	Q				
0+30	0.0006	0.02	Q				
0+35	0.0008	0.02	Q				
0+40	0.0009	0.02	Q				
0+45	0.0011	0.02	Q				
0+50	0.0012	0.02	Q				
0+55	0.0014	0.03	Q				
1+ 0	0.0016	0.03	Q				
1+ 5	0.0018	0.03	Q				
1+10	0.0020	0.02	Q				
1+15	0.0021	0.02	Q				
1+20	0.0023	0.02	Q				
1+25	0.0024	0.02	Q				
1+30	0.0026	0.02	Q				
1+35	0.0027	0.02	Q				
1+40	0.0029	0.02	Q				
1+45	0.0030	0.02	Q				
1+50	0.0032	0.02	Q				
1+55	0.0034	0.03	Q				
2+ 0	0.0036	0.03	Q				
2+ 5	0.0038	0.03	Q				
2+10	0.0040	0.03	QV				
2+15	0.0042	0.03	QV				
2+20	0.0044	0.03	QV				
2+25	0.0046	0.03	QV				
2+30	0.0048	0.03	QV				
2+35	0.0050	0.03	QV				
2+40	0.0053	0.04	QV				
2+45	0.0055	0.04	QV				
2+50	0.0058	0.04	QV				
2+55	0.0060	0.04	QV				
3+ 0	0.0063	0.04	QV				
3+ 5	0.0066	0.04	QV				
3+10	0.0068	0.04	QV				
3+15	0.0071	0.04	QV				
3+20	0.0073	0.04	QV				
3+25	0.0076	0.04	QV				
3+30	0.0078	0.04	Q V				
3+35	0.0081	0.04	Q V				
3+40	0.0083	0.04	Q V				
3+45	0.0086	0.04	Q V				
3+50	0.0089	0.04	Q V				
3+55	0.0092	0.04	Q V				
4+ 0	0.0095	0.04	Q V				
4+ 5	0.0098	0.04	Q V				
4+10	0.0101	0.04	Q V				
4+15	0.0104	0.04	Q V				
4+20	0.0107	0.05	Q V				
4+25	0.0110	0.05	Q V				
4+30	0.0114	0.05	Q V				
4+35	0.0117	0.05	Q V				
4+40	0.0121	0.05	Q V				
4+45	0.0125	0.05	Q V				
4+50	0.0128	0.05	Q V				
4+55	0.0132	0.06	Q V				
5+ 0	0.0136	0.06	Q V				
5+ 5	0.0140	0.05	Q V				
5+10	0.0143	0.05	Q V				
5+15	0.0146	0.05	Q V				
5+20	0.0150	0.05	Q V				
5+25	0.0153	0.05	Q V				
5+30	0.0157	0.05	Q V				
5+35	0.0160	0.05	Q V				
5+40	0.0164	0.06	Q V				
5+45	0.0168	0.06	Q V				
5+50	0.0172	0.06	Q V				
5+55	0.0176	0.06	Q V				
6+ 0	0.0180	0.06	Q V				
6+ 5	0.0185	0.06	Q V				
6+10	0.0189	0.06	Q V				
6+15	0.0194	0.07	Q V				
6+20	0.0198	0.07	Q V				
6+25	0.0203	0.07	Q V				
6+30	0.0207	0.07	Q V				
6+35	0.0212	0.07	Q V				
6+40	0.0217	0.07	Q V				

6+45	0.0222	0.07	Q	V
6+50	0.0227	0.07	Q	V
6+55	0.0232	0.07	Q	V
7+ 0	0.0237	0.07	Q	V
7+ 5	0.0242	0.07	Q	V
7+10	0.0248	0.07	Q	V
7+15	0.0253	0.07	Q	V
7+20	0.0258	0.08	Q	V
7+25	0.0263	0.08	Q	V
7+30	0.0269	0.08	Q	V
7+35	0.0275	0.08	Q	V
7+40	0.0281	0.09	Q	V
7+45	0.0287	0.09	Q	V
7+50	0.0293	0.09	Q	V
7+55	0.0299	0.09	Q	V
8+ 0	0.0306	0.10	Q	V
8+ 5	0.0313	0.10	Q	V
8+10	0.0320	0.11	Q	V
8+15	0.0328	0.11	Q	V
8+20	0.0335	0.11	Q	V
8+25	0.0343	0.11	Q	V
8+30	0.0351	0.11	Q	V
8+35	0.0359	0.11	Q	V
8+40	0.0367	0.12	Q	V
8+45	0.0375	0.12	Q	V
8+50	0.0383	0.12	Q	V
8+55	0.0391	0.12	Q	V
9+ 0	0.0400	0.12	Q	V
9+ 5	0.0409	0.13	Q	V
9+10	0.0418	0.14	Q	V
9+15	0.0428	0.14	Q	V
9+20	0.0438	0.14	Q	V
9+25	0.0448	0.15	Q	V
9+30	0.0458	0.15	Q	V
9+35	0.0468	0.15	Q	V
9+40	0.0479	0.15	Q	V
9+45	0.0489	0.15	Q	V
9+50	0.0500	0.16	Q	V
9+55	0.0511	0.16	Q	V
10+ 0	0.0523	0.16	Q	V
10+ 5	0.0533	0.14	Q	V
10+10	0.0541	0.12	Q	V
10+15	0.0549	0.12	Q	V
10+20	0.0557	0.11	Q	V
10+25	0.0564	0.11	Q	V
10+30	0.0572	0.11	Q	V
10+35	0.0580	0.12	Q	V
10+40	0.0590	0.14	Q	V
10+45	0.0600	0.14	Q	V
10+50	0.0610	0.15	Q	V
10+55	0.0620	0.15	Q	V
11+ 0	0.0630	0.15	Q	V
11+ 5	0.0640	0.15	Q	V
11+10	0.0650	0.14	Q	V
11+15	0.0660	0.14	Q	V
11+20	0.0669	0.14	Q	V
11+25	0.0679	0.14	Q	V
11+30	0.0689	0.14	Q	V
11+35	0.0698	0.14	Q	V
11+40	0.0707	0.13	Q	V
11+45	0.0716	0.13	Q	V
11+50	0.0724	0.13	Q	V
11+55	0.0734	0.13	Q	V
12+ 0	0.0743	0.13	Q	V
12+ 5	0.0753	0.15	Q	V
12+10	0.0765	0.17	Q	V
12+15	0.0777	0.18	Q	V
12+20	0.0790	0.19	Q	V
12+25	0.0803	0.19	Q	V
12+30	0.0816	0.19	Q	V
12+35	0.0830	0.20	Q	V
12+40	0.0844	0.20	Q	V
12+45	0.0858	0.21	Q	V
12+50	0.0872	0.21	Q	V
12+55	0.0887	0.21	Q	V
13+ 0	0.0902	0.21	Q	V
13+ 5	0.0917	0.23	Q	V
13+10	0.0934	0.24	Q	V
13+15	0.0951	0.25	Q	V
13+20	0.0968	0.25	Q	V
13+25	0.0986	0.25	Q	V
13+30	0.1003	0.25	Q	V
13+35	0.1018	0.22	Q	V
13+40	0.1031	0.19	Q	V
13+45	0.1043	0.18	Q	V
13+50	0.1055	0.17	Q	V
13+55	0.1067	0.17	Q	V
14+ 0	0.1079	0.17	Q	V
14+ 5	0.1091	0.18	Q	V
14+10	0.1104	0.19	Q	V
14+15	0.1118	0.20	Q	V
14+20	0.1131	0.20	Q	V
14+25	0.1145	0.19	Q	V
14+30	0.1158	0.19	Q	V
14+35	0.1171	0.19	Q	V
14+40	0.1184	0.19	Q	V
14+45	0.1198	0.19	Q	V
14+50	0.1211	0.19	Q	V
14+55	0.1223	0.19	Q	V

15+ 0	0.1236	0.19	Q		V	
15+ 5	0.1249	0.18	Q		V	
15+10	0.1261	0.18	Q		V	
15+15	0.1273	0.18	Q		V	
15+20	0.1285	0.17	Q		V	
15+25	0.1297	0.17	Q		V	
15+30	0.1309	0.17	Q		V	
15+35	0.1320	0.16	Q		V	
15+40	0.1330	0.15	Q		V	
15+45	0.1340	0.14	Q		V	
15+50	0.1350	0.14	Q		V	
15+55	0.1359	0.14	Q		V	
16+ 0	0.1369	0.14	Q		V	
16+ 5	0.1376	0.10	Q		V	
16+10	0.1380	0.05	Q		V	
16+15	0.1382	0.04	Q		V	
16+20	0.1385	0.03	Q		V	
16+25	0.1387	0.03	Q		V	
16+30	0.1389	0.03	Q		V	
16+35	0.1391	0.03	Q		V	
16+40	0.1392	0.02	Q		V	
16+45	0.1394	0.02	Q		V	
16+50	0.1395	0.02	Q		V	
16+55	0.1397	0.02	Q		V	
17+ 0	0.1398	0.02	Q		V	
17+ 5	0.1400	0.03	Q		V	
17+10	0.1403	0.03	Q		V	
17+15	0.1405	0.04	Q		V	
17+20	0.1408	0.04	Q		V	
17+25	0.1410	0.04	Q		V	
17+30	0.1413	0.04	Q		V	
17+35	0.1415	0.04	Q		V	
17+40	0.1418	0.04	Q		V	
17+45	0.1420	0.04	Q		V	
17+50	0.1423	0.03	Q		V	
17+55	0.1425	0.03	Q		V	
18+ 0	0.1427	0.03	Q		V	
18+ 5	0.1429	0.03	Q		V	
18+10	0.1431	0.03	Q		V	
18+15	0.1433	0.03	Q		V	
18+20	0.1435	0.03	Q		V	
18+25	0.1437	0.03	Q		V	
18+30	0.1439	0.03	Q		V	
18+35	0.1441	0.03	Q		V	
18+40	0.1443	0.02	Q		V	
18+45	0.1444	0.02	Q		V	
18+50	0.1445	0.02	Q		V	
18+55	0.1447	0.02	Q		V	
19+ 0	0.1448	0.02	Q		V	
19+ 5	0.1449	0.02	Q		V	
19+10	0.1450	0.02	Q		V	
19+15	0.1452	0.02	Q		V	
19+20	0.1453	0.02	Q		V	
19+25	0.1455	0.03	Q		V	
19+30	0.1457	0.03	Q		V	
19+35	0.1459	0.03	Q		V	
19+40	0.1461	0.02	Q		V	
19+45	0.1462	0.02	Q		V	
19+50	0.1464	0.02	Q		V	
19+55	0.1465	0.02	Q		V	
20+ 0	0.1466	0.02	Q		V	
20+ 5	0.1467	0.02	Q		V	
20+10	0.1469	0.02	Q		V	
20+15	0.1470	0.02	Q		V	
20+20	0.1472	0.02	Q		V	
20+25	0.1473	0.02	Q		V	
20+30	0.1475	0.02	Q		V	
20+35	0.1476	0.02	Q		V	
20+40	0.1478	0.02	Q		V	
20+45	0.1479	0.02	Q		V	
20+50	0.1481	0.02	Q		V	
20+55	0.1482	0.02	Q		V	
21+ 0	0.1483	0.02	Q		V	
21+ 5	0.1484	0.02	Q		V	
21+10	0.1485	0.02	Q		V	
21+15	0.1487	0.02	Q		V	
21+20	0.1488	0.02	Q		V	
21+25	0.1489	0.02	Q		V	
21+30	0.1490	0.02	Q		V	
21+35	0.1492	0.02	Q		V	
21+40	0.1493	0.02	Q		V	
21+45	0.1494	0.02	Q		V	
21+50	0.1496	0.02	Q		V	
21+55	0.1497	0.02	Q		V	
22+ 0	0.1498	0.02	Q		V	
22+ 5	0.1499	0.02	Q		V	
22+10	0.1501	0.02	Q		V	
22+15	0.1502	0.02	Q		V	
22+20	0.1503	0.02	Q		V	
22+25	0.1505	0.02	Q		V	
22+30	0.1506	0.02	Q		V	
22+35	0.1507	0.02	Q		V	
22+40	0.1508	0.01	Q		V	
22+45	0.1509	0.01	Q		V	
22+50	0.1510	0.01	Q		V	
22+55	0.1511	0.01	Q		V	
23+ 0	0.1512	0.01	Q		V	
23+ 5	0.1513	0.01	Q		V	
23+10	0.1514	0.01	Q		V	

23+15	0.1515	0.01	Q				V
23+20	0.1516	0.01	Q				V
23+25	0.1517	0.01	Q				V
23+30	0.1518	0.01	Q				V
23+35	0.1519	0.01	Q				V
23+40	0.1520	0.01	Q				V
23+45	0.1521	0.01	Q				V
23+50	0.1522	0.01	Q				V
23+55	0.1523	0.01	Q				V
24+ 0	0.1524	0.01	Q				V
24+ 5	0.1525	0.01	Q				V
24+10	0.1525	0.00	Q				V
24+15	0.1525	0.00	Q				V
24+20	0.1525	0.00	Q				V
24+25	0.1525	0.00	Q				V

Unit Hydrograph Analysis
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Study date 09/03/19 File: 2712EX515.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
5 YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

1 HOUR

2 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 0.50 4.58

100 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 1.30 11.90

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.500(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.687(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.687(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-1 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
77.0 59.4 0.476 0.000 0.476 1.000 0.476
Sum (F) = 0.476

Area averaged mean soil loss (F) (In/Hr) = 0.476
Minimum soil loss rate ((In/Hr)) = 0.238
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph Analysis
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	149.774	33.120	3.054
2 0.167	299.549	47.027	4.337
3 0.250	449.323	11.195	1.032
4 0.333	599.098	4.890	0.451
5 0.417	748.872	2.473	0.228
6 0.500	898.646	1.295	0.119

Sum = 100.000 Sum= 9.221

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) Max | Low	Effective (In/Hr)
1 0.08	4.20	0.346	(0.476) | 0.312	0.035
2 0.17	4.30	0.355	(0.476) | 0.319	0.035
3 0.25	5.00	0.412	(0.476) | 0.371	0.041
4 0.33	5.00	0.412	(0.476) | 0.371	0.041
5 0.42	5.80	0.478	(0.476) | 0.431	0.048
6 0.50	6.50	0.536	0.476 | ( 0.483)	0.060
7 0.58	7.40	0.610	0.476 | ( 0.549)	0.134
8 0.67	8.60	0.709	0.476 | ( 0.638)	0.233
9 0.75	12.30	1.014	0.476 | ( 0.913)	0.538
10 0.83	29.10	2.400	0.476 | ( 2.160)	1.924
11 0.92	6.80	0.561	0.476 | ( 0.505)	0.085
12 1.00	5.00	0.412	(0.476) | 0.371	0.041

(Loss Rate Not Used)

Sum = 100.0 Sum = 3.2

Flood volume = Effective rainfall 0.27 (In)
times area 9.2 (Ac.) / [(In)/(Ft.)] = 0.2 (Ac.Ft)

Total soil loss = 0.42 (In)

Total soil loss = 0.320 (Ac.Ft)

Total rainfall = 0.69 (In)

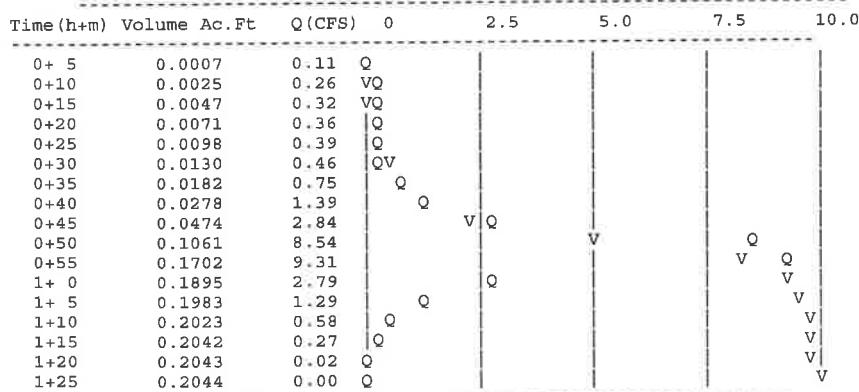
Flood volume = 8902.0 Cubic Feet

Total soil loss = 13927.1 Cubic Feet

Peak flow rate of this hydrograph = 9.306 (CFS)

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

Hydrograph in 5 Minute intervals ((CFS))



Unit Hydrograph Analysis
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Study date 09/03/19 File: 2712EX535.out

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

Program License Serial Number 6400

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

2712
EXISTING CONDITION - ONSITE
5 YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

3 HOUR

2 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 0.80 7.32

100 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 2.00 18.30

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.800(In)
Area Averaged 100-Year Rainfall = 2.000(In)

Point rain (area averaged) = 1.081(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.081(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-1 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
77.0 59.4 0.476 0.000 0.476 1.000 0.476
Sum (F) = 0.476

Area averaged mean soil loss (F) (In/Hr) = 0.476
Minimum soil loss rate ((In/Hr)) = 0.238
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	149.774	33.120	3.054
2 0.167	299.549	47.027	4.337
3 0.250	449.323	11.195	1.032
4 0.333	599.098	4.890	0.451
5 0.417	748.872	2.473	0.228
6 0.500	898.646	1.295	0.119
	Sum = 100.000	Sum=	9.221

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) Max | Low	Effective (In/Hr)
1	0.08	1.30	0.169	(0.476) | 0.476	0.152 0.017
2	0.17	1.30	0.169	(0.476) | 0.476	0.152 0.017
3	0.25	1.10	0.143	(0.476) | 0.476	0.128 0.014
4	0.33	1.50	0.195	(0.476) | 0.476	0.175 0.019
5	0.42	1.50	0.195	(0.476) | 0.476	0.175 0.019
6	0.50	1.80	0.234	(0.476) | 0.476	0.210 0.023
7	0.58	1.50	0.195	(0.476) | 0.476	0.175 0.019
8	0.67	1.80	0.234	(0.476) | 0.476	0.210 0.023
9	0.75	1.80	0.234	(0.476) | 0.476	0.210 0.023
10	0.83	1.50	0.195	(0.476) | 0.476	0.175 0.019
11	0.92	1.60	0.208	(0.476) | 0.476	0.187 0.021
12	1.00	1.80	0.234	(0.476) | 0.476	0.210 0.023
13	1.08	2.20	0.285	(0.476) | 0.476	0.257 0.029
14	1.17	2.20	0.285	(0.476) | 0.476	0.257 0.029
15	1.25	2.20	0.285	(0.476) | 0.476	0.257 0.029
16	1.33	2.00	0.259	(0.476) | 0.476	0.234 0.026
17	1.42	2.60	0.337	(0.476) | 0.476	0.304 0.034
18	1.50	2.70	0.350	(0.476) | 0.476	0.315 0.035
19	1.58	2.40	0.311	(0.476) | 0.476	0.280 0.031
20	1.67	2.70	0.350	(0.476) | 0.476	0.315 0.035
21	1.75	3.30	0.428	(0.476) | 0.476	0.385 0.043
22	1.83	3.10	0.402	(0.476) | 0.476	0.362 0.040
23	1.92	2.90	0.376	(0.476) | 0.476	0.339 0.038
24	2.00	3.00	0.389	(0.476) | 0.476	0.350 0.039
25	2.08	3.10	0.402	(0.476) | 0.476	0.362 0.040
26	2.17	4.20	0.545	0.476 | ( 0.490)	0.490 0.069
27	2.25	5.00	0.649	0.476 | ( 0.584)	0.584 0.172
28	2.33	3.50	0.454	(0.476) | 0.476	0.409 0.045
29	2.42	6.80	0.882	0.476 | ( 0.794)	0.794 0.406
30	2.50	7.30	0.947	0.476 | ( 0.852)	0.852 0.471
31	2.58	8.20	1.064	0.476 | ( 0.957)	0.957 0.588
32	2.67	5.90	0.765	0.476 | ( 0.689)	0.689 0.289
33	2.75	2.00	0.259	(0.476) | 0.476	0.234 0.026
34	2.83	1.80	0.234	(0.476) | 0.476	0.210 0.023
35	2.92	1.80	0.234	(0.476) | 0.476	0.210 0.023
36	3.00	0.60	0.078	(0.476) | 0.476	0.070 0.008

(Loss Rate Not Used)

Sum = 100.0 Sum = 2.8

Flood volume = Effective rainfall 0.23 (In)
times area 9.2 (Ac.)/[(In)/(Ft.)] = 0.2 (Ac.Ft)

Total soil loss = 0.85 (In)

Total soil loss = 0.646 (Ac.Ft)

Total rainfall = 1.08 (In)

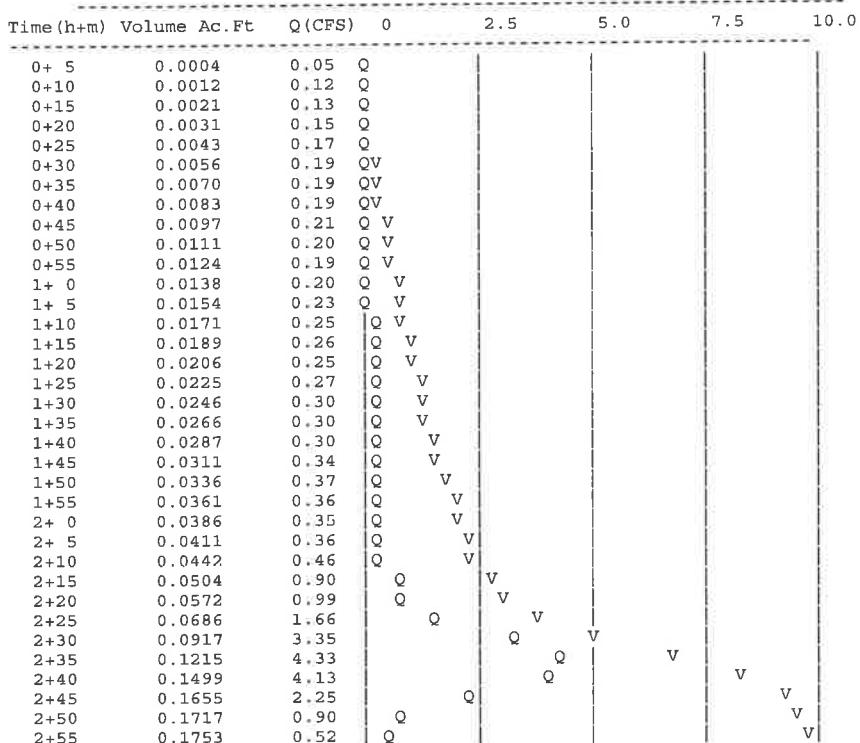
Flood volume = 7769.4 Cubic Feet

Total soil loss = 28136.3 Cubic Feet

Peak flow rate of this hydrograph = 4.326 (CFS)

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

Hydrograph in 5 Minute intervals ((CFS))



3+ 0	0.1773	0.30	Q				V
3+ 5	0.1781	0.11	Q				V
3+10	0.1782	0.03	Q				V
3+15	0.1783	0.01	Q				V
3+20	0.1784	0.00	Q				V
3+25	0.1784	0.00	Q				V

Unit Hydrograph Analysis
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Study date 09/03/19 File: 2712EX565.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
5 YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

6 HOUR

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	1.20	10.98

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	3.00	27.45

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.200(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.622(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.622(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-1	(In/Hr)	(Dec. %)	(In/Hr)	(Dec.)	(In/Hr)
77.0	59.4	0.476	0.000	0.476	1.000	0.476
					Sum (F) =	0.476

Area averaged mean soil loss (F) (In/Hr) = 0.476
Minimum soil loss rate ((In/Hr)) = 0.238
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	149.774	33.120
2	0.167	299.549	47.027
3	0.250	449.323	11.195
4	0.333	599.098	4.890
5	0.417	748.872	2.473
6	0.500	898.646	1.295
		Sum = 100.000	Sum= 9.221

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) Max | Low	Effective (In/Hr)
1	0.08	0.50	0.097	(0.476) | 0.088	0.010
2	0.17	0.60	0.117	(0.476) | 0.105	0.012
3	0.25	0.60	0.117	(0.476) | 0.105	0.012
4	0.33	0.60	0.117	(0.476) | 0.105	0.012
5	0.42	0.60	0.117	(0.476) | 0.105	0.012
6	0.50	0.70	0.136	(0.476) | 0.123	0.014
7	0.58	0.70	0.136	(0.476) | 0.123	0.014
8	0.67	0.70	0.136	(0.476) | 0.123	0.014
9	0.75	0.70	0.136	(0.476) | 0.123	0.014
10	0.83	0.70	0.136	(0.476) | 0.123	0.014
11	0.92	0.70	0.136	(0.476) | 0.123	0.014
12	1.00	0.80	0.156	(0.476) | 0.140	0.016
13	1.08	0.80	0.156	(0.476) | 0.140	0.016
14	1.17	0.80	0.156	(0.476) | 0.140	0.016
15	1.25	0.80	0.156	(0.476) | 0.140	0.016
16	1.33	0.80	0.156	(0.476) | 0.140	0.016
17	1.42	0.80	0.156	(0.476) | 0.140	0.016
18	1.50	0.80	0.156	(0.476) | 0.140	0.016
19	1.58	0.80	0.156	(0.476) | 0.140	0.016
20	1.67	0.80	0.156	(0.476) | 0.140	0.016
21	1.75	0.80	0.156	(0.476) | 0.140	0.016
22	1.83	0.80	0.156	(0.476) | 0.140	0.016
23	1.92	0.80	0.156	(0.476) | 0.140	0.016
24	2.00	0.90	0.175	(0.476) | 0.158	0.018
25	2.08	0.80	0.156	(0.476) | 0.140	0.016
26	2.17	0.90	0.175	(0.476) | 0.158	0.018
27	2.25	0.90	0.175	(0.476) | 0.158	0.018
28	2.33	0.90	0.175	(0.476) | 0.158	0.018
29	2.42	0.90	0.175	(0.476) | 0.158	0.018
30	2.50	0.90	0.175	(0.476) | 0.158	0.018
31	2.58	0.90	0.175	(0.476) | 0.158	0.018
32	2.67	0.90	0.175	(0.476) | 0.158	0.018
33	2.75	1.00	0.195	(0.476) | 0.175	0.019
34	2.83	1.00	0.195	(0.476) | 0.175	0.019
35	2.92	1.00	0.195	(0.476) | 0.175	0.019
36	3.00	1.00	0.195	(0.476) | 0.175	0.019
37	3.08	1.00	0.195	(0.476) | 0.175	0.019
38	3.17	1.10	0.214	(0.476) | 0.193	0.021
39	3.25	1.10	0.214	(0.476) | 0.193	0.021
40	3.33	1.10	0.214	(0.476) | 0.193	0.021
41	3.42	1.20	0.234	(0.476) | 0.210	0.023
42	3.50	1.30	0.253	(0.476) | 0.228	0.025
43	3.58	1.40	0.272	(0.476) | 0.245	0.027
44	3.67	1.40	0.272	(0.476) | 0.245	0.027
45	3.75	1.50	0.292	(0.476) | 0.263	0.029
46	3.83	1.50	0.292	(0.476) | 0.263	0.029
47	3.92	1.60	0.311	(0.476) | 0.280	0.031
48	4.00	1.60	0.311	(0.476) | 0.280	0.031
49	4.08	1.70	0.331	(0.476) | 0.298	0.033
50	4.17	1.80	0.350	(0.476) | 0.315	0.035
51	4.25	1.90	0.370	(0.476) | 0.333	0.037
52	4.33	2.00	0.389	(0.476) | 0.350	0.039
53	4.42	2.10	0.409	(0.476) | 0.368	0.041
54	4.50	2.10	0.409	(0.476) | 0.368	0.041
55	4.58	2.20	0.428	(0.476) | 0.385	0.043
56	4.67	2.30	0.448	(0.476) | 0.403	0.045
57	4.75	2.40	0.467	(0.476) | 0.420	0.047
58	4.83	2.40	0.467	(0.476) | 0.420	0.047
59	4.92	2.50	0.486	(0.476) | 0.438	0.049
60	5.00	2.60	0.506	(0.476) | 0.455	0.051
61	5.08	3.10	0.603	(0.476) | 0.543	0.127
62	5.17	3.60	0.701	(0.476) | 0.630	0.224
63	5.25	3.90	0.759	(0.476) | 0.683	0.283
64	5.33	4.20	0.817	(0.476) | 0.736	0.341
65	5.42	4.70	0.915	(0.476) | 0.823	0.438
66	5.50	5.60	1.090	(0.476) | 0.981	0.614
67	5.58	1.90	0.370	(0.476) | 0.333	0.037
68	5.67	0.90	0.175	(0.476) | 0.158	0.018
69	5.75	0.60	0.117	(0.476) | 0.105	0.012
70	5.83	0.50	0.097	(0.476) | 0.088	0.010
71	5.92	0.30	0.058	(0.476) | 0.053	0.006
72	6.00	0.20	0.039	(0.476) | 0.035	0.004

(Loss Rate Not Used)

Sum = 100.0 Sum = 3.5

Flood volume = Effective rainfall 0.29 (In)

times area 9.2 (Ac.) / [(In) / (Ft.)] = 0.2 (Ac.Ft)

Total soil loss = 1.33 (In)

Total soil loss = 1.015 (Ac.Ft)

Total rainfall = 1.62 (In)

Flood volume = 9645.6 Cubic Feet

Total soil loss = 44213.4 Cubic Feet

Peak flow rate of this hydrograph = 4.324 (CFS)

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

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	0.0007	0.08	Q					
0+15	0.0014	0.10	Q					
0+20	0.0021	0.10	Q					
0+25	0.0028	0.11	Q					
0+30	0.0036	0.11	Q					
0+35	0.0045	0.12	Q					
0+40	0.0053	0.12	Q					
0+45	0.0062	0.12	QV					
0+50	0.0070	0.13	QV					
0+55	0.0079	0.13	QV					
1+ 0	0.0088	0.13	QV					
1+ 5	0.0098	0.14	QV					
1+10	0.0108	0.14	QV					
1+15	0.0117	0.14	Q V					
1+20	0.0127	0.14	Q V					
1+25	0.0137	0.14	Q V					
1+30	0.0147	0.14	Q V					
1+35	0.0157	0.14	Q V					
1+40	0.0167	0.14	Q V					
1+45	0.0177	0.14	Q V					
1+50	0.0187	0.14	Q V					
1+55	0.0197	0.14	Q V					
2+ 0	0.0207	0.15	Q V					
2+ 5	0.0217	0.15	Q V					
2+10	0.0228	0.15	Q V					
2+15	0.0239	0.16	Q V					
2+20	0.0250	0.16	Q V					
2+25	0.0261	0.16	Q V					
2+30	0.0272	0.16	Q V					
2+35	0.0283	0.16	Q V					
2+40	0.0294	0.16	Q V					
2+45	0.0306	0.17	Q V					
2+50	0.0318	0.18	Q V					
2+55	0.0330	0.18	Q V					
3+ 0	0.0342	0.18	Q V					
3+ 5	0.0355	0.18	Q V					
3+10	0.0368	0.19	Q V					
3+15	0.0381	0.19	Q V					
3+20	0.0394	0.20	Q V					
3+25	0.0408	0.20	Q V					
3+30	0.0423	0.22	Q V					
3+35	0.0440	0.23	Q V					
3+40	0.0456	0.25	Q V					
3+45	0.0474	0.25	Q V					
3+50	0.0492	0.26	Q V					
3+55	0.0511	0.27	Q V					
4+ 0	0.0531	0.28	Q V					
4+ 5	0.0551	0.29	Q V					
4+10	0.0572	0.31	Q V					
4+15	0.0594	0.32	Q V					
4+20	0.0618	0.34	Q V					
4+25	0.0642	0.36	Q V					
4+30	0.0668	0.37	Q V					
4+35	0.0694	0.38	Q V					
4+40	0.0721	0.40	Q V					
4+45	0.0750	0.41	Q V					
4+50	0.0779	0.43	Q V					
4+55	0.0809	0.43	Q V					
5+ 0	0.0840	0.45	Q V					
5+ 5	0.0888	0.70	Q V					
5+10	0.0979	1.33	Q V					
5+15	0.1118	2.01	Q V					
5+20	0.1295	2.58	Q V					
5+25	0.1519	3.25	Q V					
5+30	0.1816	4.32	Q V					
5+35	0.2056	3.47	Q V					
5+40	0.2135	1.16	Q V					
5+45	0.2174	0.57	Q V					
5+50	0.2196	0.31	Q V					
5+55	0.2207	0.16	Q V					
6+ 0	0.2211	0.06	Q V					
6+ 5	0.2213	0.03	Q V					
6+10	0.2214	0.01	Q V					
6+15	0.2214	0.00	Q V					
6+20	0.2214	0.00	Q V					
6+25	0.2214	0.00	Q V					

Unit Hydrograph Analysis
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Study date 09/03/19 File: 2712EX5245.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
5 YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

24 HOUR

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 2.00 18.30

100 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 5.50 50.33

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.500(In)

Point rain (area averaged) = 2.820(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.820(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-1 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
77.0 59.4 0.476 0.000 0.476 1.000 0.476
Sum (F) = 0.476

Area averaged mean soil loss (F) (In/Hr) = 0.476
Minimum soil loss rate ((In/Hr)) = 0.238
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag Graph %	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	149.774	33.120	3.054
2 0.167	299.549	47.027	4.337
3 0.250	449.323	11.195	1.032
4 0.333	599.098	4.890	0.451
5 0.417	748.872	2.473	0.228
6 0.500	898.646	1.295	0.119
	Sum = 100.000	Sum=	9.221

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	0.023	(0.844)	0.020	0.002
2	0.17	0.07	0.023	(0.841)	0.020	0.002
3	0.25	0.07	0.023	(0.838)	0.020	0.002
4	0.33	0.10	0.034	(0.834)	0.030	0.003
5	0.42	0.10	0.034	(0.831)	0.030	0.003
6	0.50	0.10	0.034	(0.828)	0.030	0.003
7	0.58	0.10	0.034	(0.825)	0.030	0.003
8	0.67	0.10	0.034	(0.821)	0.030	0.003
9	0.75	0.10	0.034	(0.818)	0.030	0.003
10	0.83	0.13	0.045	(0.815)	0.041	0.005
11	0.92	0.13	0.045	(0.812)	0.041	0.005
12	1.00	0.13	0.045	(0.808)	0.041	0.005
13	1.08	0.10	0.034	(0.805)	0.030	0.003
14	1.17	0.10	0.034	(0.802)	0.030	0.003
15	1.25	0.10	0.034	(0.799)	0.030	0.003
16	1.33	0.10	0.034	(0.796)	0.030	0.003
17	1.42	0.10	0.034	(0.793)	0.030	0.003
18	1.50	0.10	0.034	(0.789)	0.030	0.003
19	1.58	0.10	0.034	(0.786)	0.030	0.003
20	1.67	0.10	0.034	(0.783)	0.030	0.003
21	1.75	0.10	0.034	(0.780)	0.030	0.003
22	1.83	0.13	0.045	(0.777)	0.041	0.005
23	1.92	0.13	0.045	(0.774)	0.041	0.005
24	2.00	0.13	0.045	(0.771)	0.041	0.005
25	2.08	0.13	0.045	(0.767)	0.041	0.005
26	2.17	0.13	0.045	(0.764)	0.041	0.005
27	2.25	0.13	0.045	(0.761)	0.041	0.005
28	2.33	0.13	0.045	(0.758)	0.041	0.005
29	2.42	0.13	0.045	(0.755)	0.041	0.005
30	2.50	0.13	0.045	(0.752)	0.041	0.005
31	2.58	0.17	0.056	(0.749)	0.051	0.006
32	2.67	0.17	0.056	(0.746)	0.051	0.006
33	2.75	0.17	0.056	(0.743)	0.051	0.006
34	2.83	0.17	0.056	(0.740)	0.051	0.006
35	2.92	0.17	0.056	(0.737)	0.051	0.006
36	3.00	0.17	0.056	(0.734)	0.051	0.006
37	3.08	0.17	0.056	(0.731)	0.051	0.006
38	3.17	0.17	0.056	(0.728)	0.051	0.006
39	3.25	0.17	0.056	(0.724)	0.051	0.006
40	3.33	0.17	0.056	(0.721)	0.051	0.006
41	3.42	0.17	0.056	(0.718)	0.051	0.006
42	3.50	0.17	0.056	(0.715)	0.051	0.006
43	3.58	0.17	0.056	(0.712)	0.051	0.006
44	3.67	0.17	0.056	(0.709)	0.051	0.006
45	3.75	0.17	0.056	(0.706)	0.051	0.006
46	3.83	0.20	0.068	(0.704)	0.061	0.007
47	3.92	0.20	0.068	(0.701)	0.061	0.007
48	4.00	0.20	0.068	(0.698)	0.061	0.007
49	4.08	0.20	0.068	(0.695)	0.061	0.007
50	4.17	0.20	0.068	(0.692)	0.061	0.007
51	4.25	0.20	0.068	(0.689)	0.061	0.007
52	4.33	0.23	0.079	(0.686)	0.071	0.008
53	4.42	0.23	0.079	(0.683)	0.071	0.008
54	4.50	0.23	0.079	(0.680)	0.071	0.008
55	4.58	0.23	0.079	(0.677)	0.071	0.008
56	4.67	0.23	0.079	(0.674)	0.071	0.008
57	4.75	0.23	0.079	(0.671)	0.071	0.008
58	4.83	0.27	0.090	(0.668)	0.081	0.009
59	4.92	0.27	0.090	(0.665)	0.081	0.009
60	5.00	0.27	0.090	(0.663)	0.081	0.009
61	5.08	0.20	0.068	(0.660)	0.061	0.007
62	5.17	0.20	0.068	(0.657)	0.061	0.007
63	5.25	0.20	0.068	(0.654)	0.061	0.007
64	5.33	0.23	0.079	(0.651)	0.071	0.008
65	5.42	0.23	0.079	(0.648)	0.071	0.008
66	5.50	0.23	0.079	(0.645)	0.071	0.008
67	5.58	0.27	0.090	(0.643)	0.081	0.009
68	5.67	0.27	0.090	(0.640)	0.081	0.009
69	5.75	0.27	0.090	(0.637)	0.081	0.009
70	5.83	0.27	0.090	(0.634)	0.081	0.009
71	5.92	0.27	0.090	(0.631)	0.081	0.009
72	6.00	0.27	0.090	(0.628)	0.081	0.009
73	6.08	0.30	0.102	(0.626)	0.091	0.010
74	6.17	0.30	0.102	(0.623)	0.091	0.010
75	6.25	0.30	0.102	(0.620)	0.091	0.010
76	6.33	0.30	0.102	(0.617)	0.091	0.010
77	6.42	0.30	0.102	(0.615)	0.091	0.010
78	6.50	0.30	0.102	(0.612)	0.091	0.010
79	6.58	0.33	0.113	(0.609)	0.102	0.011
80	6.67	0.33	0.113	(0.606)	0.102	0.011
81	6.75	0.33	0.113	(0.604)	0.102	0.011
82	6.83	0.33	0.113	(0.601)	0.102	0.011
83	6.92	0.33	0.113	(0.598)	0.102	0.011
84	7.00	0.33	0.113	(0.595)	0.102	0.011
85	7.08	0.33	0.113	(0.593)	0.102	0.011
86	7.17	0.33	0.113	(0.590)	0.102	0.011
87	7.25	0.33	0.113	(0.587)	0.102	0.011
88	7.33	0.37	0.124	(0.585)	0.112	0.012
89	7.42	0.37	0.124	(0.582)	0.112	0.012
90	7.50	0.37	0.124	(0.579)	0.112	0.012
91	7.58	0.40	0.135	(0.577)	0.122	0.014
92	7.67	0.40	0.135	(0.574)	0.122	0.014

93	7.75	0.40	0.135	(0.571)	0.122	0.014
94	7.83	0.43	0.147	(0.569)	0.132	0.015
95	7.92	0.43	0.147	(0.566)	0.132	0.015
96	8.00	0.43	0.147	(0.563)	0.132	0.015
97	8.08	0.50	0.169	(0.561)	0.152	0.017
98	8.17	0.50	0.169	(0.558)	0.152	0.017
99	8.25	0.50	0.169	(0.556)	0.152	0.017
100	8.33	0.50	0.169	(0.553)	0.152	0.017
101	8.42	0.50	0.169	(0.550)	0.152	0.017
102	8.50	0.50	0.169	(0.548)	0.152	0.017
103	8.58	0.53	0.180	(0.545)	0.162	0.018
104	8.67	0.53	0.180	(0.543)	0.162	0.018
105	8.75	0.53	0.180	(0.540)	0.162	0.018
106	8.83	0.57	0.192	(0.538)	0.173	0.019
107	8.92	0.57	0.192	(0.535)	0.173	0.019
108	9.00	0.57	0.192	(0.533)	0.173	0.019
109	9.08	0.63	0.214	(0.530)	0.193	0.021
110	9.17	0.63	0.214	(0.528)	0.193	0.021
111	9.25	0.63	0.214	(0.525)	0.193	0.021
112	9.33	0.67	0.226	(0.523)	0.203	0.023
113	9.42	0.67	0.226	(0.520)	0.203	0.023
114	9.50	0.67	0.226	(0.518)	0.203	0.023
115	9.58	0.70	0.237	(0.515)	0.213	0.024
116	9.67	0.70	0.237	(0.513)	0.213	0.024
117	9.75	0.70	0.237	(0.510)	0.213	0.024
118	9.83	0.73	0.248	(0.508)	0.223	0.025
119	9.92	0.73	0.248	(0.505)	0.223	0.025
120	10.00	0.73	0.248	(0.503)	0.223	0.025
121	10.08	0.50	0.169	(0.500)	0.152	0.017
122	10.17	0.50	0.169	(0.498)	0.152	0.017
123	10.25	0.50	0.169	(0.496)	0.152	0.017
124	10.33	0.50	0.169	(0.493)	0.152	0.017
125	10.42	0.50	0.169	(0.491)	0.152	0.017
126	10.50	0.50	0.169	(0.488)	0.152	0.017
127	10.58	0.67	0.226	(0.486)	0.203	0.023
128	10.67	0.67	0.226	(0.484)	0.203	0.023
129	10.75	0.67	0.226	(0.481)	0.203	0.023
130	10.83	0.67	0.226	(0.479)	0.203	0.023
131	10.92	0.67	0.226	(0.476)	0.203	0.023
132	11.00	0.67	0.226	(0.474)	0.203	0.023
133	11.08	0.63	0.214	(0.472)	0.193	0.021
134	11.17	0.63	0.214	(0.469)	0.193	0.021
135	11.25	0.63	0.214	(0.467)	0.193	0.021
136	11.33	0.63	0.214	(0.465)	0.193	0.021
137	11.42	0.63	0.214	(0.463)	0.193	0.021
138	11.50	0.63	0.214	(0.460)	0.193	0.021
139	11.58	0.57	0.192	(0.458)	0.173	0.019
140	11.67	0.57	0.192	(0.456)	0.173	0.019
141	11.75	0.57	0.192	(0.453)	0.173	0.019
142	11.83	0.60	0.203	(0.451)	0.183	0.020
143	11.92	0.60	0.203	(0.449)	0.183	0.020
144	12.00	0.60	0.203	(0.447)	0.183	0.020
145	12.08	0.83	0.282	(0.444)	0.254	0.028
146	12.17	0.83	0.282	(0.442)	0.254	0.028
147	12.25	0.83	0.282	(0.440)	0.254	0.028
148	12.33	0.87	0.293	(0.438)	0.264	0.029
149	12.42	0.87	0.293	(0.436)	0.264	0.029
150	12.50	0.87	0.293	(0.433)	0.264	0.029
151	12.58	0.93	0.316	(0.431)	0.284	0.032
152	12.67	0.93	0.316	(0.429)	0.284	0.032
153	12.75	0.93	0.316	(0.427)	0.284	0.032
154	12.83	0.97	0.327	(0.425)	0.294	0.033
155	12.92	0.97	0.327	(0.423)	0.294	0.033
156	13.00	0.97	0.327	(0.420)	0.294	0.033
157	13.08	1.13	0.383	(0.418)	0.345	0.038
158	13.17	1.13	0.383	(0.416)	0.345	0.038
159	13.25	1.13	0.383	(0.414)	0.345	0.038
160	13.33	1.13	0.383	(0.412)	0.345	0.038
161	13.42	1.13	0.383	(0.410)	0.345	0.038
162	13.50	1.13	0.383	(0.408)	0.345	0.038
163	13.58	0.77	0.259	(0.406)	0.233	0.026
164	13.67	0.77	0.259	(0.404)	0.233	0.026
165	13.75	0.77	0.259	(0.402)	0.233	0.026
166	13.83	0.77	0.259	(0.400)	0.233	0.026
167	13.92	0.77	0.259	(0.398)	0.233	0.026
168	14.00	0.77	0.259	(0.395)	0.233	0.026
169	14.08	0.90	0.305	(0.393)	0.274	0.030
170	14.17	0.90	0.305	(0.391)	0.274	0.030
171	14.25	0.90	0.305	(0.389)	0.274	0.030
172	14.33	0.87	0.293	(0.387)	0.264	0.029
173	14.42	0.87	0.293	(0.385)	0.264	0.029
174	14.50	0.87	0.293	(0.384)	0.264	0.029
175	14.58	0.87	0.293	(0.382)	0.264	0.029
176	14.67	0.87	0.293	(0.380)	0.264	0.029
177	14.75	0.87	0.293	(0.378)	0.264	0.029
178	14.83	0.83	0.282	(0.376)	0.254	0.028
179	14.92	0.83	0.282	(0.374)	0.254	0.028
180	15.00	0.83	0.282	(0.372)	0.254	0.028
181	15.08	0.80	0.271	(0.370)	0.244	0.027
182	15.17	0.80	0.271	(0.368)	0.244	0.027
183	15.25	0.80	0.271	(0.366)	0.244	0.027
184	15.33	0.77	0.259	(0.364)	0.233	0.026
185	15.42	0.77	0.259	(0.362)	0.233	0.026
186	15.50	0.77	0.259	(0.361)	0.233	0.026
187	15.58	0.63	0.214	(0.359)	0.193	0.021
188	15.67	0.63	0.214	(0.357)	0.193	0.021
189	15.75	0.63	0.214	(0.355)	0.193	0.021
190	15.83	0.63	0.214	(0.353)	0.193	0.021
191	15.92	0.63	0.214	(0.351)	0.193	0.021

192	16.00	0.63	0.214	(0.350)	0.193	0.021
193	16.08	0.13	0.045	(0.348)	0.041	0.005
194	16.17	0.13	0.045	(0.346)	0.041	0.005
195	16.25	0.13	0.045	(0.344)	0.041	0.005
196	16.33	0.13	0.045	(0.343)	0.041	0.005
197	16.42	0.13	0.045	(0.341)	0.041	0.005
198	16.50	0.13	0.045	(0.339)	0.041	0.005
199	16.58	0.10	0.034	(0.337)	0.030	0.003
200	16.67	0.10	0.034	(0.336)	0.030	0.003
201	16.75	0.10	0.034	(0.334)	0.030	0.003
202	16.83	0.10	0.034	(0.332)	0.030	0.003
203	16.92	0.10	0.034	(0.331)	0.030	0.003
204	17.00	0.10	0.034	(0.329)	0.030	0.003
205	17.08	0.17	0.056	(0.327)	0.051	0.006
206	17.17	0.17	0.056	(0.326)	0.051	0.006
207	17.25	0.17	0.056	(0.324)	0.051	0.006
208	17.33	0.17	0.056	(0.322)	0.051	0.006
209	17.42	0.17	0.056	(0.321)	0.051	0.006
210	17.50	0.17	0.056	(0.319)	0.051	0.006
211	17.58	0.17	0.056	(0.317)	0.051	0.006
212	17.67	0.17	0.056	(0.316)	0.051	0.006
213	17.75	0.17	0.056	(0.314)	0.051	0.006
214	17.83	0.13	0.045	(0.313)	0.041	0.005
215	17.92	0.13	0.045	(0.311)	0.041	0.005
216	18.00	0.13	0.045	(0.310)	0.041	0.005
217	18.08	0.13	0.045	(0.308)	0.041	0.005
218	18.17	0.13	0.045	(0.307)	0.041	0.005
219	18.25	0.13	0.045	(0.305)	0.041	0.005
220	18.33	0.13	0.045	(0.304)	0.041	0.005
221	18.42	0.13	0.045	(0.302)	0.041	0.005
222	18.50	0.13	0.045	(0.301)	0.041	0.005
223	18.58	0.10	0.034	(0.299)	0.030	0.003
224	18.67	0.10	0.034	(0.298)	0.030	0.003
225	18.75	0.10	0.034	(0.296)	0.030	0.003
226	18.83	0.07	0.023	(0.295)	0.020	0.002
227	18.92	0.07	0.023	(0.294)	0.020	0.002
228	19.00	0.07	0.023	(0.292)	0.020	0.002
229	19.08	0.10	0.034	(0.291)	0.030	0.003
230	19.17	0.10	0.034	(0.289)	0.030	0.003
231	19.25	0.10	0.034	(0.288)	0.030	0.003
232	19.33	0.13	0.045	(0.287)	0.041	0.005
233	19.42	0.13	0.045	(0.285)	0.041	0.005
234	19.50	0.13	0.045	(0.284)	0.041	0.005
235	19.58	0.10	0.034	(0.283)	0.030	0.003
236	19.67	0.10	0.034	(0.281)	0.030	0.003
237	19.75	0.10	0.034	(0.280)	0.030	0.003
238	19.83	0.07	0.023	(0.279)	0.020	0.002
239	19.92	0.07	0.023	(0.278)	0.020	0.002
240	20.00	0.07	0.023	(0.276)	0.020	0.002
241	20.08	0.10	0.034	(0.275)	0.030	0.003
242	20.17	0.10	0.034	(0.274)	0.030	0.003
243	20.25	0.10	0.034	(0.273)	0.030	0.003
244	20.33	0.10	0.034	(0.272)	0.030	0.003
245	20.42	0.10	0.034	(0.271)	0.030	0.003
246	20.50	0.10	0.034	(0.269)	0.030	0.003
247	20.58	0.10	0.034	(0.268)	0.030	0.003
248	20.67	0.10	0.034	(0.267)	0.030	0.003
249	20.75	0.10	0.034	(0.266)	0.030	0.003
250	20.83	0.07	0.023	(0.265)	0.020	0.002
251	20.92	0.07	0.023	(0.264)	0.020	0.002
252	21.00	0.07	0.023	(0.263)	0.020	0.002
253	21.08	0.10	0.034	(0.262)	0.030	0.003
254	21.17	0.10	0.034	(0.261)	0.030	0.003
255	21.25	0.10	0.034	(0.260)	0.030	0.003
256	21.33	0.07	0.023	(0.259)	0.020	0.002
257	21.42	0.07	0.023	(0.258)	0.020	0.002
258	21.50	0.07	0.023	(0.257)	0.020	0.002
259	21.58	0.10	0.034	(0.256)	0.030	0.003
260	21.67	0.10	0.034	(0.255)	0.030	0.003
261	21.75	0.10	0.034	(0.254)	0.030	0.003
262	21.83	0.07	0.023	(0.253)	0.020	0.002
263	21.92	0.07	0.023	(0.252)	0.020	0.002
264	22.00	0.07	0.023	(0.251)	0.020	0.002
265	22.08	0.10	0.034	(0.251)	0.030	0.003
266	22.17	0.10	0.034	(0.250)	0.030	0.003
267	22.25	0.10	0.034	(0.249)	0.030	0.003
268	22.33	0.07	0.023	(0.248)	0.020	0.002
269	22.42	0.07	0.023	(0.247)	0.020	0.002
270	22.50	0.07	0.023	(0.247)	0.020	0.002
271	22.58	0.07	0.023	(0.246)	0.020	0.002
272	22.67	0.07	0.023	(0.245)	0.020	0.002
273	22.75	0.07	0.023	(0.245)	0.020	0.002
274	22.83	0.07	0.023	(0.244)	0.020	0.002
275	22.92	0.07	0.023	(0.243)	0.020	0.002
276	23.00	0.07	0.023	(0.243)	0.020	0.002
277	23.08	0.07	0.023	(0.242)	0.020	0.002
278	23.17	0.07	0.023	(0.242)	0.020	0.002
279	23.25	0.07	0.023	(0.241)	0.020	0.002
280	23.33	0.07	0.023	(0.241)	0.020	0.002
281	23.42	0.07	0.023	(0.240)	0.020	0.002
282	23.50	0.07	0.023	(0.240)	0.020	0.002
283	23.58	0.07	0.023	(0.239)	0.020	0.002
284	23.67	0.07	0.023	(0.239)	0.020	0.002
285	23.75	0.07	0.023	(0.239)	0.020	0.002
286	23.83	0.07	0.023	(0.238)	0.020	0.002
287	23.92	0.07	0.023	(0.238)	0.020	0.002
288	24.00	0.07	0.023	(0.238)	0.020	0.002

(Loss Rate Not Used)

Sum = 100.0

Sum = 3.4

Flood volume = Effective rainfall 0.28 (In)
 times area 9.2 (Ac.) / [(In) / (Ft.)] = 0.2 (Ac.Ft)
 Total soil loss = 2.54 (In)
 Total soil loss = 1.935 (Ac.Ft)
 Total rainfall = 2.82 (In)
 Flood volume = 9365.6 Cubic Feet
 Total soil loss = 84290.5 Cubic Feet

 Peak flow rate of this hydrograph = 0.354 (CFS)

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 24 - H O U R S T O R M
 Runoff Hydrograph

 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	0.02	Q				
0+25	0.0007	0.03	Q				
0+30	0.0009	0.03	Q				
0+35	0.0011	0.03	Q				
0+40	0.0013	0.03	Q				
0+45	0.0015	0.03	Q				
0+50	0.0017	0.03	Q				
0+55	0.0020	0.04	Q				
1+ 0	0.0023	0.04	Q				
1+ 5	0.0026	0.04	Q				
1+10	0.0028	0.03	Q				
1+15	0.0030	0.03	Q				
1+20	0.0032	0.03	Q				
1+25	0.0034	0.03	Q				
1+30	0.0037	0.03	Q				
1+35	0.0039	0.03	Q				
1+40	0.0041	0.03	Q				
1+45	0.0043	0.03	Q				
1+50	0.0045	0.03	Q				
1+55	0.0048	0.04	Q				
2+ 0	0.0051	0.04	Q				
2+ 5	0.0054	0.04	Q				
2+10	0.0057	0.04	QV				
2+15	0.0059	0.04	QV				
2+20	0.0062	0.04	QV				
2+25	0.0065	0.04	QV				
2+30	0.0068	0.04	QV				
2+35	0.0071	0.05	QV				
2+40	0.0075	0.05	QV				
2+45	0.0078	0.05	QV				
2+50	0.0082	0.05	QV				
2+55	0.0085	0.05	QV				
3+ 0	0.0089	0.05	QV				
3+ 5	0.0092	0.05	QV				
3+10	0.0096	0.05	QV				
3+15	0.0100	0.05	QV				
3+20	0.0103	0.05	QV				
3+25	0.0107	0.05	QV				
3+30	0.0110	0.05	Q V				
3+35	0.0114	0.05	Q V				
3+40	0.0118	0.05	Q V				
3+45	0.0121	0.05	Q V				
3+50	0.0125	0.06	Q V				
3+55	0.0129	0.06	Q V				
4+ 0	0.0133	0.06	Q V				
4+ 5	0.0138	0.06	Q V				
4+10	0.0142	0.06	Q V				
4+15	0.0146	0.06	Q V				
4+20	0.0151	0.07	Q V				
4+25	0.0156	0.07	Q V				
4+30	0.0161	0.07	Q V				
4+35	0.0166	0.07	Q V				
4+40	0.0171	0.07	Q V				
4+45	0.0176	0.07	Q V				
4+50	0.0181	0.08	Q V				
4+55	0.0186	0.08	Q V				
5+ 0	0.0192	0.08	Q V				
5+ 5	0.0197	0.08	Q V				
5+10	0.0202	0.07	Q V				
5+15	0.0206	0.06	Q V				
5+20	0.0211	0.07	Q V				
5+25	0.0216	0.07	Q V				
5+30	0.0221	0.07	Q V				
5+35	0.0226	0.08	Q V				
5+40	0.0232	0.08	Q V				
5+45	0.0237	0.08	Q V				
5+50	0.0243	0.08	Q V				
5+55	0.0249	0.08	Q V				
6+ 0	0.0254	0.08	Q V				
6+ 5	0.0260	0.09	Q V				
6+10	0.0267	0.09	Q V				
6+15	0.0273	0.09	Q V				
6+20	0.0279	0.09	Q V				
6+25	0.0286	0.09	Q V				
6+30	0.0292	0.09	Q V				
6+35	0.0299	0.10	Q V				
6+40	0.0306	0.10	Q V				

6+45	0.0313	0.10	Q	V
6+50	0.0320	0.10	Q	V
6+55	0.0327	0.10	Q	V
7+ 0	0.0335	0.10	Q	V
7+ 5	0.0342	0.10	Q	V
7+10	0.0349	0.10	Q	V
7+15	0.0356	0.10	Q	V
7+20	0.0364	0.11	Q	V
7+25	0.0371	0.11	Q	V
7+30	0.0379	0.11	Q	V
7+35	0.0387	0.12	Q	V
7+40	0.0396	0.12	Q	V
7+45	0.0404	0.12	Q	V
7+50	0.0413	0.13	Q	V
7+55	0.0422	0.13	Q	V
8+ 0	0.0431	0.13	Q	V
8+ 5	0.0441	0.14	Q	V
8+10	0.0452	0.15	Q	V
8+15	0.0462	0.15	Q	V
8+20	0.0473	0.16	Q	V
8+25	0.0484	0.16	Q	V
8+30	0.0494	0.16	Q	V
8+35	0.0505	0.16	Q	V
8+40	0.0517	0.16	Q	V
8+45	0.0528	0.17	Q	V
8+50	0.0540	0.17	Q	V
8+55	0.0552	0.17	Q	V
9+ 0	0.0564	0.18	Q	V
9+ 5	0.0577	0.18	Q	V
9+10	0.0590	0.19	Q	V
9+15	0.0603	0.20	Q	V
9+20	0.0617	0.20	Q	V
9+25	0.0631	0.21	Q	V
9+30	0.0646	0.21	Q	V
9+35	0.0660	0.21	Q	V
9+40	0.0675	0.22	Q	V
9+45	0.0690	0.22	Q	V
9+50	0.0705	0.22	Q	V
9+55	0.0721	0.23	Q	V
10+ 0	0.0737	0.23	Q	V
10+ 5	0.0751	0.20	Q	V
10+10	0.0763	0.17	Q	V
10+15	0.0774	0.16	Q	V
10+20	0.0785	0.16	Q	V
10+25	0.0795	0.16	Q	V
10+30	0.0806	0.16	Q	V
10+35	0.0818	0.17	Q	V
10+40	0.0832	0.20	Q	V
10+45	0.0846	0.20	Q	V
10+50	0.0860	0.21	Q	V
10+55	0.0874	0.21	Q	V
11+ 0	0.0889	0.21	Q	V
11+ 5	0.0903	0.20	Q	V
11+10	0.0916	0.20	Q	V
11+15	0.0930	0.20	Q	V
11+20	0.0944	0.20	Q	V
11+25	0.0957	0.20	Q	V
11+30	0.0971	0.20	Q	V
11+35	0.0984	0.19	Q	V
11+40	0.0997	0.18	Q	V
11+45	0.1009	0.18	Q	V
11+50	0.1021	0.18	Q	V
11+55	0.1034	0.19	Q	V
12+ 0	0.1047	0.19	Q	V
12+ 5	0.1062	0.21	Q	V
12+10	0.1078	0.25	Q	V
12+15	0.1096	0.25	Q	V
12+20	0.1114	0.26	Q	V
12+25	0.1132	0.27	Q	V
12+30	0.1151	0.27	Q	V
12+35	0.1170	0.28	Q	V
12+40	0.1190	0.29	Q	V
12+45	0.1210	0.29	Q	V
12+50	0.1230	0.29	Q	V
12+55	0.1251	0.30	Q	V
13+ 0	0.1271	0.30	Q	V
13+ 5	0.1293	0.32	Q	V
13+10	0.1317	0.34	Q	V
13+15	0.1341	0.35	Q	V
13+20	0.1365	0.35	Q	V
13+25	0.1390	0.35	Q	V
13+30	0.1414	0.35	Q	V
13+35	0.1436	0.32	Q	V
13+40	0.1454	0.26	Q	V
13+45	0.1471	0.25	Q	V
13+50	0.1488	0.24	Q	V
13+55	0.1504	0.24	Q	V
14+ 0	0.1521	0.24	Q	V
14+ 5	0.1538	0.25	Q	V
14+10	0.1557	0.27	Q	V
14+15	0.1576	0.28	Q	V
14+20	0.1595	0.28	Q	V
14+25	0.1614	0.27	Q	V
14+30	0.1632	0.27	Q	V
14+35	0.1651	0.27	Q	V
14+40	0.1670	0.27	Q	V
14+45	0.1688	0.27	Q	V
14+50	0.1707	0.27	Q	V
14+55	0.1725	0.26	Q	V

15+ 0	0.1743	0.26	| Q	V
15+ 5	0.1761	0.26	| Q	V
15+10	0.1778	0.25	| Q	V
15+15	0.1795	0.25	| Q	V
15+20	0.1812	0.25	| Q	V
15+25	0.1829	0.24	| Q	V
15+30	0.1845	0.24	| Q	V
15+35	0.1861	0.23	| Q	V
15+40	0.1875	0.21	| Q	V
15+45	0.1889	0.20	| Q	V
15+50	0.1903	0.20	| Q	V
15+55	0.1916	0.20	| Q	V
16+ 0	0.1930	0.20	| Q	V
16+ 5	0.1940	0.15	| Q	V
16+10	0.1945	0.07	| Q	V
16+15	0.1949	0.06	| Q	V
16+20	0.1952	0.05	| Q	V
16+25	0.1955	0.04	| Q	V
16+30	0.1958	0.04	| Q	V
16+35	0.1961	0.04	| Q	V
16+40	0.1963	0.03	| Q	V
16+45	0.1965	0.03	| Q	V
16+50	0.1967	0.03	| Q	V
16+55	0.1969	0.03	| Q	V
17+ 0	0.1972	0.03	| Q	V
17+ 5	0.1974	0.04	| Q	V
17+10	0.1978	0.05	| Q	V
17+15	0.1981	0.05	| Q	V
17+20	0.1984	0.05	| Q	V
17+25	0.1988	0.05	| Q	V
17+30	0.1992	0.05	| Q	V
17+35	0.1995	0.05	| Q	V
17+40	0.1999	0.05	| Q	V
17+45	0.2002	0.05	| Q	V
17+50	0.2006	0.05	| Q	V
17+55	0.2009	0.04	| Q	V
18+ 0	0.2012	0.04	| Q	V
18+ 5	0.2015	0.04	| Q	V
18+10	0.2017	0.04	| Q	V
18+15	0.2020	0.04	| Q	V
18+20	0.2023	0.04	| Q	V
18+25	0.2026	0.04	| Q	V
18+30	0.2029	0.04	| Q	V
18+35	0.2032	0.04	| Q	V
18+40	0.2034	0.03	| Q	V
18+45	0.2036	0.03	| Q	V
18+50	0.2038	0.03	| Q	V
18+55	0.2040	0.02	| Q	V
19+ 0	0.2041	0.02	| Q	V
19+ 5	0.2043	0.02	| Q	V
19+10	0.2045	0.03	| Q	V
19+15	0.2047	0.03	| Q	V
19+20	0.2049	0.03	| Q	V
19+25	0.2052	0.04	| Q	V
19+30	0.2055	0.04	| Q	V
19+35	0.2057	0.04	| Q	V
19+40	0.2060	0.03	| Q	V
19+45	0.2062	0.03	| Q	V
19+50	0.2064	0.03	| Q	V
19+55	0.2065	0.02	| Q	V
20+ 0	0.2067	0.02	| Q	V
20+ 5	0.2069	0.02	| Q	V
20+10	0.2071	0.03	| Q	V
20+15	0.2073	0.03	| Q	V
20+20	0.2075	0.03	| Q	V
20+25	0.2077	0.03	| Q	V
20+30	0.2079	0.03	| Q	V
20+35	0.2081	0.03	| Q	V
20+40	0.2083	0.03	| Q	V
20+45	0.2086	0.03	| Q	V
20+50	0.2087	0.03	| Q	V
20+55	0.2089	0.02	| Q	V
21+ 0	0.2091	0.02	| Q	V
21+ 5	0.2092	0.02	| Q	V
21+10	0.2094	0.03	| Q	V
21+15	0.2096	0.03	| Q	V
21+20	0.2098	0.03	| Q	V
21+25	0.2100	0.02	| Q	V
21+30	0.2101	0.02	| Q	V
21+35	0.2103	0.02	| Q	V
21+40	0.2105	0.03	| Q	V
21+45	0.2107	0.03	| Q	V
21+50	0.2109	0.03	| Q	V
21+55	0.2111	0.02	| Q	V
22+ 0	0.2112	0.02	| Q	V
22+ 5	0.2114	0.02	| Q	V
22+10	0.2116	0.03	| Q	V
22+15	0.2118	0.03	| Q	V
22+20	0.2120	0.03	| Q	V
22+25	0.2121	0.02	| Q	V
22+30	0.2123	0.02	| Q	V
22+35	0.2124	0.02	| Q	V
22+40	0.2126	0.02	| Q	V
22+45	0.2127	0.02	| Q	V
22+50	0.2129	0.02	| Q	V
22+55	0.2130	0.02	| Q	V
23+ 0	0.2131	0.02	| Q	V
23+ 5	0.2133	0.02	| Q	V
23+10	0.2134	0.02	| Q	V

23+15	0.2136	0.02	Q				V
23+20	0.2137	0.02	Q				V
23+25	0.2139	0.02	Q				V
23+30	0.2140	0.02	Q				V
23+35	0.2141	0.02	Q				V
23+40	0.2143	0.02	Q				V
23+45	0.2144	0.02	Q				V
23+50	0.2146	0.02	Q				V
23+55	0.2147	0.02	Q				V
24+ 0	0.2149	0.02	Q				V
24+ 5	0.2150	0.01	Q				V
24+10	0.2150	0.00	Q				V
24+15	0.2150	0.00	Q				V
24+20	0.2150	0.00	Q				V
24+25	0.2150	0.00	Q				V

Unit Hydrograph Analysis

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Study date 09/03/19 File: 2712EX10110.out

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

Program License Serial Number 6400

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

2712
EXISTING CONDITION - ONSITE
10 YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

1 HOUR

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	0.50	4.58

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	1.30	11.90

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.500(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.829(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.829(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
9.150	77.00	0.000
Total Area Entered	=	9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
77.0	77.0	0.279	0.000	0.279	1.000	0.279
						Sum (F) = 0.279

Area averaged mean soil loss (F) (In/Hr) = 0.279

Minimum soil loss rate ((In/Hr)) = 0.140

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.900

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	149.774	33.120	3.054
2 0.167	299.549	47.027	4.337
3 0.250	449.323	11.195	1.032
4 0.333	599.098	4.890	0.451
5 0.417	748.872	2.473	0.228
6 0.500	898.646	1.295	0.119

Sum = 100.000 Sum= 9.221

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) Max | Low	Effective (In/Hr)
1	0.08	4.20	0.418	0.279 (0.376)	0.138
2	0.17	4.30	0.428	0.279 (0.385)	0.148
3	0.25	5.00	0.497	0.279 (0.448)	0.218
4	0.33	5.00	0.497	0.279 (0.448)	0.218
5	0.42	5.80	0.577	0.279 (0.519)	0.298
6	0.50	6.50	0.647	0.279 (0.582)	0.367
7	0.58	7.40	0.736	0.279 (0.663)	0.457
8	0.67	8.60	0.856	0.279 (0.770)	0.576
9	0.75	12.30	1.224	0.279 (1.101)	0.944
10	0.83	29.10	2.895	0.279 (2.606)	2.616
11	0.92	6.80	0.677	0.279 (0.609)	0.397
12	1.00	5.00	0.497	0.279 (0.448)	0.218

(Loss Rate Not Used)

Sum = 100.0 Sum = 6.6

Flood volume = Effective rainfall 0.55 (In)

times area 9.2 (Ac.) / [(In)/(Ft.)] = 0.4 (Ac.Ft)

Total soil loss = 0.28 (In)

Total soil loss = 0.213 (Ac.Ft)

Total rainfall = 0.83 (In)

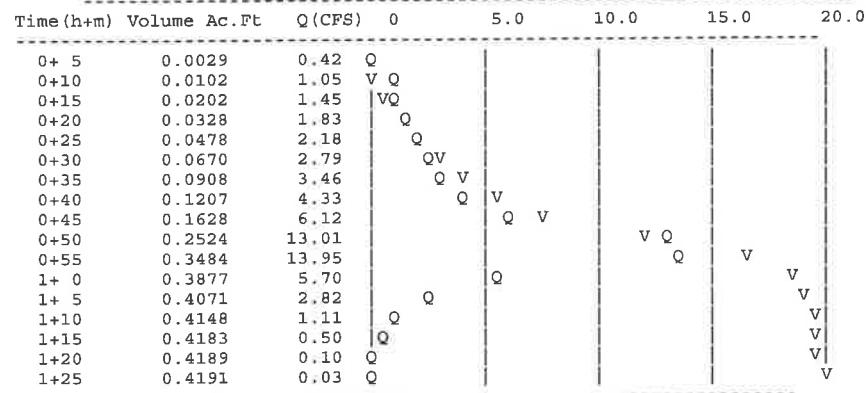
Flood volume = 18256.6 Cubic Feet

Total soil loss = 9280.1 Cubic Feet

Peak flow rate of this hydrograph = 13.946 (CFS)

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

Hydrograph in 5 Minute intervals ((CFS))



Unit Hydrograph Analysis
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Study date 09/03/19 File: 2712EX10310.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
10 YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

3 TO UP

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	0.80	7.32

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	2.00	18.30

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.800(In)
Area Averaged 100-Year Rainfall = 2.000(In)

Point rain (area averaged) = 1.294(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.294(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
77.0	77.0	0.279	0.000	0.279	1.000	0.279
						Sum (F) = 0.279

Area averaged mean soil loss (F) (In/Hr) = 0.279
Minimum soil loss rate ((In/Hr)) = 0.140
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	149.774	3.054
2	0.167	299.549	4.337
3	0.250	449.323	1.032
4	0.333	599.098	0.451
5	0.417	748.872	0.228
6	0.500	898.646	0.119
Sum = 100.000 Sum=			9.221

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 (In/Hr.)	Rain (In/Hr.)	Loss rate (In./Hr)		Effective (In/Hr)
					Max	Low	
1	0.08	1.30	0.202	(0.279)	0.182	0.020	
2	0.17	1.30	0.202	(0.279)	0.182	0.020	
3	0.25	1.10	0.171	(0.279)	0.154	0.017	
4	0.33	1.50	0.233	(0.279)	0.210	0.023	
5	0.42	1.50	0.233	(0.279)	0.210	0.023	
6	0.50	1.80	0.279	(0.279)	0.251	0.028	
7	0.58	1.50	0.233	(0.279)	0.210	0.023	
8	0.67	1.80	0.279	(0.279)	0.251	0.028	
9	0.75	1.80	0.279	(0.279)	0.251	0.028	
10	0.83	1.50	0.233	(0.279)	0.210	0.023	
11	0.92	1.60	0.248	(0.279)	0.224	0.025	
12	1.00	1.80	0.279	(0.279)	0.251	0.028	
13	1.08	2.20	0.342	0.279	(0.307)	0.062	
14	1.17	2.20	0.342	0.279	(0.307)	0.062	
15	1.25	2.20	0.342	0.279	(0.307)	0.062	
16	1.33	2.00	0.310	0.279	(0.279)	0.031	
17	1.42	2.60	0.404	0.279	(0.363)	0.124	
18	1.50	2.70	0.419	0.279	(0.377)	0.140	
19	1.58	2.40	0.373	0.279	(0.335)	0.093	
20	1.67	2.70	0.419	0.279	(0.377)	0.140	
21	1.75	3.30	0.512	0.279	(0.461)	0.233	
22	1.83	3.10	0.481	0.279	(0.433)	0.202	
23	1.92	2.90	0.450	0.279	(0.405)	0.171	
24	2.00	3.00	0.466	0.279	(0.419)	0.186	
25	2.08	3.10	0.481	0.279	(0.433)	0.202	
26	2.17	4.20	0.652	0.279	(0.587)	0.373	
27	2.25	5.00	0.776	0.279	(0.699)	0.497	
28	2.33	3.50	0.543	0.279	(0.489)	0.264	
29	2.42	6.80	1.056	0.279	(0.950)	0.776	
30	2.50	7.30	1.133	0.279	(1.020)	0.854	
31	2.58	8.20	1.273	0.279	(1.146)	0.994	
32	2.67	5.90	0.916	0.279	(0.824)	0.636	
33	2.75	2.00	0.310	0.279	(0.279)	0.031	
34	2.83	1.80	0.279	(0.279)	0.251	0.028	
35	2.92	1.80	0.279	(0.279)	0.251	0.028	
36	3.00	0.60	0.093	(0.279)	0.084	0.009	

(Loss Rate Not Used)

$$\text{Sum} = 6.5$$

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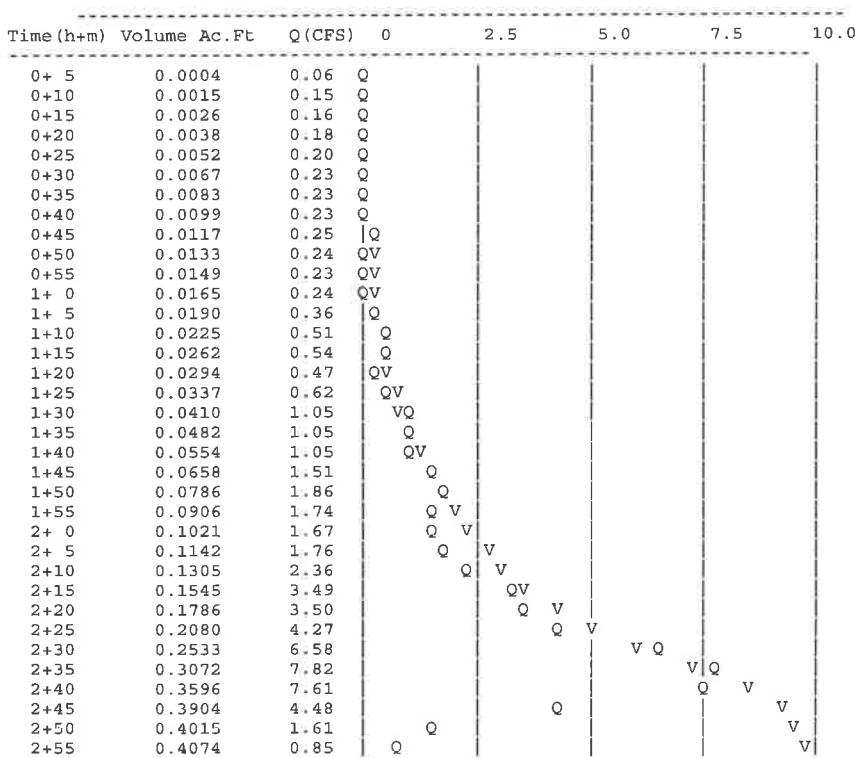
Flood volume = Effective rainfall      0.54 (In)
times area      9.2 (Ac.) / [(In) / (Ft.)] =      0.4 (Ac.Ft)
Total soil loss =      0.75 (In)
Total soil loss =      0.574 (Ac.Ft)
Total rainfall =      1.29 (In)
Flood volume =    17949.0 Cubic Feet
Total soil loss =   25018.5 Cubic Feet

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Peak flow rate of this hydrograph = 7.819 (CFS)

3 - H O U R S T O R M

Urograph in 5 minute intervals ((CES))



3+ 0	0.4106	0.46	| Q				V
3+ 5	0.4117	0.17	Q				V
3+10	0.4119	0.03	Q				V
3+15	0.4120	0.01	Q				V
3+20	0.4120	0.01	Q				V
3+25	0.4121	0.00	Q				V

Unit Hydrograph Analysis

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Study date 09/03/19 File: 2712EX10610.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
10 YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

6 HOUR

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 1.20 10.98

100 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 3.00 27.45

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.200(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.941(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.940(In)

Sub-Area Data:

Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-2 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
77.0 77.0 0.279 0.000 0.279 1.000 0.279
Sum (F) = 0.279

Area averaged mean soil loss (F) (In/Hr) = 0.279
Minimum soil loss rate ((In/Hr)) = 0.140
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period Time % of lag Distribution Unit Hydrograph
(hrs) Graph % (CFS)

1	0.083	149.774	33.120	3.054
2	0.167	299.549	47.027	4.337
3	0.250	449.323	11.195	1.032
4	0.333	599.098	4.890	0.451
5	0.417	748.872	2.473	0.228
6	0.500	898.646	1.295	0.119
		Sum = 100.000	Sum=	9.221

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	0.50	0.116	(0.279)	0.105	0.012
2	0.17	0.60	0.140	(0.279)	0.126	0.014
3	0.25	0.60	0.140	(0.279)	0.126	0.014
4	0.33	0.60	0.140	(0.279)	0.126	0.014
5	0.42	0.60	0.140	(0.279)	0.126	0.014
6	0.50	0.70	0.163	(0.279)	0.147	0.016
7	0.58	0.70	0.163	(0.279)	0.147	0.016
8	0.67	0.70	0.163	(0.279)	0.147	0.016
9	0.75	0.70	0.163	(0.279)	0.147	0.016
10	0.83	0.70	0.163	(0.279)	0.147	0.016
11	0.92	0.70	0.163	(0.279)	0.147	0.016
12	1.00	0.80	0.186	(0.279)	0.168	0.019
13	1.08	0.80	0.186	(0.279)	0.168	0.019
14	1.17	0.80	0.186	(0.279)	0.168	0.019
15	1.25	0.80	0.186	(0.279)	0.168	0.019
16	1.33	0.80	0.186	(0.279)	0.168	0.019
17	1.42	0.80	0.186	(0.279)	0.168	0.019
18	1.50	0.80	0.186	(0.279)	0.168	0.019
19	1.58	0.80	0.186	(0.279)	0.168	0.019
20	1.67	0.80	0.186	(0.279)	0.168	0.019
21	1.75	0.80	0.186	(0.279)	0.168	0.019
22	1.83	0.80	0.186	(0.279)	0.168	0.019
23	1.92	0.80	0.186	(0.279)	0.168	0.019
24	2.00	0.90	0.210	(0.279)	0.189	0.021
25	2.08	0.80	0.186	(0.279)	0.168	0.019
26	2.17	0.90	0.210	(0.279)	0.189	0.021
27	2.25	0.90	0.210	(0.279)	0.189	0.021
28	2.33	0.90	0.210	(0.279)	0.189	0.021
29	2.42	0.90	0.210	(0.279)	0.189	0.021
30	2.50	0.90	0.210	(0.279)	0.189	0.021
31	2.58	0.90	0.210	(0.279)	0.189	0.021
32	2.67	0.90	0.210	(0.279)	0.189	0.021
33	2.75	1.00	0.233	(0.279)	0.210	0.023
34	2.83	1.00	0.233	(0.279)	0.210	0.023
35	2.92	1.00	0.233	(0.279)	0.210	0.023
36	3.00	1.00	0.233	(0.279)	0.210	0.023
37	3.08	1.00	0.233	(0.279)	0.210	0.023
38	3.17	1.10	0.256	(0.279)	0.231	0.026
39	3.25	1.10	0.256	(0.279)	0.231	0.026
40	3.33	1.10	0.256	(0.279)	0.231	0.026
41	3.42	1.20	0.279	(0.279)	0.251	0.028
42	3.50	1.30	0.303	(0.279)	0.272	0.030
43	3.58	1.40	0.326	0.279	(0.293)	0.047
44	3.67	1.40	0.326	0.279	(0.293)	0.047
45	3.75	1.50	0.349	0.279	(0.314)	0.070
46	3.83	1.50	0.349	0.279	(0.314)	0.070
47	3.92	1.60	0.373	0.279	(0.335)	0.093
48	4.00	1.60	0.373	0.279	(0.335)	0.093
49	4.08	1.70	0.396	0.279	(0.356)	0.116
50	4.17	1.80	0.419	0.279	(0.377)	0.140
51	4.25	1.90	0.442	0.279	(0.398)	0.163
52	4.33	2.00	0.466	0.279	(0.419)	0.186
53	4.42	2.10	0.489	0.279	(0.440)	0.210
54	4.50	2.10	0.489	0.279	(0.440)	0.210
55	4.58	2.20	0.512	0.279	(0.461)	0.233
56	4.67	2.30	0.536	0.279	(0.482)	0.256
57	4.75	2.40	0.559	0.279	(0.503)	0.279
58	4.83	2.40	0.559	0.279	(0.503)	0.279
59	4.92	2.50	0.582	0.279	(0.524)	0.303
60	5.00	2.60	0.605	0.279	(0.545)	0.326
61	5.08	3.10	0.722	0.279	(0.650)	0.442
62	5.17	3.60	0.838	0.279	(0.754)	0.559
63	5.25	3.90	0.908	0.279	(0.817)	0.629
64	5.33	4.20	0.978	0.279	(0.880)	0.699
65	5.42	4.70	1.094	0.279	(0.985)	0.815
66	5.50	5.60	1.304	0.279	(1.174)	1.025
67	5.58	1.90	0.442	0.279	(0.398)	0.163
68	5.67	0.90	0.210	(0.279)	0.189	0.021
69	5.75	0.60	0.140	(0.279)	0.126	0.014
70	5.83	0.50	0.116	(0.279)	0.105	0.012
71	5.92	0.30	0.070	(0.279)	0.063	0.007
72	6.00	0.20	0.047	(0.279)	0.042	0.005

(Loss Rate Not Used)

Sum = 8.3

Flood volume = Effective rainfall 0.69 (In)

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times area 9.2 (Ac.) / [(In

Total soil loss = 1.25 (In)

Total soil loss = 0.950 (Ac.)

Total rainfall = 1.94 (In)

Flood volume = 23075.7 Cubic Feet

Peak flow rate of this hydrograph = 7.853 (CES)

6 - H O U R S T O R M
Runoff Hydrograph

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	0.04	Q				
0+10	0.0009	0.09	Q				
0+15	0.0017	0.12	Q				
0+20	0.0025	0.12	Q				
0+25	0.0034	0.13	Q				
0+30	0.0043	0.14	Q				
0+35	0.0053	0.15	Q				
0+40	0.0064	0.15	Q				
0+45	0.0074	0.15	Q				
0+50	0.0084	0.15	Q				
0+55	0.0095	0.15	Q				
1+ 0	0.0105	0.16	Q				
1+ 5	0.0117	0.17	Q				
1+10	0.0129	0.17	Q				
1+15	0.0141	0.17	QV				
1+20	0.0152	0.17	QV				
1+25	0.0164	0.17	QV				
1+30	0.0176	0.17	QV				
1+35	0.0188	0.17	QV				
1+40	0.0200	0.17	QV				
1+45	0.0212	0.17	QV				
1+50	0.0223	0.17	QV				
1+55	0.0235	0.17	QV				
2+ 0	0.0248	0.18	QV				
2+ 5	0.0260	0.18	QV				
2+10	0.0273	0.18	Q V				
2+15	0.0286	0.19	Q V				
2+20	0.0299	0.19	Q V				
2+25	0.0312	0.19	Q V				
2+30	0.0325	0.19	Q V				
2+35	0.0339	0.19	Q V				
2+40	0.0352	0.19	Q V				
2+45	0.0366	0.20	Q V				
2+50	0.0380	0.21	Q V				
2+55	0.0395	0.21	Q V				
3+ 0	0.0410	0.21	Q V				
3+ 5	0.0425	0.21	Q V				
3+10	0.0440	0.22	Q V				
3+15	0.0456	0.23	Q V				
3+20	0.0472	0.23	Q V				
3+25	0.0489	0.24	Q V				
3+30	0.0507	0.26	Q V				
3+35	0.0529	0.32	Q V				
3+40	0.0556	0.40	Q V				
3+45	0.0590	0.49	Q V				
3+50	0.0631	0.60	Q V				
3+55	0.0679	0.70	Q V				
4+ 0	0.0734	0.81	Q V				
4+ 5	0.0797	0.91	Q V				
4+10	0.0872	1.09	Q V				
4+15	0.0962	1.30	Q V				
4+20	0.1065	1.51	Q V				
4+25	0.1184	1.72	Q V				
4+30	0.1312	1.86	Q V				
4+35	0.1448	1.98	Q V				
4+40	0.1597	2.17	Q V				
4+45	0.1761	2.37	Q V				
4+50	0.1933	2.51	Q V				
4+55	0.2114	2.62	Q V				
5+ 0	0.2307	2.81	Q V				
5+ 5	0.2535	3.30	Q V				
5+10	0.2824	4.20	Q V				
5+15	0.3172	5.05	Q V				
5+20	0.3568	5.75	Q V				
5+25	0.4020	6.56	Q V				
5+30	0.4561	7.85	Q V				
5+35	0.4995	6.31	Q V				
5+40	0.5163	2.43	Q V				
5+45	0.5234	1.03	Q V				
5+50	0.5270	0.52	Q V				
5+55	0.5287	0.26	Q V				
6+ 0	0.5293	0.09	Q V				
6+ 5	0.5296	0.04	Q V				
6+10	0.5297	0.01	Q V				
6+15	0.5297	0.01	Q V				
6+20	0.5297	0.00	Q V				
6+25	0.5297	0.00	Q V				

Unit Hydrograph Analysis

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Study date 09/03/19 File: 2712EX102410.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
EXISTING CONDITION - ONSITE
10 YEAR

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 773.00(Ft.)
Length along longest watercourse measured to centroid = 412.00(Ft.)
Length along longest watercourse = 0.146 Mi.
Length along longest watercourse measured to centroid = 0.078 Mi.
Difference in elevation = 13.60(Ft.)
Slope along watercourse = 92.8952 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.056 Hr.
Lag time = 3.34 Min.
25% of lag time = 0.83 Min.
40% of lag time = 1.34 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

24 HOUR

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	2.00	18.30

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	5.50	50.33

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.500(In)

Point rain (area averaged) = 3.440(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.440(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 77.00 0.000
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
77.0	77.0	0.279	0.000	0.279	1.000	0.279
					Sum (F) =	0.279

Area averaged mean soil loss (F) (In/Hr) = 0.279

Minimum soil loss rate ((In/Hr)) = 0.140

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.900

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1 0.083	149.774	33.120	3.054
2 0.167	299.549	47.027	4.337
3 0.250	449.323	11.195	1.032
4 0.333	599.098	4.890	0.451
5 0.417	748.872	2.473	0.228
6 0.500	898.646	1.295	0.119
		Sum = 100.000	Sum= 9.221

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) Max | Low	Effective (In/Hr)
1	0.08	0.07	0.028	(0.495) 0.025	0.003
2	0.17	0.07	0.028	(0.493) 0.025	0.003
3	0.25	0.07	0.028	(0.491) 0.025	0.003
4	0.33	0.10	0.041	(0.490) 0.037	0.004
5	0.42	0.10	0.041	(0.488) 0.037	0.004
6	0.50	0.10	0.041	(0.486) 0.037	0.004
7	0.58	0.10	0.041	(0.484) 0.037	0.004
8	0.67	0.10	0.041	(0.482) 0.037	0.004
9	0.75	0.10	0.041	(0.480) 0.037	0.004
10	0.83	0.13	0.055	(0.478) 0.050	0.006
11	0.92	0.13	0.055	(0.476) 0.050	0.006
12	1.00	0.13	0.055	(0.474) 0.050	0.006
13	1.08	0.10	0.041	(0.473) 0.037	0.004
14	1.17	0.10	0.041	(0.471) 0.037	0.004
15	1.25	0.10	0.041	(0.469) 0.037	0.004
16	1.33	0.10	0.041	(0.467) 0.037	0.004
17	1.42	0.10	0.041	(0.465) 0.037	0.004
18	1.50	0.10	0.041	(0.463) 0.037	0.004
19	1.58	0.10	0.041	(0.461) 0.037	0.004
20	1.67	0.10	0.041	(0.460) 0.037	0.004
21	1.75	0.10	0.041	(0.458) 0.037	0.004
22	1.83	0.13	0.055	(0.456) 0.050	0.006
23	1.92	0.13	0.055	(0.454) 0.050	0.006
24	2.00	0.13	0.055	(0.452) 0.050	0.006
25	2.08	0.13	0.055	(0.450) 0.050	0.006
26	2.17	0.13	0.055	(0.449) 0.050	0.006
27	2.25	0.13	0.055	(0.447) 0.050	0.006
28	2.33	0.13	0.055	(0.445) 0.050	0.006
29	2.42	0.13	0.055	(0.443) 0.050	0.006
30	2.50	0.13	0.055	(0.441) 0.050	0.006
31	2.58	0.17	0.069	(0.439) 0.062	0.007
32	2.67	0.17	0.069	(0.438) 0.062	0.007
33	2.75	0.17	0.069	(0.436) 0.062	0.007
34	2.83	0.17	0.069	(0.434) 0.062	0.007
35	2.92	0.17	0.069	(0.432) 0.062	0.007
36	3.00	0.17	0.069	(0.430) 0.062	0.007
37	3.08	0.17	0.069	(0.429) 0.062	0.007
38	3.17	0.17	0.069	(0.427) 0.062	0.007
39	3.25	0.17	0.069	(0.425) 0.062	0.007
40	3.33	0.17	0.069	(0.423) 0.062	0.007
41	3.42	0.17	0.069	(0.422) 0.062	0.007
42	3.50	0.17	0.069	(0.420) 0.062	0.007
43	3.58	0.17	0.069	(0.418) 0.062	0.007
44	3.67	0.17	0.069	(0.416) 0.062	0.007
45	3.75	0.17	0.069	(0.415) 0.062	0.007
46	3.83	0.20	0.083	(0.413) 0.074	0.008
47	3.92	0.20	0.083	(0.411) 0.074	0.008
48	4.00	0.20	0.083	(0.409) 0.074	0.008
49	4.08	0.20	0.083	(0.408) 0.074	0.008
50	4.17	0.20	0.083	(0.406) 0.074	0.008
51	4.25	0.20	0.083	(0.404) 0.074	0.008
52	4.33	0.23	0.096	(0.402) 0.087	0.010
53	4.42	0.23	0.096	(0.401) 0.087	0.010
54	4.50	0.23	0.096	(0.399) 0.087	0.010
55	4.58	0.23	0.096	(0.397) 0.087	0.010
56	4.67	0.23	0.096	(0.396) 0.087	0.010
57	4.75	0.23	0.096	(0.394) 0.087	0.010
58	4.83	0.27	0.110	(0.392) 0.099	0.011
59	4.92	0.27	0.110	(0.390) 0.099	0.011
60	5.00	0.27	0.110	(0.389) 0.099	0.011
61	5.08	0.20	0.083	(0.387) 0.074	0.008
62	5.17	0.20	0.083	(0.385) 0.074	0.008
63	5.25	0.20	0.083	(0.384) 0.074	0.008
64	5.33	0.23	0.096	(0.382) 0.087	0.010
65	5.42	0.23	0.096	(0.380) 0.087	0.010
66	5.50	0.23	0.096	(0.379) 0.087	0.010
67	5.58	0.27	0.110	(0.377) 0.099	0.011
68	5.67	0.27	0.110	(0.375) 0.099	0.011
69	5.75	0.27	0.110	(0.374) 0.099	0.011
70	5.83	0.27	0.110	(0.372) 0.099	0.011
71	5.92	0.27	0.110	(0.370) 0.099	0.011
72	6.00	0.27	0.110	(0.369) 0.099	0.011
73	6.08	0.30	0.124	(0.367) 0.111	0.012
74	6.17	0.30	0.124	(0.366) 0.111	0.012
75	6.25	0.30	0.124	(0.364) 0.111	0.012
76	6.33	0.30	0.124	(0.362) 0.111	0.012
77	6.42	0.30	0.124	(0.361) 0.111	0.012
78	6.50	0.30	0.124	(0.359) 0.111	0.012
79	6.58	0.33	0.138	(0.357) 0.124	0.014
80	6.67	0.33	0.138	(0.356) 0.124	0.014
81	6.75	0.33	0.138	(0.354) 0.124	0.014
82	6.83	0.33	0.138	(0.353) 0.124	0.014
83	6.92	0.33	0.138	(0.351) 0.124	0.014
84	7.00	0.33	0.138	(0.349) 0.124	0.014
85	7.08	0.33	0.138	(0.348) 0.124	0.014
86	7.17	0.33	0.138	(0.346) 0.124	0.014
87	7.25	0.33	0.138	(0.345) 0.124	0.014
88	7.33	0.37	0.151	(0.343) 0.136	0.015
89	7.42	0.37	0.151	(0.342) 0.136	0.015
90	7.50	0.37	0.151	(0.340) 0.136	0.015
91	7.58	0.40	0.165	(0.338) 0.149	0.017
92	7.67	0.40	0.165	(0.337) 0.149	0.017

93	7.75	0.40	0.165	(0.335)	0.149	0.017
94	7.83	0.43	0.179	(0.334)	0.161	0.018
95	7.92	0.43	0.179	(0.332)	0.161	0.018
96	8.00	0.43	0.179	(0.331)	0.161	0.018
97	8.08	0.50	0.206	(0.329)	0.186	0.021
98	8.17	0.50	0.206	(0.328)	0.186	0.021
99	8.25	0.50	0.206	(0.326)	0.186	0.021
100	8.33	0.50	0.206	(0.325)	0.186	0.021
101	8.42	0.50	0.206	(0.323)	0.186	0.021
102	8.50	0.50	0.206	(0.322)	0.186	0.021
103	8.58	0.53	0.220	(0.320)	0.198	0.022
104	8.67	0.53	0.220	(0.318)	0.198	0.022
105	8.75	0.53	0.220	(0.317)	0.198	0.022
106	8.83	0.57	0.234	(0.316)	0.211	0.023
107	8.92	0.57	0.234	(0.314)	0.211	0.023
108	9.00	0.57	0.234	(0.313)	0.211	0.023
109	9.08	0.63	0.261	(0.311)	0.235	0.026
110	9.17	0.63	0.261	(0.310)	0.235	0.026
111	9.25	0.63	0.261	(0.308)	0.235	0.026
112	9.33	0.67	0.275	(0.307)	0.248	0.028
113	9.42	0.67	0.275	(0.305)	0.248	0.028
114	9.50	0.67	0.275	(0.304)	0.248	0.028
115	9.58	0.70	0.289	(0.302)	0.260	0.029
116	9.67	0.70	0.289	(0.301)	0.260	0.029
117	9.75	0.70	0.289	(0.299)	0.260	0.029
118	9.83	0.73	0.303	(0.298)	0.272	0.030
119	9.92	0.73	0.303	(0.296)	0.272	0.030
120	10.00	0.73	0.303	(0.295)	0.272	0.030
121	10.08	0.50	0.206	(0.294)	0.186	0.021
122	10.17	0.50	0.206	(0.292)	0.186	0.021
123	10.25	0.50	0.206	(0.291)	0.186	0.021
124	10.33	0.50	0.206	(0.289)	0.186	0.021
125	10.42	0.50	0.206	(0.288)	0.186	0.021
126	10.50	0.50	0.206	(0.287)	0.186	0.021
127	10.58	0.67	0.275	(0.285)	0.248	0.028
128	10.67	0.67	0.275	(0.284)	0.248	0.028
129	10.75	0.67	0.275	(0.282)	0.248	0.028
130	10.83	0.67	0.275	(0.281)	0.248	0.028
131	10.92	0.67	0.275	(0.280)	0.248	0.028
132	11.00	0.67	0.275	(0.278)	0.248	0.028
133	11.08	0.63	0.261	(0.277)	0.235	0.026
134	11.17	0.63	0.261	(0.276)	0.235	0.026
135	11.25	0.63	0.261	(0.274)	0.235	0.026
136	11.33	0.63	0.261	(0.273)	0.235	0.026
137	11.42	0.63	0.261	(0.271)	0.235	0.026
138	11.50	0.63	0.261	(0.270)	0.235	0.026
139	11.58	0.57	0.234	(0.269)	0.211	0.023
140	11.67	0.57	0.234	(0.267)	0.211	0.023
141	11.75	0.57	0.234	(0.266)	0.211	0.023
142	11.83	0.60	0.248	(0.265)	0.223	0.025
143	11.92	0.60	0.248	(0.263)	0.223	0.025
144	12.00	0.60	0.248	(0.262)	0.223	0.025
145	12.08	0.83	0.344	0.261 (0.310)	0.083	
146	12.17	0.83	0.344	0.260 (0.310)	0.084	
147	12.25	0.83	0.344	0.258 (0.310)	0.086	
148	12.33	0.87	0.358	0.257 (0.322)	0.101	
149	12.42	0.87	0.358	0.256 (0.322)	0.102	
150	12.50	0.87	0.358	0.254 (0.322)	0.103	
151	12.58	0.93	0.385	0.253 (0.347)	0.132	
152	12.67	0.93	0.385	0.252 (0.347)	0.133	
153	12.75	0.93	0.385	0.251 (0.347)	0.135	
154	12.83	0.97	0.399	0.249 (0.359)	0.150	
155	12.92	0.97	0.399	0.248 (0.359)	0.151	
156	13.00	0.97	0.399	0.247 (0.359)	0.152	
157	13.08	1.13	0.468	0.245 (0.421)	0.222	
158	13.17	1.13	0.468	0.244 (0.421)	0.224	
159	13.25	1.13	0.468	0.243 (0.421)	0.225	
160	13.33	1.13	0.468	0.242 (0.421)	0.226	
161	13.42	1.13	0.468	0.241 (0.421)	0.227	
162	13.50	1.13	0.468	0.239 (0.421)	0.229	
163	13.58	0.77	0.316	0.238 (0.285)	0.078	
164	13.67	0.77	0.316	0.237 (0.285)	0.080	
165	13.75	0.77	0.316	0.236 (0.285)	0.081	
166	13.83	0.77	0.316	0.234 (0.285)	0.082	
167	13.92	0.77	0.316	0.233 (0.285)	0.083	
168	14.00	0.77	0.316	0.232 (0.285)	0.084	
169	14.08	0.90	0.372	0.231 (0.334)	0.141	
170	14.17	0.90	0.372	0.230 (0.334)	0.142	
171	14.25	0.90	0.372	0.229 (0.334)	0.143	
172	14.33	0.87	0.358	0.227 (0.322)	0.130	
173	14.42	0.87	0.358	0.226 (0.322)	0.132	
174	14.50	0.87	0.358	0.225 (0.322)	0.133	
175	14.58	0.87	0.358	0.224 (0.322)	0.134	
176	14.67	0.87	0.358	0.223 (0.322)	0.135	
177	14.75	0.87	0.358	0.222 (0.322)	0.136	
178	14.83	0.83	0.344	0.220 (0.310)	0.124	
179	14.92	0.83	0.344	0.219 (0.310)	0.125	
180	15.00	0.83	0.344	0.218 (0.310)	0.126	
181	15.08	0.80	0.330	0.217 (0.297)	0.113	
182	15.17	0.80	0.330	0.216 (0.297)	0.114	
183	15.25	0.80	0.330	0.215 (0.297)	0.115	
184	15.33	0.77	0.316	0.214 (0.285)	0.103	
185	15.42	0.77	0.316	0.213 (0.285)	0.104	
186	15.50	0.77	0.316	0.212 (0.285)	0.105	
187	15.58	0.63	0.261	0.211 (0.235)	0.051	
188	15.67	0.63	0.261	0.209 (0.235)	0.052	
189	15.75	0.63	0.261	0.208 (0.235)	0.053	
190	15.83	0.63	0.261	0.207 (0.235)	0.054	
191	15.92	0.63	0.261	0.206 (0.235)	0.055	

192	16.00	0.63	0.261	0.205	(0.235)	0.056
193	16.08	0.13	0.055	{ 0.204)	0.050	0.006
194	16.17	0.13	0.055	{ 0.203)	0.050	0.006
195	16.25	0.13	0.055	{ 0.202)	0.050	0.006
196	16.33	0.13	0.055	{ 0.201)	0.050	0.006
197	16.42	0.13	0.055	{ 0.200)	0.050	0.006
198	16.50	0.13	0.055	{ 0.199)	0.050	0.006
199	16.58	0.10	0.041	{ 0.198)	0.037	0.004
200	16.67	0.10	0.041	{ 0.197)	0.037	0.004
201	16.75	0.10	0.041	{ 0.196)	0.037	0.004
202	16.83	0.10	0.041	{ 0.195)	0.037	0.004
203	16.92	0.10	0.041	{ 0.194)	0.037	0.004
204	17.00	0.10	0.041	{ 0.193)	0.037	0.004
205	17.08	0.17	0.069	{ 0.192)	0.062	0.007
206	17.17	0.17	0.069	{ 0.191)	0.062	0.007
207	17.25	0.17	0.069	{ 0.190)	0.062	0.007
208	17.33	0.17	0.069	{ 0.189)	0.062	0.007
209	17.42	0.17	0.069	{ 0.188)	0.062	0.007
210	17.50	0.17	0.069	{ 0.187)	0.062	0.007
211	17.58	0.17	0.069	{ 0.186)	0.062	0.007
212	17.67	0.17	0.069	{ 0.185)	0.062	0.007
213	17.75	0.17	0.069	{ 0.184)	0.062	0.007
214	17.83	0.13	0.055	{ 0.184)	0.050	0.006
215	17.92	0.13	0.055	{ 0.183)	0.050	0.006
216	18.00	0.13	0.055	{ 0.182)	0.050	0.006
217	18.08	0.13	0.055	{ 0.181)	0.050	0.006
218	18.17	0.13	0.055	{ 0.180)	0.050	0.006
219	18.25	0.13	0.055	{ 0.179)	0.050	0.006
220	18.33	0.13	0.055	{ 0.178)	0.050	0.006
221	18.42	0.13	0.055	{ 0.177)	0.050	0.006
222	18.50	0.13	0.055	{ 0.176)	0.050	0.006
223	18.58	0.10	0.041	{ 0.176)	0.037	0.004
224	18.67	0.10	0.041	{ 0.175)	0.037	0.004
225	18.75	0.10	0.041	{ 0.174)	0.037	0.004
226	18.83	0.07	0.028	{ 0.173)	0.025	0.003
227	18.92	0.07	0.028	{ 0.172)	0.025	0.003
228	19.00	0.07	0.028	{ 0.171)	0.025	0.003
229	19.08	0.10	0.041	{ 0.171)	0.037	0.004
230	19.17	0.10	0.041	{ 0.170)	0.037	0.004
231	19.25	0.10	0.041	{ 0.169)	0.037	0.004
232	19.33	0.13	0.055	{ 0.168)	0.050	0.006
233	19.42	0.13	0.055	{ 0.167)	0.050	0.006
234	19.50	0.13	0.055	{ 0.167)	0.050	0.006
235	19.58	0.10	0.041	{ 0.166)	0.037	0.004
236	19.67	0.10	0.041	{ 0.165)	0.037	0.004
237	19.75	0.10	0.041	{ 0.164)	0.037	0.004
238	19.83	0.07	0.028	{ 0.164)	0.025	0.003
239	19.92	0.07	0.028	{ 0.163)	0.025	0.003
240	20.00	0.07	0.028	{ 0.162)	0.025	0.003
241	20.08	0.10	0.041	{ 0.162)	0.037	0.004
242	20.17	0.10	0.041	{ 0.161)	0.037	0.004
243	20.25	0.10	0.041	{ 0.160)	0.037	0.004
244	20.33	0.10	0.041	{ 0.159)	0.037	0.004
245	20.42	0.10	0.041	{ 0.159)	0.037	0.004
246	20.50	0.10	0.041	{ 0.158)	0.037	0.004
247	20.58	0.10	0.041	{ 0.157)	0.037	0.004
248	20.67	0.10	0.041	{ 0.157)	0.037	0.004
249	20.75	0.10	0.041	{ 0.156)	0.037	0.004
250	20.83	0.07	0.028	{ 0.155)	0.025	0.003
251	20.92	0.07	0.028	{ 0.155)	0.025	0.003
252	21.00	0.07	0.028	{ 0.154)	0.025	0.003
253	21.08	0.10	0.041	{ 0.154)	0.037	0.004
254	21.17	0.10	0.041	{ 0.153)	0.037	0.004
255	21.25	0.10	0.041	{ 0.152)	0.037	0.004
256	21.33	0.07	0.028	{ 0.152)	0.025	0.003
257	21.42	0.07	0.028	{ 0.151)	0.025	0.003
258	21.50	0.07	0.028	{ 0.151)	0.025	0.003
259	21.58	0.10	0.041	{ 0.150)	0.037	0.004
260	21.67	0.10	0.041	{ 0.150)	0.037	0.004
261	21.75	0.10	0.041	{ 0.149)	0.037	0.004
262	21.83	0.07	0.028	{ 0.149)	0.025	0.003
263	21.92	0.07	0.028	{ 0.148)	0.025	0.003
264	22.00	0.07	0.028	{ 0.148)	0.025	0.003
265	22.08	0.10	0.041	{ 0.147)	0.037	0.004
266	22.17	0.10	0.041	{ 0.147)	0.037	0.004
267	22.25	0.10	0.041	{ 0.146)	0.037	0.004
268	22.33	0.07	0.028	{ 0.146)	0.025	0.003
269	22.42	0.07	0.028	{ 0.145)	0.025	0.003
270	22.50	0.07	0.028	{ 0.145)	0.025	0.003
271	22.58	0.07	0.028	{ 0.144)	0.025	0.003
272	22.67	0.07	0.028	{ 0.144)	0.025	0.003
273	22.75	0.07	0.028	{ 0.144)	0.025	0.003
274	22.83	0.07	0.028	{ 0.143)	0.025	0.003
275	22.92	0.07	0.028	{ 0.143)	0.025	0.003
276	23.00	0.07	0.028	{ 0.142)	0.025	0.003
277	23.08	0.07	0.028	{ 0.142)	0.025	0.003
278	23.17	0.07	0.028	{ 0.142)	0.025	0.003
279	23.25	0.07	0.028	{ 0.142)	0.025	0.003
280	23.33	0.07	0.028	{ 0.141)	0.025	0.003
281	23.42	0.07	0.028	{ 0.141)	0.025	0.003
282	23.50	0.07	0.028	{ 0.141)	0.025	0.003
283	23.58	0.07	0.028	{ 0.140)	0.025	0.003
284	23.67	0.07	0.028	{ 0.140)	0.025	0.003
285	23.75	0.07	0.028	{ 0.140)	0.025	0.003
286	23.83	0.07	0.028	{ 0.140)	0.025	0.003
287	23.92	0.07	0.028	{ 0.140)	0.025	0.003
288	24.00	0.07	0.028	{ 0.140)	0.025	0.003

(Loss Rate Not Used)

Sum = 100.0

Sum = 8.3

Flood volume = Effective rainfall 0.69 (In)
 times area 9.2 (Ac.) / [(In) / (Ft.)] = 0.5 (Ac.Ft)
 Total soil loss = 2.75 (In)
 Total soil loss = 2.098 (Ac.Ft)
 Total rainfall = 3.44 (In)
 Flood volume = 22862.8 Cubic Feet
 Total soil loss = 91390.6 Cubic Feet

 Peak flow rate of this hydrograph = 2.097 (CFS)

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 24 - H O U R S T O R M
 Run off Hydrograph

 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	0.0004	0.02	Q				
0+20	0.0006	0.03	Q				
0+25	0.0008	0.04	Q				
0+30	0.0011	0.04	Q				
0+35	0.0013	0.04	Q				
0+40	0.0016	0.04	Q				
0+45	0.0018	0.04	Q				
0+50	0.0021	0.04	Q				
0+55	0.0025	0.05	Q				
1+ 0	0.0028	0.05	Q				
1+ 5	0.0031	0.05	Q				
1+10	0.0034	0.04	Q				
1+15	0.0037	0.04	Q				
1+20	0.0039	0.04	Q				
1+25	0.0042	0.04	Q				
1+30	0.0045	0.04	Q				
1+35	0.0047	0.04	Q				
1+40	0.0050	0.04	Q				
1+45	0.0052	0.04	Q				
1+50	0.0055	0.04	Q				
1+55	0.0059	0.05	Q				
2+ 0	0.0062	0.05	Q				
2+ 5	0.0066	0.05	Q				
2+10	0.0069	0.05	Q				
2+15	0.0073	0.05	Q				
2+20	0.0076	0.05	Q				
2+25	0.0080	0.05	Q				
2+30	0.0083	0.05	Q				
2+35	0.0087	0.05	Q				
2+40	0.0091	0.06	Q				
2+45	0.0095	0.06	Q				
2+50	0.0100	0.06	Q				
2+55	0.0104	0.06	Q				
3+ 0	0.0108	0.06	Q				
3+ 5	0.0113	0.06	Q				
3+10	0.0117	0.06	Q				
3+15	0.0122	0.06	Q				
3+20	0.0126	0.06	Q				
3+25	0.0130	0.06	Q				
3+30	0.0135	0.06	QV				
3+35	0.0139	0.06	QV				
3+40	0.0143	0.06	QV				
3+45	0.0148	0.06	QV				
3+50	0.0152	0.07	QV				
3+55	0.0157	0.07	QV				
4+ 0	0.0163	0.08	QV				
4+ 5	0.0168	0.08	QV				
4+10	0.0173	0.08	QV				
4+15	0.0178	0.08	QV				
4+20	0.0184	0.08	QV				
4+25	0.0190	0.09	QV				
4+30	0.0196	0.09	QV				
4+35	0.0202	0.09	QV				
4+40	0.0208	0.09	QV				
4+45	0.0214	0.09	QV				
4+50	0.0221	0.09	QV				
4+55	0.0227	0.10	QV				
5+ 0	0.0234	0.10	QV				
5+ 5	0.0241	0.09	QV				
5+10	0.0246	0.08	QV				
5+15	0.0252	0.08	QV				
5+20	0.0257	0.08	QV				
5+25	0.0263	0.09	Q V				
5+30	0.0269	0.09	Q V				
5+35	0.0276	0.09	Q V				
5+40	0.0282	0.10	Q V				
5+45	0.0289	0.10	Q V				
5+50	0.0296	0.10	Q V				
5+55	0.0303	0.10	Q V				
6+ 0	0.0310	0.10	Q V				
6+ 5	0.0318	0.11	Q V				
6+10	0.0325	0.11	Q V				
6+15	0.0333	0.11	Q V				
6+20	0.0341	0.11	Q V				
6+25	0.0349	0.11	Q V				
6+30	0.0357	0.11	Q V				
6+35	0.0365	0.12	Q V				
6+40	0.0373	0.12	Q V				

6+45	0.0382	0.13	Q	V
6+50	0.0391	0.13	Q	V
6+55	0.0400	0.13	Q	V
7+ 0	0.0408	0.13	Q	V
7+ 5	0.0417	0.13	Q	V
7+10	0.0426	0.13	Q	V
7+15	0.0434	0.13	Q	V
7+20	0.0444	0.13	Q	V
7+25	0.0453	0.14	Q	V
7+30	0.0463	0.14	Q	V
7+35	0.0472	0.14	Q	V
7+40	0.0483	0.15	Q	V
7+45	0.0493	0.15	Q	V
7+50	0.0504	0.16	Q	V
7+55	0.0515	0.16	Q	V
8+ 0	0.0526	0.16	Q	V
8+ 5	0.0538	0.17	Q	V
8+10	0.0551	0.19	Q	V
8+15	0.0564	0.19	Q	V
8+20	0.0577	0.19	Q	V
8+25	0.0590	0.19	Q	V
8+30	0.0603	0.19	Q	V
8+35	0.0617	0.19	Q	V
8+40	0.0630	0.20	Q	V
8+45	0.0644	0.20	Q	V
8+50	0.0659	0.21	Q	V
8+55	0.0673	0.21	Q	V
9+ 0	0.0688	0.21	Q	V
9+ 5	0.0703	0.22	Q	V
9+10	0.0720	0.24	Q	V
9+15	0.0736	0.24	Q	V
9+20	0.0753	0.24	Q	V
9+25	0.0770	0.25	Q	V
9+30	0.0788	0.25	Q	V
9+35	0.0805	0.26	Q	V
9+40	0.0824	0.26	Q	V
9+45	0.0842	0.27	Q	V
9+50	0.0861	0.27	Q	V
9+55	0.0880	0.28	Q	V
10+ 0	0.0899	0.28	Q	V
10+ 5	0.0916	0.25	Q	V
10+10	0.0930	0.21	Q	V
10+15	0.0944	0.20	Q	V
10+20	0.0957	0.19	Q	V
10+25	0.0970	0.19	Q	V
10+30	0.0984	0.19	Q	V
10+35	0.0998	0.21	Q	V
10+40	0.1015	0.24	Q	V
10+45	0.1032	0.25	Q	V
10+50	0.1049	0.25	Q	V
10+55	0.1067	0.25	Q	V
11+ 0	0.1084	0.25	Q	V
11+ 5	0.1101	0.25	Q	V
11+10	0.1118	0.24	Q	V
11+15	0.1135	0.24	Q	V
11+20	0.1151	0.24	Q	V
11+25	0.1168	0.24	Q	V
11+30	0.1185	0.24	Q	V
11+35	0.1201	0.23	Q	V
11+40	0.1216	0.22	Q	V
11+45	0.1231	0.22	Q	V
11+50	0.1246	0.22	Q	V
11+55	0.1262	0.23	Q	V
12+ 0	0.1277	0.23	Q	V
12+ 5	0.1305	0.41	Q	V
12+10	0.1351	0.66	Q	V
12+15	0.1402	0.73	Q	V
12+20	0.1458	0.81	Q	V
12+25	0.1520	0.90	Q	V
12+30	0.1584	0.93	Q	V
12+35	0.1655	1.03	Q	V
12+40	0.1735	1.17	Q	V
12+45	0.1819	1.21	Q	V
12+50	0.1906	1.28	Q	V
12+55	0.2000	1.35	Q	V
13+ 0	0.2095	1.38	Q	V
13+ 5	0.2206	1.61	Q	V
13+10	0.2338	1.92	Q	V
13+15	0.2477	2.01	Q	V
13+20	0.2618	2.05	Q	V
13+25	0.2761	2.08	Q	V
13+30	0.2905	2.10	Q	V
13+35	0.3019	1.65	Q	V
13+40	0.3087	1.00	Q	V
13+45	0.3146	0.86	Q	V
13+50	0.3201	0.80	Q	V
13+55	0.3255	0.77	Q	V
14+ 0	0.3307	0.77	Q	V
14+ 5	0.3373	0.95	Q	V
14+10	0.3455	1.20	Q	V
14+15	0.3542	1.26	Q	V
14+20	0.3629	1.26	Q	V
14+25	0.3713	1.22	Q	V
14+30	0.3797	1.22	Q	V
14+35	0.3882	1.23	Q	V
14+40	0.3967	1.24	Q	V
14+45	0.4053	1.25	Q	V
14+50	0.4136	1.21	Q	V
14+55	0.4217	1.16	Q	V

15+ 0	0.4297	1.16		V
15+ 5	0.4374	1.12	Q	V
15+10	0.4448	1.07	Q	V
15+15	0.4521	1.06	Q	V
15+20	0.4592	1.03	Q	V
15+25	0.4659	0.97	O	V
15+30	0.4725	0.97	Q	V
15+35	0.4781	0.80	Q	V
15+40	0.4820	0.57	Q	V
15+45	0.4856	0.52	Q	V
15+50	0.4891	0.51	Q	V
15+55	0.4926	0.51	Q	V
16+ 0	0.4961	0.51	Q	V
16+ 5	0.4986	0.36	Q	V
16+10	0.4996	0.14	Q	V
16+15	0.5002	0.09	Q	V
16+20	0.5007	0.07	Q	V
16+25	0.5011	0.06	Q	V
16+30	0.5014	0.05	Q	V
16+35	0.5017	0.05	Q	V
16+40	0.5020	0.04	Q	V
16+45	0.5023	0.04	Q	V
16+50	0.5026	0.04	Q	V
16+55	0.5028	0.04	Q	V
17+ 0	0.5031	0.04	Q	V
17+ 5	0.5034	0.05	Q	V
17+10	0.5038	0.06	Q	V
17+15	0.5042	0.06	Q	V
17+20	0.5047	0.06	Q	V
17+25	0.5051	0.06	Q	V
17+30	0.5055	0.06	Q	V
17+35	0.5060	0.06	Q	V
17+40	0.5064	0.06	Q	V
17+45	0.5068	0.06	Q	V
17+50	0.5073	0.06	Q	V
17+55	0.5076	0.05	Q	V
18+ 0	0.5080	0.05	Q	V
18+ 5	0.5083	0.05	Q	V
18+10	0.5087	0.05	Q	V
18+15	0.5090	0.05	Q	V
18+20	0.5094	0.05	Q	V
18+25	0.5097	0.05	Q	V
18+30	0.5101	0.05	Q	V
18+35	0.5104	0.05	Q	V
18+40	0.5107	0.04	Q	V
18+45	0.5110	0.04	Q	V
18+50	0.5112	0.03	Q	V
18+55	0.5114	0.03	Q	V
19+ 0	0.5116	0.03	Q	V
19+ 5	0.5118	0.03	Q	V
19+10	0.5120	0.04	Q	V
19+15	0.5123	0.04	Q	V
19+20	0.5126	0.04	Q	V
19+25	0.5129	0.05	Q	V
19+30	0.5132	0.05	Q	V
19+35	0.5136	0.05	Q	V
19+40	0.5138	0.04	Q	V
19+45	0.5141	0.04	Q	V
19+50	0.5143	0.03	Q	V
19+55	0.5145	0.03	Q	V
20+ 0	0.5147	0.03	Q	V
20+ 5	0.5149	0.03	Q	V
20+10	0.5152	0.04	Q	V
20+15	0.5154	0.04	Q	V
20+20	0.5157	0.04	Q	V
20+25	0.5159	0.04	Q	V
20+30	0.5162	0.04	Q	V
20+35	0.5165	0.04	Q	V
20+40	0.5167	0.04	Q	V
20+45	0.5170	0.04	Q	V
20+50	0.5172	0.03	Q	V
20+55	0.5174	0.03	Q	V
21+ 0	0.5176	0.03	Q	V
21+ 5	0.5178	0.03	Q	V
21+10	0.5180	0.04	Q	V
21+15	0.5183	0.04	Q	V
21+20	0.5185	0.03	Q	V
21+25	0.5187	0.03	Q	V
21+30	0.5189	0.03	Q	V
21+35	0.5191	0.03	Q	V
21+40	0.5194	0.04	Q	V
21+45	0.5196	0.04	Q	V
21+50	0.5198	0.03	Q	V
21+55	0.5200	0.03	Q	V
22+ 0	0.5202	0.03	Q	V
22+ 5	0.5204	0.03	Q	V
22+10	0.5207	0.04	Q	V
22+15	0.5209	0.04	Q	V
22+20	0.5212	0.03	Q	V
22+25	0.5213	0.03	Q	V
22+30	0.5215	0.03	Q	V
22+35	0.5217	0.03	Q	V
22+40	0.5219	0.03	Q	V
22+45	0.5221	0.03	Q	V
22+50	0.5222	0.03	Q	V
22+55	0.5224	0.03	Q	V
23+ 0	0.5226	0.03	Q	V
23+ 5	0.5228	0.03	Q	V
23+10	0.5229	0.03	Q	V

23+15	0.5231	0.03	Q				V
23+20	0.5233	0.03	Q				V
23+25	0.5235	0.03	Q				V
23+30	0.5236	0.03	Q				V
23+35	0.5238	0.03	Q				V
23+40	0.5240	0.03	Q				V
23+45	0.5242	0.03	Q				V
23+50	0.5243	0.03	Q				V
23+55	0.5245	0.03	Q				V
24+ 0	0.5247	0.03	Q				V
24+ 5	0.5248	0.02	Q				V
24+10	0.5248	0.01	Q				V
24+15	0.5248	0.00	Q				V
24+20	0.5249	0.00	Q				V
24+25	0.5249	0.00	Q				V

PROPOSED CONDITION HYDROGRAPHS

Unit Hydrograph Analysis

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
Study date 09/03/19 File: 2712PR212.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
2-YEAR UNJT HYDROGRAPH
PROPOSED CONDITION
ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

1 HOUR

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	0.50	4.58

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	1.30	11.90

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.500(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
9.150	69.00	0.900
Total Area Entered =	9.15(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	0.900	0.109	1.000	0.109
					Sum (F) =	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109

Minimum soil loss rate ((In/Hr)) = 0.055

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.100

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	239.299	49.462	4.561
2 0.167	478.599	40.726	3.756
3 0.250	717.898	7.376	0.680
4 0.333	957.198	2.436	0.225
	Sum = 100.000	Sum=	9.221

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) Max | Low	Effective (In/Hr)
1	0.08	4.20	0.252	(0.109) |	0.025 0.227
2	0.17	4.30	0.258	(0.109) |	0.026 0.232
3	0.25	5.00	0.300	(0.109) |	0.030 0.270
4	0.33	5.00	0.300	(0.109) |	0.030 0.270
5	0.42	5.80	0.348	(0.109) |	0.035 0.313
6	0.50	6.50	0.390	(0.109) |	0.039 0.351
7	0.58	7.40	0.444	(0.109) |	0.044 0.400
8	0.67	8.60	0.516	(0.109) |	0.052 0.464
9	0.75	12.30	0.738	(0.109) |	0.074 0.664
10	0.83	29.10	1.746	0.109 | ( 0.175)	1.637
11	0.92	6.80	0.408	(0.109) |	0.041 0.367
12	1.00	5.00	0.300	(0.109) |	0.030 0.270

(Loss Rate Not Used)

Sum = 100.0 Sum = 5.5

Flood volume = Effective rainfall 0.46 (In)
times area 9.2 (Ac.)/[(In)/(Ft.)] = 0.3 (Ac.Ft)

Total soil loss = 0.04 (In)

Total soil loss = 0.034 (Ac.Ft)

Total rainfall = 0.50 (In)

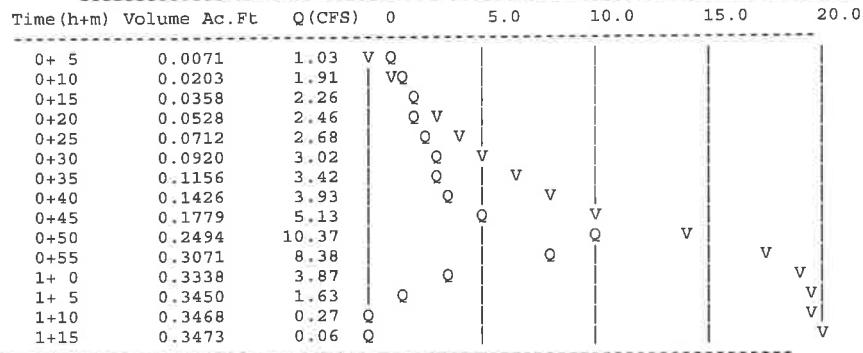
Flood volume = 15126.7 Cubic Feet

Total soil loss = 1479.2 Cubic Feet

Peak flow rate of this hydrograph = 10.371 (CFS)

+++++
1 - H O U R S T O R M
Run off Hydrograph

Hydrograph in 5 Minute intervals ((CFS))



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

Program License Serial Number 6400

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

English Units used in output format

2712
2-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION
ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	0.80	7.32

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	2.00	18.30

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.800 (In)
Area Averaged 100-Year Rainfall = 2.000 (In)

Point rain (area averaged) = 0.800 (In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.800 (In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(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	0.900	0.109	1.000	0.109
					Sum (F)	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
(hrs)			
1	0.083	239.299	4.561
2	0.167	478.599	3.756
3	0.250	717.898	0.680
4	0.333	957.198	0.225
		Sum = 100.000	Sum= 9.221

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	1.30	0.125	(0.109)	0.012	0.112
2	0.17	1.30	0.125	(0.109)	0.012	0.112
3	0.25	1.10	0.106	(0.109)	0.011	0.095
4	0.33	1.50	0.144	(0.109)	0.014	0.130
5	0.42	1.50	0.144	(0.109)	0.014	0.130
6	0.50	1.80	0.173	(0.109)	0.017	0.156
7	0.58	1.50	0.144	(0.109)	0.014	0.130
8	0.67	1.80	0.173	(0.109)	0.017	0.156
9	0.75	1.80	0.173	(0.109)	0.017	0.156
10	0.83	1.50	0.144	(0.109)	0.014	0.130
11	0.92	1.60	0.154	(0.109)	0.015	0.138
12	1.00	1.80	0.173	(0.109)	0.017	0.156
13	1.08	2.20	0.211	(0.109)	0.021	0.190
14	1.17	2.20	0.211	(0.109)	0.021	0.190
15	1.25	2.20	0.211	(0.109)	0.021	0.190
16	1.33	2.00	0.192	(0.109)	0.019	0.173
17	1.42	2.60	0.250	(0.109)	0.025	0.225
18	1.50	2.70	0.259	(0.109)	0.026	0.233
19	1.58	2.40	0.230	(0.109)	0.023	0.207
20	1.67	2.70	0.259	(0.109)	0.026	0.233
21	1.75	3.30	0.317	(0.109)	0.032	0.285
22	1.83	3.10	0.298	(0.109)	0.030	0.268
23	1.92	2.90	0.278	(0.109)	0.028	0.251
24	2.00	3.00	0.288	(0.109)	0.029	0.259
25	2.08	3.10	0.298	(0.109)	0.030	0.268
26	2.17	4.20	0.403	(0.109)	0.040	0.363
27	2.25	5.00	0.480	(0.109)	0.048	0.432
28	2.33	3.50	0.336	(0.109)	0.034	0.302
29	2.42	6.80	0.653	(0.109)	0.065	0.587
30	2.50	7.30	0.701	(0.109)	0.070	0.631
31	2.58	8.20	0.787	(0.109)	0.079	0.708
32	2.67	5.90	0.566	(0.109)	0.057	0.510
33	2.75	2.00	0.192	(0.109)	0.019	0.173
34	2.83	1.80	0.173	(0.109)	0.017	0.156
35	2.92	1.80	0.173	(0.109)	0.017	0.156
36	3.00	0.60	0.058	(0.109)	0.006	0.052

(Loss Rate Not Used)

```

Sum =      100.0          Sum =      8.6
Flood volume = Effective rainfall      0.72 (In)
times area      9.2 (Ac.)/(In)/(Ft.) =      0.5 (Ac.Ft)
Total soil loss =      0.08 (In)
Total soil loss =      0.061 (Ac.Ft)
Total rainfall =      0.80 (In)
Flood volume =      23913.5 Cubic Feet
Total soil loss =      2657.1 Cubic Feet

```

Peak flow rate of this hydrograph = 6.071 (CFS)

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			0.0035	0.51	V Q			
0+10			0.0100	0.93	V Q			
0+15			0.0164	0.93	| V Q			
0+20			0.0236	1.05	V Q			
0+25			0.0317	1.17	V Q			
0+30			0.0407	1.31	V Q			
0+35			0.0496	1.29	V Q			
0+40			0.0587	1.33	VQ			
0+45			0.0685	1.42	VQ			
0+50			0.0775	1.31	Q			
0+55			0.0862	1.26	QV			
1+ 0			0.0955	1.35	QV			
1+ 5			0.1064	1.57	QV			
1+10			0.1182	1.72	Q V			
1+15			0.1302	1.75	Q V			
1+20			0.1417	1.67	Q V			
1+25			0.1545	1.85	Q V			
1+30			0.1687	2.07	Q V			
1+35			0.1826	2.01	Q V			
1+40			0.1967	2.05	Q V			
1+45			0.2131	2.37	Q V			
1+50			0.2303	2.50	Q V			
1+55			0.2468	2.40	Q V			
2+ 0			0.2631	2.37	Q V			
2+ 5			0.2798	2.43	Q V			
2+10			0.2997	2.89	Q V			
2+15			0.3244	3.58	Q V			
2+20			0.3472	3.31	Q V			
2+25			0.3760	4.19	Q V			
2+30			0.4132	5.39	Q V			
2+35			0.4550	6.07	Q V			
2+40			0.4932	5.55	Q V			
2+45			0.5161	3.33	Q V			
2+50			0.5289	1.87	Q V			
2+55			0.5395	1.53	Q V			
3+ 0			0.5461	0.97	Q V			
3+ 5			0.5494	0.34	Q V			

3+10	0.5489	0.07	Q	|	|	|	V|
3+15	0.5490	0.01	Q				V|

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

Program License Serial Number 6400

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English Rainfall Data (Inches) Input Values Used

English Units used in output format

2712
2-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION
ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	1.20	10.98

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	2.00	18.30

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.200(In)
Area Averaged 100-Year Rainfall = 2.000(In)

Point rain (area averaged) = 1.200(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.200(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(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	0.900	0.109	1.000	0.109
Sum (F) =						0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	239.299	49.462	4.561
2 0.167	478.599	40.726	3.756
3 0.250	717.898	7.376	0.680
4 0.333	957.198	2.436	0.225
Sum = 100.000		Sum=	9.221

6 HOUR

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 (In/Hr)	Rain (In/Hr)	Loss rate (In./Hr)		Effective (In/Hr)
					Max	Low	
1	0.08	0.50	0.072	(0.109)	0.007	0.065	
2	0.17	0.60	0.086	(0.109)	0.009	0.078	
3	0.25	0.60	0.086	(0.109)	0.009	0.078	
4	0.33	0.60	0.086	(0.109)	0.009	0.078	
5	0.42	0.60	0.086	(0.109)	0.009	0.078	
6	0.50	0.70	0.101	(0.109)	0.010	0.091	
7	0.58	0.70	0.101	(0.109)	0.010	0.091	
8	0.67	0.70	0.101	(0.109)	0.010	0.091	
9	0.75	0.70	0.101	(0.109)	0.010	0.091	
10	0.83	0.70	0.101	(0.109)	0.010	0.091	
11	0.92	0.70	0.101	(0.109)	0.010	0.091	
12	1.00	0.80	0.115	(0.109)	0.012	0.104	
13	1.08	0.80	0.115	(0.109)	0.012	0.104	
14	1.17	0.80	0.115	(0.109)	0.012	0.104	
15	1.25	0.80	0.115	(0.109)	0.012	0.104	
16	1.33	0.80	0.115	(0.109)	0.012	0.104	
17	1.42	0.80	0.115	(0.109)	0.012	0.104	
18	1.50	0.80	0.115	(0.109)	0.012	0.104	
19	1.58	0.80	0.115	(0.109)	0.012	0.104	
20	1.67	0.80	0.115	(0.109)	0.012	0.104	
21	1.75	0.80	0.115	(0.109)	0.012	0.104	
22	1.83	0.80	0.115	(0.109)	0.012	0.104	
23	1.92	0.80	0.115	(0.109)	0.012	0.104	
24	2.00	0.90	0.130	(0.109)	0.013	0.117	
25	2.08	0.80	0.115	(0.109)	0.012	0.104	
26	2.17	0.90	0.130	(0.109)	0.013	0.117	
27	2.25	0.90	0.130	(0.109)	0.013	0.117	
28	2.33	0.90	0.130	(0.109)	0.013	0.117	
29	2.42	0.90	0.130	(0.109)	0.013	0.117	
30	2.50	0.90	0.130	(0.109)	0.013	0.117	
31	2.58	0.90	0.130	(0.109)	0.013	0.117	
32	2.67	0.90	0.130	(0.109)	0.013	0.117	
33	2.75	1.00	0.144	(0.109)	0.014	0.130	
34	2.83	1.00	0.144	(0.109)	0.014	0.130	
35	2.92	1.00	0.144	(0.109)	0.014	0.130	
36	3.00	1.00	0.144	(0.109)	0.014	0.130	
37	3.08	1.00	0.144	(0.109)	0.014	0.130	
38	3.17	1.10	0.158	(0.109)	0.016	0.143	
39	3.25	1.10	0.158	(0.109)	0.016	0.143	
40	3.33	1.10	0.158	(0.109)	0.016	0.143	
41	3.42	1.20	0.173	(0.109)	0.017	0.156	
42	3.50	1.30	0.187	(0.109)	0.019	0.169	
43	3.58	1.40	0.202	(0.109)	0.020	0.181	
44	3.67	1.40	0.202	(0.109)	0.020	0.181	
45	3.75	1.50	0.216	(0.109)	0.022	0.194	
46	3.83	1.50	0.216	(0.109)	0.022	0.194	
47	3.92	1.60	0.230	(0.109)	0.023	0.207	
48	4.00	1.60	0.230	(0.109)	0.023	0.207	
49	4.08	1.70	0.245	(0.109)	0.024	0.220	
50	4.17	1.80	0.259	(0.109)	0.026	0.233	
51	4.25	1.90	0.274	(0.109)	0.027	0.246	
52	4.33	2.00	0.288	(0.109)	0.029	0.259	
53	4.42	2.10	0.302	(0.109)	0.030	0.272	
54	4.50	2.10	0.302	(0.109)	0.030	0.272	
55	4.58	2.20	0.317	(0.109)	0.032	0.285	
56	4.67	2.30	0.331	(0.109)	0.033	0.298	
57	4.75	2.40	0.346	(0.109)	0.035	0.311	
58	4.83	2.40	0.346	(0.109)	0.035	0.311	
59	4.92	2.50	0.360	(0.109)	0.036	0.324	
60	5.00	2.60	0.374	(0.109)	0.037	0.337	
61	5.08	3.10	0.446	(0.109)	0.045	0.402	
62	5.17	3.60	0.518	(0.109)	0.052	0.467	
63	5.25	3.90	0.562	(0.109)	0.056	0.505	
64	5.33	4.20	0.605	(0.109)	0.060	0.544	
65	5.42	4.70	0.677	(0.109)	0.068	0.609	
66	5.50	5.60	0.806	(0.109)	0.081	0.726	
67	5.58	1.90	0.274	(0.109)	0.027	0.246	
68	5.67	0.90	0.130	(0.109)	0.013	0.117	
69	5.75	0.60	0.086	(0.109)	0.009	0.078	
70	5.83	0.50	0.072	(0.109)	0.007	0.065	
71	5.92	0.30	0.043	(0.109)	0.004	0.039	
72	6.00	0.20	0.029	(0.109)	0.003	0.026	

(Loss Rate Not Used)

Sum = 13.0

```

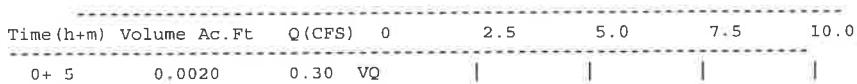
Sum =      100.0          Sum =      15
Flood volume = Effective rainfall      1.08 (In)
times area     9.2(Ac.)/[(In)/(Ft.)] =      0.8 (Ac.Ft)
Total soil loss =      0.12 (In)
Total soil loss =      0.091(Ac.Ft)
Total rainfall =      1.20 (In)
Flood volume =      35870.5 Cubic Feet
Total soil loss =      3985.6 Cubic Feet

```

Peak flow rate of this hydrograph = 6.085 (CFS)

6 - H O U R S T O R M

Hydrograph in 5 Minute intervals ((CFS))



0+10	0.0062	0.60	V Q
0+15	0.0109	0.69	V Q
0+20	0.0158	0.71	V Q
0+25	0.0208	0.72	|VQ
0+30	0.0261	0.78	V Q
0+35	0.0318	0.83	V Q
0+40	0.0376	0.83	V Q
0+45	0.0433	0.84	VQ
0+50	0.0491	0.84	VQ
0+55	0.0548	0.84	VQ
1+ 0	0.0610	0.90	VQ
1+ 5	0.0675	0.94	Q
1+10	0.0741	0.95	Q
1+15	0.0807	0.96	Q
1+20	0.0873	0.96	QV
1+25	0.0939	0.96	QV
1+30	0.1004	0.96	QV
1+35	0.1070	0.96	Q V
1+40	0.1136	0.96	Q V
1+45	0.1202	0.96	Q V
1+50	0.1268	0.96	Q V
1+55	0.1334	0.96	Q V
2+ 0	0.1404	1.02	Q V
2+ 5	0.1473	1.01	Q V
2+10	0.1544	1.02	Q V
2+15	0.1617	1.07	Q V
2+20	0.1691	1.07	Q V
2+25	0.1765	1.08	Q V
2+30	0.1839	1.08	Q V
2+35	0.1913	1.08	Q V
2+40	0.1987	1.08	Q V
2+45	0.2066	1.14	Q V
2+50	0.2147	1.18	Q V
2+55	0.2229	1.19	Q V
3+ 0	0.2312	1.20	Q V
3+ 5	0.2394	1.20	Q V
3+10	0.2480	1.25	Q V
3+15	0.2570	1.30	Q V
3+20	0.2661	1.31	Q V
3+25	0.2755	1.37	Q V
3+30	0.2857	1.48	Q V
3+35	0.2967	1.60	Q V
3+40	0.3082	1.66	Q V
3+45	0.3201	1.73	Q V
3+50	0.3324	1.78	Q V
3+55	0.3451	1.85	Q V
4+ 0	0.3582	1.90	Q V
4+ 5	0.3718	1.97	Q V
4+10	0.3861	2.08	Q V
4+15	0.4012	2.20	Q V
4+20	0.4172	2.32	Q V
4+25	0.4339	2.44	Q V
4+30	0.4511	2.50	Q V
4+35	0.4688	2.57	Q V
4+40	0.4873	2.68	Q V
4+45	0.5065	2.79	Q V
4+50	0.5262	2.85	Q V
4+55	0.5463	2.93	Q V
5+ 0	0.5672	3.04	Q V
5+ 5	0.5906	3.39	Q V
5+10	0.6177	3.94	Q V
5+15	0.6481	4.41	Q V
5+20	0.6811	4.79	Q V
5+25	0.7174	5.27	Q V
5+30	0.7593	6.08	Q V
5+35	0.7895	4.39	Q V
5+40	0.8039	2.09	Q V
5+45	0.8116	1.12	Q V
5+50	0.8166	0.72	Q V
5+55	0.8201	0.50	Q V
6+ 0	0.8223	0.33	|Q V
6+ 5	0.8233	0.14	Q V
6+10	0.8234	0.03	Q V
6+15	0.8235	0.01	Q V

Unit Hydrograph Analysis
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Study date 09/03/19 File: 2712PR2242.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
2-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION
ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 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]
9.15	2.00	18.30

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	5.50	50.33

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.500(In)

Point rain (area averaged) = 2.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
9.150	69.00	0.900
Total Area Entered	=	9.15(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	0.900	0.109	1.000	0.109
					Sum (F)	= 0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	239.299	4.561
2	0.167	478.599	3.756
3	0.250	717.898	0.680
4	0.333	957.198	0.225
		Sum = 100.000	Sum= 9.221

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	0.016	(0.193)	0.002	0.014
2	0.17	0.07	0.016	(0.193)	0.002	0.014
3	0.25	0.07	0.016	(0.192)	0.002	0.014
4	0.33	0.10	0.024	(0.191)	0.002	0.022
5	0.42	0.10	0.024	(0.190)	0.002	0.022
6	0.50	0.10	0.024	(0.189)	0.002	0.022
7	0.58	0.10	0.024	(0.188)	0.002	0.022
8	0.67	0.10	0.024	(0.187)	0.002	0.022
9	0.75	0.10	0.024	(0.187)	0.002	0.022
10	0.83	0.13	0.032	(0.186)	0.003	0.029
11	0.92	0.13	0.032	(0.185)	0.003	0.029
12	1.00	0.13	0.032	(0.184)	0.002	0.022
13	1.08	0.10	0.024	(0.184)	0.002	0.022
14	1.17	0.10	0.024	(0.184)	0.002	0.022
15	1.25	0.10	0.024	(0.183)	0.002	0.022
16	1.33	0.10	0.024	(0.182)	0.002	0.022
17	1.42	0.10	0.024	(0.182)	0.002	0.022
18	1.50	0.10	0.024	(0.181)	0.002	0.022
19	1.58	0.10	0.024	(0.180)	0.002	0.022
20	1.67	0.10	0.024	(0.179)	0.002	0.022
21	1.75	0.10	0.024	(0.179)	0.002	0.022
22	1.83	0.13	0.032	(0.178)	0.003	0.029
23	1.92	0.13	0.032	(0.177)	0.003	0.029
24	2.00	0.13	0.032	(0.176)	0.003	0.029
25	2.08	0.13	0.032	(0.176)	0.003	0.029
26	2.17	0.13	0.032	(0.175)	0.003	0.029
27	2.25	0.13	0.032	(0.174)	0.003	0.029
28	2.33	0.13	0.032	(0.174)	0.003	0.029
29	2.42	0.13	0.032	(0.173)	0.003	0.029
30	2.50	0.13	0.032	(0.172)	0.003	0.029
31	2.58	0.17	0.040	(0.172)	0.004	0.036
32	2.67	0.17	0.040	(0.171)	0.004	0.036
33	2.75	0.17	0.040	(0.170)	0.004	0.036
34	2.83	0.17	0.040	(0.169)	0.004	0.036
35	2.92	0.17	0.040	(0.169)	0.004	0.036
36	3.00	0.17	0.040	(0.168)	0.004	0.036
37	3.08	0.17	0.040	(0.167)	0.004	0.036
38	3.17	0.17	0.040	(0.167)	0.004	0.036
39	3.25	0.17	0.040	(0.166)	0.004	0.036
40	3.33	0.17	0.040	(0.165)	0.004	0.036
41	3.42	0.17	0.040	(0.165)	0.004	0.036
42	3.50	0.17	0.040	(0.164)	0.004	0.036
43	3.58	0.17	0.040	(0.163)	0.004	0.036
44	3.67	0.17	0.040	(0.162)	0.004	0.036
45	3.75	0.17	0.040	(0.162)	0.004	0.036
46	3.83	0.20	0.048	(0.161)	0.005	0.043
47	3.92	0.20	0.048	(0.160)	0.005	0.043
48	4.00	0.20	0.048	(0.160)	0.005	0.043
49	4.08	0.20	0.048	(0.159)	0.005	0.043
50	4.17	0.20	0.048	(0.158)	0.005	0.043
51	4.25	0.20	0.048	(0.158)	0.005	0.043
52	4.33	0.23	0.056	(0.157)	0.006	0.050
53	4.42	0.23	0.056	(0.156)	0.006	0.050
54	4.50	0.23	0.056	(0.156)	0.006	0.050
55	4.58	0.23	0.056	(0.155)	0.006	0.050
56	4.67	0.23	0.056	(0.154)	0.006	0.050
57	4.75	0.23	0.056	(0.154)	0.006	0.050
58	4.83	0.27	0.064	(0.153)	0.006	0.058
59	4.92	0.27	0.064	(0.152)	0.006	0.058
60	5.00	0.27	0.064	(0.152)	0.006	0.058
61	5.08	0.20	0.048	(0.151)	0.005	0.043
62	5.17	0.20	0.048	(0.150)	0.005	0.043
63	5.25	0.20	0.048	(0.150)	0.005	0.043
64	5.33	0.23	0.056	(0.149)	0.006	0.050
65	5.42	0.23	0.056	(0.148)	0.006	0.050
66	5.50	0.23	0.056	(0.148)	0.006	0.050
67	5.58	0.27	0.064	(0.147)	0.006	0.058
68	5.67	0.27	0.064	(0.147)	0.006	0.058
69	5.75	0.27	0.064	(0.146)	0.006	0.058
70	5.83	0.27	0.064	(0.145)	0.006	0.058
71	5.92	0.27	0.064	(0.145)	0.006	0.058
72	6.00	0.27	0.064	(0.144)	0.006	0.058
73	6.08	0.30	0.072	(0.143)	0.007	0.065
74	6.17	0.30	0.072	(0.143)	0.007	0.065
75	6.25	0.30	0.072	(0.142)	0.007	0.065
76	6.33	0.30	0.072	(0.141)	0.007	0.065
77	6.42	0.30	0.072	(0.141)	0.007	0.065
78	6.50	0.30	0.072	(0.140)	0.007	0.065
79	6.58	0.33	0.080	(0.140)	0.008	0.072
80	6.67	0.33	0.080	(0.139)	0.008	0.072
81	6.75	0.33	0.080	(0.138)	0.008	0.072
82	6.83	0.33	0.080	(0.138)	0.008	0.072
83	6.92	0.33	0.080	(0.137)	0.008	0.072
84	7.00	0.33	0.080	(0.136)	0.008	0.072
85	7.08	0.33	0.080	(0.136)	0.008	0.072
86	7.17	0.33	0.080	(0.135)	0.008	0.072
87	7.25	0.33	0.080	(0.135)	0.008	0.072
88	7.33	0.37	0.088	(0.134)	0.009	0.079
89	7.42	0.37	0.088	(0.133)	0.009	0.079
90	7.50	0.37	0.088	(0.133)	0.009	0.079
91	7.58	0.40	0.096	(0.132)	0.010	0.086
92	7.67	0.40	0.096	(0.131)	0.010	0.086
93	7.75	0.40	0.096	(0.131)	0.010	0.086
94	7.83	0.43	0.104	(0.130)	0.010	0.094

95	7.92	0.43	0.104	(-0.130)	0.010	0.094
96	8.00	0.43	0.104	(-0.129)	0.010	0.094
97	8.08	0.50	0.120	(-0.128)	0.012	0.108
98	8.17	0.50	0.120	(-0.128)	0.012	0.108
99	8.25	0.50	0.120	(-0.127)	0.012	0.108
100	8.33	0.50	0.120	(-0.127)	0.012	0.108
101	8.42	0.50	0.120	(-0.126)	0.012	0.108
102	8.50	0.50	0.120	(-0.125)	0.012	0.108
103	8.58	0.53	0.128	(-0.125)	0.013	0.115
104	8.67	0.53	0.128	(-0.124)	0.013	0.115
105	8.75	0.53	0.128	(-0.124)	0.013	0.115
106	8.83	0.57	0.136	(-0.123)	0.014	0.122
107	8.92	0.57	0.136	(-0.123)	0.014	0.122
108	9.00	0.57	0.136	(-0.122)	0.014	0.122
109	9.08	0.63	0.152	(-0.121)	0.015	0.137
110	9.17	0.63	0.152	(-0.121)	0.015	0.137
111	9.25	0.63	0.152	(-0.120)	0.015	0.137
112	9.33	0.67	0.160	(-0.120)	0.016	0.144
113	9.42	0.67	0.160	(-0.119)	0.016	0.144
114	9.50	0.67	0.160	(-0.119)	0.016	0.144
115	9.58	0.70	0.168	(-0.118)	0.017	0.151
116	9.67	0.70	0.168	(-0.117)	0.017	0.151
117	9.75	0.70	0.168	(-0.117)	0.017	0.151
118	9.83	0.73	0.176	(-0.116)	0.018	0.158
119	9.92	0.73	0.176	(-0.116)	0.018	0.158
120	10.00	0.73	0.176	(-0.115)	0.018	0.158
121	10.08	0.50	0.120	(-0.115)	0.012	0.108
122	10.17	0.50	0.120	(-0.114)	0.012	0.108
123	10.25	0.50	0.120	(-0.113)	0.012	0.108
124	10.33	0.50	0.120	(-0.113)	0.012	0.108
125	10.42	0.50	0.120	(-0.112)	0.012	0.108
126	10.50	0.50	0.120	(-0.112)	0.012	0.108
127	10.58	0.67	0.160	(-0.111)	0.016	0.144
128	10.67	0.67	0.160	(-0.111)	0.016	0.144
129	10.75	0.67	0.160	(-0.110)	0.016	0.144
130	10.83	0.67	0.160	(-0.110)	0.016	0.144
131	10.92	0.67	0.160	(-0.109)	0.016	0.144
132	11.00	0.67	0.160	(-0.109)	0.016	0.144
133	11.08	0.63	0.152	(-0.108)	0.015	0.137
134	11.17	0.63	0.152	(-0.108)	0.015	0.137
135	11.25	0.63	0.152	(-0.107)	0.015	0.137
136	11.33	0.63	0.152	(-0.106)	0.015	0.137
137	11.42	0.63	0.152	(-0.106)	0.015	0.137
138	11.50	0.63	0.152	(-0.105)	0.015	0.137
139	11.58	0.57	0.136	(-0.105)	0.014	0.122
140	11.67	0.57	0.136	(-0.104)	0.014	0.122
141	11.75	0.57	0.136	(-0.104)	0.014	0.122
142	11.83	0.60	0.144	(-0.103)	0.014	0.130
143	11.92	0.60	0.144	(-0.103)	0.014	0.130
144	12.00	0.60	0.144	(-0.102)	0.014	0.130
145	12.08	0.83	0.200	(-0.102)	0.020	0.180
146	12.17	0.83	0.200	(-0.101)	0.020	0.180
147	12.25	0.83	0.200	(-0.101)	0.020	0.180
148	12.33	0.87	0.208	(-0.100)	0.021	0.187
149	12.42	0.87	0.208	(-0.100)	0.021	0.187
150	12.50	0.87	0.208	(-0.099)	0.021	0.187
151	12.58	0.93	0.224	(-0.099)	0.022	0.202
152	12.67	0.93	0.224	(-0.098)	0.022	0.202
153	12.75	0.93	0.224	(-0.098)	0.022	0.202
154	12.83	0.97	0.232	(-0.097)	0.023	0.209
155	12.92	0.97	0.232	(-0.097)	0.023	0.209
156	13.00	0.97	0.232	(-0.096)	0.023	0.209
157	13.08	1.13	0.272	(-0.096)	0.027	0.245
158	13.17	1.13	0.272	(-0.095)	0.027	0.245
159	13.25	1.13	0.272	(-0.095)	0.027	0.245
160	13.33	1.13	0.272	(-0.094)	0.027	0.245
161	13.42	1.13	0.272	(-0.094)	0.027	0.245
162	13.50	1.13	0.272	(-0.093)	0.027	0.245
163	13.58	0.77	0.184	(-0.093)	0.018	0.166
164	13.67	0.77	0.184	(-0.092)	0.018	0.166
165	13.75	0.77	0.184	(-0.092)	0.018	0.166
166	13.83	0.77	0.184	(-0.092)	0.018	0.166
167	13.92	0.77	0.184	(-0.091)	0.018	0.166
168	14.00	0.77	0.184	(-0.091)	0.018	0.166
169	14.08	0.90	0.216	(-0.090)	0.022	0.194
170	14.17	0.90	0.216	(-0.090)	0.022	0.194
171	14.25	0.90	0.216	(-0.089)	0.022	0.194
172	14.33	0.87	0.208	(-0.089)	0.021	0.187
173	14.42	0.87	0.208	(-0.088)	0.021	0.187
174	14.50	0.87	0.208	(-0.088)	0.021	0.187
175	14.58	0.87	0.208	(-0.087)	0.021	0.187
176	14.67	0.87	0.208	(-0.087)	0.021	0.187
177	14.75	0.87	0.208	(-0.086)	0.021	0.187
178	14.83	0.83	0.200	(-0.086)	0.020	0.180
179	14.92	0.83	0.200	(-0.086)	0.020	0.180
180	15.00	0.83	0.200	(-0.085)	0.020	0.180
181	15.08	0.80	0.192	(-0.085)	0.019	0.173
182	15.17	0.80	0.192	(-0.084)	0.019	0.173
183	15.25	0.80	0.192	(-0.084)	0.019	0.173
184	15.33	0.77	0.184	(-0.083)	0.018	0.166
185	15.42	0.77	0.184	(-0.083)	0.018	0.166
186	15.50	0.77	0.184	(-0.083)	0.018	0.166
187	15.58	0.63	0.152	(-0.082)	0.015	0.137
188	15.67	0.63	0.152	(-0.082)	0.015	0.137
189	15.75	0.63	0.152	(-0.081)	0.015	0.137
190	15.83	0.63	0.152	(-0.081)	0.015	0.137
191	15.92	0.63	0.152	(-0.080)	0.015	0.137
192	16.00	0.63	0.152	(-0.080)	0.015	0.137
193	16.08	0.13	0.032	(-0.080)	0.003	0.029

Year	Month	Day	Open	High	Low	Close	Volume	Turnover
194	16.17	0.13	0.032	(	0.079)	0.003	0.029	
195	16.25	0.13	0.032	(	0.079)	0.003	0.029	
196	16.33	0.13	0.032	(	0.078)	0.003	0.029	
197	16.42	0.13	0.032	(	0.078)	0.003	0.029	
198	16.50	0.13	0.032	(	0.078)	0.003	0.029	
199	16.58	0.10	0.024	(	0.077)	0.002	0.022	
200	16.67	0.10	0.024	(	0.077)	0.002	0.022	
201	16.75	0.10	0.024	(	0.076)	0.002	0.022	
202	16.83	0.10	0.024	(	0.076)	0.002	0.022	
203	16.92	0.10	0.024	(	0.076)	0.002	0.022	
204	17.00	0.10	0.024	(	0.075)	0.002	0.022	
205	17.08	0.17	0.040	(	0.075)	0.004	0.036	
206	17.17	0.17	0.040	(	0.075)	0.004	0.036	
207	17.25	0.17	0.040	(	0.074)	0.004	0.036	
208	17.33	0.17	0.040	(	0.074)	0.004	0.036	
209	17.42	0.17	0.040	(	0.073)	0.004	0.036	
210	17.50	0.17	0.040	(	0.073)	0.004	0.036	
211	17.58	0.17	0.040	(	0.073)	0.004	0.036	
212	17.67	0.17	0.040	(	0.072)	0.004	0.036	
213	17.75	0.17	0.040	(	0.072)	0.004	0.036	
214	17.83	0.13	0.032	(	0.072)	0.003	0.029	
215	17.92	0.13	0.032	(	0.071)	0.003	0.029	
216	18.00	0.13	0.032	(	0.071)	0.003	0.029	
217	18.08	0.13	0.032	(	0.071)	0.003	0.029	
218	18.17	0.13	0.032	(	0.070)	0.003	0.029	
219	18.25	0.13	0.032	(	0.070)	0.003	0.029	
220	18.33	0.13	0.032	(	0.070)	0.003	0.029	
221	18.42	0.13	0.032	(	0.069)	0.003	0.029	
222	18.50	0.13	0.032	(	0.069)	0.003	0.029	
223	18.58	0.10	0.024	(	0.069)	0.002	0.022	
224	18.67	0.10	0.024	(	0.068)	0.002	0.022	
225	18.75	0.10	0.024	(	0.068)	0.002	0.022	
226	18.83	0.07	0.016	(	0.068)	0.002	0.014	
227	18.92	0.07	0.016	(	0.067)	0.002	0.014	
228	19.00	0.07	0.016	(	0.067)	0.002	0.014	
229	19.08	0.10	0.024	(	0.067)	0.002	0.022	
230	19.17	0.10	0.024	(	0.066)	0.002	0.022	
231	19.25	0.10	0.024	(	0.066)	0.002	0.022	
232	19.33	0.13	0.032	(	0.066)	0.003	0.029	
233	19.42	0.13	0.032	(	0.065)	0.003	0.029	
234	19.50	0.13	0.032	(	0.065)	0.003	0.029	
235	19.58	0.10	0.024	(	0.065)	0.002	0.022	
236	19.67	0.10	0.024	(	0.064)	0.002	0.022	
237	19.75	0.10	0.024	(	0.064)	0.002	0.022	
238	19.83	0.07	0.016	(	0.064)	0.002	0.014	
239	19.92	0.07	0.016	(	0.064)	0.002	0.014	
240	20.00	0.07	0.016	(	0.063)	0.002	0.014	
241	20.08	0.10	0.024	(	0.063)	0.002	0.022	
242	20.17	0.10	0.024	(	0.063)	0.002	0.022	
243	20.25	0.10	0.024	(	0.062)	0.002	0.022	
244	20.33	0.10	0.024	(	0.062)	0.002	0.022	
245	20.42	0.10	0.024	(	0.062)	0.002	0.022	
246	20.50	0.10	0.024	(	0.062)	0.002	0.022	
247	20.58	0.10	0.024	(	0.061)	0.002	0.022	
248	20.67	0.10	0.024	(	0.061)	0.002	0.022	
249	20.75	0.10	0.024	(	0.061)	0.002	0.022	
250	20.83	0.07	0.016	(	0.061)	0.002	0.014	
251	20.92	0.07	0.016	(	0.060)	0.002	0.014	
252	21.00	0.07	0.016	(	0.060)	0.002	0.014	
253	21.08	0.10	0.024	(	0.060)	0.002	0.022	
254	21.17	0.10	0.024	(	0.060)	0.002	0.022	
255	21.25	0.10	0.024	(	0.059)	0.002	0.022	
256	21.33	0.07	0.016	(	0.059)	0.002	0.014	
257	21.42	0.07	0.016	(	0.059)	0.002	0.014	
258	21.50	0.07	0.016	(	0.059)	0.002	0.014	
259	21.58	0.10	0.024	(	0.059)	0.002	0.022	
260	21.67	0.10	0.024	(	0.058)	0.002	0.022	
261	21.75	0.10	0.024	(	0.058)	0.002	0.022	
262	21.83	0.07	0.016	(	0.058)	0.002	0.014	
263	21.92	0.07	0.016	(	0.058)	0.002	0.014	
264	22.00	0.07	0.016	(	0.058)	0.002	0.014	
265	22.08	0.10	0.024	(	0.057)	0.002	0.022	
266	22.17	0.10	0.024	(	0.057)	0.002	0.022	
267	22.25	0.10	0.024	(	0.057)	0.002	0.022	
268	22.33	0.07	0.016	(	0.057)	0.002	0.014	
269	22.42	0.07	0.016	(	0.057)	0.002	0.014	
270	22.50	0.07	0.016	(	0.057)	0.002	0.014	
271	22.58	0.07	0.016	(	0.056)	0.002	0.014	
272	22.67	0.07	0.016	(	0.056)	0.002	0.014	
273	22.75	0.07	0.016	(	0.056)	0.002	0.014	
274	22.83	0.07	0.016	(	0.056)	0.002	0.014	
275	22.92	0.07	0.016	(	0.056)	0.002	0.014	
276	23.00	0.07	0.016	(	0.056)	0.002	0.014	
277	23.08	0.07	0.016	(	0.055)	0.002	0.014	
278	23.17	0.07	0.016	(	0.055)	0.002	0.014	
279	23.25	0.07	0.016	(	0.055)	0.002	0.014	
280	23.33	0.07	0.016	(	0.055)	0.002	0.014	
281	23.42	0.07	0.016	(	0.055)	0.002	0.014	
282	23.50	0.07	0.016	(	0.055)	0.002	0.014	
283	23.58	0.07	0.016	(	0.055)	0.002	0.014	
284	23.67	0.07	0.016	(	0.055)	0.002	0.014	
285	23.75	0.07	0.016	(	0.055)	0.002	0.014	
286	23.83	0.07	0.016	(	0.055)	0.002	0.014	
287	23.92	0.07	0.016	(	0.055)	0.002	0.014	
288	24.00	0.07	0.016	(	0.055)	0.002	0.014	

(Loss Rate Not Used)

Sum = 21.6

Flood volume = Effective rainfall	1.80 (In)
times area	9.2 (Ac.) / [(In) / (Ft.)] = 1.4 (Ac.Ft)

Total soil loss = 0.20 (In)
 Total soil loss = 0.152 (Ac.Ft)
 Total rainfall = 2.00 (In)
 Flood volume = 59785.0 Cubic Feet
 Total soil loss = 6642.8 Cubic Feet

Peak flow rate of this hydrograph = 2.259 (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	0.0005	0.07	Q				
0+10	0.0013	0.12	Q				
0+15	0.0022	0.13	Q				
0+20	0.0033	0.17	Q				
0+25	0.0046	0.19	Q				
0+30	0.0060	0.20	Q				
0+35	0.0074	0.20	Q				
0+40	0.0087	0.20	Q				
0+45	0.0101	0.20	Q				
0+50	0.0117	0.23	Q				
0+55	0.0135	0.26	VQ				
1+ 0	0.0153	0.26	VQ				
1+ 5	0.0169	0.23	Q				
1+10	0.0183	0.21	Q				
1+15	0.0197	0.20	Q				
1+20	0.0211	0.20	Q				
1+25	0.0225	0.20	Q				
1+30	0.0238	0.20	Q				
1+35	0.0252	0.20	Q				
1+40	0.0266	0.20	Q				
1+45	0.0280	0.20	Q				
1+50	0.0296	0.23	Q				
1+55	0.0313	0.26	VQ				
2+ 0	0.0332	0.26	VQ				
2+ 5	0.0350	0.27	|Q				
2+10	0.0368	0.27	Q				
2+15	0.0387	0.27	Q				
2+20	0.0405	0.27	Q				
2+25	0.0423	0.27	Q				
2+30	0.0441	0.27	Q				
2+35	0.0462	0.30	Q				
2+40	0.0484	0.33	Q				
2+45	0.0507	0.33	Q				
2+50	0.0530	0.33	Q				
2+55	0.0553	0.33	Q				
3+ 0	0.0576	0.33	Q				
3+ 5	0.0599	0.33	Q				
3+10	0.0622	0.33	Q				
3+15	0.0644	0.33	Q				
3+20	0.0667	0.33	Q				
3+25	0.0690	0.33	QV				
3+30	0.0713	0.33	QV				
3+35	0.0736	0.33	QV				
3+40	0.0759	0.33	QV				
3+45	0.0782	0.33	QV				
3+50	0.0807	0.36	QV				
3+55	0.0834	0.39	QV				
4+ 0	0.0861	0.40	QV				
4+ 5	0.0889	0.40	QV				
4+10	0.0916	0.40	QV				
4+15	0.0943	0.40	QV				
4+20	0.0973	0.43	QV				
4+25	0.1005	0.46	QV				
4+30	0.1037	0.46	Q V				
4+35	0.1069	0.46	Q V				
4+40	0.1101	0.46	Q V				
4+45	0.1133	0.46	Q V				
4+50	0.1167	0.50	Q V				
4+55	0.1203	0.52	QV				
5+ 0	0.1240	0.53	QV				
5+ 5	0.1272	0.47	Q V				
5+10	0.1300	0.41	Q V				
5+15	0.1328	0.40	Q V				
5+20	0.1358	0.43	Q V				
5+25	0.1389	0.46	Q V				
5+30	0.1421	0.46	Q V				
5+35	0.1455	0.50	Q V				
5+40	0.1491	0.52	Q V				
5+45	0.1528	0.53	Q V				
5+50	0.1565	0.53	Q V				
5+55	0.1601	0.53	Q V				
6+ 0	0.1638	0.53	Q V				
6+ 5	0.1677	0.56	Q V				
6+10	0.1717	0.59	Q V				
6+15	0.1758	0.60	Q V				
6+20	0.1800	0.60	Q V				
6+25	0.1841	0.60	Q V				
6+30	0.1882	0.60	Q V				
6+35	0.1925	0.63	Q V				
6+40	0.1971	0.66	Q V				
6+45	0.2016	0.66	Q V				
6+50	0.2062	0.66	Q V				

6+55	0.2108	0.66				
7+ 0	0.2154	0.66				
7+ 5	0.2199	0.66				
7+10	0.2245	0.66				
7+15	0.2291	0.66				
7+20	0.2339	0.70				
7+25	0.2389	0.72				
7+30	0.2439	0.73	Q	V		
7+35	0.2491	0.76	Q	V		
7+40	0.2546	0.79	Q	V		
7+45	0.2601	0.80	Q	V		
7+50	0.2658	0.83	Q	V		
7+55	0.2717	0.86	Q	V		
8+ 0	0.2776	0.86	Q	V		
8+ 5	0.2840	0.93	Q	V		
8+10	0.2908	0.98	Q	V		
8+15	0.2976	0.99	Q	V		
8+20	0.3045	1.00	Q	V		
8+25	0.3114	1.00	Q	V		
8+30	0.3182	1.00	Q	V		
8+35	0.3253	1.03	Q	V		
8+40	0.3326	1.06	Q	V		
8+45	0.3399	1.06	Q	V		
8+50	0.3474	1.10	Q	V		
8+55	0.3552	1.12	Q	V		
9+ 0	0.3629	1.13	Q	V		
9+ 5	0.3712	1.19	Q	V		
9+10	0.3798	1.25	Q	V		
9+15	0.3884	1.26	Q	V		
9+20	0.3974	1.29	Q	V		
9+25	0.4065	1.32	Q	V		
9+30	0.4156	1.33	Q	V		
9+35	0.4250	1.36	Q	V		
9+40	0.4345	1.39	Q	V		
9+45	0.4441	1.39	Q	V		
9+50	0.4540	1.43	Q	V		
9+55	0.4640	1.45	Q	V		
10+ 0	0.4740	1.46	Q	V		
10+ 5	0.4825	1.23		V		
10+10	0.4897	1.04		V		
10+15	0.4966	1.01		V		
10+20	0.5035	1.00		V		
10+25	0.5104	1.00		V		
10+30	0.5172	1.00		V		
10+35	0.5252	1.16		V		
10+40	0.5342	1.30		V		
10+45	0.5432	1.32		V		
10+50	0.5524	1.33		V		
10+55	0.5615	1.33		V		
11+ 0	0.5707	1.33		V		
11+ 5	0.5796	1.30		V		
11+10	0.5884	1.27		V		
11+15	0.5971	1.26		V		
11+20	0.6058	1.26		V		
11+25	0.6144	1.26		V		
11+30	0.6231	1.26		V		
11+35	0.6314	1.20		V		
11+40	0.6392	1.14		V		
11+45	0.6470	1.13		V		
11+50	0.6550	1.16		V		
11+55	0.6632	1.19		V		
12+ 0	0.6715	1.19		V		
12+ 5	0.6813	1.43		V		
12+10	0.6924	1.62		V		
12+15	0.7038	1.65		V		
12+20	0.7154	1.69		V		
12+25	0.7273	1.72		V		
12+30	0.7392	1.73		V		
12+35	0.7515	1.79		V		
12+40	0.7642	1.85		V		
12+45	0.7770	1.86		V		
12+50	0.7900	1.89		V		
12+55	0.8033	1.92		V		
13+ 0	0.8165	1.92		V		
13+ 5	0.8309	2.09	Q	V		
13+10	0.8463	2.23	Q	V		
13+15	0.8618	2.25	Q	V		
13+20	0.8773	2.26	Q	V		
13+25	0.8929	2.26	Q	V		
13+30	0.9084	2.26	Q	V		
13+35	0.9215	1.90	Q	V		
13+40	0.9325	1.60	Q	V		
13+45	0.9431	1.55	Q	V		
13+50	0.9537	1.53	Q	V		
13+55	0.9642	1.53	Q	V		
14+ 0	0.9747	1.53	Q	V		
14+ 5	0.9861	1.66	Q	V		
14+10	0.9983	1.77	Q	V		
14+15	1.0106	1.79	Q	V		
14+20	1.0227	1.76	Q	V		
14+25	1.0347	1.73	Q	V		
14+30	1.0466	1.73	Q	V		
14+35	1.0585	1.73	Q	V		
14+40	1.0704	1.73	Q	V		
14+45	1.0823	1.73	Q	V		
14+50	1.0939	1.69	Q	V		
14+55	1.1054	1.67	Q	V		
15+ 0	1.1169	1.66	Q	V		
15+ 5	1.1281	1.63	Q	V		

15+10	1.1391	1.60			V
15+15	1.1501	1.60			V
15+20	1.1609	1.56			V
15+25	1.1714	1.53			V
15+30	1.1820	1.53			V
15+35	1.1916	1.40			V
15+40	1.2004	1.29			V
15+45	1.2092	1.27			V
15+50	1.2179	1.26			V
15+55	1.2266	1.26			V
16+ 0	1.2353	1.26			V
16+ 5	1.2406	0.77			V
16+10	1.2431	0.36			V
16+15	1.2451	0.29			V
16+20	1.2469	0.27			V
16+25	1.2487	0.27			V
16+30	1.2505	0.27			V
16+35	1.2522	0.23			V
16+40	1.2536	0.21			V
16+45	1.2550	0.20			V
16+50	1.2563	0.20			V
16+55	1.2577	0.20			V
17+ 0	1.2591	0.20			V
17+ 5	1.2609	0.26			V
17+10	1.2631	0.32			V
17+15	1.2654	0.33			V
17+20	1.2676	0.33			V
17+25	1.2699	0.33			V
17+30	1.2722	0.33			V
17+35	1.2745	0.33			V
17+40	1.2768	0.33			V
17+45	1.2791	0.33			V
17+50	1.2811	0.30			V
17+55	1.2830	0.27			V
18+ 0	1.2849	0.27			V
18+ 5	1.2867	0.27			V
18+10	1.2885	0.27			V
18+15	1.2904	0.27			V
18+20	1.2922	0.27			V
18+25	1.2940	0.27			V
18+30	1.2958	0.27			V
18+35	1.2974	0.23			V
18+40	1.2989	0.21			V
18+45	1.3002	0.20			V
18+50	1.3014	0.17			V
18+55	1.3024	0.14			V
19+ 0	1.3033	0.13			V
19+ 5	1.3044	0.17			V
19+10	1.3057	0.19			V
19+15	1.3071	0.20			V
19+20	1.3087	0.23			V
19+25	1.3105	0.26			V
19+30	1.3123	0.26			V
19+35	1.3139	0.23			V
19+40	1.3153	0.21			V
19+45	1.3167	0.20			V
19+50	1.3179	0.17			V
19+55	1.3188	0.14			V
20+ 0	1.3197	0.13			V
20+ 5	1.3209	0.17			V
20+10	1.3222	0.19			V
20+15	1.3236	0.20			V
20+20	1.3249	0.20			V
20+25	1.3263	0.20			V
20+30	1.3277	0.20			V
20+35	1.3291	0.20			V
20+40	1.3304	0.20			V
20+45	1.3318	0.20			V
20+50	1.3330	0.17			V
20+55	1.3339	0.14			V
21+ 0	1.3348	0.13			V
21+ 5	1.3360	0.17			V
21+10	1.3373	0.19			V
21+15	1.3387	0.20			V
21+20	1.3398	0.17			V
21+25	1.3408	0.14			V
21+30	1.3417	0.13			V
21+35	1.3428	0.17			V
21+40	1.3442	0.19			V
21+45	1.3455	0.20			V
21+50	1.3467	0.17			V
21+55	1.3476	0.14			V
22+ 0	1.3486	0.13			V
22+ 5	1.3497	0.17			V
22+10	1.3510	0.19			V
22+15	1.3524	0.20			V
22+20	1.3535	0.17			V
22+25	1.3545	0.14			V
22+30	1.3554	0.13			V
22+35	1.3563	0.13			V
22+40	1.3573	0.13			V
22+45	1.3582	0.13			V
22+50	1.3591	0.13			V
22+55	1.3600	0.13			V
23+ 0	1.3609	0.13			V
23+ 5	1.3618	0.13			V
23+10	1.3628	0.13			V
23+15	1.3637	0.13			V
23+20	1.3646	0.13			V

23+25	1.3655	0.13	Q				V
23+30	1.3664	0.13	Q				V
23+35	1.3673	0.13	Q				V
23+40	1.3682	0.13	Q				V
23+45	1.3692	0.13	Q				V
23+50	1.3701	0.13	Q				V
23+55	1.3710	0.13	Q				V
24+ 0	1.3719	0.13	Q				V
24+ 5	1.3724	0.07	Q				V
24+10	1.3725	0.01	Q				V
24+15	1.3725	0.00	Q				V

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

Program License Serial Number 6400

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

English Units used in output format

2712
5-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION
ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 0.50 4.58

100 YEAR Area rainfall data:

Area(Ac.) [1] Rainfall(In) [2] Weighting[1*2]
9.15 1.30 11.90

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.500(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.687(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.687(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(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 0.900 0.109 1.000 0.109
Sum (F) = 0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109

Minimum soil loss rate ((In/Hr)) = 0.055

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.100

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period Time % of lag Distribution Unit Hydrograph
(hrs) Graph % (CFS)

1 0.083 239.299 49.462 4.561
2 0.167 478.599 40.726 3.756
3 0.250 717.898 7.376 0.680
4 0.333 957.198 2.436 0.225
Sum = 100.000 Sum= 9.221

Unit Hydrograph Analysis
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
Study date 12/03/19 File: 2712PR535.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
5-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION
ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	0.80	7.32

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	2.00	18.30

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.800(In)
Area Averaged 100-Year Rainfall = 2.000(In)

Point rain (area averaged) = 1.081(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.081(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(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	0.900	0.109	1.000	0.109
					Sum (F)	= 0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	239.299	49.462	4.561
2 0.167	478.599	40.726	3.756
3 0.250	717.898	7.376	0.680
4 0.333	957.198	2.436	0.225
	Sum = 100.000	Sum=	9.221

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) Max | Low	Effective (In/Hr)
1	0.08	1.30	0.169	(0.109) |	0.017 0.152
2	0.17	1.30	0.169	(0.109) |	0.017 0.152
3	0.25	1.10	0.143	(0.109) |	0.014 0.128
4	0.33	1.50	0.195	(0.109) |	0.019 0.175
5	0.42	1.50	0.195	(0.109) |	0.019 0.175
6	0.50	1.80	0.234	(0.109) |	0.023 0.210
7	0.58	1.50	0.195	(0.109) |	0.019 0.175
8	0.67	1.80	0.234	(0.109) |	0.023 0.210
9	0.75	1.80	0.234	(0.109) |	0.023 0.210
10	0.83	1.50	0.195	(0.109) |	0.019 0.175
11	0.92	1.60	0.208	(0.109) |	0.021 0.187
12	1.00	1.80	0.234	(0.109) |	0.023 0.210
13	1.08	2.20	0.285	(0.109) |	0.029 0.257
14	1.17	2.20	0.285	(0.109) |	0.029 0.257
15	1.25	2.20	0.285	(0.109) |	0.029 0.257
16	1.33	2.00	0.259	(0.109) |	0.026 0.234
17	1.42	2.60	0.337	(0.109) |	0.034 0.304
18	1.50	2.70	0.350	(0.109) |	0.035 0.315
19	1.58	2.40	0.311	(0.109) |	0.031 0.280
20	1.67	2.70	0.350	(0.109) |	0.035 0.315
21	1.75	3.30	0.428	(0.109) |	0.043 0.385
22	1.83	3.10	0.402	(0.109) |	0.040 0.362
23	1.92	2.90	0.376	(0.109) |	0.038 0.339
24	2.00	3.00	0.389	(0.109) |	0.039 0.350
25	2.08	3.10	0.402	(0.109) |	0.040 0.362
26	2.17	4.20	0.545	(0.109) |	0.054 0.490
27	2.25	5.00	0.649	(0.109) |	0.065 0.584
28	2.33	3.50	0.454	(0.109) |	0.045 0.409
29	2.42	6.80	0.882	(0.109) |	0.088 0.794
30	2.50	7.30	0.947	(0.109) |	0.095 0.852
31	2.58	8.20	1.064	(0.109) |	0.106 0.957
32	2.67	5.90	0.765	(0.109) |	0.077 0.689
33	2.75	2.00	0.259	(0.109) |	0.026 0.234
34	2.83	1.80	0.234	(0.109) |	0.023 0.210
35	2.92	1.80	0.234	(0.109) |	0.023 0.210
36	3.00	0.60	0.078	(0.109) |	0.008 0.070

(Loss Rate Not Used)

Sum = 100.0 Sum = 11.7

Flood volume = Effective rainfall 0.97 (In)
times area 9.2 (Ac.)/[(In)/(Ft.)] = 0.7 (Ac.Ft)

Total soil loss = 0.11 (In)

Total soil loss = 0.082 (Ac.Ft)

Total rainfall = 1.08 (In)

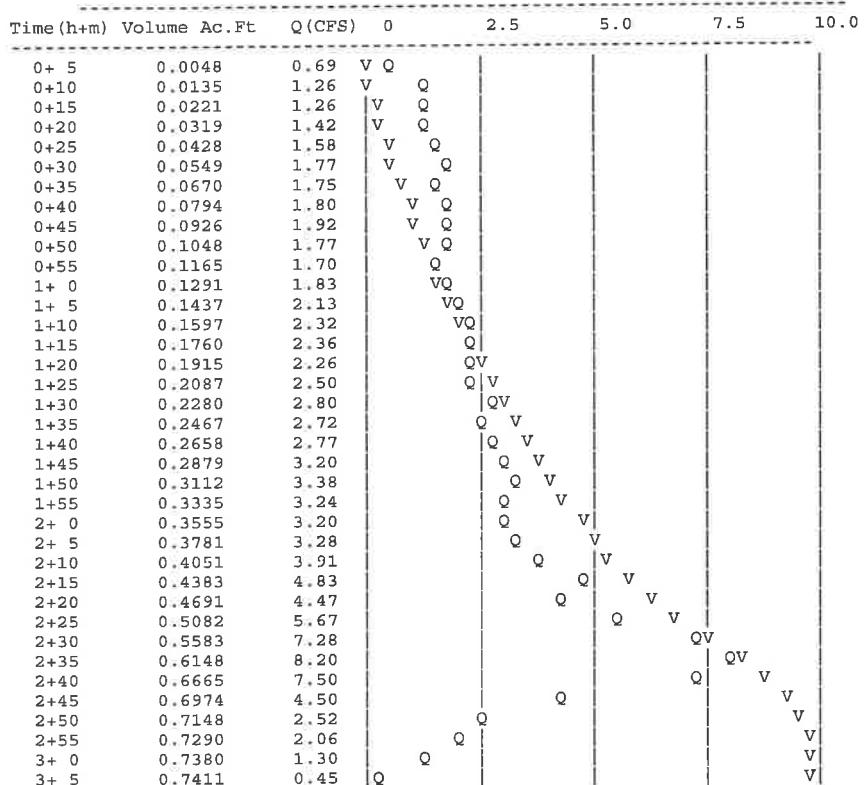
Flood volume = 32315.2 Cubic Feet

Total soil loss = 3590.6 Cubic Feet

Peak flow rate of this hydrograph = 8.203 (CFS)

+++++ 3 - H O U R S T O R M R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))



3+10	0.7417	0.09	Q				v
3+15	0.7419	0.02	Q				v

Unit Hydrograph Analysis
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Study date 12/03/19 File: 2712PR565.out

+++++-----

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

Program License Serial Number 6400

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

English Units used in output format

2712
5-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION
ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	1.20	10.98

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	3.00	27.45

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.200(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.622(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.622(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(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	0.900	0.109	1.000	0.109
				Sum (F) =		0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	239.299	4.561
2	0.167	478.599	3.756
3	0.250	717.898	0.680
4	0.333	957.198	0.225
		Sum = 100.000	Sum= 9.221

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	0.50	0.097	(0.109)	0.010	0.088
2	0.17	0.60	0.117	(0.109)	0.012	0.105
3	0.25	0.60	0.117	(0.109)	0.012	0.105
4	0.33	0.60	0.117	(0.109)	0.012	0.105
5	0.42	0.60	0.117	(0.109)	0.012	0.105
6	0.50	0.70	0.136	(0.109)	0.014	0.123
7	0.58	0.70	0.136	(0.109)	0.014	0.123
8	0.67	0.70	0.136	(0.109)	0.014	0.123
9	0.75	0.70	0.136	(0.109)	0.014	0.123
10	0.83	0.70	0.136	(0.109)	0.014	0.123
11	0.92	0.70	0.136	(0.109)	0.014	0.123
12	1.00	0.80	0.156	(0.109)	0.016	0.140
13	1.08	0.80	0.156	(0.109)	0.016	0.140
14	1.17	0.80	0.156	(0.109)	0.016	0.140
15	1.25	0.80	0.156	(0.109)	0.016	0.140
16	1.33	0.80	0.156	(0.109)	0.016	0.140
17	1.42	0.80	0.156	(0.109)	0.016	0.140
18	1.50	0.80	0.156	(0.109)	0.016	0.140
19	1.58	0.80	0.156	(0.109)	0.016	0.140
20	1.67	0.80	0.156	(0.109)	0.016	0.140
21	1.75	0.80	0.156	(0.109)	0.016	0.140
22	1.83	0.80	0.156	(0.109)	0.016	0.140
23	1.92	0.80	0.156	(0.109)	0.016	0.140
24	2.00	0.90	0.175	(0.109)	0.018	0.158
25	2.08	0.80	0.156	(0.109)	0.016	0.140
26	2.17	0.90	0.175	(0.109)	0.018	0.158
27	2.25	0.90	0.175	(0.109)	0.018	0.158
28	2.33	0.90	0.175	(0.109)	0.018	0.158
29	2.42	0.90	0.175	(0.109)	0.018	0.158
30	2.50	0.90	0.175	(0.109)	0.018	0.158
31	2.58	0.90	0.175	(0.109)	0.018	0.158
32	2.67	0.90	0.175	(0.109)	0.018	0.158
33	2.75	1.00	0.195	(0.109)	0.019	0.175
34	2.83	1.00	0.195	(0.109)	0.019	0.175
35	2.92	1.00	0.195	(0.109)	0.019	0.175
36	3.00	1.00	0.195	(0.109)	0.019	0.175
37	3.08	1.00	0.195	(0.109)	0.019	0.175
38	3.17	1.10	0.214	(0.109)	0.021	0.193
39	3.25	1.10	0.214	(0.109)	0.021	0.193
40	3.33	1.10	0.214	(0.109)	0.021	0.193
41	3.42	1.20	0.234	(0.109)	0.023	0.210
42	3.50	1.30	0.253	(0.109)	0.025	0.228
43	3.58	1.40	0.272	(0.109)	0.027	0.245
44	3.67	1.40	0.272	(0.109)	0.027	0.245
45	3.75	1.50	0.292	(0.109)	0.029	0.263
46	3.83	1.50	0.292	(0.109)	0.029	0.263
47	3.92	1.60	0.311	(0.109)	0.031	0.280
48	4.00	1.60	0.311	(0.109)	0.031	0.280
49	4.08	1.70	0.331	(0.109)	0.033	0.298
50	4.17	1.80	0.350	(0.109)	0.035	0.315
51	4.25	1.90	0.370	(0.109)	0.037	0.333
52	4.33	2.00	0.389	(0.109)	0.039	0.350
53	4.42	2.10	0.409	(0.109)	0.041	0.368
54	4.50	2.10	0.409	(0.109)	0.041	0.368
55	4.58	2.20	0.428	(0.109)	0.043	0.385
56	4.67	2.30	0.448	(0.109)	0.045	0.403
57	4.75	2.40	0.467	(0.109)	0.047	0.420
58	4.83	2.40	0.467	(0.109)	0.047	0.420
59	4.92	2.50	0.486	(0.109)	0.049	0.438
60	5.00	2.60	0.506	(0.109)	0.051	0.455
61	5.08	3.10	0.603	(0.109)	0.060	0.543
62	5.17	3.60	0.701	(0.109)	0.070	0.630
63	5.25	3.90	0.759	(0.109)	0.076	0.683
64	5.33	4.20	0.817	(0.109)	0.082	0.736
65	5.42	4.70	0.915	(0.109)	0.091	0.823
66	5.50	5.60	1.090	(0.109)	0.109	0.981
67	5.58	1.90	0.370	(0.109)	0.037	0.333
68	5.67	0.90	0.175	(0.109)	0.018	0.158
69	5.75	0.60	0.117	(0.109)	0.012	0.105
70	5.83	0.50	0.097	(0.109)	0.010	0.088
71	5.92	0.30	0.058	(0.109)	0.006	0.053
72	6.00	0.20	0.039	(0.109)	0.004	0.035

(Loss Rate Not Used)

Sum = 17.5

```

Sum = 100.0                                     Sum = 17
Flood volume = Effective rainfall      1.46 (In)
times area    9.2(Ac.)/[(In)/(Ft.)] = 1.1(Ac.Ft)
Total soil loss = 0.16 (In)
Total soil loss = 0.124(Ac.Ft)
Total rainfall = 1.62 (In)
Flood volume = 48473.2 Cubic Feet
Total soil loss = 5385.9 Cubic Feet

```

Peak flow rate of this hydrograph - 8.222 (CFS)

6 - H O U R S T O R M
Runoff Hydrograph

Hydrograph in 5 Minute intervals ((CFS))



0+10	0.0083	0.81	V	Q
0+15	0.0148	0.93	V	Q
0+20	0.0214	0.97	V	Q
0+25	0.0281	0.97	V	Q
0+30	0.0353	1.05	V	Q
0+35	0.0430	1.12	V	Q
0+40	0.0507	1.13	V	Q
0+45	0.0585	1.13	V	Q
0+50	0.0663	1.13	V	Q
0+55	0.0741	1.13	V	Q
1+ 0	0.0825	1.21	V	Q
1+ 5	0.0913	1.28	V	Q
1+10	0.1001	1.29	V	Q
1+15	0.1090	1.29	V	Q
1+20	0.1179	1.29	VQ	
1+25	0.1268	1.29	VQ	
1+30	0.1357	1.29	VQ	
1+35	0.1446	1.29	Q	
1+40	0.1535	1.29	Q	
1+45	0.1624	1.29	Q	
1+50	0.1713	1.29	QV	
1+55	0.1802	1.29	QV	
2+ 0	0.1897	1.37	QV	
2+ 5	0.1991	1.36	Q	V
2+10	0.2086	1.38	Q	V
2+15	0.2185	1.44	Q	V
2+20	0.2285	1.45	Q	V
2+25	0.2385	1.45	Q	V
2+30	0.2485	1.45	Q	V
2+35	0.2586	1.45	Q	V
2+40	0.2686	1.45	Q	V
2+45	0.2791	1.53	Q	V
2+50	0.2902	1.60	Q	V
2+55	0.3013	1.61	Q	V
3+ 0	0.3124	1.62	Q	V
3+ 5	0.3235	1.62	Q	V
3+10	0.3352	1.70	Q	V
3+15	0.3473	1.76	Q	V
3+20	0.3595	1.77	Q	V
3+25	0.3723	1.86	Q	V
3+30	0.3861	2.00	Q	V
3+35	0.4010	2.16	Q	V
3+40	0.4164	2.24	Q	V
3+45	0.4325	2.34	Q	V
3+50	0.4491	2.41	Q	V
3+55	0.4663	2.50	Q	V
4+ 0	0.4840	2.57	Q	V
4+ 5	0.5024	2.66	Q	V
4+10	0.5217	2.81	Q	V
4+15	0.5422	2.97	Q	V
4+20	0.5637	3.13	Q	V
4+25	0.5864	3.29	Q	V
4+30	0.6096	3.37	Q	V
4+35	0.6335	3.47	Q	V
4+40	0.6584	3.62	Q	V
4+45	0.6845	3.78	Q	V
4+50	0.7110	3.86	Q	V
4+55	0.7383	3.95	Q	V
5+ 0	0.7665	4.10	Q	V
5+ 5	0.7981	4.58	Q	V
5+10	0.8347	5.33	Q	V
5+15	0.8758	5.96	Q	V
5+20	0.9204	6.47	Q	V
5+25	0.9694	7.13	Q	V
5+30	1.0261	8.22	Q	V
5+35	1.0669	5.93	Q	V
5+40	1.0863	2.82	Q	V
5+45	1.0968	1.52	Q	V
5+50	1.1035	0.98	Q	V
5+55	1.1082	0.68	Q	V
6+ 0	1.1112	0.44	Q	V
6+ 5	1.1125	0.19	Q	V
6+10	1.1127	0.04	Q	V
6+15	1.1128	0.01	Q	V

Unit Hydrograph Analysis
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Study date 12/03/19 File: 2712PR5245.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
5-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION
ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(FT.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 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]
9.15	2.00	18.30

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	5.50	50.33

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.500(In)

Point rain (area averaged) = 2.820(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.820(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(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	0.900	0.109	1.000	0.109
					Sum (F)	0.109

Area averaged mean soil loss (F) (In/Hr) = 0.109
Minimum soil loss rate ((In/Hr)) = 0.055
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	239.299	49.462	4.561
2 0.167	478.599	40.726	3.756
3 0.250	717.898	7.376	0.680
4 0.333	957.198	2.436	0.225
		Sum = 100.000	Sum= 9.221

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	0.023	(0.193)	0.002	0.020
2	0.17	0.07	0.023	(0.193)	0.002	0.020
3	0.25	0.07	0.023	(0.192)	0.002	0.020
4	0.33	0.10	0.034	(0.191)	0.003	0.030
5	0.42	0.10	0.034	(0.190)	0.003	0.030
6	0.50	0.10	0.034	(0.190)	0.003	0.030
7	0.58	0.10	0.034	(0.189)	0.003	0.030
8	0.67	0.10	0.034	(0.188)	0.003	0.030
9	0.75	0.10	0.034	(0.187)	0.003	0.030
10	0.83	0.13	0.045	(0.187)	0.005	0.041
11	0.92	0.13	0.045	(0.186)	0.005	0.041
12	1.00	0.13	0.045	(0.185)	0.005	0.041
13	1.08	0.10	0.034	(0.184)	0.003	0.030
14	1.17	0.10	0.034	(0.184)	0.003	0.030
15	1.25	0.10	0.034	(0.183)	0.003	0.030
16	1.33	0.10	0.034	(0.182)	0.003	0.030
17	1.42	0.10	0.034	(0.182)	0.003	0.030
18	1.50	0.10	0.034	(0.181)	0.003	0.030
19	1.58	0.10	0.034	(0.180)	0.003	0.030
20	1.67	0.10	0.034	(0.179)	0.003	0.030
21	1.75	0.10	0.034	(0.179)	0.003	0.030
22	1.83	0.13	0.045	(0.178)	0.005	0.041
23	1.92	0.13	0.045	(0.177)	0.005	0.041
24	2.00	0.13	0.045	(0.176)	0.005	0.041
25	2.08	0.13	0.045	(0.176)	0.005	0.041
26	2.17	0.13	0.045	(0.175)	0.005	0.041
27	2.25	0.13	0.045	(0.174)	0.005	0.041
28	2.33	0.13	0.045	(0.174)	0.005	0.041
29	2.42	0.13	0.045	(0.173)	0.005	0.041
30	2.50	0.13	0.045	(0.172)	0.005	0.041
31	2.58	0.17	0.056	(0.172)	0.006	0.051
32	2.67	0.17	0.056	(0.171)	0.006	0.051
33	2.75	0.17	0.056	(0.170)	0.006	0.051
34	2.83	0.17	0.056	(0.169)	0.006	0.051
35	2.92	0.17	0.056	(0.169)	0.006	0.051
36	3.00	0.17	0.056	(0.168)	0.006	0.051
37	3.08	0.17	0.056	(0.167)	0.006	0.051
38	3.17	0.17	0.056	(0.167)	0.006	0.051
39	3.25	0.17	0.056	(0.166)	0.006	0.051
40	3.33	0.17	0.056	(0.165)	0.006	0.051
41	3.42	0.17	0.056	(0.165)	0.006	0.051
42	3.50	0.17	0.056	(0.164)	0.006	0.051
43	3.58	0.17	0.056	(0.163)	0.006	0.051
44	3.67	0.17	0.056	(0.162)	0.006	0.051
45	3.75	0.17	0.056	(0.162)	0.006	0.051
46	3.83	0.20	0.068	(0.161)	0.007	0.061
47	3.92	0.20	0.068	(0.160)	0.007	0.061
48	4.00	0.20	0.068	(0.160)	0.007	0.061
49	4.08	0.20	0.068	(0.159)	0.007	0.061
50	4.17	0.20	0.068	(0.158)	0.007	0.061
51	4.25	0.20	0.068	(0.158)	0.007	0.061
52	4.33	0.23	0.079	(0.157)	0.008	0.071
53	4.42	0.23	0.079	(0.156)	0.008	0.071
54	4.50	0.23	0.079	(0.156)	0.008	0.071
55	4.58	0.23	0.079	(0.155)	0.008	0.071
56	4.67	0.23	0.079	(0.154)	0.008	0.071
57	4.75	0.23	0.079	(0.154)	0.008	0.071
58	4.83	0.27	0.090	(0.153)	0.009	0.081
59	4.92	0.27	0.090	(0.152)	0.009	0.081
60	5.00	0.27	0.090	(0.152)	0.009	0.081
61	5.08	0.20	0.068	(0.151)	0.007	0.061
62	5.17	0.20	0.068	(0.150)	0.007	0.061
63	5.25	0.20	0.068	(0.150)	0.007	0.061
64	5.33	0.23	0.079	(0.149)	0.008	0.071
65	5.42	0.23	0.079	(0.148)	0.008	0.071
66	5.50	0.23	0.079	(0.148)	0.008	0.071
67	5.58	0.27	0.090	(0.147)	0.009	0.081
68	5.67	0.27	0.090	(0.147)	0.009	0.081
69	5.75	0.27	0.090	(0.146)	0.009	0.081
70	5.83	0.27	0.090	(0.145)	0.009	0.081
71	5.92	0.27	0.090	(0.145)	0.009	0.081
72	6.00	0.27	0.090	(0.144)	0.009	0.081
73	6.08	0.30	0.102	(0.143)	0.010	0.091
74	6.17	0.30	0.102	(0.143)	0.010	0.091
75	6.25	0.30	0.102	(0.142)	0.010	0.091
76	6.33	0.30	0.102	(0.141)	0.010	0.091
77	6.42	0.30	0.102	(0.141)	0.010	0.091
78	6.50	0.30	0.102	(0.140)	0.010	0.091
79	6.58	0.33	0.113	(0.140)	0.011	0.102
80	6.67	0.33	0.113	(0.139)	0.011	0.102
81	6.75	0.33	0.113	(0.138)	0.011	0.102
82	6.83	0.33	0.113	(0.138)	0.011	0.102
83	6.92	0.33	0.113	(0.137)	0.011	0.102
84	7.00	0.33	0.113	(0.136)	0.011	0.102
85	7.08	0.33	0.113	(0.136)	0.011	0.102
86	7.17	0.33	0.113	(0.135)	0.011	0.102
87	7.25	0.33	0.113	(0.135)	0.011	0.102
88	7.33	0.37	0.124	(0.134)	0.012	0.112
89	7.42	0.37	0.124	(0.133)	0.012	0.112
90	7.50	0.37	0.124	(0.133)	0.012	0.112
91	7.58	0.40	0.135	(0.132)	0.014	0.122
92	7.67	0.40	0.135	(0.131)	0.014	0.122
93	7.75	0.40	0.135	(0.131)	0.014	0.122
94	7.83	0.43	0.147	(0.130)	0.015	0.132

95	7.92	0.43	0.147	(-0.130)	0.015	0.132
96	8.00	0.43	0.147	(-0.129)	0.015	0.132
97	8.08	0.50	0.169	(-0.128)	0.017	0.152
98	8.17	0.50	0.169	(-0.128)	0.017	0.152
99	8.25	0.50	0.169	(-0.127)	0.017	0.152
100	8.33	0.50	0.169	(-0.127)	0.017	0.152
101	8.42	0.50	0.169	(-0.126)	0.017	0.152
102	8.50	0.50	0.169	(-0.125)	0.017	0.152
103	8.58	0.53	0.180	(-0.125)	0.018	0.162
104	8.67	0.53	0.180	(-0.124)	0.018	0.162
105	8.75	0.53	0.180	(-0.124)	0.018	0.162
106	8.83	0.57	0.192	(-0.123)	0.019	0.173
107	8.92	0.57	0.192	(-0.123)	0.019	0.173
108	9.00	0.57	0.192	(-0.122)	0.019	0.173
109	9.08	0.63	0.214	(-0.121)	0.021	0.193
110	9.17	0.63	0.214	(-0.121)	0.021	0.193
111	9.25	0.63	0.214	(-0.120)	0.021	0.193
112	9.33	0.67	0.226	(-0.120)	0.023	0.203
113	9.42	0.67	0.226	(-0.119)	0.023	0.203
114	9.50	0.67	0.226	(-0.119)	0.023	0.203
115	9.58	0.70	0.237	(-0.118)	0.024	0.213
116	9.67	0.70	0.237	(-0.117)	0.024	0.213
117	9.75	0.70	0.237	(-0.117)	0.024	0.213
118	9.83	0.73	0.248	(-0.116)	0.025	0.223
119	9.92	0.73	0.248	(-0.116)	0.025	0.223
120	10.00	0.73	0.248	(-0.115)	0.025	0.223
121	10.08	0.50	0.169	(-0.115)	0.017	0.152
122	10.17	0.50	0.169	(-0.114)	0.017	0.152
123	10.25	0.50	0.169	(-0.113)	0.017	0.152
124	10.33	0.50	0.169	(-0.113)	0.017	0.152
125	10.42	0.50	0.169	(-0.112)	0.017	0.152
126	10.50	0.50	0.169	(-0.112)	0.017	0.152
127	10.58	0.67	0.226	(-0.111)	0.023	0.203
128	10.67	0.67	0.226	(-0.111)	0.023	0.203
129	10.75	0.67	0.226	(-0.110)	0.023	0.203
130	10.83	0.67	0.226	(-0.110)	0.023	0.203
131	10.92	0.67	0.226	(-0.109)	0.023	0.203
132	11.00	0.67	0.226	(-0.109)	0.023	0.203
133	11.08	0.63	0.214	(-0.108)	0.021	0.193
134	11.17	0.63	0.214	(-0.108)	0.021	0.193
135	11.25	0.63	0.214	(-0.107)	0.021	0.193
136	11.33	0.63	0.214	(-0.106)	0.021	0.193
137	11.42	0.63	0.214	(-0.106)	0.021	0.193
138	11.50	0.63	0.214	(-0.105)	0.021	0.193
139	11.58	0.57	0.192	(-0.105)	0.019	0.173
140	11.67	0.57	0.192	(-0.104)	0.019	0.173
141	11.75	0.57	0.192	(-0.104)	0.019	0.173
142	11.83	0.60	0.203	(-0.103)	0.020	0.183
143	11.92	0.60	0.203	(-0.103)	0.020	0.183
144	12.00	0.60	0.203	(-0.102)	0.020	0.183
145	12.08	0.83	0.282	(-0.102)	0.028	0.254
146	12.17	0.83	0.282	(-0.101)	0.028	0.254
147	12.25	0.83	0.282	(-0.101)	0.028	0.254
148	12.33	0.87	0.293	(-0.100)	0.029	0.264
149	12.42	0.87	0.293	(-0.100)	0.029	0.264
150	12.50	0.87	0.293	(-0.099)	0.029	0.264
151	12.58	0.93	0.316	(-0.099)	0.032	0.284
152	12.67	0.93	0.316	(-0.098)	0.032	0.284
153	12.75	0.93	0.316	(-0.098)	0.032	0.284
154	12.83	0.97	0.327	(-0.097)	0.033	0.294
155	12.92	0.97	0.327	(-0.097)	0.033	0.294
156	13.00	0.97	0.327	(-0.096)	0.033	0.294
157	13.08	1.13	0.383	(-0.096)	0.038	0.345
158	13.17	1.13	0.383	(-0.095)	0.038	0.345
159	13.25	1.13	0.383	(-0.095)	0.038	0.345
160	13.33	1.13	0.383	(-0.094)	0.038	0.345
161	13.42	1.13	0.383	(-0.094)	0.038	0.345
162	13.50	1.13	0.383	(-0.093)	0.038	0.345
163	13.58	0.77	0.259	(-0.093)	0.026	0.233
164	13.67	0.77	0.259	(-0.092)	0.026	0.233
165	13.75	0.77	0.259	(-0.092)	0.026	0.233
166	13.83	0.77	0.259	(-0.092)	0.026	0.233
167	13.92	0.77	0.259	(-0.091)	0.026	0.233
168	14.00	0.77	0.259	(-0.091)	0.026	0.233
169	14.08	0.90	0.305	(-0.090)	0.030	0.274
170	14.17	0.90	0.305	(-0.090)	0.030	0.274
171	14.25	0.90	0.305	(-0.089)	0.030	0.274
172	14.33	0.87	0.293	(-0.089)	0.029	0.264
173	14.42	0.87	0.293	(-0.088)	0.029	0.264
174	14.50	0.87	0.293	(-0.088)	0.029	0.264
175	14.58	0.87	0.293	(-0.087)	0.029	0.264
176	14.67	0.87	0.293	(-0.087)	0.029	0.264
177	14.75	0.87	0.293	(-0.086)	0.029	0.264
178	14.83	0.83	0.282	(-0.086)	0.028	0.254
179	14.92	0.83	0.282	(-0.086)	0.028	0.254
180	15.00	0.83	0.282	(-0.085)	0.028	0.254
181	15.08	0.80	0.271	(-0.085)	0.027	0.244
182	15.17	0.80	0.271	(-0.084)	0.027	0.244
183	15.25	0.80	0.271	(-0.084)	0.027	0.244
184	15.33	0.77	0.259	(-0.083)	0.026	0.233
185	15.42	0.77	0.259	(-0.083)	0.026	0.233
186	15.50	0.77	0.259	(-0.083)	0.026	0.233
187	15.58	0.63	0.214	(-0.082)	0.021	0.193
188	15.67	0.63	0.214	(-0.082)	0.021	0.193
189	15.75	0.63	0.214	(-0.081)	0.021	0.193
190	15.83	0.63	0.214	(-0.081)	0.021	0.193
191	15.92	0.63	0.214	(-0.080)	0.021	0.193
192	16.00	0.63	0.214	(-0.080)	0.021	0.193
193	16.08	0.13	0.045	(-0.080)	0.005	0.041

194	16.17	0.13	0.045	(-0.079)	0.005	0.041
195	16.25	0.13	0.045	(-0.079)	0.005	0.041
196	16.33	0.13	0.045	(-0.078)	0.005	0.041
197	16.42	0.13	0.045	(-0.078)	0.005	0.041
198	16.50	0.13	0.045	(-0.078)	0.005	0.041
199	16.58	0.10	0.034	(-0.077)	0.003	0.030
200	16.67	0.10	0.034	(-0.077)	0.003	0.030
201	16.75	0.10	0.034	(-0.076)	0.003	0.030
202	16.83	0.10	0.034	(-0.076)	0.003	0.030
203	16.92	0.10	0.034	(-0.076)	0.003	0.030
204	17.00	0.10	0.034	(-0.075)	0.003	0.030
205	17.08	0.17	0.056	(-0.075)	0.006	0.051
206	17.17	0.17	0.056	(-0.075)	0.006	0.051
207	17.25	0.17	0.056	(-0.074)	0.006	0.051
208	17.33	0.17	0.056	(-0.074)	0.006	0.051
209	17.42	0.17	0.056	(-0.073)	0.006	0.051
210	17.50	0.17	0.056	(-0.073)	0.006	0.051
211	17.58	0.17	0.056	(-0.073)	0.006	0.051
212	17.67	0.17	0.056	(-0.072)	0.006	0.051
213	17.75	0.17	0.056	(-0.072)	0.006	0.051
214	17.83	0.13	0.045	(-0.072)	0.005	0.041
215	17.92	0.13	0.045	(-0.071)	0.005	0.041
216	18.00	0.13	0.045	(-0.071)	0.005	0.041
217	18.08	0.13	0.045	(-0.071)	0.005	0.041
218	18.17	0.13	0.045	(-0.070)	0.005	0.041
219	18.25	0.13	0.045	(-0.070)	0.005	0.041
220	18.33	0.13	0.045	(-0.070)	0.005	0.041
221	18.42	0.13	0.045	(-0.069)	0.005	0.041
222	18.50	0.13	0.045	(-0.069)	0.005	0.041
223	18.58	0.10	0.034	(-0.069)	0.003	0.030
224	18.67	0.10	0.034	(-0.068)	0.003	0.030
225	18.75	0.10	0.034	(-0.068)	0.003	0.030
226	18.83	0.07	0.023	(-0.068)	0.002	0.020
227	18.92	0.07	0.023	(-0.067)	0.002	0.020
228	19.00	0.07	0.023	(-0.067)	0.002	0.020
229	19.08	0.10	0.034	(-0.067)	0.003	0.030
230	19.17	0.10	0.034	(-0.066)	0.003	0.030
231	19.25	0.10	0.034	(-0.066)	0.003	0.030
232	19.33	0.13	0.045	(-0.066)	0.005	0.041
233	19.42	0.13	0.045	(-0.065)	0.005	0.041
234	19.50	0.13	0.045	(-0.065)	0.005	0.041
235	19.58	0.10	0.034	(-0.065)	0.003	0.030
236	19.67	0.10	0.034	(-0.064)	0.003	0.030
237	19.75	0.10	0.034	(-0.064)	0.003	0.030
238	19.83	0.07	0.023	(-0.064)	0.002	0.020
239	19.92	0.07	0.023	(-0.064)	0.002	0.020
240	20.00	0.07	0.023	(-0.063)	0.002	0.020
241	20.08	0.10	0.034	(-0.063)	0.003	0.030
242	20.17	0.10	0.034	(-0.063)	0.003	0.030
243	20.25	0.10	0.034	(-0.062)	0.003	0.030
244	20.33	0.10	0.034	(-0.062)	0.003	0.030
245	20.42	0.10	0.034	(-0.062)	0.003	0.030
246	20.50	0.10	0.034	(-0.062)	0.003	0.030
247	20.58	0.10	0.034	(-0.061)	0.003	0.030
248	20.67	0.10	0.034	(-0.061)	0.003	0.030
249	20.75	0.10	0.034	(-0.061)	0.003	0.030
250	20.83	0.07	0.023	(-0.061)	0.002	0.020
251	20.92	0.07	0.023	(-0.060)	0.002	0.020
252	21.00	0.07	0.023	(-0.060)	0.002	0.020
253	21.08	0.10	0.034	(-0.060)	0.003	0.030
254	21.17	0.10	0.034	(-0.060)	0.003	0.030
255	21.25	0.10	0.034	(-0.059)	0.003	0.030
256	21.33	0.07	0.023	(-0.059)	0.002	0.020
257	21.42	0.07	0.023	(-0.059)	0.002	0.020
258	21.50	0.07	0.023	(-0.059)	0.002	0.020
259	21.58	0.10	0.034	(-0.059)	0.003	0.030
260	21.67	0.10	0.034	(-0.058)	0.003	0.030
261	21.75	0.10	0.034	(-0.058)	0.003	0.030
262	21.83	0.07	0.023	(-0.058)	0.002	0.020
263	21.92	0.07	0.023	(-0.058)	0.002	0.020
264	22.00	0.07	0.023	(-0.058)	0.002	0.020
265	22.08	0.10	0.034	(-0.057)	0.003	0.030
266	22.17	0.10	0.034	(-0.057)	0.003	0.030
267	22.25	0.10	0.034	(-0.057)	0.003	0.030
268	22.33	0.07	0.023	(-0.057)	0.002	0.020
269	22.42	0.07	0.023	(-0.057)	0.002	0.020
270	22.50	0.07	0.023	(-0.057)	0.002	0.020
271	22.58	0.07	0.023	(-0.056)	0.002	0.020
272	22.67	0.07	0.023	(-0.056)	0.002	0.020
273	22.75	0.07	0.023	(-0.056)	0.002	0.020
274	22.83	0.07	0.023	(-0.056)	0.002	0.020
275	22.92	0.07	0.023	(-0.056)	0.002	0.020
276	23.00	0.07	0.023	(-0.056)	0.002	0.020
277	23.08	0.07	0.023	(-0.055)	0.002	0.020
278	23.17	0.07	0.023	(-0.055)	0.002	0.020
279	23.25	0.07	0.023	(-0.055)	0.002	0.020
280	23.33	0.07	0.023	(-0.055)	0.002	0.020
281	23.42	0.07	0.023	(-0.055)	0.002	0.020
282	23.50	0.07	0.023	(-0.055)	0.002	0.020
283	23.58	0.07	0.023	(-0.055)	0.002	0.020
284	23.67	0.07	0.023	(-0.055)	0.002	0.020
285	23.75	0.07	0.023	(-0.055)	0.002	0.020
286	23.83	0.07	0.023	(-0.055)	0.002	0.020
287	23.92	0.07	0.023	(-0.055)	0.002	0.020
288	24.00	0.07	0.023	(-0.055)	0.002	0.020

(Loss Rate Not Used)

Sum = 100.0 Flood volume = Effective rainfall 2.54 (In)
 times area 9.2 (Ac.) / [(In) / (Ft.)] = 1.9 (Ac.Ft)

Total soil loss = 0.28 (In)
 Total soil loss = 0.215 (Ac.Ft)
 Total rainfall = 2.82 (In)
 Flood volume = 84290.5 Cubic Feet
 Total soil loss = 9365.6 Cubic Feet

Peak flow rate of this hydrograph = 3.184 (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	0.0006	0.09	Q				
0+10	0.0018	0.17	Q				
0+15	0.0031	0.18	Q				
0+20	0.0047	0.23	Q				
0+25	0.0065	0.27	VQ				
0+30	0.0085	0.28	VQ				
0+35	0.0104	0.28	VQ				
0+40	0.0123	0.28	VQ				
0+45	0.0143	0.28	VQ				
0+50	0.0165	0.33	VQ				
0+55	0.0190	0.37	VQ				
1+ 0	0.0216	0.37	VQ				
1+ 5	0.0239	0.33	VQ				
1+10	0.0259	0.29	VQ				
1+15	0.0278	0.28	VQ				
1+20	0.0297	0.28	VQ				
1+25	0.0317	0.28	VQ				
1+30	0.0336	0.28	VQ				
1+35	0.0356	0.28	VQ				
1+40	0.0375	0.28	VQ				
1+45	0.0394	0.28	VQ				
1+50	0.0417	0.33	VQ				
1+55	0.0442	0.37	VQ				
2+ 0	0.0468	0.37	VQ				
2+ 5	0.0493	0.37	|Q				
2+10	0.0519	0.37	O				
2+15	0.0545	0.37	Q				
2+20	0.0571	0.37	Q				
2+25	0.0597	0.37	Q				
2+30	0.0622	0.37	Q				
2+35	0.0651	0.42	Q				
2+40	0.0683	0.46	Q				
2+45	0.0715	0.47	Q				
2+50	0.0747	0.47	Q				
2+55	0.0780	0.47	Q				
3+ 0	0.0812	0.47	Q				
3+ 5	0.0844	0.47	Q				
3+10	0.0876	0.47	Q				
3+15	0.0909	0.47	Q				
3+20	0.0941	0.47	Q				
3+25	0.0973	0.47	QV				
3+30	0.1005	0.47	QV				
3+35	0.1038	0.47	QV				
3+40	0.1070	0.47	QV				
3+45	0.1102	0.47	QV				
3+50	0.1138	0.51	Q				
3+55	0.1176	0.55	Q				
4+ 0	0.1214	0.56	Q				
4+ 5	0.1253	0.56	Q				
4+10	0.1292	0.56	Q				
4+15	0.1330	0.56	Q				
4+20	0.1372	0.61	Q				
4+25	0.1417	0.65	Q				
4+30	0.1462	0.65	QV				
4+35	0.1507	0.66	QV				
4+40	0.1552	0.66	QV				
4+45	0.1597	0.66	QV				
4+50	0.1645	0.70	QV				
4+55	0.1696	0.74	QV				
5+ 0	0.1748	0.75	QV				
5+ 5	0.1793	0.66	QV				
5+10	0.1833	0.58	QV				
5+15	0.1872	0.57	QV				
5+20	0.1914	0.61	QV				
5+25	0.1958	0.65	Q V				
5+30	0.2003	0.65	Q V				
5+35	0.2052	0.70	Q V				
5+40	0.2103	0.74	Q V				
5+45	0.2154	0.75	Q V				
5+50	0.2206	0.75	Q V				
5+55	0.2257	0.75	Q V				
6+ 0	0.2309	0.75	Q V				
6+ 5	0.2364	0.80	QV				
6+10	0.2421	0.83	Q V				
6+15	0.2479	0.84	Q V				
6+20	0.2537	0.84	Q V				
6+25	0.2595	0.84	Q V				
6+30	0.2653	0.84	Q V				
6+35	0.2715	0.89	Q V				
6+40	0.2778	0.93	Q V				
6+45	0.2843	0.93	Q V				
6+50	0.2907	0.94	Q V				

6+55	0.2972	0.94	Q	V
7+ 0	0.3036	0.94	Q	V
7+ 5	0.3101	0.94	Q	V
7+10	0.3165	0.94	Q	V
7+15	0.3230	0.94	Q	V
7+20	0.3297	0.98	Q	V
7+25	0.3368	1.02	Q	V
7+30	0.3439	1.03	Q	V
7+35	0.3513	1.08	Q	V
7+40	0.3589	1.11	Q	V
7+45	0.3667	1.12	Q	V
7+50	0.3747	1.17	Q	V
7+55	0.3830	1.21	Q	V
8+ 0	0.3914	1.22	Q	V
8+ 5	0.4004	1.31	Q	V
8+10	0.4100	1.39	Q	V
8+15	0.4196	1.40	Q	V
8+20	0.4293	1.40	Q	V
8+25	0.4390	1.40	Q	V
8+30	0.4487	1.40	Q	V
8+35	0.4587	1.45	Q	V
8+40	0.4689	1.49	Q	V
8+45	0.4792	1.50	Q	V
8+50	0.4899	1.54	Q	V
8+55	0.5008	1.58	Q	V
9+ 0	0.5117	1.59	Q	V
9+ 5	0.5233	1.68	Q	V
9+10	0.5354	1.76	Q	V
9+15	0.5477	1.77	Q	V
9+20	0.5602	1.83	Q	V
9+25	0.5731	1.86	Q	V
9+30	0.5860	1.87	Q	V
9+35	0.5992	1.92	Q	V
9+40	0.6127	1.96	Q	V
9+45	0.6262	1.96	Q	V
9+50	0.6401	2.01	Q	V
9+55	0.6542	2.05	Q	V
10+ 0	0.6684	2.06	Q	V
10+ 5	0.6803	1.74	Q	V
10+10	0.6904	1.47	Q	V
10+15	0.7002	1.42	Q	V
10+20	0.7099	1.40	Q	V
10+25	0.7196	1.40	Q	V
10+30	0.7292	1.40	Q	V
10+35	0.7405	1.64	Q	V
10+40	0.7531	1.83	Q	V
10+45	0.7659	1.86	Q	V
10+50	0.7788	1.87	Q	V
10+55	0.7917	1.87	Q	V
11+ 0	0.8046	1.87	Q	V
11+ 5	0.8172	1.83	Q	V
11+10	0.8295	1.79	Q	V
11+15	0.8418	1.78	Q	V
11+20	0.8540	1.78	Q	V
11+25	0.8663	1.78	Q	V
11+30	0.8786	1.78	Q	V
11+35	0.8902	1.69	Q	V
11+40	0.9013	1.61	Q	V
11+45	0.9123	1.60	Q	V
11+50	0.9235	1.64	Q	V
11+55	0.9351	1.68	Q	V
12+ 0	0.9467	1.68	Q	V
12+ 5	0.9605	2.01	Q	V
12+10	0.9762	2.28	Q	V
12+15	0.9922	2.33	Q	V
12+20	1.0087	2.39	Q	V
12+25	1.0254	2.43	Q	V
12+30	1.0421	2.43	Q	V
12+35	1.0595	2.53	Q	V
12+40	1.0775	2.60	Q	V
12+45	1.0955	2.62	Q	V
12+50	1.1139	2.67	Q	V
12+55	1.1325	2.71	Q	V
13+ 0	1.1512	2.71	Q	V
13+ 5	1.1715	2.95	Q	V
13+10	1.1931	3.14	Q	V
13+15	1.2150	3.17	Q	V
13+20	1.2369	3.18	Q	V
13+25	1.2588	3.18	Q	V
13+30	1.2808	3.18	Q	V
13+35	1.2992	2.67	Q	V
13+40	1.3147	2.26	Q	V
13+45	1.3297	2.18	Q	V
13+50	1.3446	2.15	Q	V
13+55	1.3594	2.15	Q	V
14+ 0	1.3742	2.15	Q	V
14+ 5	1.3904	2.34	Q	V
14+10	1.4075	2.19	Q	V
14+15	1.4249	2.52	Q	V
14+20	1.4420	2.48	Q	V
14+25	1.4588	2.44	Q	V
14+30	1.4756	2.44	Q	V
14+35	1.4924	2.44	Q	V
14+40	1.5091	2.44	Q	V
14+45	1.5259	2.44	Q	V
14+50	1.5423	2.39	Q	V
14+55	1.5585	2.35	Q	V
15+ 0	1.5747	2.34	Q	V
15+ 5	1.5905	2.30	Q	V

15+10	1.6060	2.26				V
15+15	1.6215	2.25				V
15+20	1.6367	2.20				V
15+25	1.6516	2.16				V
15+30	1.6664	2.16				V
15+35	1.6800	1.97				V
15+40	1.6925	1.82				V
15+45	1.7048	1.79				V
15+50	1.7171	1.78				V
15+55	1.7293	1.78				V
16+ 0	1.7416	1.78				V
16+ 5	1.7491	1.08				V
16+10	1.7526	0.51				V
16+15	1.7554	0.41				V
16+20	1.7580	0.37				V
16+25	1.7606	0.37				V
16+30	1.7631	0.37				V
16+35	1.7654	0.33				V
16+40	1.7674	0.29				V
16+45	1.7693	0.28				V
16+50	1.7713	0.28				V
16+55	1.7732	0.28				V
17+ 0	1.7752	0.28				V
17+ 5	1.7777	0.37				V
17+10	1.7808	0.45				V
17+15	1.7840	0.46				V
17+20	1.7872	0.47				V
17+25	1.7905	0.47				V
17+30	1.7937	0.47				V
17+35	1.7969	0.47				V
17+40	1.8001	0.47				V
17+45	1.8034	0.47				V
17+50	1.8063	0.42				V
17+55	1.8089	0.38				V
18+ 0	1.8115	0.38				V
18+ 5	1.8141	0.37				V
18+10	1.8167	0.37				V
18+15	1.8193	0.37				V
18+20	1.8218	0.37				V
18+25	1.8244	0.37				V
18+30	1.8270	0.37				V
18+35	1.8293	0.33				V
18+40	1.8313	0.29				V
18+45	1.8332	0.28				V
18+50	1.8348	0.23				V
18+55	1.8362	0.20				V
19+ 0	1.8375	0.19				V
19+ 5	1.8391	0.23				V
19+10	1.8410	0.27				V
19+15	1.8429	0.28				V
19+20	1.8451	0.33				V
19+25	1.8477	0.37				V
19+30	1.8502	0.37				V
19+35	1.8525	0.33				V
19+40	1.8545	0.29				V
19+45	1.8564	0.28				V
19+50	1.8580	0.23				V
19+55	1.8594	0.20				V
20+ 0	1.8607	0.19				V
20+ 5	1.8623	0.23				V
20+10	1.8642	0.27				V
20+15	1.8661	0.28				V
20+20	1.8680	0.28				V
20+25	1.8700	0.28				V
20+30	1.8719	0.28				V
20+35	1.8738	0.28				V
20+40	1.8758	0.28				V
20+45	1.8777	0.28				V
20+50	1.8793	0.23				V
20+55	1.8807	0.20				V
21+ 0	1.8820	0.19				V
21+ 5	1.8836	0.23				V
21+10	1.8855	0.27				V
21+15	1.8874	0.28				V
21+20	1.8890	0.23				V
21+25	1.8904	0.20				V
21+30	1.8917	0.19				V
21+35	1.8933	0.23				V
21+40	1.8951	0.27				V
21+45	1.8971	0.28				V
21+50	1.8987	0.23				V
21+55	1.9000	0.20				V
22+ 0	1.9013	0.19				V
22+ 5	1.9029	0.23				V
22+10	1.9048	0.27				V
22+15	1.9067	0.28				V
22+20	1.9084	0.23				V
22+25	1.9097	0.20				V
22+30	1.9110	0.19				V
22+35	1.9123	0.19				V
22+40	1.9136	0.19				V
22+45	1.9149	0.19				V
22+50	1.9162	0.19				V
22+55	1.9175	0.19				V
23+ 0	1.9188	0.19				V
23+ 5	1.9200	0.19				V
23+10	1.9213	0.19				V
23+15	1.9226	0.19				V
23+20	1.9239	0.19				V

23+25	1.9252	0.19	Q				V
23+30	1.9265	0.19	Q				V
23+35	1.9278	0.19	Q				V
23+40	1.9291	0.19	Q				V
23+45	1.9304	0.19	Q				V
23+50	1.9317	0.19	Q				V
23+55	1.9329	0.19	Q				V
24+ 0	1.9342	0.19	Q				V
24+ 5	1.9349	0.09	Q				V
24+10	1.9350	0.02	Q				V
24+15	1.9350	0.00	Q				V

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

Program License Serial Number 6400

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

English Units used in output format

2712
10-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION

ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	0.50	4.58

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	1.30	11.90

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.500(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.829(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.829(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F) =	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Slope of intensity-duration curve for a 1 hour storm = 0.5000

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	239.299	49.462	4.561
2 0.167	478.599	40.726	3.756
3 0.250	717.898	7.376	0.680
4 0.333	957.198	2.436	0.225
		Sum = 100.000	Sum= 9.221

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) Max | Low	Effective (In/Hr)
1	0.08	4.20	0.418	(0.071) | 0.042	0.376
2	0.17	4.30	0.428	(0.071) | 0.043	0.385
3	0.25	5.00	0.497	(0.071) | 0.050	0.448
4	0.33	5.00	0.497	(0.071) | 0.050	0.448
5	0.42	5.80	0.577	(0.071) | 0.058	0.519
6	0.50	6.50	0.647	(0.071) | 0.065	0.582
7	0.58	7.40	0.736	0.071 | ( 0.074)	0.665
8	0.67	8.60	0.856	0.071 | ( 0.086)	0.785
9	0.75	12.30	1.224	0.071 | ( 0.122)	1.153
10	0.83	29.10	2.895	0.071 | ( 0.290)	2.824
11	0.92	6.80	0.677	(0.071) | 0.068	0.609
12	1.00	5.00	0.497	(0.071) | 0.050	0.448

(Loss Rate Not Used)

Sum = 100.0 Sum = 9.2

Flood volume = Effective rainfall 0.77 (In)

times area 9.2 (Ac.) / [(In) / (Ft.)] = 0.6 (Ac.Ft)

Total soil loss = 0.06 (In)

Total soil loss = 0.045 (Ac.Ft)

Total rainfall = 0.83 (In)

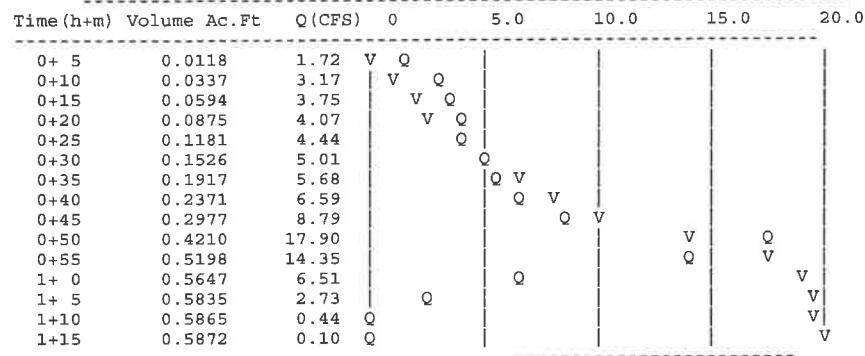
Flood volume = 25579.5 Cubic Feet

Total soil loss = 1957.3 Cubic Feet

Peak flow rate of this hydrograph = 17.904 (CFS)

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

Hydrograph in 5 Minute intervals ((CFS))



Unit Hydrograph Analysis
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
Study date 12/03/19 File: 2712PR10310.out

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

Program License Serial Number 6400

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English Units used in output format

2712
10-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION
ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	0.80	7.32

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	2.00	18.30

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.800(In)
Area Averaged 100-Year Rainfall = 2.000(In)

Point rain (area averaged) = 1.294(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.294(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F)	0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1 0.083	239.299	49.462	4.561
2 0.167	478.599	40.726	3.756
3 0.250	717.898	7.376	0.680
4 0.333	957.198	2.436	0.225
	Sum = 100.000	Sum=	9.221

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	1.30	0.202	(0.071)	0.020	0.182
2	0.17	1.30	0.202	(0.071)	0.020	0.182
3	0.25	1.10	0.171	(0.071)	0.017	0.154
4	0.33	1.50	0.233	(0.071)	0.023	0.210
5	0.42	1.50	0.233	(0.071)	0.023	0.210
6	0.50	1.80	0.279	(0.071)	0.028	0.251
7	0.58	1.50	0.233	(0.071)	0.023	0.210
8	0.67	1.80	0.279	(0.071)	0.028	0.251
9	0.75	1.80	0.279	(0.071)	0.028	0.251
10	0.83	1.50	0.233	(0.071)	0.023	0.210
11	0.92	1.60	0.248	(0.071)	0.025	0.224
12	1.00	1.80	0.279	(0.071)	0.028	0.251
13	1.08	2.20	0.342	(0.071)	0.034	0.307
14	1.17	2.20	0.342	(0.071)	0.034	0.307
15	1.25	2.20	0.342	(0.071)	0.034	0.307
16	1.33	2.00	0.310	(0.071)	0.031	0.279
17	1.42	2.60	0.404	(0.071)	0.040	0.363
18	1.50	2.70	0.419	(0.071)	0.042	0.377
19	1.58	2.40	0.373	(0.071)	0.037	0.335
20	1.67	2.70	0.419	(0.071)	0.042	0.377
21	1.75	3.30	0.512	(0.071)	0.051	0.461
22	1.83	3.10	0.481	(0.071)	0.048	0.433
23	1.92	2.90	0.450	(0.071)	0.045	0.405
24	2.00	3.00	0.466	(0.071)	0.047	0.419
25	2.08	3.10	0.481	(0.071)	0.048	0.433
26	2.17	4.20	0.652	(0.071)	0.065	0.587
27	2.25	5.00	0.776	0.071	(0.078)	0.705
28	2.33	3.50	0.543	(0.071)	0.054	0.489
29	2.42	6.80	1.056	0.071	(0.106)	0.985
30	2.50	7.30	1.133	0.071	(0.113)	1.062
31	2.58	8.20	1.273	0.071	(0.127)	1.202
32	2.67	5.90	0.916	0.071	(0.092)	0.845
33	2.75	2.00	0.310	(0.071)	0.031	0.279
34	2.83	1.80	0.279	(0.071)	0.028	0.251
35	2.92	1.80	0.279	(0.071)	0.028	0.251
36	3.00	0.60	0.093	(0.071)	0.009	0.084

(Loss Rate Not Used)

```

Sum =      100.0          Sum =      14.1
Flood volume = Effective rainfall      1.18 (In)
times area      9.2(Ac.)/(In)/(Ft.) =      0.9(Ac.Ft)
Total soil loss =      0.12 (In)
Total soil loss =      0.088 (Ac.Ft)
Total rainfall =      1.29 (In)
Flood volume =      39117.0 Cubic Feet
Total soil loss =      3850.5 Cubic Feet

```

Peak flow rate of this hydrograph = 10.258 (CFS)

3 - H O U R S T O R M
Runoff Hydrograph

Hydrograph in 5 Minute intervals ((CFS))

Time(h:m)	Volume	Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5			0.0057	0.83	VQ			
0+10			0.0161	1.51	V Q			
0+15			0.0265	1.51	| V Q			
0+20			0.0382	1.70	V Q			
0+25			0.0512	1.89	VQ			
0+30			0.0658	2.11	V Q			
0+35			0.0802	2.09	VQ			
0+40			0.0950	2.15	Q			
0+45			0.1108	2.29	Q			
0+50			0.1254	2.12	QV			
0+55			0.1394	2.04	Q V			
1+ 0			0.1544	2.19	Q V			
1+ 5			0.1720	2.55	Q V			
1+10			0.1911	2.78	Q V			
1+15			0.2106	2.82	Q V			
1+20			0.2292	2.71	Q V			
1+25			0.2498	2.99	Q V			
1+30			0.2728	3.35	Q V			
1+35			0.2953	3.26	Q V			
1+40			0.3181	3.32	Q V			
1+45			0.3445	3.83	Q V			
1+50			0.3724	4.04	Q V			
1+55			0.3990	3.87	Q V			
2+ 0			0.4254	3.83	Q V			
2+ 5			0.4525	3.92	Q V			
2+10			0.4847	4.60	Q V			
2+15			0.5247	5.81	Q V			
2+20			0.5618	5.38	Q V			
2+25			0.6096	6.94	Q V			
2+30			0.6719	9.04	Q V			
2+35			0.7425	10.26	Q V			
2+40			0.8067	9.32	Q V			
2+45			0.8446	5.51	Q V			
2+50			0.8656	3.04	Q V			
2+55			0.8826	2.47	Q V			
3+ 0			0.8934	1.56	Q V			
3+ 5			0.8971	0.54	Q V			

3+10	0.8979	0.11	Q				v
3+15	0.8980	0.02	Q				v

Unit Hydrograph Analysis
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Study date 12/03/19 File: 2712PR10610.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
10-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION

ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	1.20	10.98

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	3.00	27.45

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.200(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.941(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.940(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F)	= 0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	239.299	49.462
2	0.167	478.599	40.726
3	0.250	717.898	7.376
4	0.333	957.198	2.436
		Sum = 100.000	Sum= 9.221

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) Max | Low	Effective (In/Hr)
1	0.08	0.50	0.116	(0.071) | 0.012	0.105
2	0.17	0.60	0.140	(0.071) | 0.014	0.126
3	0.25	0.60	0.140	(0.071) | 0.014	0.126
4	0.33	0.60	0.140	(0.071) | 0.014	0.126
5	0.42	0.60	0.140	(0.071) | 0.014	0.126
6	0.50	0.70	0.163	(0.071) | 0.016	0.147
7	0.58	0.70	0.163	(0.071) | 0.016	0.147
8	0.67	0.70	0.163	(0.071) | 0.016	0.147
9	0.75	0.70	0.163	(0.071) | 0.016	0.147
10	0.83	0.70	0.163	(0.071) | 0.016	0.147
11	0.92	0.70	0.163	(0.071) | 0.016	0.147
12	1.00	0.80	0.186	(0.071) | 0.019	0.168
13	1.08	0.80	0.186	(0.071) | 0.019	0.168
14	1.17	0.80	0.186	(0.071) | 0.019	0.168
15	1.25	0.80	0.186	(0.071) | 0.019	0.168
16	1.33	0.80	0.186	(0.071) | 0.019	0.168
17	1.42	0.80	0.186	(0.071) | 0.019	0.168
18	1.50	0.80	0.186	(0.071) | 0.019	0.168
19	1.58	0.80	0.186	(0.071) | 0.019	0.168
20	1.67	0.80	0.186	(0.071) | 0.019	0.168
21	1.75	0.80	0.186	(0.071) | 0.019	0.168
22	1.83	0.80	0.186	(0.071) | 0.019	0.168
23	1.92	0.80	0.186	(0.071) | 0.019	0.168
24	2.00	0.90	0.210	(0.071) | 0.021	0.189
25	2.08	0.80	0.186	(0.071) | 0.019	0.168
26	2.17	0.90	0.210	(0.071) | 0.021	0.189
27	2.25	0.90	0.210	(0.071) | 0.021	0.189
28	2.33	0.90	0.210	(0.071) | 0.021	0.189
29	2.42	0.90	0.210	(0.071) | 0.021	0.189
30	2.50	0.90	0.210	(0.071) | 0.021	0.189
31	2.58	0.90	0.210	(0.071) | 0.021	0.189
32	2.67	0.90	0.210	(0.071) | 0.021	0.189
33	2.75	1.00	0.233	(0.071) | 0.023	0.210
34	2.83	1.00	0.233	(0.071) | 0.023	0.210
35	2.92	1.00	0.233	(0.071) | 0.023	0.210
36	3.00	1.00	0.233	(0.071) | 0.023	0.210
37	3.08	1.00	0.233	(0.071) | 0.023	0.210
38	3.17	1.10	0.256	(0.071) | 0.026	0.231
39	3.25	1.10	0.256	(0.071) | 0.026	0.231
40	3.33	1.10	0.256	(0.071) | 0.026	0.231
41	3.42	1.20	0.279	(0.071) | 0.028	0.251
42	3.50	1.30	0.303	(0.071) | 0.030	0.272
43	3.58	1.40	0.326	(0.071) | 0.033	0.293
44	3.67	1.40	0.326	(0.071) | 0.033	0.293
45	3.75	1.50	0.349	(0.071) | 0.035	0.314
46	3.83	1.50	0.349	(0.071) | 0.035	0.314
47	3.92	1.60	0.373	(0.071) | 0.037	0.335
48	4.00	1.60	0.373	(0.071) | 0.037	0.335
49	4.08	1.70	0.396	(0.071) | 0.040	0.356
50	4.17	1.80	0.419	(0.071) | 0.042	0.377
51	4.25	1.90	0.442	(0.071) | 0.044	0.398
52	4.33	2.00	0.466	(0.071) | 0.047	0.419
53	4.42	2.10	0.489	(0.071) | 0.049	0.440
54	4.50	2.10	0.489	(0.071) | 0.049	0.440
55	4.58	2.20	0.512	(0.071) | 0.051	0.461
56	4.67	2.30	0.536	(0.071) | 0.054	0.482
57	4.75	2.40	0.559	(0.071) | 0.056	0.503
58	4.83	2.40	0.559	(0.071) | 0.056	0.503
59	4.92	2.50	0.582	(0.071) | 0.058	0.524
60	5.00	2.60	0.605	(0.071) | 0.061	0.545
61	5.08	3.10	0.722	0.071 (0.072)	0.651
62	5.17	3.60	0.838	0.071 (0.084)	0.767
63	5.25	3.90	0.908	0.071 (0.091)	0.837
64	5.33	4.20	0.978	0.071 (0.098)	0.907
65	5.42	4.70	1.094	0.071 (0.109)	1.024
66	5.50	5.60	1.304	0.071 (0.130)	1.233
67	5.58	1.90	0.442	(0.071) | 0.044	0.398
68	5.67	0.90	0.210	(0.071) | 0.021	0.189
69	5.75	0.60	0.140	(0.071) | 0.014	0.126
70	5.83	0.50	0.116	(0.071) | 0.012	0.105
71	5.92	0.30	0.070	(0.071) | 0.007	0.063
72	6.00	0.20	0.047	(0.071) | 0.005	0.042

(Loss Rate Not Used)

Sum = 100.0 Sum = 21.1

Flood volume = Effective rainfall 1.76 (In)
times area 9.2(Ac.)/(In)/(Ft.) = 1.3 (Ac.Ft)
Total soil loss = 0.18 (In)
Total soil loss = 0.138 (Ac.Ft)
Total rainfall = 1.94 (In)
Flood volume = 58448.1 Cubic Feet
Total soil loss = 6003.8 Cubic Feet

Peak flow rate of this hydrograph = 10.279 (CFS)

+++++ 6 - H O U R S T O R M Run off f Hydrograph

Hydrograph in 5 Minute intervals ((CFS))



0+10	0.0100	0.97	VQ
0+15	0.0177	1.12	V Q
0+20	0.0256	1.16	V Q
0+25	0.0336	1.16	|VQ
0+30	0.0422	1.26	VQ
0+35	0.0514	1.33	|VQ
0+40	0.0607	1.35	VQ
0+45	0.0701	1.35	Q
0+50	0.0794	1.35	Q
0+55	0.0887	1.35	Q
1+ 0	0.0987	1.45	Q
1+ 5	0.1092	1.53	Q
1+10	0.1198	1.54	Q
1+15	0.1305	1.55	Q
1+20	0.1411	1.55	QV
1+25	0.1518	1.55	QV
1+30	0.1624	1.55	QV
1+35	0.1731	1.55	Q V
1+40	0.1837	1.55	Q V
1+45	0.1944	1.55	Q V
1+50	0.2050	1.55	Q V
1+55	0.2157	1.55	Q V
2+ 0	0.2270	1.64	Q V
2+ 5	0.2382	1.63	Q V
2+10	0.2496	1.66	Q V
2+15	0.2615	1.73	Q V
2+20	0.2735	1.74	Q V
2+25	0.2854	1.74	Q V
2+30	0.2974	1.74	Q V
2+35	0.3094	1.74	Q V
2+40	0.3214	1.74	Q V
2+45	0.3340	1.84	Q V
2+50	0.3472	1.91	Q V
2+55	0.3605	1.93	Q V
3+ 0	0.3738	1.93	Q V
3+ 5	0.3871	1.93	Q V
3+10	0.4011	2.03	Q V
3+15	0.4156	2.11	Q V
3+20	0.4302	2.12	Q V
3+25	0.4456	2.22	Q V
3+30	0.4621	2.40	Q V
3+35	0.4799	2.59	Q V
3+40	0.4983	2.68	Q V
3+45	0.5176	2.80	Q V
3+50	0.5375	2.88	Q V
3+55	0.5581	2.99	Q V
4+ 0	0.5792	3.07	Q V
4+ 5	0.6012	3.18	Q V
4+10	0.6243	3.36	Q V
4+15	0.6488	3.55	Q V
4+20	0.6746	3.75	Q V
4+25	0.7017	3.94	Q V
4+30	0.7295	4.04	Q V
4+35	0.7581	4.15	Q V
4+40	0.7879	4.33	Q V
4+45	0.8191	4.52	Q V
4+50	0.8509	4.62	Q V
4+55	0.8835	4.73	Q V
5+ 0	0.9173	4.91	Q V
5+ 5	0.9551	5.49	Q V
5+10	0.9994	6.44	Q V
5+15	1.0495	7.27	Q V
5+20	1.1043	7.95	Q V
5+25	1.1650	8.82	Q V
5+30	1.2358	10.28	Q V
5+35	1.2864	7.35	Q V
5+40	1.3100	3.43	Q V
5+45	1.3226	1.83	Q V
5+50	1.3307	1.17	Q V
5+55	1.3363	0.81	Q V
6+ 0	1.3399	0.53	Q V
6+ 5	1.3414	0.22	Q V
6+10	1.3417	0.04	Q V
6+15	1.3418	0.01	Q V

Unit Hydrograph Analysis
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Study date 12/03/19 File: 2712PR102410.out

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

Program License Serial Number 6400

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

English Units used in output format

2712
10-YEAR UNIT HYDROGRAPH
PROPOSED CONDITION

ENTIRE SITE - 9.15 ACRES

Drainage Area = 9.15(Ac.) = 0.014 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 9.15(Ac.) = 0.014 Sq. Mi.
Length along longest watercourse = 1000.00(Ft.)
Length along longest watercourse measured to centroid = 500.00(Ft.)
Length along longest watercourse = 0.189 Mi.
Length along longest watercourse measured to centroid = 0.095 Mi.
Difference in elevation = 13.30(Ft.)
Slope along watercourse = 70.2240 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.035 Hr.
Lag time = 2.09 Min.
25% of lag time = 0.52 Min.
40% of lag time = 0.84 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]
9.15	2.00	18.30

100 YEAR Area rainfall data:

Area(Ac.) [1]	Rainfall(In) [2]	Weighting[1*2]
9.15	5.50	50.33

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.500(In)

Point rain (area averaged) = 3.440(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.440(In)

Sub-Area Data:
Area(Ac.) Runoff Index Impervious %
9.150 69.00 0.900
Total Area Entered = 9.15(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F
AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
69.0	69.0	0.373	0.900	0.071	1.000	0.071
					Sum (F)	= 0.071

Area averaged mean soil loss (F) (In/Hr) = 0.071
Minimum soil loss rate ((In/Hr)) = 0.035
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period	Time % of lag	Distribution	Unit Hydrograph
(hrs)		Graph %	(CFS)
1	0.083	239.299	4.561
2	0.167	478.599	3.756
3	0.250	717.898	0.680
4	0.333	957.198	0.225
		Sum = 100.000	Sum= 9.221

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	0.028	(0.126)	0.003	0.025
2	0.17	0.07	0.028	(0.125)	0.003	0.025
3	0.25	0.07	0.028	(0.125)	0.003	0.025
4	0.33	0.10	0.041	(0.124)	0.004	0.037
5	0.42	0.10	0.041	(0.124)	0.004	0.037
6	0.50	0.10	0.041	(0.123)	0.004	0.037
7	0.58	0.10	0.041	(0.123)	0.004	0.037
8	0.67	0.10	0.041	(0.122)	0.004	0.037
9	0.75	0.10	0.041	(0.122)	0.004	0.037
10	0.83	0.13	0.055	(0.121)	0.006	0.050
11	0.92	0.13	0.055	(0.121)	0.006	0.050
12	1.00	0.13	0.055	(0.120)	0.006	0.050
13	1.08	0.10	0.041	(0.120)	0.004	0.037
14	1.17	0.10	0.041	(0.119)	0.004	0.037
15	1.25	0.10	0.041	(0.119)	0.004	0.037
16	1.33	0.10	0.041	(0.118)	0.004	0.037
17	1.42	0.10	0.041	(0.118)	0.004	0.037
18	1.50	0.10	0.041	(0.117)	0.004	0.037
19	1.58	0.10	0.041	(0.117)	0.004	0.037
20	1.67	0.10	0.041	(0.117)	0.004	0.037
21	1.75	0.10	0.041	(0.116)	0.004	0.037
22	1.83	0.13	0.055	(0.116)	0.006	0.050
23	1.92	0.13	0.055	(0.115)	0.006	0.050
24	2.00	0.13	0.055	(0.115)	0.006	0.050
25	2.08	0.13	0.055	(0.114)	0.006	0.050
26	2.17	0.13	0.055	(0.114)	0.006	0.050
27	2.25	0.13	0.055	(0.113)	0.006	0.050
28	2.33	0.13	0.055	(0.113)	0.006	0.050
29	2.42	0.13	0.055	(0.112)	0.006	0.050
30	2.50	0.13	0.055	(0.112)	0.006	0.050
31	2.58	0.17	0.069	(0.111)	0.007	0.062
32	2.67	0.17	0.069	(0.111)	0.007	0.062
33	2.75	0.17	0.069	(0.110)	0.007	0.062
34	2.83	0.17	0.069	(0.110)	0.007	0.062
35	2.92	0.17	0.069	(0.110)	0.007	0.062
36	3.00	0.17	0.069	(0.109)	0.007	0.062
37	3.08	0.17	0.069	(0.109)	0.007	0.062
38	3.17	0.17	0.069	(0.108)	0.007	0.062
39	3.25	0.17	0.069	(0.108)	0.007	0.062
40	3.33	0.17	0.069	(0.107)	0.007	0.062
41	3.42	0.17	0.069	(0.107)	0.007	0.062
42	3.50	0.17	0.069	(0.106)	0.007	0.062
43	3.58	0.17	0.069	(0.106)	0.007	0.062
44	3.67	0.17	0.069	(0.106)	0.007	0.062
45	3.75	0.17	0.069	(0.105)	0.007	0.062
46	3.83	0.20	0.083	(0.105)	0.008	0.074
47	3.92	0.20	0.083	(0.104)	0.008	0.074
48	4.00	0.20	0.083	(0.104)	0.008	0.074
49	4.08	0.20	0.083	(0.103)	0.008	0.074
50	4.17	0.20	0.083	(0.103)	0.008	0.074
51	4.25	0.20	0.083	(0.102)	0.008	0.074
52	4.33	0.23	0.096	(0.102)	0.010	0.087
53	4.42	0.23	0.096	(0.102)	0.010	0.087
54	4.50	0.23	0.096	(0.101)	0.010	0.087
55	4.58	0.23	0.096	(0.101)	0.010	0.087
56	4.67	0.23	0.096	(0.100)	0.010	0.087
57	4.75	0.23	0.096	(0.100)	0.010	0.087
58	4.83	0.27	0.110	(0.099)	0.011	0.099
59	4.92	0.27	0.110	(0.099)	0.011	0.099
60	5.00	0.27	0.110	(0.099)	0.011	0.099
61	5.08	0.20	0.083	(0.098)	0.008	0.074
62	5.17	0.20	0.083	(0.098)	0.008	0.074
63	5.25	0.20	0.083	(0.097)	0.008	0.074
64	5.33	0.23	0.096	(0.097)	0.010	0.087
65	5.42	0.23	0.096	(0.096)	0.010	0.087
66	5.50	0.23	0.096	(0.096)	0.010	0.087
67	5.58	0.27	0.110	(0.096)	0.011	0.099
68	5.67	0.27	0.110	(0.095)	0.011	0.099
69	5.75	0.27	0.110	(0.095)	0.011	0.099
70	5.83	0.27	0.110	(0.094)	0.011	0.099
71	5.92	0.27	0.110	(0.094)	0.011	0.099
72	6.00	0.27	0.110	(0.093)	0.011	0.099
73	6.08	0.30	0.124	(0.093)	0.012	0.111
74	6.17	0.30	0.124	(0.093)	0.012	0.111
75	6.25	0.30	0.124	(0.092)	0.012	0.111
76	6.33	0.30	0.124	(0.092)	0.012	0.111
77	6.42	0.30	0.124	(0.091)	0.012	0.111
78	6.50	0.30	0.124	(0.091)	0.012	0.111
79	6.58	0.33	0.138	(0.091)	0.014	0.124
80	6.67	0.33	0.138	(0.090)	0.014	0.124
81	6.75	0.33	0.138	(0.090)	0.014	0.124
82	6.83	0.33	0.138	(0.089)	0.014	0.124
83	6.92	0.33	0.138	(0.089)	0.014	0.124
84	7.00	0.33	0.138	(0.089)	0.014	0.124
85	7.08	0.33	0.138	(0.088)	0.014	0.124
86	7.17	0.33	0.138	(0.088)	0.014	0.124
87	7.25	0.33	0.138	(0.087)	0.014	0.124
88	7.33	0.37	0.151	(0.087)	0.015	0.136
89	7.42	0.37	0.151	(0.087)	0.015	0.136
90	7.50	0.37	0.151	(0.086)	0.015	0.136
91	7.58	0.40	0.165	(0.086)	0.017	0.149
92	7.67	0.40	0.165	(0.085)	0.017	0.149
93	7.75	0.40	0.165	(0.085)	0.017	0.149
94	7.83	0.43	0.179	(0.085)	0.018	0.161

95	7.92	0.43	0.179	(-0.084)	0.018	0.161
96	8.00	0.43	0.179	(-0.084)	0.018	0.161
97	8.08	0.50	0.206	(-0.083)	0.021	0.186
98	8.17	0.50	0.206	(-0.083)	0.021	0.186
99	8.25	0.50	0.206	(-0.083)	0.021	0.186
100	8.33	0.50	0.206	(-0.082)	0.021	0.186
101	8.42	0.50	0.206	(-0.082)	0.021	0.186
102	8.50	0.50	0.206	(-0.082)	0.021	0.186
103	8.58	0.53	0.220	(-0.081)	0.022	0.198
104	8.67	0.53	0.220	(-0.081)	0.022	0.198
105	8.75	0.53	0.220	(-0.080)	0.022	0.198
106	8.83	0.57	0.234	(-0.080)	0.023	0.211
107	8.92	0.57	0.234	(-0.080)	0.023	0.211
108	9.00	0.57	0.234	(-0.079)	0.023	0.211
109	9.08	0.63	0.261	(-0.079)	0.026	0.235
110	9.17	0.63	0.261	(-0.078)	0.026	0.235
111	9.25	0.63	0.261	(-0.078)	0.026	0.235
112	9.33	0.67	0.275	(-0.078)	0.028	0.248
113	9.42	0.67	0.275	(-0.077)	0.028	0.248
114	9.50	0.67	0.275	(-0.077)	0.028	0.248
115	9.58	0.70	0.289	(-0.077)	0.029	0.260
116	9.67	0.70	0.289	(-0.076)	0.029	0.260
117	9.75	0.70	0.289	(-0.076)	0.029	0.260
118	9.83	0.73	0.303	(-0.076)	0.030	0.272
119	9.92	0.73	0.303	(-0.075)	0.030	0.272
120	10.00	0.73	0.303	(-0.075)	0.030	0.272
121	10.08	0.50	0.206	(-0.074)	0.021	0.186
122	10.17	0.50	0.206	(-0.074)	0.021	0.186
123	10.25	0.50	0.206	(-0.074)	0.021	0.186
124	10.33	0.50	0.206	(-0.073)	0.021	0.186
125	10.42	0.50	0.206	(-0.073)	0.021	0.186
126	10.50	0.50	0.206	(-0.073)	0.021	0.186
127	10.58	0.67	0.275	(-0.072)	0.028	0.248
128	10.67	0.67	0.275	(-0.072)	0.028	0.248
129	10.75	0.67	0.275	(-0.072)	0.028	0.248
130	10.83	0.67	0.275	(-0.071)	0.028	0.248
131	10.92	0.67	0.275	(-0.071)	0.028	0.248
132	11.00	0.67	0.275	(-0.071)	0.028	0.248
133	11.08	0.63	0.261	(-0.070)	0.026	0.235
134	11.17	0.63	0.261	(-0.070)	0.026	0.235
135	11.25	0.63	0.261	(-0.069)	0.026	0.235
136	11.33	0.63	0.261	(-0.069)	0.026	0.235
137	11.42	0.63	0.261	(-0.069)	0.026	0.235
138	11.50	0.63	0.261	(-0.068)	0.026	0.235
139	11.58	0.57	0.234	(-0.068)	0.023	0.211
140	11.67	0.57	0.234	(-0.068)	0.023	0.211
141	11.75	0.57	0.234	(-0.067)	0.023	0.211
142	11.83	0.60	0.248	(-0.067)	0.025	0.223
143	11.92	0.60	0.248	(-0.067)	0.025	0.223
144	12.00	0.60	0.248	(-0.066)	0.025	0.223
145	12.08	0.83	0.344	(-0.066)	0.034	0.310
146	12.17	0.83	0.344	(-0.066)	0.034	0.310
147	12.25	0.83	0.344	(-0.065)	0.034	0.310
148	12.33	0.87	0.358	(-0.065)	0.036	0.322
149	12.42	0.87	0.358	(-0.065)	0.036	0.322
150	12.50	0.87	0.358	(-0.064)	0.036	0.322
151	12.58	0.93	0.385	(-0.064)	0.039	0.347
152	12.67	0.93	0.385	(-0.064)	0.039	0.347
153	12.75	0.93	0.385	(-0.064)	0.039	0.347
154	12.83	0.97	0.399	(-0.063)	0.040	0.359
155	12.92	0.97	0.399	(-0.063)	0.040	0.359
156	13.00	0.97	0.399	(-0.063)	0.040	0.359
157	13.08	1.13	0.468	(-0.062)	0.047	0.421
158	13.17	1.13	0.468	(-0.062)	0.047	0.421
159	13.25	1.13	0.468	(-0.062)	0.047	0.421
160	13.33	1.13	0.468	(-0.061)	0.047	0.421
161	13.42	1.13	0.468	(-0.061)	0.047	0.421
162	13.50	1.13	0.468	(-0.061)	0.047	0.421
163	13.58	0.77	0.316	(-0.060)	0.032	0.285
164	13.67	0.77	0.316	(-0.060)	0.032	0.285
165	13.75	0.77	0.316	(-0.060)	0.032	0.285
166	13.83	0.77	0.316	(-0.059)	0.032	0.285
167	13.92	0.77	0.316	(-0.059)	0.032	0.285
168	14.00	0.77	0.316	(-0.059)	0.032	0.285
169	14.08	0.90	0.372	(-0.059)	0.037	0.334
170	14.17	0.90	0.372	(-0.058)	0.037	0.334
171	14.25	0.90	0.372	(-0.058)	0.037	0.334
172	14.33	0.87	0.358	(-0.058)	0.036	0.322
173	14.42	0.87	0.358	(-0.057)	0.036	0.322
174	14.50	0.87	0.358	(-0.057)	0.036	0.322
175	14.58	0.87	0.358	(-0.057)	0.036	0.322
176	14.67	0.87	0.358	(-0.056)	0.036	0.322
177	14.75	0.87	0.358	(-0.056)	0.036	0.322
178	14.83	0.83	0.344	(-0.056)	0.034	0.310
179	14.92	0.83	0.344	(-0.056)	0.034	0.310
180	15.00	0.83	0.344	(-0.055)	0.034	0.310
181	15.08	0.80	0.330	(-0.055)	0.033	0.297
182	15.17	0.80	0.330	(-0.055)	0.033	0.297
183	15.25	0.80	0.330	(-0.054)	0.033	0.297
184	15.33	0.77	0.316	(-0.054)	0.032	0.285
185	15.42	0.77	0.316	(-0.054)	0.032	0.285
186	15.50	0.77	0.316	(-0.054)	0.032	0.285
187	15.58	0.63	0.261	(-0.053)	0.026	0.235
188	15.67	0.63	0.261	(-0.053)	0.026	0.235
189	15.75	0.63	0.261	(-0.053)	0.026	0.235
190	15.83	0.63	0.261	(-0.053)	0.026	0.235
191	15.92	0.63	0.261	(-0.052)	0.026	0.235
192	16.00	0.63	0.261	(-0.052)	0.026	0.235
193	16.08	0.13	0.055	(-0.052)	0.006	0.050

194	16.17	0.13	0.055	(	0.051)	0.006	0.050
195	16.25	0.13	0.055	(	0.051)	0.006	0.050
196	16.33	0.13	0.055	(	0.051)	0.006	0.050
197	16.42	0.13	0.055	(	0.051)	0.006	0.050
198	16.50	0.13	0.055	(	0.050)	0.006	0.050
199	16.58	0.10	0.041	(	0.050)	0.004	0.037
200	16.67	0.10	0.041	(	0.050)	0.004	0.037
201	16.75	0.10	0.041	(	0.050)	0.004	0.037
202	16.83	0.10	0.041	(	0.049)	0.004	0.037
203	16.92	0.10	0.041	(	0.049)	0.004	0.037
204	17.00	0.10	0.041	(	0.049)	0.004	0.037
205	17.08	0.17	0.069	(	0.049)	0.007	0.062
206	17.17	0.17	0.069	(	0.048)	0.007	0.062
207	17.25	0.17	0.069	(	0.048)	0.007	0.062
208	17.33	0.17	0.069	(	0.048)	0.007	0.062
209	17.42	0.17	0.069	(	0.048)	0.007	0.062
210	17.50	0.17	0.069	(	0.047)	0.007	0.062
211	17.58	0.17	0.069	(	0.047)	0.007	0.062
212	17.67	0.17	0.069	(	0.047)	0.007	0.062
213	17.75	0.17	0.069	(	0.047)	0.007	0.062
214	17.83	0.13	0.055	(	0.047)	0.006	0.050
215	17.92	0.13	0.055	(	0.046)	0.006	0.050
216	18.00	0.13	0.055	(	0.046)	0.006	0.050
217	18.08	0.13	0.055	(	0.046)	0.006	0.050
218	18.17	0.13	0.055	(	0.046)	0.006	0.050
219	18.25	0.13	0.055	(	0.045)	0.006	0.050
220	18.33	0.13	0.055	(	0.045)	0.006	0.050
221	18.42	0.13	0.055	(	0.045)	0.006	0.050
222	18.50	0.13	0.055	(	0.045)	0.006	0.050
223	18.58	0.10	0.041	(	0.045)	0.004	0.037
224	18.67	0.10	0.041	(	0.044)	0.004	0.037
225	18.75	0.10	0.041	(	0.044)	0.004	0.037
226	18.83	0.07	0.028	(	0.044)	0.003	0.025
227	18.92	0.07	0.028	(	0.044)	0.003	0.025
228	19.00	0.07	0.028	(	0.043)	0.003	0.025
229	19.08	0.10	0.041	(	0.043)	0.004	0.037
230	19.17	0.10	0.041	(	0.043)	0.004	0.037
231	19.25	0.10	0.041	(	0.043)	0.004	0.037
232	19.33	0.13	0.055	(	0.043)	0.006	0.050
233	19.42	0.13	0.055	(	0.042)	0.006	0.050
234	19.50	0.13	0.055	(	0.042)	0.006	0.050
235	19.58	0.10	0.041	(	0.042)	0.004	0.037
236	19.67	0.10	0.041	(	0.042)	0.004	0.037
237	19.75	0.10	0.041	(	0.042)	0.004	0.037
238	19.83	0.07	0.028	(	0.041)	0.003	0.025
239	19.92	0.07	0.028	(	0.041)	0.003	0.025
240	20.00	0.07	0.028	(	0.041)	0.003	0.025
241	20.08	0.10	0.041	(	0.041)	0.004	0.037
242	20.17	0.10	0.041	(	0.041)	0.004	0.037
243	20.25	0.10	0.041	(	0.041)	0.004	0.037
244	20.33	0.10	0.041	(	0.040)	0.004	0.037
245	20.42	0.10	0.041	(	0.040)	0.004	0.037
246	20.50	0.10	0.041	(	0.040)	0.004	0.037
247	20.58	0.10	0.041	(	0.040)	0.004	0.037
248	20.67	0.10	0.041	(	0.040)	0.004	0.037
249	20.75	0.10	0.041	(	0.040)	0.004	0.037
250	20.83	0.07	0.028	(	0.039)	0.003	0.025
251	20.92	0.07	0.028	(	0.039)	0.003	0.025
252	21.00	0.07	0.028	(	0.039)	0.003	0.025
253	21.08	0.10	0.041	(	0.039)	0.004	0.037
254	21.17	0.10	0.041	(	0.039)	0.004	0.037
255	21.25	0.10	0.041	(	0.039)	0.004	0.037
256	21.33	0.07	0.028	(	0.038)	0.003	0.025
257	21.42	0.07	0.028	(	0.038)	0.003	0.025
258	21.50	0.07	0.028	(	0.038)	0.003	0.025
259	21.58	0.10	0.041	(	0.038)	0.004	0.037
260	21.67	0.10	0.041	(	0.038)	0.004	0.037
261	21.75	0.10	0.041	(	0.038)	0.004	0.037
262	21.83	0.07	0.028	(	0.038)	0.003	0.025
263	21.92	0.07	0.028	(	0.038)	0.003	0.025
264	22.00	0.07	0.028	(	0.037)	0.003	0.025
265	22.08	0.10	0.041	(	0.037)	0.004	0.037
266	22.17	0.10	0.041	(	0.037)	0.004	0.037
267	22.25	0.10	0.041	(	0.037)	0.004	0.037
268	22.33	0.07	0.028	(	0.037)	0.003	0.025
269	22.42	0.07	0.028	(	0.037)	0.003	0.025
270	22.50	0.07	0.028	(	0.037)	0.003	0.025
271	22.58	0.07	0.028	(	0.037)	0.003	0.025
272	22.67	0.07	0.028	(	0.036)	0.003	0.025
273	22.75	0.07	0.028	(	0.036)	0.003	0.025
274	22.83	0.07	0.028	(	0.036)	0.003	0.025
275	22.92	0.07	0.028	(	0.036)	0.003	0.025
276	23.00	0.07	0.028	(	0.036)	0.003	0.025
277	23.08	0.07	0.028	(	0.036)	0.003	0.025
278	23.17	0.07	0.028	(	0.036)	0.003	0.025
279	23.25	0.07	0.028	(	0.036)	0.003	0.025
280	23.33	0.07	0.028	(	0.036)	0.003	0.025
281	23.42	0.07	0.028	(	0.036)	0.003	0.025
282	23.50	0.07	0.028	(	0.036)	0.003	0.025
283	23.58	0.07	0.028	(	0.036)	0.003	0.025
284	23.67	0.07	0.028	(	0.036)	0.003	0.025
285	23.75	0.07	0.028	(	0.036)	0.003	0.025
286	23.83	0.07	0.028	(	0.035)	0.003	0.025
287	23.92	0.07	0.028	(	0.035)	0.003	0.025
288	24.00	0.07	0.028	(	0.035)	0.003	0.025

(Loss Rate Not Used)

Sum = 100.0 Sum = 37.2
 Flood volume = Effective rainfall 3.10 (In)
 times area 9.2 (Ac.) / [(In) / (Ft.)] = 2.4 (Ac.Ft)

Total soil loss = 0.34 (In)
 Total soil loss = 0.262 (Ac.Ft)
 Total rainfall = 3.44 (In)
 Flood volume = 102828.1 Cubic Feet
 Total soil loss = 11425.3 Cubic Feet

Peak flow rate of this hydrograph = 3.885 (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	0.0008	0.11	Q				
0+10	0.0022	0.21	Q				
0+15	0.0037	0.22	Q				
0+20	0.0057	0.29	VQ				
0+25	0.0080	0.33	VQ				
0+30	0.0103	0.34	VQ				
0+35	0.0127	0.34	VQ				
0+40	0.0150	0.34	VQ				
0+45	0.0174	0.34	VQ				
0+50	0.0202	0.40	VQ				
0+55	0.0232	0.45	VQ				
1+ 0	0.0264	0.45	VQ				
1+ 5	0.0291	0.40	VQ				
1+10	0.0315	0.35	VQ				
1+15	0.0339	0.35	VQ				
1+20	0.0363	0.34	VQ				
1+25	0.0386	0.34	VQ				
1+30	0.0410	0.34	VQ				
1+35	0.0434	0.34	VQ				
1+40	0.0457	0.34	VQ				
1+45	0.0481	0.34	VQ				
1+50	0.0508	0.40	VQ				
1+55	0.0539	0.45	VQ				
2+ 0	0.0570	0.45	VQ				
2+ 5	0.0602	0.46	|Q				
2+10	0.0633	0.46	|Q				
2+15	0.0665	0.46	|Q				
2+20	0.0696	0.46	|Q				
2+25	0.0728	0.46	|Q				
2+30	0.0759	0.46	|Q				
2+35	0.0795	0.51	VQ				
2+40	0.0833	0.56	VQ				
2+45	0.0872	0.57	VQ				
2+50	0.0912	0.57	VQ				
2+55	0.0951	0.57	VQ				
3+ 0	0.0990	0.57	VQ				
3+ 5	0.1030	0.57	VQ				
3+10	0.1069	0.57	VQ				
3+15	0.1108	0.57	VQ				
3+20	0.1148	0.57	VQ				
3+25	0.1187	0.57	Q				
3+30	0.1226	0.57	Q				
3+35	0.1266	0.57	Q				
3+40	0.1305	0.57	Q				
3+45	0.1344	0.57	Q				
3+50	0.1388	0.63	Q				
3+55	0.1434	0.67	Q				
4+ 0	0.1481	0.68	Q				
4+ 5	0.1528	0.69	Q				
4+10	0.1576	0.69	Q				
4+15	0.1623	0.69	Q				
4+20	0.1674	0.74	Q				
4+25	0.1728	0.79	VQ				
4+30	0.1783	0.80	Q				
4+35	0.1838	0.80	Q				
4+40	0.1893	0.80	Q				
4+45	0.1948	0.80	Q				
4+50	0.2007	0.86	Q				
4+55	0.2069	0.90	Q				
5+ 0	0.2132	0.91	Q				
5+ 5	0.2187	0.80	Q				
5+10	0.2236	0.71	VQ				
5+15	0.2284	0.69	VQ				
5+20	0.2335	0.74	VQ				
5+25	0.2389	0.79	VQ				
5+30	0.2444	0.80	VQ				
5+35	0.2503	0.86	VQ				
5+40	0.2565	0.90	VQ				
5+45	0.2628	0.91	VQ				
5+50	0.2691	0.91	VQ				
5+55	0.2754	0.91	VQ				
6+ 0	0.2817	0.91	VQ				
6+ 5	0.2884	0.97	VQ				
6+10	0.2954	1.02	VQ				
6+15	0.3024	1.03	VQ				
6+20	0.3095	1.03	VQ				
6+25	0.3166	1.03	VQ				
6+30	0.3237	1.03	VQ				
6+35	0.3311	1.08	VQ				
6+40	0.3389	1.13	VQ				
6+45	0.3468	1.14	VQ				
6+50	0.3547	1.14	Q V				

6+55	0.3625	1.14	Q V
7+ 0	0.3704	1.14	Q V
7+ 5	0.3783	1.14	Q V
7+10	0.3861	1.14	Q V
7+15	0.3940	1.14	Q V
7+20	0.4023	1.20	Q V
7+25	0.4108	1.25	Q V
7+30	0.4195	1.25	Q V
7+35	0.4285	1.31	Q V
7+40	0.4379	1.36	Q V
7+45	0.4473	1.37	Q V
7+50	0.4571	1.43	Q V
7+55	0.4673	1.47	Q V
8+ 0	0.4775	1.48	Q V
8+ 5	0.4885	1.60	Q V
8+10	0.5002	1.69	Q V
8+15	0.5119	1.71	Q V
8+20	0.5237	1.71	Q V
8+25	0.5355	1.71	Q V
8+30	0.5473	1.71	Q V
8+35	0.5595	1.77	Q V
8+40	0.5720	1.82	Q V
8+45	0.5846	1.83	Q V
8+50	0.5976	1.88	Q V
8+55	0.6109	1.93	Q V
9+ 0	0.6242	1.94	Q V
9+ 5	0.6384	2.06	Q V
9+10	0.6532	2.15	Q V
9+15	0.6681	2.17	Q V
9+20	0.6834	2.23	Q V
9+25	0.6991	2.27	Q V
9+30	0.7148	2.28	Q V
9+35	0.7310	2.34	Q V
9+40	0.7474	2.39	Q V
9+45	0.7639	2.40	Q V
9+50	0.7808	2.46	Q V
9+55	0.7981	2.50	Q V
10+ 0	0.8153	2.51	Q V
10+ 5	0.8299	2.12	V
10+10	0.8423	1.79	V
10+15	0.8542	1.73	V
10+20	0.8660	1.71	V
10+25	0.8778	1.71	V
10+30	0.8896	1.71	V
10+35	0.9034	2.00	V
10+40	0.9187	2.23	V
10+45	0.9344	2.27	V
10+50	0.9501	2.29	V
10+55	0.9658	2.29	V
11+ 0	0.9816	2.29	V
11+ 5	0.9969	2.23	V
11+10	1.0120	2.18	V
11+15	1.0269	2.17	V
11+20	1.0419	2.17	V
11+25	1.0568	2.17	V
11+30	1.0718	2.17	V
11+35	1.0859	2.06	V
11+40	1.0995	1.96	V
11+45	1.1129	1.95	V
11+50	1.1267	2.00	V
11+55	1.1407	2.05	V
12+ 0	1.1549	2.05	V
12+ 5	1.1718	2.45	V
12+10	1.1909	2.78	V
12+15	1.2104	2.84	V
12+20	1.2305	2.91	V
12+25	1.2509	2.96	V
12+30	1.2713	2.97	V
12+35	1.2926	3.08	V
12+40	1.3144	3.18	V
12+45	1.3364	3.19	V
12+50	1.3589	3.26	V
12+55	1.3816	3.30	V
13+ 0	1.4044	3.31	V
13+ 5	1.4292	3.60	V
13+10	1.4555	3.83	V
13+15	1.4822	3.87	V
13+20	1.5089	3.88	V
13+25	1.5357	3.88	V
13+30	1.5624	3.88	V
13+35	1.5849	3.26	V
13+40	1.6039	2.75	V
13+45	1.6222	2.66	V
13+50	1.6403	2.63	V
13+55	1.6584	2.63	V
14+ 0	1.6765	2.63	V
14+ 5	1.6961	2.85	V
14+10	1.7171	3.04	V
14+15	1.7382	3.07	V
14+20	1.7591	3.03	V
14+25	1.7796	2.98	V
14+30	1.8001	2.97	V
14+35	1.8206	2.97	V
14+40	1.8410	2.97	V
14+45	1.8615	2.97	V
14+50	1.8815	2.91	V
14+55	1.9013	2.87	V
15+ 0	1.9210	2.86	V
15+ 5	1.9403	2.80	V

15+10	1.9592	2.75	Q	V
15+15	1.9781	2.74	Q	V
15+20	1.9966	2.69	Q	V
15+25	2.0148	2.64	Q	V
15+30	2.0329	2.63	Q	V
15+35	2.0495	2.40	Q	V
15+40	2.0647	2.22	Q	V
15+45	2.0798	2.18	Q	V
15+50	2.0947	2.17	Q	V
15+55	2.1097	2.17	Q	V
16+ 0	2.1246	2.17	Q	V
16+ 5	2.1337	1.32	Q	V
16+10	2.1380	0.63	Q	V
16+15	2.1415	0.50	Q	V
16+20	2.1446	0.46	Q	V
16+25	2.1478	0.46	Q	V
16+30	2.1509	0.46	Q	V
16+35	2.1537	0.40	Q	V
16+40	2.1561	0.35	Q	V
16+45	2.1585	0.35	Q	V
16+50	2.1608	0.34	Q	V
16+55	2.1632	0.34	Q	V
17+ 0	2.1656	0.34	Q	V
17+ 5	2.1687	0.46	Q	V
17+10	2.1725	0.55	Q	V
17+15	2.1764	0.57	Q	V
17+20	2.1803	0.57	Q	V
17+25	2.1842	0.57	Q	V
17+30	2.1882	0.57	Q	V
17+35	2.1921	0.57	Q	V
17+40	2.1960	0.57	Q	V
17+45	2.2000	0.57	Q	V
17+50	2.2035	0.51	Q	V
17+55	2.2067	0.47	Q	V
18+ 0	2.2099	0.46	Q	V
18+ 5	2.2131	0.46	Q	V
18+10	2.2162	0.46	Q	V
18+15	2.2194	0.46	Q	V
18+20	2.2225	0.46	Q	V
18+25	2.2257	0.46	Q	V
18+30	2.2288	0.46	Q	V
18+35	2.2316	0.40	Q	V
18+40	2.2340	0.35	Q	V
18+45	2.2364	0.35	Q	V
18+50	2.2383	0.29	Q	V
18+55	2.2400	0.24	Q	V
19+ 0	2.2416	0.23	Q	V
19+ 5	2.2436	0.29	Q	V
19+10	2.2458	0.33	Q	V
19+15	2.2482	0.34	Q	V
19+20	2.2509	0.40	Q	V
19+25	2.2540	0.45	Q	V
19+30	2.2571	0.45	Q	V
19+35	2.2599	0.40	Q	V
19+40	2.2623	0.35	Q	V
19+45	2.2647	0.35	Q	V
19+50	2.2667	0.29	Q	V
19+55	2.2683	0.24	Q	V
20+ 0	2.2699	0.23	Q	V
20+ 5	2.2719	0.29	Q	V
20+10	2.2742	0.33	Q	V
20+15	2.2765	0.34	Q	V
20+20	2.2789	0.34	Q	V
20+25	2.2812	0.34	Q	V
20+30	2.2836	0.34	Q	V
20+35	2.2859	0.34	Q	V
20+40	2.2883	0.34	Q	V
20+45	2.2907	0.34	Q	V
20+50	2.2926	0.29	Q	V
20+55	2.2943	0.24	Q	V
21+ 0	2.2959	0.23	Q	V
21+ 5	2.2978	0.29	Q	V
21+10	2.3001	0.33	Q	V
21+15	2.3025	0.34	Q	V
21+20	2.3044	0.29	Q	V
21+25	2.3061	0.24	Q	V
21+30	2.3077	0.23	Q	V
21+35	2.3097	0.29	Q	V
21+40	2.3119	0.33	Q	V
21+45	2.3143	0.34	Q	V
21+50	2.3162	0.29	Q	V
21+55	2.3179	0.24	Q	V
22+ 0	2.3195	0.23	Q	V
22+ 5	2.3215	0.29	Q	V
22+10	2.3237	0.33	Q	V
22+15	2.3261	0.34	Q	V
22+20	2.3280	0.29	Q	V
22+25	2.3297	0.24	Q	V
22+30	2.3313	0.23	Q	V
22+35	2.3329	0.23	Q	V
22+40	2.3344	0.23	Q	V
22+45	2.3360	0.23	Q	V
22+50	2.3376	0.23	Q	V
22+55	2.3392	0.23	Q	V
23+ 0	2.3407	0.23	Q	V
23+ 5	2.3423	0.23	Q	V
23+10	2.3439	0.23	Q	V
23+15	2.3455	0.23	Q	V
23+20	2.3470	0.23	Q	V

23+25	2.3486	0.23	Q				V
23+30	2.3502	0.23	Q				V
23+35	2.3518	0.23	Q				V
23+40	2.3533	0.23	Q				V
23+45	2.3549	0.23	Q				V
23+50	2.3565	0.23	Q				V
23+55	2.3580	0.23	Q				V
24+ 0	2.3596	0.23	Q				V
24+ 5	2.3604	0.12	Q				V
24+10	2.3606	0.02	Q				V
24+15	2.3606	0.01	Q				V

BASIN ROUTING CALCULATIONS

Thienes Engineering, Inc.

CIVIL ENGINEERING • LAND SURVEYING

subject	by	date	job no.	sheet of

7.75'
7.0
6.5'
5.0'
4.5'
3.0'
2.5'

2.5 cfs MAX

$h = 1 \quad Q = .21 \text{ cfs}$
 $h = 1.75 \quad Q = .6(.044) \sqrt{64.4 \times 1.75} = .28 \text{ cfs.}$

(2) 2" holes AREA = 0.044 ϕ

O 2" ϕ hole
 $\text{AREA} = 0.022 \phi$

$h = 1.0' \quad Q = .6(.044) \sqrt{64.4 \times 1.0} = .21 \text{ cfs}$
 $h = 2.5' \quad Q = .6(.044) \sqrt{64.4 \times 2.5} = .34 \text{ cfs.}$
 $h = 3.5' \quad Q = .6(.044) \sqrt{64.4 \times 3.5} = .39 \text{ cfs.}$
 $h = 4.5' \quad Q = .6(.044) \sqrt{64.4 \times 4.5} = .45 \text{ cfs.}$
 $h = 5.25' \quad Q = .6(.044) \sqrt{64.4 \times 5.25} = .49 \text{ cfs}$

DEPTH	VOLUME	Q OUT
UP TO 2.5'	.45 AC-ft.	0 cfs
3.5	.74 AC-ft	0.21 cfs
5.0	1.30 AC-ft.	0.34 cfs
6.0	1.63 AC-ft	0.39 cfs
7.0	1.84 AC-ft	$0.45 + .21 = 0.66 \text{ cfs}$
7.75	1.98 AC-ft	$0.49 + 0.28 = 0.77 \text{ cfs}$

Project:

Chamber Model -

Units -

Number of Chambers -

Number of End Caps -

Voids in the stone (porosity) -

Base of Stone Elevation -

Amount of Stone Above Chambers -

Amount of Stone Below Chambers -

MC-3500
Imperial
378
18
40
1510.00
12
36

[Click Here for Metric](#)

%
ft
in
in



Include Perimeter Stone In Calculations

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch, EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
93	0.00	0.00	0.00	0.00	657.23	657.23	86219.81	1517.75
92	0.00	0.00	0.00	0.00	657.23	657.23	85562.59	1517.67
91	0.00	0.00	0.00	0.00	657.23	657.23	84905.36	1517.58
90	0.00	0.00	0.00	0.00	657.23	657.23	84248.13	1517.50
89	0.00	0.00	0.00	0.00	657.23	657.23	83590.90	1517.42
88	0.00	0.00	0.00	0.00	657.23	657.23	82933.67	1517.33
87	0.00	0.00	0.00	0.00	657.23	657.23	82276.44	1517.25
86	0.00	0.00	0.00	0.00	657.23	657.23	81619.21	1517.17
85	0.00	0.00	0.00	0.00	657.23	657.23	80961.98	1517.08
84	0.00	0.00	0.00	0.00	657.23	657.23	80304.76	1517.00
83	0.00	0.00	0.00	0.00	657.23	657.23	79647.53	1516.92
82	0.00	0.00	0.00	0.00	657.23	657.23	78990.30	1516.83
81	0.06	0.00	21.96	0.00	648.45	670.40	78333.07	1516.75
80	0.19	0.02	73.37	0.43	627.71	701.51	77662.67	1516.67
79	0.29	0.04	111.12	0.68	612.51	724.30	76961.16	1516.58
78	0.40	0.05	152.58	0.93	595.83	749.33	76236.85	1516.50
77	0.69	0.07	259.75	1.22	552.84	813.81	75487.52	1516.42
76	1.03	0.09	388.70	1.59	501.12	891.40	74673.71	1516.33
75	1.25	0.11	472.32	1.93	467.53	941.78	73782.31	1516.25
74	1.42	0.13	537.60	2.27	441.28	981.15	72840.53	1516.17
73	1.57	0.14	594.64	2.60	418.33	1015.58	71859.38	1516.08
72	1.71	0.16	645.30	2.93	397.93	1046.17	70843.80	1516.00
71	1.83	0.18	691.17	3.27	379.45	1073.89	69797.63	1515.92
70	1.94	0.20	732.48	3.61	362.79	1098.88	68723.74	1515.83
69	2.04	0.22	771.43	3.93	347.08	1122.44	67624.86	1515.75
68	2.13	0.23	806.91	4.23	332.77	1143.91	66502.41	1515.67
67	2.22	0.25	840.76	4.51	319.12	1164.39	65358.50	1515.58
66	2.31	0.27	871.97	4.78	306.53	1183.28	64194.11	1515.50
65	2.38	0.28	901.44	5.04	294.64	1201.12	63010.83	1515.42
64	2.46	0.29	929.54	5.29	283.30	1218.13	61809.72	1515.33
63	2.53	0.31	955.65	5.54	272.75	1233.94	60591.59	1515.25
62	2.59	0.32	980.44	5.78	262.74	1248.96	59357.65	1515.17
61	2.66	0.33	1003.99	6.02	253.22	1263.23	58108.69	1515.08
60	2.72	0.35	1026.31	6.25	244.21	1276.76	56845.45	1515.00
59	2.77	0.36	1047.55	6.48	235.62	1289.65	55568.69	1514.92
58	2.82	0.37	1067.72	6.70	227.46	1301.88	54279.05	1514.83
57	2.88	0.38	1086.92	6.92	219.69	1313.53	52977.17	1514.75
56	2.92	0.40	1105.32	7.13	212.25	1324.70	51663.63	1514.67
55	2.97	0.41	1122.62	7.34	205.25	1335.20	50338.93	1514.58
54	3.01	0.42	1138.71	7.54	198.73	1344.97	49003.73	1514.50
53	3.05	0.43	1154.13	7.73	192.48	1354.35	47658.76	1514.42
52	3.09	0.44	1169.64	7.93	186.20	1363.77	46304.41	1514.33
51	3.13	0.45	1183.35	8.11	180.64	1372.11	44940.64	1514.25

50	3.17	0.46	1196.62	8.30	175.26	1380.18	43568.54	1514.17
49	3.20	0.47	1209.39	8.47	170.08	1387.95	42188.36	1514.08
48	3.23	0.48	1221.36	8.64	165.23	1395.23	40800.41	1514.00
47	3.26	0.49	1232.81	8.81	160.58	1402.20	39405.18	1513.92
46	3.29	0.50	1243.72	8.96	156.16	1408.84	38002.98	1513.83
45	3.32	0.51	1254.19	9.12	151.91	1415.21	36594.14	1513.75
44	3.34	0.51	1264.08	9.26	147.89	1421.23	35178.93	1513.67
43	3.37	0.52	1273.34	9.40	144.13	1426.87	33757.70	1513.58
42	3.39	0.53	1282.37	9.53	140.47	1432.37	32330.83	1513.50
41	3.41	0.54	1290.70	9.66	137.09	1437.44	30898.46	1513.42
40	3.44	0.54	1299.19	9.78	133.64	1442.61	29461.02	1513.33
39	3.46	0.55	1307.02	9.89	130.47	1447.37	28018.41	1513.25
38	3.48	0.56	1314.95	9.99	127.25	1452.19	26571.04	1513.17
37	3.51	0.59	1324.92	10.71	122.98	1458.61	25118.84	1513.08
36	0.00	0.00	0.00	0.00	657.23	657.23	23660.23	1513.00
35	0.00	0.00	0.00	0.00	657.23	657.23	23003.00	1512.92
34	0.00	0.00	0.00	0.00	657.23	657.23	22345.78	1512.83
33	0.00	0.00	0.00	0.00	657.23	657.23	21688.547	1512.75
32	0.00	0.00	0.00	0.00	657.23	657.23	21031.32	1512.67
31	0.00	0.00	0.00	0.00	657.23	657.23	20374.09	1512.58
30	0.00	0.00	0.00	0.00	657.23	657.23	19716.86	1512.50
29	0.00	0.00	0.00	0.00	657.23	657.23	19059.63	1512.42
28	0.00	0.00	0.00	0.00	657.23	657.23	18402.40	1512.33
27	0.00	0.00	0.00	0.00	657.23	657.23	17745.18	1512.25
26	0.00	0.00	0.00	0.00	657.23	657.23	17087.95	1512.17
25	0.00	0.00	0.00	0.00	657.23	657.23	16430.72	1512.08
24	0.00	0.00	0.00	0.00	657.23	657.23	15773.49	1512.00
23	0.00	0.00	0.00	0.00	657.23	657.23	15116.26	1511.92
22	0.00	0.00	0.00	0.00	657.23	657.23	14459.03	1511.83
21	0.00	0.00	0.00	0.00	657.23	657.23	13801.80	1511.75
20	0.00	0.00	0.00	0.00	657.23	657.23	13144.57	1511.67
19	0.00	0.00	0.00	0.00	657.23	657.23	12487.35	1511.58
18	0.00	0.00	0.00	0.00	657.23	657.23	11830.12	1511.50
17	0.00	0.00	0.00	0.00	657.23	657.23	11172.89	1511.42
16	0.00	0.00	0.00	0.00	657.23	657.23	10515.66	1511.33
15	0.00	0.00	0.00	0.00	657.23	657.23	9858.43	1511.25
14	0.00	0.00	0.00	0.00	657.23	657.23	9201.20	1511.17
13	0.00	0.00	0.00	0.00	657.23	657.23	8543.97	1511.08
12	0.00	0.00	0.00	0.00	657.23	657.23	7886.74	1511.00
11	0.00	0.00	0.00	0.00	657.23	657.23	7229.52	1510.92
10	0.00	0.00	0.00	0.00	657.23	657.23	6572.29	1510.83
9	0.00	0.00	0.00	0.00	657.23	657.23	5915.06	1510.75
8	0.00	0.00	0.00	0.00	657.23	657.23	5257.83	1510.67
7	0.00	0.00	0.00	0.00	657.23	657.23	4600.60	1510.58
6	0.00	0.00	0.00	0.00	657.23	657.23	3943.37	1510.50
5	0.00	0.00	0.00	0.00	657.23	657.23	3286.14	1510.42
4	0.00	0.00	0.00	0.00	657.23	657.23	2628.91	1510.33
3	0.00	0.00	0.00	0.00	657.23	657.23	1971.69	1510.25
2	0.00	0.00	0.00	0.00	657.23	657.23	1314.46	1510.17
1	0.00	0.00	0.00	0.00	657.23	657.23	657.23	1510.08

SEATON
2 YEAR 1 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR212.rte
***** HYDROGRAPH DATA *****
Number of intervals = 15
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 10.371 (CFS)
Total volume = 0.347 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS) 0.000 0.000 0.000 0.000 0.000
Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
Process from Point/Station 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 15
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00 (Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:
Basin Depth Storage Outflow (S-O*dt/2) (S+O*dt/2)
(Ft.) (Ac.Ft) (CFS) (Ac.Ft) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	2.6	5.19	7.78	10.37	Depth (Ft.)
0.083	1.03	0.00	0.004	O I					0.02
0.167	1.91	0.00	0.014	O I					0.08
0.250	2.26	0.00	0.028	O I					0.16
0.333	2.46	0.00	0.044	O I					0.25
0.417	2.68	0.00	0.062	O I					0.34
0.500	3.02	0.00	0.082	O I					0.45
0.583	3.42	0.01	0.104	O I					0.58
0.667	3.93	0.01	0.129	O I					0.72
0.750	5.13	0.01	0.160	O I					0.89
0.833	10.37	0.01	0.213	O I				I	1.19
0.917	8.38	0.01	0.278	O I			I		1.54
1.000	3.87	0.01	0.320	O I			I		1.78
1.083	1.63	0.01	0.339	O I			I		1.88
1.167	0.27	0.01	0.345	O I			I		1.92
1.250	0.06	0.01	0.346	O I			I		1.92
1.333	0.00	0.01	0.347	O I			I		1.93
1.417	0.00	0.01	0.347	O I			I		1.93
1.500	0.00	0.01	0.346	O I			I		1.92
1.583	0.00	0.01	0.346	O I			I		1.92
1.667	0.00	0.01	0.346	O I			I		1.92
1.750	0.00	0.01	0.346	O I			I		1.92
1.833	0.00	0.01	0.346	O I			I		1.92
1.917	0.00	0.01	0.346	O I			I		1.92
2.000	0.00	0.01	0.346	O I			I		1.92
2.083	0.00	0.01	0.346	O I			I		1.92
2.167	0.00	0.01	0.346	O I			I		1.92

10.500	0.00	0.01	0.339	0					1.88
10.583	0.00	0.01	0.339	0					1.88
10.667	0.00	0.01	0.339	0					1.88
10.750	0.00	0.01	0.339	0					1.88
10.833	0.00	0.01	0.339	0					1.88
10.917	0.00	0.01	0.339	0					1.88
11.000	0.00	0.01	0.339	0					1.88
11.083	0.00	0.01	0.339	0					1.88
11.167	0.00	0.01	0.338	0					1.88
11.250	0.00	0.01	0.338	0					1.88
11.333	0.00	0.01	0.338	0					1.88
11.417	0.00	0.01	0.338	0					1.88
11.500	0.00	0.01	0.338	0					1.88
11.583	0.00	0.01	0.338	0					1.88
11.667	0.00	0.01	0.338	0					1.88
11.750	0.00	0.01	0.338	0					1.88
11.833	0.00	0.01	0.338	0					1.88
11.917	0.00	0.01	0.338	0					1.88
12.000	0.00	0.01	0.338	0					1.88
12.083	0.00	0.01	0.338	0					1.88
12.167	0.00	0.01	0.338	0					1.88
12.250	0.00	0.01	0.338	0					1.88
12.333	0.00	0.01	0.337	0					1.87
12.417	0.00	0.01	0.337	0					1.87
12.500	0.00	0.01	0.337	0					1.87
12.583	0.00	0.01	0.337	0					1.87
12.667	0.00	0.01	0.337	0					1.87
12.750	0.00	0.01	0.337	0					1.87
12.833	0.00	0.01	0.337	0					1.87
12.917	0.00	0.01	0.337	0					1.87
13.000	0.00	0.01	0.337	0					1.87
13.083	0.00	0.01	0.337	0					1.87
13.167	0.00	0.01	0.337	0					1.87
13.250	0.00	0.01	0.337	0					1.87
13.333	0.00	0.01	0.337	0					1.87
13.417	0.00	0.01	0.337	0					1.87
13.500	0.00	0.01	0.337	0					1.87
13.583	0.00	0.01	0.336	0					1.87
13.667	0.00	0.01	0.336	0					1.87
13.750	0.00	0.01	0.336	0					1.87
13.833	0.00	0.01	0.336	0					1.87
13.917	0.00	0.01	0.336	0					1.87
14.000	0.00	0.01	0.336	0					1.87
14.083	0.00	0.01	0.336	0					1.87
14.167	0.00	0.01	0.336	0					1.87
14.250	0.00	0.01	0.336	0					1.87
14.333	0.00	0.01	0.336	0					1.87
14.417	0.00	0.01	0.336	0					1.87
14.500	0.00	0.01	0.336	0					1.86
14.583	0.00	0.01	0.336	0					1.86
14.667	0.00	0.01	0.336	0					1.86
14.750	0.00	0.01	0.335	0					1.86
14.833	0.00	0.01	0.335	0					1.86
14.917	0.00	0.01	0.335	0					1.86
15.000	0.00	0.01	0.335	0					1.86
15.083	0.00	0.01	0.335	0					1.86
15.167	0.00	0.01	0.335	0					1.86
15.250	0.00	0.01	0.335	0					1.86
15.333	0.00	0.01	0.335	0					1.86
15.417	0.00	0.01	0.335	0					1.86
15.500	0.00	0.01	0.335	0					1.86
15.583	0.00	0.01	0.335	0					1.86
15.667	0.00	0.01	0.335	0					1.86
15.750	0.00	0.01	0.335	0					1.86
15.833	0.00	0.01	0.335	0					1.86
15.917	0.00	0.01	0.335	0					1.86
16.000	0.00	0.01	0.334	0					1.86
16.083	0.00	0.01	0.334	0					1.86
16.167	0.00	0.01	0.334	0					1.86
16.250	0.00	0.01	0.334	0					1.86
16.333	0.00	0.01	0.334	0					1.86
16.417	0.00	0.01	0.334	0					1.86
16.500	0.00	0.01	0.334	0					1.86
16.583	0.00	0.01	0.334	0					1.86
16.667	0.00	0.01	0.334	0					1.86
16.750	0.00	0.01	0.334	0					1.85
16.833	0.00	0.01	0.334	0					1.85
16.917	0.00	0.01	0.334	0					1.85
17.000	0.00	0.01	0.334	0					1.85
17.083	0.00	0.01	0.334	0					1.85
17.167	0.00	0.01	0.333	0					1.85
17.250	0.00	0.01	0.333	0					1.85
17.333	0.00	0.01	0.333	0					1.85
17.417	0.00	0.01	0.333	0					1.85
17.500	0.00	0.01	0.333	0					1.85
17.583	0.00	0.01	0.333	0					1.85
17.667	0.00	0.01	0.333	0					1.85
17.750	0.00	0.01	0.333	0					1.85
17.833	0.00	0.01	0.333	0					1.85
17.917	0.00	0.01	0.333	0					1.85
18.000	0.00	0.01	0.333	0					1.85
18.083	0.00	0.01	0.333	0					1.85
18.167	0.00	0.01	0.333	0					1.85
18.250	0.00	0.01	0.333	0					1.85
18.333	0.00	0.01	0.333	0					1.85
18.417	0.00	0.01	0.332	0					1.85
18.500	0.00	0.01	0.332	0					1.85
18.583	0.00	0.01	0.332	0					1.85
18.667	0.00	0.01	0.332	0					1.85

18.750	0.00	0.01	0.332	O						1.85
18.833	0.00	0.01	0.332	O						1.85
18.917	0.00	0.01	0.332	O						1.84
19.000	0.00	0.01	0.332	O						1.84
19.083	0.00	0.01	0.332	O						1.84
19.167	0.00	0.01	0.332	O						1.84
19.250	0.00	0.01	0.332	O						1.84
19.333	0.00	0.01	0.332	O						1.84
19.417	0.00	0.01	0.332	O						1.84
19.500	0.00	0.01	0.332	O						1.84
19.583	0.00	0.01	0.331	O						1.84
19.667	0.00	0.01	0.331	O						1.84
19.750	0.00	0.01	0.331	O						1.84
19.833	0.00	0.01	0.331	O						1.84
19.917	0.00	0.01	0.331	O						1.84
20.000	0.00	0.01	0.331	O						1.84
20.083	0.00	0.01	0.331	O						1.84
20.167	0.00	0.01	0.331	O						1.84
20.250	0.00	0.01	0.331	O						1.84
20.333	0.00	0.01	0.331	O						1.84
20.417	0.00	0.01	0.331	O						1.84
20.500	0.00	0.01	0.331	O						1.84
20.583	0.00	0.01	0.331	O						1.84
20.667	0.00	0.01	0.331	O						1.84
20.750	0.00	0.01	0.331	O						1.84
20.833	0.00	0.01	0.330	O						1.84
20.917	0.00	0.01	0.330	O						1.84
21.000	0.00	0.01	0.330	O						1.84
21.083	0.00	0.01	0.330	O						1.83
21.167	0.00	0.01	0.330	O						1.83
21.250	0.00	0.01	0.330	O						1.83
21.333	0.00	0.01	0.330	O						1.83
21.417	0.00	0.01	0.330	O						1.83
21.500	0.00	0.01	0.330	O						1.83
21.583	0.00	0.01	0.330	O						1.83
21.667	0.00	0.01	0.330	O						1.83
21.750	0.00	0.01	0.330	O						1.83
21.833	0.00	0.01	0.330	O						1.83
21.917	0.00	0.01	0.330	O						1.83
22.000	0.00	0.01	0.329	O						1.83
22.083	0.00	0.01	0.329	O						1.83
22.167	0.00	0.01	0.329	O						1.83
22.250	0.00	0.01	0.329	O						1.83
22.333	0.00	0.01	0.329	O						1.83
22.417	0.00	0.01	0.329	O						1.83
22.500	0.00	0.01	0.329	O						1.83
22.583	0.00	0.01	0.329	O						1.83
22.667	0.00	0.01	0.329	O						1.83
22.750	0.00	0.01	0.329	O						1.83
22.833	0.00	0.01	0.329	O						1.83
22.917	0.00	0.01	0.329	O						1.83
23.000	0.00	0.01	0.329	O						1.83
23.083	0.00	0.01	0.329	O						1.83
23.167	0.00	0.01	0.329	O						1.83
23.250	0.00	0.01	0.328	O						1.82
23.333	0.00	0.01	0.328	O						1.82
23.417	0.00	0.01	0.328	O						1.82
23.500	0.00	0.01	0.328	O						1.82
23.583	0.00	0.01	0.328	O						1.82
23.667	0.00	0.01	0.328	O						1.82
23.750	0.00	0.01	0.328	O						1.82
23.833	0.00	0.01	0.328	O						1.82
23.917	0.00	0.01	0.328	O						1.82
24.000	0.00	0.01	0.328	O						1.82

Remaining water in basin = 0.07 (Ac.Ft)

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*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.010 (CFS)
Total volume = 0.280 (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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SEATON
 2 YEAR 3 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR232.rte
 **** HYDROGRAPH DATA ****
 Number of intervals = 39
 Time interval = 5.0 (Min.)
 Maximum/Peak flow rate = 6.071 (CFS)
 Total volume = 0.549 (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 100.000 to Point/Station 100.000
 *** RETARDING BASIN ROUTING ***

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 39
 Hydrograph time unit = 5.000 (Min.)
 Initial depth in storage basin = 0.00 (Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth Storage Outflow (S-O*dt/2) (S+O*dt/2)
 (Ft.) (Ac.Ft) (CFS) (Ac.Ft) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.5	3.04	4.55	6.07	Depth (Ft.)
0.083	0.51	0.00	0.002	O I					0.01
0.167	0.93	0.00	0.007	O I					0.04
0.250	0.93	0.00	0.013	O I					0.07
0.333	1.05	0.00	0.020	O I					0.11
0.417	1.17	0.00	0.028	O I					0.15
0.500	1.31	0.00	0.036	O I					0.20
0.583	1.29	0.00	0.045	O I					0.25
0.667	1.33	0.00	0.054	O I					0.30
0.750	1.42	0.00	0.064	O I					0.35
0.833	1.31	0.00	0.073	O I					0.40
0.917	1.26	0.00	0.082	O I					0.45
1.000	1.35	0.01	0.091	O I					0.50
1.083	1.57	0.01	0.101	O I					0.56
1.167	1.72	0.01	0.112	O I					0.62
1.250	1.75	0.01	0.124	O I					0.69
1.333	1.67	0.01	0.136	O I					0.75
1.417	1.85	0.01	0.148	O I					0.82
1.500	2.07	0.01	0.161	O I					0.90
1.583	2.01	0.01	0.175	O I					0.97
1.667	2.05	0.01	0.189	O I					1.05
1.750	2.37	0.01	0.204	O I					1.13
1.833	2.50	0.01	0.221	O I					1.23
1.917	2.40	0.01	0.238	O I					1.32
2.000	2.37	0.01	0.254	O I					1.41
2.083	2.43	0.01	0.271	O I					1.50
2.167	2.89	0.01	0.289	O I					1.60

2.250	3.58	0.01	0.311	O	I	I	1.73
2.333	3.31	0.01	0.335	O	I	I	1.86
2.417	4.19	0.01	0.360	O	I	I	2.00
2.500	5.39	0.01	0.393	O	I	I	2.19
2.583	6.07	0.01	0.433	O	I	I	2.40
2.667	5.55	0.03	0.473	O	I	I	2.58
2.750	3.33	0.05	0.503	O	I	I	2.68
2.833	1.87	0.06	0.520	O	I	I	2.74
2.917	1.53	0.07	0.532	O	I	I	2.78
3.000	0.97	0.07	0.540	O	I	I	2.81
3.083	0.34	0.07	0.544	OI	I	I	2.82
3.167	0.07	0.08	0.545	O	I	I	2.83
3.250	0.01	0.08	0.544	O	I	I	2.83
3.333	0.00	0.07	0.544	O	I	I	2.82
3.417	0.00	0.07	0.543	O	I	I	2.82
3.500	0.00	0.07	0.543	O	I	I	2.82
3.583	0.00	0.07	0.542	O	I	I	2.82
3.667	0.00	0.07	0.542	O	I	I	2.82
3.750	0.00	0.07	0.541	O	I	I	2.82
3.833	0.00	0.07	0.541	O	I	I	2.81
3.917	0.00	0.07	0.540	O	I	I	2.81
4.000	0.00	0.07	0.540	O	I	I	2.81
4.083	0.00	0.07	0.539	O	I	I	2.81
4.167	0.00	0.07	0.539	O	I	I	2.81
4.250	0.00	0.07	0.538	O	I	I	2.80
4.333	0.00	0.07	0.538	O	I	I	2.80
4.417	0.00	0.07	0.537	O	I	I	2.80
4.500	0.00	0.07	0.537	O	I	I	2.80
4.583	0.00	0.07	0.536	O	I	I	2.80
4.667	0.00	0.07	0.536	O	I	I	2.80
4.750	0.00	0.07	0.536	O	I	I	2.79
4.833	0.00	0.07	0.535	O	I	I	2.79
4.917	0.00	0.07	0.535	O	I	I	2.79
5.000	0.00	0.07	0.534	O	I	I	2.79
5.083	0.00	0.07	0.534	O	I	I	2.79
5.167	0.00	0.07	0.533	O	I	I	2.79
5.250	0.00	0.07	0.533	O	I	I	2.79
5.333	0.00	0.07	0.532	O	I	I	2.78
5.417	0.00	0.07	0.532	O	I	I	2.78
5.500	0.00	0.07	0.531	O	I	I	2.78
5.583	0.00	0.07	0.531	O	I	I	2.78
5.667	0.00	0.07	0.530	O	I	I	2.78
5.750	0.00	0.07	0.530	O	I	I	2.78
5.833	0.00	0.06	0.530	O	I	I	2.77
5.917	0.00	0.06	0.529	O	I	I	2.77
6.000	0.00	0.06	0.529	O	I	I	2.77
6.083	0.00	0.06	0.528	O	I	I	2.77
6.167	0.00	0.06	0.528	O	I	I	2.77
6.250	0.00	0.06	0.527	O	I	I	2.77
6.333	0.00	0.06	0.527	O	I	I	2.77
6.417	0.00	0.06	0.526	O	I	I	2.76
6.500	0.00	0.06	0.526	O	I	I	2.76
6.583	0.00	0.06	0.526	O	I	I	2.76
6.667	0.00	0.06	0.525	O	I	I	2.76
6.750	0.00	0.06	0.525	O	I	I	2.76
6.833	0.00	0.06	0.524	O	I	I	2.76
6.917	0.00	0.06	0.524	O	I	I	2.75
7.000	0.00	0.06	0.523	O	I	I	2.75
7.083	0.00	0.06	0.523	O	I	I	2.75
7.167	0.00	0.06	0.523	O	I	I	2.75
7.250	0.00	0.06	0.522	O	I	I	2.75
7.333	0.00	0.06	0.522	O	I	I	2.75
7.417	0.00	0.06	0.521	O	I	I	2.75
7.500	0.00	0.06	0.521	O	I	I	2.74
7.583	0.00	0.06	0.521	O	I	I	2.74
7.667	0.00	0.06	0.520	O	I	I	2.74
7.750	0.00	0.06	0.520	O	I	I	2.74
7.833	0.00	0.06	0.519	O	I	I	2.74
7.917	0.00	0.06	0.519	O	I	I	2.74
8.000	0.00	0.06	0.519	O	I	I	2.74
8.083	0.00	0.06	0.518	O	I	I	2.74
8.167	0.00	0.06	0.518	O	I	I	2.73
8.250	0.00	0.06	0.517	O	I	I	2.73
8.333	0.00	0.06	0.517	O	I	I	2.73
8.417	0.00	0.06	0.517	O	I	I	2.73
8.500	0.00	0.06	0.516	O	I	I	2.73
8.583	0.00	0.06	0.516	O	I	I	2.73
8.667	0.00	0.06	0.516	O	I	I	2.73
8.750	0.00	0.05	0.515	O	I	I	2.72
8.833	0.00	0.05	0.515	O	I	I	2.72
8.917	0.00	0.05	0.514	O	I	I	2.72
9.000	0.00	0.05	0.514	O	I	I	2.72
9.083	0.00	0.05	0.514	O	I	I	2.72
9.167	0.00	0.05	0.513	O	I	I	2.72
9.250	0.00	0.05	0.513	O	I	I	2.72
9.333	0.00	0.05	0.513	O	I	I	2.72
9.417	0.00	0.05	0.512	O	I	I	2.71
9.500	0.00	0.05	0.512	O	I	I	2.71
9.583	0.00	0.05	0.511	O	I	I	2.71
9.667	0.00	0.05	0.511	O	I	I	2.71
9.750	0.00	0.05	0.511	O	I	I	2.71
9.833	0.00	0.05	0.510	O	I	I	2.71
9.917	0.00	0.05	0.510	O	I	I	2.71
10.000	0.00	0.05	0.510	O	I	I	2.71
10.083	0.00	0.05	0.509	O	I	I	2.70
10.167	0.00	0.05	0.509	O	I	I	2.70
10.250	0.00	0.05	0.509	O	I	I	2.70
10.333	0.00	0.05	0.508	O	I	I	2.70
10.417	0.00	0.05	0.508	O	I	I	2.70

10.500	0.00	0.05	0.508	O					2.70
10.583	0.00	0.05	0.507	O					2.70
10.667	0.00	0.05	0.507	O					2.70
10.750	0.00	0.05	0.507	O					2.69
10.833	0.00	0.05	0.506	O					2.69
10.917	0.00	0.05	0.506	O					2.69
11.000	0.00	0.05	0.506	O					2.69
11.083	0.00	0.05	0.505	O					2.69
11.167	0.00	0.05	0.505	O					2.69
11.250	0.00	0.05	0.505	O					2.69
11.333	0.00	0.05	0.504	O					2.69
11.417	0.00	0.05	0.504	O					2.69
11.500	0.00	0.05	0.504	O					2.68
11.583	0.00	0.05	0.503	O					2.68
11.667	0.00	0.05	0.503	O					2.68
11.750	0.00	0.05	0.503	O					2.68
11.833	0.00	0.05	0.502	O					2.68
11.917	0.00	0.05	0.502	O					2.68
12.000	0.00	0.05	0.502	O					2.68
12.083	0.00	0.05	0.501	O					2.68
12.167	0.00	0.05	0.501	O					2.68
12.250	0.00	0.04	0.501	O					2.67
12.333	0.00	0.04	0.500	O					2.67
12.417	0.00	0.04	0.500	O					2.67
12.500	0.00	0.04	0.500	O					2.67
12.583	0.00	0.04	0.500	O					2.67
12.667	0.00	0.04	0.499	O					2.67
12.750	0.00	0.04	0.499	O					2.67
12.833	0.00	0.04	0.499	O					2.67
12.917	0.00	0.04	0.498	O					2.67
13.000	0.00	0.04	0.498	O					2.67
13.083	0.00	0.04	0.498	O					2.66
13.167	0.00	0.04	0.497	O					2.66
13.250	0.00	0.04	0.497	O					2.66
13.333	0.00	0.04	0.497	O					2.66
13.417	0.00	0.04	0.497	O					2.66
13.500	0.00	0.04	0.496	O					2.66
13.583	0.00	0.04	0.496	O					2.66
13.667	0.00	0.04	0.496	O					2.66
13.750	0.00	0.04	0.495	O					2.66
13.833	0.00	0.04	0.495	O					2.66
13.917	0.00	0.04	0.495	O					2.65
14.000	0.00	0.04	0.495	O					2.65
14.083	0.00	0.04	0.494	O					2.65
14.167	0.00	0.04	0.494	O					2.65
14.250	0.00	0.04	0.494	O					2.65
14.333	0.00	0.04	0.493	O					2.65
14.417	0.00	0.04	0.493	O					2.65
14.500	0.00	0.04	0.493	O					2.65
14.583	0.00	0.04	0.493	O					2.65
14.667	0.00	0.04	0.492	O					2.65
14.750	0.00	0.04	0.492	O					2.65
14.833	0.00	0.04	0.492	O					2.64
14.917	0.00	0.04	0.492	O					2.64
15.000	0.00	0.04	0.491	O					2.64
15.083	0.00	0.04	0.491	O					2.64
15.167	0.00	0.04	0.491	O					2.64
15.250	0.00	0.04	0.490	O					2.64
15.333	0.00	0.04	0.490	O					2.64
15.417	0.00	0.04	0.490	O					2.64
15.500	0.00	0.04	0.490	O					2.64
15.583	0.00	0.04	0.489	O					2.64
15.667	0.00	0.04	0.489	O					2.64
15.750	0.00	0.04	0.489	O					2.63
15.833	0.00	0.04	0.489	O					2.63
15.917	0.00	0.04	0.488	O					2.63
16.000	0.00	0.04	0.488	O					2.63
16.083	0.00	0.04	0.488	O					2.63
16.167	0.00	0.04	0.488	O					2.63
16.250	0.00	0.04	0.487	O					2.63
16.333	0.00	0.04	0.487	O					2.63
16.417	0.00	0.04	0.487	O					2.63
16.500	0.00	0.04	0.487	O					2.63
16.583	0.00	0.04	0.486	O					2.63
16.667	0.00	0.03	0.486	O					2.62
16.750	0.00	0.03	0.486	O					2.62
16.833	0.00	0.03	0.486	O					2.62
16.917	0.00	0.03	0.485	O					2.62
17.000	0.00	0.03	0.485	O					2.62
17.083	0.00	0.03	0.485	O					2.62
17.167	0.00	0.03	0.485	O					2.62
17.250	0.00	0.03	0.485	O					2.62
17.333	0.00	0.03	0.484	O					2.62
17.417	0.00	0.03	0.484	O					2.62
17.500	0.00	0.03	0.484	O					2.62
17.583	0.00	0.03	0.484	O					2.62
17.667	0.00	0.03	0.483	O					2.62
17.750	0.00	0.03	0.483	O					2.61
17.833	0.00	0.03	0.483	O					2.61
17.917	0.00	0.03	0.483	O					2.61
18.000	0.00	0.03	0.483	O					2.61
18.083	0.00	0.03	0.482	O					2.61
18.167	0.00	0.03	0.482	O					2.61
18.250	0.00	0.03	0.482	O					2.61
18.333	0.00	0.03	0.482	O					2.61
18.417	0.00	0.03	0.481	O					2.61
18.500	0.00	0.03	0.481	O					2.61
18.583	0.00	0.03	0.481	O					2.61
18.667	0.00	0.03	0.481	O					2.61

18.750	0.00	0.03	0.481	O					2.61
18.833	0.00	0.03	0.480	O					2.60
18.917	0.00	0.03	0.480	O					2.60
19.000	0.00	0.03	0.480	O					2.60
19.083	0.00	0.03	0.480	O					2.60
19.167	0.00	0.03	0.479	O					2.60
19.250	0.00	0.03	0.479	O					2.60
19.333	0.00	0.03	0.479	O					2.60
19.417	0.00	0.03	0.479	O					2.60
19.500	0.00	0.03	0.479	O					2.60
19.583	0.00	0.03	0.478	O					2.60
19.667	0.00	0.03	0.478	O					2.60
19.750	0.00	0.03	0.478	O					2.60
19.833	0.00	0.03	0.478	O					2.60
19.917	0.00	0.03	0.478	O					2.60
20.000	0.00	0.03	0.477	O					2.59
20.083	0.00	0.03	0.477	O					2.59
20.167	0.00	0.03	0.477	O					2.59
20.250	0.00	0.03	0.477	O					2.59
20.333	0.00	0.03	0.477	O					2.59
20.417	0.00	0.03	0.476	O					2.59
20.500	0.00	0.03	0.476	O					2.59
20.583	0.00	0.03	0.476	O					2.59
20.667	0.00	0.03	0.476	O					2.59
20.750	0.00	0.03	0.476	O					2.59
20.833	0.00	0.03	0.475	O					2.59
20.917	0.00	0.03	0.475	O					2.59
21.000	0.00	0.03	0.475	O					2.59
21.083	0.00	0.03	0.475	O					2.59
21.167	0.00	0.03	0.475	O					2.59
21.250	0.00	0.03	0.475	O					2.58
21.333	0.00	0.03	0.474	O					2.58
21.417	0.00	0.03	0.474	O					2.58
21.500	0.00	0.03	0.474	O					2.58
21.583	0.00	0.03	0.474	O					2.58
21.667	0.00	0.03	0.474	O					2.58
21.750	0.00	0.03	0.473	O					2.58
21.833	0.00	0.03	0.473	O					2.58
21.917	0.00	0.03	0.473	O					2.58
22.000	0.00	0.03	0.473	O					2.58
22.083	0.00	0.03	0.473	O					2.58
22.167	0.00	0.03	0.473	O					2.58
22.250	0.00	0.03	0.472	O					2.58
22.333	0.00	0.03	0.472	O					2.58
22.417	0.00	0.03	0.472	O					2.58
22.500	0.00	0.03	0.472	O					2.58
22.583	0.00	0.02	0.472	O					2.57
22.667	0.00	0.02	0.472	O					2.57
22.750	0.00	0.02	0.471	O					2.57
22.833	0.00	0.02	0.471	O					2.57
22.917	0.00	0.02	0.471	O					2.57
23.000	0.00	0.02	0.471	O					2.57
23.083	0.00	0.02	0.471	O					2.57
23.167	0.00	0.02	0.471	O					2.57
23.250	0.00	0.02	0.470	O					2.57
23.333	0.00	0.02	0.470	O					2.57
23.417	0.00	0.02	0.470	O					2.57
23.500	0.00	0.02	0.470	O					2.57
23.583	0.00	0.02	0.470	O					2.57
23.667	0.00	0.02	0.470	O					2.57
23.750	0.00	0.02	0.469	O					2.57
23.833	0.00	0.02	0.469	O					2.57
23.917	0.00	0.02	0.469	O					2.57
24.000	0.00	0.02	0.469	O					2.57

Remaining water in basin = 0.14 (Ac.Ft)

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*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.075 (CFS)
Total volume = 0.407 (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
*****
```

SEATON
2 YEAR 6 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR262.rte
***** HYDROGRAPH DATA *****
Number of intervals = 75
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 6.085 (CFS)
Total volume = 0.823 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS) 0.000 0.000 0.000 0.000 0.000
Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
Process from Point/Station 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 75
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00 (Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:
Basin Depth Storage Outflow (S-O*dt/2) (S+O*dt/2)
(Ft.) (Ac.Ft) (CFS) (Ac.Ft) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.5	3.04	4.56	6.08	(Ft.)
0.083	0.30	0.00	0.001	I					0.01
0.167	0.60	0.00	0.004	O I					0.02
0.250	0.69	0.00	0.009	O I					0.05
0.333	0.71	0.00	0.013	O I					0.07
0.417	0.72	0.00	0.018	O I					0.10
0.500	0.78	0.00	0.023	O I					0.13
0.583	0.83	0.00	0.029	O I					0.16
0.667	0.83	0.00	0.035	O I					0.19
0.750	0.84	0.00	0.040	O I					0.22
0.833	0.84	0.00	0.046	O I					0.26
0.917	0.84	0.00	0.052	O I					0.29
1.000	0.90	0.00	0.058	O I					0.32
1.083	0.94	0.00	0.064	O I					0.36
1.167	0.95	0.00	0.071	O I					0.39
1.250	0.96	0.00	0.077	O I					0.43
1.333	0.96	0.00	0.084	O I					0.47
1.417	0.96	0.01	0.090	O I					0.50
1.500	0.96	0.01	0.097	O I					0.54
1.583	0.96	0.01	0.103	O I					0.57
1.667	0.96	0.01	0.110	O I					0.61
1.750	0.96	0.01	0.117	O I					0.65
1.833	0.96	0.01	0.123	O I					0.68
1.917	0.96	0.01	0.130	O I					0.72
2.000	1.02	0.01	0.136	O I					0.76
2.083	1.01	0.01	0.143	O I					0.80
2.167	1.02	0.01	0.150	O I					0.83

10.500	0.00	0.20	0.725	IO				3.45
10.583	0.00	0.20	0.723	IO				3.44
10.667	0.00	0.20	0.722	IO				3.44
10.750	0.00	0.20	0.721	IO				3.43
10.833	0.00	0.20	0.719	IO				3.43
10.917	0.00	0.19	0.718	IO				3.42
11.000	0.00	0.19	0.717	IO				3.42
11.083	0.00	0.19	0.715	IO				3.41
11.167	0.00	0.19	0.714	IO				3.41
11.250	0.00	0.19	0.713	IO				3.41
11.333	0.00	0.19	0.711	IO				3.40
11.417	0.00	0.19	0.710	O				3.40
11.500	0.00	0.19	0.709	O				3.39
11.583	0.00	0.19	0.707	O				3.39
11.667	0.00	0.19	0.706	O				3.38
11.750	0.00	0.19	0.705	O				3.38
11.833	0.00	0.18	0.703	O				3.37
11.917	0.00	0.18	0.702	O				3.37
12.000	0.00	0.18	0.701	O				3.37
12.083	0.00	0.18	0.700	O				3.36
12.167	0.00	0.18	0.698	O				3.36
12.250	0.00	0.18	0.697	O				3.35
12.333	0.00	0.18	0.696	O				3.35
12.417	0.00	0.18	0.695	O				3.34
12.500	0.00	0.18	0.693	O				3.34
12.583	0.00	0.18	0.692	O				3.34
12.667	0.00	0.18	0.691	O				3.33
12.750	0.00	0.18	0.690	O				3.33
12.833	0.00	0.17	0.689	O				3.32
12.917	0.00	0.17	0.687	O				3.32
13.000	0.00	0.17	0.686	O				3.31
13.083	0.00	0.17	0.685	O				3.31
13.167	0.00	0.17	0.684	O				3.31
13.250	0.00	0.17	0.683	O				3.30
13.333	0.00	0.17	0.682	O				3.30
13.417	0.00	0.17	0.680	O				3.29
13.500	0.00	0.17	0.679	O				3.29
13.583	0.00	0.17	0.678	O				3.29
13.667	0.00	0.17	0.677	O				3.28
13.750	0.00	0.17	0.676	O				3.28
13.833	0.00	0.16	0.675	O				3.27
13.917	0.00	0.16	0.673	O				3.27
14.000	0.00	0.16	0.672	O				3.27
14.083	0.00	0.16	0.671	O				3.26
14.167	0.00	0.16	0.670	O				3.26
14.250	0.00	0.16	0.669	O				3.26
14.333	0.00	0.16	0.668	O				3.25
14.417	0.00	0.16	0.667	O				3.25
14.500	0.00	0.16	0.666	O				3.24
14.583	0.00	0.16	0.665	O				3.24
14.667	0.00	0.16	0.664	O				3.24
14.750	0.00	0.16	0.662	O				3.23
14.833	0.00	0.16	0.661	O				3.23
14.917	0.00	0.16	0.660	O				3.23
15.000	0.00	0.15	0.659	O				3.22
15.083	0.00	0.15	0.658	O				3.22
15.167	0.00	0.15	0.657	O				3.21
15.250	0.00	0.15	0.656	O				3.21
15.333	0.00	0.15	0.655	O				3.21
15.417	0.00	0.15	0.654	O				3.20
15.500	0.00	0.15	0.653	O				3.20
15.583	0.00	0.15	0.652	O				3.20
15.667	0.00	0.15	0.651	O				3.19
15.750	0.00	0.15	0.650	O				3.19
15.833	0.00	0.15	0.649	O				3.19
15.917	0.00	0.15	0.648	O				3.18
16.000	0.00	0.15	0.647	O				3.18
16.083	0.00	0.15	0.646	O				3.18
16.167	0.00	0.14	0.645	O				3.17
16.250	0.00	0.14	0.644	O				3.17
16.333	0.00	0.14	0.643	O				3.17
16.417	0.00	0.14	0.642	O				3.16
16.500	0.00	0.14	0.641	O				3.16
16.583	0.00	0.14	0.640	O				3.15
16.667	0.00	0.14	0.639	O				3.15
16.750	0.00	0.14	0.638	O				3.15
16.833	0.00	0.14	0.637	O				3.14
16.917	0.00	0.14	0.636	O				3.14
17.000	0.00	0.14	0.635	O				3.14
17.083	0.00	0.14	0.634	O				3.14
17.167	0.00	0.14	0.633	O				3.13
17.250	0.00	0.14	0.632	O				3.13
17.333	0.00	0.14	0.631	O				3.13
17.417	0.00	0.13	0.630	O				3.12
17.500	0.00	0.13	0.630	O				3.12
17.583	0.00	0.13	0.629	O				3.12
17.667	0.00	0.13	0.628	O				3.11
17.750	0.00	0.13	0.627	O				3.11
17.833	0.00	0.13	0.626	O				3.11
17.917	0.00	0.13	0.625	O				3.10
18.000	0.00	0.13	0.624	O				3.10
18.083	0.00	0.13	0.623	O				3.10
18.167	0.00	0.13	0.622	O				3.09
18.250	0.00	0.13	0.621	O				3.09
18.333	0.00	0.13	0.621	O				3.09
18.417	0.00	0.13	0.620	O				3.08
18.500	0.00	0.13	0.619	O				3.08
18.583	0.00	0.13	0.618	O				3.08
18.667	0.00	0.13	0.617	O				3.08

18.750	0.00	0.12	0.616	O					3.07
18.833	0.00	0.12	0.615	O					3.07
18.917	0.00	0.12	0.614	O					3.07
19.000	0.00	0.12	0.614	O					3.06
19.083	0.00	0.12	0.613	O					3.06
19.167	0.00	0.12	0.612	O					3.06
19.250	0.00	0.12	0.611	O					3.05
19.333	0.00	0.12	0.610	O					3.05
19.417	0.00	0.12	0.609	O					3.05
19.500	0.00	0.12	0.609	O					3.05
19.583	0.00	0.12	0.608	O					3.04
19.667	0.00	0.12	0.607	O					3.04
19.750	0.00	0.12	0.606	O					3.04
19.833	0.00	0.12	0.605	O					3.04
19.917	0.00	0.12	0.605	O					3.03
20.000	0.00	0.12	0.604	O					3.03
20.083	0.00	0.12	0.603	O					3.03
20.167	0.00	0.11	0.602	O					3.02
20.250	0.00	0.11	0.601	O					3.02
20.333	0.00	0.11	0.601	O					3.02
20.417	0.00	0.11	0.600	O					3.02
20.500	0.00	0.11	0.599	O					3.01
20.583	0.00	0.11	0.598	O					3.01
20.667	0.00	0.11	0.597	O					3.01
20.750	0.00	0.11	0.597	O					3.01
20.833	0.00	0.11	0.596	O					3.00
20.917	0.00	0.11	0.595	O					3.00
21.000	0.00	0.11	0.594	O					3.00
21.083	0.00	0.11	0.594	O					3.00
21.167	0.00	0.11	0.593	O					2.99
21.250	0.00	0.11	0.592	O					2.99
21.333	0.00	0.11	0.591	O					2.99
21.417	0.00	0.11	0.591	O					2.99
21.500	0.00	0.11	0.590	O					2.98
21.583	0.00	0.11	0.589	O					2.98
21.667	0.00	0.11	0.589	O					2.98
21.750	0.00	0.11	0.588	O					2.98
21.833	0.00	0.10	0.587	O					2.97
21.917	0.00	0.10	0.586	O					2.97
22.000	0.00	0.10	0.586	O					2.97
22.083	0.00	0.10	0.585	O					2.97
22.167	0.00	0.10	0.584	O					2.96
22.250	0.00	0.10	0.583	O					2.96
22.333	0.00	0.10	0.583	O					2.96
22.417	0.00	0.10	0.582	O					2.96
22.500	0.00	0.10	0.581	O					2.95
22.583	0.00	0.10	0.581	O					2.95
22.667	0.00	0.10	0.580	O					2.95
22.750	0.00	0.10	0.579	O					2.95
22.833	0.00	0.10	0.579	O					2.94
22.917	0.00	0.10	0.578	O					2.94
23.000	0.00	0.10	0.577	O					2.94
23.083	0.00	0.10	0.577	O					2.94
23.167	0.00	0.10	0.576	O					2.93
23.250	0.00	0.10	0.575	O					2.93
23.333	0.00	0.10	0.575	O					2.93
23.417	0.00	0.10	0.574	O					2.93
23.500	0.00	0.10	0.573	O					2.93
23.583	0.00	0.09	0.573	O					2.92
23.667	0.00	0.09	0.572	O					2.92
23.750	0.00	0.09	0.571	O					2.92
23.833	0.00	0.09	0.571	O					2.92
23.917	0.00	0.09	0.570	O					2.91
24.000	0.00	0.09	0.569	O					2.91

Remaining water in basin = 0.16 (Ac.Ft)

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*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.224 (CFS)
Total volume = 0.664 (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
*****
```

SEATON
2 YEAR 24 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR2242.rte
***** HYDROGRAPH DATA *****
Number of intervals = 291
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 2.259 (CFS)
Total volume = 1.372 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS) 0.000 0.000 0.000 0.000 0.000
Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
Process from Point/Station 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 291
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:
Basin Depth Storage Outflow (S-O*dt/2) (S+O*dt/2)
(Ft.) (Ac.Ft) (CFS) (Ac.Ft) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	0.6	1.13	1.69	2.26	Depth (Ft.)
0.083	0.07	0.00	0.000	O					0.00
0.167	0.12	0.00	0.001	O I					0.00
0.250	0.13	0.00	0.002	O I					0.01
0.333	0.17	0.00	0.003	O I					0.02
0.417	0.19	0.00	0.004	O I					0.02
0.500	0.20	0.00	0.005	O I					0.03
0.583	0.20	0.00	0.007	O I					0.04
0.667	0.20	0.00	0.008	O I					0.04
0.750	0.20	0.00	0.009	O I					0.05
0.833	0.23	0.00	0.011	O I					0.06
0.917	0.26	0.00	0.013	O I					0.07
1.000	0.26	0.00	0.014	O I					0.08
1.083	0.23	0.00	0.016	O I					0.09
1.167	0.21	0.00	0.018	O I					0.10
1.250	0.20	0.00	0.019	O I					0.11
1.333	0.20	0.00	0.020	O I					0.11
1.417	0.20	0.00	0.022	O I					0.12
1.500	0.20	0.00	0.023	O I					0.13
1.583	0.20	0.00	0.024	O I					0.14
1.667	0.20	0.00	0.026	O I					0.14
1.750	0.20	0.00	0.027	O I					0.15
1.833	0.23	0.00	0.029	O I					0.16
1.917	0.26	0.00	0.030	O I					0.17
2.000	0.26	0.00	0.032	O I					0.18
2.083	0.27	0.00	0.034	O I					0.19
2.167	0.27	0.00	0.036	O I					0.20

2.250	0.27	0.00	0.038	O	I		0.21
2.333	0.27	0.00	0.039	O	I		0.22
2.417	0.27	0.00	0.041	O	I		0.23
2.500	0.27	0.00	0.043	O	I		0.24
2.583	0.30	0.00	0.045	O	I		0.25
2.667	0.33	0.00	0.047	O	I		0.26
2.750	0.33	0.00	0.049	O	I		0.27
2.833	0.33	0.00	0.052	O	I		0.29
2.917	0.33	0.00	0.054	O	I		0.30
3.000	0.33	0.00	0.056	O	I		0.31
3.083	0.33	0.00	0.058	O	I		0.32
3.167	0.33	0.00	0.061	O	I		0.34
3.250	0.33	0.00	0.063	O	I		0.35
3.333	0.33	0.00	0.065	O	I		0.36
3.417	0.33	0.00	0.067	O	I		0.37
3.500	0.33	0.00	0.070	O	I		0.39
3.583	0.33	0.00	0.072	O	I		0.40
3.667	0.33	0.00	0.074	O	I		0.41
3.750	0.33	0.00	0.076	O	I		0.42
3.833	0.36	0.00	0.079	O	I		0.44
3.917	0.39	0.00	0.081	O	I		0.45
4.000	0.40	0.00	0.084	O	I		0.47
4.083	0.40	0.00	0.087	O	I		0.48
4.167	0.40	0.00	0.090	O	I		0.50
4.250	0.40	0.01	0.092	O	I		0.51
4.333	0.43	0.01	0.095	O	I		0.53
4.417	0.46	0.01	0.098	O	I		0.54
4.500	0.46	0.01	0.101	O	I		0.56
4.583	0.46	0.01	0.104	O	I		0.58
4.667	0.46	0.01	0.108	O	I		0.60
4.750	0.46	0.01	0.111	O	I		0.61
4.833	0.50	0.01	0.114	O	I		0.63
4.917	0.52	0.01	0.117	O	I		0.65
5.000	0.53	0.01	0.121	O	I		0.67
5.083	0.47	0.01	0.124	O	I		0.69
5.167	0.41	0.01	0.127	O	I		0.71
5.250	0.40	0.01	0.130	O	I		0.72
5.333	0.43	0.01	0.133	O	I		0.74
5.417	0.46	0.01	0.136	O	I		0.76
5.500	0.46	0.01	0.139	O	I		0.77
5.583	0.50	0.01	0.142	O	I		0.79
5.667	0.52	0.01	0.146	O	I		0.81
5.750	0.53	0.01	0.149	O	I		0.83
5.833	0.53	0.01	0.153	O	I		0.85
5.917	0.53	0.01	0.157	O	I		0.87
6.000	0.53	0.01	0.160	O	I		0.89
6.083	0.56	0.01	0.164	O	I		0.91
6.167	0.59	0.01	0.168	O	I		0.93
6.250	0.60	0.01	0.172	O	I		0.95
6.333	0.60	0.01	0.176	O	I		0.98
6.417	0.60	0.01	0.180	O	I		1.00
6.500	0.60	0.01	0.184	O	I		1.02
6.583	0.63	0.01	0.188	O	I		1.05
6.667	0.66	0.01	0.193	O	I		1.07
6.750	0.66	0.01	0.197	O	I		1.09
6.833	0.66	0.01	0.201	O	I		1.12
6.917	0.66	0.01	0.206	O	I		1.14
7.000	0.66	0.01	0.210	O	I		1.17
7.083	0.66	0.01	0.215	O	I		1.19
7.167	0.66	0.01	0.220	O	I		1.22
7.250	0.66	0.01	0.224	O	I		1.24
7.333	0.70	0.01	0.229	O	I		1.27
7.417	0.72	0.01	0.233	O	I		1.30
7.500	0.73	0.01	0.238	O	I		1.32
7.583	0.76	0.01	0.243	O	I		1.35
7.667	0.79	0.01	0.249	O	I		1.38
7.750	0.80	0.01	0.254	O	I		1.41
7.833	0.83	0.01	0.260	O	I		1.44
7.917	0.86	0.01	0.265	O	I		1.47
8.000	0.86	0.01	0.271	O	I		1.51
8.083	0.93	0.01	0.277	O	I		1.54
8.167	0.98	0.01	0.284	O	I		1.58
8.250	0.99	0.01	0.291	O	I		1.61
8.333	1.00	0.01	0.297	O	I		1.65
8.417	1.00	0.01	0.304	O	I		1.69
8.500	1.00	0.01	0.311	O	I		1.73
8.583	1.03	0.01	0.318	O	I		1.77
8.667	1.06	0.01	0.325	O	I		1.81
8.750	1.06	0.01	0.332	O	I		1.85
8.833	1.10	0.01	0.340	O	I		1.89
8.917	1.12	0.01	0.347	O	I		1.93
9.000	1.13	0.01	0.355	O	I		1.97
9.083	1.19	0.01	0.363	O	I		2.02
9.167	1.25	0.01	0.371	O	I		2.06
9.250	1.26	0.01	0.380	O	I		2.11
9.333	1.29	0.01	0.388	O	I		2.16
9.417	1.32	0.01	0.397	O	I		2.21
9.500	1.33	0.01	0.406	O	I		2.26
9.583	1.36	0.01	0.416	O	I		2.31
9.667	1.39	0.01	0.425	O	I		2.36
9.750	1.39	0.01	0.435	O	I		2.41
9.833	1.43	0.01	0.444	O	I		2.47
9.917	1.45	0.01	0.454	O	I		2.51
10.000	1.46	0.02	0.464	O	I		2.55
10.083	1.23	0.03	0.473	O	I		2.58
10.167	1.04	0.03	0.481	O	I		2.61
10.250	1.01	0.04	0.487	O	I		2.63
10.333	1.00	0.04	0.494	O	I		2.65
10.417	1.00	0.04	0.501	O	I		2.67

18.750	0.20	0.30	1.131	I O					4.55
18.833	0.17	0.30	1.130	I O					4.55
18.917	0.14	0.30	1.129	I O					4.54
19.000	0.13	0.30	1.128	I O					4.54
19.083	0.17	0.30	1.127	I O					4.54
19.167	0.19	0.30	1.126	I O					4.54
19.250	0.20	0.30	1.126	I O					4.53
19.333	0.23	0.30	1.125	IO					4.53
19.417	0.26	0.30	1.125	IO					4.53
19.500	0.26	0.30	1.125	IO					4.53
19.583	0.23	0.30	1.124	IO					4.53
19.667	0.21	0.30	1.124	I O					4.53
19.750	0.20	0.30	1.123	I O					4.53
19.833	0.17	0.30	1.122	I O					4.52
19.917	0.14	0.30	1.121	I O					4.52
20.000	0.13	0.30	1.120	I O					4.52
20.083	0.17	0.30	1.119	I O					4.52
20.167	0.19	0.30	1.118	I O					4.51
20.250	0.20	0.30	1.118	I O					4.51
20.333	0.20	0.30	1.117	I O					4.51
20.417	0.20	0.30	1.116	I O					4.51
20.500	0.20	0.30	1.116	I O					4.51
20.583	0.20	0.30	1.115	I O					4.50
20.667	0.20	0.30	1.114	I O					4.50
20.750	0.20	0.30	1.113	I O					4.50
20.833	0.17	0.30	1.113	I O					4.50
20.917	0.14	0.30	1.112	I O					4.50
21.000	0.13	0.30	1.111	I O					4.49
21.083	0.17	0.30	1.110	I O					4.49
21.167	0.19	0.30	1.109	I O					4.49
21.250	0.20	0.30	1.108	I O					4.49
21.333	0.17	0.30	1.107	I O					4.48
21.417	0.14	0.30	1.106	I O					4.48
21.500	0.13	0.29	1.105	I O					4.48
21.583	0.17	0.29	1.104	I O					4.48
21.667	0.19	0.29	1.103	I O					4.47
21.750	0.20	0.29	1.103	I O					4.47
21.833	0.17	0.29	1.102	I O					4.47
21.917	0.14	0.29	1.101	I O					4.47
22.000	0.13	0.29	1.100	I O					4.46
22.083	0.17	0.29	1.099	I O					4.46
22.167	0.19	0.29	1.098	I O					4.46
22.250	0.20	0.29	1.098	I O					4.46
22.333	0.17	0.29	1.097	I O					4.46
22.417	0.14	0.29	1.096	I O					4.45
22.500	0.13	0.29	1.095	I O					4.45
22.583	0.13	0.29	1.094	I O					4.45
22.667	0.13	0.29	1.093	I O					4.44
22.750	0.13	0.29	1.091	I O					4.44
22.833	0.13	0.29	1.090	I O					4.44
22.917	0.13	0.29	1.089	I O					4.44
23.000	0.13	0.29	1.088	I O					4.43
23.083	0.13	0.29	1.087	I O					4.43
23.167	0.13	0.29	1.086	I O					4.43
23.250	0.13	0.29	1.085	I O					4.42
23.333	0.13	0.29	1.084	I O					4.42
23.417	0.13	0.29	1.083	I O					4.42
23.500	0.13	0.29	1.082	I O					4.41
23.583	0.13	0.29	1.081	I O					4.41
23.667	0.13	0.29	1.080	I O					4.41
23.750	0.13	0.29	1.078	I O					4.41
23.833	0.13	0.29	1.077	I O					4.40
23.917	0.13	0.29	1.076	I O					4.40
24.000	0.13	0.29	1.075	I O					4.40

Remaining water in basin = 0.18 (Ac.Ft)

*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.302 (CFS)
Total volume = 1.189 (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

SEATON
5 YEAR 1 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR515.rte
***** HYDROGRAPH DATA *****
Number of intervals = 15
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 14.444 (CFS)
Total volume = 0.480 (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 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 15
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00 (Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:
Basin Depth Storage Outflow (S-O*dt/2) (S+O*dt/2)
(Ft.) (Ac.Ft) (CFS) (Ac.Ft) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	3.6	7.22	10.83	14.44	(Ft.)
0.083	1.42	0.00	0.005	O I					0.03
0.167	2.63	0.00	0.019	O I					0.10
0.250	3.11	0.00	0.039	O I					0.21
0.333	3.38	0.00	0.061	O I					0.34
0.417	3.68	0.00	0.085	O I					0.47
0.500	4.16	0.01	0.112	O I					0.62
0.583	4.70	0.01	0.143	O I					0.79
0.667	5.40	0.01	0.177	O I					0.98
0.750	7.05	0.01	0.220	O I					1.22
0.833	14.44	0.01	0.294	O I			I		1.63
0.917	11.68	0.01	0.384	O I			I		2.13
1.000	5.35	0.01	0.442	O I			I		2.46
1.083	2.25	0.02	0.469	O I			I		2.56
1.167	0.37	0.03	0.477	O I			I		2.59
1.250	0.08	0.03	0.479	O I			I		2.60
1.333	0.00	0.03	0.479	O I			I		2.60
1.417	0.00	0.03	0.479	O I			I		2.60
1.500	0.00	0.03	0.478	O I			I		2.60
1.583	0.00	0.03	0.478	O I			I		2.60
1.667	0.00	0.03	0.478	O I			I		2.60
1.750	0.00	0.03	0.478	O I			I		2.60
1.833	0.00	0.03	0.478	O I			I		2.60
1.917	0.00	0.03	0.477	O I			I		2.59
2.000	0.00	0.03	0.477	O I			I		2.59
2.083	0.00	0.03	0.477	O I			I		2.59
2.167	0.00	0.03	0.477	O I			I		2.59

2.250	0.00	0.03	0.477	O					2.59
2.333	0.00	0.03	0.476	O					2.59
2.417	0.00	0.03	0.476	O					2.59
2.500	0.00	0.03	0.476	O					2.59
2.583	0.00	0.03	0.476	O					2.59
2.667	0.00	0.03	0.476	O					2.59
2.750	0.00	0.03	0.475	O					2.59
2.833	0.00	0.03	0.475	O					2.59
2.917	0.00	0.03	0.475	O					2.59
3.000	0.00	0.03	0.475	O					2.59
3.083	0.00	0.03	0.475	O					2.59
3.167	0.00	0.03	0.475	O					2.58
3.250	0.00	0.03	0.474	O					2.58
3.333	0.00	0.03	0.474	O					2.58
3.417	0.00	0.03	0.474	O					2.58
3.500	0.00	0.03	0.474	O					2.58
3.583	0.00	0.03	0.474	O					2.58
3.667	0.00	0.03	0.473	O					2.58
3.750	0.00	0.03	0.473	O					2.58
3.833	0.00	0.03	0.473	O					2.58
3.917	0.00	0.03	0.473	O					2.58
4.000	0.00	0.03	0.473	O					2.58
4.083	0.00	0.03	0.473	O					2.58
4.167	0.00	0.03	0.472	O					2.58
4.250	0.00	0.03	0.472	O					2.58
4.333	0.00	0.03	0.472	O					2.58
4.417	0.00	0.03	0.472	O					2.58
4.500	0.00	0.02	0.472	O					2.57
4.583	0.00	0.02	0.471	O					2.57
4.667	0.00	0.02	0.471	O					2.57
4.750	0.00	0.02	0.471	O					2.57
4.833	0.00	0.02	0.471	O					2.57
4.917	0.00	0.02	0.471	O					2.57
5.000	0.00	0.02	0.471	O					2.57
5.083	0.00	0.02	0.470	O					2.57
5.167	0.00	0.02	0.470	O					2.57
5.250	0.00	0.02	0.470	O					2.57
5.333	0.00	0.02	0.470	O					2.57
5.417	0.00	0.02	0.470	O					2.57
5.500	0.00	0.02	0.470	O					2.57
5.583	0.00	0.02	0.469	O					2.57
5.667	0.00	0.02	0.469	O					2.57
5.750	0.00	0.02	0.469	O					2.57
5.833	0.00	0.02	0.469	O					2.57
5.917	0.00	0.02	0.469	O					2.57
6.000	0.00	0.02	0.469	O					2.56
6.083	0.00	0.02	0.469	O					2.56
6.167	0.00	0.02	0.468	O					2.56
6.250	0.00	0.02	0.468	O					2.56
6.333	0.00	0.02	0.468	O					2.56
6.417	0.00	0.02	0.468	O					2.56
6.500	0.00	0.02	0.468	O					2.56
6.583	0.00	0.02	0.468	O					2.56
6.667	0.00	0.02	0.467	O					2.56
6.750	0.00	0.02	0.467	O					2.56
6.833	0.00	0.02	0.467	O					2.56
6.917	0.00	0.02	0.467	O					2.56
7.000	0.00	0.02	0.467	O					2.56
7.083	0.00	0.02	0.467	O					2.56
7.167	0.00	0.02	0.467	O					2.56
7.250	0.00	0.02	0.466	O					2.56
7.333	0.00	0.02	0.466	O					2.56
7.417	0.00	0.02	0.466	O					2.56
7.500	0.00	0.02	0.466	O					2.56
7.583	0.00	0.02	0.466	O					2.55
7.667	0.00	0.02	0.466	O					2.55
7.750	0.00	0.02	0.466	O					2.55
7.833	0.00	0.02	0.465	O					2.55
7.917	0.00	0.02	0.465	O					2.55
8.000	0.00	0.02	0.465	O					2.55
8.083	0.00	0.02	0.465	O					2.55
8.167	0.00	0.02	0.465	O					2.55
8.250	0.00	0.02	0.465	O					2.55
8.333	0.00	0.02	0.465	O					2.55
8.417	0.00	0.02	0.464	O					2.55
8.500	0.00	0.02	0.464	O					2.55
8.583	0.00	0.02	0.464	O					2.55
8.667	0.00	0.02	0.464	O					2.55
8.750	0.00	0.02	0.464	O					2.55
8.833	0.00	0.02	0.464	O					2.55
8.917	0.00	0.02	0.464	O					2.55
9.000	0.00	0.02	0.463	O					2.55
9.083	0.00	0.02	0.463	O					2.55
9.167	0.00	0.02	0.463	O					2.55
9.250	0.00	0.02	0.463	O					2.54
9.333	0.00	0.02	0.463	O					2.54
9.417	0.00	0.02	0.463	O					2.54
9.500	0.00	0.02	0.463	O					2.54
9.583	0.00	0.02	0.463	O					2.54
9.667	0.00	0.02	0.462	O					2.54
9.750	0.00	0.02	0.462	O					2.54
9.833	0.00	0.02	0.462	O					2.54
9.917	0.00	0.02	0.462	O					2.54
10.000	0.00	0.02	0.462	O					2.54
10.083	0.00	0.02	0.462	O					2.54
10.167	0.00	0.02	0.462	O					2.54
10.250	0.00	0.02	0.462	O					2.54
10.333	0.00	0.02	0.461	O					2.54
10.417	0.00	0.02	0.461	O					2.54

18.750	0.00	0.01	0.452	O					2.51
18.833	0.00	0.01	0.451	O					2.51
18.917	0.00	0.01	0.451	O					2.50
19.000	0.00	0.01	0.451	O					2.50
19.083	0.00	0.01	0.451	O					2.50
19.167	0.00	0.01	0.451	O					2.50
19.250	0.00	0.01	0.451	O					2.50
19.333	0.00	0.01	0.451	O					2.50
19.417	0.00	0.01	0.451	O					2.50
19.500	0.00	0.01	0.451	O					2.50
19.583	0.00	0.01	0.451	O					2.50
19.667	0.00	0.01	0.451	O					2.50
19.750	0.00	0.01	0.451	O					2.50
19.833	0.00	0.01	0.451	O					2.50
19.917	0.00	0.01	0.451	O					2.50
20.000	0.00	0.01	0.450	O					2.50
20.083	0.00	0.01	0.450	O					2.50
20.167	0.00	0.01	0.450	O					2.50
20.250	0.00	0.01	0.450	O					2.50
20.333	0.00	0.01	0.450	O					2.50
20.417	0.00	0.01	0.450	O					2.50
20.500	0.00	0.01	0.450	O					2.50
20.583	0.00	0.01	0.450	O					2.50
20.667	0.00	0.01	0.450	O					2.50
20.750	0.00	0.01	0.450	O					2.50
20.833	0.00	0.01	0.450	O					2.50
20.917	0.00	0.01	0.450	O					2.50
21.000	0.00	0.01	0.450	O					2.50
21.083	0.00	0.01	0.450	O					2.50
21.167	0.00	0.01	0.449	O					2.50
21.250	0.00	0.01	0.449	O					2.50
21.333	0.00	0.01	0.449	O					2.50
21.417	0.00	0.01	0.449	O					2.50
21.500	0.00	0.01	0.449	O					2.50
21.583	0.00	0.01	0.449	O					2.50
21.667	0.00	0.01	0.449	O					2.49
21.750	0.00	0.01	0.449	O					2.49
21.833	0.00	0.01	0.449	O					2.49
21.917	0.00	0.01	0.449	O					2.49
22.000	0.00	0.01	0.449	O					2.49
22.083	0.00	0.01	0.449	O					2.49
22.167	0.00	0.01	0.449	O					2.49
22.250	0.00	0.01	0.449	O					2.49
22.333	0.00	0.01	0.449	O					2.49
22.417	0.00	0.01	0.448	O					2.49
22.500	0.00	0.01	0.448	O					2.49
22.583	0.00	0.01	0.448	O					2.49
22.667	0.00	0.01	0.448	O					2.49
22.750	0.00	0.01	0.448	O					2.49
22.833	0.00	0.01	0.448	O					2.49
22.917	0.00	0.01	0.448	O					2.49
23.000	0.00	0.01	0.448	O					2.49
23.083	0.00	0.01	0.448	O					2.49
23.167	0.00	0.01	0.448	O					2.49
23.250	0.00	0.01	0.448	O					2.49
23.333	0.00	0.01	0.448	O					2.49
23.417	0.00	0.01	0.448	O					2.49
23.500	0.00	0.01	0.448	O					2.49
23.583	0.00	0.01	0.447	O					2.49
23.667	0.00	0.01	0.447	O					2.49
23.750	0.00	0.01	0.447	O					2.49
23.833	0.00	0.01	0.447	O					2.48
23.917	0.00	0.01	0.447	O					2.48
24.000	0.00	0.01	0.447	O					2.48

Remaining water in basin = 0.13 (Ac.Ft)

*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.030 (CFS)
Total volume = 0.349 (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

SEATON
5 YEAR 3 HOUR

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR535.rte
***** HYDROGRAPH DATA *****
Number of intervals = 39
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 8.203 (CFS)
Total volume = 0.742 (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 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 39
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:
Basin Depth Storage Outflow (S-O*dt/2) (S+O*dt/2)
(Ft.) (Ac.Ft) (CFS) (Ac.Ft) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	2.1	4.10	6.15	8.20	Depth (Ft.)
0.083	0.69	0.00	0.002	O I					0.01
0.167	1.26	0.00	0.009	O I					0.05
0.250	1.26	0.00	0.018	O I					0.10
0.333	1.42	0.00	0.027	O I					0.15
0.417	1.58	0.00	0.037	O I					0.21
0.500	1.77	0.00	0.049	O I					0.27
0.583	1.75	0.00	0.061	O I					0.34
0.667	1.80	0.00	0.073	O I					0.41
0.750	1.92	0.00	0.086	O I					0.48
0.833	1.77	0.01	0.099	O I					0.55
0.917	1.70	0.01	0.110	O I					0.61
1.000	1.83	0.01	0.123	O I					0.68
1.083	2.13	0.01	0.136	O I					0.76
1.167	2.32	0.01	0.151	O I					0.84
1.250	2.36	0.01	0.167	O I					0.93
1.333	2.26	0.01	0.183	O I					1.02
1.417	2.50	0.01	0.200	O I					1.11
1.500	2.80	0.01	0.218	O I					1.21
1.583	2.72	0.01	0.237	O I					1.31
1.667	2.77	0.01	0.256	O I					1.42
1.750	3.20	0.01	0.276	O I					1.53
1.833	3.38	0.01	0.299	O I					1.66
1.917	3.24	0.01	0.321	O I					1.79
2.000	3.20	0.01	0.343	O I					1.91
2.083	3.28	0.01	0.366	O I					2.03
2.167	3.91	0.01	0.390	O I					2.17

10.500	0.00	0.13	0.630	○				3.12
10.583	0.00	0.13	0.629	○				3.12
10.667	0.00	0.13	0.628	○				3.11
10.750	0.00	0.13	0.627	○				3.11
10.833	0.00	0.13	0.626	○				3.11
10.917	0.00	0.13	0.625	○				3.10
11.000	0.00	0.13	0.625	○				3.10
11.083	0.00	0.13	0.624	○				3.10
11.167	0.00	0.13	0.623	○				3.10
11.250	0.00	0.13	0.622	○				3.09
11.333	0.00	0.13	0.621	○				3.09
11.417	0.00	0.13	0.620	○				3.09
11.500	0.00	0.13	0.619	○				3.08
11.583	0.00	0.13	0.618	○				3.08
11.667	0.00	0.13	0.617	○				3.08
11.750	0.00	0.12	0.617	○				3.07
11.833	0.00	0.12	0.616	○				3.07
11.917	0.00	0.12	0.615	○				3.07
12.000	0.00	0.12	0.614	○				3.07
12.083	0.00	0.12	0.613	○				3.06
12.167	0.00	0.12	0.612	○				3.06
12.250	0.00	0.12	0.612	○				3.06
12.333	0.00	0.12	0.611	○				3.05
12.417	0.00	0.12	0.610	○				3.05
12.500	0.00	0.12	0.609	○				3.05
12.583	0.00	0.12	0.608	○				3.05
12.667	0.00	0.12	0.607	○				3.04
12.750	0.00	0.12	0.607	○				3.04
12.833	0.00	0.12	0.606	○				3.04
12.917	0.00	0.12	0.605	○				3.03
13.000	0.00	0.12	0.604	○				3.03
13.083	0.00	0.12	0.603	○				3.03
13.167	0.00	0.12	0.603	○				3.03
13.250	0.00	0.11	0.602	○				3.02
13.333	0.00	0.11	0.601	○				3.02
13.417	0.00	0.11	0.600	○				3.02
13.500	0.00	0.11	0.599	○				3.02
13.583	0.00	0.11	0.599	○				3.01
13.667	0.00	0.11	0.598	○				3.01
13.750	0.00	0.11	0.597	○				3.01
13.833	0.00	0.11	0.596	○				3.00
13.917	0.00	0.11	0.596	○				3.00
14.000	0.00	0.11	0.595	○				3.00
14.083	0.00	0.11	0.594	○				3.00
14.167	0.00	0.11	0.593	○				2.99
14.250	0.00	0.11	0.593	○				2.99
14.333	0.00	0.11	0.592	○				2.99
14.417	0.00	0.11	0.591	○				2.99
14.500	0.00	0.11	0.590	○				2.98
14.583	0.00	0.11	0.590	○				2.98
14.667	0.00	0.11	0.589	○				2.98
14.750	0.00	0.11	0.588	○				2.98
14.833	0.00	0.10	0.587	○				2.97
14.917	0.00	0.10	0.587	○				2.97
15.000	0.00	0.10	0.586	○				2.97
15.083	0.00	0.10	0.585	○				2.97
15.167	0.00	0.10	0.585	○				2.96
15.250	0.00	0.10	0.584	○				2.96
15.333	0.00	0.10	0.583	○				2.96
15.417	0.00	0.10	0.582	○				2.96
15.500	0.00	0.10	0.582	○				2.95
15.583	0.00	0.10	0.581	○				2.95
15.667	0.00	0.10	0.580	○				2.95
15.750	0.00	0.10	0.580	○				2.95
15.833	0.00	0.10	0.579	○				2.94
15.917	0.00	0.10	0.578	○				2.94
16.000	0.00	0.10	0.578	○				2.94
16.083	0.00	0.10	0.577	○				2.94
16.167	0.00	0.10	0.576	○				2.94
16.250	0.00	0.10	0.576	○				2.93
16.333	0.00	0.10	0.575	○				2.93
16.417	0.00	0.10	0.574	○				2.93
16.500	0.00	0.10	0.574	○				2.93
16.583	0.00	0.09	0.573	○				2.92
16.667	0.00	0.09	0.572	○				2.92
16.750	0.00	0.09	0.572	○				2.92
16.833	0.00	0.09	0.571	○				2.92
16.917	0.00	0.09	0.570	○				2.92
17.000	0.00	0.09	0.570	○				2.91
17.083	0.00	0.09	0.569	○				2.91
17.167	0.00	0.09	0.569	○				2.91
17.250	0.00	0.09	0.568	○				2.91
17.333	0.00	0.09	0.567	○				2.90
17.417	0.00	0.09	0.567	○				2.90
17.500	0.00	0.09	0.566	○				2.90
17.583	0.00	0.09	0.565	○				2.90
17.667	0.00	0.09	0.565	○				2.90
17.750	0.00	0.09	0.564	○				2.89
17.833	0.00	0.09	0.564	○				2.89
17.917	0.00	0.09	0.563	○				2.89
18.000	0.00	0.09	0.562	○				2.89
18.083	0.00	0.09	0.562	○				2.89
18.167	0.00	0.09	0.561	○				2.88
18.250	0.00	0.09	0.561	○				2.88
18.333	0.00	0.09	0.560	○				2.88
18.417	0.00	0.09	0.559	○				2.88
18.500	0.00	0.09	0.559	○				2.88
18.583	0.00	0.08	0.558	○				2.87
18.667	0.00	0.08	0.558	○				2.87

18.750	0.00	0.08	0.557	0					2.87
18.833	0.00	0.08	0.556	0					2.87
18.917	0.00	0.08	0.556	0					2.87
19.000	0.00	0.08	0.555	0					2.86
19.083	0.00	0.08	0.555	0					2.86
19.167	0.00	0.08	0.554	0					2.86
19.250	0.00	0.08	0.554	0					2.86
19.333	0.00	0.08	0.553	0					2.86
19.417	0.00	0.08	0.553	0					2.85
19.500	0.00	0.08	0.552	0					2.85
19.583	0.00	0.08	0.551	0					2.85
19.667	0.00	0.08	0.551	0					2.85
19.750	0.00	0.08	0.550	0					2.85
19.833	0.00	0.08	0.550	0					2.84
19.917	0.00	0.08	0.549	0					2.84
20.000	0.00	0.08	0.549	0					2.84
20.083	0.00	0.08	0.548	0					2.84
20.167	0.00	0.08	0.548	0					2.84
20.250	0.00	0.08	0.547	0					2.83
20.333	0.00	0.08	0.547	0					2.83
20.417	0.00	0.08	0.546	0					2.83
20.500	0.00	0.08	0.546	0					2.83
20.583	0.00	0.08	0.545	0					2.83
20.667	0.00	0.08	0.544	0					2.83
20.750	0.00	0.07	0.544	0					2.82
20.833	0.00	0.07	0.543	0					2.82
20.917	0.00	0.07	0.543	0					2.82
21.000	0.00	0.07	0.542	0					2.82
21.083	0.00	0.07	0.542	0					2.82
21.167	0.00	0.07	0.541	0					2.82
21.250	0.00	0.07	0.541	0					2.81
21.333	0.00	0.07	0.540	0					2.81
21.417	0.00	0.07	0.540	0					2.81
21.500	0.00	0.07	0.539	0					2.81
21.583	0.00	0.07	0.539	0					2.81
21.667	0.00	0.07	0.538	0					2.80
21.750	0.00	0.07	0.538	0					2.80
21.833	0.00	0.07	0.537	0					2.80
21.917	0.00	0.07	0.537	0					2.80
22.000	0.00	0.07	0.536	0					2.80
22.083	0.00	0.07	0.536	0					2.80
22.167	0.00	0.07	0.536	0					2.79
22.250	0.00	0.07	0.535	0					2.79
22.333	0.00	0.07	0.535	0					2.79
22.417	0.00	0.07	0.534	0					2.79
22.500	0.00	0.07	0.534	0					2.79
22.583	0.00	0.07	0.533	0					2.79
22.667	0.00	0.07	0.533	0					2.79
22.750	0.00	0.07	0.532	0					2.78
22.833	0.00	0.07	0.532	0					2.78
22.917	0.00	0.07	0.531	0					2.78
23.000	0.00	0.07	0.531	0					2.78
23.083	0.00	0.07	0.530	0					2.78
23.167	0.00	0.07	0.530	0					2.78
23.250	0.00	0.06	0.530	0					2.77
23.333	0.00	0.06	0.529	0					2.77
23.417	0.00	0.06	0.529	0					2.77
23.500	0.00	0.06	0.528	0					2.77
23.583	0.00	0.06	0.528	0					2.77
23.667	0.00	0.06	0.527	0					2.77
23.750	0.00	0.06	0.527	0					2.77
23.833	0.00	0.06	0.526	0					2.76
23.917	0.00	0.06	0.526	0					2.76
24.000	0.00	0.06	0.526	0					2.76

Remaining water in basin = 0.15 (Ac.Ft)

*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.203 (CFS)
Total volume = 0.588 (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

SEATON
5 YEAR 6 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR565.rte
***** HYDROGRAPH DATA *****
Number of intervals = 75
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 8.222 (CFS)
Total volume = 1.113 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS) 0.000 0.000 0.000 0.000 0.000
Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
Process from Point/Station 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 75
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (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
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	2.1	4.11	6.17	8.22 (Ft.)	Depth
0.083	0.40	0.00	0.001	O I					0.01
0.167	0.81	0.00	0.006	O I					0.03
0.250	0.93	0.00	0.012	O I					0.06
0.333	0.97	0.00	0.018	O I					0.10
0.417	0.97	0.00	0.025	O I					0.14
0.500	1.05	0.00	0.032	O I					0.18
0.583	1.12	0.00	0.039	O I					0.22
0.667	1.13	0.00	0.047	O I					0.26
0.750	1.13	0.00	0.055	O I					0.30
0.833	1.13	0.00	0.062	O I					0.35
0.917	1.13	0.00	0.070	O I					0.39
1.000	1.21	0.00	0.078	O I					0.43
1.083	1.28	0.00	0.087	O I					0.48
1.167	1.29	0.01	0.095	O I					0.53
1.250	1.29	0.01	0.104	O I					0.58
1.333	1.29	0.01	0.113	O I					0.63
1.417	1.29	0.01	0.122	O I					0.68
1.500	1.29	0.01	0.131	O I					0.73
1.583	1.29	0.01	0.140	O I					0.78
1.667	1.29	0.01	0.149	O I					0.83
1.750	1.29	0.01	0.157	O I					0.87
1.833	1.29	0.01	0.166	O I					0.92
1.917	1.29	0.01	0.175	O I					0.97
2.000	1.37	0.01	0.184	O I					1.02
2.083	1.36	0.01	0.194	O I					1.08
2.167	1.38	0.01	0.203	O I					1.13

10.500	0.00	0.26	0.977	IO			4.13
10.583	0.00	0.26	0.975	IO			4.13
10.667	0.00	0.26	0.973	IO			4.12
10.750	0.00	0.26	0.971	IO			4.12
10.833	0.00	0.26	0.970	IO			4.11
10.917	0.00	0.26	0.968	IO			4.11
11.000	0.00	0.26	0.966	IO			4.11
11.083	0.00	0.26	0.964	IO			4.10
11.167	0.00	0.26	0.962	IO			4.10
11.250	0.00	0.26	0.960	IO			4.09
11.333	0.00	0.26	0.959	IO			4.09
11.417	0.00	0.26	0.957	IO			4.08
11.500	0.00	0.26	0.955	IO			4.08
11.583	0.00	0.26	0.953	IO			4.07
11.667	0.00	0.26	0.952	IO			4.07
11.750	0.00	0.26	0.950	IO			4.06
11.833	0.00	0.26	0.948	IO			4.06
11.917	0.00	0.26	0.946	IO			4.05
12.000	0.00	0.26	0.944	IO			4.05
12.083	0.00	0.26	0.943	IO			4.04
12.167	0.00	0.26	0.941	O			4.04
12.250	0.00	0.26	0.939	O			4.03
12.333	0.00	0.26	0.937	O			4.03
12.417	0.00	0.26	0.936	O			4.02
12.500	0.00	0.25	0.934	O			4.02
12.583	0.00	0.25	0.932	O			4.01
12.667	0.00	0.25	0.930	O			4.01
12.750	0.00	0.25	0.929	O			4.01
12.833	0.00	0.25	0.927	O			4.00
12.917	0.00	0.25	0.925	O			4.00
13.000	0.00	0.25	0.923	O			3.99
13.083	0.00	0.25	0.922	O			3.99
13.167	0.00	0.25	0.920	O			3.98
13.250	0.00	0.25	0.918	O			3.98
13.333	0.00	0.25	0.916	O			3.97
13.417	0.00	0.25	0.915	O			3.97
13.500	0.00	0.25	0.913	O			3.96
13.583	0.00	0.25	0.911	O			3.96
13.667	0.00	0.25	0.910	O			3.95
13.750	0.00	0.25	0.908	O			3.95
13.833	0.00	0.25	0.906	O			3.94
13.917	0.00	0.25	0.904	O			3.94
14.000	0.00	0.25	0.903	O			3.94
14.083	0.00	0.25	0.901	O			3.93
14.167	0.00	0.25	0.899	O			3.93
14.250	0.00	0.25	0.898	O			3.92
14.333	0.00	0.25	0.896	O			3.92
14.417	0.00	0.25	0.894	O			3.91
14.500	0.00	0.25	0.892	O			3.91
14.583	0.00	0.25	0.891	O			3.90
14.667	0.00	0.24	0.889	O			3.90
14.750	0.00	0.24	0.887	O			3.89
14.833	0.00	0.24	0.886	O			3.89
14.917	0.00	0.24	0.884	O			3.89
15.000	0.00	0.24	0.882	O			3.88
15.083	0.00	0.24	0.881	O			3.88
15.167	0.00	0.24	0.879	O			3.87
15.250	0.00	0.24	0.877	O			3.87
15.333	0.00	0.24	0.876	O			3.86
15.417	0.00	0.24	0.874	O			3.86
15.500	0.00	0.24	0.872	O			3.85
15.583	0.00	0.24	0.871	O			3.85
15.667	0.00	0.24	0.869	O			3.85
15.750	0.00	0.24	0.867	O			3.84
15.833	0.00	0.24	0.866	O			3.84
15.917	0.00	0.24	0.864	O			3.83
16.000	0.00	0.24	0.862	O			3.83
16.083	0.00	0.24	0.861	O			3.82
16.167	0.00	0.24	0.859	O			3.82
16.250	0.00	0.24	0.858	O			3.81
16.333	0.00	0.24	0.856	O			3.81
16.417	0.00	0.24	0.854	O			3.81
16.500	0.00	0.24	0.853	O			3.80
16.583	0.00	0.24	0.851	O			3.80
16.667	0.00	0.24	0.849	O			3.79
16.750	0.00	0.24	0.848	O			3.79
16.833	0.00	0.23	0.846	O			3.78
16.917	0.00	0.23	0.845	O			3.78
17.000	0.00	0.23	0.843	O			3.78
17.083	0.00	0.23	0.841	O			3.77
17.167	0.00	0.23	0.840	O			3.77
17.250	0.00	0.23	0.838	O			3.76
17.333	0.00	0.23	0.837	O			3.76
17.417	0.00	0.23	0.835	O			3.75
17.500	0.00	0.23	0.833	O			3.75
17.583	0.00	0.23	0.832	O			3.75
17.667	0.00	0.23	0.830	O			3.74
17.750	0.00	0.23	0.829	O			3.74
17.833	0.00	0.23	0.827	O			3.73
17.917	0.00	0.23	0.825	O			3.73
18.000	0.00	0.23	0.824	O			3.72
18.083	0.00	0.23	0.822	O			3.72
18.167	0.00	0.23	0.821	O			3.72
18.250	0.00	0.23	0.819	O			3.71
18.333	0.00	0.23	0.818	O			3.71
18.417	0.00	0.23	0.816	O			3.70
18.500	0.00	0.23	0.814	O			3.70
18.583	0.00	0.23	0.813	O			3.70
18.667	0.00	0.23	0.811	O			3.69

18.750	0.00	0.23	0.810	O				3.69
18.833	0.00	0.23	0.808	O				3.68
18.917	0.00	0.23	0.807	O				3.68
19.000	0.00	0.23	0.805	O				3.67
19.083	0.00	0.22	0.803	O				3.67
19.167	0.00	0.22	0.802	O				3.67
19.250	0.00	0.22	0.800	O				3.66
19.333	0.00	0.22	0.799	O				3.66
19.417	0.00	0.22	0.797	O				3.65
19.500	0.00	0.22	0.796	O				3.65
19.583	0.00	0.22	0.794	O				3.65
19.667	0.00	0.22	0.793	O				3.64
19.750	0.00	0.22	0.791	O				3.64
19.833	0.00	0.22	0.790	O				3.63
19.917	0.00	0.22	0.788	O				3.63
20.000	0.00	0.22	0.787	O				3.62
20.083	0.00	0.22	0.785	O				3.62
20.167	0.00	0.22	0.784	O				3.62
20.250	0.00	0.22	0.782	O				3.61
20.333	0.00	0.22	0.781	O				3.61
20.417	0.00	0.22	0.779	O				3.60
20.500	0.00	0.22	0.778	O				3.60
20.583	0.00	0.22	0.776	O				3.60
20.667	0.00	0.22	0.775	O				3.59
20.750	0.00	0.22	0.773	O				3.59
20.833	0.00	0.22	0.772	O				3.58
20.917	0.00	0.22	0.770	O				3.58
21.000	0.00	0.22	0.769	O				3.58
21.083	0.00	0.22	0.767	O				3.57
21.167	0.00	0.22	0.766	O				3.57
21.250	0.00	0.22	0.764	O				3.56
21.333	0.00	0.22	0.763	O				3.56
21.417	0.00	0.21	0.761	O				3.56
21.500	0.00	0.21	0.760	O				3.55
21.583	0.00	0.21	0.758	O				3.55
21.667	0.00	0.21	0.757	O				3.54
21.750	0.00	0.21	0.755	O				3.54
21.833	0.00	0.21	0.754	O				3.54
21.917	0.00	0.21	0.752	O				3.53
22.000	0.00	0.21	0.751	O				3.53
22.083	0.00	0.21	0.749	O				3.53
22.167	0.00	0.21	0.748	O				3.52
22.250	0.00	0.21	0.746	O				3.52
22.333	0.00	0.21	0.745	O				3.51
22.417	0.00	0.21	0.744	O				3.51
22.500	0.00	0.21	0.742	O				3.51
22.583	0.00	0.21	0.741	O				3.50
22.667	0.00	0.21	0.739	O				3.50
22.750	0.00	0.21	0.738	O				3.49
22.833	0.00	0.21	0.736	O				3.49
22.917	0.00	0.21	0.735	O				3.48
23.000	0.00	0.21	0.733	O				3.48
23.083	0.00	0.20	0.732	O				3.47
23.167	0.00	0.20	0.731	O				3.47
23.250	0.00	0.20	0.729	O				3.46
23.333	0.00	0.20	0.728	O				3.46
23.417	0.00	0.20	0.726	O				3.45
23.500	0.00	0.20	0.725	O				3.45
23.583	0.00	0.20	0.724	O				3.44
23.667	0.00	0.20	0.722	O				3.44
23.750	0.00	0.20	0.721	O				3.43
23.833	0.00	0.20	0.720	O				3.43
23.917	0.00	0.20	0.718	O				3.43
24.000	0.00	0.19	0.717	O				3.42

Remaining water in basin = 0.17 (Ac.Ft)

*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.288 (CFS)
Total volume = 0.944 (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

SEATON
5 YEAR 24 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR5245.rte
***** HYDROGRAPH DATA *****
Number of intervals = 291
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 3.184 (CFS)
Total volume = 1.935 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS) 0.000 0.000 0.000 0.000 0.000
Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
Process from Point/Station 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 291
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (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
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	0.8	1.59	2.39	3.18 (Ft.)	Depth
0.083	0.09	0.00	0.000	O					0.00
0.167	0.17	0.00	0.001	O I					0.01
0.250	0.18	0.00	0.002	O I					0.01
0.333	0.23	0.00	0.004	O I					0.02
0.417	0.27	0.00	0.006	O I					0.03
0.500	0.28	0.00	0.007	O I					0.04
0.583	0.28	0.00	0.009	O I					0.05
0.667	0.28	0.00	0.011	O I					0.06
0.750	0.28	0.00	0.013	O I					0.07
0.833	0.33	0.00	0.015	O I					0.09
0.917	0.37	0.00	0.018	O I					0.10
1.000	0.37	0.00	0.020	O I					0.11
1.083	0.33	0.00	0.023	O I					0.13
1.167	0.29	0.00	0.025	O I					0.14
1.250	0.28	0.00	0.027	O I					0.15
1.333	0.28	0.00	0.029	O I					0.16
1.417	0.28	0.00	0.031	O I					0.17
1.500	0.28	0.00	0.033	O I					0.18
1.583	0.28	0.00	0.034	O I					0.19
1.667	0.28	0.00	0.036	O I					0.20
1.750	0.28	0.00	0.038	O I					0.21
1.833	0.33	0.00	0.040	O I					0.22
1.917	0.37	0.00	0.043	O I					0.24
2.000	0.37	0.00	0.045	O I					0.25
2.083	0.37	0.00	0.048	O I					0.27
2.167	0.37	0.00	0.050	O I					0.28

2.250	0.37	0.00	0.053	O	I				0.29
2.333	0.37	0.00	0.056	O	I				0.31
2.417	0.37	0.00	0.058	O	I				0.32
2.500	0.37	0.00	0.061	O	I				0.34
2.583	0.42	0.00	0.063	O	I				0.35
2.667	0.46	0.00	0.066	O	I				0.37
2.750	0.47	0.00	0.070	O	I				0.39
2.833	0.47	0.00	0.073	O	I				0.40
2.917	0.47	0.00	0.076	O	I				0.42
3.000	0.47	0.00	0.079	O	I				0.44
3.083	0.47	0.00	0.082	O	I				0.46
3.167	0.47	0.00	0.085	O	I				0.47
3.250	0.47	0.00	0.089	O	I				0.49
3.333	0.47	0.01	0.092	O	I				0.51
3.417	0.47	0.01	0.095	O	I				0.53
3.500	0.47	0.01	0.098	O	I				0.55
3.583	0.47	0.01	0.101	O	I				0.56
3.667	0.47	0.01	0.105	O	I				0.58
3.750	0.47	0.01	0.108	O	I				0.60
3.833	0.51	0.01	0.111	O	I				0.62
3.917	0.55	0.01	0.115	O	I				0.64
4.000	0.56	0.01	0.119	O	I				0.66
4.083	0.56	0.01	0.122	O	I				0.68
4.167	0.56	0.01	0.126	O	I				0.70
4.250	0.56	0.01	0.130	O	I				0.72
4.333	0.61	0.01	0.134	O	I				0.74
4.417	0.65	0.01	0.138	O	I				0.77
4.500	0.65	0.01	0.143	O	I				0.79
4.583	0.66	0.01	0.147	O	I				0.82
4.667	0.66	0.01	0.152	O	I				0.84
4.750	0.66	0.01	0.156	O	I				0.87
4.833	0.70	0.01	0.161	O	I				0.89
4.917	0.74	0.01	0.166	O	I				0.92
5.000	0.75	0.01	0.171	O	I				0.95
5.083	0.66	0.01	0.175	O	I				0.97
5.167	0.58	0.01	0.180	O	I				1.00
5.250	0.57	0.01	0.183	O	I				1.02
5.333	0.61	0.01	0.187	O	I				1.04
5.417	0.65	0.01	0.192	O	I				1.07
5.500	0.65	0.01	0.196	O	I				1.09
5.583	0.70	0.01	0.201	O	I				1.12
5.667	0.74	0.01	0.206	O	I				1.14
5.750	0.75	0.01	0.211	O	I				1.17
5.833	0.75	0.01	0.216	O	I				1.20
5.917	0.75	0.01	0.221	O	I				1.23
6.000	0.75	0.01	0.226	O	I				1.26
6.083	0.80	0.01	0.231	O	I				1.28
6.167	0.83	0.01	0.237	O	I				1.32
6.250	0.84	0.01	0.242	O	I				1.35
6.333	0.84	0.01	0.248	O	I				1.38
6.417	0.84	0.01	0.254	O	I				1.41
6.500	0.84	0.01	0.260	O	I				1.44
6.583	0.89	0.01	0.266	O	I				1.48
6.667	0.93	0.01	0.272	O	I				1.51
6.750	0.93	0.01	0.278	O	I				1.54
6.833	0.94	0.01	0.284	O	I				1.58
6.917	0.94	0.01	0.291	O	I				1.62
7.000	0.94	0.01	0.297	O	I				1.65
7.083	0.94	0.01	0.304	O	I				1.69
7.167	0.94	0.01	0.310	O	I				1.72
7.250	0.94	0.01	0.316	O	I				1.76
7.333	0.98	0.01	0.323	O	I				1.79
7.417	1.02	0.01	0.330	O	I				1.83
7.500	1.03	0.01	0.337	O	I				1.87
7.583	1.08	0.01	0.344	O	I				1.91
7.667	1.11	0.01	0.351	O	I				1.95
7.750	1.12	0.01	0.359	O	I				1.99
7.833	1.17	0.01	0.367	O	I				2.04
7.917	1.21	0.01	0.375	O	I				2.08
8.000	1.22	0.01	0.383	O	I				2.13
8.083	1.31	0.01	0.392	O	I				2.18
8.167	1.39	0.01	0.401	O	I				2.23
8.250	1.40	0.01	0.411	O	I				2.28
8.333	1.40	0.01	0.420	O	I				2.33
8.417	1.40	0.01	0.430	O	I				2.39
8.500	1.40	0.01	0.439	O	I				2.44
8.583	1.45	0.01	0.449	O	I				2.50
8.667	1.49	0.02	0.459	O	I				2.53
8.750	1.50	0.02	0.469	O	I				2.57
8.833	1.54	0.03	0.480	O	I				2.60
8.917	1.58	0.04	0.490	O	I				2.64
9.000	1.59	0.05	0.501	O	I				2.68
9.083	1.68	0.05	0.512	O	I				2.71
9.167	1.76	0.06	0.523	O	I				2.75
9.250	1.77	0.07	0.535	O	I				2.79
9.333	1.83	0.08	0.547	O	I				2.83
9.417	1.86	0.09	0.559	O	I				2.88
9.500	1.87	0.09	0.571	O	I				2.92
9.583	1.92	0.10	0.584	O	I				2.96
9.667	1.96	0.11	0.596	O	I				3.00
9.750	1.96	0.12	0.609	O	I				3.05
9.833	2.01	0.13	0.622	O	I				3.09
9.917	2.05	0.14	0.635	O	I				3.14
10.000	2.06	0.15	0.648	O	I				3.18
10.083	1.74	0.15	0.660	O	I				3.22
10.167	1.47	0.16	0.670	O	I				3.26
10.250	1.42	0.17	0.679	O	I				3.29
10.333	1.40	0.17	0.687	O	I				3.32
10.417	1.40	0.18	0.696	O	I				3.35

10.500	1.40	0.19	0.704	O	I		3.38
10.583	1.64	0.19	0.713	O	I		3.41
10.667	1.83	0.20	0.724	O	I		3.44
10.750	1.86	0.21	0.735	O	I		3.48
10.833	1.87	0.21	0.747	O	I		3.52
10.917	1.87	0.21	0.758	O	I		3.55
11.000	1.87	0.22	0.770	O	I		3.58
11.083	1.83	0.22	0.781	O	I		3.61
11.167	1.79	0.22	0.792	O	I		3.64
11.250	1.78	0.22	0.802	O	I		3.67
11.333	1.78	0.23	0.813	O	I		3.70
11.417	1.78	0.23	0.824	O	I		3.72
11.500	1.78	0.23	0.835	O	I		3.75
11.583	1.69	0.23	0.845	O	I		3.78
11.667	1.61	0.24	0.855	O	I		3.81
11.750	1.60	0.24	0.864	O	I		3.83
11.833	1.64	0.24	0.874	O	I		3.86
11.917	1.68	0.24	0.883	O	I		3.88
12.000	1.68	0.25	0.893	O	I		3.91
12.083	2.01	0.25	0.904	O	I		3.94
12.167	2.28	0.25	0.917	O	I		3.97
12.250	2.33	0.25	0.931	O	I		4.01
12.333	2.39	0.26	0.946	O	I		4.05
12.417	2.43	0.26	0.961	O	I		4.09
12.500	2.43	0.26	0.975	O	I		4.13
12.583	2.53	0.27	0.991	O	I		4.17
12.667	2.60	0.27	1.007	O	I		4.21
12.750	2.62	0.28	1.023	O	I		4.26
12.833	2.67	0.28	1.039	O	I		4.30
12.917	2.71	0.28	1.056	O	I		4.35
13.000	2.71	0.29	1.072	O	I		4.39
13.083	2.95	0.29	1.090	O	I		4.44
13.167	3.14	0.30	1.109	O	I		4.49
13.250	3.17	0.30	1.128	O	I		4.54
13.333	3.18	0.30	1.148	O	I		4.59
13.417	3.18	0.31	1.168	O	I		4.65
13.500	3.18	0.31	1.188	O	I		4.70
13.583	2.67	0.32	1.206	O	I		4.75
13.667	2.26	0.32	1.221	O	I		4.79
13.750	2.18	0.32	1.234	O	I		4.82
13.833	2.15	0.33	1.246	O	I		4.86
13.917	2.15	0.33	1.259	O	I		4.89
14.000	2.15	0.33	1.271	O	I		4.92
14.083	2.34	0.34	1.285	O	I		4.96
14.167	2.49	0.34	1.299	O	I		5.00
14.250	2.52	0.34	1.314	O	I		5.04
14.333	2.48	0.34	1.329	O	I		5.09
14.417	2.44	0.35	1.343	O	I		5.13
14.500	2.44	0.35	1.358	O	I		5.17
14.583	2.44	0.35	1.372	O	I		5.22
14.667	2.44	0.35	1.386	O	I		5.26
14.750	2.44	0.36	1.401	O	I		5.30
14.833	2.39	0.36	1.415	O	I		5.35
14.917	2.35	0.36	1.429	O	I		5.39
15.000	2.34	0.36	1.442	O	I		5.43
15.083	2.30	0.36	1.456	O	I		5.47
15.167	2.26	0.37	1.469	O	I		5.51
15.250	2.25	0.37	1.482	O	I		5.55
15.333	2.20	0.37	1.495	O	I		5.59
15.417	2.16	0.37	1.507	O	I		5.63
15.500	2.16	0.37	1.520	O	I		5.67
15.583	1.97	0.38	1.531	O	I		5.70
15.667	1.82	0.38	1.542	O	I		5.73
15.750	1.79	0.38	1.551	O	I		5.76
15.833	1.78	0.38	1.561	O	I		5.79
15.917	1.78	0.38	1.571	O	I		5.82
16.000	1.78	0.38	1.580	O	I		5.85
16.083	1.08	0.38	1.588	O	I		5.87
16.167	0.51	0.38	1.590	O I			5.88
16.250	0.41	0.38	1.591	O I			5.88
16.333	0.37	0.38	1.591	O			5.88
16.417	0.37	0.38	1.591	O			5.88
16.500	0.37	0.38	1.591	O			5.88
16.583	0.33	0.38	1.591	O			5.88
16.667	0.29	0.38	1.590	O I			5.88
16.750	0.28	0.38	1.590	O I			5.88
16.833	0.28	0.38	1.589	O I			5.88
16.917	0.28	0.38	1.588	O I			5.87
17.000	0.28	0.38	1.587	O I			5.87
17.083	0.37	0.38	1.587	O			5.87
17.167	0.45	0.38	1.587	O I			5.87
17.250	0.46	0.38	1.588	O I			5.87
17.333	0.47	0.38	1.588	O I			5.87
17.417	0.47	0.38	1.589	O I			5.88
17.500	0.47	0.38	1.589	O I			5.88
17.583	0.47	0.38	1.590	O I			5.88
17.667	0.47	0.38	1.591	O I			5.88
17.750	0.47	0.38	1.591	O I			5.88
17.833	0.42	0.38	1.592	O I			5.88
17.917	0.38	0.38	1.592	O			5.88
18.000	0.38	0.38	1.592	O			5.88
18.083	0.37	0.38	1.592	O			5.88
18.167	0.37	0.38	1.592	O			5.88
18.250	0.37	0.38	1.592	O			5.88
18.333	0.37	0.38	1.591	O			5.88
18.417	0.37	0.38	1.591	O			5.88
18.500	0.37	0.38	1.591	O			5.88
18.583	0.33	0.38	1.591	O			5.88
18.667	0.29	0.38	1.591	O I			5.88

18.750	0.28	0.38	1.590	IO					5.88
18.833	0.23	0.38	1.589	IO					5.88
18.917	0.20	0.38	1.588	I O					5.87
19.000	0.19	0.38	1.587	I O					5.87
19.083	0.23	0.38	1.585	IO					5.86
19.167	0.27	0.38	1.584	IO					5.86
19.250	0.28	0.38	1.584	IO					5.86
19.333	0.33	0.38	1.583	O					5.86
19.417	0.37	0.38	1.583	O					5.86
19.500	0.37	0.38	1.583	O					5.86
19.583	0.33	0.38	1.583	O					5.86
19.667	0.29	0.38	1.582	IO					5.85
19.750	0.28	0.38	1.581	IO					5.85
19.833	0.23	0.38	1.581	IO					5.85
19.917	0.20	0.38	1.579	I O					5.85
20.000	0.19	0.38	1.578	I O					5.84
20.083	0.23	0.38	1.577	IO					5.84
20.167	0.27	0.38	1.576	IO					5.84
20.250	0.28	0.38	1.575	IO					5.83
20.333	0.28	0.38	1.575	IO					5.83
20.417	0.28	0.38	1.574	IO					5.83
20.500	0.28	0.38	1.573	IO					5.83
20.583	0.28	0.38	1.573	IO					5.83
20.667	0.28	0.38	1.572	IO					5.82
20.750	0.28	0.38	1.571	IO					5.82
20.833	0.23	0.38	1.570	IO					5.82
20.917	0.20	0.38	1.569	I O					5.82
21.000	0.19	0.38	1.568	I O					5.81
21.083	0.23	0.38	1.567	IO					5.81
21.167	0.27	0.38	1.566	IO					5.81
21.250	0.28	0.38	1.565	IO					5.80
21.333	0.23	0.38	1.564	IO					5.80
21.417	0.20	0.38	1.563	I O					5.80
21.500	0.19	0.38	1.562	I O					5.79
21.583	0.23	0.38	1.561	IO					5.79
21.667	0.27	0.38	1.560	IO					5.79
21.750	0.28	0.38	1.559	IO					5.79
21.833	0.23	0.38	1.558	IO					5.78
21.917	0.20	0.38	1.557	I O					5.78
22.000	0.19	0.38	1.556	I O					5.78
22.083	0.23	0.38	1.555	IO					5.77
22.167	0.27	0.38	1.554	IO					5.77
22.250	0.28	0.38	1.553	IO					5.77
22.333	0.23	0.38	1.552	IO					5.76
22.417	0.20	0.38	1.551	I O					5.76
22.500	0.19	0.38	1.550	I O					5.76
22.583	0.19	0.38	1.549	I O					5.75
22.667	0.19	0.38	1.547	I O					5.75
22.750	0.19	0.38	1.546	I O					5.75
22.833	0.19	0.38	1.545	I O					5.74
22.917	0.19	0.38	1.543	I O					5.74
23.000	0.19	0.38	1.542	I O					5.73
23.083	0.19	0.38	1.541	I O					5.73
23.167	0.19	0.38	1.539	I O					5.73
23.250	0.19	0.38	1.538	I O					5.72
23.333	0.19	0.38	1.537	I O					5.72
23.417	0.19	0.38	1.536	I O					5.71
23.500	0.19	0.38	1.534	I O					5.71
23.583	0.19	0.38	1.533	I O					5.71
23.667	0.19	0.38	1.532	I O					5.70
23.750	0.19	0.37	1.530	I O					5.70
23.833	0.19	0.37	1.529	I O					5.69
23.917	0.19	0.37	1.528	I O					5.69
24.000	0.19	0.37	1.527	I O					5.69

Remaining water in basin = 0.20 (Ac.Ft)

*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.384 (CFS)
Total volume = 1.738 (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

SEATON
 10-YEAR 1 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR10110.rte
 ***** HYDROGRAPH DATA *****
 Number of intervals = 15
 Time interval = 5.0 (Min.)
 Maximum/Peak flow rate = 17.904 (CFS)
 Total volume = 0.587 (Ac.Ft)
 Status of hydrographs being held in storage
 Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
 Peak (CFS) 0.000 0.000 0.000 0.000 0.000
 Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
 Process from Point/Station 100.000 to Point/Station 100.000
 **** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 15
 Hydrograph time unit = 5.000 (Min.)
 Initial depth in storage basin = 0.00(Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth Storage Outflow (S-O*dt/2) (S+O*dt/2)
 (Ft.) (Ac.Ft) (CFS) (Ac.Ft) (Ac.Ft)

0.000	0.000	0.000	0.000	0.000
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	4.5	8.95	13.43	17.90	(Ft.)	Depth
0.083	1.72	0.00	0.006	O I						0.03
0.167	3.17	0.00	0.023	O I						0.13
0.250	3.75	0.00	0.047	O I						0.26
0.333	4.07	0.00	0.073	O I						0.41
0.417	4.44	0.01	0.103	O I						0.57
0.500	5.01	0.01	0.135	O I						0.75
0.583	5.68	0.01	0.172	O I						0.96
0.667	6.59	0.01	0.214	O I						1.19
0.750	8.79	0.01	0.267	O I						1.48
0.833	17.90	0.01	0.359	O I						1.99
0.917	14.35	0.02	0.470	O I						2.57
1.000	6.51	0.07	0.541	O I						2.82
1.083	2.73	0.09	0.573	O I						2.92
1.167	0.44	0.10	0.583	O I						2.96
1.250	0.10	0.10	0.584	O I						2.96
1.333	0.00	0.10	0.584	O I						2.96
1.417	0.00	0.10	0.583	O I						2.96
1.500	0.00	0.10	0.582	O I						2.96
1.583	0.00	0.10	0.582	O I						2.95
1.667	0.00	0.10	0.581	O I						2.95
1.750	0.00	0.10	0.580	O I						2.95
1.833	0.00	0.10	0.580	O I						2.95
1.917	0.00	0.10	0.579	O I						2.94
2.000	0.00	0.10	0.578	O I						2.94
2.083	0.00	0.10	0.578	O I						2.94
2.167	0.00	0.10	0.577	O I						2.94

2.250	0.00	0.10	0.576	O			2.94
2.333	0.00	0.10	0.576	O			2.93
2.417	0.00	0.10	0.575	O			2.93
2.500	0.00	0.10	0.574	O			2.93
2.583	0.00	0.10	0.574	O			2.93
2.667	0.00	0.09	0.573	O			2.92
2.750	0.00	0.09	0.572	O			2.92
2.833	0.00	0.09	0.572	O			2.92
2.917	0.00	0.09	0.571	O			2.92
3.000	0.00	0.09	0.570	O			2.91
3.083	0.00	0.09	0.570	O			2.91
3.167	0.00	0.09	0.569	O			2.91
3.250	0.00	0.09	0.568	O			2.91
3.333	0.00	0.09	0.568	O			2.91
3.417	0.00	0.09	0.567	O			2.90
3.500	0.00	0.09	0.567	O			2.90
3.583	0.00	0.09	0.566	O			2.90
3.667	0.00	0.09	0.565	O			2.90
3.750	0.00	0.09	0.565	O			2.90
3.833	0.00	0.09	0.564	O			2.89
3.917	0.00	0.09	0.563	O			2.89
4.000	0.00	0.09	0.563	O			2.89
4.083	0.00	0.09	0.562	O			2.89
4.167	0.00	0.09	0.562	O			2.88
4.250	0.00	0.09	0.561	O			2.88
4.333	0.00	0.09	0.560	O			2.88
4.417	0.00	0.09	0.560	O			2.88
4.500	0.00	0.09	0.559	O			2.88
4.583	0.00	0.08	0.559	O			2.87
4.667	0.00	0.08	0.558	O			2.87
4.750	0.00	0.08	0.557	O			2.87
4.833	0.00	0.08	0.557	O			2.87
4.917	0.00	0.08	0.556	O			2.87
5.000	0.00	0.08	0.556	O			2.86
5.083	0.00	0.08	0.555	O			2.86
5.167	0.00	0.08	0.555	O			2.86
5.250	0.00	0.08	0.554	O			2.86
5.333	0.00	0.08	0.554	O			2.86
5.417	0.00	0.08	0.553	O			2.85
5.500	0.00	0.08	0.552	O			2.85
5.583	0.00	0.08	0.552	O			2.85
5.667	0.00	0.08	0.551	O			2.85
5.750	0.00	0.08	0.551	O			2.85
5.833	0.00	0.08	0.550	O			2.85
5.917	0.00	0.08	0.550	O			2.84
6.000	0.00	0.08	0.549	O			2.84
6.083	0.00	0.08	0.549	O			2.84
6.167	0.00	0.08	0.548	O			2.84
6.250	0.00	0.08	0.548	O			2.84
6.333	0.00	0.08	0.547	O			2.83
6.417	0.00	0.08	0.546	O			2.83
6.500	0.00	0.08	0.546	O			2.83
6.583	0.00	0.08	0.545	O			2.83
6.667	0.00	0.08	0.545	O			2.83
6.750	0.00	0.08	0.544	O			2.83
6.833	0.00	0.07	0.544	O			2.82
6.917	0.00	0.07	0.543	O			2.82
7.000	0.00	0.07	0.543	O			2.82
7.083	0.00	0.07	0.542	O			2.82
7.167	0.00	0.07	0.542	O			2.82
7.250	0.00	0.07	0.541	O			2.81
7.333	0.00	0.07	0.541	O			2.81
7.417	0.00	0.07	0.540	O			2.81
7.500	0.00	0.07	0.540	O			2.81
7.583	0.00	0.07	0.539	O			2.81
7.667	0.00	0.07	0.539	O			2.81
7.750	0.00	0.07	0.538	O			2.80
7.833	0.00	0.07	0.538	O			2.80
7.917	0.00	0.07	0.537	O			2.80
8.000	0.00	0.07	0.537	O			2.80
8.083	0.00	0.07	0.536	O			2.80
8.167	0.00	0.07	0.536	O			2.80
8.250	0.00	0.07	0.535	O			2.79
8.333	0.00	0.07	0.535	O			2.79
8.417	0.00	0.07	0.534	O			2.79
8.500	0.00	0.07	0.534	O			2.79
8.583	0.00	0.07	0.534	O			2.79
8.667	0.00	0.07	0.533	O			2.79
8.750	0.00	0.07	0.533	O			2.78
8.833	0.00	0.07	0.532	O			2.78
8.917	0.00	0.07	0.532	O			2.78
9.000	0.00	0.07	0.531	O			2.78
9.083	0.00	0.07	0.531	O			2.78
9.167	0.00	0.07	0.530	O			2.78
9.250	0.00	0.07	0.530	O			2.78
9.333	0.00	0.06	0.529	O			2.77
9.417	0.00	0.06	0.529	O			2.77
9.500	0.00	0.06	0.529	O			2.77
9.583	0.00	0.06	0.528	O			2.77
9.667	0.00	0.06	0.528	O			2.77
9.750	0.00	0.06	0.527	O			2.77
9.833	0.00	0.06	0.527	O			2.76
9.917	0.00	0.06	0.526	O			2.76
10.000	0.00	0.06	0.526	O			2.76
10.083	0.00	0.06	0.526	O			2.76
10.167	0.00	0.06	0.525	O			2.76
10.250	0.00	0.06	0.525	O			2.76
10.333	0.00	0.06	0.524	O			2.76
10.417	0.00	0.06	0.524	O			2.75

10.500	0.00	0.06	0.523	O			2.75
10.583	0.00	0.06	0.523	O			2.75
10.667	0.00	0.06	0.523	O			2.75
10.750	0.00	0.06	0.522	O			2.75
10.833	0.00	0.06	0.522	O			2.75
10.917	0.00	0.06	0.521	O			2.75
11.000	0.00	0.06	0.521	O			2.74
11.083	0.00	0.06	0.521	O			2.74
11.167	0.00	0.06	0.520	O			2.74
11.250	0.00	0.06	0.520	O			2.74
11.333	0.00	0.06	0.519	O			2.74
11.417	0.00	0.06	0.519	O			2.74
11.500	0.00	0.06	0.519	O			2.74
11.583	0.00	0.06	0.518	O			2.73
11.667	0.00	0.06	0.518	O			2.73
11.750	0.00	0.06	0.517	O			2.73
11.833	0.00	0.06	0.517	O			2.73
11.917	0.00	0.06	0.517	O			2.73
12.000	0.00	0.06	0.516	O			2.73
12.083	0.00	0.06	0.516	O			2.73
12.167	0.00	0.06	0.515	O			2.72
12.250	0.00	0.05	0.515	O			2.72
12.333	0.00	0.05	0.515	O			2.72
12.417	0.00	0.05	0.514	O			2.72
12.500	0.00	0.05	0.514	O			2.72
12.583	0.00	0.05	0.514	O			2.72
12.667	0.00	0.05	0.513	O			2.72
12.750	0.00	0.05	0.513	O			2.72
12.833	0.00	0.05	0.512	O			2.72
12.917	0.00	0.05	0.512	O			2.71
13.000	0.00	0.05	0.512	O			2.71
13.083	0.00	0.05	0.511	O			2.71
13.167	0.00	0.05	0.511	O			2.71
13.250	0.00	0.05	0.511	O			2.71
13.333	0.00	0.05	0.510	O			2.71
13.417	0.00	0.05	0.510	O			2.71
13.500	0.00	0.05	0.510	O			2.70
13.583	0.00	0.05	0.509	O			2.70
13.667	0.00	0.05	0.509	O			2.70
13.750	0.00	0.05	0.509	O			2.70
13.833	0.00	0.05	0.508	O			2.70
13.917	0.00	0.05	0.508	O			2.70
14.000	0.00	0.05	0.508	O			2.70
14.083	0.00	0.05	0.507	O			2.70
14.167	0.00	0.05	0.507	O			2.70
14.250	0.00	0.05	0.506	O			2.69
14.333	0.00	0.05	0.506	O			2.69
14.417	0.00	0.05	0.506	O			2.69
14.500	0.00	0.05	0.505	O			2.69
14.583	0.00	0.05	0.505	O			2.69
14.667	0.00	0.05	0.505	O			2.69
14.750	0.00	0.05	0.504	O			2.69
14.833	0.00	0.05	0.504	O			2.69
14.917	0.00	0.05	0.504	O			2.69
15.000	0.00	0.05	0.504	O			2.68
15.083	0.00	0.05	0.503	O			2.68
15.167	0.00	0.05	0.503	O			2.68
15.250	0.00	0.05	0.503	O			2.68
15.333	0.00	0.05	0.502	O			2.68
15.417	0.00	0.05	0.502	O			2.68
15.500	0.00	0.05	0.502	O			2.68
15.583	0.00	0.05	0.501	O			2.68
15.667	0.00	0.05	0.501	O			2.68
15.750	0.00	0.04	0.501	O			2.67
15.833	0.00	0.04	0.500	O			2.67
15.917	0.00	0.04	0.500	O			2.67
16.000	0.00	0.04	0.500	O			2.67
16.083	0.00	0.04	0.499	O			2.67
16.167	0.00	0.04	0.499	O			2.67
16.250	0.00	0.04	0.499	O			2.67
16.333	0.00	0.04	0.499	O			2.67
16.417	0.00	0.04	0.498	O			2.67
16.500	0.00	0.04	0.498	O			2.67
16.583	0.00	0.04	0.498	O			2.66
16.667	0.00	0.04	0.497	O			2.66
16.750	0.00	0.04	0.497	O			2.66
16.833	0.00	0.04	0.497	O			2.66
16.917	0.00	0.04	0.496	O			2.66
17.000	0.00	0.04	0.496	O			2.66
17.083	0.00	0.04	0.496	O			2.66
17.167	0.00	0.04	0.496	O			2.66
17.250	0.00	0.04	0.495	O			2.66
17.333	0.00	0.04	0.495	O			2.66
17.417	0.00	0.04	0.495	O			2.65
17.500	0.00	0.04	0.494	O			2.65
17.583	0.00	0.04	0.494	O			2.65
17.667	0.00	0.04	0.494	O			2.65
17.750	0.00	0.04	0.494	O			2.65
17.833	0.00	0.04	0.493	O			2.65
17.917	0.00	0.04	0.493	O			2.65
18.000	0.00	0.04	0.493	O			2.65
18.083	0.00	0.04	0.493	O			2.65
18.167	0.00	0.04	0.492	O			2.65
18.250	0.00	0.04	0.492	O			2.64
18.333	0.00	0.04	0.492	O			2.64
18.417	0.00	0.04	0.491	O			2.64
18.500	0.00	0.04	0.491	O			2.64
18.583	0.00	0.04	0.491	O			2.64
18.667	0.00	0.04	0.491	O			2.64

18.750	0.00	0.04	0.490	O				2.64
18.833	0.00	0.04	0.490	O				2.64
18.917	0.00	0.04	0.490	O				2.64
19.000	0.00	0.04	0.490	O				2.64
19.083	0.00	0.04	0.489	O				2.64
19.167	0.00	0.04	0.489	O				2.63
19.250	0.00	0.04	0.489	O				2.63
19.333	0.00	0.04	0.489	O				2.63
19.417	0.00	0.04	0.488	O				2.63
19.500	0.00	0.04	0.488	O				2.63
19.583	0.00	0.04	0.488	O				2.63
19.667	0.00	0.04	0.488	O				2.63
19.750	0.00	0.04	0.487	O				2.63
19.833	0.00	0.04	0.487	O				2.63
19.917	0.00	0.04	0.487	O				2.63
20.000	0.00	0.04	0.487	O				2.63
20.083	0.00	0.04	0.486	O				2.63
20.167	0.00	0.03	0.486	O				2.62
20.250	0.00	0.03	0.486	O				2.62
20.333	0.00	0.03	0.486	O				2.62
20.417	0.00	0.03	0.485	O				2.62
20.500	0.00	0.03	0.485	O				2.62
20.583	0.00	0.03	0.485	O				2.62
20.667	0.00	0.03	0.485	O				2.62
20.750	0.00	0.03	0.485	O				2.62
20.833	0.00	0.03	0.484	O				2.62
20.917	0.00	0.03	0.484	O				2.62
21.000	0.00	0.03	0.484	O				2.62
21.083	0.00	0.03	0.484	O				2.62
21.167	0.00	0.03	0.483	O				2.62
21.250	0.00	0.03	0.483	O				2.61
21.333	0.00	0.03	0.483	O				2.61
21.417	0.00	0.03	0.483	O				2.61
21.500	0.00	0.03	0.482	O				2.61
21.583	0.00	0.03	0.482	O				2.61
21.667	0.00	0.03	0.482	O				2.61
21.750	0.00	0.03	0.482	O				2.61
21.833	0.00	0.03	0.482	O				2.61
21.917	0.00	0.03	0.481	O				2.61
22.000	0.00	0.03	0.481	O				2.61
22.083	0.00	0.03	0.481	O				2.61
22.167	0.00	0.03	0.481	O				2.61
22.250	0.00	0.03	0.480	O				2.61
22.333	0.00	0.03	0.480	O				2.60
22.417	0.00	0.03	0.480	O				2.60
22.500	0.00	0.03	0.480	O				2.60
22.583	0.00	0.03	0.480	O				2.60
22.667	0.00	0.03	0.479	O				2.60
22.750	0.00	0.03	0.479	O				2.60
22.833	0.00	0.03	0.479	O				2.60
22.917	0.00	0.03	0.479	O				2.60
23.000	0.00	0.03	0.479	O				2.60
23.083	0.00	0.03	0.478	O				2.60
23.167	0.00	0.03	0.478	O				2.60
23.250	0.00	0.03	0.478	O				2.60
23.333	0.00	0.03	0.478	O				2.60
23.417	0.00	0.03	0.478	O				2.60
23.500	0.00	0.03	0.477	O				2.59
23.583	0.00	0.03	0.477	O				2.59
23.667	0.00	0.03	0.477	O				2.59
23.750	0.00	0.03	0.477	O				2.59
23.833	0.00	0.03	0.477	O				2.59
23.917	0.00	0.03	0.476	O				2.59
24.000	0.00	0.03	0.476	O				2.59

Remaining water in basin = 0.14 (Ac.Ft)

*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/peak flow rate = 0.102 (CFS)
Total volume = 0.443 (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

SEATON
10 YEAR 3 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR10310.rte
*****HYDROGRAPH DATA*****
Number of intervals = 39
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 10.258 (CFS)
Total volume = 0.898 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS) 0.000 0.000 0.000 0.000 0.000
Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
Process from Point/Station 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 39
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (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
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	2.6	5.13	7.69	10.26	Depth (Ft.)
0.083	0.83	0.00	0.003	O I					0.02
0.167	1.51	0.00	0.011	O I					0.06
0.250	1.51	0.00	0.021	O I					0.12
0.333	1.70	0.00	0.032	O I					0.18
0.417	1.89	0.00	0.045	O I					0.25
0.500	2.11	0.00	0.058	O I					0.32
0.583	2.09	0.00	0.073	O I					0.40
0.667	2.15	0.00	0.087	O I					0.49
0.750	2.29	0.01	0.103	O I					0.57
0.833	2.12	0.01	0.118	O I					0.65
0.917	2.04	0.01	0.132	O I					0.73
1.000	2.19	0.01	0.147	O I					0.81
1.083	2.55	0.01	0.163	O I					0.90
1.167	2.78	0.01	0.181	O I					1.01
1.250	2.82	0.01	0.200	O I					1.11
1.333	2.71	0.01	0.219	O I					1.22
1.417	2.99	0.01	0.239	O I					1.33
1.500	3.35	0.01	0.261	O I					1.45
1.583	3.26	0.01	0.283	O I					1.57
1.667	3.32	0.01	0.306	O I					1.70
1.750	3.83	0.01	0.330	O I					1.84
1.833	4.04	0.01	0.357	O I					1.99
1.917	3.87	0.01	0.385	O I					2.14
2.000	3.83	0.01	0.411	O I					2.28
2.083	3.92	0.01	0.438	O I					2.43
2.167	4.68	0.02	0.467	O I					2.56

2.250	5.81	0.05	0.503	O	I	I	I	I	2.68
2.333	5.38	0.07	0.541	O					2.81
2.417	6.94	0.10	0.583	O					2.96
2.500	9.04	0.14	0.637	O					3.15
2.583	10.26	0.18	0.703	O					3.37
2.667	9.32	0.22	0.769	O	I	I	I	I	3.58
2.750	5.51	0.23	0.818	O					3.71
2.833	3.04	0.23	0.846	O	I				3.78
2.917	2.47	0.24	0.863	O					3.83
3.000	1.56	0.24	0.876	O					3.86
3.083	0.54	0.24	0.881	OI					3.88
3.167	0.11	0.24	0.882	O					3.88
3.250	0.02	0.24	0.881	O					3.88
3.333	0.00	0.24	0.879	O					3.87
3.417	0.00	0.24	0.877	O					3.87
3.500	0.00	0.24	0.876	O					3.86
3.583	0.00	0.24	0.874	O					3.86
3.667	0.00	0.24	0.872	O					3.85
3.750	0.00	0.24	0.871	O					3.85
3.833	0.00	0.24	0.869	O					3.84
3.917	0.00	0.24	0.867	O					3.84
4.000	0.00	0.24	0.866	O					3.84
4.083	0.00	0.24	0.864	O					3.83
4.167	0.00	0.24	0.863	O					3.83
4.250	0.00	0.24	0.861	O					3.82
4.333	0.00	0.24	0.859	O					3.82
4.417	0.00	0.24	0.858	O					3.81
4.500	0.00	0.24	0.856	O					3.81
4.583	0.00	0.24	0.854	O					3.81
4.667	0.00	0.24	0.853	O					3.80
4.750	0.00	0.24	0.851	O					3.80
4.833	0.00	0.24	0.849	O					3.79
4.917	0.00	0.24	0.848	O					3.79
5.000	0.00	0.23	0.846	O					3.78
5.083	0.00	0.23	0.845	O					3.78
5.167	0.00	0.23	0.843	O					3.78
5.250	0.00	0.23	0.841	O					3.77
5.333	0.00	0.23	0.840	O					3.77
5.417	0.00	0.23	0.838	O					3.76
5.500	0.00	0.23	0.837	O					3.76
5.583	0.00	0.23	0.835	O					3.75
5.667	0.00	0.23	0.833	O					3.75
5.750	0.00	0.23	0.832	O					3.75
5.833	0.00	0.23	0.830	O					3.74
5.917	0.00	0.23	0.829	O					3.74
6.000	0.00	0.23	0.827	O					3.73
6.083	0.00	0.23	0.825	O					3.73
6.167	0.00	0.23	0.824	O					3.72
6.250	0.00	0.23	0.822	O					3.72
6.333	0.00	0.23	0.821	O					3.72
6.417	0.00	0.23	0.819	O					3.71
6.500	0.00	0.23	0.818	O					3.71
6.583	0.00	0.23	0.816	O					3.70
6.667	0.00	0.23	0.814	O					3.70
6.750	0.00	0.23	0.813	O					3.70
6.833	0.00	0.23	0.811	O					3.69
6.917	0.00	0.23	0.810	O					3.69
7.000	0.00	0.23	0.808	O					3.68
7.083	0.00	0.23	0.807	O					3.68
7.167	0.00	0.23	0.805	O					3.67
7.250	0.00	0.22	0.804	O					3.67
7.333	0.00	0.22	0.802	O					3.67
7.417	0.00	0.22	0.800	O					3.66
7.500	0.00	0.22	0.799	O					3.66
7.583	0.00	0.22	0.797	O					3.65
7.667	0.00	0.22	0.796	O					3.65
7.750	0.00	0.22	0.794	O					3.65
7.833	0.00	0.22	0.793	O					3.64
7.917	0.00	0.22	0.791	O					3.64
8.000	0.00	0.22	0.790	O					3.63
8.083	0.00	0.22	0.788	O					3.63
8.167	0.00	0.22	0.787	O					3.62
8.250	0.00	0.22	0.785	O					3.62
8.333	0.00	0.22	0.784	O					3.62
8.417	0.00	0.22	0.782	O					3.61
8.500	0.00	0.22	0.781	O					3.61
8.583	0.00	0.22	0.779	O					3.60
8.667	0.00	0.22	0.778	O					3.60
8.750	0.00	0.22	0.776	O					3.60
8.833	0.00	0.22	0.775	O					3.59
8.917	0.00	0.22	0.773	O					3.59
9.000	0.00	0.22	0.772	O					3.58
9.083	0.00	0.22	0.770	O					3.58
9.167	0.00	0.22	0.769	O					3.58
9.250	0.00	0.22	0.767	O					3.57
9.333	0.00	0.22	0.766	O					3.57
9.417	0.00	0.22	0.764	O					3.56
9.500	0.00	0.22	0.763	O					3.56
9.583	0.00	0.21	0.761	O					3.56
9.667	0.00	0.21	0.760	O					3.55
9.750	0.00	0.21	0.758	O					3.55
9.833	0.00	0.21	0.757	O					3.54
9.917	0.00	0.21	0.755	O					3.54
10.000	0.00	0.21	0.754	O					3.54
10.083	0.00	0.21	0.752	O					3.53
10.167	0.00	0.21	0.751	O					3.53
10.250	0.00	0.21	0.749	O					3.53
10.333	0.00	0.21	0.748	O					3.52
10.417	0.00	0.21	0.746	O					3.52

10.500	0.00	0.21	0.745	O			3.51
10.583	0.00	0.21	0.744	O			3.51
10.667	0.00	0.21	0.742	O			3.51
10.750	0.00	0.21	0.741	O			3.50
10.833	0.00	0.21	0.739	O			3.50
10.917	0.00	0.21	0.738	O			3.49
11.000	0.00	0.21	0.736	O			3.49
11.083	0.00	0.21	0.735	O			3.48
11.167	0.00	0.21	0.733	O			3.48
11.250	0.00	0.20	0.732	O			3.47
11.333	0.00	0.20	0.731	O			3.47
11.417	0.00	0.20	0.729	O			3.46
11.500	0.00	0.20	0.728	O			3.46
11.583	0.00	0.20	0.726	O			3.45
11.667	0.00	0.20	0.725	O			3.45
11.750	0.00	0.20	0.724	O			3.44
11.833	0.00	0.20	0.722	O			3.44
11.917	0.00	0.20	0.721	O			3.43
12.000	0.00	0.20	0.720	O			3.43
12.083	0.00	0.20	0.718	O			3.43
12.167	0.00	0.19	0.717	O			3.42
12.250	0.00	0.19	0.716	O			3.42
12.333	0.00	0.19	0.714	O			3.41
12.417	0.00	0.19	0.713	O			3.41
12.500	0.00	0.19	0.712	O			3.40
12.583	0.00	0.19	0.710	O			3.40
12.667	0.00	0.19	0.709	O			3.39
12.750	0.00	0.19	0.708	O			3.39
12.833	0.00	0.19	0.706	O			3.38
12.917	0.00	0.19	0.705	O			3.38
13.000	0.00	0.19	0.704	O			3.38
13.083	0.00	0.18	0.703	O			3.37
13.167	0.00	0.18	0.701	O			3.37
13.250	0.00	0.18	0.700	O			3.36
13.333	0.00	0.18	0.699	O			3.36
13.417	0.00	0.18	0.698	O			3.35
13.500	0.00	0.18	0.696	O			3.35
13.583	0.00	0.18	0.695	O			3.35
13.667	0.00	0.18	0.694	O			3.34
13.750	0.00	0.18	0.693	O			3.34
13.833	0.00	0.18	0.691	O			3.33
13.917	0.00	0.18	0.690	O			3.33
14.000	0.00	0.17	0.689	O			3.32
14.083	0.00	0.17	0.688	O			3.32
14.167	0.00	0.17	0.687	O			3.32
14.250	0.00	0.17	0.685	O			3.31
14.333	0.00	0.17	0.684	O			3.31
14.417	0.00	0.17	0.683	O			3.30
14.500	0.00	0.17	0.682	O			3.30
14.583	0.00	0.17	0.681	O			3.30
14.667	0.00	0.17	0.680	O			3.29
14.750	0.00	0.17	0.678	O			3.29
14.833	0.00	0.17	0.677	O			3.28
14.917	0.00	0.17	0.676	O			3.28
15.000	0.00	0.17	0.675	O			3.28
15.083	0.00	0.16	0.674	O			3.27
15.167	0.00	0.16	0.673	O			3.27
15.250	0.00	0.16	0.672	O			3.26
15.333	0.00	0.16	0.670	O			3.26
15.417	0.00	0.16	0.669	O			3.26
15.500	0.00	0.16	0.668	O			3.25
15.583	0.00	0.16	0.667	O			3.25
15.667	0.00	0.16	0.666	O			3.25
15.750	0.00	0.16	0.665	O			3.24
15.833	0.00	0.16	0.664	O			3.24
15.917	0.00	0.16	0.663	O			3.23
16.000	0.00	0.16	0.662	O			3.23
16.083	0.00	0.16	0.661	O			3.23
16.167	0.00	0.15	0.660	O			3.22
16.250	0.00	0.15	0.659	O			3.22
16.333	0.00	0.15	0.657	O			3.22
16.417	0.00	0.15	0.656	O			3.21
16.500	0.00	0.15	0.655	O			3.21
16.583	0.00	0.15	0.654	O			3.20
16.667	0.00	0.15	0.653	O			3.20
16.750	0.00	0.15	0.652	O			3.20
16.833	0.00	0.15	0.651	O			3.19
16.917	0.00	0.15	0.650	O			3.19
17.000	0.00	0.15	0.649	O			3.19
17.083	0.00	0.15	0.648	O			3.18
17.167	0.00	0.15	0.647	O			3.18
17.250	0.00	0.15	0.646	O			3.18
17.333	0.00	0.14	0.645	O			3.17
17.417	0.00	0.14	0.644	O			3.17
17.500	0.00	0.14	0.643	O			3.17
17.583	0.00	0.14	0.642	O			3.16
17.667	0.00	0.14	0.641	O			3.16
17.750	0.00	0.14	0.640	O			3.16
17.833	0.00	0.14	0.639	O			3.15
17.917	0.00	0.14	0.638	O			3.15
18.000	0.00	0.14	0.637	O			3.15
18.083	0.00	0.14	0.636	O			3.14
18.167	0.00	0.14	0.635	O			3.14
18.250	0.00	0.14	0.634	O			3.13
18.333	0.00	0.14	0.634	O			3.13
18.417	0.00	0.14	0.633	O			3.13
18.500	0.00	0.14	0.632	O			3.13
18.583	0.00	0.13	0.631	O			3.12
18.667	0.00	0.13	0.630	O			3.12

18.750	0.00	0.13	0.629	O				3.12
18.833	0.00	0.13	0.628	O				3.11
18.917	0.00	0.13	0.627	O				3.11
19.000	0.00	0.13	0.626	O				3.11
19.083	0.00	0.13	0.625	O				3.10
19.167	0.00	0.13	0.624	O				3.10
19.250	0.00	0.13	0.623	O				3.10
19.333	0.00	0.13	0.623	O				3.10
19.417	0.00	0.13	0.622	O				3.09
19.500	0.00	0.13	0.621	O				3.09
19.583	0.00	0.13	0.620	O				3.09
19.667	0.00	0.13	0.619	O				3.08
19.750	0.00	0.13	0.618	O				3.08
19.833	0.00	0.13	0.617	O				3.08
19.917	0.00	0.12	0.616	O				3.07
20.000	0.00	0.12	0.616	O				3.07
20.083	0.00	0.12	0.615	O				3.07
20.167	0.00	0.12	0.614	O				3.07
20.250	0.00	0.12	0.613	O				3.06
20.333	0.00	0.12	0.612	O				3.06
20.417	0.00	0.12	0.611	O				3.06
20.500	0.00	0.12	0.611	O				3.05
20.583	0.00	0.12	0.610	O				3.05
20.667	0.00	0.12	0.609	O				3.05
20.750	0.00	0.12	0.608	O				3.05
20.833	0.00	0.12	0.607	O				3.04
20.917	0.00	0.12	0.606	O				3.04
21.000	0.00	0.12	0.606	O				3.04
21.083	0.00	0.12	0.605	O				3.03
21.167	0.00	0.12	0.604	O				3.03
21.250	0.00	0.12	0.603	O				3.03
21.333	0.00	0.12	0.602	O				3.03
21.417	0.00	0.11	0.602	O				3.02
21.500	0.00	0.11	0.601	O				3.02
21.583	0.00	0.11	0.600	O				3.02
21.667	0.00	0.11	0.599	O				3.01
21.750	0.00	0.11	0.599	O				3.01
21.833	0.00	0.11	0.598	O				3.01
21.917	0.00	0.11	0.597	O				3.01
22.000	0.00	0.11	0.596	O				3.00
22.083	0.00	0.11	0.595	O				3.00
22.167	0.00	0.11	0.595	O				3.00
22.250	0.00	0.11	0.594	O				3.00
22.333	0.00	0.11	0.593	O				2.99
22.417	0.00	0.11	0.592	O				2.99
22.500	0.00	0.11	0.592	O				2.99
22.583	0.00	0.11	0.591	O				2.99
22.667	0.00	0.11	0.590	O				2.98
22.750	0.00	0.11	0.589	O				2.98
22.833	0.00	0.11	0.589	O				2.98
22.917	0.00	0.11	0.588	O				2.98
23.000	0.00	0.10	0.587	O				2.97
23.083	0.00	0.10	0.587	O				2.97
23.167	0.00	0.10	0.586	O				2.97
23.250	0.00	0.10	0.585	O				2.97
23.333	0.00	0.10	0.584	O				2.96
23.417	0.00	0.10	0.584	O				2.96
23.500	0.00	0.10	0.583	O				2.96
23.583	0.00	0.10	0.582	O				2.96
23.667	0.00	0.10	0.582	O				2.95
23.750	0.00	0.10	0.581	O				2.95
23.833	0.00	0.10	0.580	O				2.95
23.917	0.00	0.10	0.580	O				2.95
24.000	0.00	0.10	0.579	O				2.94

Remaining water in basin = 0.16 (Ac.Ft)

*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/peak flow rate = 0.243 (CFS)
Total volume = 0.738 (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

SEATON
10-YEAR 6 HOUR ROUTING

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR10610.rte
***** HYDROGRAPH DATA *****
Number of intervals = 75
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 10.279 (CFS)
Total volume = 1.342 (Ac.Ft)
Status of hydrographs being held in storage
Stream 1 Stream 2 Stream 3 Stream 4 Stream 5
Peak (CFS) 0.000 0.000 0.000 0.000 0.000
Vol (Ac.Ft) 0.000 0.000 0.000 0.000 0.000

+++++
Process from Point/Station 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 75
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00 (Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (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
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	2.6	5.14	7.71	10.28	(Ft.)	Depth
0.083	0.48	0.00	0.002	O I						0.01
0.167	0.97	0.00	0.007	O I						0.04
0.250	1.12	0.00	0.014	O I						0.08
0.333	1.16	0.00	0.022	O I						0.12
0.417	1.16	0.00	0.030	O I						0.16
0.500	1.26	0.00	0.038	O I						0.21
0.583	1.33	0.00	0.047	O I						0.26
0.667	1.35	0.00	0.056	O I						0.31
0.750	1.35	0.00	0.065	O I						0.36
0.833	1.35	0.00	0.075	O I						0.41
0.917	1.35	0.00	0.084	O I						0.47
1.000	1.45	0.01	0.093	O I						0.52
1.083	1.53	0.01	0.104	O I						0.58
1.167	1.54	0.01	0.114	O I						0.63
1.250	1.55	0.01	0.125	O I						0.69
1.333	1.55	0.01	0.135	O I						0.75
1.417	1.55	0.01	0.146	O I						0.81
1.500	1.55	0.01	0.157	O I						0.87
1.583	1.55	0.01	0.167	O I						0.93
1.667	1.55	0.01	0.178	O I						0.99
1.750	1.55	0.01	0.188	O I						1.05
1.833	1.55	0.01	0.199	O I						1.11
1.917	1.55	0.01	0.210	O I						1.16
2.000	1.64	0.01	0.220	O I						1.22
2.083	1.63	0.01	0.232	O I						1.29
2.167	1.66	0.01	0.243	O I						1.35

2.250	1.73	0.01	0.254	O	I					1.41
2.333	1.74	0.01	0.266	O	I					1.48
2.417	1.74	0.01	0.278	O	I					1.55
2.500	1.74	0.01	0.290	O	I					1.61
2.583	1.74	0.01	0.302	O	I					1.68
2.667	1.74	0.01	0.314	O	I					1.74
2.750	1.84	0.01	0.326	O	I					1.81
2.833	1.91	0.01	0.339	O	I					1.88
2.917	1.93	0.01	0.352	O	I					1.96
3.000	1.93	0.01	0.365	O	I					2.03
3.083	1.93	0.01	0.379	O	I					2.10
3.167	2.03	0.01	0.392	O	I					2.18
3.250	2.11	0.01	0.406	O	I					2.26
3.333	2.12	0.01	0.421	O	I					2.34
3.417	2.22	0.01	0.436	O	I					2.42
3.500	2.40	0.01	0.452	O	I					2.51
3.583	2.59	0.02	0.469	O	I					2.56
3.667	2.68	0.04	0.487	O	I					2.63
3.750	2.80	0.05	0.505	O	I					2.69
3.833	2.88	0.06	0.524	O	I					2.76
3.917	2.99	0.07	0.544	O	I					2.82
4.000	3.07	0.09	0.565	O	I					2.89
4.083	3.18	0.10	0.585	O	I					2.97
4.167	3.36	0.12	0.607	O	I					3.04
4.250	3.55	0.13	0.630	O	I					3.12
4.333	3.75	0.15	0.654	O	I					3.20
4.417	3.94	0.17	0.680	O	I					3.29
4.500	4.04	0.19	0.706	O	I					3.38
4.583	4.15	0.20	0.733	O	I					3.47
4.667	4.33	0.21	0.761	O	I					3.55
4.750	4.52	0.22	0.789	O	I					3.63
4.833	4.62	0.23	0.819	O	I					3.71
4.917	4.73	0.24	0.850	O	I					3.79
5.000	4.91	0.24	0.882	O	I					3.88
5.083	5.49	0.25	0.916	O	I					3.97
5.167	6.44	0.26	0.955	O	I					4.08
5.250	7.27	0.27	1.000	O	I					4.20
5.333	7.95	0.28	1.051	O	I					4.33
5.417	8.82	0.30	1.107	O	I					4.48
5.500	10.28	0.31	1.170	O	I					4.65
5.583	7.35	0.32	1.229	O	I					4.81
5.667	3.43	0.33	1.264	O	I					4.90
5.750	1.83	0.34	1.280	O	I					4.95
5.833	1.17	0.34	1.288	O	I					4.97
5.917	0.81	0.34	1.292	OI						4.98
6.000	0.53	0.34	1.294	O						4.98
6.083	0.22	0.34	1.295	IO						4.99
6.167	0.04	0.34	1.293	IO						4.98
6.250	0.01	0.34	1.291	IO						4.98
6.333	0.00	0.34	1.289	IO						4.97
6.417	0.00	0.34	1.286	IO						4.96
6.500	0.00	0.34	1.284	IO						4.96
6.583	0.00	0.34	1.282	IO						4.95
6.667	0.00	0.34	1.279	IO						4.94
6.750	0.00	0.33	1.277	IO						4.94
6.833	0.00	0.33	1.275	IO						4.93
6.917	0.00	0.33	1.273	IO						4.93
7.000	0.00	0.33	1.270	IO						4.92
7.083	0.00	0.33	1.268	IO						4.91
7.167	0.00	0.33	1.266	IO						4.91
7.250	0.00	0.33	1.263	IO						4.90
7.333	0.00	0.33	1.261	IO						4.90
7.417	0.00	0.33	1.259	IO						4.89
7.500	0.00	0.33	1.257	IO						4.88
7.583	0.00	0.33	1.254	IO						4.88
7.667	0.00	0.33	1.252	IO						4.87
7.750	0.00	0.33	1.250	IO						4.87
7.833	0.00	0.33	1.247	IO						4.86
7.917	0.00	0.33	1.245	IO						4.85
8.000	0.00	0.33	1.243	IO						4.85
8.083	0.00	0.33	1.241	IO						4.84
8.167	0.00	0.33	1.238	IO						4.84
8.250	0.00	0.33	1.236	IO						4.83
8.333	0.00	0.32	1.234	IO						4.82
8.417	0.00	0.32	1.232	IO						4.82
8.500	0.00	0.32	1.230	IO						4.81
8.583	0.00	0.32	1.227	IO						4.81
8.667	0.00	0.32	1.225	IO						4.80
8.750	0.00	0.32	1.223	IO						4.79
8.833	0.00	0.32	1.221	IO						4.79
8.917	0.00	0.32	1.218	O						4.78
9.000	0.00	0.32	1.216	O						4.78
9.083	0.00	0.32	1.214	O						4.77
9.167	0.00	0.32	1.212	O						4.76
9.250	0.00	0.32	1.210	O						4.76
9.333	0.00	0.32	1.207	O						4.75
9.417	0.00	0.32	1.205	O						4.75
9.500	0.00	0.32	1.203	O						4.74
9.583	0.00	0.32	1.201	O						4.73
9.667	0.00	0.32	1.199	O						4.73
9.750	0.00	0.32	1.196	O						4.72
9.833	0.00	0.32	1.194	O						4.72
9.917	0.00	0.31	1.192	O						4.71
10.000	0.00	0.31	1.190	O						4.71
10.083	0.00	0.31	1.188	O						4.70
10.167	0.00	0.31	1.186	O						4.69
10.250	0.00	0.31	1.183	O						4.69
10.333	0.00	0.31	1.181	O						4.68
10.417	0.00	0.31	1.179	O						4.68

10.500	0.00	0.31	1.177	O		4.67
10.583	0.00	0.31	1.175	O		4.66
10.667	0.00	0.31	1.173	O		4.66
10.750	0.00	0.31	1.171	O		4.65
10.833	0.00	0.31	1.168	O		4.65
10.917	0.00	0.31	1.166	O		4.64
11.000	0.00	0.31	1.164	O		4.64
11.083	0.00	0.31	1.162	O		4.63
11.167	0.00	0.31	1.160	O		4.62
11.250	0.00	0.31	1.158	O		4.62
11.333	0.00	0.31	1.156	O		4.61
11.417	0.00	0.31	1.154	O		4.61
11.500	0.00	0.31	1.152	O		4.60
11.583	0.00	0.31	1.149	O		4.60
11.667	0.00	0.30	1.147	O		4.59
11.750	0.00	0.30	1.145	O		4.59
11.833	0.00	0.30	1.143	O		4.58
11.917	0.00	0.30	1.141	O		4.57
12.000	0.00	0.30	1.139	O		4.57
12.083	0.00	0.30	1.137	O		4.56
12.167	0.00	0.30	1.135	O		4.56
12.250	0.00	0.30	1.133	O		4.55
12.333	0.00	0.30	1.131	O		4.55
12.417	0.00	0.30	1.129	O		4.54
12.500	0.00	0.30	1.127	O		4.54
12.583	0.00	0.30	1.124	O		4.53
12.667	0.00	0.30	1.122	O		4.52
12.750	0.00	0.30	1.120	O		4.52
12.833	0.00	0.30	1.118	O		4.51
12.917	0.00	0.30	1.116	O		4.51
13.000	0.00	0.30	1.114	O		4.50
13.083	0.00	0.30	1.112	O		4.50
13.167	0.00	0.30	1.110	O		4.49
13.250	0.00	0.30	1.108	O		4.49
13.333	0.00	0.29	1.106	O		4.48
13.417	0.00	0.29	1.104	O		4.48
13.500	0.00	0.29	1.102	O		4.47
13.583	0.00	0.29	1.100	O		4.46
13.667	0.00	0.29	1.098	O		4.46
13.750	0.00	0.29	1.096	O		4.45
13.833	0.00	0.29	1.094	O		4.45
13.917	0.00	0.29	1.092	O		4.44
14.000	0.00	0.29	1.090	O		4.44
14.083	0.00	0.29	1.088	O		4.43
14.167	0.00	0.29	1.086	O		4.43
14.250	0.00	0.29	1.084	O		4.42
14.333	0.00	0.29	1.082	O		4.42
14.417	0.00	0.29	1.080	O		4.41
14.500	0.00	0.29	1.078	O		4.41
14.583	0.00	0.29	1.076	O		4.40
14.667	0.00	0.29	1.074	O		4.39
14.750	0.00	0.29	1.072	O		4.39
14.833	0.00	0.29	1.070	O		4.38
14.917	0.00	0.29	1.068	O		4.38
15.000	0.00	0.29	1.066	O		4.37
15.083	0.00	0.29	1.064	O		4.37
15.167	0.00	0.28	1.062	O		4.36
15.250	0.00	0.28	1.060	O		4.36
15.333	0.00	0.28	1.058	O		4.35
15.417	0.00	0.28	1.056	O		4.35
15.500	0.00	0.28	1.054	O		4.34
15.583	0.00	0.28	1.052	O		4.34
15.667	0.00	0.28	1.050	O		4.33
15.750	0.00	0.28	1.048	O		4.33
15.833	0.00	0.28	1.047	O		4.32
15.917	0.00	0.28	1.045	O		4.32
16.000	0.00	0.28	1.043	O		4.31
16.083	0.00	0.28	1.041	O		4.31
16.167	0.00	0.28	1.039	O		4.30
16.250	0.00	0.28	1.037	O		4.30
16.333	0.00	0.28	1.035	O		4.29
16.417	0.00	0.28	1.033	O		4.28
16.500	0.00	0.28	1.031	O		4.28
16.583	0.00	0.28	1.029	O		4.27
16.667	0.00	0.28	1.027	O		4.27
16.750	0.00	0.28	1.025	O		4.26
16.833	0.00	0.28	1.024	O		4.26
16.917	0.00	0.28	1.022	O		4.25
17.000	0.00	0.27	1.020	O		4.25
17.083	0.00	0.27	1.018	O		4.24
17.167	0.00	0.27	1.016	O		4.24
17.250	0.00	0.27	1.014	O		4.23
17.333	0.00	0.27	1.012	O		4.23
17.417	0.00	0.27	1.010	O		4.22
17.500	0.00	0.27	1.008	O		4.22
17.583	0.00	0.27	1.007	O		4.21
17.667	0.00	0.27	1.005	O		4.21
17.750	0.00	0.27	1.003	O		4.20
17.833	0.00	0.27	1.001	O		4.20
17.917	0.00	0.27	0.999	O		4.19
18.000	0.00	0.27	0.997	O		4.19
18.083	0.00	0.27	0.995	O		4.18
18.167	0.00	0.27	0.994	O		4.18
18.250	0.00	0.27	0.992	O		4.17
18.333	0.00	0.27	0.990	O		4.17
18.417	0.00	0.27	0.988	O		4.16
18.500	0.00	0.27	0.986	O		4.16
18.583	0.00	0.27	0.984	O		4.15
18.667	0.00	0.27	0.982	O		4.15

18.750	0.00	0.27	0.981	O			4.14
18.833	0.00	0.27	0.979	O			4.14
18.917	0.00	0.27	0.977	O			4.13
19.000	0.00	0.26	0.975	O			4.13
19.083	0.00	0.26	0.973	O			4.12
19.167	0.00	0.26	0.972	O			4.12
19.250	0.00	0.26	0.970	O			4.12
19.333	0.00	0.26	0.968	O			4.11
19.417	0.00	0.26	0.966	O			4.11
19.500	0.00	0.26	0.964	O			4.10
19.583	0.00	0.26	0.962	O			4.10
19.667	0.00	0.26	0.961	O			4.09
19.750	0.00	0.26	0.959	O			4.09
19.833	0.00	0.26	0.957	O			4.08
19.917	0.00	0.26	0.955	O			4.08
20.000	0.00	0.26	0.953	O			4.07
20.083	0.00	0.26	0.952	O			4.07
20.167	0.00	0.26	0.950	O			4.06
20.250	0.00	0.26	0.948	O			4.06
20.333	0.00	0.26	0.946	O			4.05
20.417	0.00	0.26	0.945	O			4.05
20.500	0.00	0.26	0.943	O			4.04
20.583	0.00	0.26	0.941	O			4.04
20.667	0.00	0.26	0.939	O			4.03
20.750	0.00	0.26	0.938	O			4.03
20.833	0.00	0.26	0.936	O			4.02
20.917	0.00	0.26	0.934	O			4.02
21.000	0.00	0.25	0.932	O			4.01
21.083	0.00	0.25	0.930	O			4.01
21.167	0.00	0.25	0.929	O			4.01
21.250	0.00	0.25	0.927	O			4.00
21.333	0.00	0.25	0.925	O			4.00
21.417	0.00	0.25	0.924	O			3.99
21.500	0.00	0.25	0.922	O			3.99
21.583	0.00	0.25	0.920	O			3.98
21.667	0.00	0.25	0.918	O			3.98
21.750	0.00	0.25	0.917	O			3.97
21.833	0.00	0.25	0.915	O			3.97
21.917	0.00	0.25	0.913	O			3.96
22.000	0.00	0.25	0.911	O			3.96
22.083	0.00	0.25	0.910	O			3.95
22.167	0.00	0.25	0.908	O			3.95
22.250	0.00	0.25	0.906	O			3.95
22.333	0.00	0.25	0.905	O			3.94
22.417	0.00	0.25	0.903	O			3.94
22.500	0.00	0.25	0.901	O			3.93
22.583	0.00	0.25	0.899	O			3.93
22.667	0.00	0.25	0.898	O			3.92
22.750	0.00	0.25	0.896	O			3.92
22.833	0.00	0.25	0.894	O			3.91
22.917	0.00	0.25	0.893	O			3.91
23.000	0.00	0.25	0.891	O			3.90
23.083	0.00	0.24	0.889	O			3.90
23.167	0.00	0.24	0.888	O			3.90
23.250	0.00	0.24	0.886	O			3.89
23.333	0.00	0.24	0.884	O			3.89
23.417	0.00	0.24	0.883	O			3.88
23.500	0.00	0.24	0.881	O			3.88
23.583	0.00	0.24	0.879	O			3.87
23.667	0.00	0.24	0.878	O			3.87
23.750	0.00	0.24	0.876	O			3.86
23.833	0.00	0.24	0.874	O			3.86
23.917	0.00	0.24	0.873	O			3.86
24.000	0.00	0.24	0.871	O			3.85

Remaining water in basin = 0.18 (Ac.Ft)

*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.339 (CFS)
Total volume = 1.166 (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

SEATON
10-YEAR 24 HOUR

Program License Serial Number 6400

***** HYDROGRAPH INFORMATION *****

From study/file name: 2712PR102410.rte
***** HYDROGRAPH DATA *****
Number of intervals = 291
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 3.885 (CFS)
Total volume = 2.361 (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 100.000 to Point/Station 100.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 291
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

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

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (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
1.000	0.180	0.010	0.180	0.180
2.500	0.450	0.010	0.450	0.450
3.500	0.740	0.210	0.739	0.741
5.000	1.300	0.340	1.299	1.301
6.000	1.630	0.390	1.629	1.631
7.000	1.840	0.660	1.838	1.842
7.750	1.980	0.770	1.977	1.983
8.750	1.990	2.500	1.981	1.999

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.0	1.94	2.91	3.88 (Ft.)
0.083	0.11	0.00	0.000	O				0.00
0.167	0.21	0.00	0.001	O I				0.01
0.250	0.22	0.00	0.003	O I				0.02
0.333	0.29	0.00	0.005	O I				0.03
0.417	0.33	0.00	0.007	O I				0.04
0.500	0.34	0.00	0.009	O I				0.05
0.583	0.34	0.00	0.011	O I				0.06
0.667	0.34	0.00	0.014	O I				0.08
0.750	0.34	0.00	0.016	O I				0.09
0.833	0.40	0.00	0.019	O I				0.10
0.917	0.45	0.00	0.022	O I				0.12
1.000	0.45	0.00	0.025	O I				0.14
1.083	0.40	0.00	0.028	O I				0.15
1.167	0.35	0.00	0.030	O I				0.17
1.250	0.35	0.00	0.033	O I				0.18
1.333	0.34	0.00	0.035	O I				0.19
1.417	0.34	0.00	0.037	O I				0.21
1.500	0.34	0.00	0.040	O I				0.22
1.583	0.34	0.00	0.042	O I				0.23
1.667	0.34	0.00	0.044	O I				0.25
1.750	0.34	0.00	0.047	O I				0.26
1.833	0.40	0.00	0.049	O I				0.27
1.917	0.45	0.00	0.052	O I				0.29
2.000	0.45	0.00	0.055	O I				0.31
2.083	0.46	0.00	0.058	O I				0.32
2.167	0.46	0.00	0.061	O I				0.34

2.250	0.46	0.00	0.065	○	I				0.36
2.333	0.46	0.00	0.068	○	I				0.38
2.417	0.46	0.00	0.071	○	I				0.39
2.500	0.46	0.00	0.074	○	I				0.41
2.583	0.51	0.00	0.077	○	I				0.43
2.667	0.56	0.00	0.081	○	I				0.45
2.750	0.57	0.00	0.085	○	I				0.47
2.833	0.57	0.00	0.089	○	I				0.49
2.917	0.57	0.01	0.093	○	I				0.51
3.000	0.57	0.01	0.096	○	I				0.54
3.083	0.57	0.01	0.100	○	I				0.56
3.167	0.57	0.01	0.104	○	I				0.58
3.250	0.57	0.01	0.108	○	I				0.60
3.333	0.57	0.01	0.112	○	I				0.62
3.417	0.57	0.01	0.116	○	I				0.64
3.500	0.57	0.01	0.120	○	I				0.67
3.583	0.57	0.01	0.124	○	I				0.69
3.667	0.57	0.01	0.128	○	I				0.71
3.750	0.57	0.01	0.132	○	I				0.73
3.833	0.63	0.01	0.136	○	I				0.75
3.917	0.67	0.01	0.140	○	I				0.78
4.000	0.68	0.01	0.145	○	I				0.80
4.083	0.69	0.01	0.149	○	I				0.83
4.167	0.69	0.01	0.154	○	I				0.86
4.250	0.69	0.01	0.159	○	I				0.88
4.333	0.74	0.01	0.163	○	I				0.91
4.417	0.79	0.01	0.169	○	I				0.94
4.500	0.80	0.01	0.174	○	I				0.97
4.583	0.80	0.01	0.180	○	I				1.00
4.667	0.80	0.01	0.185	○	I				1.03
4.750	0.80	0.01	0.190	○	I				1.06
4.833	0.86	0.01	0.196	○	I				1.09
4.917	0.90	0.01	0.202	○	I				1.12
5.000	0.91	0.01	0.208	○	I				1.16
5.083	0.80	0.01	0.214	○	I				1.19
5.167	0.71	0.01	0.219	○	I				1.22
5.250	0.69	0.01	0.224	○	I				1.24
5.333	0.74	0.01	0.229	○	I				1.27
5.417	0.79	0.01	0.234	○	I				1.30
5.500	0.80	0.01	0.239	○	I				1.33
5.583	0.86	0.01	0.245	○	I				1.36
5.667	0.90	0.01	0.251	○	I				1.39
5.750	0.91	0.01	0.257	○	I				1.43
5.833	0.91	0.01	0.263	○	I				1.46
5.917	0.91	0.01	0.270	○	I				1.50
6.000	0.91	0.01	0.276	○	I				1.53
6.083	0.97	0.01	0.282	○	I				1.57
6.167	1.02	0.01	0.289	○	I				1.61
6.250	1.03	0.01	0.296	○	I				1.64
6.333	1.03	0.01	0.303	○	I				1.68
6.417	1.03	0.01	0.310	○	I				1.72
6.500	1.03	0.01	0.317	○	I				1.76
6.583	1.08	0.01	0.324	○	I				1.80
6.667	1.13	0.01	0.332	○	I				1.84
6.750	1.14	0.01	0.340	○	I				1.89
6.833	1.14	0.01	0.347	○	I				1.93
6.917	1.14	0.01	0.355	○	I				1.97
7.000	1.14	0.01	0.363	○	I				2.02
7.083	1.14	0.01	0.371	○	I				2.06
7.167	1.14	0.01	0.379	○	I				2.10
7.250	1.14	0.01	0.386	○	I				2.15
7.333	1.20	0.01	0.394	○	I				2.19
7.417	1.25	0.01	0.403	○	I				2.24
7.500	1.25	0.01	0.411	○	I				2.28
7.583	1.31	0.01	0.420	○	I				2.33
7.667	1.36	0.01	0.429	○	I				2.38
7.750	1.37	0.01	0.438	○	I				2.44
7.833	1.43	0.01	0.448	○	I				2.49
7.917	1.47	0.02	0.458	○	I				2.53
8.000	1.48	0.02	0.468	○	I				2.56
8.083	1.60	0.03	0.478	○	I				2.60
8.167	1.69	0.04	0.489	○	I				2.64
8.250	1.71	0.05	0.501	○	I				2.68
8.333	1.71	0.05	0.512	○	I				2.71
8.417	1.71	0.06	0.524	○	I				2.75
8.500	1.71	0.07	0.535	○	I				2.79
8.583	1.77	0.08	0.547	○	I				2.83
8.667	1.82	0.08	0.558	○	I				2.87
8.750	1.83	0.09	0.570	○	I				2.91
8.833	1.88	0.10	0.582	○	I				2.96
8.917	1.93	0.11	0.595	○	I				3.00
9.000	1.94	0.12	0.607	○	I				3.04
9.083	2.06	0.13	0.620	○	I				3.09
9.167	2.15	0.14	0.634	○	I				3.13
9.250	2.17	0.15	0.648	○	I				3.18
9.333	2.23	0.16	0.662	○	I				3.23
9.417	2.27	0.17	0.676	○	I				3.28
9.500	2.28	0.18	0.691	○	I				3.33
9.583	2.34	0.19	0.705	○	I				3.38
9.667	2.39	0.20	0.720	○	I				3.43
9.750	2.40	0.21	0.735	○	I				3.48
9.833	2.46	0.21	0.751	○	I				3.53
9.917	2.50	0.22	0.766	○	I				3.57
10.000	2.51	0.22	0.782	○	I				3.61
10.083	2.12	0.22	0.796	○	I				3.65
10.167	1.79	0.23	0.808	○	I				3.68
10.250	1.73	0.23	0.819	○	I				3.71
10.333	1.71	0.23	0.829	○	I				3.74
10.417	1.71	0.23	0.839	○	I				3.77

10.500	1.71	0.24	0.850	I		3.79
10.583	2.00	0.24	0.861	I		3.82
10.667	2.23	0.24	0.874	I		3.86
10.750	2.27	0.24	0.888	I		3.90
10.833	2.29	0.25	0.902	I		3.93
10.917	2.29	0.25	0.916	I		3.97
11.000	2.29	0.25	0.930	I		4.01
11.083	2.23	0.26	0.943	I		4.04
11.167	2.18	0.26	0.957	I		4.08
11.250	2.17	0.26	0.970	I		4.12
11.333	2.17	0.27	0.983	I		4.15
11.417	2.17	0.27	0.996	I		4.19
11.500	2.17	0.27	1.009	I		4.22
11.583	2.06	0.28	1.022	I		4.26
11.667	1.96	0.28	1.034	I		4.29
11.750	1.95	0.28	1.045	I		4.32
11.833	2.00	0.28	1.057	I		4.35
11.917	2.05	0.29	1.069	I		4.38
12.000	2.05	0.29	1.081	I		4.41
12.083	2.45	0.29	1.095	I		4.45
12.167	2.78	0.30	1.111	I		4.49
12.250	2.84	0.30	1.128	I		4.54
12.333	2.91	0.30	1.146	I		4.59
12.417	2.96	0.31	1.164	I		4.64
12.500	2.97	0.31	1.182	I		4.68
12.583	3.08	0.32	1.201	I		4.73
12.667	3.18	0.32	1.220	I		4.79
12.750	3.19	0.33	1.240	I		4.84
12.833	3.26	0.33	1.260	I		4.89
12.917	3.30	0.34	1.280	I		4.95
13.000	3.31	0.34	1.300	I		5.00
13.083	3.60	0.34	1.322	I		5.07
13.167	3.83	0.35	1.345	I		5.14
13.250	3.87	0.35	1.369	I		5.21
13.333	3.88	0.35	1.393	I		5.28
13.417	3.88	0.36	1.418	I		5.36
13.500	3.88	0.36	1.442	I		5.43
13.583	3.26	0.36	1.464	I		5.50
13.667	2.75	0.37	1.482	I		5.55
13.750	2.66	0.37	1.498	I		5.60
13.833	2.63	0.37	1.514	I		5.65
13.917	2.63	0.37	1.530	I		5.70
14.000	2.63	0.38	1.545	I		5.74
14.083	2.85	0.38	1.561	I		5.79
14.167	3.04	0.38	1.579	I		5.85
14.250	3.07	0.39	1.597	I		5.90
14.333	3.03	0.39	1.616	I		5.96
14.417	2.98	0.39	1.634	I		6.02
14.500	2.97	0.42	1.652	I		6.10
14.583	2.97	0.44	1.669	I		6.19
14.667	2.97	0.46	1.686	I		6.27
14.750	2.97	0.48	1.704	I		6.35
14.833	2.91	0.51	1.720	I		6.43
14.917	2.87	0.53	1.737	I		6.51
15.000	2.86	0.55	1.753	I		6.58
15.083	2.80	0.57	1.768	I		6.66
15.167	2.75	0.59	1.784	I		6.73
15.250	2.74	0.61	1.798	I		6.80
15.333	2.69	0.63	1.813	I		6.87
15.417	2.64	0.64	1.827	I		6.94
15.500	2.63	0.66	1.841	I		7.00
15.583	2.40	0.67	1.853	I		7.07
15.667	2.22	0.68	1.865	I		7.13
15.750	2.18	0.69	1.875	I		7.19
15.833	2.17	0.70	1.885	I		7.24
15.917	2.17	0.70	1.895	I		7.30
16.000	2.17	0.71	1.905	I		7.35
16.083	1.32	0.72	1.913	I		7.39
16.167	0.63	0.72	1.914	I		7.40
16.250	0.50	0.72	1.913	IO		7.39
16.333	0.46	0.72	1.912	IO		7.38
16.417	0.46	0.71	1.910	IO		7.37
16.500	0.46	0.71	1.908	IO		7.36
16.583	0.40	0.71	1.906	IO		7.35
16.667	0.35	0.71	1.904	IO		7.34
16.750	0.35	0.71	1.901	IO		7.33
16.833	0.34	0.71	1.899	IO		7.31
16.917	0.34	0.70	1.896	IO		7.30
17.000	0.34	0.70	1.894	IO		7.29
17.083	0.46	0.70	1.892	IO		7.28
17.167	0.55	0.70	1.890	IO		7.27
17.250	0.57	0.70	1.889	IO		7.26
17.333	0.57	0.70	1.888	IO		7.26
17.417	0.57	0.70	1.888	IO		7.26
17.500	0.57	0.70	1.887	IO		7.25
17.583	0.57	0.70	1.886	IO		7.25
17.667	0.57	0.70	1.885	IO		7.24
17.750	0.57	0.69	1.884	IO		7.24
17.833	0.51	0.69	1.883	IO		7.23
17.917	0.47	0.69	1.882	IO		7.22
18.000	0.46	0.69	1.880	IO		7.22
18.083	0.46	0.69	1.879	IO		7.21
18.167	0.46	0.69	1.877	IO		7.20
18.250	0.46	0.69	1.875	IO		7.19
18.333	0.46	0.69	1.874	IO		7.18
18.417	0.46	0.69	1.872	IO		7.17
18.500	0.46	0.68	1.871	IO		7.16
18.583	0.40	0.68	1.869	IO		7.15
18.667	0.35	0.68	1.867	IO		7.14

18.750	0.35	0.68	1.865	I	O					7.13
18.833	0.29	0.68	1.862	I	O					7.12
18.917	0.24	0.68	1.859	I	O					7.10
19.000	0.23	0.67	1.856	I	O					7.09
19.083	0.29	0.67	1.853	I	O					7.07
19.167	0.33	0.67	1.851	I	O					7.06
19.250	0.34	0.67	1.849	I	O					7.05
19.333	0.40	0.67	1.846	I	O					7.03
19.417	0.45	0.66	1.845	I	O					7.03
19.500	0.45	0.66	1.843	I	O					7.02
19.583	0.40	0.66	1.842	I	O					7.01
19.667	0.35	0.66	1.840	I	O					7.00
19.750	0.35	0.66	1.838	I	O					6.99
19.833	0.29	0.65	1.835	I	O					6.98
19.917	0.24	0.65	1.833	I	O					6.96
20.000	0.23	0.65	1.830	I	O					6.95
20.083	0.29	0.64	1.827	I	O					6.94
20.167	0.33	0.64	1.825	I	O					6.93
20.250	0.34	0.64	1.823	I	O					6.92
20.333	0.34	0.64	1.821	I	O					6.91
20.417	0.34	0.63	1.819	I	O					6.90
20.500	0.34	0.63	1.817	I	O					6.89
20.583	0.34	0.63	1.815	I	O					6.88
20.667	0.34	0.63	1.813	I	O					6.87
20.750	0.34	0.62	1.811	I	O					6.86
20.833	0.29	0.62	1.809	I	O					6.85
20.917	0.24	0.62	1.806	I	O					6.84
21.000	0.23	0.61	1.804	I	O					6.83
21.083	0.29	0.61	1.801	I	O					6.82
21.167	0.33	0.61	1.799	I	O					6.81
21.250	0.34	0.61	1.797	I	O					6.80
21.333	0.29	0.60	1.795	I	O					6.79
21.417	0.24	0.60	1.793	I	O					6.78
21.500	0.23	0.60	1.790	I	O					6.76
21.583	0.29	0.59	1.788	I	O					6.75
21.667	0.33	0.59	1.786	I	O					6.74
21.750	0.34	0.59	1.784	I	O					6.74
21.833	0.29	0.59	1.783	I	O					6.73
21.917	0.24	0.58	1.780	I	O					6.72
22.000	0.23	0.58	1.778	I	O					6.70
22.083	0.29	0.58	1.776	I	O					6.69
22.167	0.33	0.58	1.774	I	O					6.69
22.250	0.34	0.57	1.772	I	O					6.68
22.333	0.29	0.57	1.771	I	O					6.67
22.417	0.24	0.57	1.768	I	O					6.66
22.500	0.23	0.57	1.766	I	O					6.65
22.583	0.23	0.56	1.764	I	O					6.64
22.667	0.23	0.56	1.762	I	O					6.63
22.750	0.23	0.56	1.759	I	O					6.62
22.833	0.23	0.55	1.757	I	O					6.60
22.917	0.23	0.55	1.755	I	O					6.59
23.000	0.23	0.55	1.753	I	O					6.58
23.083	0.23	0.54	1.750	I	O					6.57
23.167	0.23	0.54	1.748	I	O					6.56
23.250	0.23	0.54	1.746	I	O					6.55
23.333	0.23	0.54	1.744	I	O					6.54
23.417	0.23	0.53	1.742	I	O					6.53
23.500	0.23	0.53	1.740	I	O					6.52
23.583	0.23	0.53	1.738	I	O					6.51
23.667	0.23	0.53	1.736	I	O					6.50
23.750	0.23	0.52	1.734	I	O					6.49
23.833	0.23	0.52	1.732	I	O					6.48
23.917	0.23	0.52	1.730	I	O					6.47
24.000	0.23	0.52	1.728	I	O					6.46

Remaining water in basin = 0.20 (Ac.Ft)

*****HYDROGRAPH DATA*****
Number of intervals = 5001
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 0.718 (CFS)
Total volume = 2.159 (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

APPENDIX D

HYDRAULIC CALCULATIONS

DATE: 1/19/2020
TIME: 12:27

F0515P
WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIERS	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	66	4			5.50														
CD	48	4			4.00														
CD	42	4			3.50														
CD	24	4			2.00														

F 0 5 1 5 P

PAGE NO 3

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

TEI JOB NO 2712

HEADING LINE NO 2 IS -

PUBLIC STORM DRAIN LINE A

HEADING LINE NO 3 IS -

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F 0 5 1 5 P

PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	1 IS A SYSTEM OUTLET U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	W S ELEV			
		1000.00	1507.91	66															1511.60				
ELEMENT NO	2 IS A REACH U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	RADIUS 0.00	ANGLE 0.00	ANG PT 0.00	MAN H 0	
		1319.04	1510.27	66															0.013				
ELEMENT NO	3 IS A JUNCTION U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*	*	Q3 18.5	Q4 0.0	INVERT-3 1511.81	INVERT-4 0.00	PHI 3 45.00	PHI 4 0.00
		1323.71	1510.31	66	24	0	0.013																
ELEMENT NO	4 IS A REACH U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*	*		RADIUS 0.00	ANGLE 0.00	ANG PT 0.00	MAN H 0	
		1437.24	1511.00	66															0.013				
ELEMENT NO	5 IS A JUNCTION U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*	Q3 16.1	Q4 0.0	INVERT-3 1511.04	INVERT-4 0.00	PHI 3 45.00	PHI 4 0.00	
		1442.46	1511.10	66	24	0	0.013																
ELEMENT NO	6 IS A REACH U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*		RADIUS 0.00	ANGLE 0.00	ANG PT 0.00	MAN H 0		
		1624.86	1514.07	66															0.013				
ELEMENT NO	7 IS A REACH U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*		RADIUS 0.00	ANGLE 0.00	ANG PT 0.00	MAN H 0		
		1629.53	1514.13	66														0.013					
ELEMENT NO	8 IS A REACH U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*		RADIUS 0.00	ANGLE 0.00	ANG PT 0.00	MAN H 0		
		1922.97	1517.80	66														0.013					
ELEMENT NO	9 IS A REACH U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*		RADIUS 0.00	ANGLE 0.00	ANG PT 0.00	MAN H 1		
		1927.63	1517.85	66														0.013					
ELEMENT NO	10 IS A REACH U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*		RADIUS 494.00	ANGLE 10.00	ANG PT 0.00	MAN H 0		
		2041.54	1519.28	66														0.013					
ELEMENT NO	11 IS A JUNCTION U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*	Q3 73.7	Q4 0.0	INVERT-3 1520.03	INVERT-4 0.00	PHI 3 90.00	PHI 4 0.00	
		2041.54	1519.28	66	42	0	0.013																

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING □

PAGE NO 3

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	12 IS A REACH U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	RADIUS 494.00	ANGLE 5.00	ANG PT 0.00	MAN H 0
		2060.92	1519.52	66														0.013					
ELEMENT NO	13 IS A REACH U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*	*		RADIUS 0.00	ANGLE 0.00	ANG PT 0.00	MAN H 0	
		2067.12	1519.60	66														0.013					
ELEMENT NO	14 IS A SYSTEM HEADWORKS U/S DATA	STATION	INVERT	SECT	*	*	*	*	*	*	*	*	*	*	*	*	*		W S ELEV 0.00				
		2067.12	1519.60	66																			

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING
** WARNING NO. 2 ** - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN HDWKDS, W.S.ELEV = INV + DC
LICENSEE: THIENES ENGINEERING

PAGE 1

WATER SURFACE PROFILE LISTING

TEI JOB NO 2712
PUBLIC STORM DRAIN LINE A

100

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO				SF AVE	HF			NORM DEPTH			ZR		
1000.00	1507.91	3.161	1511.071	180.0	12.74	2.520	1513.591	0.00	3.754	5.50	0.00	0.00	0	0.00
116.22	0.00740					.007185	0.84		3.145			0.00		
1116.22	1508.77	3.187	1511.957	180.0	12.61	2.470	1514.427	0.00	3.754	5.50	0.00	0.00	0	0.00
133.42	0.00740					.006681	0.89		3.145			0.00		
1249.64	1509.76	3.316	1513.073	180.0	12.02	2.245	1515.318	0.00	3.754	5.50	0.00	0.00	0	0.00
45.91	0.00740					.005914	0.27		3.145			0.00		
1295.55	1510.10	3.452	1513.548	180.0	11.46	2.041	1515.589	0.00	3.754	5.50	0.00	0.00	0	0.00
18.83	0.00740					.005243	0.10		3.145			0.00		
1314.38	1510.24	3.597	1513.833	180.0	10.93	1.855	1515.688	0.00	3.754	5.50	0.00	0.00	0	0.00
4.66	0.00740					.004658	0.02		3.145			0.00		
1319.04	1510.27	3.754	1514.024	180.0	10.42	1.686	1515.710	0.00	3.754	5.50	0.00	0.00	0	0.00
JUNCT STR	0.00856					.003285	0.02					0.00		
1323.71	1510.31	4.666	1514.976	161.5	7.52	0.877	1515.853	0.00	3.550	5.50	0.00	0.00	0	0.00
40.42	0.00608					.002289	0.09		3.124			0.00		
1364.13	1510.56	4.425	1514.981	161.5	7.88	0.965	1515.946	0.00	3.550	5.50	0.00	0.00	0	0.00
6.21	0.00608					.002413	0.01		3.124			0.00		
1370.34	1510.59	4.389	1514.983	161.5	7.94	0.980	1515.963	0.00	3.550	5.50	0.00	0.00	0	0.00
HYDRAULIC JUMP												0.00		
1370.34	1510.59	2.848	1513.442	161.5	13.01	2.627	1516.069	0.00	3.550	5.50	0.00	0.00	0	0.00
10.55	0.00608					.008311	0.09		3.124			0.00		
1380.89	1510.66	2.830	1513.488	161.5	13.11	2.668	1516.156	0.00	3.550	5.50	0.00	0.00	0	0.00
56.35	0.00608					.008965	0.51		3.124			0.00		

□

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TEI JOB NO 2712
PUBLIC STORM DRAIN LINE A
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STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO				SF AVE	HF			NORM DEPTH			ZR		
1437.24	1511.00	2.726	1513.726	161.5	13.75	2.935	1516.661	0.00	3.550	5.50	0.00	0.00	0	0.00
JUNCT STR	0.01916					.012350	0.06					0.00		
1442.46	1511.10	2.252	1513.352	145.4	15.88	3.918	1517.270	0.00	3.362	5.50	0.00	0.00	0	0.00
103.78	0.01628					.014561	1.51		2.208			0.00		
1546.24	1512.79	2.303	1515.093	145.4	15.41	3.686	1518.779	0.00	3.362	5.50	0.00	0.00	0	0.00
78.62	0.01628					.013107	1.03		2.208			0.00		
1624.86	1514.07	2.389	1516.459	145.4	14.69	3.351	1519.810	0.00	3.362	5.50	0.00	0.00	0	0.00
4.67	0.01285					.012252	0.06		2.357			0.00		
1629.53	1514.13	2.390	1516.520	145.4	14.68	3.348	1519.868	0.00	3.362	5.50	0.00	0.00	0	0.00
212.90	0.01251					.011547	2.46		2.375			0.00		
1842.43	1516.79	2.472	1519.265	145.4	14.04	3.063	1522.328	0.00	3.362	5.50	0.00	0.00	0	0.00
80.54	0.01251					.010195	0.82		2.375			0.00		
1922.97	1517.80	2.564	1520.364	145.4	13.39	2.784	1523.148	0.00	3.362	5.50	0.00	0.00	0	0.00
4.66	0.01073					.009524	0.04		2.480			0.00		
1927.63	1517.85	2.567	1520.417	145.4	13.37	2.777	1523.194	0.00	3.362	5.50	0.00	0.00	0	0.00
2.44	0.01255					.009479	0.02		2.373			0.00		
1930.07	1517.88	2.571	1520.452	145.4	13.34	2.765	1523.217	0.00	3.362	5.50	0.00	0.00	0	0.00
42.03	0.01255					.008882	0.37		2.373			0.00		

1972.10	1518.41	2.668	1521.076	145.4	12.72	2.513	1523.589	0.00	3.362	5.50	0.00	0.00	0	0.00
26.91	0.01255					.007817	0.21			2.373		0.00		
1999.01	1518.75	2.769	1521.515	145.4	12.13	2.285	1523.800	0.00	3.362	5.50	0.00	0.00	0	0.00
17.94	0.01255					.006884	0.12			2.373		0.00		

□ LICENSEE: THIENES ENGINEERING

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WATER SURFACE PROFILE LISTING

PAGE 3

TEI JOB NO 2712
PUBLIC STORM DRAIN LINE A
100

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD.EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	NO PIER	AVBPR
L/ELEM	SO				SF AVE	HF			NORM DEPTH				ZR	
2016.95	1518.97	2.875	1521.846	145.4	11.57	2.077	1523.923	0.00	3.362	5.50	0.00	0.00	0	0.00
11.85	0.01255					.006069	0.07			2.373		0.00		
2028.80	1519.12	2.987	1522.107	145.4	11.03	1.888	1523.995	0.00	3.362	5.50	0.00	0.00	0	0.00
7.45	0.01255					.005355	0.04			2.373		0.00		
2036.25	1519.21	3.105	1522.319	145.4	10.51	1.717	1524.036	0.00	3.362	5.50	0.00	0.00	0	0.00
4.10	0.01255					.004730	0.02			2.373		0.00		
2040.35	1519.27	3.229	1522.494	145.4	10.02	1.561	1524.055	0.00	3.362	5.50	0.00	0.00	0	0.00
1.19	0.01255					.004181	0.00			2.373		0.00		
2041.54	1519.28	3.362	1522.642	145.4	9.56	1.418	1524.060	0.00	3.362	5.50	0.00	0.00	0	0.00
JUNCT STR	0.00000					.002160	0.00					0.00		
2041.54	1519.28	5.244	1524.524	71.7	3.07	0.146	1524.670	0.00	2.323	5.50	0.00	0.00	0	0.00
19.38	0.01238					.000397	0.01			1.632		0.00		
2060.92	1519.52	5.003	1524.523	71.7	3.16	0.155	1524.678	0.00	2.323	5.50	0.00	0.00	0	0.00
6.20	0.01290					.000401	0.00			1.615		0.00		
2067.12	1519.60	4.922	1524.522	71.7	3.20	0.159	1524.681	0.00	2.323	5.50	0.00	0.00	0	
0.00□														

TEI JOB NO 2712
PUBLIC STORM DRAIN LINE A
100

1000.00	I	W C	H E							R
1018.09	.									.
1036.17	.									.
1054.26	.									.
1072.35	.									.
1090.43	.									.
1108.52	.									.
1126.61	I	W C	HE							R
1144.69	.									.
1162.78	.									.
1180.87	.									.
1198.95	.									.
1217.04	.									.
1235.13	.									.
1253.21	I	W C	HE							R
1271.30	.									.
1289.39	.									.
1307.48	I	W C	X							R
1325.56	I	WC	X							R
1343.65	I	X	X							JX
1361.74	I	C	W HE							R
1379.82	I	C	W EH							R
1397.91	I	C	W EH							R
1416.00	I	W C	X							R
1434.08	I	W C	X							R
1452.17	I	W C	HE							JX
1470.26	I	W C	H E							R
1488.34	.									.
1506.43	.									.
1524.52	.									.
1542.60	.									.
1560.69	.									.
1578.78	.									.
1596.86	.									.
1614.95	.									.
1633.04	I	W C	H E							R
1651.12	I	W C	HE							R
1669.21	.									.
1687.30	.									.
1705.38	.									.
1723.47	.									.

1741.56	.	.	.	.	.	.	.	.	.	.	.
1759.64	.	.	.	.	.	.	.	.	.	.	.
1777.73	.	.	.	.	.	.	.	.	.	.	.
1795.82	.	.	.	.	.	.	.	.	.	.	.
1813.91	.	.	.	.	.	.	.	.	.	.	.
1831.99	.	.	.	.	I	W	C	X	.	.	R
1850.08	.	.	.	.	.	.	.	.	.	.	.
1868.17	.	.	.	.	.	.	.	.	.	.	.
1886.25	.	.	.	.	.	.	.	.	.	.	.
1904.34	.	.	.	.	.	.	.	.	.	.	.
1922.43	.	.	.	.	I	W	C	EH	.	.	R
1940.51	.	.	.	.	I	W	C	EH	.	.	R
1958.60	.	.	.	.	I	W	C	X	.	.	R
1976.69	.	.	.	.	I	W	C	E H	.	.	R
1994.77	.	.	.	.	I	W	C	E H	.	.	R
2012.86	.	.	.	.	I	W	C	E H	.	.	R
2030.95	.	.	.	.	I	W	C	E H	.	.	R
2049.03	.	.	.	.	I	W	C	E H	.	.	R
2067.12	.	.	.	.	I	W	C	E H	.	.	R
.											
1507.91	1509.63	1511.35	1513.07	1514.79	1516.51	1518.22	1519.94	1521.66	1523.38	1525.10	

N O T E S

1. GLOSSARY

I = INVERT ELEVATION
 C = CRITICAL DEPTH
 W = WATER SURFACE ELEVATION
 H = HEIGHT OF CHANNEL
 E = ENERGY GRADE LINE
 X = CURVES CROSSING OVER
 B = BRIDGE ENTRANCE OR EXIT
 Y = WALL ENTRANCE OR EXIT

2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY□

DATE: 1/19/2020
TIME: 12:16

F0515P
WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIERS	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	48	4			4.00														
CD	42	4			3.50														
CD	36	4			3.00														
CD	30	4			2.50														

F 0 5 1 5 P

PAGE NO 3

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

TEI JOB NO 2712

HEADING LINE NO 2 IS -

PUBLIC STORM DRAIN LINE B

HEADING LINE NO 3 IS -

100

F 0 5 1 5 P

□

PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	1 IS A SYSTEM OUTLET U/S DATA	STATION	INVERT	SECT	W S ELEV							
		1005.35	1520.30	42	1524.52							
ELEMENT NO	2 IS A REACH U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H				
		1012.32	1520.35	42	0.00	0.00	0.00	0				
					N	0.013						
ELEMENT NO	3 IS A REACH U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H				
		1029.99	1520.46	42	45.00	45.00	0.00	0				
					N	0.013						
ELEMENT NO	4 IS A REACH U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H				
		1275.58	1521.98	42	0.00	0.00	0.00	0				
					N	0.013						
ELEMENT NO	5 IS A JUNCTION U/S DATA	STATION	INVERT	SECT	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	*	*
		1280.25	1522.02	36	36	0.0	1522.52	0.00	45.00	0.00	*	*
					N	0.013						
ELEMENT NO	6 IS A REACH U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H				
		1507.41	1524.25	36	0.00	0.00	0.00	0				
					N	0.013						
ELEMENT NO	7 IS A REACH U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H				
		1525.08	1524.42	36	22.50	45.00	0.00	0				
					N	0.013						
ELEMENT NO	8 IS A REACH U/S DATA	STATION	INVERT	SECT	RADIUS	ANGLE	ANG PT	MAN H				
		1552.53	1524.69	36	0.00	0.00	0.00	0				
					N	0.013						
ELEMENT NO	9 IS A SYSTEM HEADWORKS U/S DATA	STATION	INVERT	SECT	W S ELEV	*	*	*	*	*	*	*
		1552.53	1524.69	36	0.00							

NO EDIT ERRORS ENCOUNTERED-COMPUTATION IS NOW BEGINNING

** WARNING NO. 2 ** - WATER SURFACE ELEVATION GIVEN IS LESS THAN OR EQUALS INVERT ELEVATION IN HDWKDS, W.S.ELEV = INV + DC □
LICENSEE: THIENES ENGINEERING F0515P PAGE 1

WATER SURFACE PROFILE LISTING

TEI JOB NO 2712
PUBLIC STORM DRAIN LINE B
100

STATION	INVERT ELEV	DEPTH OF FLOW	W.S. ELEV	Q	VEL	VEL HEAD	ENERGY GRD. EL.	SUPER ELEV	CRITICAL DEPTH	HGT/ DIA	BASE/ ID NO.	ZL	NO AVBPR PIER
L/ELEM	SO				SF AVE	HF			NORM DEPTH			ZR	
1005.35	1520.30	4.220	1524.520	73.7	7.66	0.911	1525.431	0.00	2.688	3.50	0.00	0.00	0 0.00
6.97	0.00717				.005366	0.04			2.512				0.00
1012.32	1520.35	4.207	1524.557	73.7	7.66	0.911	1525.468	0.00	2.688	3.50	0.00	0.00	0 0.00
17.67	0.00622				.005366	0.09			2.666				0.00
1029.99	1520.46	4.321	1524.781	73.7	7.66	0.911	1525.692	0.00	2.688	3.50	0.00	0.00	0 0.00
245.59	0.00619				.005366	1.32			2.673				0.00
1275.58	1521.98	4.119	1526.099	73.7	7.66	0.911	1527.010	0.00	2.688	3.50	0.00	0.00	0 0.00
JUNCT STR	0.00856				.004205	0.02							0.00
1280.25	1522.02	4.980	1527.000	36.8	5.21	0.421	1527.421	0.00	1.973	3.00	0.00	0.00	0 0.00

227.16	0.00982				.003044	0.69			1.600		0.00		
1507.41	1524.25	3.441	1527.691	36.8	5.21	0.421	1528.112	0.00	1.973	3.00	0.00	0.00	0 0.00
17.67	0.00962				.003044	0.05			1.610		0.00		
1525.08	1524.42	3.385	1527.805	36.8	5.21	0.421	1528.226	0.00	1.973	3.00	0.00	0.00	0 0.00
27.45	0.00984				.003044	0.08			1.600		0.00		
1552.53	1524.69	3.198	1527.888	36.8	5.21	0.421	1528.309	0.00	1.973	3.00	0.00	0.00	0
0.00□													

TEI JOB NO 2712
PUBLIC STORM DRAIN LINE B
100

				C	H	W	E				R
1005.35	I			C	H	W	E				R
1016.52	I			C	H	W	E				R
1027.68				C	H	W	E				R
1038.85	I			C	H	W	E				R
1050.02											
1061.18											
1072.35											
1083.52											
1094.69											
1105.85											
1117.02											
1128.19											
1139.35											
1150.52											
1161.69											
1172.85											
1184.02											
1195.19											
1206.35											
1217.52											
1228.69											
1239.86											
1251.02											
1262.19											
1273.36											
1284.52	I			C	H	H	W	E			JX
1295.69	I			C	H	W	E	W	E		R
1306.86											
1318.02											
1329.19											
1340.36											
1351.53											
1362.69											
1373.86											
1385.03											
1396.19											
1407.36											
1418.53											
1429.69											
1440.86											
1452.03											
1463.19											
1474.36											
1485.53											
1496.70											
1507.86				I			C	H	W	E	R
1519.03				I			C	H	W	E	R
1530.20				I			C	H	W	E	R
1541.36				I			C	H	W	E	R
1552.53											
1520.30	1521.10	1521.90	1522.70	1523.50	1524.30	1525.11	1525.91	1526.71	1527.51	1528.31	

N O T E S

1. GLOSSARY

I = INVERT ELEVATION
C = CRITICAL DEPTH
W = WATER SURFACE ELEVATION
H = HEIGHT OF CHANNEL
E = ENERGY GRADE LINE
X = CURVES CROSSING OVER
B = BRIDGE ENTRANCE OR EXIT
Y = WALL ENTRANCE OR EXIT

2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY□

HYDRAULIC ELEMENTS - I PROGRAM PACKAGE
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Analysis prepared by:

THIENES ENGINEERING
16800 VALLEY VIEW AVENUE
LA MIRADA CA 90638
PH: (714) 521-4811 FAX: (714) 521-4173

TIME/DATE OF STUDY: 10: 1 1/29/2020

***** DESCRIPTION OF STUDY *****
* DEPTH OF FLOW IN CHANNEL AT EASTERLY PROPERTY LINE *
* WITH OFFSITE Q100 *
*

*****>>>CHANNEL INPUT INFORMATION<<<

CHANNEL Z1(HORIZONTAL/VERTICAL) = 1.00
Z2(HORIZONTAL/VERTICAL) = 1.00
BASEWIDTH(FEET) = 2.00
CONSTANT CHANNEL SLOPE(FEET/FEET) = 0.009000
UNIFORM FLOW(CFS) = 16.90
MANNINGS FRICTION FACTOR = 0.0150

NORMAL-DEPTH FLOW INFORMATION:

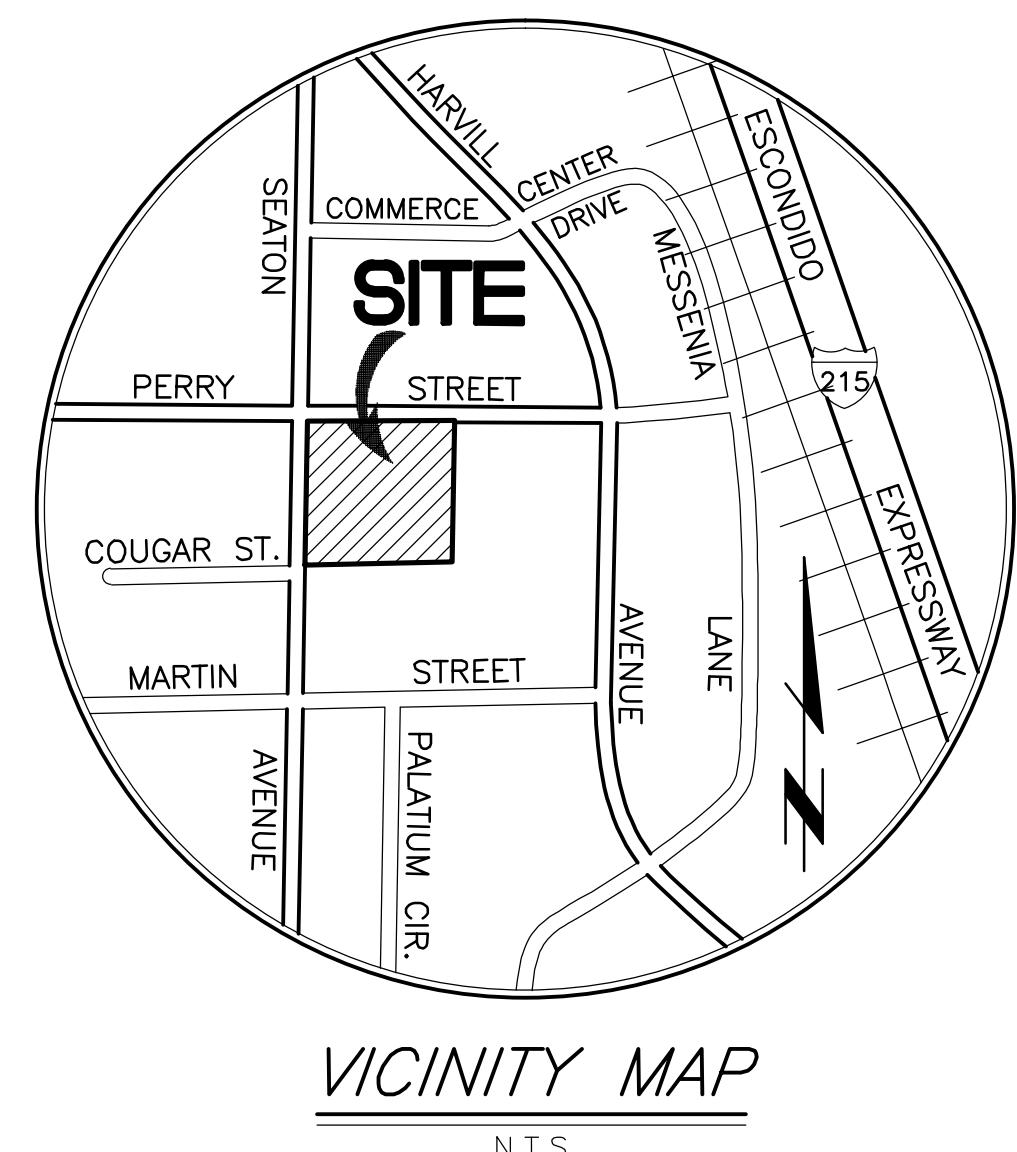
>>> NORMAL DEPTH(FEET) = 0.90
FLOW TOP-WIDTH(FEET) = 3.80
FLOW AREA(SQUARE FEET) = 2.60
HYDRAULIC DEPTH(FEET) = 0.69
FLOW AVERAGE VELOCITY(FEET/SEC.) = 6.49
UNIFORM FROUDE NUMBER = 1.381
PRESSURE + MOMENTUM(POUNDS) = 278.01
AVERAGED VELOCITY HEAD(FEET) = 0.654
SPECIFIC ENERGY(FEET) = 1.553

CRITICAL-DEPTH FLOW INFORMATION:

CRITICAL FLOW TOP-WIDTH(FEET) = 4.16
CRITICAL FLOW AREA(SQUARE FEET) = 3.33
CRITICAL FLOW HYDRAULIC DEPTH(FEET) = 0.80
CRITICAL FLOW AVERAGE VELOCITY(FEET/SEC.) = 5.07
CRITICAL DEPTH(FEET) = 1.08
CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) = 265.38
AVERAGED CRITICAL FLOW VELOCITY HEAD(FEET) = 0.400
CRITICAL FLOW SPECIFIC ENERGY(FEET) = 1.481

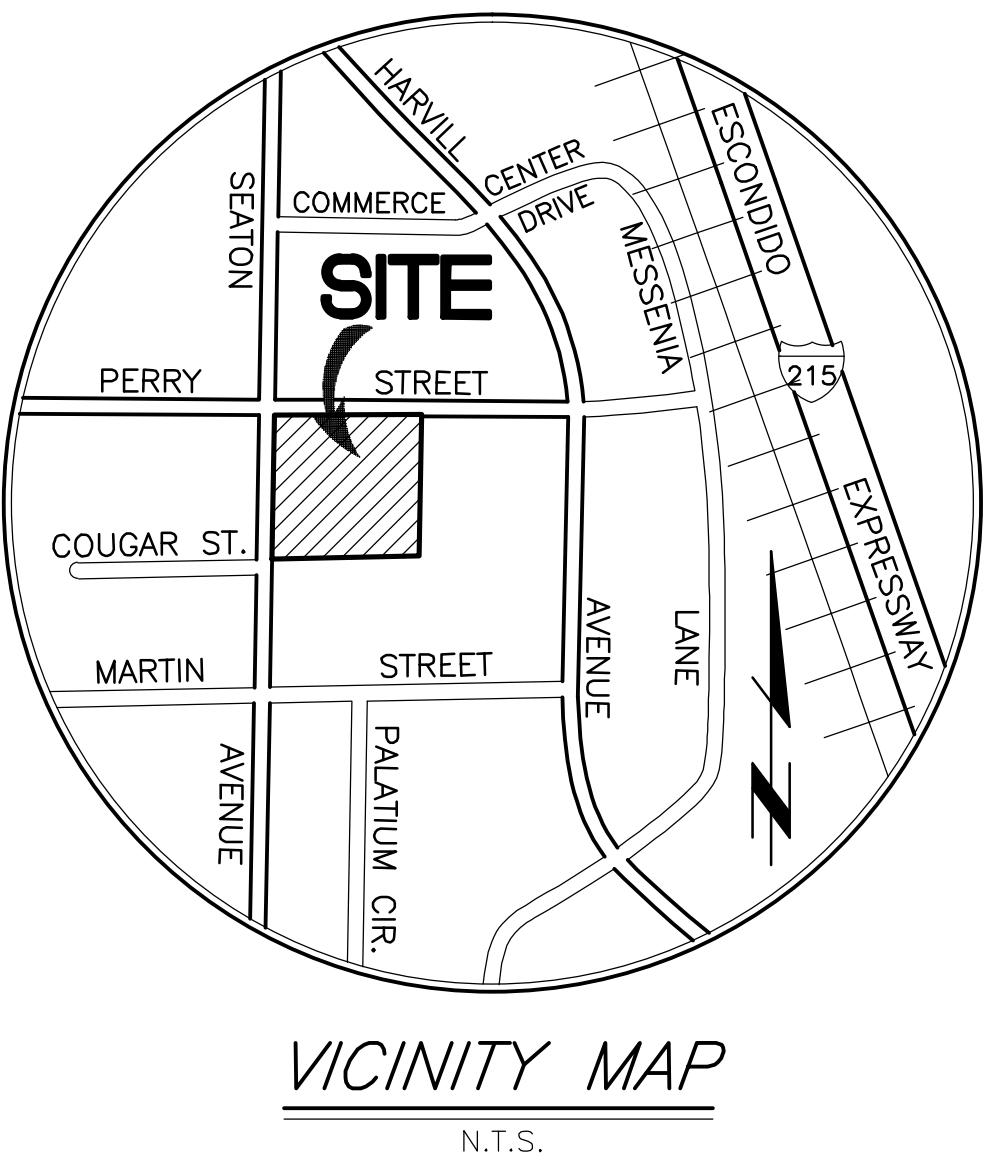
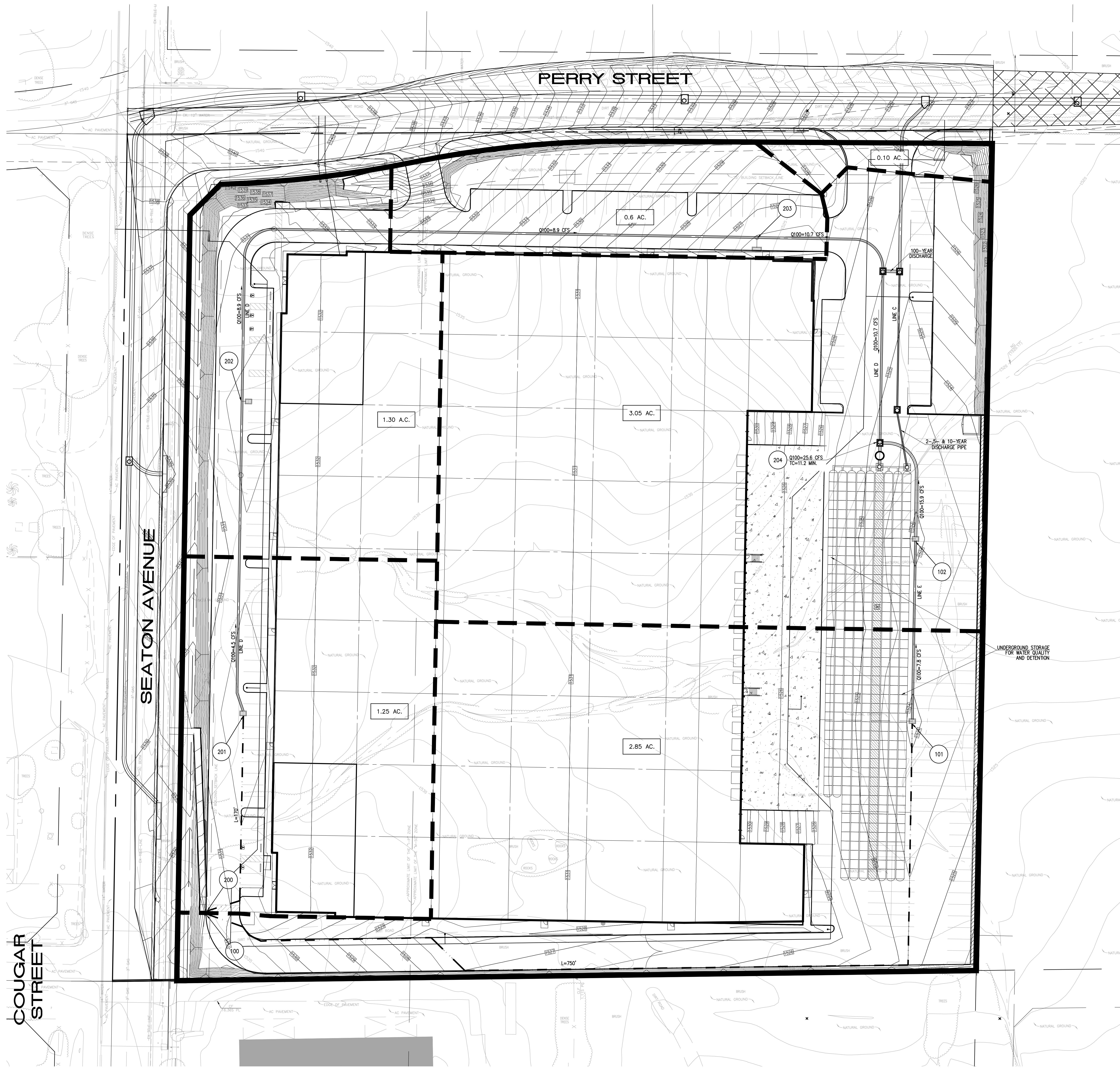
APPENDIX E

HYDROLOGY MAPS



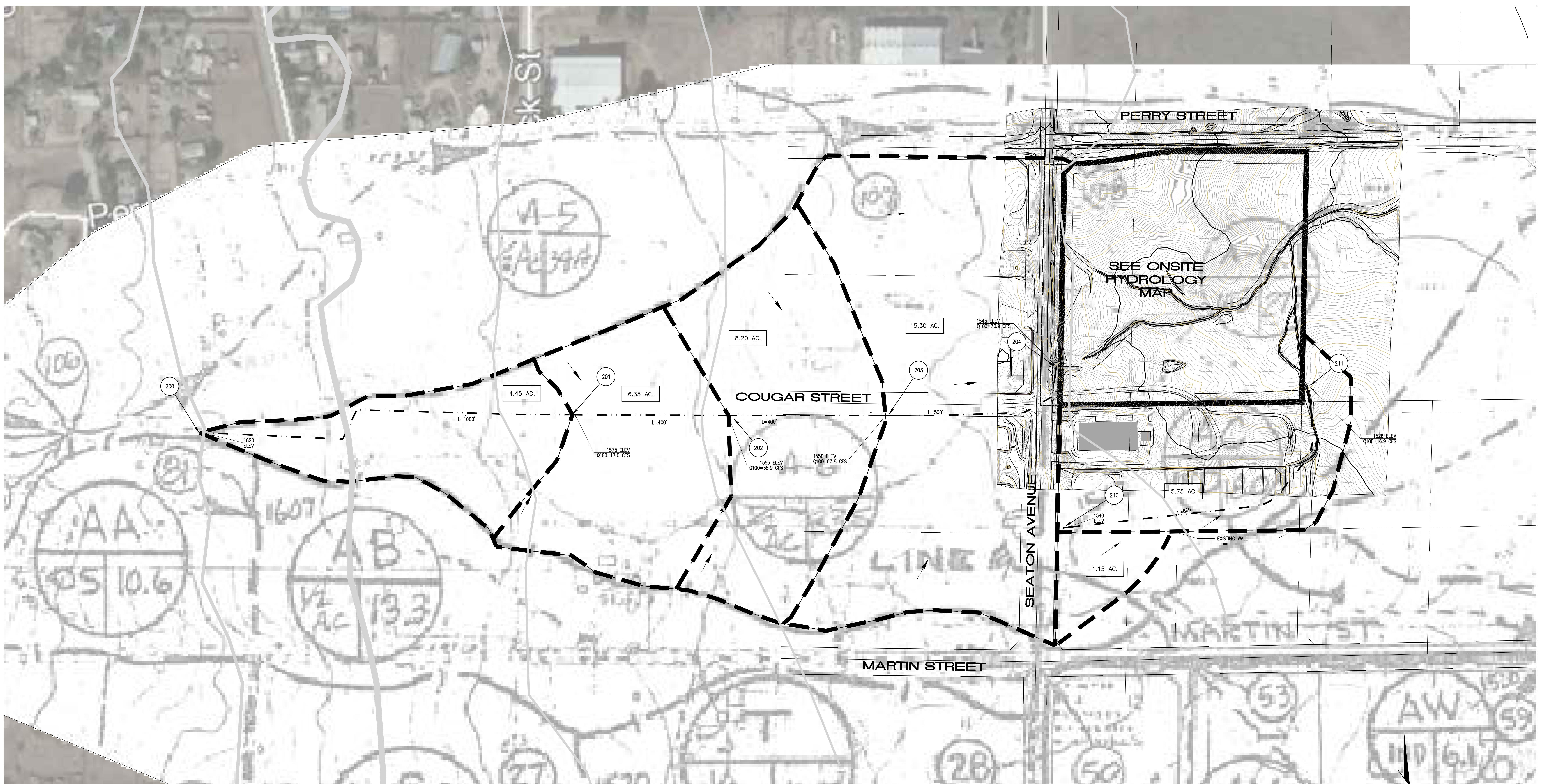
Last Update: 1/20/20
0\2700-2799\2712\2712HD-Ex.dwg

COUNTY OF RIVERSIDE		
PUBLIC WORKS DEPARTMENT		
EXISTING CONDITION HYDROLOGY MAP FOR		
PERRY STREET		
Designed by Thienes Engineering, Inc. CIVIL ENGINEERING + LAND SURVEYING 1001 SANTA MONICA BLVD. LA MIRADA, CALIFORNIA 90639 PH.(714)821-4811 FAX(714)821-4173	Approved by Date _____	Date _____
Checked by Date _____		
Designed by Public Works Director	R.C.E. XXXXX	Date _____
Checked by Date _____		
Sheet 1 of 1 Sheets		



LEGEND	
PROJECT BOUNDARY	[Solid Black Line]
SUBAREA BOUNDARY	[Dashed Black Line]
FLOW LINE	[Dashed Line with Arrow]
SUBAREA AREA	[Area Shaded with Dots]
NODE NUMBER	[Node Number in Circle]
FLOW DIRECTION	[Arrowhead on Flow Line]

0 15 30 60 90
SCALE: 1" = 30'



Last Update: 1/16/20
03/200-2790/2712/2712HYD-OFF SITE.Dwg

COUNTY OF RIVERSIDE PUBLIC WORKS DEPARTMENT		
PRELIMINARY OFF SITE HYDROLOGY MAP FOR		
PERRY STREET		
Designed by _____ Date _____ Checked by _____ Date _____ Designed by _____ Date _____ Checked by _____ Date _____	Approved by _____ Date _____	_____
Thienes Engineering, Inc. CIVIL ENGINEERING • LAND SURVEYING LA MIRADA, CALIFORNIA 90639 PH.(714) 521-4811 FAX(714) 521-4773		Public Works Director _____ R.C.E. XXXXX
Sheet 1 of 1 Sheets		