Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

JURUPA VALLEY COMMERCE PARK
MONTANA AVENUE, BETWEEN 25TH & 28TH STREET
JURUPA VALLEY, CA

PREPARED FOR

PROFICIENCY RUBIDOUX LLC
11777 SAN VICENTE BOULEVARD, SUITE 780
LOS ANGELES, CA 90049
P. (949) 842-3074

OCTOBER 7, 2020
REVISED SEPTEMBER 02, 2021

JOB NO. 3384c

PREPARED BY

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PRELIMINARY HYDROLOGY CALCULATIONS

FOR

JURUPA VALLEY COMMERCE PARK
MONTANA AVENUE, BETWEEN 25TH & 28TH STREET

PREPARED BY MATTHEW CRUZ
UNDER THE SUPERVISION OF:

10/07/2020

REINHARD STENZEL — DATE
R.C.E. 56155
EXP. 12/31/2022

INTRODUCTION

A: PROJECT LOCATION

The project site is located north of Canal Street, east of 28th Street and west of 25th Street in the City of Jurupa Valley, California. Please see next page for vicinity map.

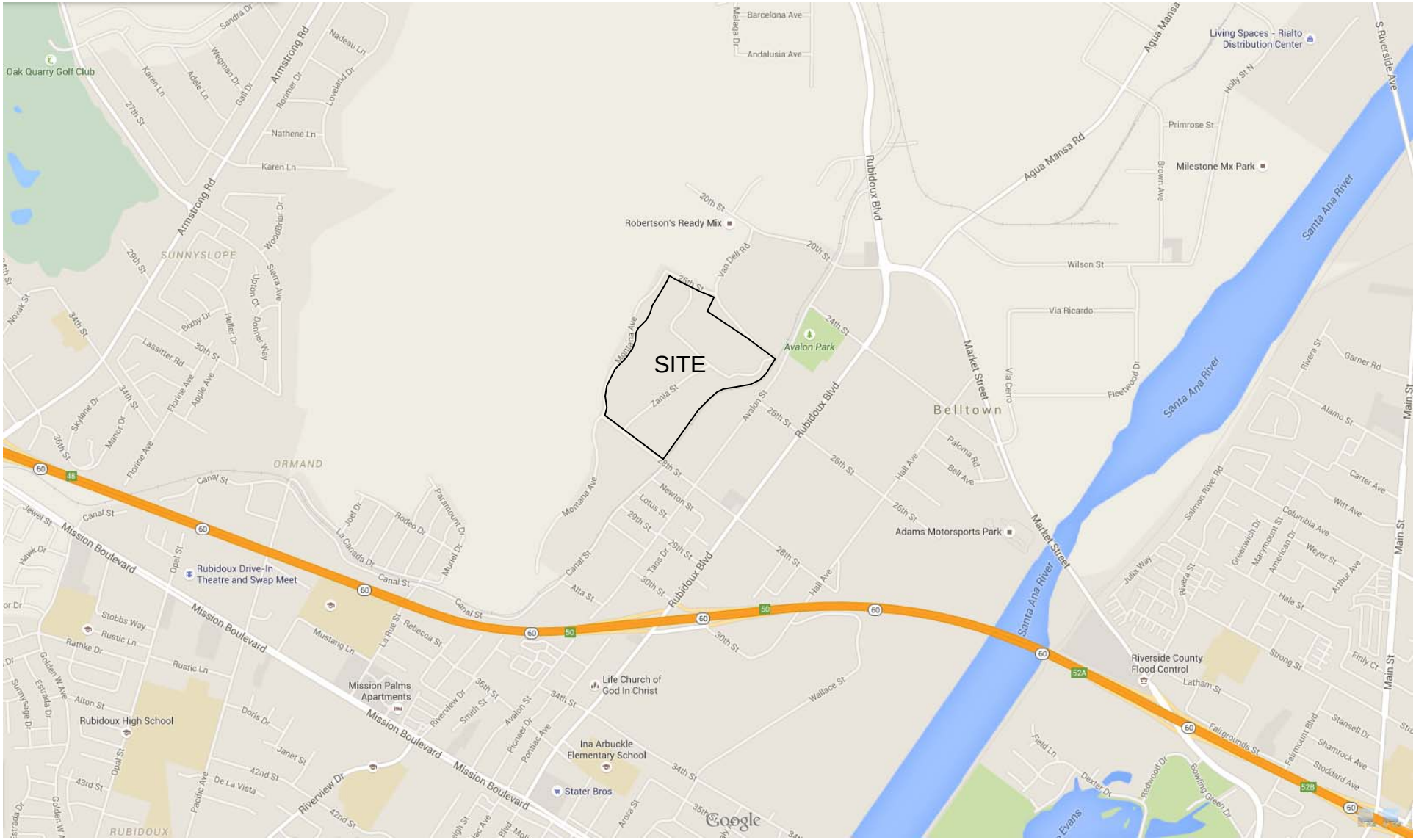
B: STUDY PURPOSE

The purpose of this study is to determine the proposed condition 100-year peak flow rate from the site that ultimately drains to the existing Belltown Line "D" storm drain in 28th Street.

C: PROJECT STAFF:

Thienes Engineering staff involved in this study include:

Reinhard Stenzel
Brian Weil
Ricky Hwa


SITE
Oak Quarry Golf Club
Armstrong Rd
SUNNYSLOPE
ORMAND
RUBIDOUX
Mission Boulevard
Rubidoux Drive-In Theatre and Swap Meet
Rubidoux High School
Mission Palms Apartments
Life Church of God In Christ
Ina Arbuckle Elementary School
Stater Bros
Robertson's Ready Mix
Avalon Park
Rubidoux Blvd
Belltown
Adams Motorsports Park
Market Street
Santa Ana River
Riverside County Flood Control
Milestone Mx Park
Living Spaces - Rialto Distribution Center
Agua Mansa Rd
Agua Mansa
S Riverside Ave
Main St
Google

DISCUSSION

The project site encompasses approximately 78.45 acres where 75.95 acres (proposed Building 1) is north of the existing dirt channel while 2.50 acres (proposed Building 2) is located south of the channel. Proposed improvements to the site include two industrial warehouse type buildings with areas 1,261,904 square feet (Building 1) and 37,454 square feet (Building 1). There will be truck yards and vehicle parking lots adjacent to each building. The remainder of the site will be reserved for landscaping. A proposed extension of 26th Street will traverse northerly adjacent to Building 1, providing access to the site from Avalon Street. Another proposed cul-de-sac at the corner of 25th Street and Van Dell Road will provide access to the site from the east. There will be two water quality basins located along the southerly property line. A storm drain system will be built near the northerly property line to intercept runoff from the northerly adjacent hills and horse stables, plus the easterly proposed cul-de-sac to the existing 72-inch storm drain in 28th Street.

Master Drainage Plan

Per "Rubidoux Area Master Drainage Plan" by Riverside County Flood Control and the "Belltown Master Drainage Plan Alternative 2 – District System", runoff from the project site (Bldg. 1 and Bldg. 2) is tabled to the 72-inch Storm Drain Line "D" in 28th Street. The Storm Drain Line "D" system is designed for 100-year storm events as confirmed by R.C.F.C. Per the master drainage plan, the Line "D" system has a designed 100-year peak flow rate of 460 cfs at the project site's point of connection.

Please see Appendix "A" for master drainage plan, as-built storm drain plans, storm event confirmation email and other pertinent reference materials.

Existing Conditions

The main site (75.95 acres north of dirt channel) is currently an undeveloped dirt lot. Runoff from the site generally surface drains southerly to the dirt channel (also part of Storm Drain Line "D"), then westerly to the 72-inch storm drain in 28th Street. The offsite hills and horse stables north of the project site are also tributary to the site.

The southerly 2.50-acre site is currently developed with a church building, a paved parking lot, and an unpaved grass lot. This southerly site generally surface drains southerly to Avalon Street, then westerly to a catch basin at the 28th Street/Avalon Street intersection tributary to the same 72-inch storm drain.

The 72" RCP storm drain system downstream was designed for a 100-year peak flow rate of 460 cfs. and the allowable runoff volume from the northerly side of 28th Street and Canal Street intersection at the southwesterly point of connection is approximately 295.3 cfs. (See Appendix "A" for Exhibit 1).

Proposed Condition

The existing 25th Street, the existing west end of Van Dell Road, the proposed cul-de-sac and the existing north-easterly offsite dirt areas (Nodes 100-114, 3.60 acres) will drain southerly to catch basins in the proposed cul-de-sac. Runoff will then be conveyed westerly via the proposed public storm drain Line "A", traversing through the project site while accepting runoffs from the northerly onsite landscapes, offsite hills and horse stables (Nodes 120-174, 96.70 acres), then turning southerly and discharging to the existing 72-inch storm drain in 28th Street. The proposed condition 100-year peak flow rate from the northerly onsite landscapes plus offsite areas (100.30 acres total) is approximately 153.1 cfs.

The south half of the proposed Building 1, the building's southerly truckyard, the vehicle parking easterly adjacent to Building 1, and the southeasterly vehicle parking lot (Nodes 200-214) will all drain to the Basin "B" located at the southeasterly portion of the site. Flows are conveyed via a proposed onsite storm drain line "C". The Basin "B" will be used to infiltrate low flows and for detention purposes from onsite areas tributary to the basin. Runoff will then be conveyed westerly via onsite storm drain line "B" and discharged to the existing 72" inch 28th Street storm drain. the proposed condition 100-year peak flow rate from the aforementioned areas (32.2 acres total) is approximately 59.7 cfs. undetained

The north half of Building 1, the building's northerly truck yard, north-easterly trailer parking, and the westerly vehicle parking (Nodes 300-312) will drain to Basin "A" via onsite storm drain line "D". Runoff will then be conveyed northerly via the proposed private storm drain Line "E", then westerly via the private Line "B" to the proposed public Line "A" and discharged to the existing 72-inch 28th Street storm drain. The proposed condition 100-year peak flow rate from the areas tributary to Basin "A" (38.70 acres total) is approximately 78.4 cfs. undetained

The total 100-year peak flow rate tributary to Building 1 including the northerly offsite runoff (Node 316) is approximately 268.1 cfs undetained. Which is less than the allowable discharge of 295.3 cfs.

The southerly Building 2 site will maintain its existing drainage pattern. The truck yard north of Building 2 (Nodes 400-401, 0.80 acres) will drain southerly to a catch basin in the truck well. Runoff will then be pumped to the surface in the parking lot (Nodes 410-411, 1.25 acres) west of Building 2. All runoffs (2.05 acres total) will then be conveyed southerly via a proposed storm drain and parkway culvert to Avalon Street. The proposed condition 100-year peak flow rate from commercial areas within the Building 2 site is approximately 6.5 cfs. Landscape areas from the Building 2 site adjacent to 26th Street and Avalon Street (Nodes 420-421, 0.45 acres) will drain southerly to Avalon Street via another proposed parkway culvert. The proposed condition 100-year peak flow rate from these landscape areas is approximately 0.7 cfs. The resultant total proposed 100-year discharge from the entire Building 2 site (commercial plus landscape areas) is

approximately 7.2 cfs. (6.5 cgs + 0.7 cfs). Same as existing condition, proposed condition Building 2 site runoff will be conveyed westerly in Avalon Street to the catch basin at the 28th Street/Avalon Street intersection tributary to the 72-inch 28th Street storm drain.

See Appendix "B" for proposed condition hydrology calculations and Appendix “D” for proposed condition hydrology map.

Detention Analysis

Although proposed condition 100-year peak flow rate from the main site (Building 1 and surrounding areas) north of the dirt channel is less than the allotted Master Plan flow rate (295.3 cfs.) for the existing 72-inch 28th Street storm drain, detention calculations were performed for Basins “A” and “B” to ensure that tributary 100-year flows will not exceed the capacities (volume and depth) of the water quality basins. For each basin, proposed condition 100-year flows were analyzed for 1-hour, 3-hour, 6-hour and 24-hour storm events.

Please see the following tables (one for each basin) for the proposed 2-year, 5-year, 10-year and 100-year discharge, ponding volume and depth for each storm event.

BASIN A					
		Q TRIBUTARY	Q DISCHARGE	VOLUME	DEPTH
2 YEAR	1 HR.	28.3 cfs.	0.00 cfs.	1.52 ac-ft.	1.81 ft.
	3 HR.	23.4 cfs.	2.00 cfs.	2.60 ac-ft.	2.81 ft.
	6 HR.	21.2 cfs.	11.32 cfs.	3.07 ac-ft.	3.19 ft.
	24 HR.	9.0 cfs.	7.93 cfs.	2.94 ac-ft.	3.08 ft.
5 YEAR	1 HR.	36.7 cfs.	0.00 cfs.	1.96 ac-ft.	2.24 ft.
	3 HR.	28.8 cfs.	7.75 cfs.	2.93 ac-ft.	3.07 ft.
	6 HR.	25.7 cfs.	18.16 cfs.	3.31 ac-ft.	3.37 ft.
	24 HR.	12.7 cfs.	11.55 cfs.	3.08 ac-ft.	3.20 ft.
10 YEAR	1 HR.	43.5 cfs.	0.00 cfs.	2.31 ac-ft.	2.56 ft.
	3 HR.	33.5 cfs.	13.35 cfs.	3.14 ac-ft.	3.24 ft.
	6 HR.	29.4 cfs.	22.49 cfs.	3.44 ac-ft.	3.47 ft.
	24 HR.	15.5 cfs.	14.27 cfs.	3.17 ac-ft.	3.27 ft.
100 YEAR	1 HR.	66.3 cfs.	8.4 cfs.	2.96 ac-ft.	3.10 ft.
	3 HR.	49.7 cfs.	32.5 cfs.	3.73 ac-ft.	3.69 ft.
	6 HR.	43.0 cfs.	35.0 cfs..	3.80 ac-ft.	3.74 ft.
	24 HR.	25.6 cfs.	23.7 cfs	3.48 ac-ft.	3.50 ft.

BASIN B					
		Q TRIBUTARY	Q DISCHARGE	VOLUME	DEPTH
2 YEAR	1 HR.	20.9 cfs.	0.00 cfs.	1.26 ac-ft.	1.91 ft.
	3 HR.	18.4 cfs.	5.33 cfs.	1.93 ac-ft.	2.79 ft.
	6 HR.	16.7 cfs.	12.55 cfs.	2.19 ac-ft.	3.10 ft.
	24 HR.	7.4 cfs.	6.68 cfs.	1.99 ac-ft.	2.86 ft.
5 YEAR	1 HR.	27.1 cfs.	0.01 cfs.	1.63 ac-ft.	2.41 ft.
	3 HR.	22.7 cfs.	11.10 cfs.	2.14 ac-ft.	3.05 ft.
	6 HR.	20.4 cfs.	16.44 cfs.	2.30 ac-ft.	3.24 ft.
	24 HR.	10.4 cfs.	9.65 cfs.	2.09 ac-ft.	2.99 ft.
10 YEAR	1 HR.	32.1 cfs.	1.84 cfs.	1.78 ac-ft.	2.59 ft.
	3 HR.	26.2 cfs.	15.64 cfs.	2.28 ac-ft.	3.21 ft.
	6 HR.	23.2 cfs.	19.16 cfs.	2.38 ac-ft.	3.33 ft.
	24 HR.	12.7 cfs.	11.80 cfs.	2.16 ac-ft.	3.08 ft.
100 YEAR	1 HR.	48.8 cfs.	12.0 cfs.	2.17 ac-ft.	3.08 ft.
	3 HR.	38.9 cfs.	29.5 cfs.	2.64 ac-ft.	3.64 ft.
	6 HR.	33.9 cfs.	28.8 cfs.	2.63 ac-ft.	3.62 ft.
	24 HR.	21.0 cfs.	19.6 cfs.	2.40 ac-ft.	3.35 ft.

Corrugated metal risers will be installed in the basins and outlet pipes will be designed to limit runoff outflow from the two basins. For Basin "A", the 6-hour storm event generates the highest ponding volume (3.80 ac-ft). The total maximum discharge from Basin "A" is approximately 35.0 cfs. with a ponding depth of approximately 3.74 feet. Basin "A: has a total capacity of 5.38 ac-ft.

For Basin "B", the 3-hour storm event generates the highest ponding volume (2.64 ac-ft). The total maximum discharge from Basin "B" is approximately 29.5 cfs. with a ponding depth of approximately 3.64 feet. Basin "B" has a total capacity of 3.89 ac-ft. Therefore, for both basins, ponding capacities will not be exceeded by tributary 100-year flows.

The allowable runoff discharge north of 28th Street tributary to the existing 72" RCP downstream is approximately 295.3 cfs. The total runoff discharge from the site including the offsite runoff north and the easterly side of the site at detained condition is approximately 216.6 cfs which is less than the allowable. Therefore, runoff discharge from the site at proposed condition will not have an adverse effect to the existing storm drain system downstream.

See Appendix "C" for detention calculations.

Methodology

Hydrology calculations were computed using the Riverside County rational method program (by AES software). The soil type is “B” for the project site per the Riverside County Hydrology Manual. See appendix “A” for reference materials.

APPENDIX	DESCRIPTION
A	REFERENCE MATERIALS
B	HYDROLOGY CALCULATIONS
C	DETENTION CALCULATIONS
D	HYDRAULICS CALCULATIONS
E	CATCH BASIN CALCULATIONS
F	HYDROLOGY MAP

APPENDIX A

REFERENCE MATERIALS

LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC & WCD

HYDROLOGY MANUAL

N

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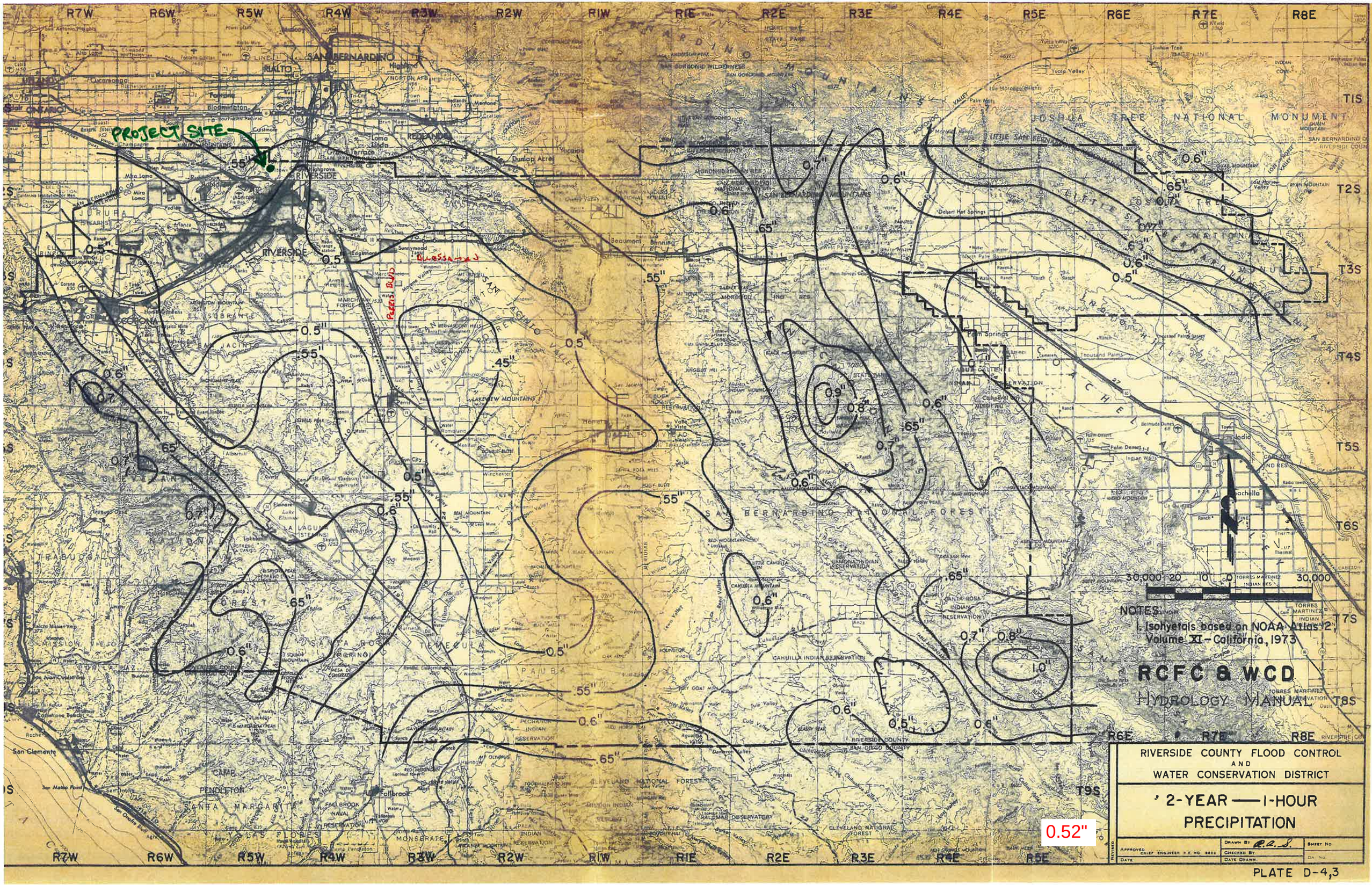
HYDROLOGIC SOILS GROUP MAP FOR FONTANA

PLATE C-1.03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NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 1-HOUR PRECIPITATION
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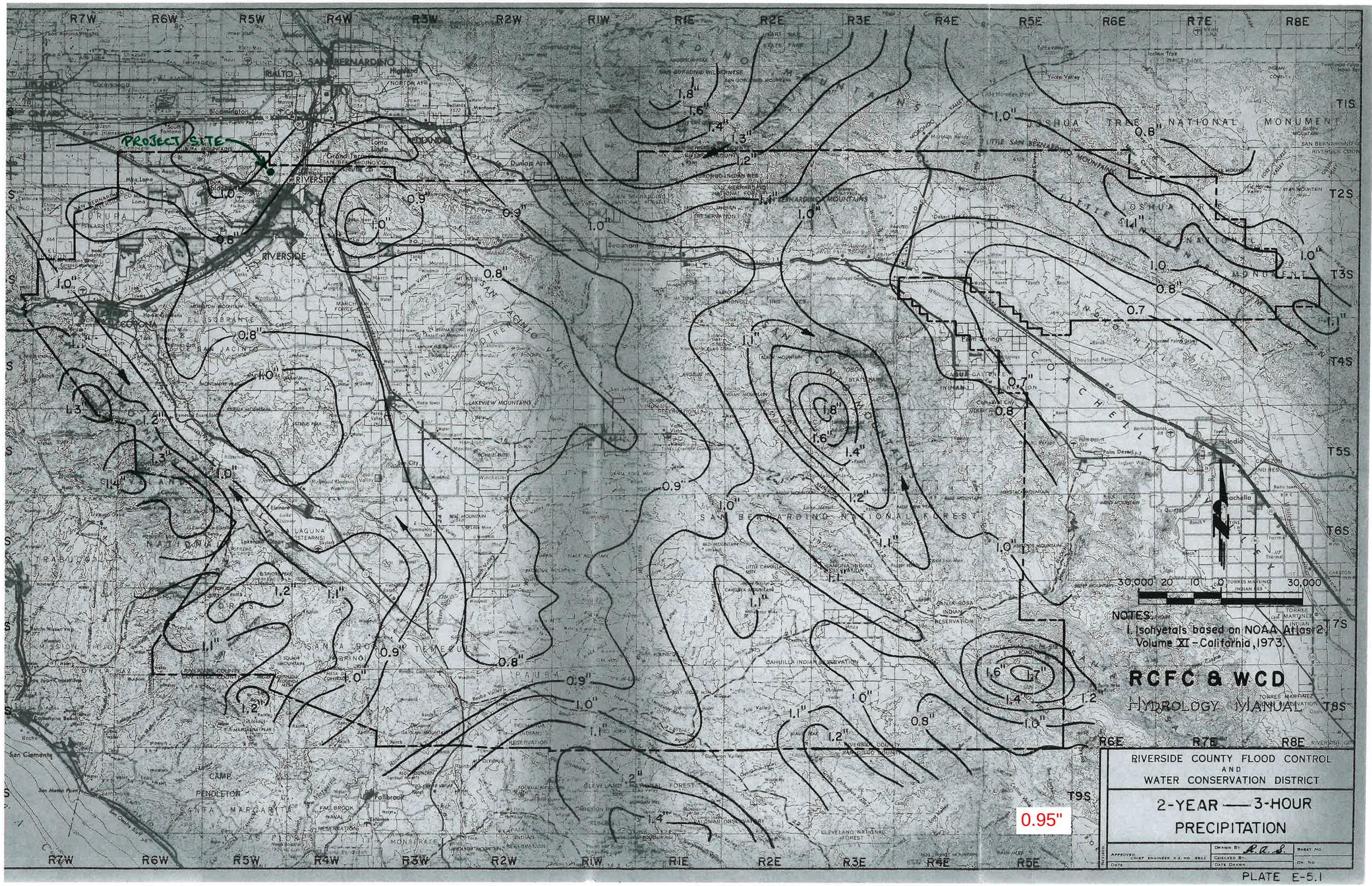
PLATE D-4,3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2-YEAR — 3-HOUR PRECIPITATION
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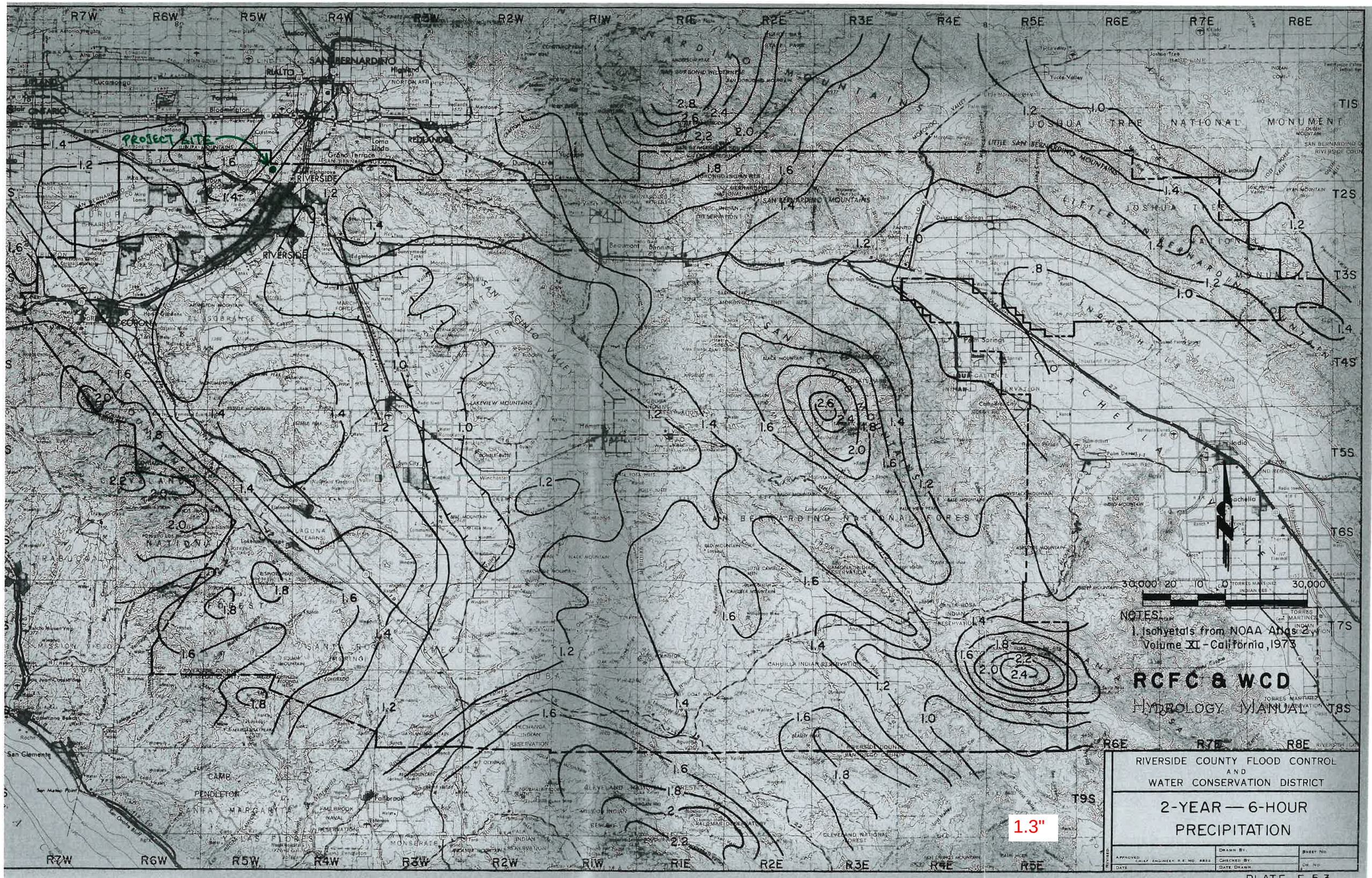
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SAN JACINTO FAULT
SAN JACINTO VALLEY
PALM SPRINGS
INDIO
LAKE ELSINORE
SAN BERNARDINO NATIONAL FOREST
CAMP PENDLETON
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AND
WATER CONSERVATION DISTRICT
2-YEAR — 6-HOUR
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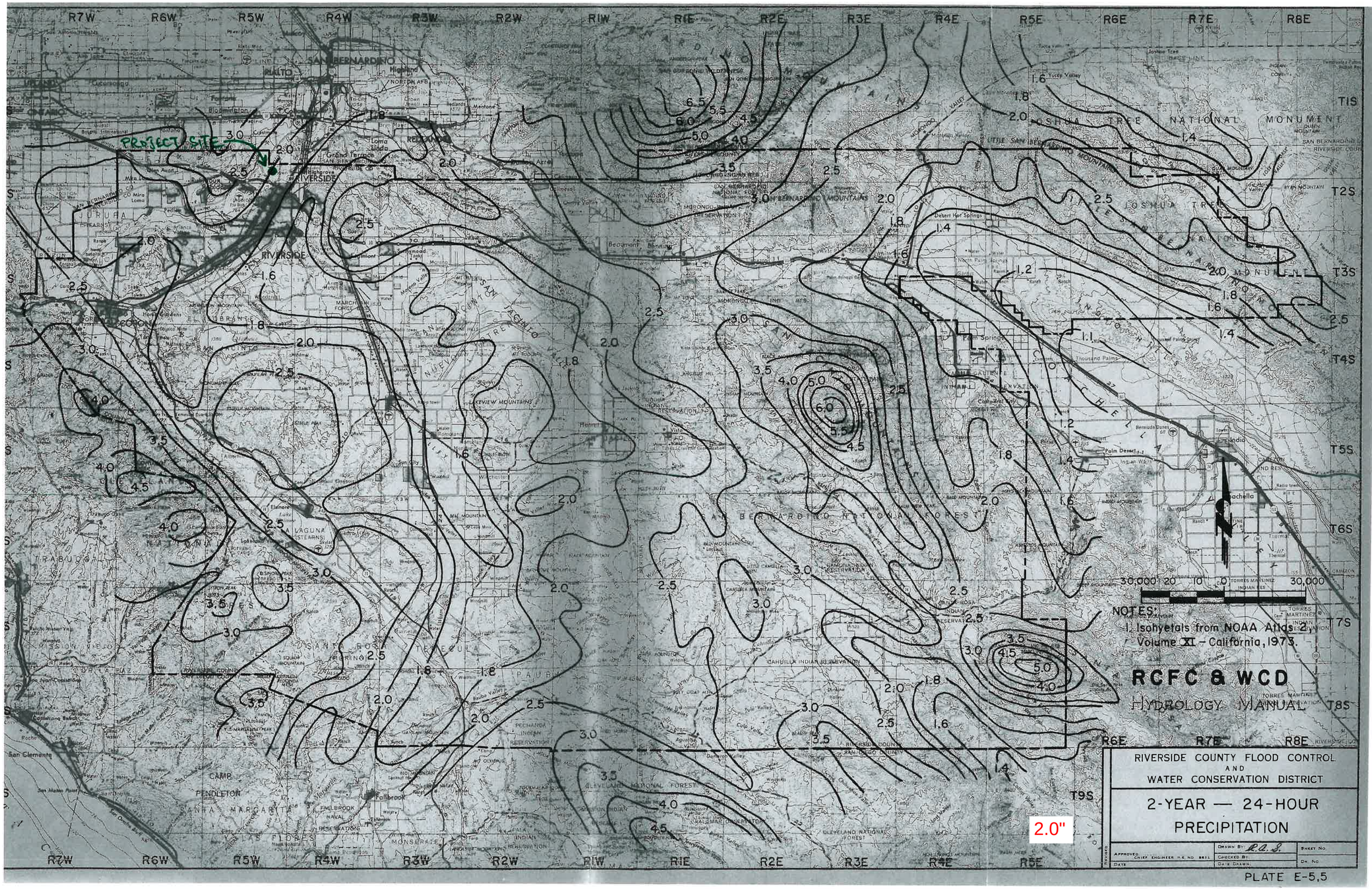
PLATE E-5.3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PROJECT SITE
SAN BERNARDINO
RIVERSIDE
RIALTO
Beaumont
Banning
Palm Springs
Indio
Coachella
Fallbrook
Elsinore
Lake Elsinore
Temecula
San Clemente
JURUPA MOUNTAINS
SAN JACINTO MOUNTAINS
SAN BERNARDINO MOUNTAINS
JOSHUA TREE NATIONAL MONUMENT
SAN BERNARDINO NATIONAL FOREST
CAHUILLA INDIAN RESERVATION
CAMP PENDLETON
SANTA MARGARITA
LAS FLORES
TRABUCO
SANTA ROSA PLATEAU
CLEVELAND NATIONAL FOREST
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NOTES:
1. Isohyetals from NOAA Atlas 2, Volume XI - California, 1973.
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RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
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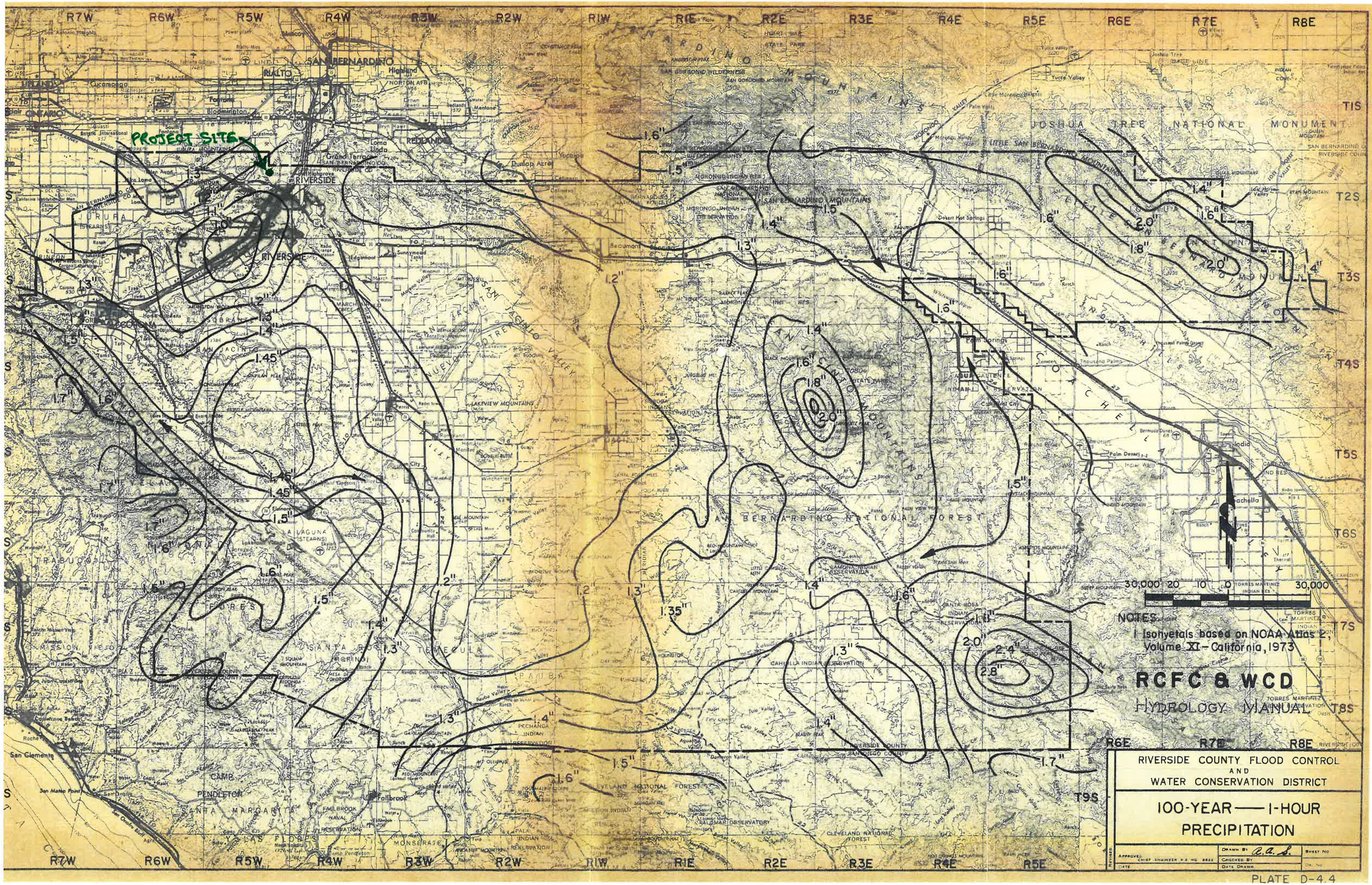
DR. NO.

PLATE E-5.5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Highland
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Beaumont
Banning
Sunnymead
Edgemont
Perris
Menifee
Hemet
Lake Elsinore
Temecula
Murrieta
Fallbrook
Palm Springs
Palm Desert
Indio
Coachella
Thousand Palms
Desert Hot Springs
Yucca Valley
Joshua Tree
Cabazon
San Clemente
San Mateo Point
JOSHUA TREE NATIONAL MONUMENT
SAN BERNARDINO NATIONAL FOREST
CLEVELAND NATIONAL FOREST
SAN JACINTO MOUNTAINS
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LITTLE SAN BERNARDINO MOUNTAINS
SANTA ROSA MOUNTAINS
LAKEVIEW MOUNTAINS
CAMP PENDLETON
MARINE CORPS BASE
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NORTON AFB
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1 Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
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WATER CONSERVATION DISTRICT
100-YEAR — 1-HOUR
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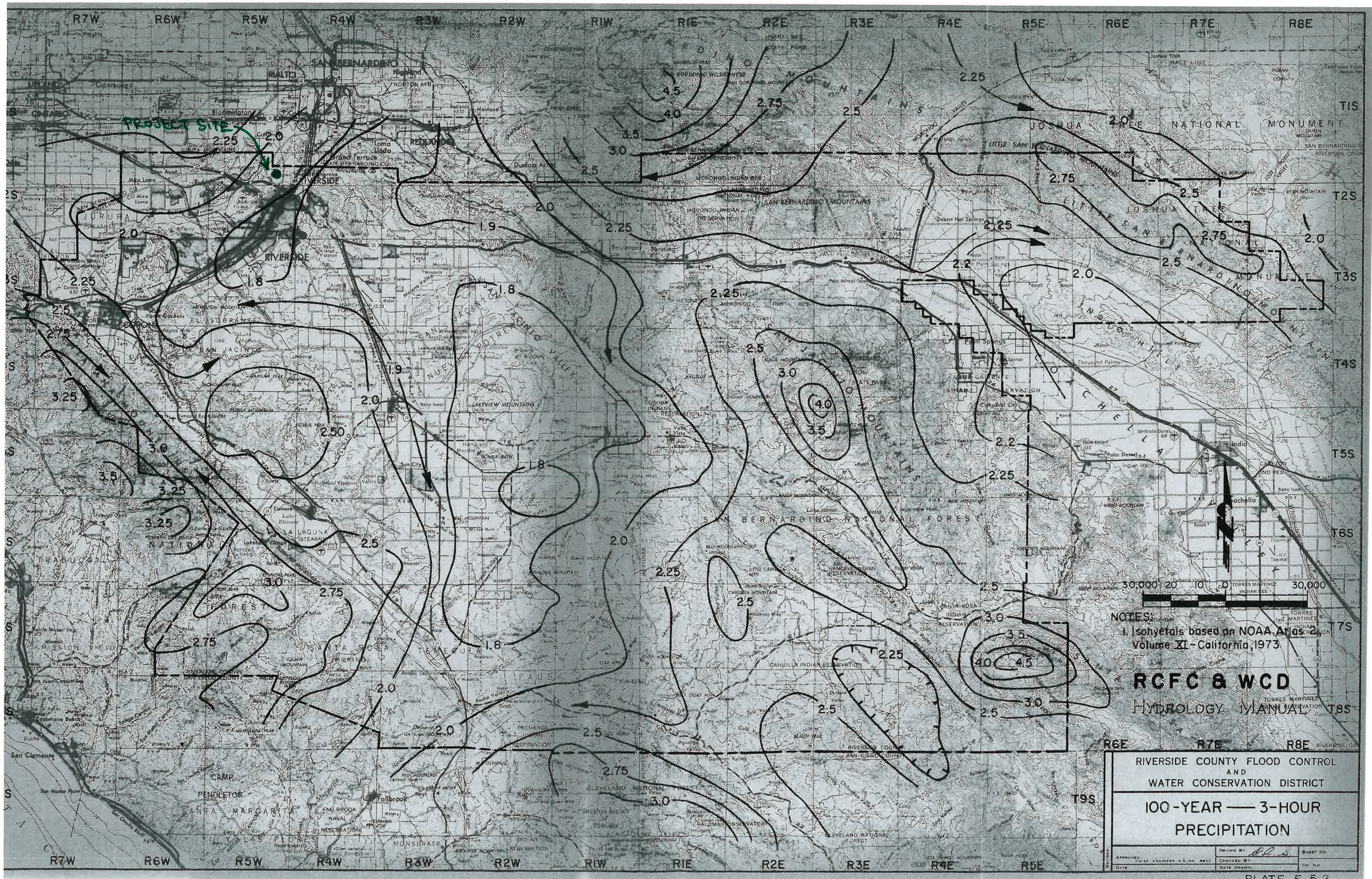
PLATE D-4.4



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

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HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

100-YEAR — 3-HOUR PRECIPITATION

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PLATE E-5.2

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PROJECT SITE
SAN BERNARDINO
RIALTO
RIVERSIDE
Corona
Elsinore
Lake Elsinore
Temecula
Fallbrook
Hemet
San Jacinto
Beaumont
Banning
Palm Springs
Indio
Coachella
Desert Hot Springs
Yucca Valley
Joshua Tree
JOSHUA TREE NATIONAL MONUMENT
SAN BERNARDINO NATIONAL FOREST
CLEVELAND NATIONAL FOREST
CAMP PENDLETON
SANTA MARGARITA
LA LAGUNA
SANTA ROSA
CAHUILLA INDIAN RESERVATION
SANTA ROSA INDIAN RESERVATION
TORRES MARTINEZ INDIAN RESERVATION
SAN JACINTO MOUNTAINS
SAN BERNARDINO MOUNTAINS
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NOTES:
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RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
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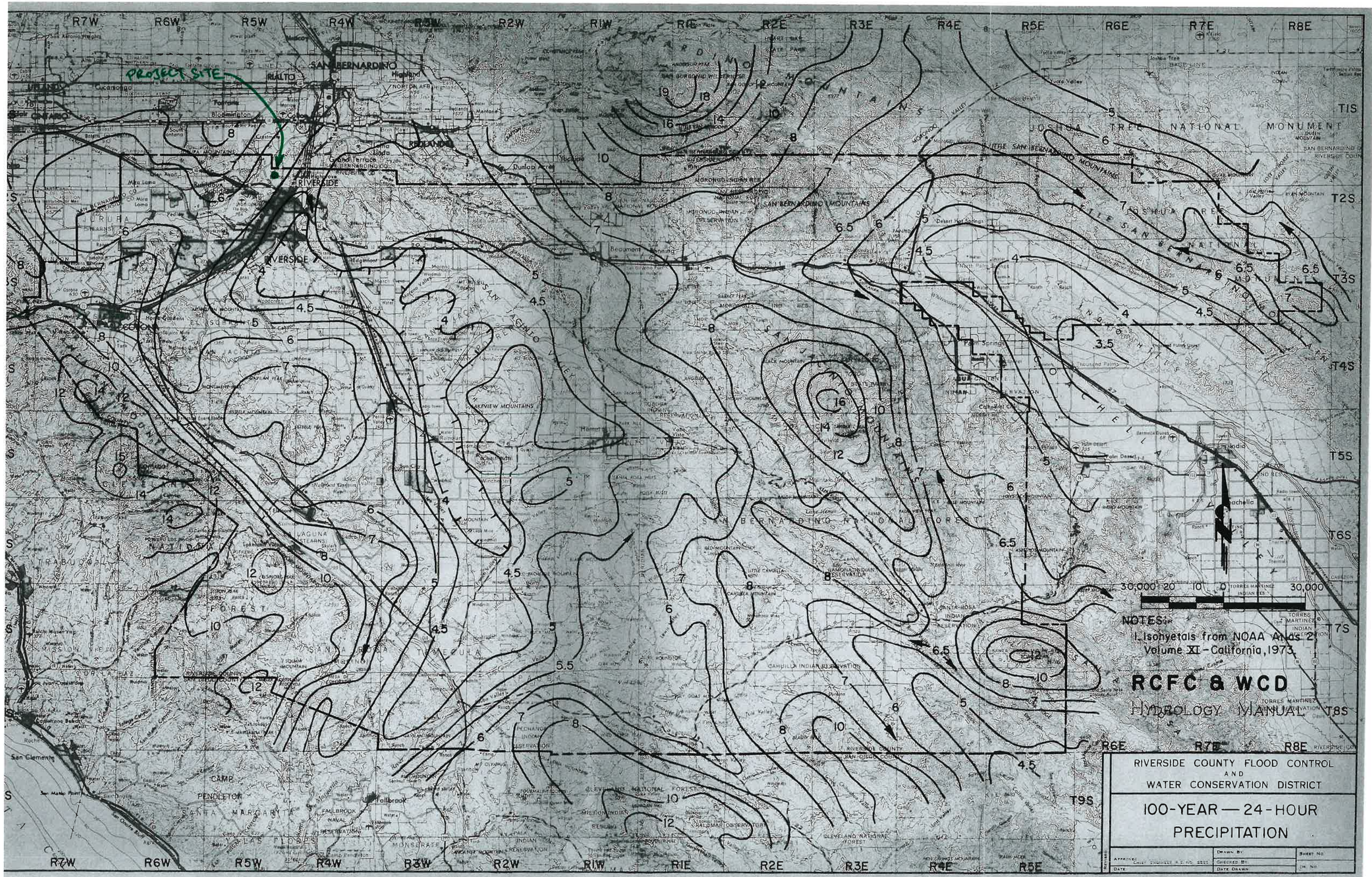
PROJECT SITE
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RIALTO
RIVERSIDE
Fontana
Bloomington
Beaumont
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Menifee
Temecula
Murrieta
Lake Elsinore
Corona
Palm Springs
Desert Hot Springs
Indio
Coachella
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JOSHUA TREE NATIONAL MONUMENT
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SANTA ROSA MOUNTAINS
SAN BERNARDINO NATIONAL FOREST
CLEVELAND NATIONAL FOREST
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SANTA ROSA INDIAN RESERVATION
TORRES MARTINEZ INDIAN RESERVATION
MORONGO INDIAN RESERVATION
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R5W
R4W
R3W
R2W
R1W
R1E
R2E
R3E
R4E
R5E
R6E
R7E
R8E
T1S
T2S
T3S
T4S
T5S
T6S
T7S
T8S
T9S
30,000 20 10 0 30,000
NOTES:
1. Isohyetals from NOAA Atlas 2, Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 24-HOUR PRECIPITATION
DRAWN BY
CHECKED BY
DATE DRAWN
SHEET NO.
DR. NO.
APPROVED
CHIEF ENGINEER R.C.E. NO.
DATE
REVISED

PLATE E-5.6

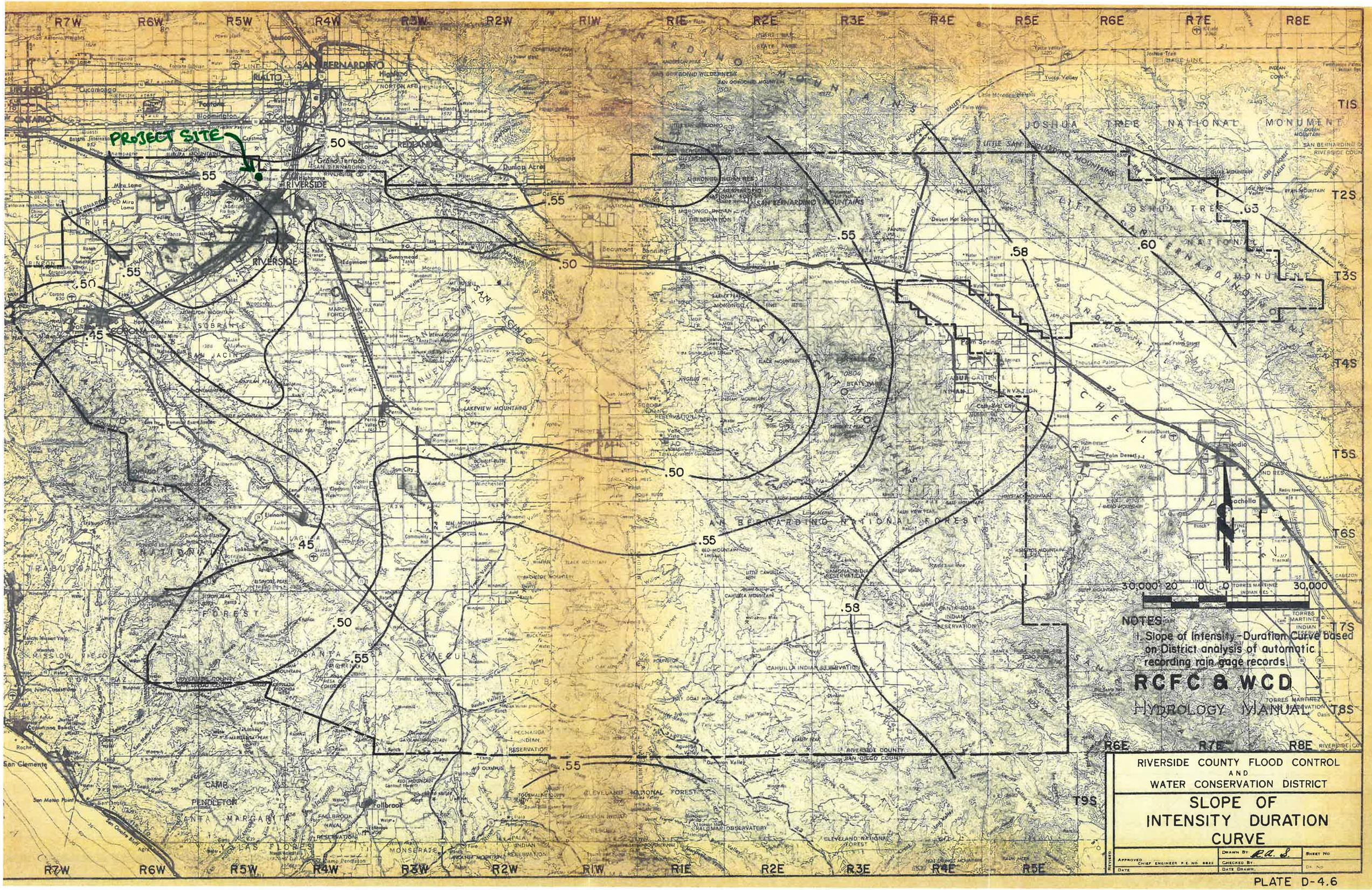
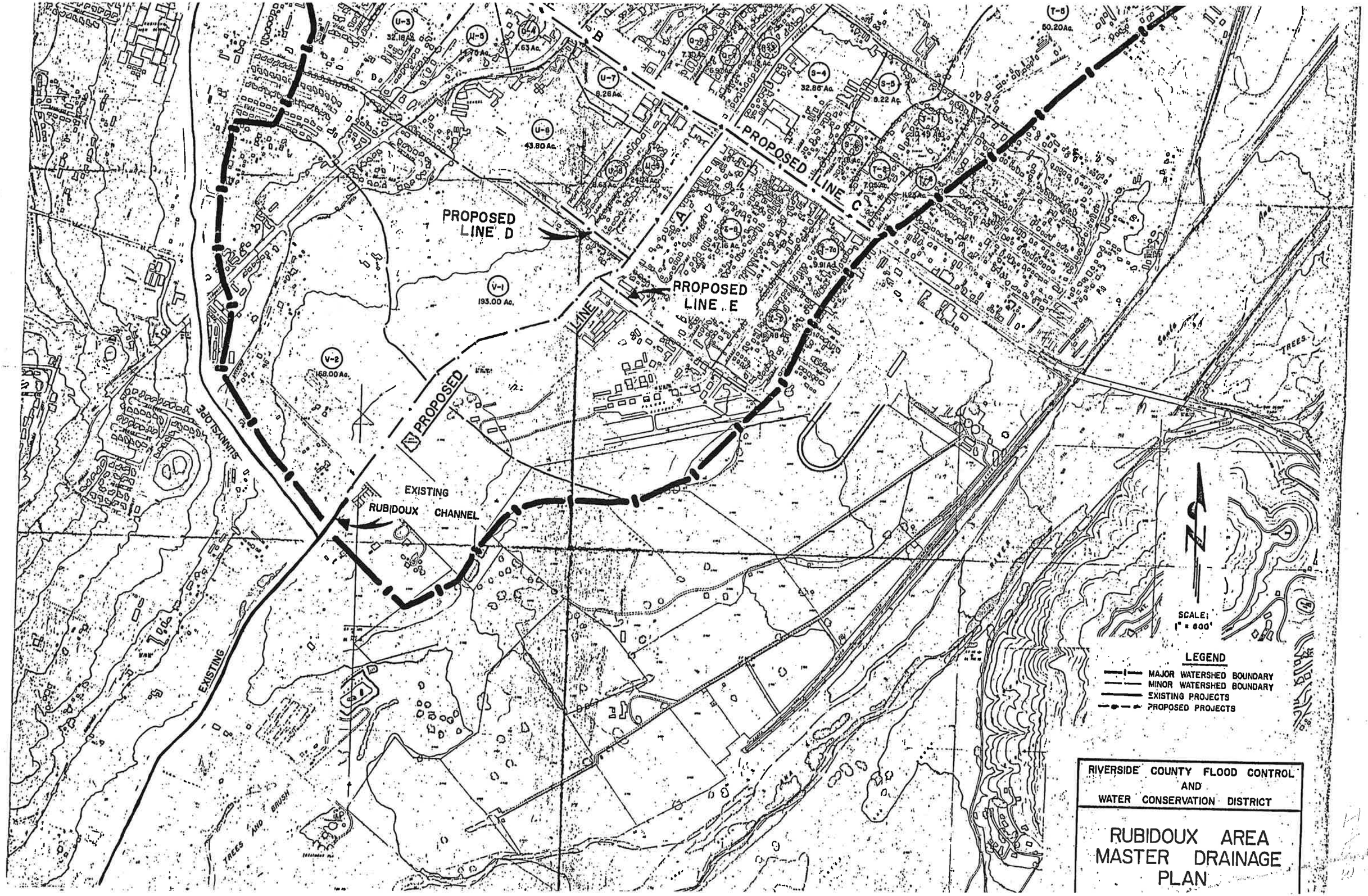
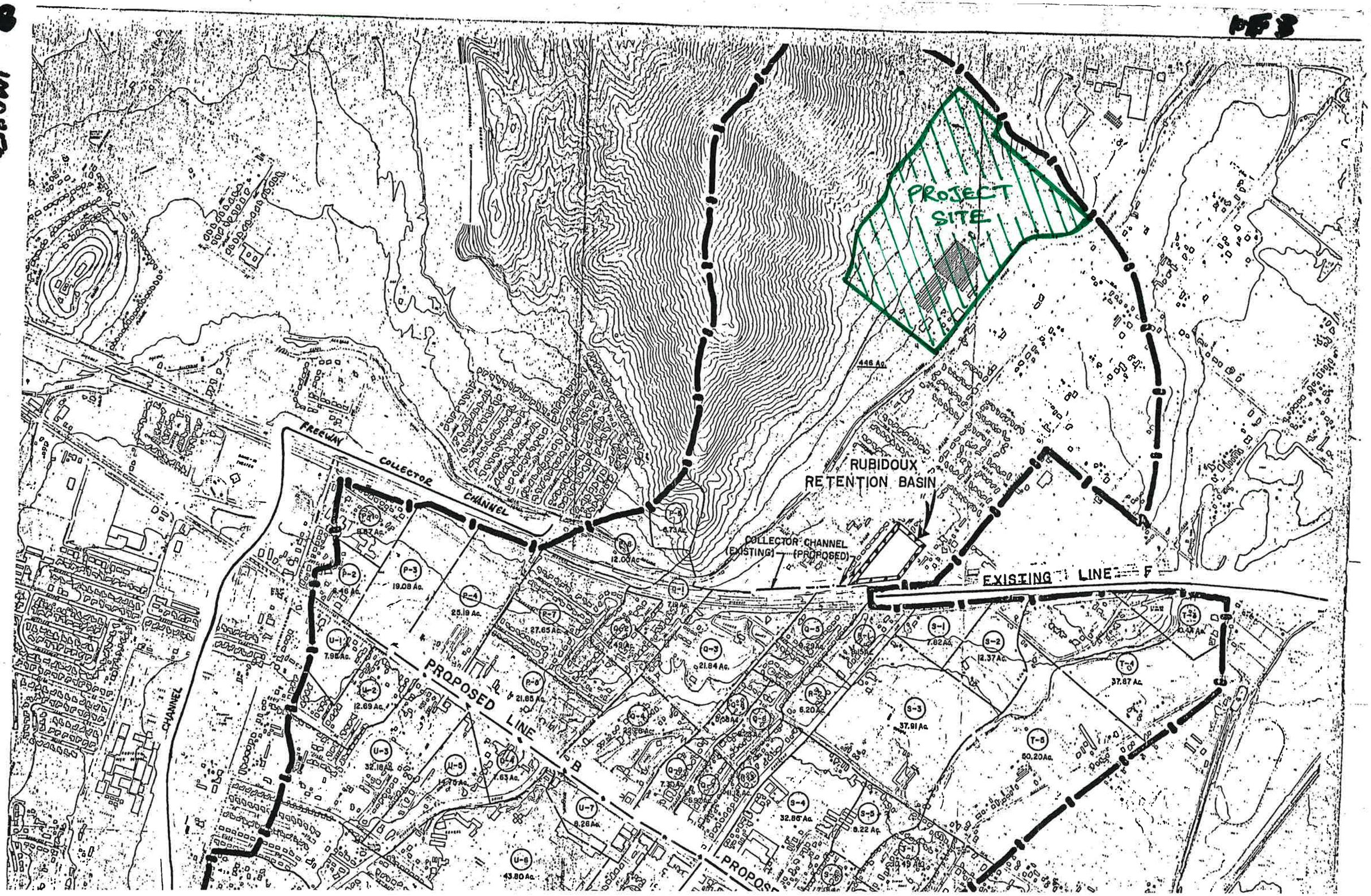
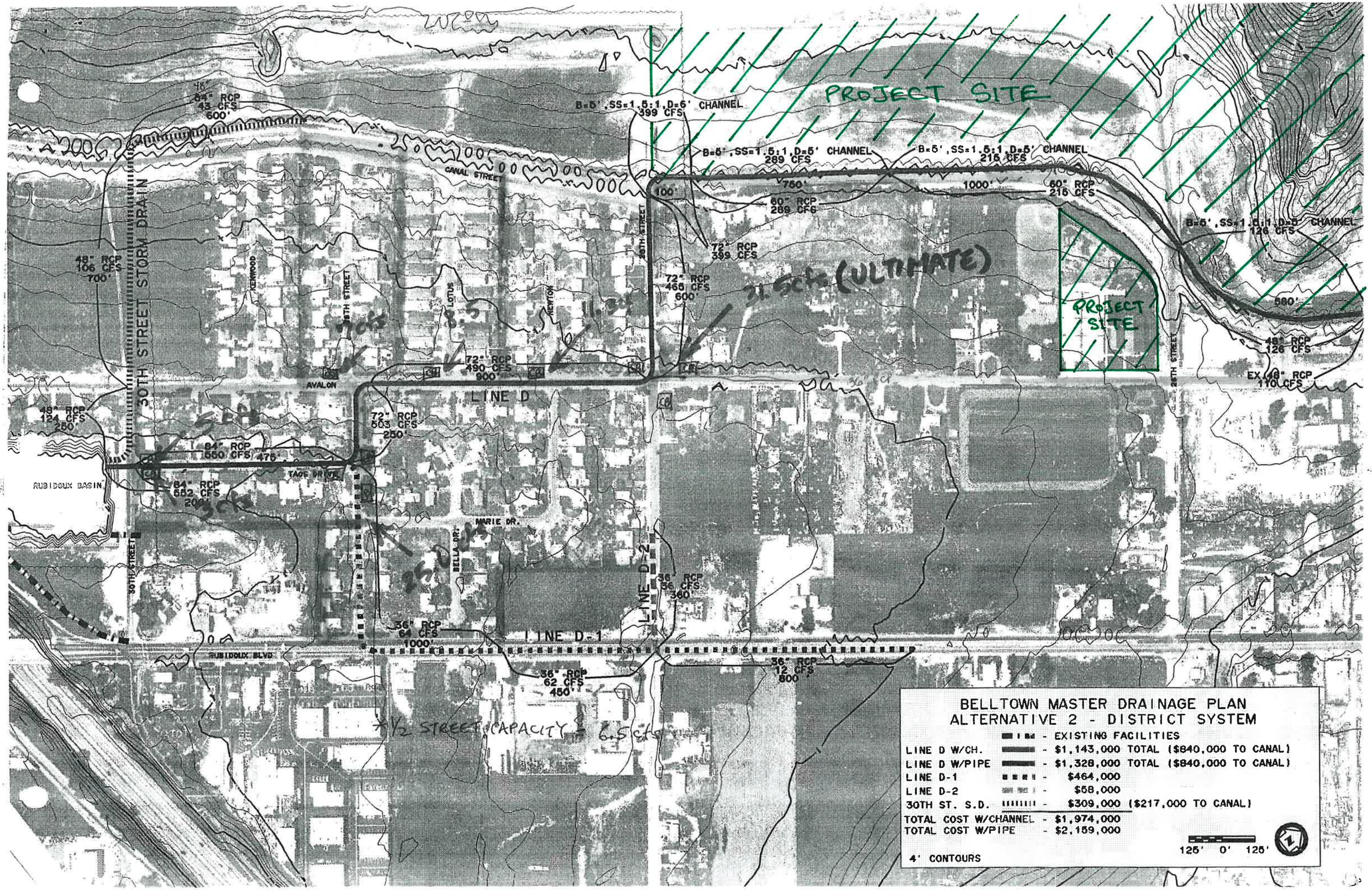

PROJECT SITE
.45
.50
.55
.58
.60
.65
R7W
R6W
R5W
R4W
R3W
R2W
R1W
R1E
R2E
R3E
R4E
R5E
R6E
R7E
R8E
T1S
T2S
T3S
T4S
T5S
T6S
T7S
T8S
T9S
SAN BERNARDINO MOUNTAINS
JOSHUA TREE NATIONAL MONUMENT
SAN BERNARDINO NATIONAL FOREST
CLEVELAND NATIONAL FOREST
RIVERSIDE
SAN BERNARDINO
RIALTO
Fontana
Ontario
Corona
Perris
Hemet
Beaumont
Banning
Palm Springs
Indio
Coachella
Temecula
Fallbrook
San Clemente
30,000 20 10 0 30,000
NOTES
1. Slope of Intensity-Duration Curve based on District analysis of automatic recording rain gage records.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
SLOPE OF INTENSITY DURATION CURVE
DRAWN BY
CHECKED BY
DATE DRAWN
SHEET NO
DR. NO
APPROVED CHIEF ENGINEER R.E. NO. 8825
DATE
REVISED

PLATE D-4.6


PROPOSED LINE D
PROPOSED LINE E
PROPOSED LINE C
PROPOSED
EXISTING RUBIDOUX CHANNEL
EXISTING
SLANTS OFF
TREES AND BRUSH
TREES
U-3
32.18 Ac.
U-5
U-6
7.63 Ac.
U-7
8.26 Ac.
U-8
43.80 Ac.
U-9
U-10
V-1
193.00 Ac.
V-2
168.00 Ac.
S-4
32.86 Ac.
S-5
8.22 Ac.
T-5
50.20 Ac.
T-2
T-6
9.91 Ac.
SCALE:
1" = 600'
LEGEND
MAJOR WATERSHED BOUNDARY
MINOR WATERSHED BOUNDARY
EXISTING PROJECTS
PROPOSED PROJECTS
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
RUBIDOUX AREA
MASTER DRAINAGE
PLAN


PROJECT SITE
RUBIDOUX RETENTION BASIN
COLLECTOR CHANNEL (EXISTING) (PROPOSED)
EXISTING LINE F
PROPOSED LINE B
FREEWAY COLLECTOR CHANNEL
CHANNEL
446 Ac.
P-1 11.87 Ac.
P-2 8.46 Ac.
P-3 19.08 Ac.
P-4 25.19 Ac.
P-5 12.00 Ac.
P-6 6.73 Ac.
P-7 27.65 Ac.
P-8 21.85 Ac.
U-1 7.95 Ac.
U-2 12.69 Ac.
U-3 32.18 Ac.
U-4 1.63 Ac.
U-5 14.15 Ac.
U-6 43.80 Ac.
U-7 8.26 Ac.
Q-1 7.19 Ac.
Q-3 21.84 Ac.
Q-5 9.23 Ac.
Q-6 4.48 Ac.
Q-7 5.28 Ac.
Q-8 7.30 Ac.
Q-9 6.90 Ac.
R-1 1.15 Ac.
R-3 6.20 Ac.
S-1 7.82 Ac.
S-2 12.37 Ac.
S-3 37.91 Ac.
S-4 32.86 Ac.
S-5 8.22 Ac.
T-5 60.20 Ac.
T-6 37.87 Ac.
T-7 10.41 Ac.


PROJECT SITE
B=5', SS=1.5:1, D=5' CHANNEL
399 CFS
B=5', SS=1.5:1, D=5' CHANNEL
289 CFS
B=5', SS=1.5:1, D=5' CHANNEL
216 CFS
B=5', SS=1.5:1, D=5' CHANNEL
126 CFS
84" RCP
43 CFS
600'
CANAL STREET
750'
1000'
100'
60" RCP
289 CFS
60" RCP
216 CFS
72" RCP
399 CFS
72" RCP
465 CFS
600'
31.5cfs (ULTIMATE)
48" RCP
106 CFS
700'
30TH STREET STORM DRAIN
KENWOOD
30TH STREET
LOTUS
KENTON
26TH STREET
8.5
11.3cfs
72" RCP
490 CFS
900'
AVALON
LINE D
48" RCP
126 CFS
580'
EX 48" RCP
110 CFS
48" RCP
124 CFS
250'
72" RCP
603 CFS
250'
84" RCP
550 CFS
475
TAOS DRIVE
RUBIDOUX BASIN
84" RCP
662 CFS
200'
MARIE DR.
BELLA DR.
LINE D-2
36" RCP
56 CFS
360
36" RCP
64 CFS
1000'
LINE D-1
RUBIDOUX BLVD
36" RCP
62 CFS
450'
36" RCP
12 CFS
800
1/2 STREET CAPACITY = 6.5cfs
BELLTOWN MASTER DRAINAGE PLAN
ALTERNATIVE 2 - DISTRICT SYSTEM
- EXISTING FACILITIES
LINE D W/CH. - $1,143,000 TOTAL ($840,000 TO CANAL)
LINE D W/PIPE - $1,328,000 TOTAL ($840,000 TO CANAL)
LINE D-1 - $464,000
LINE D-2 - $58,000
30TH ST. S.D. - $309,000 ($217,000 TO CANAL)
TOTAL COST W/CHANNEL - $1,974,000
TOTAL COST W/PIPE - $2,159,000
125' 0' 125'
4' CONTOURS

Julianne F.

From: Quinonez, Edwin [eequinonez@rcflood.org]
Sent: Monday, June 29, 2015 9:58 AM
To: 'Julianne F.'
Subject: RE: TEI Job#3384
Attachments: Aerial.pdf; Belltown Line Workmap.pdf; Belltown Line D Node Diagram.pdf; Belltown Line D Hydrology.pdf; Belltown Line D Hydraulics.pdf

Hi Julianne,

I was able to do some digging through our files and also spoke with one of the engineers that worked on the Line D project. Based on my findings it appears that Belltown Line D is sized to convey flows from your site. Attached are some of the backup files. The Q = 460cfs shown at the upstream end of the existing Line D assumes a future upgrade of the canal adjacent to your site and sized to convey 100-yr flows to the pipe.

If you have any questions just let me know, or feel free to give me a call.

Edwin Quinonez, P.E.
Engineering Project Manager
Riverside County Flood Control and
Water Conservation District
(951) 955-1345

From: Julianne F. [mailto:julianne@thieneseng.com]
Sent: Wednesday, June 24, 2015 3:13 PM
To: Quinonez, Edwin
Subject: RE: TEI Job#3384

Ok, thank you.

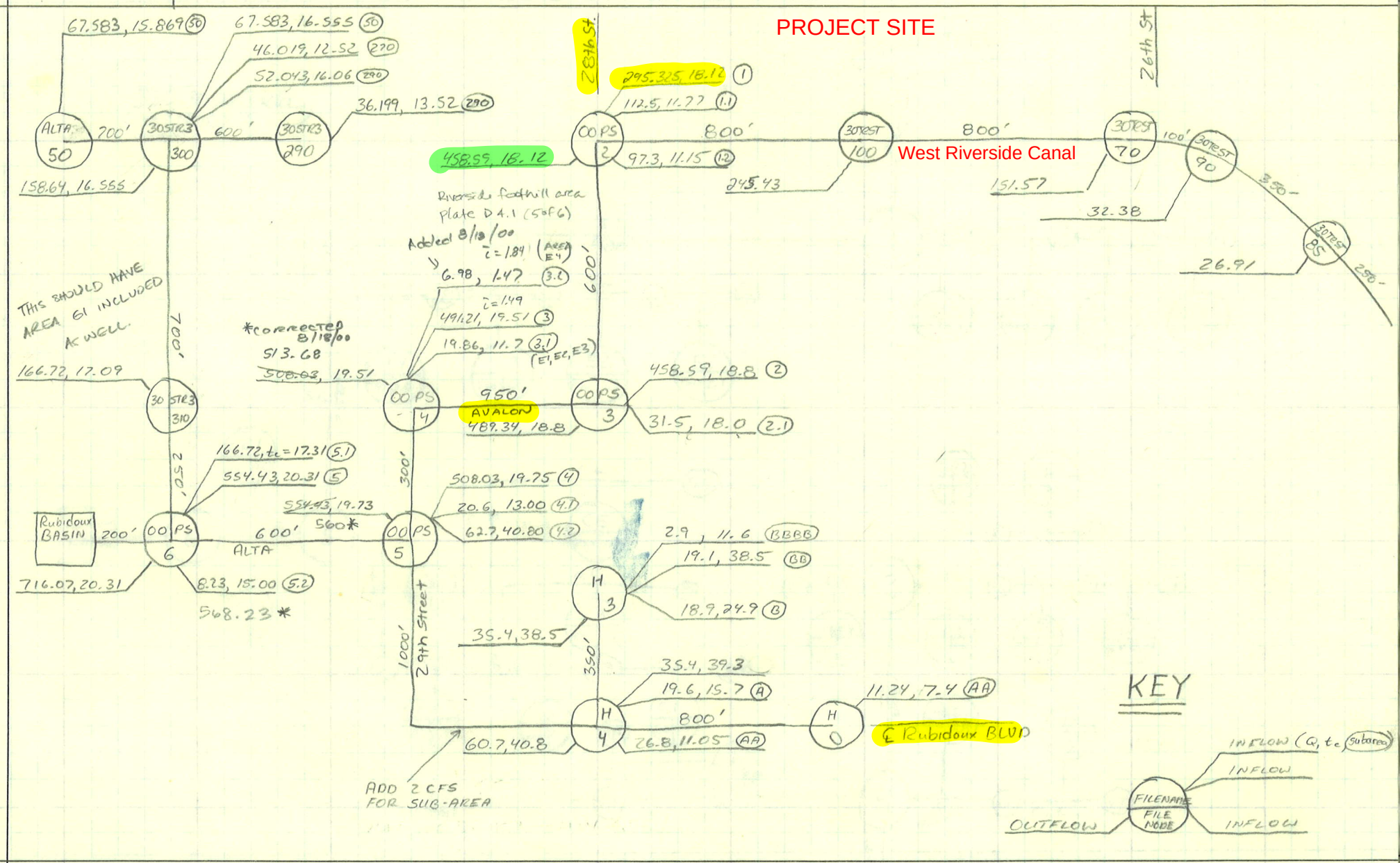
Julianne Frabizio, PE, QSD
Water Resource Engineer

THIENES ENGINEERING, INC.
14349 Firestone Blvd. | La Mirada, California | 90638
P: 714.521.4811 ext: 231 F: 714.521.4173
julianne@thieneseng.com

From: Quinonez, Edwin [mailto:eequinonez@rcflood.org]
Sent: Wednesday, June 24, 2015 3:02 PM
To: 'Julianne F.'; Russell, Eric
Subject: RE: TEI Job#3384

3-11-99

Rubidoux 30th Street Storm Drain
Final Hydrology MAP 3-11-99 - JEU



SEP - SYSTEM

EXHIBIT 1

OOPS

OOPS.OUT

COMBINE HYDROLOGY FROM HAND-CALCS, ALTA.OUT, AND 30TEST.OUT. DETERMINE TOTAL FLOW IN SYSTEM.

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 1998 Version 5.1
        Rational Hydrology Study        Date: 03/11/99  File:oops.out
--------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

--------------------------------------------------------------------------
FOR OFFICIAL USE  - Riverside County Offices - S/N   433
--------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Riverside-Foothill ] area used.
10 year storm 10 minute intensity =  2.140(In/Hr)
10 year storm 60 minute intensity =  0.800(In/Hr)
100 year storm 10 minute intensity =  3.210(In/Hr)
100 year storm 60 minute intensity =  1.200(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.200(In/Hr)
Slope of intensity duration curve = 0.5500
```

HAND CALC BCKUP IS PART OF "H" FROM ALT "2" DATED 2/17/99

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________
Rainfall intensity =      2.318(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 1.000
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =   0.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
User specified values are as follows:
TC =  18.12 min.  Rain intensity =       2.32(In/Hr)
Total area =         1.00(Ac.)  Total runoff =     295.33(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      1.000(Ac.)
Runoff from this stream =    295.325(CFS)
Time of concentration =   18.12 min.
Rainfall intensity =     2.318(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.100 to Point/Station        2.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________
Rainfall intensity =      2.939(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 1.000
```

```
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =   0.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
User specified values are as follows:
TC =  11.77 min.  Rain intensity =       2.94(In/Hr)
Total area =         1.00(Ac.)  Total runoff =    112.55(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.100 to Point/Station        2.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.000(Ac.)
Runoff from this stream =    112.549(CFS)
Time of concentration =   11.77 min.
Rainfall intensity =     2.939(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.200 to Point/Station        2.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________
Rainfall intensity =      3.028(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 1.000
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =   0.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
User specified values are as follows:
TC =  11.15 min.  Rain intensity =       3.03(In/Hr)
Total area =         1.00(Ac.)  Total runoff =     97.29(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.200 to Point/Station        2.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      1.000(Ac.)
Runoff from this stream =     97.292(CFS)
Time of concentration =   11.15 min.
Rainfall intensity =     3.028(In/Hr)
Summary of stream data:

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


1    295.325     18.12                 2.318
2    112.549     11.77                 2.939
3     97.292     11.15                 3.028
Largest stream flow has longer time of concentration
Qp =    295.325 + sum of
          Qb          Ia/Ib
        112.549 *     0.789 =     88.773
          Qb          Ia/Ib
         97.292 *     0.766 =     74.489
Qp =    458.587

Total of 3 streams to confluence:
Flow rates before confluence point:
     295.325     112.549      97.292
Area of streams before confluence:
        1.000        1.000        1.000
```

```
Results of confluence:
Total flow rate =    458.587(CFS)
Time of concentration =    18.120 min.
Effective stream area after confluence =      3.000(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       2.000 to Point/Station       3.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =   854.000(Ft.)
Downstream point/station elevation =   848.900(Ft.)
Pipe length  =   600.00(Ft.)   Manning's N = 0.015
No. of pipes = 1  Required pipe flow  =   458.587(CFS)
Nearest computed pipe diameter  =     81.00(In.)
Calculated individual pipe flow  =   458.587(CFS)
Normal flow depth in pipe =   65.63(In.)
Flow top width inside pipe =   63.53(In.)
Critical Depth =   67.71(In.)
Pipe flow velocity =     14.76(Ft/s)
Travel time through pipe =    0.68 min.
Time of concentration (TC) =    18.80 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       2.000 to Point/Station       3.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      3.000(Ac.)
Runoff from this stream =    458.587(CFS)
Time of concentration =   18.80 min.
Rainfall intensity =     2.272(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       2.100 to Point/Station       3.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________
Rainfall intensity =      2.327(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 1.000
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =   0.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
User specified values are as follows:
TC =  18.00 min.  Rain intensity =       2.33(In/Hr)
Total area =         1.00(Ac.)  Total runoff =     31.50(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       2.100 to Point/Station       3.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.000(Ac.)
Runoff from this stream =     31.500(CFS)
Time of concentration =   18.00 min.
Rainfall intensity =     2.327(In/Hr)
Summary of stream data:

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


1      458.587     18.80                 2.272
2       31.500     18.00                 2.327
Largest stream flow has longer time of concentration
```

```
Qp =    458.587 + sum of
          Qb          Ia/Ib
          31.500 *     0.976 =      30.758
Qp =    489.345

Total of 2 streams to confluence:
Flow rates before confluence point:
     458.587      31.500
Area of streams before confluence:
        3.000        1.000
Results of confluence:
Total flow rate =    489.345(CFS)
Time of concentration =    18.798 min.
Effective stream area after confluence =      4.000(Ac.)

-------------- Check of Previous Confluence Operations -------------
                 Inside main stream number 1


Total of 4 streams to confluence:
Flow rates before and maximum after confluence point:

 No.          Flow Rate          TC         I        Max Confluence
  1           295.325          18.798      2.272        491.209
  2           112.549          12.448      2.850        424.490
  3            97.292          11.828      2.931        410.754
  4            31.500          18.000      2.327        483.405


Results of confluence check:
Total flow rate =    491.209(CFS)
Time of concentration =    18.798 min.
NOTE:
Maximum flow rate derived from previous confluences =    491.21(CFS)
This exceeds normal confluence rate of    489.34(CFS)
Therefore, largest confluence flow rate and TC =  18.80 Min. is used.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =   848.900(Ft.)
Downstream point/station elevation =   831.900(Ft.)
Pipe length  =   950.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   491.209(CFS)
Nearest computed pipe diameter  =     69.00(In.)
Calculated individual pipe flow  =   491.209(CFS)
Normal flow depth in pipe =   54.84(In.)
Flow top width inside pipe =   55.73(In.)
Critical depth could not be calculated.
Pipe flow velocity =     22.19(Ft/s)
Travel time through pipe =    0.71 min.
Time of concentration (TC) =    19.51 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      4.000(Ac.)
Runoff from this stream =    491.209(CFS)
Time of concentration =   19.51 min.
Rainfall intensity =     2.226(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.100 to Point/Station        4.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________
```

why didn't you use street + pipe (option)

```
Rainfall intensity =      2.949(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 1.000
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =   0.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
User specified values are as follows:
TC =  11.70 min.  Rain intensity =       2.95(In/Hr)
Total area =         1.00(Ac.)  Total runoff =     19.86(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.100 to Point/Station        4.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.000(Ac.)
Runoff from this stream =     19.860(CFS)
Time of concentration =   11.70 min.
Rainfall intensity =     2.949(In/Hr)
Summary of stream data:

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


1      491.209     19.51                 2.226
2       19.860     11.70                 2.949
Largest stream flow has longer time of concentration
Qp =    491.209 + sum of
          Qb          Ia/Ib
          19.860 *    0.755 =     14.991
Qp =    506.200

Total of 2 streams to confluence:
Flow rates before confluence point:
     491.209      19.860
Area of streams before confluence:
        4.000        1.000
Results of confluence:
Total flow rate =    506.200(CFS)
Time of concentration =    19.511 min.
Effective stream area after confluence =      5.000(Ac.)

-------------- Check of Previous Confluence Operations -------------
                Inside main stream number 1


Total of 5 streams to confluence:
Flow rates before and maximum after confluence point:

 No.         Flow Rate          TC         I        Max Confluence
  1          295.325          19.511      2.226        508.033
  2          112.549          13.161      2.764        447.271
  3           97.292          12.541      2.838        434.590
  4           31.500          18.713      2.278        500.900
  5           19.860          11.700      2.949        407.472


Results of confluence check:
Total flow rate =    508.033(CFS)
Time of concentration =    19.511 min.
NOTE:
Maximum flow rate derived from previous confluences =    508.03(CFS)
This exceeds normal confluence rate of    506.20(CFS)
Therefore, largest confluence flow rate and TC =  19.51 Min. is used.
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       4.000 to Point/Station       5.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________
Upstream point/station elevation =   831.900(Ft.)
Downstream point/station elevation =   827.000(Ft.)
Pipe length  =   300.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   508.033(CFS)
Nearest computed pipe diameter  =     69.00(In.)
Calculated individual pipe flow  =   508.033(CFS)
Normal flow depth in pipe =   60.38(In.)
Flow top width inside pipe =   45.64(In.)
Critical depth could not be calculated.
Pipe flow velocity =     21.07(Ft/s)
Travel time through pipe =    0.24 min.
Time of concentration (TC) =    19.75 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       4.000 to Point/Station       5.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.000(Ac.)
Runoff from this stream =    508.033(CFS)
Time of concentration =   19.75 min.
Rainfall intensity =     2.211(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       4.100 to Point/Station       5.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________
Rainfall intensity =      2.783(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 1.000
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =   0.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
User specified values are as follows:
TC =  13.00 min.  Rain intensity =       2.78(In/Hr)
Total area =         1.00(Ac.)  Total runoff =     20.60(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       4.100 to Point/Station       5.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.000(Ac.)
Runoff from this stream =     20.600(CFS)
Time of concentration =   13.00 min.
Rainfall intensity =     2.783(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       4.200 to Point/Station       5.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________
Rainfall intensity =      1.484(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 1.000
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =   0.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
```

areas C1 to C6

User specified values are as follows:
TC = 40.80 min. Rain intensity = 1.48(In/Hr)
Total area = 1.00(Ac.) Total runoff = 60.70(CFS)

++
Process from Point/Station 4.200 to Point/Station 5.000
**** CONFLUENCE OF MINOR STREAMS ****

Along Main Stream number: 1 in normal stream number 3
Stream flow area = 1.000(Ac.)
Runoff from this stream = 60.700(CFS)
Time of concentration = 40.80 min.
Rainfall intensity = 1.484(In/Hr)
Summary of stream data:

Stream No.	Flow rate (CFS)	TC (min)	Rainfall Intensity (In/Hr)
1	508.033	19.75	2.211
2	20.600	13.00	2.783
3	60.700	40.80	1.484

Largest stream flow has longer or shorter time of concentration
Qp = 508.033 + sum of

Qb	Ia/Ib		
20.600 *	0.795 =	16.368	
Qa	Tb/Ta		
60.700 *	0.484 =	29.380	30.347

Qp = 553.781 should be 62.7, actually 46.7

Total of 3 streams to confluence:
Flow rates before confluence point:
508.033 20.600 60.700
Area of streams before confluence:
5.000 1.000 1.000
Results of confluence:
Total flow rate = 553.781(CFS)
Time of concentration = 19.748 min.
Effective stream area after confluence = 7.000(Ac.)

---------- Check of Previous Confluence Operations ----------
Inside main stream number 1

Total of 7 streams to confluence:
Flow rates before and maximum after confluence point:

No.	Flow Rate	TC	I	Max Confluence
1	295.325	19.748	2.211	554.425
2	112.549	13.398	2.737	488.806
3	97.292	12.778	2.809	475.355
4	31.500	18.951	2.262	546.579
5	19.860	11.937	2.917	446.058
6	20.600	13.000	2.783	480.486
7	60.700	40.800	1.484	412.969

Results of confluence check:
Total flow rate = 554.425(CFS)
Time of concentration = 19.748 min.
NOTE:
Maximum flow rate derived from previous confluences = 554.42(CFS)
This exceeds normal confluence rate of 553.78(CFS)
Therefore, largest confluence flow rate and TC = 19.75 Min. is used.

++
Process from Point/Station 5.000 to Point/Station 6.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

```
Upstream point/station elevation =   827.000(Ft.)
Downstream point/station elevation =   821.000(Ft.)
Pipe length  =   600.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   554.425(CFS)
Nearest computed pipe diameter  =     78.00(In.)
Calculated individual pipe flow  =   554.425(CFS)
Normal flow depth in pipe =   69.00(In.)
Flow top width inside pipe =   49.84(In.)
Critical Depth =   72.09(In.)
Pipe flow velocity =     17.85(Ft/s)
Travel time through pipe =    0.56 min.
Time of concentration (TC) =    20.31 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.000 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      7.000(Ac.)
Runoff from this stream =    554.425(CFS)
Time of concentration =   20.31 min.
Rainfall intensity =     2.177(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.200 to Point/Station        6.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________
Rainfall intensity =      2.572(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 1.000
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =   0.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
User specified values are as follows:
TC =  15.00 min.  Rain intensity =       2.57(In/Hr)
Total area =         1.00(Ac.)  Total runoff =      8.23(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.200 to Point/Station        6.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.000(Ac.)
Runoff from this stream =      8.230(CFS)
Time of concentration =   15.00 min.
Rainfall intensity =     2.572(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        5.100 to Point/Station        6.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________
Rainfall intensity =      2.378(In/Hr) for a   100.0 year storm
USER INPUT of soil data for subarea
Runoff Coefficient = 1.000
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =   0.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
User specified values are as follows:
TC =  17.31 min.  Rain intensity =       2.38(In/Hr)
Total area =         1.00(Ac.)  Total runoff =    166.72(CFS)
```

++
Process from Point/Station 5.100 to Point/Station 6.000
**** CONFLUENCE OF MINOR STREAMS ****

Along Main Stream number: 1 in normal stream number 3
Stream flow area = 1.000(Ac.)
Runoff from this stream = 166.720(CFS)
Time of concentration = 17.31 min.
Rainfall intensity = 2.378(In/Hr)
Summary of stream data:

Stream No.	Flow rate (CFS)	TC (min)	Rainfall Intensity (In/Hr)
1	554.425	20.31	2.177
2	8.230	15.00	2.572
3	166.720	17.31	2.378

Largest stream flow has longer time of concentration
Qp = 554.425 + sum of
Qb Ia/Ib
8.230 * 0.846 = 6.967
Qb Ia/Ib
166.720 * 0.916 = 152.672
Qp = 714.063

Total of 3 streams to confluence:
Flow rates before confluence point:
554.425 8.230 166.720
Area of streams before confluence:
7.000 1.000 1.000
Results of confluence:
Total flow rate = 714.063(CFS)
Time of concentration = 20.309 min.
Effective stream area after confluence = 9.000(Ac.)

---------- Check of Previous Confluence Operations ----------
Inside main stream number 1

Total of 9 streams to confluence:
Flow rates before and maximum after confluence point:

No.	Flow Rate	TC	I	Max Confluence
1	295.325	20.309	2.177	716.068
2	112.549	13.959	2.676	634.546
3	97.292	13.339	2.744	615.170
4	31.500	19.511	2.226	712.009
5	19.860	12.498	2.844	578.289
6	20.600	13.560	2.719	622.408
7	60.700	41.360	1.472	524.781
8	8.230	15.000	2.572	653.944
9	166.720	17.305	2.378	698.245

Results of confluence check:
Total flow rate = 716.068(CFS)
Time of concentration = 20.309 min.
NOTE:
Maximum flow rate derived from previous confluences = 716.07(CFS)
This exceeds normal confluence rate of 714.06(CFS)
Therefore, largest confluence flow rate and TC = 20.31 Min. is used.
End of computations, total study area = 9.00 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number = 0.0

```
T1                                                                                                  0
T2 Belltown Line D  10/13/00    jc
T3
SO   1000.000 822.000  1                                828.500
R    1016.000 822.030  1      .013                                        .000    .000 0
R    1032.000 822.060  1      .013                                        .000    .000 0
R    1135.900 823.340  1      .013                                        .000    .000 0
JX   1145.900 823.460  1  2  2.013    5.000    5.000 826.500 826.500 90.0-90.0    .000
R    1734.000 830.700  1      .013                                        .000    .000 0
JX   1751.670 830.910  4  3   .013   50.000          832.000             82.0          .000
R    1796.790 831.470  4      .013                                        .000    .000 0
R    1941.810 836.470  4      .013                                        .000    .000 0
R    2176.680 838.910  4      .013                                        .000    .000 0
JX   2182.180 838.970  4  2   .013   12.000          841.700            -90.0          .000
R    2506.390 842.340  4      .013                                        .000    .000 0
JX   2514.390 842.430  4  2   .013    8.000          844.700            -90.0          .000
R    2829.050 845.700  4      .013                                        .000    .000 0
JX   2854.050 845.960  4  3   .013   31.500          848.100             28.0          .000
R    2905.770 846.500  4      .013                                        .000    .000 0
R    3390.000 863.470  4      .013                                        .000    .000 0
R    3462.000 869.850  4      .013                                        .000    .000 0
SH   3462.000 869.850  4                                875.850
CD   1  4   1    .000   6.500     .000  .000  .000   .00
CD   2  4   1    .000   1.500     .000  .000  .000   .00
CD   3  4   1    .000   4.000     .000  .000  .000   .00
CD   4  4   1    .000   6.000     .000  .000  .000   .00
Q           458.000   .0
```

Belltown Line D 10/13/00 jc

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	822.000	6.500	828.500	569.50	20.14	6.30	834.80	.00	5.80	.00	6.000	.000	.00	1 .0
16.000	.0019					.0181	.29	6.50	.00	6.00	.013	.00	.00	PIPE
1016.000	822.030	6.759	828.789	569.50	20.14	6.30	835.09	.00	5.80	.00	6.000	.000	.00	1 .0
16.000	.0019					.0181	.29	6.76	.00	6.00	.013	.00	.00	PIPE
1032.000	822.060	7.019	829.079	569.50	20.14	6.30	835.38	.00	5.80	.00	6.000	.000	.00	1 .0
103.900	.0123					.0181	1.88	7.02	.00	6.00	.013	.00	.00	PIPE
1135.900	823.340	7.617	830.957	569.50	20.14	6.30	837.26	.00	5.80	.00	6.000	.000	.00	1 .0
JUNCT STR	.0120					.0178	.18	7.62	.00		.013	.00	.00	PIPE
1145.900	823.460	8.114	831.574	559.50	19.79	6.08	837.65	.00	5.78	.00	6.000	.000	.00	1 .0
588.100	.0123					.0175	10.26	8.11	.00	6.00	.013	.00	.00	PIPE
1734.000	830.700	11.138	841.838	559.50	19.79	6.08	847.92	.00	5.78	.00	6.000	.000	.00	1 .0
JUNCT STR	.0119					.0160	.28	11.14	.00		.013	.00	.00	PIPE
1751.670	830.910	13.256	844.166	509.50	18.02	5.04	849.21	.00	5.69	.00	6.000	.000	.00	1 .0
45.120	.0124					.0145	.65	13.26	.00	6.00	.013	.00	.00	PIPE
1796.790	831.470	13.349	844.819	509.50	18.02	5.04	849.86	.00	5.69	.00	6.000	.000	.00	1 .0
145.020	.0345					.0145	2.10	13.35	.00	3.52	.013	.00	.00	PIPE
1941.810	836.470	10.448	846.918	509.50	18.02	5.04	851.96	.00	5.69	.00	6.000	.000	.00	1 .0
234.870	.0104					.0145	3.40	10.45	.00	6.00	.013	.00	.00	PIPE

Belltown Line D 10/13/00 jc

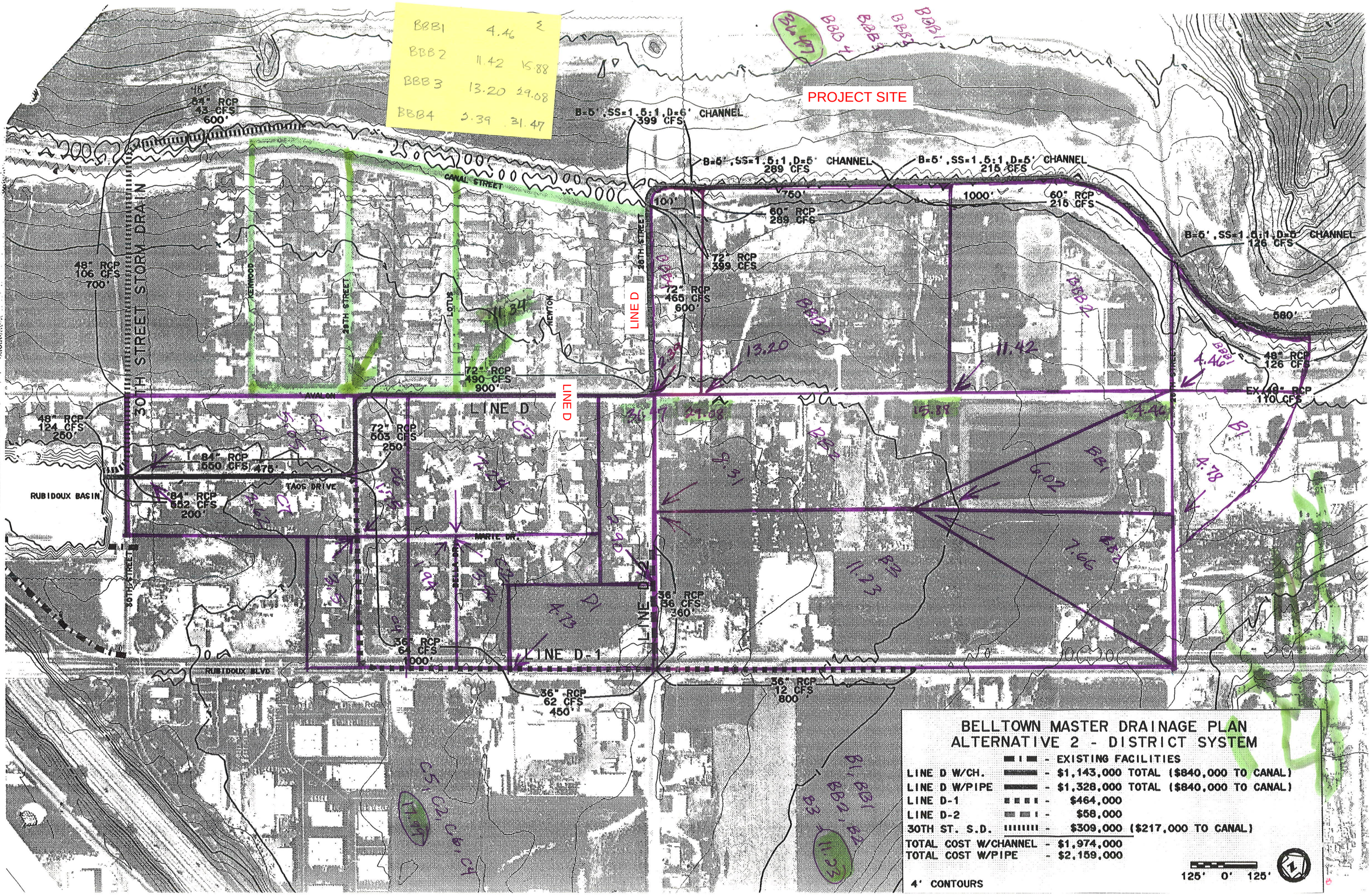
Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
2176.680	838.910	11.407	850.317	509.50	18.02	5.04	855.36	.00	5.69	.00	6.000	.000	.00	1 .0
JUNCT STR	.0109					.0141	.08	11.41	.00		.013	.00	.00	PIPE
2182.180	838.970	11.894	850.864	497.50	17.60	4.81	855.67	.00	5.67	.00	6.000	.000	.00	1 .0
324.210	.0104					.0138	4.47	11.89	.00	6.00	.013	.00	.00	PIPE
2506.390	842.340	12.998	855.338	497.50	17.60	4.81	860.15	.00	5.67	.00	6.000	.000	.00	1 .0
JUNCT STR	.0112					.0136	.11	13.00	.00		.013	.00	.00	PIPE
2514.390	842.430	13.324	855.754	489.50	17.31	4.65	860.41	.00	5.65	.00	6.000	.000	.00	1 .0
314.660	.0104					.0134	4.20	13.32	.00	6.00	.013	.00	.00	PIPE
2829.050	845.700	14.257	859.957	489.50	17.31	4.65	864.61	.00	5.65	.00	6.000	.000	.00	1 .0
JUNCT STR	.0104					.0125	.31	14.26	.00		.013	.00	.00	PIPE
2854.050	845.960	15.393	861.353	458.00	16.20	4.07	865.43	.00	5.56	.00	6.000	.000	.00	1 .0
51.720	.0104					.0117	.60	15.39	.00	5.32	.013	.00	.00	PIPE
2905.770	846.500	15.458	861.958	458.00	16.20	4.07	866.03	.00	5.56	.00	6.000	.000	.00	1 .0
236.364	.0350					.0117	2.76	15.46	.00	3.27	.013	.00	.00	PIPE
3142.134	854.783	9.936	864.719	458.00	16.20	4.07	868.79	.00	5.56	.00	6.000	.000	.00	1 .0
HYDRAULIC JUMP														
3142.134	854.783	3.334	858.118	458.00	28.38	12.51	870.62	.00	5.56	5.96	6.000	.000	.00	1 .0
247.866	.0350					.0310	7.69	3.33	3.04	3.27	.013	.00	.00	PIPE

Belltown Line D 10/13/00 jc

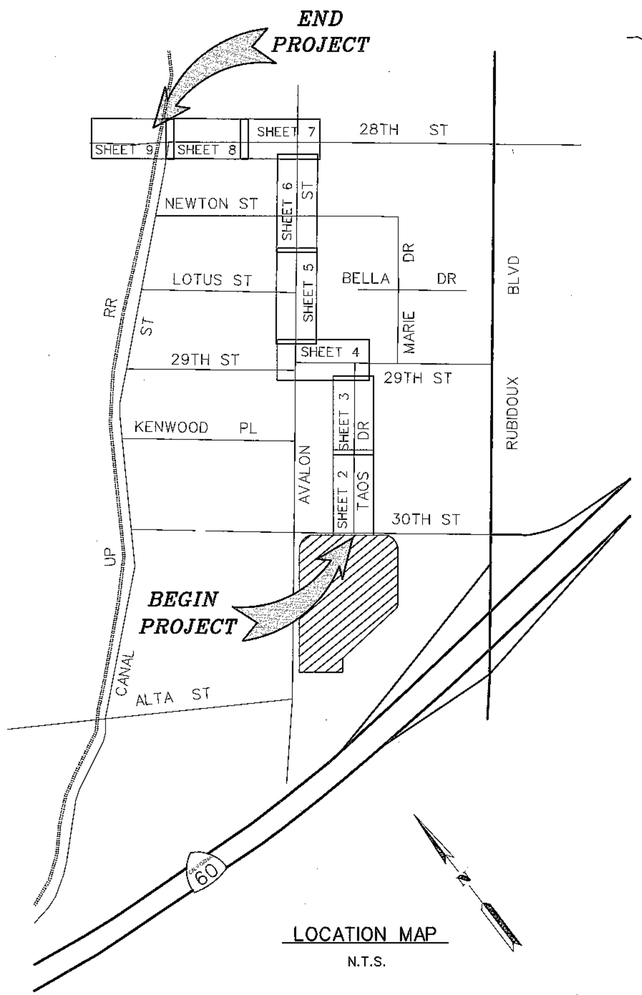
Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
3390.000	863.470	3.467	866.937	458.00	27.05	11.36	878.30	.00	5.56	5.93	6.000	.000	.00	1 .0
.811	.0886					.0290	.02	3.47	2.82	2.50	.013	.00	.00	PIPE
3390.811	863.542	3.474	867.016	458.00	26.99	11.31	878.33	.00	5.56	5.92	6.000	.000	.00	1 .0
14.479	.0886					.0273	.39	3.47	2.81	2.50	.013	.00	.00	PIPE
3405.290	864.825	3.614	868.439	458.00	25.73	10.28	878.72	.00	5.56	5.87	6.000	.000	.00	1 .0
12.187	.0886					.0241	.29	3.61	2.61	2.50	.013	.00	.00	PIPE
3417.477	865.905	3.763	869.668	458.00	24.54	9.35	879.02	.00	5.56	5.80	6.000	.000	.00	1 .0
10.293	.0886					.0214	.22	3.76	2.41	2.50	.013	.00	.00	PIPE
3427.770	866.817	3.921	870.738	458.00	23.39	8.50	879.24	.00	5.56	5.71	6.000	.000	.00	1 .0
8.671	.0886					.0190	.16	3.92	2.23	2.50	.013	.00	.00	PIPE
3436.441	867.585	4.090	871.675	458.00	22.31	7.73	879.40	.00	5.56	5.59	6.000	.000	.00	1 .0
7.259	.0886					.0169	.12	4.09	2.05	2.50	.013	.00	.00	PIPE
3443.700	868.228	4.272	872.500	458.00	21.27	7.02	879.52	.00	5.56	5.43	6.000	.000	.00	1 .0
6.008	.0886					.0151	.09	4.27	1.88	2.50	.013	.00	.00	PIPE
3449.708	868.761	4.469	873.230	458.00	20.28	6.38	879.61	.00	5.56	5.23	6.000	.000	.00	1 .0
4.857	.0886					.0136	.07	4.47	1.72	2.50	.013	.00	.00	PIPE
3454.565	869.191	4.685	873.876	458.00	19.33	5.80	879.68	.00	5.56	4.96	6.000	.000	.00	1 .0
3.754	.0886					.0123	.05	4.69	1.56	2.50	.013	.00	.00	PIPE

Belltown Line D 10/13/00 jc

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
3458.319	869.524	4.926	874.450	458.00	18.43	5.28	879.73	.00	5.56	4.60	6.000	.000	.00	1 .0
2.579	.0886					.0112	.03	4.93	1.40	2.50	.013	.00	.00	PIPE
3460.898	869.752	5.206	874.958	458.00	17.58	4.80	879.76	.00	5.56	4.07	6.000	.000	.00	1 .0
1.102	.0886					.0104	.01	5.21	1.22	2.50	.013	.00	.00	PIPE
3462.000	869.850	5.557	875.407	458.00	16.76	4.36	879.77	.00	5.56	3.14	6.000	.000	.00	1 .0

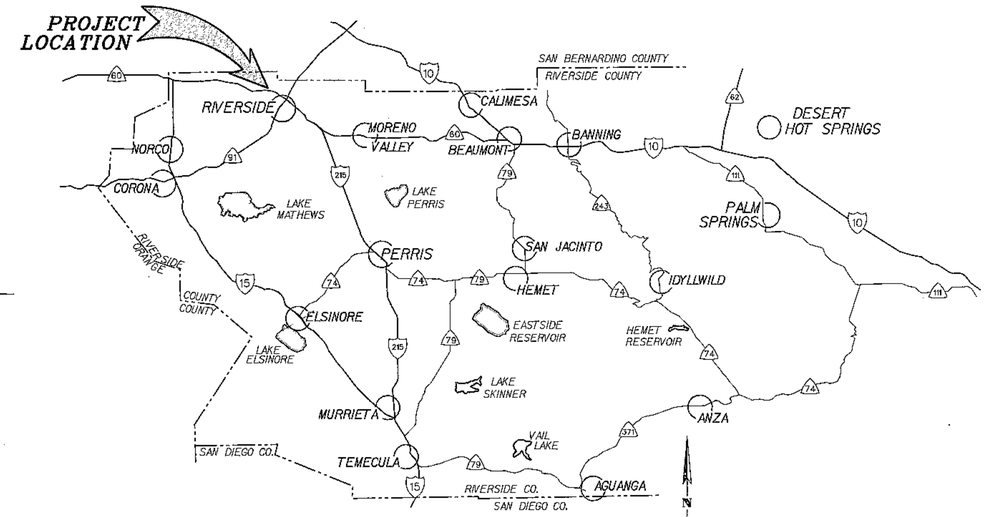

BELLTOWN MASTER DRAINAGE PLAN
ALTERNATIVE 2 - DISTRICT SYSTEM
EXISTING FACILITIES
LINE D W/CH. - $1,143,000 TOTAL ($840,000 TO CANAL)
LINE D W/PIPE - $1,328,000 TOTAL ($840,000 TO CANAL)
LINE D-1 - $464,000
LINE D-2 - $58,000
30TH ST. S.D. - $309,000 ($217,000 TO CANAL)
TOTAL COST W/CHANNEL - $1,974,000
TOTAL COST W/PIPE - $2,159,000
4' CONTOURS
125' 0' 125'
PROJECT SITE
BBB1 4.46
BBB2 11.42 15.88
BBB3 13.20 29.08
BBB4 2.39 31.47
B=5', SS=1.5:1, D=6' CHANNEL 399 CFS
B=5', SS=1.5:1, D=5' CHANNEL 289 CFS
B=5', SS=1.5:1, D=5' CHANNEL 215 CFS
B=5', SS=1.5:1, D=5' CHANNEL 126 CFS
60" RCP 289 CFS
60" RCP 215 CFS
72" RCP 399 CFS
72" RCP 465 CFS 600'
72" RCP 490 CFS 900'
48" RCP 126 CFS
EX 48" RCP 110 CFS
84" RCP 43 CFS 600'
48" RCP 106 CFS 700'
48" RCP 124 CFS 260'
72" RCP 603 CFS 250'
84" RCP 550 CFS 475'
84" RCP 552 CFS 200'
36" RCP 36 CFS 360'
36" RCP 62 CFS 1000'
36" RCP 62 CFS 450'
36" RCP 12 CFS 800'
LINE D
LINE D-1
LINE D-2
30TH STREET STORM DRAIN
CANAL STREET
KENWOOD
30TH STREET
LOTUS
KENTON
AVALON
TAOS DRIVE
MARTE DR.
BELLA DR.
RUBIDOUX BASIN
RUBIDOUX BLVD
750'
1000'
100'
580'

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT



LOCATION MAP

N.T.S.



VICINITY MAP

N.T.S.

GENERAL NOTES

1. ALL STATIONING REFERS TO CENTERLINE OF CONSTRUCTION.
2. ALL CHANNEL/STORM DRAIN REFERENCES AND CROSS SECTIONS ARE TAKEN LOOKING DOWNSTREAM.
3. TOPOGRAPHY BY DIGITAL PHOTOGRAMMETRIC METHODS. AERIAL PHOTOGRAPHS TAKEN AT AN ALTITUDE NOT TO EXCEED A FLYING HEIGHT TO CONTOUR INTERVAL RATIO OF 1800. PHOTOGRAPHY DATED 05-20-98.
4. THE VERTICAL DATUM IS DERIVED FROM NAVD 88. THE HORIZONTAL DATUM IS DERIVED FROM NAD 83.
5. STANDARD DRAWINGS CALLED FOR ON THE PLAN & PROFILE SHALL CONFORM TO RCFC & WCD STD. DRAWINGS, OR CALTRANS/CITY/COUNTY STANDARD PLANS.
6. ELEVATIONS AND LOCATIONS OF UTILITIES WERE OBTAINED FROM AVAILABLE INFORMATION AND ARE SHOWN APPROXIMATELY ON THESE PLANS. 48 HOURS BEFORE EXCAVATION CALL UNDERGROUND SERVICE ALERT AT 1-800-227-2600. ALL UTILITIES SHALL BE PROTECTED IN PLACE EXCEPT AS NOTED ON PLANS AND SPECIFICATIONS.
7. UTILITY SERVICE HOUSE CONNECTIONS SHOWN ON THE PLANS WERE PLOTTED WITH THE BEST KNOWN INFORMATION. SOME CONNECTIONS MAY NOT BE SHOWN OR MAY BE MISPLOTTED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, PROTECTING IN PLACE, AND/OR REPAIRING ALL HOUSE CONNECTIONS.
8. THE CONTRACTOR IS REQUIRED TO CONTACT ALL UTILITY AGENCIES REGARDING TEMPORARY SUPPORT AND SHORING REQUIREMENTS FOR THE VARIOUS UTILITY LINES SHOWN ON THESE PLANS.
9. ALL OPENINGS RESULTING FROM CUTTING OR PARTIAL REMOVAL OF EXIST. CULVERTS, PIPES, OR SIMILAR STRUCTURES TO BE ABANDONED, SHALL BE SEALED AT BOTH ENDS WITH 0.5' MIN. CLASS "B" CONCRETE.
10. UNLESS OTHERWISE SPECIFIED, MINIMUM STREET RECONSTRUCTION SHALL BE 0.25' TYPE "B" ASPHALT CONCRETE OVER 0.5' CLASS 2 AGGREGATE BASE.
11. ALL RECONSTRUCTION, RESURFACING AND PAVEMENT DELINEATION, CURBS, SIDEWALKS AND OTHER IMPROVEMENTS ARE TO BE RECONSTRUCTED IN KIND AT THE SAME LOCATIONS AND ELEVATIONS AS THE EXISTING IMPROVEMENTS, UNLESS OTHERWISE NOTED.
12. ⊕ INDICATES APPROX. SOIL BORING LOCATION PER SOILS REPORT DATED 06/25/99. HOUSE CONNECTIONS

INDEX

	SHEET NO.:
TITLE SHEET	1
PLAN & PROFILE	2-9
CONNECTOR PIPE DETAILS	10-12
MISCELLANEOUS DETAILS	13-15
PAVING PLAN	16-19
TRAFFIC CONTROL PLAN	20-25

R.C.F.C. & W.C.D. STANDARD DRAWINGS

CB 100	CATCH BASIN NO 1	26
CB 103	MANHOLE FRAME AND COVER FOR CATCH BASINS	27
CB 101	CATCH BASIN NO 4	28
CB 105	DETAIL OF CATCH BASIN OPENING & INSTALLATION DETAILS/REMOVABLE PROTECTION BAR FOR C.B.	29-30
CB 106	CATCH BASIN REINFORCEMENT	31
JS 227	JUNCTION STRUCTURE NO 2	32-33
JS 229	JUNCTION STRUCTURE NO 4	34
LD 201	LOCAL DEPRESSION NO 2	35
LD 202	LOCAL DEPRESSION NO 3	36
MH 252	MANHOLE NO 2	37
MH 254	MANHOLE NO 4	38
MH 255	MANHOLE FRAME & COVER NON-ROCKING	39
MH 257	MANHOLE SHAFT FOR CAST PIPE	40
MH 259	STANDARD DROP STEP	41
CH 326	TRAPEZOIDAL CHANNEL DETAILS	42
M 803	CONCRETE COLLAR FOR PIPE	43
M 806	PIPE SUPPORTS ACROSS TRENCHES	44
M 808	REMODELING DETAILS - HOUSE CONNECTION SEWERS	45-46
M 814	ABBREVIATIONS AND SYMBOLS	47
M 816	CONCRETE BULKHEAD	48

COUNTY OF RIVERSIDE STANDARD DRAWINGS

200	TYPE A-6 CURB	49
201	TYPE A-8 CURB	50
209	CROSS GUTTER LAYOUT	51
209A	CROSS GUTTER TYPICAL SECTION	52

RUBIDOUX CSD

S-4	PRECAST MANHOLE	53
S-7	SEWER LATERAL CURBED STREETS	54

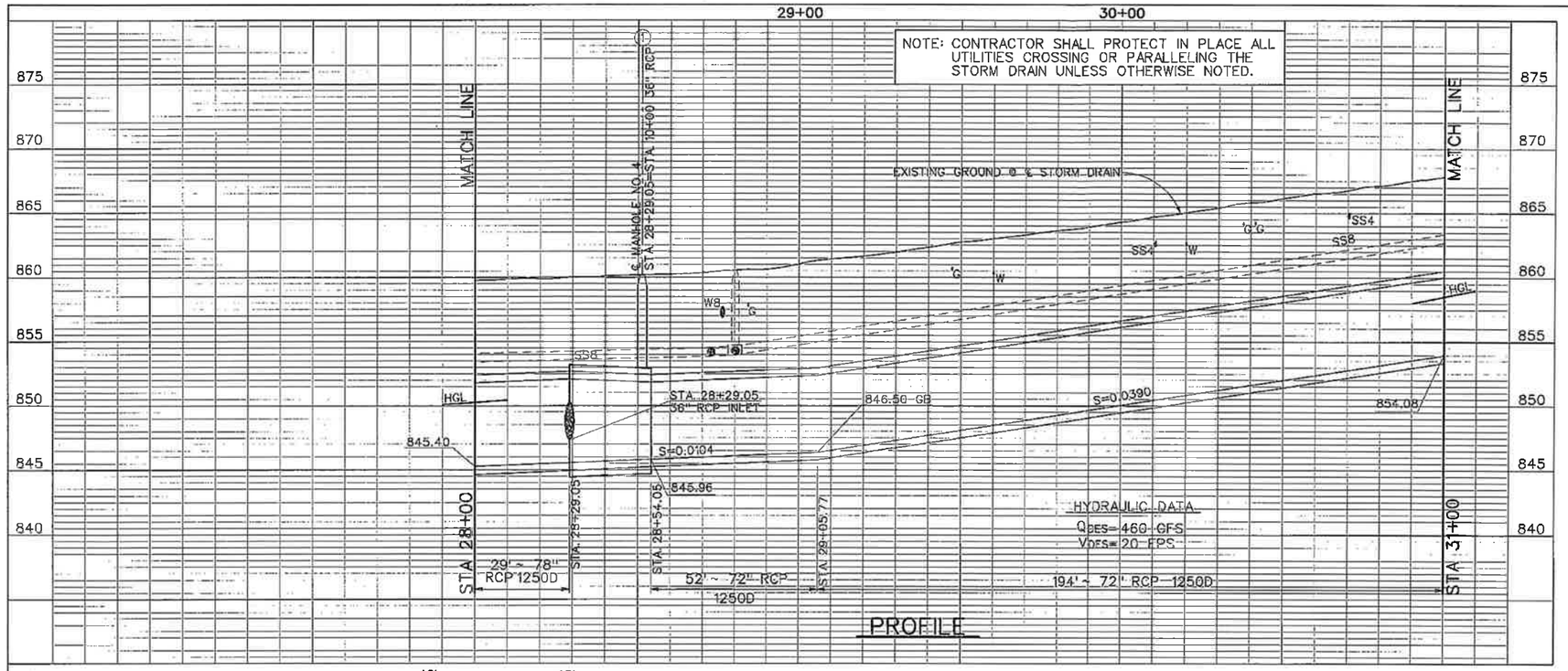
CALTRANS STANDARDS

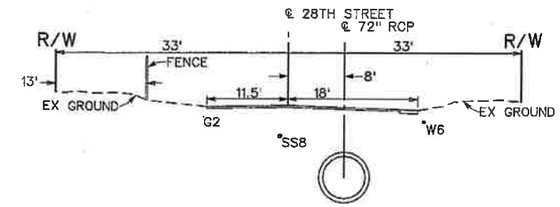
A 24 C	PAVEMENT MARKINGS SYMBOLS	55
A 24 D	PAVEMENT MARKINGS WORDS	56
A 24 E	PAVEMENT MARKINGS WORDS AND CROSSWALKS	57

REGISTERED PROFESSIONAL ENGINEER — CLYDE D. JOHNSON — No. 30539 Exp. 3-31-04 — CIVIL — STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER — DAVID F. ZASPEL — No. 22035 Exp. 9-30-01 — CIVIL — STATE OF CALIFORNIA

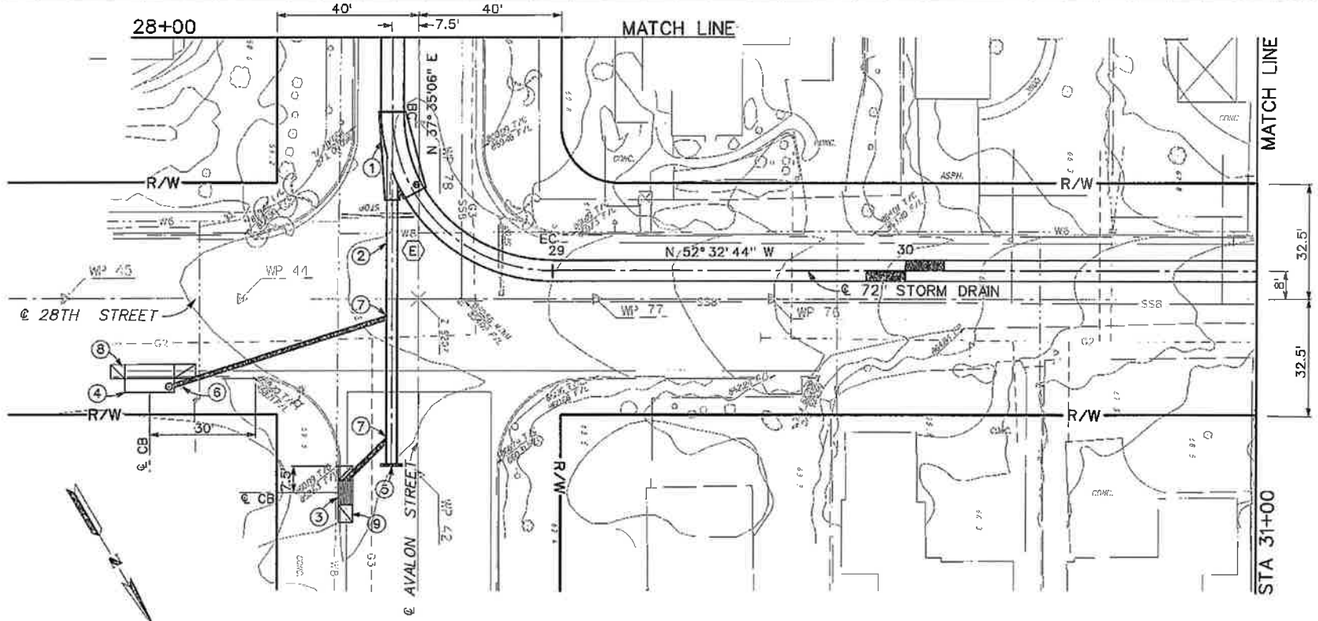
COUNTY OF RIVERSIDE TRANSPORTATION DEPARTMENT APPROVED BY: Clyde D. Johnson DEPUTY DIRECTOR OF TRANSPORTATION DATE: 3/15/01	Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2600 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG	PERMANENT BENCH MARK B.M. NO. " ML 8-3 APR. 1964. " FD. 3" BRASS DISK STAMPD. " ML 8-3 APR. 1964 " ON TOP OF 2' HIGH CONC. WALL @ S.W. COR. OF RUBIDOUX BLVD. BRIDGE NEAR INTERSECTING HWY 60, FLUSH. EL. 836.013	REVISIONS REF. / DESCRIPTION / APPR. / DATE	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT DESIGNED BY: J. C. GALE DRAWN BY: H. VERDUSCO DATE DRAWN: FEB. 2001 CHECKED BY: DCJ	RECOMMENDED FOR APPROVAL BY: Clyde D. Johnson DESIGN ENGINEER R.E. No. 30539 DATE: 3/15/01 APPROVED BY: David Zaspel CHIEF ENGINEER R.E. NO. 22035 DATE: 3/15/01	BELLTOWN LINE D STAGE 1 TITLE	PROJECT NO. 1-0-0155 DRAWING NO. 1-590 SHEET NO. 1 OF 57





SECTION STA. 30+00

10' 0 10'



PLAN

20' 0 20'

℄ CURVE DATA

Δ = 90° 07' 50"
R = 45.00'
L = 70.79'
T = 45.10'
BC = STA 28+29.05
EC = STA 28+99.84
N = 2313125.3990
E = 6213565.4340

NOTES

1. CONSTRUCT MH NO 4 PER STD MH 254. L=25', D_1 =78", D_2 =72", B=36", C=24.85', EL. R= 847.57, EL. S= 847.54.
2. INSTALL 36" RCP PER DETAILS ON SHEET 12.
3. CONSTRUCT CB NO 4 PER STD CB 101 W=6', V=4'. INSTALL 16 LF 18" RCP CLASS IV SEE PROFILE SHEET 12.
4. CONSTRUCT CB NO 1 PER STD CB 100 W=14', V=4. INSTALL 63 LF 18" RCP CLASS IV SEE PROFILE SHEET 12.
5. INSTALL CONCRETE BULKHEAD PER STD M 816.
6. REMOVE AND REINSTALL SIGN.
7. CONSTRUCT JS NO 2 PER STD JS 227. SEE PROFILE SHEET 12.
8. CONSTRUCT LD NO 2 PER STD LD 201.
9. CONSTRUCT LD NO 3 PER STD LD 202.

REGISTERED PROFESSIONAL ENGINEER CLYDE D. JOHNSON No. 30539 Exp. 3-31-04 CIVIL STATE OF CALIFORNIA

Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2600 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG

TEMPORARY BENCH MARK
B.M. NO. Z – 9207
FD. 1¼" IP W/LS 4453 TAG IN CROSS INTERSECTIKON OF AVALON STREET AND 28TH STREET, FLUSH.
EL. 860.256

REF.	REVISIONS DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED BY: J. C. GALE
DRAWN BY: H. VERDUSCO
DATE DRAWN: FEB. 2001
CHECKED BY: JCG

RECOMMENDED FOR APPROVAL BY: DESIGN ENGINEER R.E. No. 30539 DATE: 3/15/01

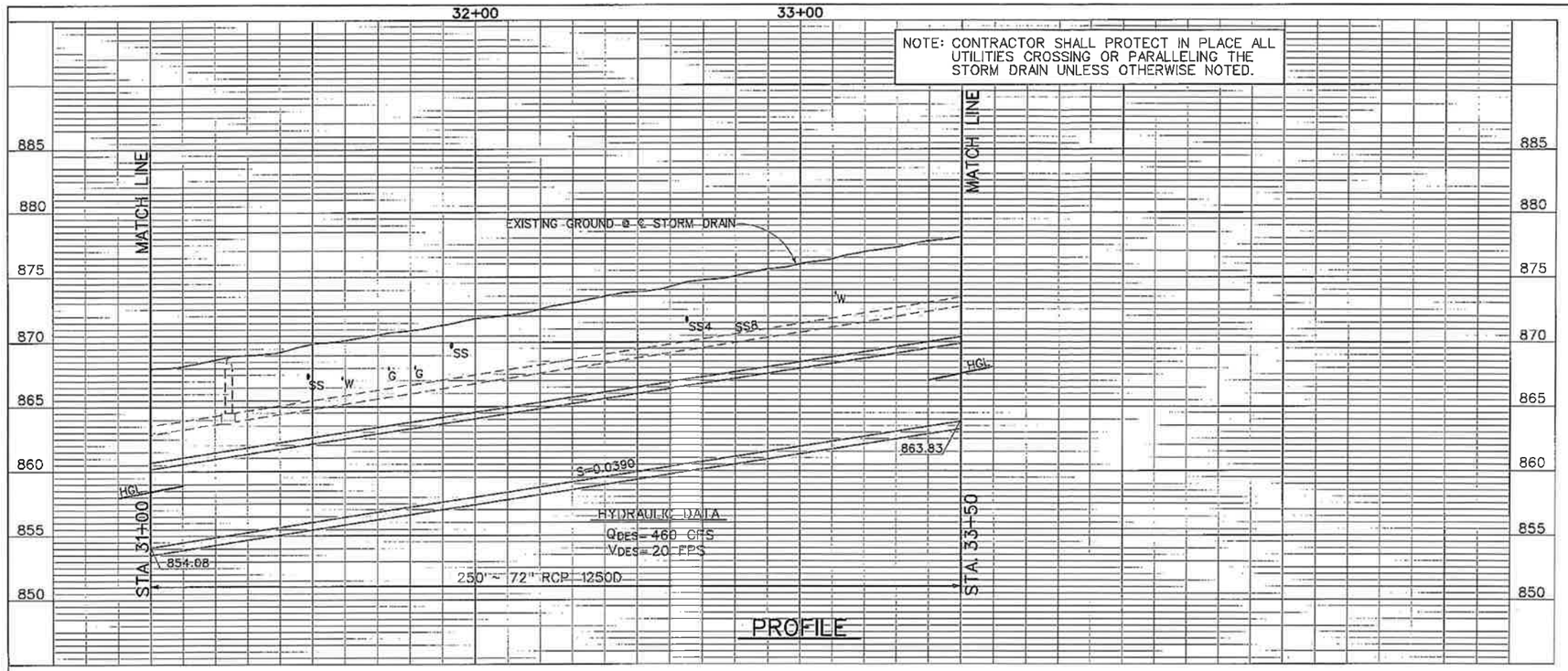
APPROVED BY: CHIEF ENGINEER R.E. No. 22035 DATE: 3/15/01

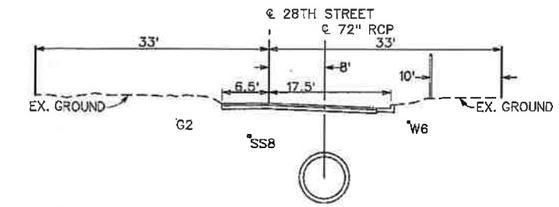
BELLTOWN LINE D

STAGE 1

PLAN AND PROFILE
STA. 28+00 TO STA. 31+00

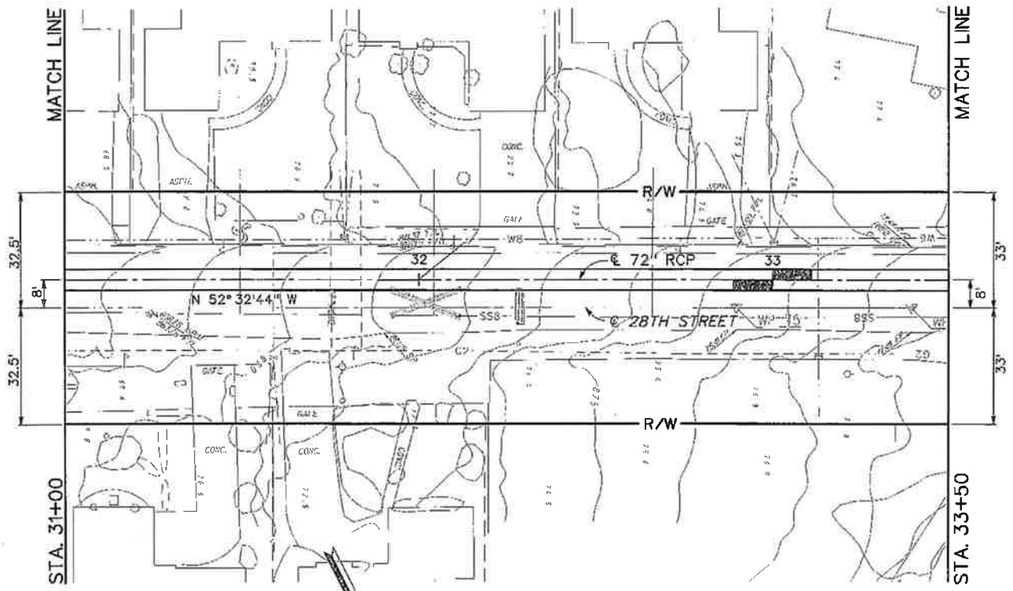
PROJECT NO. 1-0-0155
DRAWING NO. 1-590
SHEET NO. 7 OF 57





SECTION STA. 33+00

10' 0 10'



PLAN

20' 0 20'

Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2600 for the location of buried utility lines. Don't disrupt vital services.

TWO WORKING DAYS BEFORE YOU DIG

TEMPORARY BENCH MARK
B.M. NO. Z – 9207

SEE SHEET 7

REVISIONS			
REF.	DESCRIPTION	APPR.	DATE

REGISTERED PROFESSIONAL ENGINEER CLYDE D. JOHNSON No. 30539 Exp. 3-31-04 CIVIL STATE OF CALIFORNIA

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED BY: J. C. GALE
DRAWN BY: H. VERDUSCO
DATE DRAWN: FEB. 2001
CHECKED BY: JEB

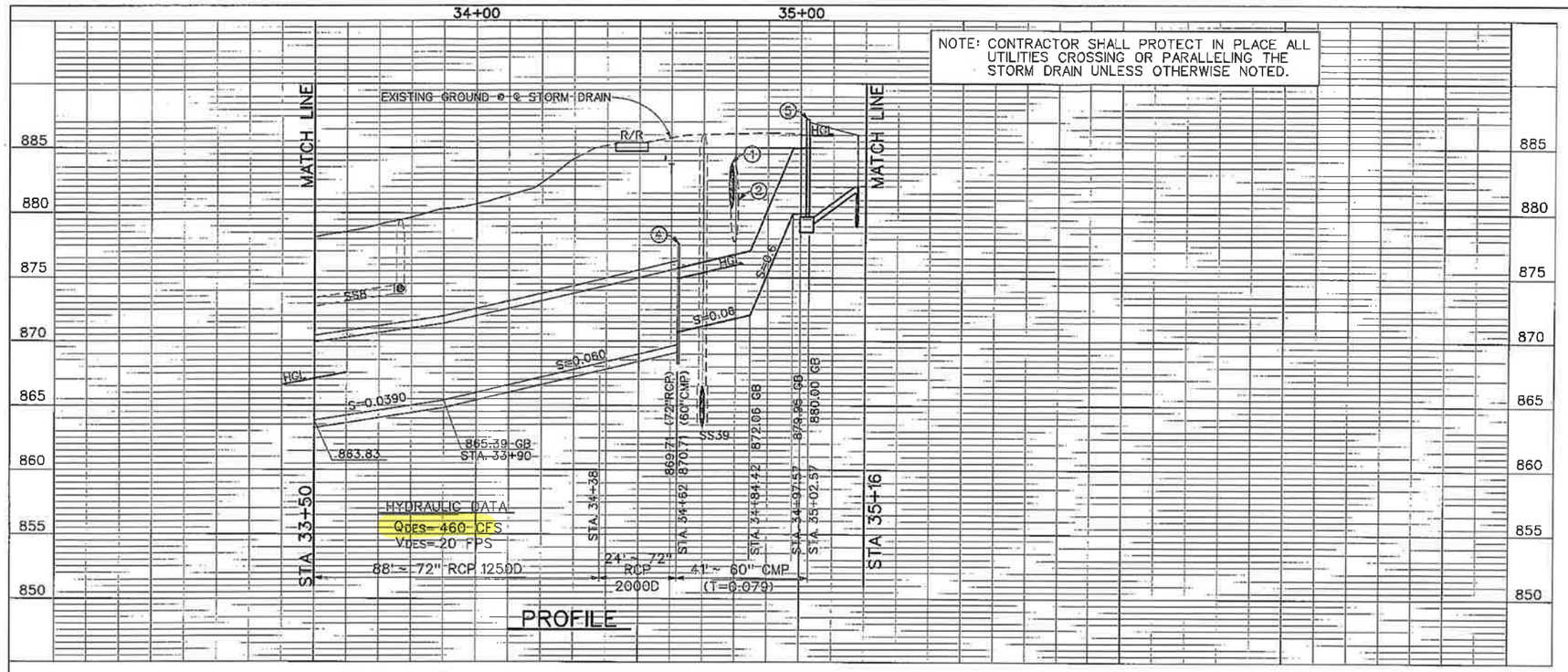
RECOMMENDED FOR APPROVAL BY: DESIGN ENGINEER R.E. No. 30539 DATE: 3/15/01

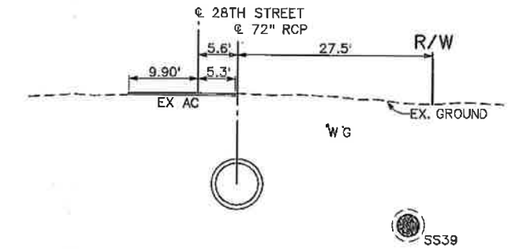
APPROVED BY: CHIEF ENGINEER R.E. NO. 22035 DATE: 3/15/01

BELLTOWN LINE D

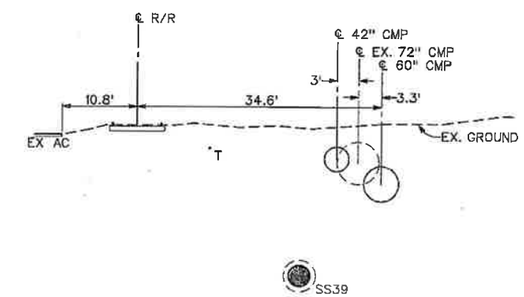
STAGE 1
PLAN AND PROFILE
STA. 31+00 TO STA. 33+50

PROJECT NO. 1-0-0155
DRAWING NO. 1-590
SHEET NO. 8 OF 57

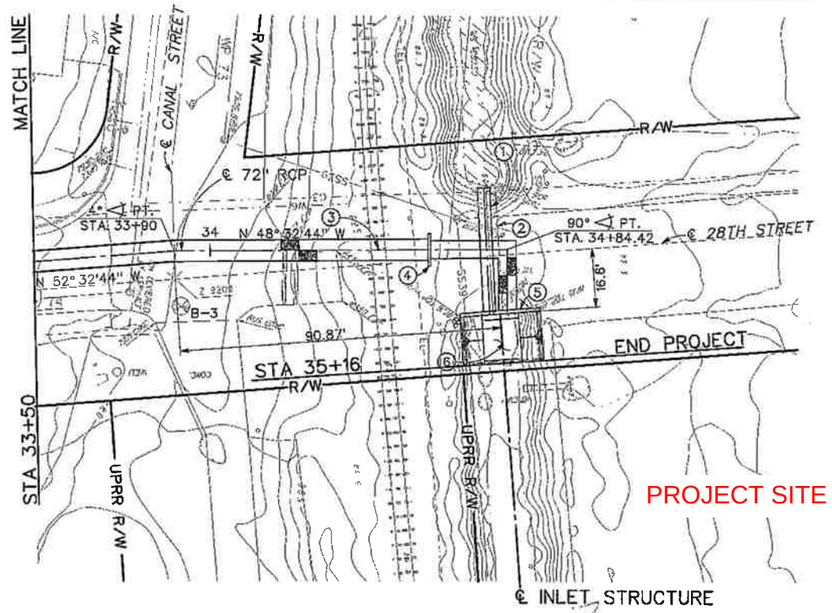




SECTION STA. 34+25



SECTION STA. 34+90



NOTES

1. INSTALL 36' – 42" CMP (T= 0.079"). SEE SHEET 15 FOR DETAILS.
2. REMOVE AND DISPOSE OF EX 72" CMP.
3. CONTRACTOR MUST COORDINATE TRACK REMOVAL AND REPLACEMENT WITH UPPR. SEE SPECIFICATIONS.
4. CONSTRUCT CONCRETE BULKHEAD PER DETAIL ON SHEET 15.
5. CONSTRUCT CONCRETE HEADWALL PER DETAILS ON SHEET 14.
6. CONSTRUCT INLET STRUCTURE PER DETAILS SHOWN ON SHEET 15.
7. SLURRY BACKFILL 60" CMP BETWEEN STA. 34+62 AND STA. 34+79 TO 1' ABOVE TOP OF PIPE SLURRY BACKFILL 60" CMP BETWEEN STA. 34+79 AND STA. 35+02 TO 1' BELOW EXISTING GRADE.

PLAN

REGISTERED PROFESSIONAL ENGINEER CLYDE D. JOHNSON No. 30539 Exp. 3-31-04 CIVIL STATE OF CALIFORNIA

Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2600 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG

TEMPORARY BENCH MARK
B.M. NO. Z – 9209
FD. 1" I.P. W/RCE 9208 TAG IN "T" INTERSECTION OF CANAL STREET AND 28TH STREET.
EL. 879.95

REVISIONS			
REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED BY: M. WONG
DRAWN BY: H. VERDUSCO
DATE DRAWN: FEB. 2001
CHECKED BY: JEL

RECOMMENDED FOR APPROVAL BY: DESIGN ENGINEER R.E. No. 30539 DATE: 3/15/01

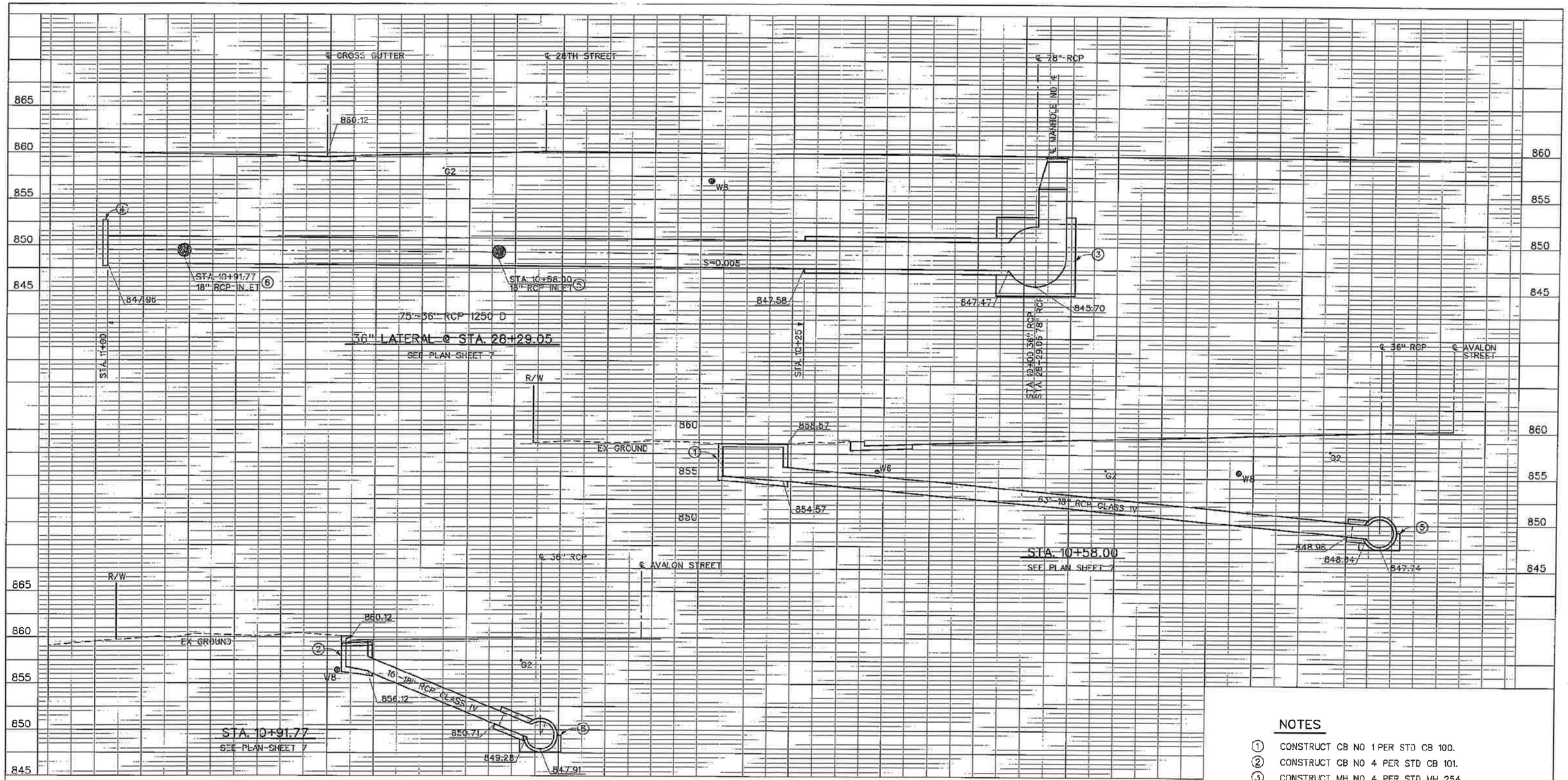
APPROVED BY: CHIEF ENGINEER R.E. No. 22035 DATE: 3/15/01

BELLTOWN LINE D

STAGE 1

STA. 33+50 TO STA. 35+16
PLAN AND PROFILE

PROJECT NO. 1-0-0155
DRAWING NO. 1-590
SHEET NO. 9 OF 57



CONNECTOR PIPE PROFILES

5' 0 5'

NOTES

1. CONSTRUCT CB NO 1 PER STD CB 100.
2. CONSTRUCT CB NO 4 PER STD CB 101.
3. CONSTRUCT MH NO 4 PER STD MH 254.
4. INSTALL CONCRETE BULKHEAD PER STD M 816.
5. CONSTRUCT JS NO 2 PER STD JS227. A=72° 09'32" B=18", C=3.5', D=36", E=2', F=19", G=16.5" L=3, EL S=848.64, EL R=848.96.
6. CONSTRUCT JS NO 2 PER STD JS227. A=45°, B=18", C=5', D=36", E=3.5', F=15", G=18", L=3.7', EL S=849.28, EL R=850.71.

REGISTERED PROFESSIONAL ENGINEER CLYDE D. JOHNSON No. 30539 Exp. 3-31-02 CIVIL STATE OF CALIFORNIA

Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2600 for the location of buried utility lines. Don't disrupt vital services. TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK

REF.	REVISIONS	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED BY: J. C. GALE
DRAWN BY: H. VERDUSCO
DATE DRAWN: FEB. 2001
CHECKED BY: SES

RECOMMENDED FOR APPROVAL BY: DESIGN ENGINEER R.E. No. 30539 DATE: 1/9/15/01

APPROVED BY: CHIEF ENGINEER R.E. No. 22035 DATE: 3/15/01

BELLTOWN LINE D

STAGE 1

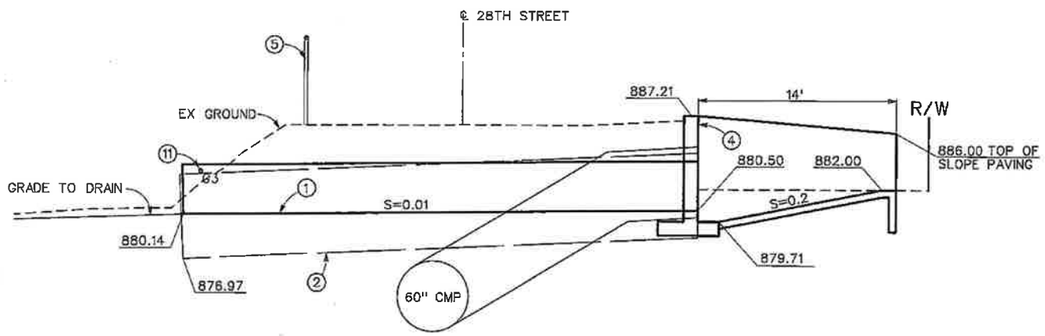
CONNECTOR PIPE PROFILES

PROJECT NO. 1-0-0155

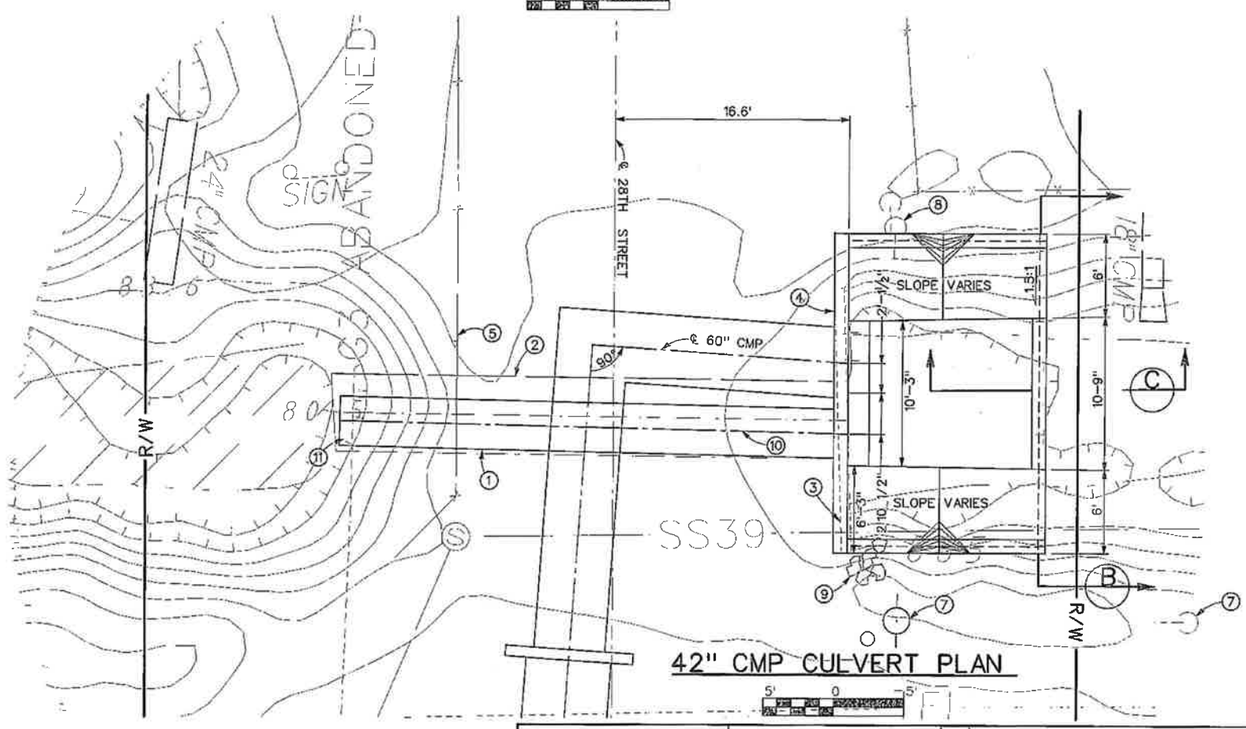
DRAWING NO. 1-590

SHEET NO. 12 OF 57

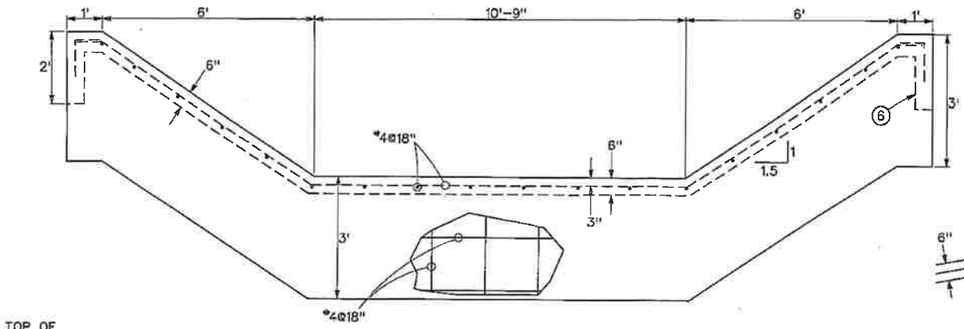
NOTE: CONTRACTOR SHALL PROTECT IN PLACE ALL UTILITIES CROSSING OR PARALLELING THE STORM DRAIN UNLESS OTHERWISE NOTED.



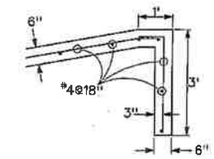
42" CMP CULVERT PROFILE



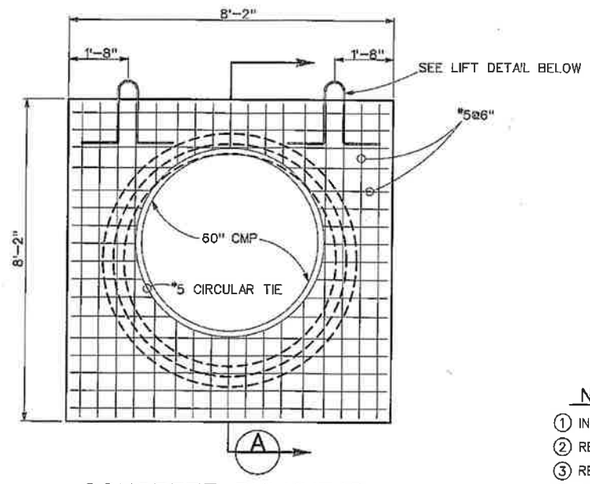
42" CMP CULVERT PLAN



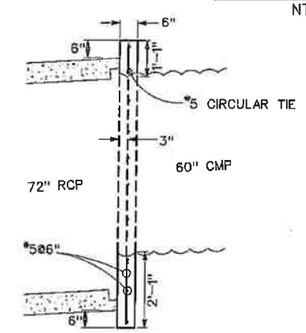
SECTION B
NTS



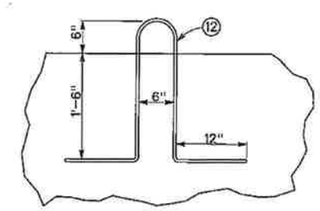
SECTION C
NTS



CONCRETE BULKHEAD
NTS



SECTION A
NTS



LIFT DETAIL
NTS

NOTES

1. INSTALL 36' – 42" CMP (T= 0.079").
2. REMOVE EX 72" CMP
3. REMOVE EX PIPE HEADWALL.
4. CONSTRUCT CONCRETE HEADWALL PER DETAILS ON SHEET 14.
5. REMOVE EX FENCE AND REPLACE IN KIND.
6. CONSTRUCT 2' CUT OFF WALL PER STD CH 326.
7. PROTECT IN PLACE EX POWER POLE AND GUY WITH ANCHOR.
8. GUY WITH ANCHOR TO BE RELOCATED BY OTHERS.
9. REMOVE EX ROCK AND PLACE AT DOWNSTREAM END OF 42" CMP AS DIRECTED BY ENGINEER.
10. SLURRY BACKFILL 42" CMP TO 1' BELOW EXISTING GRADE.
11. REMOVE AND PLUG INTERFERING PORTION OF ABANDONED 3" GAS LINE.
12. LIFTS SHALL BE STEEL WOVEN CABLE OF MIN. ¾" DIAMETER. WEAVE CABLE THROUGH HORIZONTAL BARS. COAT EXPOSED PORTION OF CABLE LIFT WITH AN APPROVED BITUMINIOUS PAINT PRIOR TO BACKFILLING TRENCH.

REGISTERED PROFESSIONAL ENGINEER
CLYDE D. JOHNSON
No. 30539
Exp. 3-31-04
CIVIL
STATE OF CALIFORNIA

Don't Dig...Until You Call U.S.A. Toll Free 1-800-227-2600 for the location of buried utility lines. Don't disrupt vital services.
TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK

REVISIONS			
REF.	DESCRIPTION	APPR.	DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED BY: M. WONG
DRAWN BY: H. VERDUSCO
DATE DRAWN: FEB. 2001
CHECKED BY: BEJ

RECOMMENDED FOR APPROVAL BY: DESIGN ENGINEER R.E. No. 30539 DATE: 3/15/01

APPROVED BY: CHIEF ENGINEER R.E. NO. 22035 DATE: 3/15/01

BELLTOWN LINE D
STAGE 1
42" CULVERT AND MISCELLANEOUS DETAILS

PROJECT NO. 1-0-0155
DRAWING NO. 1-590
SHEET NO. 15 OF 57

APPENDIX B

HYDROLOGY CALCULATIONS

2-YEAR FREQUENCY

```
____________________________________________________________________________
****************************************************************************
            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:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                        *
* PROPOSED CONDITION 2-YEAR                                              *
*                                                                        *
 ************************************************************************

  FILE NAME: W:\3384\PR2A.DAT
  TIME/DATE OF STUDY: 16:15 08/12/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =    2.00
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    2.00   1-HOUR INTENSITY(INCH/HOUR) =   0.520
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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 COMMERCIAL
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   305.00
  UPSTREAM ELEVATION(FEET) =    933.50
  DOWNSTREAM ELEVATION(FEET) =    928.00
  ELEVATION DIFFERENCE(FEET) =      5.50
  TC = 0.303*[(  305.00**3)/(     5.50)]**.2 =    6.670
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.630
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8648
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.42
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.42

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.50  DOWNSTREAM(FEET) =   922.25
  FLOW LENGTH(FEET) =    44.00   MANNING'S N =  0.013
```

```
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.45
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.42
  PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =    6.97
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     349.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 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.) =    6.97
  RAINFALL INTENSITY(INCH/HR) =   1.59
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.42

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    111.00 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) =   420.00
  UPSTREAM ELEVATION(FEET) =   1120.00
  DOWNSTREAM ELEVATION(FEET) =    998.00
  ELEVATION DIFFERENCE(FEET) =    122.00
  TC = 0.533*[(  420.00**3)/(   122.00)]**.2 =    7.640
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.519
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5326
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.24
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.24

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    998.00  DOWNSTREAM(FEET) =    933.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.0812
  NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       0.24
  FLOW VELOCITY(FEET/SEC) =   4.28 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   3.12   Tc(MIN.) =   10.76
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    112.00 =    1220.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.271
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4934
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.75   SUBAREA RUNOFF(CFS) =    0.47
  TOTAL AREA(ACRES) =        1.0   TOTAL RUNOFF(CFS) =       0.71
  TC(MIN.) =   10.76

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  933.00  DOWNSTREAM ELEVATION(FEET) =  929.00
  STREET LENGTH(FEET) =    95.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018
```

```
  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.87
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.20
    HALFSTREET FLOOD WIDTH(FEET) =    2.00
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.46
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.88
  STREET FLOW TRAVEL TIME(MIN.) =   0.36   Tc(MIN.) =   11.11
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.250
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8590
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.30      SUBAREA RUNOFF(CFS) =    0.32
  TOTAL AREA(ACRES) =        1.3        PEAK FLOW RATE(CFS) =       1.03

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.21   HALFSTREET FLOOD WIDTH(FEET) =   2.66
  FLOW VELOCITY(FEET/SEC.) =  4.03   DEPTH*VELOCITY(FT*FT/SEC.) =   0.85
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    113.00 =    1315.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.250
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4896
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.95   SUBAREA RUNOFF(CFS) =    1.19
  TOTAL AREA(ACRES) =        3.3   TOTAL RUNOFF(CFS) =       2.23
  TC(MIN.) =   11.11

****************************************************************************
  FLOW PROCESS FROM NODE    113.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   923.00  DOWNSTREAM(FEET) =   922.00
  FLOW LENGTH(FEET) =    72.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.32
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.23
  PIPE TRAVEL TIME(MIN.) =   0.23    Tc(MIN.) =   11.34
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    114.00 =    1387.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 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.) =   11.34
  RAINFALL INTENSITY(INCH/HR) =   1.24
  TOTAL STREAM AREA(ACRES) =     3.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.23

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.42     6.97        1.593          0.30
      2        2.23    11.34        1.237          3.30

  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        1.79     6.97       1.593
      2        2.56    11.34       1.237

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
```

```
  PEAK FLOW RATE(CFS) =       2.56   Tc(MIN.) =   11.34
  TOTAL AREA(ACRES) =        3.6
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    114.00 =    1387.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    124.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.00  DOWNSTREAM(FEET) =   914.00
  FLOW LENGTH(FEET) =   464.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.98
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.56
  PIPE TRAVEL TIME(MIN.) =   1.29    Tc(MIN.) =   12.63
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    124.00 =    1851.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    124.00 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.) =   12.63
  RAINFALL INTENSITY(INCH/HR) =   1.17
  TOTAL STREAM AREA(ACRES) =     3.60
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.56

****************************************************************************
  FLOW PROCESS FROM NODE    120.00 TO NODE    121.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   425.00
  UPSTREAM ELEVATION(FEET) =   1120.00
  DOWNSTREAM ELEVATION(FEET) =    997.00
  ELEVATION DIFFERENCE(FEET) =    123.00
  TC = 0.709*[(  425.00**3)/(   123.00)]**.2 =   10.232
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.305
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4992
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.98
  TOTAL AREA(ACRES) =      1.50   TOTAL RUNOFF(CFS) =      0.98

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    122.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    997.00  DOWNSTREAM(FEET) =    962.92
  CHANNEL LENGTH THRU SUBAREA(FEET) =   282.00   CHANNEL SLOPE =  0.1209
  NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       0.98
  FLOW VELOCITY(FEET/SEC) =   4.74 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.99   Tc(MIN.) =   11.22
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    122.00 =     707.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    122.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.243
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8588
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.45   SUBAREA RUNOFF(CFS) =    1.55
  TOTAL AREA(ACRES) =        3.0   TOTAL RUNOFF(CFS) =       2.53
  TC(MIN.) =   11.22

****************************************************************************
  FLOW PROCESS FROM NODE    122.00 TO NODE    123.00 IS CODE =  31
```

```
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   956.92  DOWNSTREAM(FEET) =   929.72
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  20.50
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.53
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   11.27
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    123.00 =     768.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    123.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.241
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4879
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.45   SUBAREA RUNOFF(CFS) =    0.27
  TOTAL AREA(ACRES) =        3.4   TOTAL RUNOFF(CFS) =       2.80
  TC(MIN.) =   11.27

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    124.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   929.72  DOWNSTREAM(FEET) =   914.00
  FLOW LENGTH(FEET) =   248.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.50
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.80
  PIPE TRAVEL TIME(MIN.) =   0.39    Tc(MIN.) =   11.67
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    124.00 =    1016.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    124.00 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.) =   11.67
  RAINFALL INTENSITY(INCH/HR) =   1.22
  TOTAL STREAM AREA(ACRES) =     3.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.80

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.79     8.39        1.447          3.60
      1        2.56    12.63        1.169          3.60
      2        2.80    11.67        1.219          3.40

  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        3.80     8.39       1.447
      2        5.16    11.67       1.219
      3        5.24    12.63       1.169

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.24   Tc(MIN.) =   12.63
  TOTAL AREA(ACRES) =        7.0
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    124.00 =    1851.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    136.00 IS CODE =  31
```

```
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   913.50  DOWNSTREAM(FEET) =   912.56
  FLOW LENGTH(FEET) =   107.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.43
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.24
  PIPE TRAVEL TIME(MIN.) =   0.33    Tc(MIN.) =   12.96
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    136.00 =    1958.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    136.00 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.) =   12.96
  RAINFALL INTENSITY(INCH/HR) =   1.15
  TOTAL STREAM AREA(ACRES) =     7.00
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.24

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    131.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   990.00
  UPSTREAM ELEVATION(FEET) =   1700.00
  DOWNSTREAM ELEVATION(FEET) =   1220.00
  ELEVATION DIFFERENCE(FEET) =    480.00
  TC = 0.709*[(  990.00**3)/(   480.00)]**.2 =   12.943
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.154
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4718
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      5.42
  TOTAL AREA(ACRES) =      9.95   TOTAL RUNOFF(CFS) =      5.42

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    132.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1220.00  DOWNSTREAM(FEET) =   1030.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   485.00   CHANNEL SLOPE =  0.3918
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       5.42
  FLOW VELOCITY(FEET/SEC) =   6.80 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   1.19   Tc(MIN.) =   14.13
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    132.00 =    1475.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    132.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.103
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4616
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    9.90   SUBAREA RUNOFF(CFS) =    5.04
  TOTAL AREA(ACRES) =       19.8   TOTAL RUNOFF(CFS) =      10.46
  TC(MIN.) =   14.13

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1030.00  DOWNSTREAM(FEET) =    996.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   335.00   CHANNEL SLOPE =  0.1015
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
```

```
  CHANNEL FLOW THRU SUBAREA(CFS) =      10.46
  FLOW VELOCITY(FEET/SEC) =   7.99 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.70   Tc(MIN.) =   14.83
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    133.00 =    1810.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.076
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4559
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    5.80   SUBAREA RUNOFF(CFS) =    2.84
  TOTAL AREA(ACRES) =       25.6   TOTAL RUNOFF(CFS) =      13.30
  TC(MIN.) =   14.83

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    134.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    996.00  DOWNSTREAM(FEET) =    961.17
  CHANNEL LENGTH THRU SUBAREA(FEET) =   405.00   CHANNEL SLOPE =  0.0860
  CHANNEL FLOW THRU SUBAREA(CFS) =      13.30
  FLOW VELOCITY(FEET/SEC) =   7.89 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.86   Tc(MIN.) =   15.69
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    134.00 =    2215.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    134.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.045
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8549
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.85   SUBAREA RUNOFF(CFS) =    1.65
  TOTAL AREA(ACRES) =       27.5   TOTAL RUNOFF(CFS) =      14.96
  TC(MIN.) =   15.69

****************************************************************************
  FLOW PROCESS FROM NODE    134.00 TO NODE    135.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   951.17  DOWNSTREAM(FEET) =   925.97
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  32.43
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      14.96
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   15.72
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    135.00 =    2276.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    135.00 TO NODE    135.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.044
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4491
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.35   SUBAREA RUNOFF(CFS) =    0.16
  TOTAL AREA(ACRES) =       27.8   TOTAL RUNOFF(CFS) =      15.12
  TC(MIN.) =   15.72

****************************************************************************
  FLOW PROCESS FROM NODE    135.00 TO NODE    136.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   925.97  DOWNSTREAM(FEET) =   911.06
  FLOW LENGTH(FEET) =   158.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  18.60
```

```
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      15.12
  PIPE TRAVEL TIME(MIN.) =   0.14    Tc(MIN.) =   15.86
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    136.00 =    2434.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    136.00 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.) =   15.86
  RAINFALL INTENSITY(INCH/HR) =   1.04
  TOTAL STREAM AREA(ACRES) =    27.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     15.12

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.80     8.74        1.416          7.00
      1        5.16    11.99        1.201          7.00
      1        5.24    12.96        1.154          7.00
      2       15.12    15.86        1.039         27.85

  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       12.13     8.74       1.416
      2       16.59    11.99       1.201
      3       17.60    12.96       1.154
      4       19.84    15.86       1.039

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      19.84   Tc(MIN.) =   15.86
  TOTAL AREA(ACRES) =       34.8
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    136.00 =    2434.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    145.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   910.56  DOWNSTREAM(FEET) =   906.54
  FLOW LENGTH(FEET) =   802.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  20.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.10
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      19.84
  PIPE TRAVEL TIME(MIN.) =   2.19    Tc(MIN.) =   18.05
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    145.00 =    3236.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    145.00 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.) =   18.05
  RAINFALL INTENSITY(INCH/HR) =   0.97
  TOTAL STREAM AREA(ACRES) =    34.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     19.84

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    141.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =  1000.00
  UPSTREAM ELEVATION(FEET) =   1620.00
```

```
  DOWNSTREAM ELEVATION(FEET) =   1080.00
  ELEVATION DIFFERENCE(FEET) =    540.00
  TC = 0.709*[( 1000.00**3)/(   540.00)]**.2 =   12.718
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.165
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4739
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      2.24
  TOTAL AREA(ACRES) =      4.05   TOTAL RUNOFF(CFS) =      2.24

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1080.00  DOWNSTREAM(FEET) =    972.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   295.00   CHANNEL SLOPE =  0.3661
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       2.24
  FLOW VELOCITY(FEET/SEC) =   5.57 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.88   Tc(MIN.) =   13.60
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    142.00 =    1295.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.125
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4661
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    6.65   SUBAREA RUNOFF(CFS) =    3.49
  TOTAL AREA(ACRES) =       10.7   TOTAL RUNOFF(CFS) =       5.72
  TC(MIN.) =   13.60

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    143.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    972.00  DOWNSTREAM(FEET) =    959.22
  CHANNEL LENGTH THRU SUBAREA(FEET) =   160.00   CHANNEL SLOPE =  0.0799
  CHANNEL FLOW THRU SUBAREA(CFS) =       5.72
  FLOW VELOCITY(FEET/SEC) =   6.16 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.43   Tc(MIN.) =   14.03
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    143.00 =    1455.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    143.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.107
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8562
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.30   SUBAREA RUNOFF(CFS) =    3.13
  TOTAL AREA(ACRES) =       14.0   TOTAL RUNOFF(CFS) =       8.85
  TC(MIN.) =   14.03

****************************************************************************
  FLOW PROCESS FROM NODE    143.00 TO NODE    144.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   950.22  DOWNSTREAM(FEET) =   924.22
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  28.74
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       8.85
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =   14.07
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    144.00 =    1516.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    144.00 IS CODE =  81
----------------------------------------------------------------------------
```

```
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
==============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.105
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4621
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.70   SUBAREA RUNOFF(CFS) =    0.87
  TOTAL AREA(ACRES) =       15.7   TOTAL RUNOFF(CFS) =       9.72
  TC(MIN.) =   14.07

******************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    145.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   924.22  DOWNSTREAM(FEET) =   907.44
  FLOW LENGTH(FEET) =   163.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  17.10
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       9.72
  PIPE TRAVEL TIME(MIN.) =   0.16    Tc(MIN.) =   14.23
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    145.00 =    1679.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    145.00 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.) =   14.23
  RAINFALL INTENSITY(INCH/HR) =   1.10
  TOTAL STREAM AREA(ACRES) =    15.70
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      9.72

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       12.13    11.17        1.246         34.85
      1       16.59    14.25        1.098         34.85
      1       17.60    15.19        1.062         34.85
      1       19.84    18.05        0.971         34.85
      2        9.72    14.23        1.099         15.70

  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       19.76    11.17       1.246
      2       26.29    14.23       1.099
      3       26.31    14.25       1.098
      4       26.99    15.19       1.062
      5       28.43    18.05       0.971

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      28.43   Tc(MIN.) =   18.05
  TOTAL AREA(ACRES) =       50.5
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    145.00 =    3236.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    154.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   906.44  DOWNSTREAM(FEET) =   904.82
  FLOW LENGTH(FEET) =   322.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  33.0 INCH PIPE IS  21.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.80
  ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      28.43
  PIPE TRAVEL TIME(MIN.) =   0.79    Tc(MIN.) =   18.84
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    154.00 =    3558.00 FEET.

******************************************************************************
```

```
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 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.) =   18.84
  RAINFALL INTENSITY(INCH/HR) =   0.95
  TOTAL STREAM AREA(ACRES) =    50.55
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     28.43

****************************************************************************
  FLOW PROCESS FROM NODE    150.00 TO NODE    151.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   995.00
  UPSTREAM ELEVATION(FEET) =   1560.00
  DOWNSTREAM ELEVATION(FEET) =   1040.00
  ELEVATION DIFFERENCE(FEET) =    520.00
  TC = 0.709*[(  995.00**3)/(   520.00)]**.2 =   12.776
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.162
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4734
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      1.46
  TOTAL AREA(ACRES) =      2.65   TOTAL RUNOFF(CFS) =      1.46

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    152.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1040.00  DOWNSTREAM(FEET) =    968.45
  CHANNEL LENGTH THRU SUBAREA(FEET) =   250.00   CHANNEL SLOPE =  0.2862
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       1.46
  FLOW VELOCITY(FEET/SEC) =   5.10 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.82   Tc(MIN.) =   13.59
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    152.00 =    1245.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    152.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.125
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4661
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.15   SUBAREA RUNOFF(CFS) =    1.65
  TOTAL AREA(ACRES) =        5.8   TOTAL RUNOFF(CFS) =       3.11
  TC(MIN.) =   13.59

****************************************************************************
  FLOW PROCESS FROM NODE    152.00 TO NODE    153.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   960.45  DOWNSTREAM(FEET) =   935.45
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  21.11
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.11
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   13.64
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    153.00 =    1306.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    153.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.123
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4657
```

```
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.55   SUBAREA RUNOFF(CFS) =    0.29
  TOTAL AREA(ACRES) =        6.4   TOTAL RUNOFF(CFS) =       3.40
  TC(MIN.) =   13.64

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    154.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   935.45  DOWNSTREAM(FEET) =   906.82
  FLOW LENGTH(FEET) =   209.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.65
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.40
  PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =   13.88
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    154.00 =    1515.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 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.) =   13.88
  RAINFALL INTENSITY(INCH/HR) =   1.11
  TOTAL STREAM AREA(ACRES) =     6.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.40

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       19.76    12.05        1.198         50.55
      1       26.29    15.05        1.068         50.55
      1       26.31    15.06        1.067         50.55
      1       26.99    16.00        1.034         50.55
      1       28.43    18.84        0.950         50.55
      2        3.40    13.88        1.113          6.35

  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       22.71    12.05       1.198
      2       27.65    13.88       1.113
      3       29.55    15.05       1.068
      4       29.56    15.06       1.067
      5       30.15    16.00       1.034
      6       31.33    18.84       0.950

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      31.33   Tc(MIN.) =   18.84
  TOTAL AREA(ACRES) =       56.9
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    154.00 =    3558.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    165.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   904.32  DOWNSTREAM(FEET) =   901.08
  FLOW LENGTH(FEET) =   604.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  33.0 INCH PIPE IS  22.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.11
  ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      31.33
  PIPE TRAVEL TIME(MIN.) =   1.42    Tc(MIN.) =   20.25
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    165.00 =    4162.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    165.00 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.) =   20.25
  RAINFALL INTENSITY(INCH/HR) =   0.91
  TOTAL STREAM AREA(ACRES) =    56.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     31.33

****************************************************************************
  FLOW PROCESS FROM NODE    160.00 TO NODE    161.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   835.00
  UPSTREAM ELEVATION(FEET) =   1688.00
  DOWNSTREAM ELEVATION(FEET) =   1270.00
  ELEVATION DIFFERENCE(FEET) =    418.00
  TC = 0.709*[(  835.00**3)/(   418.00)]**.2 =   12.013
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.200
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4805
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      5.07
  TOTAL AREA(ACRES) =      8.80   TOTAL RUNOFF(CFS) =      5.07

****************************************************************************
  FLOW PROCESS FROM NODE    161.00 TO NODE    162.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1270.00  DOWNSTREAM(FEET) =   1090.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   380.00   CHANNEL SLOPE =  0.4737
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       5.07
  FLOW VELOCITY(FEET/SEC) =   6.69 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.95   Tc(MIN.) =   12.96
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    162.00 =    1215.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    161.00 TO NODE    162.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.154
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4717
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   18.30   SUBAREA RUNOFF(CFS) =    9.96
  TOTAL AREA(ACRES) =       27.1   TOTAL RUNOFF(CFS) =      15.03
  TC(MIN.) =   12.96

****************************************************************************
  FLOW PROCESS FROM NODE    162.00 TO NODE    163.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1090.00  DOWNSTREAM(FEET) =    963.20
  CHANNEL LENGTH THRU SUBAREA(FEET) =   715.00   CHANNEL SLOPE =  0.1773
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =      15.03
  FLOW VELOCITY(FEET/SEC) =   8.78 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   1.36   Tc(MIN.) =   14.32
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    163.00 =    1930.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    162.00 TO NODE    163.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.095
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4601
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   14.85   SUBAREA RUNOFF(CFS) =    7.48
  TOTAL AREA(ACRES) =       41.9   TOTAL RUNOFF(CFS) =      22.52
```

```
  TC(MIN.) =   14.32

****************************************************************************
  FLOW PROCESS FROM NODE    163.00 TO NODE    164.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   953.20  DOWNSTREAM(FEET) =   928.20
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  34.86
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      22.52
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   14.35
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    164.00 =    1991.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    164.00 TO NODE    164.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.094
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4598
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.95   SUBAREA RUNOFF(CFS) =    0.48
  TOTAL AREA(ACRES) =       42.9   TOTAL RUNOFF(CFS) =      23.00
  TC(MIN.) =   14.35

****************************************************************************
  FLOW PROCESS FROM NODE    164.00 TO NODE    165.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   928.20  DOWNSTREAM(FEET) =   901.08
  FLOW LENGTH(FEET) =   117.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  28.97
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      23.00
  PIPE TRAVEL TIME(MIN.) =   0.07    Tc(MIN.) =   14.41
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    165.00 =    2108.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    165.00 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.) =   14.41
  RAINFALL INTENSITY(INCH/HR) =   1.09
  TOTAL STREAM AREA(ACRES) =    42.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     23.00

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       22.71    13.58        1.126         56.90
      1       27.65    15.36        1.056         56.90
      1       29.55    16.48        1.018         56.90
      1       29.56    16.50        1.018         56.90
      1       30.15    17.43        0.989         56.90
      1       31.33    20.25        0.915         56.90
      2       23.00    14.41        1.092         42.90

  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       44.37    13.58       1.126
      2       48.94    14.41       1.092
      3       49.90    15.36       1.056
      4       51.00    16.48       1.018
      5       51.00    16.50       1.018
```

```
      6       50.98    17.43       0.989
      7       50.59    20.25       0.915

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      51.00   Tc(MIN.) =   16.50
  TOTAL AREA(ACRES) =       99.8
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    165.00 =    4162.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    174.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   900.08  DOWNSTREAM(FEET) =   898.44
  FLOW LENGTH(FEET) =   211.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  36.0 INCH PIPE IS  26.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.16
  ESTIMATED PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      51.00
  PIPE TRAVEL TIME(MIN.) =   0.38    Tc(MIN.) =   16.88
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    174.00 =    4373.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    174.00 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.) =   16.88
  RAINFALL INTENSITY(INCH/HR) =   1.01
  TOTAL STREAM AREA(ACRES) =    99.80
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     51.00

****************************************************************************
  FLOW PROCESS FROM NODE    170.00 TO NODE    171.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   155.00
  UPSTREAM ELEVATION(FEET) =   1006.00
  DOWNSTREAM ELEVATION(FEET) =    967.00
  ELEVATION DIFFERENCE(FEET) =     39.00
  TC = 0.709*[(  155.00**3)/(    39.00)]**.2 =    7.029
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.586
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5420
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.13
  TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.13

****************************************************************************
  FLOW PROCESS FROM NODE    171.00 TO NODE    172.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    967.00  DOWNSTREAM(FEET) =    950.73
  CHANNEL LENGTH THRU SUBAREA(FEET) =    55.00   CHANNEL SLOPE =  0.2958
  NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       0.13
  FLOW VELOCITY(FEET/SEC) =   4.74 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.19   Tc(MIN.) =    7.22
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    172.00 =     210.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    171.00 TO NODE    172.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.564
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5389
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.05   SUBAREA RUNOFF(CFS) =    0.04
  TOTAL AREA(ACRES) =        0.2   TOTAL RUNOFF(CFS) =       0.17
```

```
  TC(MIN.) =    7.22

****************************************************************************
  FLOW PROCESS FROM NODE    172.00 TO NODE    173.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   943.73  DOWNSTREAM(FEET) =   922.89
  FLOW LENGTH(FEET) =    58.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   0.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.43
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.17
  PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =    7.34
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    173.00 =     268.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    173.00 TO NODE    173.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.551
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5372
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.30   SUBAREA RUNOFF(CFS) =    0.25
  TOTAL AREA(ACRES) =        0.5   TOTAL RUNOFF(CFS) =       0.42
  TC(MIN.) =    7.34

****************************************************************************
  FLOW PROCESS FROM NODE    173.00 TO NODE    174.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.89  DOWNSTREAM(FEET) =   904.98
  FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   1.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.62
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.42
  PIPE TRAVEL TIME(MIN.) =   0.21    Tc(MIN.) =    7.54
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    174.00 =     374.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    174.00 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.) =    7.54
  RAINFALL INTENSITY(INCH/HR) =   1.53
  TOTAL STREAM AREA(ACRES) =     0.50
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.42

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       44.37    13.98        1.109         99.80
      1       48.94    14.80        1.077         99.80
      1       49.90    15.75        1.043         99.80
      1       51.00    16.86        1.006         99.80
      1       51.00    16.88        1.006         99.80
      1       50.98    17.81        0.978         99.80
      1       50.59    20.64        0.906         99.80
      2        0.42     7.54        1.529          0.50

  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       25.36     7.54       1.529
      2       44.68    13.98       1.109
```

```
      3       49.23    14.80       1.077
      4       50.18    15.75       1.043
      5       51.28    16.86       1.006
      6       51.28    16.88       1.006
      7       51.25    17.81       0.978
      8       50.84    20.64       0.906

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      51.28   Tc(MIN.) =   16.88
  TOTAL AREA(ACRES) =      100.3
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    174.00 =    4373.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    316.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   902.44  DOWNSTREAM(FEET) =   870.69
  FLOW LENGTH(FEET) =   718.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  18.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  17.77
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      51.28
  PIPE TRAVEL TIME(MIN.) =   0.67    Tc(MIN.) =   17.55
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    316.00 =    5091.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  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) =  1000.00
  UPSTREAM ELEVATION(FEET) =    925.39
  DOWNSTREAM ELEVATION(FEET) =    917.25
  ELEVATION DIFFERENCE(FEET) =      8.14
  TC = 0.303*[( 1000.00**3)/(     8.14)]**.2 =   12.574
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.172
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8575
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      5.48
  TOTAL AREA(ACRES) =      5.45   TOTAL RUNOFF(CFS) =      5.48

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  917.25  DOWNSTREAM ELEVATION(FEET) =  911.98
  STREET LENGTH(FEET) =   766.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       8.98
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.51
    HALFSTREET FLOOD WIDTH(FEET) =   19.18
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.58
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.30
  STREET FLOW TRAVEL TIME(MIN.) =   4.95   Tc(MIN.) =   17.52
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  0.986
```

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  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8536
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    8.30      SUBAREA RUNOFF(CFS) =    6.99
  TOTAL AREA(ACRES) =       13.8        PEAK FLOW RATE(CFS) =      12.47

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.55   HALFSTREET FLOOD WIDTH(FEET) =  21.84
  FLOW VELOCITY(FEET/SEC.) =  2.80   DEPTH*VELOCITY(FT*FT/SEC.) =   1.55
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =    1766.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    203.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  911.98  DOWNSTREAM ELEVATION(FEET) =  908.36
  STREET LENGTH(FEET) =   743.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      16.23
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.63
    HALFSTREET FLOOD WIDTH(FEET) =   25.90
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.63
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.64
  STREET FLOW TRAVEL TIME(MIN.) =   4.72   Tc(MIN.) =   22.24
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  0.871
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8509
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   10.15      SUBAREA RUNOFF(CFS) =    7.52
  TOTAL AREA(ACRES) =       23.9        PEAK FLOW RATE(CFS) =      19.99

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.66   HALFSTREET FLOOD WIDTH(FEET) =  28.09
  FLOW VELOCITY(FEET/SEC.) =  2.76   DEPTH*VELOCITY(FT*FT/SEC.) =   1.83
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =    2509.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    212.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   904.00  DOWNSTREAM(FEET) =   890.00
  FLOW LENGTH(FEET) =  1391.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  16.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.54
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      19.99
  PIPE TRAVEL TIME(MIN.) =   2.72    Tc(MIN.) =   24.95
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    212.00 =    3900.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    212.00 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.) =   24.95
  RAINFALL INTENSITY(INCH/HR) =   0.82
  TOTAL STREAM AREA(ACRES) =    23.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     19.99

****************************************************************************
  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) =  1000.00
  UPSTREAM ELEVATION(FEET) =    922.99
  DOWNSTREAM ELEVATION(FEET) =    900.20
  ELEVATION DIFFERENCE(FEET) =     22.79
  TC = 0.303*[( 1000.00**3)/(    22.79)]**.2 =   10.234
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.304
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8599
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      6.56
  TOTAL AREA(ACRES) =      5.85   TOTAL RUNOFF(CFS) =      6.56

****************************************************************************
  FLOW PROCESS FROM NODE    211.00 TO NODE    212.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   895.00  DOWNSTREAM(FEET) =   890.00
  FLOW LENGTH(FEET) =    18.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  22.66
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.56
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =   10.25
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    212.00 =    1018.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    212.00 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.) =   10.25
  RAINFALL INTENSITY(INCH/HR) =   1.30
  TOTAL STREAM AREA(ACRES) =     5.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      6.56

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       19.99    24.95        0.821         23.90
      2        6.56    10.25        1.304          5.85

  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       14.77    10.25       1.304
      2       24.12    24.95       0.821

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      24.12   Tc(MIN.) =   24.95
  TOTAL AREA(ACRES) =       29.8
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    212.00 =    3900.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    213.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   890.00  DOWNSTREAM(FEET) =   876.73
  FLOW LENGTH(FEET) =   392.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  14.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.16
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      24.12
  PIPE TRAVEL TIME(MIN.) =   0.46    Tc(MIN.) =   25.41
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    213.00 =    4292.00 FEET.

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    213.00 TO NODE    214.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  0.813
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8493
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.40   SUBAREA RUNOFF(CFS) =    1.66
  TOTAL AREA(ACRES) =       32.2   TOTAL RUNOFF(CFS) =      25.78
  TC(MIN.) =   25.41

****************************************************************************
  FLOW PROCESS FROM NODE    214.00 TO NODE    315.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   874.53  DOWNSTREAM(FEET) =   868.58
  FLOW LENGTH(FEET) =  1985.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  33.0 INCH PIPE IS  23.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.77
  ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      25.78
  PIPE TRAVEL TIME(MIN.) =   5.73    Tc(MIN.) =   31.15
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    315.00 =    6277.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 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) =   777.00
  UPSTREAM ELEVATION(FEET) =    929.10
  DOWNSTREAM ELEVATION(FEET) =    917.70
  ELEVATION DIFFERENCE(FEET) =     11.40
  TC = 0.303*[(  777.00**3)/(    11.40)]**.2 =   10.103
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.313
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8601
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      9.20
  TOTAL AREA(ACRES) =      8.15   TOTAL RUNOFF(CFS) =      9.20

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    917.57
  DOWNSTREAM NODE ELEVATION(FEET) =    916.03
  CHANNEL LENGTH THRU SUBAREA(FEET) =   308.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.183
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8577
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     11.03
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.29
  AVERAGE FLOW DEPTH(FEET) =   0.47   FLOOD WIDTH(FEET) =   30.07
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   2.24   Tc(MIN.) =   12.35
  SUBAREA AREA(ACRES) =    3.60       SUBAREA RUNOFF(CFS) =    3.65
  TOTAL AREA(ACRES) =       11.8         PEAK FLOW RATE(CFS) =      12.86

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.49   FLOOD WIDTH(FEET) =   32.10
  FLOW VELOCITY(FEET/SEC.) =   2.36   DEPTH*VELOCITY(FT*FT/SEC) =   1.16
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    302.00 =    1085.00 FEET.

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    302.00 TO NODE    303.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    916.03
  DOWNSTREAM NODE ELEVATION(FEET) =    914.52
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.090
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8559
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     15.03
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.41
  AVERAGE FLOW DEPTH(FEET) =   0.52   FLOOD WIDTH(FEET) =   34.44
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   2.10   Tc(MIN.) =   14.45
  SUBAREA AREA(ACRES) =    4.65       SUBAREA RUNOFF(CFS) =    4.34
  TOTAL AREA(ACRES) =       16.4         PEAK FLOW RATE(CFS) =      17.20

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.53   FLOOD WIDTH(FEET) =   36.31
  FLOW VELOCITY(FEET/SEC.) =   2.49   DEPTH*VELOCITY(FT*FT/SEC) =   1.33
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    303.00 =    1389.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    303.00 TO NODE    304.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    914.52
  DOWNSTREAM NODE ELEVATION(FEET) =    912.99
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.020
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8544
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     19.22
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.55
  AVERAGE FLOW DEPTH(FEET) =   0.55   FLOOD WIDTH(FEET) =   38.02
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.99   Tc(MIN.) =   16.43
  SUBAREA AREA(ACRES) =    4.65       SUBAREA RUNOFF(CFS) =    4.05
  TOTAL AREA(ACRES) =       21.0         PEAK FLOW RATE(CFS) =      21.25

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.57   FLOOD WIDTH(FEET) =   39.58
  FLOW VELOCITY(FEET/SEC.) =   2.61   DEPTH*VELOCITY(FT*FT/SEC) =   1.48
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    304.00 =    1693.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    304.00 TO NODE    305.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    912.99
  DOWNSTREAM NODE ELEVATION(FEET) =    911.48
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  0.963
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8531
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     24.27
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.67
  AVERAGE FLOW DEPTH(FEET) =   0.59   FLOOD WIDTH(FEET) =   41.92
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.90   Tc(MIN.) =   18.33
  SUBAREA AREA(ACRES) =    7.35       SUBAREA RUNOFF(CFS) =    6.04
  TOTAL AREA(ACRES) =       28.4         PEAK FLOW RATE(CFS) =      27.29

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.61   FLOOD WIDTH(FEET) =   43.95
  FLOW VELOCITY(FEET/SEC.) =   2.74   DEPTH*VELOCITY(FT*FT/SEC) =   1.67
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    305.00 =    1997.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    305.00 TO NODE    312.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   903.78  DOWNSTREAM(FEET) =   880.65
  FLOW LENGTH(FEET) =  1059.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  15.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  12.41
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      27.29
  PIPE TRAVEL TIME(MIN.) =   1.42    Tc(MIN.) =   19.76
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    312.00 =    3056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    312.00 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.) =   19.76
  RAINFALL INTENSITY(INCH/HR) =   0.93
  TOTAL STREAM AREA(ACRES) =    28.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     27.29

****************************************************************************
  FLOW PROCESS FROM NODE    310.00 TO NODE    311.00 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) =   810.00
  UPSTREAM ELEVATION(FEET) =    914.31
  DOWNSTREAM ELEVATION(FEET) =    908.32
  ELEVATION DIFFERENCE(FEET) =      5.99
  TC = 0.303*[(  810.00**3)/(     5.99)]**.2 =   11.781
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.212
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8583
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      4.21
  TOTAL AREA(ACRES) =      4.05   TOTAL RUNOFF(CFS) =      4.21

****************************************************************************
  FLOW PROCESS FROM NODE    311.00 TO NODE    312.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   902.99  DOWNSTREAM(FEET) =   898.49
  FLOW LENGTH(FEET) =     9.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  24.75
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.21
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =   11.79
  LONGEST FLOWPATH FROM NODE    310.00 TO NODE    312.00 =     819.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    312.00 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.) =   11.79
  RAINFALL INTENSITY(INCH/HR) =   1.21
  TOTAL STREAM AREA(ACRES) =     4.05
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.21

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
```

```
      1       27.29    19.76        0.927         28.40
      2        4.21    11.79        1.212          4.05

  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       20.50    11.79       1.212
      2       30.51    19.76       0.927

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      30.51   Tc(MIN.) =   19.76
  TOTAL AREA(ACRES) =       32.5
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    312.00 =    3056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    313.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   880.65  DOWNSTREAM(FEET) =   870.78
  FLOW LENGTH(FEET) =   132.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  20.38
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      30.51
  PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =   19.86
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    313.00 =    3188.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    313.00 TO NODE    314.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  0.924
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4218
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    4.25   SUBAREA RUNOFF(CFS) =    1.66
  TOTAL AREA(ACRES) =       36.7   TOTAL RUNOFF(CFS) =      32.17
  TC(MIN.) =   19.86

****************************************************************************
  FLOW PROCESS FROM NODE    313.00 TO NODE    314.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  0.924
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4218
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.95   SUBAREA RUNOFF(CFS) =    0.76
  TOTAL AREA(ACRES) =       38.7   TOTAL RUNOFF(CFS) =      32.93
  TC(MIN.) =   19.86

****************************************************************************
  FLOW PROCESS FROM NODE    314.00 TO NODE    315.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   870.00  DOWNSTREAM(FEET) =   869.52
  FLOW LENGTH(FEET) =   160.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  36.0 INCH PIPE IS  25.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.13
  ESTIMATED PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      32.93
  PIPE TRAVEL TIME(MIN.) =   0.43    Tc(MIN.) =   20.30
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    315.00 =    3348.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
```

```
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       24.10    12.37       1.182       38.65
      2       32.93    20.30       0.914       38.65
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    315.00 =    3348.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       17.39    17.21       0.995       32.15
      2       25.78    31.15       0.731       32.15
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    315.00 =    6277.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      36.60      12.37        1.182
      2      45.31      17.21        0.995
      3      49.73      20.30        0.914
      4      52.13      31.15        0.731

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      52.13   Tc(MIN.) =   31.15
  TOTAL AREA(ACRES) =       70.8

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    316.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   875.32  DOWNSTREAM(FEET) =   874.96
  FLOW LENGTH(FEET) =   121.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  42.0 INCH PIPE IS  31.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.82
  ESTIMATED PIPE DIAMETER(INCH) =  42.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      52.13
  PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =   31.44
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    316.00 =    6398.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       36.60    12.70       1.166       70.80
      2       45.31    17.52       0.986       70.80
      3       49.73    20.60       0.907       70.80
      4       52.13    31.44       0.728       70.80
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    316.00 =    6398.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       25.36     8.34       1.451      100.30
      2       44.68    14.69       1.081      100.30
      3       49.23    15.48       1.052      100.30
      4       50.18    16.42       1.020      100.30
      5       51.28    17.53       0.986      100.30
      6       51.28    17.55       0.985      100.30
      7       51.25    18.49       0.959      100.30
      8       50.84    21.31       0.891      100.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    316.00 =    5091.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      49.40       8.34        1.451
      2      77.00      12.70        1.166
      3      82.67      14.69        1.081
```

```
      4      89.26      15.48        1.052
      5      92.65      16.42        1.020
      6      96.55      17.52        0.986
      7      96.57      17.53        0.986
      8      96.55      17.55        0.985
      9      95.89      18.49        0.959
     10      98.85      20.60        0.907
     11      99.69      21.31        0.891
     12      93.67      31.44        0.728

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      99.69   Tc(MIN.) =   21.31
  TOTAL AREA(ACRES) =      171.1

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      171.1  TC(MIN.) =     21.31
  PEAK FLOW RATE(CFS)   =      99.69
  *** PEAK FLOW RATE TABLE ***
         Q(CFS)   Tc(MIN.)
  1       49.40       8.34
  2       77.00      12.70
  3       82.67      14.69
  4       89.26      15.48
  5       92.65      16.42
  6       96.55      17.52
  7       96.57      17.53
  8       96.55      17.55
  9       95.89      18.49
 10       98.85      20.60
 11       99.69      21.31
 12       93.67      31.44
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

↑

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____________________________________________________________________________
****************************************************************************
            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:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                        *
* PROPOSED CONDITION 2-YEAR                                              *
* TRUCK YARD NORTHWEST OF BUILDING 2 (NODES 400-401)                     *
 ************************************************************************

  FILE NAME: W:\3384\PR2B.DAT
  TIME/DATE OF STUDY: 16:22 08/12/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =    2.00
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    2.00   1-HOUR INTENSITY(INCH/HOUR) =   0.520
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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    400.00 TO NODE    401.00 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) =   371.00
  UPSTREAM ELEVATION(FEET) =    876.52
  DOWNSTREAM ELEVATION(FEET) =    866.24
  ELEVATION DIFFERENCE(FEET) =     10.28
  TC = 0.303*[(  371.00**3)/(    10.28)]**.2 =    6.619
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.636
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8649
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      2.90
  TOTAL AREA(ACRES) =      2.05   TOTAL RUNOFF(CFS) =      2.90
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        2.0  TC(MIN.) =      6.62
  PEAK FLOW RATE(CFS)   =       2.90
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

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____________________________________________________________________________
****************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
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                      (Rational Tabling Version 23.0)
                   Release Date: 07/01/2016  License ID 1435

                           Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                        *
* PROSPOED CONDITION 2-YEAR                                              *
* LANDSCAPE EAST OF BUILDING 2 (NODES 420-421)                           *
 ************************************************************************

  FILE NAME: W:\3384\PR2C.DAT
  TIME/DATE OF STUDY: 16:24 08/12/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =    2.00
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    2.00   1-HOUR INTENSITY(INCH/HOUR) =   0.520
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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    420.00 TO NODE    421.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   295.00
  UPSTREAM ELEVATION(FEET) =    875.00
  DOWNSTREAM ELEVATION(FEET) =    869.35
  ELEVATION DIFFERENCE(FEET) =      5.65
  TC = 0.709*[(  295.00**3)/(     5.65)]**.2 =   15.219
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.061
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4529
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.22
  TOTAL AREA(ACRES) =      0.45   TOTAL RUNOFF(CFS) =      0.22
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        0.4  TC(MIN.) =     15.22
  PEAK FLOW RATE(CFS)   =       0.22
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

5-YEAR FREQUENCY

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****************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
        RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
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                  Release Date: 07/01/2016  License ID 1435

                           Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                          *
* PROPOSED CONDITION 5-YEAR                                                *
*                                                                          *
 ****************************************************************************

  FILE NAME: W:\3384\PR5A.DAT
  TIME/DATE OF STUDY: 16:20 08/12/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =    5.00
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    5.00   1-HOUR INTENSITY(INCH/HOUR) =   0.685
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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 COMMERCIAL
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   305.00
  UPSTREAM ELEVATION(FEET) =    933.50
  DOWNSTREAM ELEVATION(FEET) =    928.00
  ELEVATION DIFFERENCE(FEET) =      5.50
  TC = 0.303*[(  305.00**3)/(     5.50)]**.2 =    6.670
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.145
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8705
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.56
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.56

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.50  DOWNSTREAM(FEET) =   922.25
  FLOW LENGTH(FEET) =    44.00   MANNING'S N =  0.013
```

```
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.65
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.56
  PIPE TRAVEL TIME(MIN.) =   0.28    Tc(MIN.) =    6.95
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     349.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 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.) =    6.95
  RAINFALL INTENSITY(INCH/HR) =   2.10
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.56

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    111.00 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) =   420.00
  UPSTREAM ELEVATION(FEET) =   1120.00
  DOWNSTREAM ELEVATION(FEET) =    998.00
  ELEVATION DIFFERENCE(FEET) =    122.00
  TC = 0.533*[(  420.00**3)/(   122.00)]**.2 =    7.640
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.999
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5905
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.35
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.35

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    998.00  DOWNSTREAM(FEET) =    933.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.0812
  NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       0.35
  FLOW VELOCITY(FEET/SEC) =   4.28 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   3.12   Tc(MIN.) =   10.76
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    112.00 =    1220.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.673
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5535
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.75   SUBAREA RUNOFF(CFS) =    0.69
  TOTAL AREA(ACRES) =        1.0   TOTAL RUNOFF(CFS) =       1.05
  TC(MIN.) =   10.76

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  933.00  DOWNSTREAM ELEVATION(FEET) =  929.00
  STREET LENGTH(FEET) =    95.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018
```

```
  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.26
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.23
    HALFSTREET FLOOD WIDTH(FEET) =    4.03
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.72
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.87
  STREET FLOW TRAVEL TIME(MIN.) =   0.43   Tc(MIN.) =   11.18
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.640
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8649
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.30      SUBAREA RUNOFF(CFS) =    0.43
  TOTAL AREA(ACRES) =        1.3        PEAK FLOW RATE(CFS) =       1.47

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.25   HALFSTREET FLOOD WIDTH(FEET) =   4.78
  FLOW VELOCITY(FEET/SEC.) =  3.70   DEPTH*VELOCITY(FT*FT/SEC.) =   0.92
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    113.00 =    1315.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.640
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5491
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.95   SUBAREA RUNOFF(CFS) =    1.76
  TOTAL AREA(ACRES) =        3.3   TOTAL RUNOFF(CFS) =       3.23
  TC(MIN.) =   11.18

****************************************************************************
  FLOW PROCESS FROM NODE    113.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   923.00  DOWNSTREAM(FEET) =   922.00
  FLOW LENGTH(FEET) =    72.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.78
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.23
  PIPE TRAVEL TIME(MIN.) =   0.21    Tc(MIN.) =   11.39
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    114.00 =    1387.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 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.) =   11.39
  RAINFALL INTENSITY(INCH/HR) =   1.62
  TOTAL STREAM AREA(ACRES) =     3.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.23

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.56     6.95        2.101          0.30
      2        3.23    11.39        1.624          3.30

  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        2.53     6.95       2.101
      2        3.66    11.39       1.624

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
```

```
  PEAK FLOW RATE(CFS) =       3.66   Tc(MIN.) =   11.39
  TOTAL AREA(ACRES) =        3.6
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    114.00 =    1387.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    124.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.00  DOWNSTREAM(FEET) =   914.00
  FLOW LENGTH(FEET) =   464.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.45
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.66
  PIPE TRAVEL TIME(MIN.) =   1.20    Tc(MIN.) =   12.59
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    124.00 =    1851.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    124.00 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.) =   12.59
  RAINFALL INTENSITY(INCH/HR) =   1.54
  TOTAL STREAM AREA(ACRES) =     3.60
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.66

****************************************************************************
  FLOW PROCESS FROM NODE    120.00 TO NODE    121.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   425.00
  UPSTREAM ELEVATION(FEET) =   1120.00
  DOWNSTREAM ELEVATION(FEET) =    997.00
  ELEVATION DIFFERENCE(FEET) =    123.00
  TC = 0.709*[(  425.00**3)/(   123.00)]**.2 =   10.232
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.717
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5590
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      1.44
  TOTAL AREA(ACRES) =      1.50   TOTAL RUNOFF(CFS) =      1.44

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    122.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    997.00  DOWNSTREAM(FEET) =    962.92
  CHANNEL LENGTH THRU SUBAREA(FEET) =   282.00   CHANNEL SLOPE =  0.1209
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       1.44
  FLOW VELOCITY(FEET/SEC) =   5.09 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.92   Tc(MIN.) =   11.16
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    122.00 =     707.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    122.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.642
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8649
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.45   SUBAREA RUNOFF(CFS) =    2.06
  TOTAL AREA(ACRES) =        3.0   TOTAL RUNOFF(CFS) =       3.50
  TC(MIN.) =   11.16

****************************************************************************
  FLOW PROCESS FROM NODE    122.00 TO NODE    123.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   956.92  DOWNSTREAM(FEET) =   929.72
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  22.52
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.50
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   11.20
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    123.00 =     768.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    123.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.638
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5490
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.45   SUBAREA RUNOFF(CFS) =    0.40
  TOTAL AREA(ACRES) =        3.4   TOTAL RUNOFF(CFS) =       3.90
  TC(MIN.) =   11.20

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    124.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   929.72  DOWNSTREAM(FEET) =   914.00
  FLOW LENGTH(FEET) =   248.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.48
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.90
  PIPE TRAVEL TIME(MIN.) =   0.36    Tc(MIN.) =   11.56
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    124.00 =    1016.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    124.00 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.) =   11.56
  RAINFALL INTENSITY(INCH/HR) =   1.61
  TOTAL STREAM AREA(ACRES) =     3.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.90

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.53     8.24        1.922          3.60
      1        3.66    12.59        1.542          3.60
      2        3.90    11.56        1.612          3.40

  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        5.31     8.24       1.922
      2        7.27    11.56       1.612
      3        7.40    12.59       1.542

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       7.40   Tc(MIN.) =   12.59
  TOTAL AREA(ACRES) =        7.0
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    124.00 =    1851.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    136.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   913.50  DOWNSTREAM(FEET) =   912.56
  FLOW LENGTH(FEET) =   107.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.99
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.40
  PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =   12.89
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    136.00 =    1958.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    136.00 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.) =   12.89
  RAINFALL INTENSITY(INCH/HR) =   1.52
  TOTAL STREAM AREA(ACRES) =     7.00
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.40

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    131.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   990.00
  UPSTREAM ELEVATION(FEET) =   1700.00
  DOWNSTREAM ELEVATION(FEET) =   1220.00
  ELEVATION DIFFERENCE(FEET) =    480.00
  TC = 0.709*[(  990.00**3)/(   480.00)]**.2 =   12.943
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.520
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5328
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      8.06
  TOTAL AREA(ACRES) =      9.95   TOTAL RUNOFF(CFS) =      8.06

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    132.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1220.00  DOWNSTREAM(FEET) =   1030.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   485.00   CHANNEL SLOPE =  0.3918
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       8.06
  FLOW VELOCITY(FEET/SEC) =   7.49 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   1.08   Tc(MIN.) =   14.02
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    132.00 =    1475.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    132.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.458
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5237
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    9.90   SUBAREA RUNOFF(CFS) =    7.56
  TOTAL AREA(ACRES) =       19.8   TOTAL RUNOFF(CFS) =      15.61
  TC(MIN.) =   14.02

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1030.00  DOWNSTREAM(FEET) =    996.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   335.00   CHANNEL SLOPE =  0.1015
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =      15.61
```

```
  FLOW VELOCITY(FEET/SEC) =   8.87 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.63   Tc(MIN.) =   14.65
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    133.00 =    1810.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.425
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5187
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    5.80   SUBAREA RUNOFF(CFS) =    4.29
  TOTAL AREA(ACRES) =       25.6   TOTAL RUNOFF(CFS) =      19.90
  TC(MIN.) =   14.65

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    134.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    996.00  DOWNSTREAM(FEET) =    961.17
  CHANNEL LENGTH THRU SUBAREA(FEET) =   405.00   CHANNEL SLOPE =  0.0860
  CHANNEL FLOW THRU SUBAREA(CFS) =      19.90
  FLOW VELOCITY(FEET/SEC) =   8.78 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.77   Tc(MIN.) =   15.42
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    134.00 =    2215.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    134.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.387
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8613
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.85   SUBAREA RUNOFF(CFS) =    2.21
  TOTAL AREA(ACRES) =       27.5   TOTAL RUNOFF(CFS) =      22.11
  TC(MIN.) =   15.42

****************************************************************************
  FLOW PROCESS FROM NODE    134.00 TO NODE    135.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   951.17  DOWNSTREAM(FEET) =   925.97
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  34.93
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      22.11
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   15.45
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    135.00 =    2276.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    135.00 TO NODE    135.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.386
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5126
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.35   SUBAREA RUNOFF(CFS) =    0.25
  TOTAL AREA(ACRES) =       27.8   TOTAL RUNOFF(CFS) =      22.36
  TC(MIN.) =   15.45

****************************************************************************
  FLOW PROCESS FROM NODE    135.00 TO NODE    136.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   925.97  DOWNSTREAM(FEET) =   911.06
  FLOW LENGTH(FEET) =   158.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  20.58
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
```

```
  PIPE-FLOW(CFS) =      22.36
  PIPE TRAVEL TIME(MIN.) =   0.13    Tc(MIN.) =   15.58
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    136.00 =    2434.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    136.00 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.) =   15.58
  RAINFALL INTENSITY(INCH/HR) =   1.38
  TOTAL STREAM AREA(ACRES) =    27.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     22.36

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        5.31     8.57        1.883          7.00
      1        7.27    11.86        1.590          7.00
      1        7.40    12.89        1.523          7.00
      2       22.36    15.58        1.380         27.85

  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       17.61     8.57       1.883
      2       24.29    11.86       1.590
      3       25.89    12.89       1.523
      4       29.06    15.58       1.380

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      29.06   Tc(MIN.) =   15.58
  TOTAL AREA(ACRES) =       34.8
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    136.00 =    2434.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    145.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   910.56  DOWNSTREAM(FEET) =   906.54
  FLOW LENGTH(FEET) =   802.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  33.0 INCH PIPE IS  22.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.82
  ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      29.06
  PIPE TRAVEL TIME(MIN.) =   1.96    Tc(MIN.) =   17.54
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    145.00 =    3236.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    145.00 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.) =   17.54
  RAINFALL INTENSITY(INCH/HR) =   1.30
  TOTAL STREAM AREA(ACRES) =    34.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     29.06

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    141.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =  1000.00
  UPSTREAM ELEVATION(FEET) =   1620.00
  DOWNSTREAM ELEVATION(FEET) =   1080.00
```

```
  ELEVATION DIFFERENCE(FEET) =    540.00
  TC = 0.709*[( 1000.00**3)/(   540.00)]**.2 =   12.718
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.534
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5347
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      3.32
  TOTAL AREA(ACRES) =      4.05   TOTAL RUNOFF(CFS) =      3.32

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1080.00  DOWNSTREAM(FEET) =    972.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   295.00   CHANNEL SLOPE =  0.3661
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       3.32
  FLOW VELOCITY(FEET/SEC) =   6.07 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.81   Tc(MIN.) =   13.53
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    142.00 =    1295.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.485
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5277
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    6.65   SUBAREA RUNOFF(CFS) =    5.21
  TOTAL AREA(ACRES) =       10.7   TOTAL RUNOFF(CFS) =       8.53
  TC(MIN.) =   13.53

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    143.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    972.00  DOWNSTREAM(FEET) =    959.22
  CHANNEL LENGTH THRU SUBAREA(FEET) =   160.00   CHANNEL SLOPE =  0.0799
  CHANNEL FLOW THRU SUBAREA(CFS) =       8.53
  FLOW VELOCITY(FEET/SEC) =   6.79 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.39   Tc(MIN.) =   13.92
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    143.00 =    1455.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    143.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.463
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8624
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.30   SUBAREA RUNOFF(CFS) =    4.16
  TOTAL AREA(ACRES) =       14.0   TOTAL RUNOFF(CFS) =      12.70
  TC(MIN.) =   13.92

****************************************************************************
  FLOW PROCESS FROM NODE    143.00 TO NODE    144.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   950.22  DOWNSTREAM(FEET) =   924.22
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  31.55
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      12.70
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   13.95
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    144.00 =    1516.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    144.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
```

```
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.462
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5242
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.70   SUBAREA RUNOFF(CFS) =    1.30
  TOTAL AREA(ACRES) =       15.7   TOTAL RUNOFF(CFS) =      14.00
  TC(MIN.) =   13.95

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    145.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   924.22  DOWNSTREAM(FEET) =   907.44
  FLOW LENGTH(FEET) =   163.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  18.93
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      14.00
  PIPE TRAVEL TIME(MIN.) =   0.14    Tc(MIN.) =   14.10
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    145.00 =    1679.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    145.00 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.) =   14.10
  RAINFALL INTENSITY(INCH/HR) =   1.45
  TOTAL STREAM AREA(ACRES) =    15.70
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     14.00

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       17.61    10.80        1.670         34.85
      1       24.29    13.92        1.463         34.85
      1       25.89    14.93        1.411         34.85
      1       29.06    17.54        1.298         34.85
      2       14.00    14.10        1.454         15.70

  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       28.34    10.80       1.670
      2       38.12    13.92       1.463
      3       38.44    14.10       1.454
      4       39.48    14.93       1.411
      5       41.56    17.54       1.298

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      41.56   Tc(MIN.) =   17.54
  TOTAL AREA(ACRES) =       50.5
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    145.00 =    3236.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    154.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   906.44  DOWNSTREAM(FEET) =   904.82
  FLOW LENGTH(FEET) =   322.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  36.0 INCH PIPE IS  26.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.38
  ESTIMATED PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      41.56
  PIPE TRAVEL TIME(MIN.) =   0.73    Tc(MIN.) =   18.27
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    154.00 =    3558.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 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.) =   18.27
  RAINFALL INTENSITY(INCH/HR) =   1.27
  TOTAL STREAM AREA(ACRES) =    50.55
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     41.56

****************************************************************************
  FLOW PROCESS FROM NODE    150.00 TO NODE    151.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   995.00
  UPSTREAM ELEVATION(FEET) =   1560.00
  DOWNSTREAM ELEVATION(FEET) =   1040.00
  ELEVATION DIFFERENCE(FEET) =    520.00
  TC = 0.709*[(  995.00**3)/(   520.00)]**.2 =   12.776
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.530
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5342
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      2.17
  TOTAL AREA(ACRES) =      2.65   TOTAL RUNOFF(CFS) =      2.17

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    152.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1040.00  DOWNSTREAM(FEET) =    968.45
  CHANNEL LENGTH THRU SUBAREA(FEET) =   250.00   CHANNEL SLOPE =  0.2862
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       2.17
  FLOW VELOCITY(FEET/SEC) =   5.53 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.75   Tc(MIN.) =   13.53
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    152.00 =    1245.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    152.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.485
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5277
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.15   SUBAREA RUNOFF(CFS) =    2.47
  TOTAL AREA(ACRES) =        5.8   TOTAL RUNOFF(CFS) =       4.63
  TC(MIN.) =   13.53

****************************************************************************
  FLOW PROCESS FROM NODE    152.00 TO NODE    153.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   960.45  DOWNSTREAM(FEET) =   935.45
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  23.69
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.63
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =   13.57
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    153.00 =    1306.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    153.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.483
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5274
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.55   SUBAREA RUNOFF(CFS) =    0.43
```

```
  TOTAL AREA(ACRES) =        6.4   TOTAL RUNOFF(CFS) =       5.07
  TC(MIN.) =   13.57

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    154.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   935.45  DOWNSTREAM(FEET) =   906.82
  FLOW LENGTH(FEET) =   209.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  16.33
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.07
  PIPE TRAVEL TIME(MIN.) =   0.21    Tc(MIN.) =   13.78
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    154.00 =    1515.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 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.) =   13.78
  RAINFALL INTENSITY(INCH/HR) =   1.47
  TOTAL STREAM AREA(ACRES) =     6.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.07

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       28.34    11.61        1.608         50.55
      1       38.12    14.66        1.425         50.55
      1       38.44    14.83        1.416         50.55
      1       39.48    15.66        1.376         50.55
      1       41.56    18.27        1.271         50.55
      2        5.07    13.78        1.471          6.35

  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       32.61    11.61       1.608
      2       40.91    13.78       1.471
      3       43.02    14.66       1.425
      4       43.32    14.83       1.416
      5       44.22    15.66       1.376
      6       45.93    18.27       1.271

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      45.93   Tc(MIN.) =   18.27
  TOTAL AREA(ACRES) =       56.9
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    154.00 =    3558.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    165.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   904.32  DOWNSTREAM(FEET) =   901.08
  FLOW LENGTH(FEET) =   604.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  36.0 INCH PIPE IS  28.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.67
  ESTIMATED PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      45.93
  PIPE TRAVEL TIME(MIN.) =   1.31    Tc(MIN.) =   19.58
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    165.00 =    4162.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    165.00 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.) =   19.58
  RAINFALL INTENSITY(INCH/HR) =   1.23
  TOTAL STREAM AREA(ACRES) =    56.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     45.93

****************************************************************************
  FLOW PROCESS FROM NODE    160.00 TO NODE    161.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   835.00
  UPSTREAM ELEVATION(FEET) =   1688.00
  DOWNSTREAM ELEVATION(FEET) =   1270.00
  ELEVATION DIFFERENCE(FEET) =    418.00
  TC = 0.709*[(  835.00**3)/(   418.00)]**.2 =   12.013
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.580
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5411
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      7.52
  TOTAL AREA(ACRES) =      8.80   TOTAL RUNOFF(CFS) =      7.52

****************************************************************************
  FLOW PROCESS FROM NODE    161.00 TO NODE    162.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1270.00  DOWNSTREAM(FEET) =   1090.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   380.00   CHANNEL SLOPE =  0.4737
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       7.52
  FLOW VELOCITY(FEET/SEC) =   7.36 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.86   Tc(MIN.) =   12.87
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    162.00 =    1215.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    161.00 TO NODE    162.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.524
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5334
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   18.30   SUBAREA RUNOFF(CFS) =   14.87
  TOTAL AREA(ACRES) =       27.1   TOTAL RUNOFF(CFS) =      22.40
  TC(MIN.) =   12.87

****************************************************************************
  FLOW PROCESS FROM NODE    162.00 TO NODE    163.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1090.00  DOWNSTREAM(FEET) =    963.20
  CHANNEL LENGTH THRU SUBAREA(FEET) =   715.00   CHANNEL SLOPE =  0.1773
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =      22.40
  FLOW VELOCITY(FEET/SEC) =   9.77 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   1.22   Tc(MIN.) =   14.09
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    163.00 =    1930.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    162.00 TO NODE    163.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.454
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5231
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   14.85   SUBAREA RUNOFF(CFS) =   11.29
  TOTAL AREA(ACRES) =       41.9   TOTAL RUNOFF(CFS) =      33.69
  TC(MIN.) =   14.09
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    163.00 TO NODE    164.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   953.20  DOWNSTREAM(FEET) =   928.20
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  39.28
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      33.69
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   14.12
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    164.00 =    1991.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    164.00 TO NODE    164.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.453
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5229
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.95   SUBAREA RUNOFF(CFS) =    0.72
  TOTAL AREA(ACRES) =       42.9   TOTAL RUNOFF(CFS) =      34.41
  TC(MIN.) =   14.12

****************************************************************************
  FLOW PROCESS FROM NODE    164.00 TO NODE    165.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   928.20  DOWNSTREAM(FEET) =   901.08
  FLOW LENGTH(FEET) =   117.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  32.12
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      34.41
  PIPE TRAVEL TIME(MIN.) =   0.06    Tc(MIN.) =   14.18
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    165.00 =    2108.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    165.00 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.) =   14.18
  RAINFALL INTENSITY(INCH/HR) =   1.45
  TOTAL STREAM AREA(ACRES) =    42.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     34.41

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       32.61    13.02        1.515         56.90
      1       40.91    15.11        1.402         56.90
      1       43.02    15.98        1.362         56.90
      1       43.32    16.15        1.354         56.90
      1       44.22    16.98        1.320         56.90
      1       45.93    19.58        1.226         56.90
      2       34.41    14.18        1.449         42.90

  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       64.21    13.02       1.515
      2       72.80    14.18       1.449
      3       74.20    15.11       1.402
      4       75.36    15.98       1.362
      5       75.48    16.15       1.354
      6       75.56    16.98       1.320
      7       75.03    19.58       1.226
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      75.56   Tc(MIN.) =   16.98
  TOTAL AREA(ACRES) =       99.8
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    165.00 =    4162.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    174.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   900.08  DOWNSTREAM(FEET) =   898.44
  FLOW LENGTH(FEET) =   211.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  42.0 INCH PIPE IS  30.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.13
  ESTIMATED PIPE DIAMETER(INCH) =  42.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      75.56
  PIPE TRAVEL TIME(MIN.) =   0.35    Tc(MIN.) =   17.33
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    174.00 =    4373.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    174.00 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.) =   17.33
  RAINFALL INTENSITY(INCH/HR) =   1.31
  TOTAL STREAM AREA(ACRES) =    99.80
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     75.56

****************************************************************************
  FLOW PROCESS FROM NODE    170.00 TO NODE    171.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   155.00
  UPSTREAM ELEVATION(FEET) =   1006.00
  DOWNSTREAM ELEVATION(FEET) =    967.00
  ELEVATION DIFFERENCE(FEET) =     39.00
  TC = 0.709*[(  155.00**3)/(    39.00)]**.2 =    7.029
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.088
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5993
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.19
  TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.19

****************************************************************************
  FLOW PROCESS FROM NODE    171.00 TO NODE    172.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    967.00  DOWNSTREAM(FEET) =    950.73
  CHANNEL LENGTH THRU SUBAREA(FEET) =    55.00   CHANNEL SLOPE =  0.2958
  NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       0.19
  FLOW VELOCITY(FEET/SEC) =   4.74 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.19   Tc(MIN.) =    7.22
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    172.00 =     210.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    171.00 TO NODE    172.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.058
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5964
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.05   SUBAREA RUNOFF(CFS) =    0.06
  TOTAL AREA(ACRES) =        0.2   TOTAL RUNOFF(CFS) =       0.25
  TC(MIN.) =    7.22
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    172.00 TO NODE    173.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   943.73  DOWNSTREAM(FEET) =   922.89
  FLOW LENGTH(FEET) =    58.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   0.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.62
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.25
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    7.32
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    173.00 =     268.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    173.00 TO NODE    173.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.044
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5950
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.30   SUBAREA RUNOFF(CFS) =    0.36
  TOTAL AREA(ACRES) =        0.5   TOTAL RUNOFF(CFS) =       0.61
  TC(MIN.) =    7.32

****************************************************************************
  FLOW PROCESS FROM NODE    173.00 TO NODE    174.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.89  DOWNSTREAM(FEET) =   904.98
  FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   1.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.55
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.61
  PIPE TRAVEL TIME(MIN.) =   0.19    Tc(MIN.) =    7.51
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    174.00 =     374.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    174.00 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.) =    7.51
  RAINFALL INTENSITY(INCH/HR) =   2.02
  TOTAL STREAM AREA(ACRES) =     0.50
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.61

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       64.21    13.38        1.493         99.80
      1       72.80    14.53        1.431         99.80
      1       74.20    15.46        1.385         99.80
      1       75.36    16.32        1.347         99.80
      1       75.48    16.50        1.340         99.80
      1       75.56    17.33        1.306         99.80
      1       75.03    19.92        1.214         99.80
      2        0.61     7.51        2.017          0.50

  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       38.23     7.51       2.017
      2       64.66    13.38       1.493
      3       73.23    14.53       1.431
      4       74.62    15.46       1.385
```

```
      5       75.77    16.32       1.347
      6       75.89    16.50       1.340
      7       75.95    17.33       1.306
      8       75.40    19.92       1.214

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      75.95   Tc(MIN.) =   17.33
  TOTAL AREA(ACRES) =      100.3
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    174.00 =    4373.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    316.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   902.44  DOWNSTREAM(FEET) =   870.69
  FLOW LENGTH(FEET) =   718.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  30.0 INCH PIPE IS  22.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  19.39
  ESTIMATED PIPE DIAMETER(INCH) =  30.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      75.95
  PIPE TRAVEL TIME(MIN.) =   0.62    Tc(MIN.) =   17.95
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    316.00 =    5091.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  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) =  1000.00
  UPSTREAM ELEVATION(FEET) =    925.39
  DOWNSTREAM ELEVATION(FEET) =    917.25
  ELEVATION DIFFERENCE(FEET) =      8.14
  TC = 0.303*[( 1000.00**3)/(     8.14)]**.2 =   12.574
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.543
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8636
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      7.26
  TOTAL AREA(ACRES) =      5.45   TOTAL RUNOFF(CFS) =      7.26

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  917.25  DOWNSTREAM ELEVATION(FEET) =  911.98
  STREET LENGTH(FEET) =   766.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      11.95
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.55
    HALFSTREET FLOOD WIDTH(FEET) =   21.52
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.76
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.51
  STREET FLOW TRAVEL TIME(MIN.) =   4.63   Tc(MIN.) =   17.20
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.311
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8600
  SOIL CLASSIFICATION IS "B"
```

```
  SUBAREA AREA(ACRES) =    8.30      SUBAREA RUNOFF(CFS) =    9.36
  TOTAL AREA(ACRES) =       13.8        PEAK FLOW RATE(CFS) =      16.62

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.60   HALFSTREET FLOOD WIDTH(FEET) =  24.49
  FLOW VELOCITY(FEET/SEC.) =  2.99   DEPTH*VELOCITY(FT*FT/SEC.) =   1.80
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =    1766.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    203.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  911.98  DOWNSTREAM ELEVATION(FEET) =  908.36
  STREET LENGTH(FEET) =   743.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      21.69
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.68
    HALFSTREET FLOOD WIDTH(FEET) =   29.73
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.81
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.91
  STREET FLOW TRAVEL TIME(MIN.) =   4.41   Tc(MIN.) =   21.61
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.164
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8574
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   10.15      SUBAREA RUNOFF(CFS) =   10.13
  TOTAL AREA(ACRES) =       23.9        PEAK FLOW RATE(CFS) =      26.75

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.70   HALFSTREET FLOOD WIDTH(FEET) =  31.58
  FLOW VELOCITY(FEET/SEC.) =  2.87   DEPTH*VELOCITY(FT*FT/SEC.) =   2.00
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =    2509.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    212.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   904.00  DOWNSTREAM(FEET) =   890.00
  FLOW LENGTH(FEET) =  1391.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  18.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.20
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      26.75
  PIPE TRAVEL TIME(MIN.) =   2.52    Tc(MIN.) =   24.13
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    212.00 =    3900.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    212.00 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.) =   24.13
  RAINFALL INTENSITY(INCH/HR) =   1.10
  TOTAL STREAM AREA(ACRES) =    23.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     26.75

****************************************************************************
  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) =  1000.00
  UPSTREAM ELEVATION(FEET) =    922.99
  DOWNSTREAM ELEVATION(FEET) =    900.20
  ELEVATION DIFFERENCE(FEET) =     22.79
  TC = 0.303*[( 1000.00**3)/(    22.79)]**.2 =   10.234
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.717
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8659
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      8.70
  TOTAL AREA(ACRES) =      5.85   TOTAL RUNOFF(CFS) =      8.70

****************************************************************************
  FLOW PROCESS FROM NODE    211.00 TO NODE    212.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   895.00  DOWNSTREAM(FEET) =   890.00
  FLOW LENGTH(FEET) =    18.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  24.42
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       8.70
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =   10.25
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    212.00 =    1018.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    212.00 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.) =   10.25
  RAINFALL INTENSITY(INCH/HR) =   1.72
  TOTAL STREAM AREA(ACRES) =     5.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      8.70

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       26.75    24.13        1.099         23.90
      2        8.70    10.25        1.716          5.85

  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       20.06    10.25       1.716
      2       32.32    24.13       1.099

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      32.32   Tc(MIN.) =   24.13
  TOTAL AREA(ACRES) =       29.8
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    212.00 =    3900.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    213.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   890.00  DOWNSTREAM(FEET) =   876.73
  FLOW LENGTH(FEET) =   392.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  15.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.29
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      32.32
  PIPE TRAVEL TIME(MIN.) =   0.43    Tc(MIN.) =   24.55
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    213.00 =    4292.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    213.00 TO NODE    214.00 IS CODE =  81
----------------------------------------------------------------------------
```

```
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
==============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.089
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8559
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.40   SUBAREA RUNOFF(CFS) =    2.24
  TOTAL AREA(ACRES) =       32.2   TOTAL RUNOFF(CFS) =      34.56
  TC(MIN.) =   24.55

******************************************************************************
  FLOW PROCESS FROM NODE    214.00 TO NODE    315.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   874.53  DOWNSTREAM(FEET) =   868.58
  FLOW LENGTH(FEET) =  1985.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  36.0 INCH PIPE IS  26.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.17
  ESTIMATED PIPE DIAMETER(INCH) =  36.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      34.56
  PIPE TRAVEL TIME(MIN.) =   5.36    Tc(MIN.) =   29.92
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    315.00 =    6277.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  10
------------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
==============================================================================

******************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 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) =   777.00
  UPSTREAM ELEVATION(FEET) =    929.10
  DOWNSTREAM ELEVATION(FEET) =    917.70
  ELEVATION DIFFERENCE(FEET) =     11.40
  TC = 0.303*[(  777.00**3)/(    11.40)]**.2 =   10.103
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.729
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8660
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =     12.20
  TOTAL AREA(ACRES) =      8.15   TOTAL RUNOFF(CFS) =     12.20

******************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  91
------------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
==============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    917.57
  DOWNSTREAM NODE ELEVATION(FEET) =    916.03
  CHANNEL LENGTH THRU SUBAREA(FEET) =   308.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.565
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8639
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     14.64
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.41
  AVERAGE FLOW DEPTH(FEET) =   0.51   FLOOD WIDTH(FEET) =   33.97
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   2.13   Tc(MIN.) =   12.23
  SUBAREA AREA(ACRES) =    3.60       SUBAREA RUNOFF(CFS) =    4.87
  TOTAL AREA(ACRES) =       11.8         PEAK FLOW RATE(CFS) =      17.07

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.53   FLOOD WIDTH(FEET) =   36.15
  FLOW VELOCITY(FEET/SEC.) =   2.50   DEPTH*VELOCITY(FT*FT/SEC) =   1.33
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    302.00 =    1085.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    303.00 IS CODE =  91
------------------------------------------------------------------------------
```

```
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    916.03
  DOWNSTREAM NODE ELEVATION(FEET) =    914.52
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.448
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8622
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     19.97
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.57
  AVERAGE FLOW DEPTH(FEET) =   0.56   FLOOD WIDTH(FEET) =   38.65
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.97   Tc(MIN.) =   14.20
  SUBAREA AREA(ACRES) =    4.65       SUBAREA RUNOFF(CFS) =    5.81
  TOTAL AREA(ACRES) =       16.4         PEAK FLOW RATE(CFS) =      22.87

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.58   FLOOD WIDTH(FEET) =   40.83
  FLOW VELOCITY(FEET/SEC.) =   2.65   DEPTH*VELOCITY(FT*FT/SEC) =   1.53
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    303.00 =    1389.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    303.00 TO NODE    304.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    914.52
  DOWNSTREAM NODE ELEVATION(FEET) =    912.99
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.358
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8608
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     25.59
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.72
  AVERAGE FLOW DEPTH(FEET) =   0.60   FLOOD WIDTH(FEET) =   42.70
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.87   Tc(MIN.) =   16.07
  SUBAREA AREA(ACRES) =    4.65       SUBAREA RUNOFF(CFS) =    5.44
  TOTAL AREA(ACRES) =       21.0         PEAK FLOW RATE(CFS) =      28.31

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.62   FLOOD WIDTH(FEET) =   44.42
  FLOW VELOCITY(FEET/SEC.) =   2.78   DEPTH*VELOCITY(FT*FT/SEC) =   1.71
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    304.00 =    1693.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    304.00 TO NODE    305.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    912.99
  DOWNSTREAM NODE ELEVATION(FEET) =    911.48
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.286
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8596
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     32.37
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.84
  AVERAGE FLOW DEPTH(FEET) =   0.64   FLOOD WIDTH(FEET) =   47.07
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.78   Tc(MIN.) =   17.85
  SUBAREA AREA(ACRES) =    7.35       SUBAREA RUNOFF(CFS) =    8.12
  TOTAL AREA(ACRES) =       28.4         PEAK FLOW RATE(CFS) =      36.43

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.66   FLOOD WIDTH(FEET) =   49.26
  FLOW VELOCITY(FEET/SEC.) =   2.93   DEPTH*VELOCITY(FT*FT/SEC) =   1.94
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    305.00 =    1997.00 FEET.

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    305.00 TO NODE    312.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   903.78  DOWNSTREAM(FEET) =   880.65
  FLOW LENGTH(FEET) =  1059.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  17.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.36
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      36.43
  PIPE TRAVEL TIME(MIN.) =   1.32    Tc(MIN.) =   19.17
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    312.00 =    3056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    312.00 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.) =   19.17
  RAINFALL INTENSITY(INCH/HR) =   1.24
  TOTAL STREAM AREA(ACRES) =    28.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     36.43

****************************************************************************
  FLOW PROCESS FROM NODE    310.00 TO NODE    311.00 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) =   810.00
  UPSTREAM ELEVATION(FEET) =    914.31
  DOWNSTREAM ELEVATION(FEET) =    908.32
  ELEVATION DIFFERENCE(FEET) =      5.99
  TC = 0.303*[(  810.00**3)/(     5.99)]**.2 =   11.781
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.596
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8643
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      5.59
  TOTAL AREA(ACRES) =      4.05   TOTAL RUNOFF(CFS) =      5.59

****************************************************************************
  FLOW PROCESS FROM NODE    311.00 TO NODE    312.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   902.99  DOWNSTREAM(FEET) =   898.49
  FLOW LENGTH(FEET) =     9.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  26.83
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.59
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =   11.79
  LONGEST FLOWPATH FROM NODE    310.00 TO NODE    312.00 =     819.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    312.00 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.) =   11.79
  RAINFALL INTENSITY(INCH/HR) =   1.60
  TOTAL STREAM AREA(ACRES) =     4.05
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.59

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       36.43    19.17        1.239         28.40
      2        5.59    11.79        1.596          4.05
```

```
  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       27.98    11.79       1.596
      2       40.77    19.17       1.239

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      40.77   Tc(MIN.) =   19.17
  TOTAL AREA(ACRES) =       32.5
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    312.00 =    3056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    313.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   880.65  DOWNSTREAM(FEET) =   870.78
  FLOW LENGTH(FEET) =   132.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  15.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  21.51
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      40.77
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =   19.28
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    313.00 =    3188.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    313.00 TO NODE    314.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.235
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4870
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    4.25   SUBAREA RUNOFF(CFS) =    2.56
  TOTAL AREA(ACRES) =       36.7   TOTAL RUNOFF(CFS) =      43.33
  TC(MIN.) =   19.28

****************************************************************************
  FLOW PROCESS FROM NODE    313.00 TO NODE    314.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.235
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .4870
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.95   SUBAREA RUNOFF(CFS) =    1.17
  TOTAL AREA(ACRES) =       38.7   TOTAL RUNOFF(CFS) =      44.50
  TC(MIN.) =   19.28

****************************************************************************
  FLOW PROCESS FROM NODE    314.00 TO NODE    315.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   870.00  DOWNSTREAM(FEET) =   869.52
  FLOW LENGTH(FEET) =   160.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  39.0 INCH PIPE IS  29.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.54
  ESTIMATED PIPE DIAMETER(INCH) =  39.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      44.50
  PIPE TRAVEL TIME(MIN.) =   0.41    Tc(MIN.) =   19.68
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    315.00 =    3348.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       33.32    12.33       1.558       38.65
```

```
      2       44.50    19.68       1.222       38.65
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    315.00 =    3348.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       23.54    16.75       1.329       32.15
      2       34.56    29.92       0.983       32.15
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    315.00 =    6277.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      50.65      12.33        1.558
      2      61.40      16.75        1.329
      3      67.24      19.68        1.222
      4      70.35      29.92        0.983

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      70.35   Tc(MIN.) =   29.92
  TOTAL AREA(ACRES) =       70.8

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    316.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   875.32  DOWNSTREAM(FEET) =   874.96
  FLOW LENGTH(FEET) =   121.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  48.0 INCH PIPE IS  34.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.39
  ESTIMATED PIPE DIAMETER(INCH) =  48.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      70.35
  PIPE TRAVEL TIME(MIN.) =   0.27    Tc(MIN.) =   30.19
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    316.00 =    6398.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       50.65    12.63       1.539       70.80
      2       61.40    17.03       1.318       70.80
      3       67.24    19.96       1.213       70.80
      4       70.35    30.19       0.978       70.80
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    316.00 =    6398.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       38.23     8.23       1.923      100.30
      2       64.66    14.02       1.458      100.30
      3       73.23    15.15       1.400      100.30
      4       74.62    16.08       1.358      100.30
      5       75.77    16.94       1.321      100.30
      6       75.89    17.11       1.314      100.30
      7       75.95    17.95       1.282      100.30
      8       75.40    20.54       1.195      100.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    316.00 =    5091.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      71.25       8.23        1.923
      2     111.71      12.63        1.539
      3     115.19      14.02        1.458
      4     127.85      15.15        1.400
      5     132.59      16.08        1.358
```

```
      6     136.85      16.94        1.321
      7     136.97      17.03        1.318
      8     137.14      17.11        1.314
      9     136.39      17.95        1.282
     10     140.52      19.96        1.213
     11     141.65      20.54        1.195
     12     132.08      30.19        0.978

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     141.65   Tc(MIN.) =   20.54
  TOTAL AREA(ACRES) =      171.1

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      171.1  TC(MIN.) =     20.54
  PEAK FLOW RATE(CFS)   =     141.65
  *** PEAK FLOW RATE TABLE ***
         Q(CFS)   Tc(MIN.)
  1       71.25       8.23
  2      111.71      12.63
  3      115.19      14.02
  4      127.85      15.15
  5      132.59      16.08
  6      136.85      16.94
  7      136.97      17.03
  8      137.14      17.11
  9      136.39      17.95
 10      140.52      19.96
 11      141.65      20.54
 12      132.08      30.19
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

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****************************************************************************
            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:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                        *
* PROPOSED CONDITION 5-YEAR                                              *
* TRUCK YARD NORTHWEST OF BUILDING 2 (NODES 400-401)                     *
 ************************************************************************

  FILE NAME: W:\3384\PR5B.DAT
  TIME/DATE OF STUDY: 15:43 08/12/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =    5.00
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    5.00   1-HOUR INTENSITY(INCH/HOUR) =   0.685
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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    400.00 TO NODE    401.00 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) =   371.00
  UPSTREAM ELEVATION(FEET) =    876.52
  DOWNSTREAM ELEVATION(FEET) =    866.24
  ELEVATION DIFFERENCE(FEET) =     10.28
  TC = 0.303*[(  371.00**3)/(    10.28)]**.2 =    6.619
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.154
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8705
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      3.84
  TOTAL AREA(ACRES) =      2.05   TOTAL RUNOFF(CFS) =      3.84
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        2.0  TC(MIN.) =      6.62
  PEAK FLOW RATE(CFS)   =       3.84
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

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****************************************************************************
            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:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                        *
* PROPOSED CONDITION 5-YEAR                                              *
* LANDSCAPE EAST OF BUILDING 2 (NODES 420-421)                           *
 ************************************************************************

  FILE NAME: W:\3384\PR5C.DAT
  TIME/DATE OF STUDY: 16:12 08/12/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =    5.00
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    5.00   1-HOUR INTENSITY(INCH/HOUR) =   0.685
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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    420.00 TO NODE    421.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   295.00
  UPSTREAM ELEVATION(FEET) =    875.00
  DOWNSTREAM ELEVATION(FEET) =    869.35
  ELEVATION DIFFERENCE(FEET) =      5.65
  TC = 0.709*[(  295.00**3)/(     5.65)]**.2 =   15.219
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.397
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5143
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.32
  TOTAL AREA(ACRES) =      0.45   TOTAL RUNOFF(CFS) =      0.32
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        0.4  TC(MIN.) =     15.22
  PEAK FLOW RATE(CFS)   =       0.32
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

10-YEAR FREQUENCY

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****************************************************************************
            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:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                        *
* PROPOSED CONDITION 10-YEAR                                             *
*                                                                        *
 ************************************************************************

  FILE NAME: W:\3384\PR10A.DAT
  TIME/DATE OF STUDY: 15:29 08/12/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =   10.00   1-HOUR INTENSITY(INCH/HOUR) =   0.787
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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 COMMERCIAL
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   305.00
  UPSTREAM ELEVATION(FEET) =    933.50
  DOWNSTREAM ELEVATION(FEET) =    928.00
  ELEVATION DIFFERENCE(FEET) =      5.50
  TC = 0.303*[(  305.00**3)/(     5.50)]**.2 =    6.670
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.466
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8732
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.65
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.65

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.50  DOWNSTREAM(FEET) =   922.25
  FLOW LENGTH(FEET) =    44.00   MANNING'S N =  0.013
```

```
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.76
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.65
  PIPE TRAVEL TIME(MIN.) =   0.27    Tc(MIN.) =    6.94
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     349.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 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.) =    6.94
  RAINFALL INTENSITY(INCH/HR) =   2.42
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.65

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    111.00 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) =   420.00
  UPSTREAM ELEVATION(FEET) =   1120.00
  DOWNSTREAM ELEVATION(FEET) =    998.00
  ELEVATION DIFFERENCE(FEET) =    122.00
  TC = 0.533*[(  420.00**3)/(   122.00)]**.2 =    7.640
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.298
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6182
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.43
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    998.00  DOWNSTREAM(FEET) =    933.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.0812
  NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       0.43
  FLOW VELOCITY(FEET/SEC) =   4.28 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   3.12   Tc(MIN.) =   10.76
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    112.00 =    1220.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.924
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5827
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.75   SUBAREA RUNOFF(CFS) =    0.84
  TOTAL AREA(ACRES) =        1.0   TOTAL RUNOFF(CFS) =       1.27
  TC(MIN.) =   10.76

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  933.00  DOWNSTREAM ELEVATION(FEET) =  929.00
  STREET LENGTH(FEET) =    95.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018
```

```
  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.51
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.25
    HALFSTREET FLOOD WIDTH(FEET) =    4.84
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.75
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.93
  STREET FLOW TRAVEL TIME(MIN.) =   0.42   Tc(MIN.) =   11.18
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.885
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8679
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.30      SUBAREA RUNOFF(CFS) =    0.49
  TOTAL AREA(ACRES) =        1.3        PEAK FLOW RATE(CFS) =       1.76

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.26   HALFSTREET FLOOD WIDTH(FEET) =   5.53
  FLOW VELOCITY(FEET/SEC.) =  3.76   DEPTH*VELOCITY(FT*FT/SEC.) =   0.98
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    113.00 =    1315.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.885
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5785
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.95   SUBAREA RUNOFF(CFS) =    2.13
  TOTAL AREA(ACRES) =        3.3   TOTAL RUNOFF(CFS) =       3.88
  TC(MIN.) =   11.18

****************************************************************************
  FLOW PROCESS FROM NODE    113.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   923.00  DOWNSTREAM(FEET) =   922.00
  FLOW LENGTH(FEET) =    72.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.93
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.88
  PIPE TRAVEL TIME(MIN.) =   0.20    Tc(MIN.) =   11.38
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    114.00 =    1387.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 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.) =   11.38
  RAINFALL INTENSITY(INCH/HR) =   1.87
  TOTAL STREAM AREA(ACRES) =     3.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.88

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.65     6.94        2.417          0.30
      2        3.88    11.38        1.868          3.30

  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        3.01     6.94       2.417
      2        4.38    11.38       1.868

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
```

```
  PEAK FLOW RATE(CFS) =       4.38   Tc(MIN.) =   11.38
  TOTAL AREA(ACRES) =        3.6
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    114.00 =    1387.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    124.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.00  DOWNSTREAM(FEET) =   914.00
  FLOW LENGTH(FEET) =   464.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.62
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.38
  PIPE TRAVEL TIME(MIN.) =   1.17    Tc(MIN.) =   12.55
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    124.00 =    1851.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    124.00 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.) =   12.55
  RAINFALL INTENSITY(INCH/HR) =   1.78
  TOTAL STREAM AREA(ACRES) =     3.60
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.38

****************************************************************************
  FLOW PROCESS FROM NODE    120.00 TO NODE    121.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   425.00
  UPSTREAM ELEVATION(FEET) =   1120.00
  DOWNSTREAM ELEVATION(FEET) =    997.00
  ELEVATION DIFFERENCE(FEET) =    123.00
  TC = 0.709*[(  425.00**3)/(   123.00)]**.2 =   10.232
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.974
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5880
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      1.74
  TOTAL AREA(ACRES) =      1.50   TOTAL RUNOFF(CFS) =      1.74

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    122.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    997.00  DOWNSTREAM(FEET) =    962.92
  CHANNEL LENGTH THRU SUBAREA(FEET) =   282.00   CHANNEL SLOPE =  0.1209
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       1.74
  FLOW VELOCITY(FEET/SEC) =   5.29 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.89   Tc(MIN.) =   11.12
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    122.00 =     707.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    122.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.891
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8679
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.45   SUBAREA RUNOFF(CFS) =    2.38
  TOTAL AREA(ACRES) =        3.0   TOTAL RUNOFF(CFS) =       4.12
  TC(MIN.) =   11.12

****************************************************************************
  FLOW PROCESS FROM NODE    122.00 TO NODE    123.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   956.92  DOWNSTREAM(FEET) =   929.72
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  23.62
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.12
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =   11.16
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    123.00 =     768.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    123.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.887
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5787
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.45   SUBAREA RUNOFF(CFS) =    0.49
  TOTAL AREA(ACRES) =        3.4   TOTAL RUNOFF(CFS) =       4.61
  TC(MIN.) =   11.16

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    124.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   929.72  DOWNSTREAM(FEET) =   914.00
  FLOW LENGTH(FEET) =   248.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.99
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.61
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =   11.51
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    124.00 =    1016.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    124.00 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.) =   11.51
  RAINFALL INTENSITY(INCH/HR) =   1.86
  TOTAL STREAM AREA(ACRES) =     3.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.61

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.01     8.18        2.218          3.60
      1        4.38    12.55        1.775          3.60
      2        4.61    11.51        1.857          3.40

  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        6.29     8.18       2.218
      2        8.63    11.51       1.857
      3        8.79    12.55       1.775

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       8.79   Tc(MIN.) =   12.55
  TOTAL AREA(ACRES) =        7.0
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    124.00 =    1851.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    136.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   913.50  DOWNSTREAM(FEET) =   912.56
  FLOW LENGTH(FEET) =   107.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  13.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.16
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       8.79
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =   12.84
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    136.00 =    1958.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    136.00 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.) =   12.84
  RAINFALL INTENSITY(INCH/HR) =   1.75
  TOTAL STREAM AREA(ACRES) =     7.00
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      8.79

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    131.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   990.00
  UPSTREAM ELEVATION(FEET) =   1700.00
  DOWNSTREAM ELEVATION(FEET) =   1220.00
  ELEVATION DIFFERENCE(FEET) =    480.00
  TC = 0.709*[(  990.00**3)/(   480.00)]**.2 =   12.943
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.747
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5626
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      9.78
  TOTAL AREA(ACRES) =      9.95   TOTAL RUNOFF(CFS) =      9.78

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    132.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1220.00  DOWNSTREAM(FEET) =   1030.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   485.00   CHANNEL SLOPE =  0.3918
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       9.78
  FLOW VELOCITY(FEET/SEC) =   7.86 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   1.03   Tc(MIN.) =   13.97
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    132.00 =    1475.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    132.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
==============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.679
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5542
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    9.90   SUBAREA RUNOFF(CFS) =    9.21
  TOTAL AREA(ACRES) =       19.8   TOTAL RUNOFF(CFS) =      18.99
  TC(MIN.) =   13.97

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1030.00  DOWNSTREAM(FEET) =    996.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   335.00   CHANNEL SLOPE =  0.1015
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =      18.99
  FLOW VELOCITY(FEET/SEC) =   9.34 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
```

```
  TRAVEL TIME(MIN.) =   0.60   Tc(MIN.) =   14.57
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    133.00 =    1810.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.643
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5496
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    5.80   SUBAREA RUNOFF(CFS) =    5.24
  TOTAL AREA(ACRES) =       25.6   TOTAL RUNOFF(CFS) =      24.23
  TC(MIN.) =   14.57

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    134.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    996.00  DOWNSTREAM(FEET) =    961.17
  CHANNEL LENGTH THRU SUBAREA(FEET) =   405.00   CHANNEL SLOPE =  0.0860
  CHANNEL FLOW THRU SUBAREA(CFS) =      24.23
  FLOW VELOCITY(FEET/SEC) =   9.26 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.73   Tc(MIN.) =   15.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    134.00 =    2215.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    134.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.602
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8644
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.85   SUBAREA RUNOFF(CFS) =    2.56
  TOTAL AREA(ACRES) =       27.5   TOTAL RUNOFF(CFS) =      26.79
  TC(MIN.) =   15.30

****************************************************************************
  FLOW PROCESS FROM NODE    134.00 TO NODE    135.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   951.17  DOWNSTREAM(FEET) =   925.97
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  37.52
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      26.79
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   15.32
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    135.00 =    2276.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    135.00 TO NODE    135.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.600
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5439
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.35   SUBAREA RUNOFF(CFS) =    0.30
  TOTAL AREA(ACRES) =       27.8   TOTAL RUNOFF(CFS) =      27.10
  TC(MIN.) =   15.32

****************************************************************************
  FLOW PROCESS FROM NODE    135.00 TO NODE    136.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   925.97  DOWNSTREAM(FEET) =   911.06
  FLOW LENGTH(FEET) =   158.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  21.41
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      27.10
```

```
  PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =   15.45
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    136.00 =    2434.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    136.00 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.) =   15.45
  RAINFALL INTENSITY(INCH/HR) =   1.59
  TOTAL STREAM AREA(ACRES) =    27.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     27.10

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        6.29     8.49        2.175          7.00
      1        8.63    11.80        1.833          7.00
      1        8.79    12.84        1.754          7.00
      2       27.10    15.45        1.594         27.85

  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       21.19     8.49       2.175
      2       29.33    11.80       1.833
      3       31.32    12.84       1.754
      4       35.08    15.45       1.594

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      35.08   Tc(MIN.) =   15.45
  TOTAL AREA(ACRES) =       34.8
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    136.00 =    2434.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    145.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   910.56  DOWNSTREAM(FEET) =   906.54
  FLOW LENGTH(FEET) =   802.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  33.0 INCH PIPE IS  26.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.00
  ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      35.08
  PIPE TRAVEL TIME(MIN.) =   1.91    Tc(MIN.) =   17.36
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    145.00 =    3236.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    145.00 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.) =   17.36
  RAINFALL INTENSITY(INCH/HR) =   1.50
  TOTAL STREAM AREA(ACRES) =    34.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     35.08

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    141.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =  1000.00
  UPSTREAM ELEVATION(FEET) =   1620.00
  DOWNSTREAM ELEVATION(FEET) =   1080.00
  ELEVATION DIFFERENCE(FEET) =    540.00
```

```
  TC = 0.709*[( 1000.00**3)/(   540.00)]**.2 =   12.718
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.763
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5646
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      4.03
  TOTAL AREA(ACRES) =      4.05   TOTAL RUNOFF(CFS) =      4.03

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1080.00  DOWNSTREAM(FEET) =    972.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   295.00   CHANNEL SLOPE =  0.3661
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       4.03
  FLOW VELOCITY(FEET/SEC) =   6.35 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.77   Tc(MIN.) =   13.49
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    142.00 =    1295.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.710
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5581
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    6.65   SUBAREA RUNOFF(CFS) =    6.35
  TOTAL AREA(ACRES) =       10.7   TOTAL RUNOFF(CFS) =      10.38
  TC(MIN.) =   13.49

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    143.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    972.00  DOWNSTREAM(FEET) =    959.22
  CHANNEL LENGTH THRU SUBAREA(FEET) =   160.00   CHANNEL SLOPE =  0.0799
  CHANNEL FLOW THRU SUBAREA(CFS) =      10.38
  FLOW VELOCITY(FEET/SEC) =   7.13 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.37   Tc(MIN.) =   13.87
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    143.00 =    1455.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    143.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.686
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8655
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.30   SUBAREA RUNOFF(CFS) =    4.81
  TOTAL AREA(ACRES) =       14.0   TOTAL RUNOFF(CFS) =      15.19
  TC(MIN.) =   13.87

****************************************************************************
  FLOW PROCESS FROM NODE    143.00 TO NODE    144.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   950.22  DOWNSTREAM(FEET) =   924.22
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  32.94
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      15.19
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   13.90
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    144.00 =    1516.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    144.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.684
```

```
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5548
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.70   SUBAREA RUNOFF(CFS) =    1.59
  TOTAL AREA(ACRES) =       15.7   TOTAL RUNOFF(CFS) =      16.78
  TC(MIN.) =   13.90

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    145.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   924.22  DOWNSTREAM(FEET) =   907.44
  FLOW LENGTH(FEET) =   163.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  19.67
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      16.78
  PIPE TRAVEL TIME(MIN.) =   0.14    Tc(MIN.) =   14.04
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    145.00 =    1679.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    145.00 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.) =   14.04
  RAINFALL INTENSITY(INCH/HR) =   1.68
  TOTAL STREAM AREA(ACRES) =    15.70
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     16.78

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       21.19    10.67        1.931         34.85
      1       29.33    13.76        1.693         34.85
      1       31.32    14.78        1.631         34.85
      1       35.08    17.36        1.500         34.85
      2       16.78    14.04        1.675         15.70

  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       33.95    10.67       1.931
      2       45.77    13.76       1.693
      3       46.53    14.04       1.675
      4       47.65    14.78       1.631
      5       50.11    17.36       1.500

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      50.11   Tc(MIN.) =   17.36
  TOTAL AREA(ACRES) =       50.5
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    145.00 =    3236.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    154.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   906.44  DOWNSTREAM(FEET) =   904.82
  FLOW LENGTH(FEET) =   322.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  39.0 INCH PIPE IS  28.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.76
  ESTIMATED PIPE DIAMETER(INCH) =  39.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      50.11
  PIPE TRAVEL TIME(MIN.) =   0.69    Tc(MIN.) =   18.05
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    154.00 =    3558.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 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.) =   18.05
  RAINFALL INTENSITY(INCH/HR) =   1.47
  TOTAL STREAM AREA(ACRES) =    50.55
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     50.11

****************************************************************************
  FLOW PROCESS FROM NODE    150.00 TO NODE    151.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   995.00
  UPSTREAM ELEVATION(FEET) =   1560.00
  DOWNSTREAM ELEVATION(FEET) =   1040.00
  ELEVATION DIFFERENCE(FEET) =    520.00
  TC = 0.709*[(  995.00**3)/(   520.00)]**.2 =   12.776
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.759
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5641
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      2.63
  TOTAL AREA(ACRES) =      2.65   TOTAL RUNOFF(CFS) =      2.63

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    152.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1040.00  DOWNSTREAM(FEET) =    968.45
  CHANNEL LENGTH THRU SUBAREA(FEET) =   250.00   CHANNEL SLOPE =  0.2862
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       2.63
  FLOW VELOCITY(FEET/SEC) =   5.77 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.72   Tc(MIN.) =   13.50
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    152.00 =    1245.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    152.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.709
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5580
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.15   SUBAREA RUNOFF(CFS) =    3.00
  TOTAL AREA(ACRES) =        5.8   TOTAL RUNOFF(CFS) =       5.63
  TC(MIN.) =   13.50

****************************************************************************
  FLOW PROCESS FROM NODE    152.00 TO NODE    153.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   960.45  DOWNSTREAM(FEET) =   935.45
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  25.03
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.63
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =   13.54
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    153.00 =    1306.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    153.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.707
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5577
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.55   SUBAREA RUNOFF(CFS) =    0.52
  TOTAL AREA(ACRES) =        6.4   TOTAL RUNOFF(CFS) =       6.16
```

```
  TC(MIN.) =   13.54

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    154.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   935.45  DOWNSTREAM(FEET) =   906.82
  FLOW LENGTH(FEET) =   209.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  17.20
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.16
  PIPE TRAVEL TIME(MIN.) =   0.20    Tc(MIN.) =   13.74
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    154.00 =    1515.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 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.) =   13.74
  RAINFALL INTENSITY(INCH/HR) =   1.69
  TOTAL STREAM AREA(ACRES) =     6.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      6.16

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       33.95    11.44        1.863         50.55
      1       45.77    14.48        1.648         50.55
      1       46.53    14.74        1.633         50.55
      1       47.65    15.47        1.592         50.55
      1       50.11    18.05        1.470         50.55
      2        6.16    13.74        1.694          6.35

  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       39.08    11.44       1.863
      2       49.60    13.74       1.694
      3       51.76    14.48       1.648
      4       52.46    14.74       1.633
      5       53.44    15.47       1.592
      6       55.45    18.05       1.470

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      55.45   Tc(MIN.) =   18.05
  TOTAL AREA(ACRES) =       56.9
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    154.00 =    3558.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    165.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   904.32  DOWNSTREAM(FEET) =   901.08
  FLOW LENGTH(FEET) =   604.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  39.0 INCH PIPE IS  30.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.08
  ESTIMATED PIPE DIAMETER(INCH) =  39.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      55.45
  PIPE TRAVEL TIME(MIN.) =   1.25    Tc(MIN.) =   19.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    165.00 =    4162.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    165.00 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.) =   19.30
  RAINFALL INTENSITY(INCH/HR) =   1.42
  TOTAL STREAM AREA(ACRES) =    56.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     55.45

****************************************************************************
  FLOW PROCESS FROM NODE    160.00 TO NODE    161.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   835.00
  UPSTREAM ELEVATION(FEET) =   1688.00
  DOWNSTREAM ELEVATION(FEET) =   1270.00
  ELEVATION DIFFERENCE(FEET) =    418.00
  TC = 0.709*[(  835.00**3)/(   418.00)]**.2 =   12.013
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.816
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5708
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      9.12
  TOTAL AREA(ACRES) =      8.80   TOTAL RUNOFF(CFS) =      9.12

****************************************************************************
  FLOW PROCESS FROM NODE    161.00 TO NODE    162.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1270.00  DOWNSTREAM(FEET) =   1090.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   380.00   CHANNEL SLOPE =  0.4737
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       9.12
  FLOW VELOCITY(FEET/SEC) =   7.72 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.82   Tc(MIN.) =   12.83
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    162.00 =    1215.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    161.00 TO NODE    162.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.755
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5636
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   18.30   SUBAREA RUNOFF(CFS) =   18.10
  TOTAL AREA(ACRES) =       27.1   TOTAL RUNOFF(CFS) =      27.22
  TC(MIN.) =   12.83

****************************************************************************
  FLOW PROCESS FROM NODE    162.00 TO NODE    163.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1090.00  DOWNSTREAM(FEET) =    963.20
  CHANNEL LENGTH THRU SUBAREA(FEET) =   715.00   CHANNEL SLOPE =  0.1773
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =      27.22
  FLOW VELOCITY(FEET/SEC) =  10.31 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   1.16   Tc(MIN.) =   13.99
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    163.00 =    1930.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    162.00 TO NODE    163.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.678
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5541
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   14.85   SUBAREA RUNOFF(CFS) =   13.81
  TOTAL AREA(ACRES) =       41.9   TOTAL RUNOFF(CFS) =      41.03
  TC(MIN.) =   13.99

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    163.00 TO NODE    164.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   953.20  DOWNSTREAM(FEET) =   928.20
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  40.48
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      41.03
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   14.01
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    164.00 =    1991.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    164.00 TO NODE    164.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.676
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5539
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.95   SUBAREA RUNOFF(CFS) =    0.88
  TOTAL AREA(ACRES) =       42.9   TOTAL RUNOFF(CFS) =      41.91
  TC(MIN.) =   14.01

****************************************************************************
  FLOW PROCESS FROM NODE    164.00 TO NODE    165.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   928.20  DOWNSTREAM(FEET) =   901.08
  FLOW LENGTH(FEET) =   117.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  33.47
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      41.91
  PIPE TRAVEL TIME(MIN.) =   0.06    Tc(MIN.) =   14.07
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    165.00 =    2108.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    165.00 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.) =   14.07
  RAINFALL INTENSITY(INCH/HR) =   1.67
  TOTAL STREAM AREA(ACRES) =    42.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     41.91

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       39.08    12.78        1.759         56.90
      1       49.60    15.01        1.618         56.90
      1       51.76    15.73        1.579         56.90
      1       52.46    15.99        1.565         56.90
      1       53.44    16.72        1.529         56.90
      1       55.45    19.30        1.420         56.90
      2       41.91    14.07        1.673         42.90

  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       77.14    12.78       1.759
      2       88.43    14.07       1.673
      3       90.14    15.01       1.618
      4       91.31    15.73       1.579
      5       91.68    15.99       1.565
      6       91.76    16.72       1.529
      7       91.02    19.30       1.420
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      91.76   Tc(MIN.) =   16.72
  TOTAL AREA(ACRES) =       99.8
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    165.00 =    4162.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    174.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   900.08  DOWNSTREAM(FEET) =   898.44
  FLOW LENGTH(FEET) =   211.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  45.0 INCH PIPE IS  32.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.62
  ESTIMATED PIPE DIAMETER(INCH) =  45.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      91.76
  PIPE TRAVEL TIME(MIN.) =   0.33    Tc(MIN.) =   17.06
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    174.00 =    4373.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    174.00 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.) =   17.06
  RAINFALL INTENSITY(INCH/HR) =   1.51
  TOTAL STREAM AREA(ACRES) =    99.80
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     91.76

****************************************************************************
  FLOW PROCESS FROM NODE    170.00 TO NODE    171.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   155.00
  UPSTREAM ELEVATION(FEET) =   1006.00
  DOWNSTREAM ELEVATION(FEET) =    967.00
  ELEVATION DIFFERENCE(FEET) =     39.00
  TC = 0.709*[(  155.00**3)/(    39.00)]**.2 =    7.029
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.400
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6265
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.23
  TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.23

****************************************************************************
  FLOW PROCESS FROM NODE    171.00 TO NODE    172.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    967.00  DOWNSTREAM(FEET) =    950.73
  CHANNEL LENGTH THRU SUBAREA(FEET) =    55.00   CHANNEL SLOPE =  0.2958
  NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       0.23
  FLOW VELOCITY(FEET/SEC) =   4.74 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.19   Tc(MIN.) =    7.22
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    172.00 =     210.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    171.00 TO NODE    172.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.366
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6238
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.05   SUBAREA RUNOFF(CFS) =    0.07
  TOTAL AREA(ACRES) =        0.2   TOTAL RUNOFF(CFS) =       0.30
  TC(MIN.) =    7.22

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    172.00 TO NODE    173.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   943.73  DOWNSTREAM(FEET) =   922.89
  FLOW LENGTH(FEET) =    58.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   1.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.10
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.30
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    7.32
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    173.00 =     268.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    173.00 TO NODE    173.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.350
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6225
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.30   SUBAREA RUNOFF(CFS) =    0.44
  TOTAL AREA(ACRES) =        0.5   TOTAL RUNOFF(CFS) =       0.74
  TC(MIN.) =    7.32

****************************************************************************
  FLOW PROCESS FROM NODE    173.00 TO NODE    174.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.89  DOWNSTREAM(FEET) =   904.98
  FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   1.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.12
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.74
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    7.49
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    174.00 =     374.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    174.00 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.) =    7.49
  RAINFALL INTENSITY(INCH/HR) =   2.32
  TOTAL STREAM AREA(ACRES) =     0.50
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.74

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       77.14    13.13        1.734         99.80
      1       88.43    14.41        1.653         99.80
      1       90.14    15.34        1.600         99.80
      1       91.31    16.06        1.562         99.80
      1       91.68    16.32        1.549         99.80
      1       91.76    17.06        1.514         99.80
      1       91.02    19.63        1.407         99.80
      2        0.74     7.49        2.322          0.50

  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       46.73     7.49       2.322
      2       77.69    13.13       1.734
      3       88.96    14.41       1.653
      4       90.65    15.34       1.600
      5       91.81    16.06       1.562
```

```
      6       92.18    16.32       1.549
      7       92.24    17.06       1.514
      8       91.47    19.63       1.407

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      92.24   Tc(MIN.) =   17.06
  TOTAL AREA(ACRES) =      100.3
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    174.00 =    4373.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    316.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   902.44  DOWNSTREAM(FEET) =   870.69
  FLOW LENGTH(FEET) =   718.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  33.0 INCH PIPE IS  23.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  20.49
  ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      92.24
  PIPE TRAVEL TIME(MIN.) =   0.58    Tc(MIN.) =   17.64
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    316.00 =    5091.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  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) =  1000.00
  UPSTREAM ELEVATION(FEET) =    925.39
  DOWNSTREAM ELEVATION(FEET) =    917.25
  ELEVATION DIFFERENCE(FEET) =      8.14
  TC = 0.303*[( 1000.00**3)/(     8.14)]**.2 =   12.574
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.774
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8666
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      8.38
  TOTAL AREA(ACRES) =      5.45   TOTAL RUNOFF(CFS) =      8.38

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  917.25  DOWNSTREAM ELEVATION(FEET) =  911.98
  STREET LENGTH(FEET) =   766.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      13.82
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.57
    HALFSTREET FLOOD WIDTH(FEET) =   22.77
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.86
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.63
  STREET FLOW TRAVEL TIME(MIN.) =   4.46   Tc(MIN.) =   17.03
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.515
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8632
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    8.30      SUBAREA RUNOFF(CFS) =   10.85
```

```
  TOTAL AREA(ACRES) =       13.8        PEAK FLOW RATE(CFS) =      19.23

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.63   HALFSTREET FLOOD WIDTH(FEET) =  25.90
  FLOW VELOCITY(FEET/SEC.) =  3.11   DEPTH*VELOCITY(FT*FT/SEC.) =   1.94
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =    1766.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    203.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  911.98  DOWNSTREAM ELEVATION(FEET) =  908.36
  STREET LENGTH(FEET) =   743.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      25.11
    ***STREET FLOW SPLITS OVER STREET-CROWN***
    FULL DEPTH(FEET) =    0.70   FLOOD WIDTH(FEET) =   31.58
    FULL HALF-STREET VELOCITY(FEET/SEC.) =    2.87
    SPLIT DEPTH(FEET) =    0.33   SPLIT FLOOD WIDTH(FEET) =    9.34
    SPLIT FLOW(CFS) =    1.45   SPLIT VELOCITY(FEET/SEC.) =    1.48
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.70
    HALFSTREET FLOOD WIDTH(FEET) =   31.58
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.87
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    2.00
  STREET FLOW TRAVEL TIME(MIN.) =   4.32   Tc(MIN.) =   21.35
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.347
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8606
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   10.15      SUBAREA RUNOFF(CFS) =   11.76
  TOTAL AREA(ACRES) =       23.9        PEAK FLOW RATE(CFS) =      30.99

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.70   HALFSTREET FLOOD WIDTH(FEET) =  31.58
  FLOW VELOCITY(FEET/SEC.) =  2.87   DEPTH*VELOCITY(FT*FT/SEC.) =   2.00
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =    2509.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    212.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   904.00  DOWNSTREAM(FEET) =   890.00
  FLOW LENGTH(FEET) =  1391.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  20.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.38
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      30.99
  PIPE TRAVEL TIME(MIN.) =   2.47    Tc(MIN.) =   23.82
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    212.00 =    3900.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    212.00 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.) =   23.82
  RAINFALL INTENSITY(INCH/HR) =   1.27
  TOTAL STREAM AREA(ACRES) =    23.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     30.99

****************************************************************************
  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) =  1000.00
  UPSTREAM ELEVATION(FEET) =    922.99
  DOWNSTREAM ELEVATION(FEET) =    900.20
  ELEVATION DIFFERENCE(FEET) =     22.79
  TC = 0.303*[( 1000.00**3)/(    22.79)]**.2 =   10.234
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.974
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8688
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =     10.03
  TOTAL AREA(ACRES) =      5.85   TOTAL RUNOFF(CFS) =     10.03

******************************************************************************
  FLOW PROCESS FROM NODE    211.00 TO NODE    212.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   895.00  DOWNSTREAM(FEET) =   890.00
  FLOW LENGTH(FEET) =    18.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  25.33
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      10.03
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =   10.25
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    212.00 =    1018.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    212.00 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.) =   10.25
  RAINFALL INTENSITY(INCH/HR) =   1.97
  TOTAL STREAM AREA(ACRES) =     5.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     10.03

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       30.99    23.82        1.272         23.90
      2       10.03    10.25        1.973          5.85

  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       23.36    10.25       1.973
      2       37.46    23.82       1.272

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      37.46   Tc(MIN.) =   23.82
  TOTAL AREA(ACRES) =       29.8
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    212.00 =    3900.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    213.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   890.00  DOWNSTREAM(FEET) =   876.73
  FLOW LENGTH(FEET) =   392.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  17.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.71
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      37.46
  PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =   24.24
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    213.00 =    4292.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    213.00 TO NODE    214.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.261
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8592
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.40   SUBAREA RUNOFF(CFS) =    2.60
  TOTAL AREA(ACRES) =       32.2   TOTAL RUNOFF(CFS) =      40.06
  TC(MIN.) =   24.24

****************************************************************************
  FLOW PROCESS FROM NODE    214.00 TO NODE    315.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   874.53  DOWNSTREAM(FEET) =   868.58
  FLOW LENGTH(FEET) =  1985.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  39.0 INCH PIPE IS  27.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.45
  ESTIMATED PIPE DIAMETER(INCH) =  39.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      40.06
  PIPE TRAVEL TIME(MIN.) =   5.13    Tc(MIN.) =   29.37
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    315.00 =    6277.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 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) =   777.00
  UPSTREAM ELEVATION(FEET) =    929.10
  DOWNSTREAM ELEVATION(FEET) =    917.70
  ELEVATION DIFFERENCE(FEET) =     11.40
  TC = 0.303*[(  777.00**3)/(    11.40)]**.2 =   10.103
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.987
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8689
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =     14.07
  TOTAL AREA(ACRES) =      8.15   TOTAL RUNOFF(CFS) =     14.07

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    917.57
  DOWNSTREAM NODE ELEVATION(FEET) =    916.03
  CHANNEL LENGTH THRU SUBAREA(FEET) =   308.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.804
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8669
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     16.89
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.49
  AVERAGE FLOW DEPTH(FEET) =   0.53   FLOOD WIDTH(FEET) =   36.00
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   2.06   Tc(MIN.) =   12.16
  SUBAREA AREA(ACRES) =    3.60       SUBAREA RUNOFF(CFS) =    5.63
  TOTAL AREA(ACRES) =       11.8         PEAK FLOW RATE(CFS) =      19.71

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.55   FLOOD WIDTH(FEET) =   38.34
  FLOW VELOCITY(FEET/SEC.) =   2.58   DEPTH*VELOCITY(FT*FT/SEC) =   1.43
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    302.00 =    1085.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    303.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    916.03
  DOWNSTREAM NODE ELEVATION(FEET) =    914.52
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.673
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8653
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     23.07
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.65
  AVERAGE FLOW DEPTH(FEET) =   0.58   FLOOD WIDTH(FEET) =   40.99
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.91   Tc(MIN.) =   14.08
  SUBAREA AREA(ACRES) =    4.65       SUBAREA RUNOFF(CFS) =    6.73
  TOTAL AREA(ACRES) =       16.4         PEAK FLOW RATE(CFS) =      26.44

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.60   FLOOD WIDTH(FEET) =   43.33
  FLOW VELOCITY(FEET/SEC.) =   2.73   DEPTH*VELOCITY(FT*FT/SEC) =   1.65
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    303.00 =    1389.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    303.00 TO NODE    304.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    914.52
  DOWNSTREAM NODE ELEVATION(FEET) =    912.99
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.571
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8640
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     29.59
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.81
  AVERAGE FLOW DEPTH(FEET) =   0.62   FLOOD WIDTH(FEET) =   45.20
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.80   Tc(MIN.) =   15.88
  SUBAREA AREA(ACRES) =    4.65       SUBAREA RUNOFF(CFS) =    6.31
  TOTAL AREA(ACRES) =       21.0         PEAK FLOW RATE(CFS) =      32.75

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.64   FLOOD WIDTH(FEET) =   47.07
  FLOW VELOCITY(FEET/SEC.) =   2.88   DEPTH*VELOCITY(FT*FT/SEC) =   1.85
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    304.00 =    1693.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    304.00 TO NODE    305.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    912.99
  DOWNSTREAM NODE ELEVATION(FEET) =    911.48
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.489
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8628
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     37.47
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.94
  AVERAGE FLOW DEPTH(FEET) =   0.67   FLOOD WIDTH(FEET) =   49.88
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.72   Tc(MIN.) =   17.60
  SUBAREA AREA(ACRES) =    7.35       SUBAREA RUNOFF(CFS) =    9.44
  TOTAL AREA(ACRES) =       28.4         PEAK FLOW RATE(CFS) =      42.19

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.69   FLOOD WIDTH(FEET) =   52.22
  FLOW VELOCITY(FEET/SEC.) =   3.03   DEPTH*VELOCITY(FT*FT/SEC) =   2.10
```

```
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    305.00 =    1997.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    305.00 TO NODE    312.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   903.78  DOWNSTREAM(FEET) =   880.65
  FLOW LENGTH(FEET) =  1059.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  19.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.70
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      42.19
  PIPE TRAVEL TIME(MIN.) =   1.29    Tc(MIN.) =   18.89
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    312.00 =    3056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    312.00 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.) =   18.89
  RAINFALL INTENSITY(INCH/HR) =   1.44
  TOTAL STREAM AREA(ACRES) =    28.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     42.19

****************************************************************************
  FLOW PROCESS FROM NODE    310.00 TO NODE    311.00 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) =   810.00
  UPSTREAM ELEVATION(FEET) =    914.31
  DOWNSTREAM ELEVATION(FEET) =    908.32
  ELEVATION DIFFERENCE(FEET) =      5.99
  TC = 0.303*[(  810.00**3)/(     5.99)]**.2 =   11.781
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.835
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8673
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      6.44
  TOTAL AREA(ACRES) =      4.05   TOTAL RUNOFF(CFS) =      6.44

****************************************************************************
  FLOW PROCESS FROM NODE    311.00 TO NODE    312.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   902.99  DOWNSTREAM(FEET) =   898.49
  FLOW LENGTH(FEET) =     9.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  27.93
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.44
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =   11.79
  LONGEST FLOWPATH FROM NODE    310.00 TO NODE    312.00 =     819.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    312.00 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.) =   11.79
  RAINFALL INTENSITY(INCH/HR) =   1.83
  TOTAL STREAM AREA(ACRES) =     4.05
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      6.44

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
```

```
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       42.19    18.89        1.435         28.40
      2        6.44    11.79        1.834          4.05

  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       32.77    11.79       1.834
      2       47.24    18.89       1.435

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      47.24   Tc(MIN.) =   18.89
  TOTAL AREA(ACRES) =       32.5
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    312.00 =    3056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    313.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   880.65  DOWNSTREAM(FEET) =   870.78
  FLOW LENGTH(FEET) =   132.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  15.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  22.66
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      47.24
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =   18.98
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    313.00 =    3188.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    313.00 TO NODE    314.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.432
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5197
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    4.25   SUBAREA RUNOFF(CFS) =    3.16
  TOTAL AREA(ACRES) =       36.7   TOTAL RUNOFF(CFS) =      50.40
  TC(MIN.) =   18.98

****************************************************************************
  FLOW PROCESS FROM NODE    313.00 TO NODE    314.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.432
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5197
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.95   SUBAREA RUNOFF(CFS) =    1.45
  TOTAL AREA(ACRES) =       38.7   TOTAL RUNOFF(CFS) =      51.85
  TC(MIN.) =   18.98

****************************************************************************
  FLOW PROCESS FROM NODE    314.00 TO NODE    315.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   870.00  DOWNSTREAM(FEET) =   869.52
  FLOW LENGTH(FEET) =   160.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  42.0 INCH PIPE IS  30.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.84
  ESTIMATED PIPE DIAMETER(INCH) =  42.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      51.85
  PIPE TRAVEL TIME(MIN.) =   0.39    Tc(MIN.) =   19.37
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    315.00 =    3348.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
```

```
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       39.25    12.31       1.794       38.65
      2       51.85    19.37       1.417       38.65
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    315.00 =    3348.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       27.38    16.39       1.545       32.15
      2       40.06    29.37       1.141       32.15
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    315.00 =    6277.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      59.81      12.31        1.794
      2      71.25      16.39        1.545
      3      78.28      19.37        1.417
      4      81.83      29.37        1.141

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      81.83   Tc(MIN.) =   29.37
  TOTAL AREA(ACRES) =       70.8

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    316.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   875.32  DOWNSTREAM(FEET) =   874.96
  FLOW LENGTH(FEET) =   121.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  48.0 INCH PIPE IS  38.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.51
  ESTIMATED PIPE DIAMETER(INCH) =  48.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      81.83
  PIPE TRAVEL TIME(MIN.) =   0.27    Tc(MIN.) =   29.64
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    316.00 =    6398.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       59.81    12.59       1.772       70.80
      2       71.25    16.66       1.532       70.80
      3       78.28    19.64       1.406       70.80
      4       81.83    29.64       1.136       70.80
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    316.00 =    6398.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       46.73     8.18       2.218      100.30
      2       77.69    13.74       1.694      100.30
      3       88.96    14.99       1.619      100.30
      4       90.65    15.92       1.569      100.30
      5       91.81    16.65       1.533      100.30
      6       92.18    16.90       1.521      100.30
      7       92.24    17.64       1.487      100.30
      8       91.47    20.21       1.386      100.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    316.00 =    5091.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      85.57       8.18        2.218
      2     134.52      12.59        1.772
```

```
      3     136.45      13.74        1.694
      4     153.06      14.99        1.619
      5     158.73      15.92        1.569
      6     162.99      16.65        1.533
      7     163.02      16.66        1.532
      8     162.90      16.90        1.521
      9     162.53      17.64        1.487
     10     167.17      19.64        1.406
     11     168.59      20.21        1.386
     12     156.78      29.64        1.136

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     168.59   Tc(MIN.) =   20.21
  TOTAL AREA(ACRES) =      171.1

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      171.1  TC(MIN.) =     20.21
  PEAK FLOW RATE(CFS)   =     168.59
  *** PEAK FLOW RATE TABLE ***
         Q(CFS)   Tc(MIN.)
  1       85.57       8.18
  2      134.52      12.59
  3      136.45      13.74
  4      153.06      14.99
  5      158.73      15.92
  6      162.99      16.65
  7      163.02      16.66
  8      162.90      16.90
  9      162.53      17.64
 10      167.17      19.64
 11      168.59      20.21
 12      156.78      29.64
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

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____________________________________________________________________________
****************************************************************************
            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:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                        *
* PROPOSED CONDITINO 10-YEAR                                             *
* TRUCK YARD NORTHWEST OF BUILDING 2 (NODES 400-401)                     *
 ************************************************************************

  FILE NAME: W:\3384\PR10B.DAT
  TIME/DATE OF STUDY: 15:31 08/12/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =   10.00   1-HOUR INTENSITY(INCH/HOUR) =   0.787
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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    400.00 TO NODE    401.00 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) =   371.00
  UPSTREAM ELEVATION(FEET) =    876.52
  DOWNSTREAM ELEVATION(FEET) =    866.24
  ELEVATION DIFFERENCE(FEET) =     10.28
  TC = 0.303*[(  371.00**3)/(    10.28)]**.2 =    6.619
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.476
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8732
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      4.43
  TOTAL AREA(ACRES) =      2.05   TOTAL RUNOFF(CFS) =      4.43
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        2.0  TC(MIN.) =      6.62
  PEAK FLOW RATE(CFS)   =       4.43
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

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****************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
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                      (Rational Tabling Version 23.0)
                  Release Date: 07/01/2016  License ID 1435

                           Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                          *
* PROPOSED CONDITION 10-YEAR                                               *
* LANDSCAPE EAST OF BUILDING 2 (NODES 420-421)                             *
 ****************************************************************************

  FILE NAME: W:\3384\PR10C.DAT
  TIME/DATE OF STUDY: 15:32 08/12/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =   10.00   1-HOUR INTENSITY(INCH/HOUR) =   0.787
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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    420.00 TO NODE    421.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   295.00
  UPSTREAM ELEVATION(FEET) =    875.00
  DOWNSTREAM ELEVATION(FEET) =    869.35
  ELEVATION DIFFERENCE(FEET) =      5.65
  TC = 0.709*[(  295.00**3)/(     5.65)]**.2 =   15.219
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.606
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5447
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.39
  TOTAL AREA(ACRES) =      0.45   TOTAL RUNOFF(CFS) =      0.39
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        0.4  TC(MIN.) =     15.22
  PEAK FLOW RATE(CFS)   =       0.39
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

100-YEAR FREQUENCY

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____________________________________________________________________________
****************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
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                  Release Date: 07/01/2016  License ID 1435

                           Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                        *
* PROPOSED CONDITION 100-YEAR                                            *
*                                                                        *
 ************************************************************************

  FILE NAME: W:\3384\PR100A.DAT
  TIME/DATE OF STUDY: 14:43 07/14/2021
----------------------------------------------------------------------------
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =  100.00   1-HOUR INTENSITY(INCH/HOUR) =   1.150
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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 COMMERCIAL
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   305.00
  UPSTREAM ELEVATION(FEET) =    933.50
  DOWNSTREAM ELEVATION(FEET) =    928.00
  ELEVATION DIFFERENCE(FEET) =      5.50
  TC = 0.303*[(  305.00**3)/(     5.50)]**.2 =    6.670
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.604
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.95
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.95

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.50  DOWNSTREAM(FEET) =   922.25
  FLOW LENGTH(FEET) =    44.00   MANNING'S N =  0.013
```

```
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.08
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.95
  PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =    6.91
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     349.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 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.) =    6.91
  RAINFALL INTENSITY(INCH/HR) =   3.54
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.95

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    111.00 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) =   420.00
  UPSTREAM ELEVATION(FEET) =   1120.00
  DOWNSTREAM ELEVATION(FEET) =    998.00
  ELEVATION DIFFERENCE(FEET) =    122.00
  TC = 0.533*[(  420.00**3)/(   122.00)]**.2 =    7.640
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.358
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6860
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    998.00  DOWNSTREAM(FEET) =    933.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.0812
  NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       0.69
  FLOW VELOCITY(FEET/SEC) =   4.28 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   3.12   Tc(MIN.) =   10.76
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    112.00 =    1220.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.811
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6556
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.75   SUBAREA RUNOFF(CFS) =    1.38
  TOTAL AREA(ACRES) =        1.0   TOTAL RUNOFF(CFS) =       2.07
  TC(MIN.) =   10.76

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  933.00  DOWNSTREAM ELEVATION(FEET) =  929.00
  STREET LENGTH(FEET) =    95.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018
```

```
  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.44
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.29
    HALFSTREET FLOOD WIDTH(FEET) =    6.91
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.93
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.12
  STREET FLOW TRAVEL TIME(MIN.) =   0.40   Tc(MIN.) =   11.16
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.758
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8752
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.30      SUBAREA RUNOFF(CFS) =    0.72
  TOTAL AREA(ACRES) =        1.3        PEAK FLOW RATE(CFS) =       2.80

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.30   HALFSTREET FLOOD WIDTH(FEET) =   7.47
  FLOW VELOCITY(FEET/SEC.) =  4.04   DEPTH*VELOCITY(FT*FT/SEC.) =   1.20
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    113.00 =    1315.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.758
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6522
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.95   SUBAREA RUNOFF(CFS) =    3.51
  TOTAL AREA(ACRES) =        3.3   TOTAL RUNOFF(CFS) =       6.30
  TC(MIN.) =   11.16

****************************************************************************
  FLOW PROCESS FROM NODE    113.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   923.00  DOWNSTREAM(FEET) =   922.00
  FLOW LENGTH(FEET) =    72.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.79
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.30
  PIPE TRAVEL TIME(MIN.) =   0.18    Tc(MIN.) =   11.34
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    114.00 =    1387.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 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.) =   11.34
  RAINFALL INTENSITY(INCH/HR) =   2.74
  TOTAL STREAM AREA(ACRES) =     3.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      6.30

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.95     6.91        3.539          0.30
      2        6.30    11.34        2.735          3.30

  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        4.79     6.91       3.539
      2        7.04    11.34       2.735

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
```

```
  PEAK FLOW RATE(CFS) =       7.04   Tc(MIN.) =   11.34
  TOTAL AREA(ACRES) =        3.6
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    114.00 =    1387.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    124.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.00  DOWNSTREAM(FEET) =   914.00
  FLOW LENGTH(FEET) =   464.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.56
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.04
  PIPE TRAVEL TIME(MIN.) =   1.02    Tc(MIN.) =   12.36
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    124.00 =    1851.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    124.00 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.) =   12.36
  RAINFALL INTENSITY(INCH/HR) =   2.62
  TOTAL STREAM AREA(ACRES) =     3.60
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.04

****************************************************************************
  FLOW PROCESS FROM NODE    120.00 TO NODE    121.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   425.00
  UPSTREAM ELEVATION(FEET) =   1120.00
  DOWNSTREAM ELEVATION(FEET) =    997.00
  ELEVATION DIFFERENCE(FEET) =    123.00
  TC = 0.709*[(  425.00**3)/(   123.00)]**.2 =   10.232
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.885
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6603
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      2.86
  TOTAL AREA(ACRES) =      1.50   TOTAL RUNOFF(CFS) =      2.86

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    122.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    997.00  DOWNSTREAM(FEET) =    962.92
  CHANNEL LENGTH THRU SUBAREA(FEET) =   282.00   CHANNEL SLOPE =  0.1209
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       2.86
  FLOW VELOCITY(FEET/SEC) =   5.87 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.80   Tc(MIN.) =   11.03
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    122.00 =     707.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    122.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.774
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8753
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.45   SUBAREA RUNOFF(CFS) =    3.52
  TOTAL AREA(ACRES) =        3.0   TOTAL RUNOFF(CFS) =       6.38
  TC(MIN.) =   11.03

****************************************************************************
  FLOW PROCESS FROM NODE    122.00 TO NODE    123.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   956.92  DOWNSTREAM(FEET) =   929.72
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  26.70
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.38
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =   11.07
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    123.00 =     768.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    123.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.769
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6530
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.45   SUBAREA RUNOFF(CFS) =    0.81
  TOTAL AREA(ACRES) =        3.4   TOTAL RUNOFF(CFS) =       7.19
  TC(MIN.) =   11.07

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    124.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   929.72  DOWNSTREAM(FEET) =   914.00
  FLOW LENGTH(FEET) =   248.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.28
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.19
  PIPE TRAVEL TIME(MIN.) =   0.31    Tc(MIN.) =   11.38
  LONGEST FLOWPATH FROM NODE    120.00 TO NODE    124.00 =    1016.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    124.00 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.) =   11.38
  RAINFALL INTENSITY(INCH/HR) =   2.73
  TOTAL STREAM AREA(ACRES) =     3.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.19

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        4.79     8.02        3.276          3.60
      1        7.04    12.36        2.615          3.60
      2        7.19    11.38        2.730          3.40

  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        9.86     8.02       3.276
      2       13.67    11.38       2.730
      3       13.93    12.36       2.615

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      13.93   Tc(MIN.) =   12.36
  TOTAL AREA(ACRES) =        7.0
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    124.00 =    1851.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    136.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   913.50  DOWNSTREAM(FEET) =   912.56
  FLOW LENGTH(FEET) =   107.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  16.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.85
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      13.93
  PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =   12.62
  LONGEST FLOWPATH FROM NODE    110.00 TO NODE    136.00 =    1958.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    136.00 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.) =   12.62
  RAINFALL INTENSITY(INCH/HR) =   2.59
  TOTAL STREAM AREA(ACRES) =     7.00
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     13.93

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    131.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   990.00
  UPSTREAM ELEVATION(FEET) =   1700.00
  DOWNSTREAM ELEVATION(FEET) =   1220.00
  ELEVATION DIFFERENCE(FEET) =    480.00
  TC = 0.709*[(  990.00**3)/(   480.00)]**.2 =   12.943
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.553
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6382
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =     16.21
  TOTAL AREA(ACRES) =      9.95   TOTAL RUNOFF(CFS) =     16.21

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    132.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1220.00  DOWNSTREAM(FEET) =   1030.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   485.00   CHANNEL SLOPE =  0.3918
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =      16.21
  FLOW VELOCITY(FEET/SEC) =   8.96 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.90   Tc(MIN.) =   13.85
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    132.00 =    1475.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    132.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.465
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6316
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    9.90   SUBAREA RUNOFF(CFS) =   15.41
  TOTAL AREA(ACRES) =       19.8   TOTAL RUNOFF(CFS) =      31.63
  TC(MIN.) =   13.85

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1030.00  DOWNSTREAM(FEET) =    996.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   335.00   CHANNEL SLOPE =  0.1015
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =      31.63
  FLOW VELOCITY(FEET/SEC) =  10.75 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
```

```
  TRAVEL TIME(MIN.) =   0.52   Tc(MIN.) =   14.36
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    133.00 =    1810.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    133.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.418
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6280
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    5.80   SUBAREA RUNOFF(CFS) =    8.81
  TOTAL AREA(ACRES) =       25.6   TOTAL RUNOFF(CFS) =      40.44
  TC(MIN.) =   14.36

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    134.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    996.00  DOWNSTREAM(FEET) =    961.17
  CHANNEL LENGTH THRU SUBAREA(FEET) =   405.00   CHANNEL SLOPE =  0.0860
  CHANNEL FLOW THRU SUBAREA(CFS) =      40.44
  FLOW VELOCITY(FEET/SEC) =  10.68 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.63   Tc(MIN.) =   15.00
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    134.00 =    2215.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    134.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.365
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8724
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.85   SUBAREA RUNOFF(CFS) =    3.82
  TOTAL AREA(ACRES) =       27.5   TOTAL RUNOFF(CFS) =      44.25
  TC(MIN.) =   15.00

****************************************************************************
  FLOW PROCESS FROM NODE    134.00 TO NODE    135.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   951.17  DOWNSTREAM(FEET) =   925.97
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  42.51
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      44.25
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =   15.02
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    135.00 =    2276.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    135.00 TO NODE    135.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.363
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6236
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.35   SUBAREA RUNOFF(CFS) =    0.52
  TOTAL AREA(ACRES) =       27.8   TOTAL RUNOFF(CFS) =      44.77
  TC(MIN.) =   15.02

****************************************************************************
  FLOW PROCESS FROM NODE    135.00 TO NODE    136.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   925.97  DOWNSTREAM(FEET) =   911.06
  FLOW LENGTH(FEET) =   158.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  15.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  24.09
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      44.77
```

```
  PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =   15.13
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    136.00 =    2434.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    136.00 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.) =   15.13
  RAINFALL INTENSITY(INCH/HR) =   2.35
  TOTAL STREAM AREA(ACRES) =    27.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     44.77

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        9.86     8.29        3.219          7.00
      1       13.67    11.64        2.698          7.00
      1       13.93    12.62        2.587          7.00
      2       44.77    15.13        2.354         27.85

  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       34.39     8.29       3.219
      2       48.12    11.64       2.698
      3       51.27    12.62       2.587
      4       57.44    15.13       2.354

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      57.44   Tc(MIN.) =   15.13
  TOTAL AREA(ACRES) =       34.8
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    136.00 =    2434.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    145.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   910.56  DOWNSTREAM(FEET) =   906.54
  FLOW LENGTH(FEET) =   802.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  42.0 INCH PIPE IS  29.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.06
  ESTIMATED PIPE DIAMETER(INCH) =  42.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      57.44
  PIPE TRAVEL TIME(MIN.) =   1.66    Tc(MIN.) =   16.79
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    145.00 =    3236.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    145.00 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.) =   16.79
  RAINFALL INTENSITY(INCH/HR) =   2.23
  TOTAL STREAM AREA(ACRES) =    34.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     57.44

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    141.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =  1000.00
  UPSTREAM ELEVATION(FEET) =   1620.00
  DOWNSTREAM ELEVATION(FEET) =   1080.00
  ELEVATION DIFFERENCE(FEET) =    540.00
```

```
  TC = 0.709*[( 1000.00**3)/(   540.00)]**.2 =   12.718
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.577
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6398
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      6.68
  TOTAL AREA(ACRES) =      4.05   TOTAL RUNOFF(CFS) =      6.68

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1080.00  DOWNSTREAM(FEET) =    972.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   295.00   CHANNEL SLOPE =  0.3661
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       6.68
  FLOW VELOCITY(FEET/SEC) =   7.15 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.69   Tc(MIN.) =   13.41
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    142.00 =    1295.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.507
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6347
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    6.65   SUBAREA RUNOFF(CFS) =   10.58
  TOTAL AREA(ACRES) =       10.7   TOTAL RUNOFF(CFS) =      17.26
  TC(MIN.) =   13.41

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    143.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    972.00  DOWNSTREAM(FEET) =    959.22
  CHANNEL LENGTH THRU SUBAREA(FEET) =   160.00   CHANNEL SLOPE =  0.0799
  CHANNEL FLOW THRU SUBAREA(CFS) =      17.26
  FLOW VELOCITY(FEET/SEC) =   8.14 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.33   Tc(MIN.) =   13.73
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    143.00 =    1455.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    143.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.476
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8732
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.30   SUBAREA RUNOFF(CFS) =    7.13
  TOTAL AREA(ACRES) =       14.0   TOTAL RUNOFF(CFS) =      24.39
  TC(MIN.) =   13.73

****************************************************************************
  FLOW PROCESS FROM NODE    143.00 TO NODE    144.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   950.22  DOWNSTREAM(FEET) =   924.22
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  35.67
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      24.39
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =   13.76
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    144.00 =    1516.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    144.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.473
```

```
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6322
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.70   SUBAREA RUNOFF(CFS) =    2.66
  TOTAL AREA(ACRES) =       15.7   TOTAL RUNOFF(CFS) =      27.05
  TC(MIN.) =   13.76

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    145.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   924.22  DOWNSTREAM(FEET) =   907.44
  FLOW LENGTH(FEET) =   163.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  22.17
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      27.05
  PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =   13.88
  LONGEST FLOWPATH FROM NODE    140.00 TO NODE    145.00 =    1679.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    145.00 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.) =   13.88
  RAINFALL INTENSITY(INCH/HR) =   2.46
  TOTAL STREAM AREA(ACRES) =    15.70
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     27.05

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       34.39    10.20        2.889         34.85
      1       48.12    13.38        2.510         34.85
      1       51.27    14.34        2.421         34.85
      1       57.44    16.79        2.230         34.85
      2       27.05    13.88        2.462         15.70

  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       54.27    10.20       2.889
      2       74.19    13.38       2.510
      3       76.69    13.88       2.462
      4       77.87    14.34       2.421
      5       81.95    16.79       2.230

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      81.95   Tc(MIN.) =   16.79
  TOTAL AREA(ACRES) =       50.5
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    145.00 =    3236.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    145.00 TO NODE    154.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   906.44  DOWNSTREAM(FEET) =   904.82
  FLOW LENGTH(FEET) =   322.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  45.0 INCH PIPE IS  36.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.63
  ESTIMATED PIPE DIAMETER(INCH) =  45.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      81.95
  PIPE TRAVEL TIME(MIN.) =   0.62    Tc(MIN.) =   17.41
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    154.00 =    3558.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 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.) =   17.41
  RAINFALL INTENSITY(INCH/HR) =   2.19
  TOTAL STREAM AREA(ACRES) =    50.55
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     81.95

****************************************************************************
  FLOW PROCESS FROM NODE    150.00 TO NODE    151.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   995.00
  UPSTREAM ELEVATION(FEET) =   1560.00
  DOWNSTREAM ELEVATION(FEET) =   1040.00
  ELEVATION DIFFERENCE(FEET) =    520.00
  TC = 0.709*[(  995.00**3)/(   520.00)]**.2 =   12.776
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.570
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6394
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      4.36
  TOTAL AREA(ACRES) =      2.65   TOTAL RUNOFF(CFS) =      4.36

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    152.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1040.00  DOWNSTREAM(FEET) =    968.45
  CHANNEL LENGTH THRU SUBAREA(FEET) =   250.00   CHANNEL SLOPE =  0.2862
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       4.36
  FLOW VELOCITY(FEET/SEC) =   6.46 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.64   Tc(MIN.) =   13.42
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    152.00 =    1245.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    152.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.505
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6346
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.15   SUBAREA RUNOFF(CFS) =    5.01
  TOTAL AREA(ACRES) =        5.8   TOTAL RUNOFF(CFS) =       9.36
  TC(MIN.) =   13.42

****************************************************************************
  FLOW PROCESS FROM NODE    152.00 TO NODE    153.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   960.45  DOWNSTREAM(FEET) =   935.45
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  28.75
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       9.36
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =   13.46
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    153.00 =    1306.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    153.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.502
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6344
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.55   SUBAREA RUNOFF(CFS) =    0.87
  TOTAL AREA(ACRES) =        6.4   TOTAL RUNOFF(CFS) =      10.24
```

```
  TC(MIN.) =   13.46

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    154.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   935.45  DOWNSTREAM(FEET) =   906.82
  FLOW LENGTH(FEET) =   209.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  19.38
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      10.24
  PIPE TRAVEL TIME(MIN.) =   0.18    Tc(MIN.) =   13.64
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    154.00 =    1515.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 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.) =   13.64
  RAINFALL INTENSITY(INCH/HR) =   2.48
  TOTAL STREAM AREA(ACRES) =     6.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     10.24

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       54.27    10.89        2.793         50.55
      1       74.19    14.01        2.451         50.55
      1       76.69    14.51        2.406         50.55
      1       77.87    14.96        2.368         50.55
      1       81.95    17.41        2.188         50.55
      2       10.24    13.64        2.485          6.35

  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       62.45    10.89       2.793
      2       82.47    13.64       2.485
      3       84.28    14.01       2.451
      4       86.60    14.51       2.406
      5       87.63    14.96       2.368
      6       90.97    17.41       2.188

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      90.97   Tc(MIN.) =   17.41
  TOTAL AREA(ACRES) =       56.9
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    154.00 =    3558.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    165.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   904.32  DOWNSTREAM(FEET) =   901.08
  FLOW LENGTH(FEET) =   604.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  48.0 INCH PIPE IS  35.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.22
  ESTIMATED PIPE DIAMETER(INCH) =  48.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      90.97
  PIPE TRAVEL TIME(MIN.) =   1.09    Tc(MIN.) =   18.50
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    165.00 =    4162.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    165.00 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.) =   18.50
  RAINFALL INTENSITY(INCH/HR) =   2.12
  TOTAL STREAM AREA(ACRES) =    56.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     90.97

****************************************************************************
  FLOW PROCESS FROM NODE    160.00 TO NODE    161.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   835.00
  UPSTREAM ELEVATION(FEET) =   1688.00
  DOWNSTREAM ELEVATION(FEET) =   1270.00
  ELEVATION DIFFERENCE(FEET) =    418.00
  TC = 0.709*[(  835.00**3)/(   418.00)]**.2 =   12.013
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.654
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6453
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =     15.07
  TOTAL AREA(ACRES) =      8.80   TOTAL RUNOFF(CFS) =     15.07

****************************************************************************
  FLOW PROCESS FROM NODE    161.00 TO NODE    162.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1270.00  DOWNSTREAM(FEET) =   1090.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   380.00   CHANNEL SLOPE =  0.4737
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =      15.07
  FLOW VELOCITY(FEET/SEC) =   8.79 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.72   Tc(MIN.) =   12.73
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    162.00 =    1215.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    161.00 TO NODE    162.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.575
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6397
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   18.30   SUBAREA RUNOFF(CFS) =   30.14
  TOTAL AREA(ACRES) =       27.1   TOTAL RUNOFF(CFS) =      45.21
  TC(MIN.) =   12.73

****************************************************************************
  FLOW PROCESS FROM NODE    162.00 TO NODE    163.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1090.00  DOWNSTREAM(FEET) =    963.20
  CHANNEL LENGTH THRU SUBAREA(FEET) =   715.00   CHANNEL SLOPE =  0.1773
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =      45.21
  FLOW VELOCITY(FEET/SEC) =  11.89 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   1.00   Tc(MIN.) =   13.74
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    163.00 =    1930.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    162.00 TO NODE    163.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.475
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6324
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   14.85   SUBAREA RUNOFF(CFS) =   23.25
  TOTAL AREA(ACRES) =       41.9   TOTAL RUNOFF(CFS) =      68.46
  TC(MIN.) =   13.74

****************************************************************************
  FLOW PROCESS FROM NODE    163.00 TO NODE    164.00 IS CODE =  31
```

```
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   953.20  DOWNSTREAM(FEET) =   928.20
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  14.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  45.79
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      68.46
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =   13.76
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    164.00 =    1991.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    164.00 TO NODE    164.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.473
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6322
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.95   SUBAREA RUNOFF(CFS) =    1.49
  TOTAL AREA(ACRES) =       42.9   TOTAL RUNOFF(CFS) =      69.95
  TC(MIN.) =   13.76

****************************************************************************
  FLOW PROCESS FROM NODE    164.00 TO NODE    165.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   928.20  DOWNSTREAM(FEET) =   901.08
  FLOW LENGTH(FEET) =   117.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  15.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  37.73
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      69.95
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   13.81
  LONGEST FLOWPATH FROM NODE    160.00 TO NODE    165.00 =    2108.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    165.00 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.) =   13.81
  RAINFALL INTENSITY(INCH/HR) =   2.47
  TOTAL STREAM AREA(ACRES) =    42.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     69.95

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       62.45    12.09        2.646         56.90
      1       82.47    14.77        2.384         56.90
      1       84.28    15.14        2.354         56.90
      1       86.60    15.61        2.316         56.90
      1       87.63    16.06        2.282         56.90
      1       90.97    18.50        2.120         56.90
      2       69.95    13.81        2.468         42.90

  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      123.66    12.09       2.646
      2      147.07    13.81       2.468
      3      150.02    14.77       2.384
      4      150.97    15.14       2.354
      5      152.23    15.61       2.316
      6      152.29    16.06       2.282
      7      151.05    18.50       2.120

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
```

```
  PEAK FLOW RATE(CFS) =     152.29   Tc(MIN.) =   16.06
  TOTAL AREA(ACRES) =       99.8
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    165.00 =    4162.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    165.00 TO NODE    174.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   900.08  DOWNSTREAM(FEET) =   898.44
  FLOW LENGTH(FEET) =   211.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  54.0 INCH PIPE IS  40.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  12.03
  ESTIMATED PIPE DIAMETER(INCH) =  54.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     152.29
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =   16.36
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    174.00 =    4373.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    174.00 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.) =   16.36
  RAINFALL INTENSITY(INCH/HR) =   2.26
  TOTAL STREAM AREA(ACRES) =    99.80
  PEAK FLOW RATE(CFS) AT CONFLUENCE =    152.29

****************************************************************************
  FLOW PROCESS FROM NODE    170.00 TO NODE    171.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   155.00
  UPSTREAM ELEVATION(FEET) =   1006.00
  DOWNSTREAM ELEVATION(FEET) =    967.00
  ELEVATION DIFFERENCE(FEET) =     39.00
  TC = 0.709*[(  155.00**3)/(    39.00)]**.2 =    7.029
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.507
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6930
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.36
  TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.36

****************************************************************************
  FLOW PROCESS FROM NODE    171.00 TO NODE    172.00 IS CODE =  52
----------------------------------------------------------------------------
  >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    967.00  DOWNSTREAM(FEET) =    950.73
  CHANNEL LENGTH THRU SUBAREA(FEET) =    55.00   CHANNEL SLOPE =  0.2958
  NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
  NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION
  CHANNEL FLOW THRU SUBAREA(CFS) =       0.36
  FLOW VELOCITY(FEET/SEC) =   4.74 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
  TRAVEL TIME(MIN.) =   0.19   Tc(MIN.) =    7.22
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    172.00 =     210.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    171.00 TO NODE    172.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.458
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6907
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.05   SUBAREA RUNOFF(CFS) =    0.12
  TOTAL AREA(ACRES) =        0.2   TOTAL RUNOFF(CFS) =       0.48
  TC(MIN.) =    7.22

****************************************************************************
  FLOW PROCESS FROM NODE    172.00 TO NODE    173.00 IS CODE =  31
```

```
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   943.73  DOWNSTREAM(FEET) =   922.89
  FLOW LENGTH(FEET) =    58.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   1.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.61
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.48
  PIPE TRAVEL TIME(MIN.) =   0.08    Tc(MIN.) =    7.31
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    173.00 =     268.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    173.00 TO NODE    173.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.438
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6898
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    0.30   SUBAREA RUNOFF(CFS) =    0.71
  TOTAL AREA(ACRES) =        0.5   TOTAL RUNOFF(CFS) =       1.20
  TC(MIN.) =    7.31

****************************************************************************
  FLOW PROCESS FROM NODE    173.00 TO NODE    174.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   922.89  DOWNSTREAM(FEET) =   904.98
  FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.65
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.20
  PIPE TRAVEL TIME(MIN.) =   0.15    Tc(MIN.) =    7.46
  LONGEST FLOWPATH FROM NODE    170.00 TO NODE    174.00 =     374.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    174.00 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.) =    7.46
  RAINFALL INTENSITY(INCH/HR) =   3.40
  TOTAL STREAM AREA(ACRES) =     0.50
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.20

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1      123.66    12.39        2.611         99.80
      1      147.07    14.10        2.442         99.80
      1      150.02    15.06        2.360         99.80
      1      150.97    15.43        2.330         99.80
      1      152.23    15.90        2.294         99.80
      1      152.29    16.36        2.261         99.80
      1      151.05    18.79        2.103         99.80
      2        1.20     7.46        3.401          0.50

  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       78.95     7.46       3.401
      2      124.58    12.39       2.611
      3      147.93    14.10       2.442
      4      150.85    15.06       2.360
      5      151.79    15.43       2.330
      6      153.04    15.90       2.294
```

```
      7      153.08    16.36       2.261
      8      151.78    18.79       2.103

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     153.08   Tc(MIN.) =   16.36
  TOTAL AREA(ACRES) =      100.3
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    174.00 =    4373.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    174.00 TO NODE    316.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   902.44  DOWNSTREAM(FEET) =   870.69
  FLOW LENGTH(FEET) =   718.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  39.0 INCH PIPE IS  29.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  23.10
  ESTIMATED PIPE DIAMETER(INCH) =  39.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     153.08
  PIPE TRAVEL TIME(MIN.) =   0.52    Tc(MIN.) =   16.87
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    316.00 =    5091.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  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) =  1000.00
  UPSTREAM ELEVATION(FEET) =    925.39
  DOWNSTREAM ELEVATION(FEET) =    917.25
  ELEVATION DIFFERENCE(FEET) =      8.14
  TC = 0.303*[( 1000.00**3)/(     8.14)]**.2 =   12.574
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.592
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8741
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =     12.35
  TOTAL AREA(ACRES) =      5.45   TOTAL RUNOFF(CFS) =     12.35

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  917.25  DOWNSTREAM ELEVATION(FEET) =  911.98
  STREET LENGTH(FEET) =   766.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      20.47
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.64
    HALFSTREET FLOOD WIDTH(FEET) =   26.52
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.16
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    2.01
  STREET FLOW TRAVEL TIME(MIN.) =   4.04   Tc(MIN.) =   16.61
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.242
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8713
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    8.30      SUBAREA RUNOFF(CFS) =   16.22
  TOTAL AREA(ACRES) =       13.8        PEAK FLOW RATE(CFS) =      28.56
```

```
  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.70   HALFSTREET FLOOD WIDTH(FEET) =  31.58
  FLOW VELOCITY(FEET/SEC.) =  3.41   DEPTH*VELOCITY(FT*FT/SEC.) =   2.38
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =    1766.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    203.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  911.98  DOWNSTREAM ELEVATION(FEET) =  908.36
  STREET LENGTH(FEET) =   743.00   CURB HEIGHT(INCHES) =  8.0
  STREET HALFWIDTH(FEET) = 30.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.018
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      37.33
    ***STREET FLOW SPLITS OVER STREET-CROWN***
    FULL DEPTH(FEET) =    0.70   FLOOD WIDTH(FEET) =   31.58
    FULL HALF-STREET VELOCITY(FEET/SEC.) =    2.87
    SPLIT DEPTH(FEET) =    0.60   SPLIT FLOOD WIDTH(FEET) =   24.26
    SPLIT FLOW(CFS) =   13.67   SPLIT VELOCITY(FEET/SEC.) =    2.51
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.70
    HALFSTREET FLOOD WIDTH(FEET) =   31.58
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.87
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    2.00
  STREET FLOW TRAVEL TIME(MIN.) =   4.32   Tc(MIN.) =   20.93
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.988
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8689
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   10.15      SUBAREA RUNOFF(CFS) =   17.54
  TOTAL AREA(ACRES) =       23.9        PEAK FLOW RATE(CFS) =      46.10

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.70   HALFSTREET FLOOD WIDTH(FEET) =  31.58
  FLOW VELOCITY(FEET/SEC.) =  2.87   DEPTH*VELOCITY(FT*FT/SEC.) =   2.00
  *NOTE: INITIAL SUBAREA NOMOGRAPH WITH SUBAREA PARAMETERS,
         AND L =  743.0 FT WITH ELEVATION-DROP =   3.6 FT, IS   23.2 CFS,
         WHICH EXCEEDS THE TOP-OF-CURB STREET CAPACITY AT NODE    203.00
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =    2509.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    212.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   904.00  DOWNSTREAM(FEET) =   890.00
  FLOW LENGTH(FEET) =  1391.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  33.0 INCH PIPE IS  22.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.53
  ESTIMATED PIPE DIAMETER(INCH) =  33.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      46.10
  PIPE TRAVEL TIME(MIN.) =   2.20    Tc(MIN.) =   23.13
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    212.00 =    3900.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    212.00 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.) =   23.13
  RAINFALL INTENSITY(INCH/HR) =   1.89
  TOTAL STREAM AREA(ACRES) =    23.90
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     46.10

****************************************************************************
```

```
  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) =  1000.00
  UPSTREAM ELEVATION(FEET) =    922.99
  DOWNSTREAM ELEVATION(FEET) =    900.20
  ELEVATION DIFFERENCE(FEET) =     22.79
  TC = 0.303*[( 1000.00**3)/(    22.79)]**.2 =   10.234
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.885
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8760
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =     14.78
  TOTAL AREA(ACRES) =      5.85   TOTAL RUNOFF(CFS) =     14.78

****************************************************************************
  FLOW PROCESS FROM NODE    211.00 TO NODE    212.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   895.00  DOWNSTREAM(FEET) =   890.00
  FLOW LENGTH(FEET) =    18.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  27.67
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      14.78
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =   10.24
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    212.00 =    1018.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    212.00 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.) =   10.24
  RAINFALL INTENSITY(INCH/HR) =   2.88
  TOTAL STREAM AREA(ACRES) =     5.85
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     14.78

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       46.10    23.13        1.888         23.90
      2       14.78    10.24        2.883          5.85

  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       35.20    10.24       2.883
      2       55.78    23.13       1.888

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      55.78   Tc(MIN.) =   23.13
  TOTAL AREA(ACRES) =       29.8
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    212.00 =    3900.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    213.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   890.00  DOWNSTREAM(FEET) =   876.73
  FLOW LENGTH(FEET) =   392.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  20.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  17.18
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      55.78
  PIPE TRAVEL TIME(MIN.) =   0.38    Tc(MIN.) =   23.51
```

```
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    213.00 =    4292.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    213.00 TO NODE    214.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.872
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8677
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.40   SUBAREA RUNOFF(CFS) =    3.90
  TOTAL AREA(ACRES) =       32.2   TOTAL RUNOFF(CFS) =      59.68
  TC(MIN.) =   23.51

****************************************************************************
  FLOW PROCESS FROM NODE    214.00 TO NODE    315.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   874.53  DOWNSTREAM(FEET) =   868.58
  FLOW LENGTH(FEET) =  1985.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  45.0 INCH PIPE IS  32.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.11
  ESTIMATED PIPE DIAMETER(INCH) =  45.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      59.68
  PIPE TRAVEL TIME(MIN.) =   4.65    Tc(MIN.) =   28.17
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    315.00 =    6277.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 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) =   777.00
  UPSTREAM ELEVATION(FEET) =    929.10
  DOWNSTREAM ELEVATION(FEET) =    917.70
  ELEVATION DIFFERENCE(FEET) =     11.40
  TC = 0.303*[(  777.00**3)/(    11.40)]**.2 =   10.103
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.904
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8761
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =     20.74
  TOTAL AREA(ACRES) =      8.15   TOTAL RUNOFF(CFS) =     20.74

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    917.57
  DOWNSTREAM NODE ELEVATION(FEET) =    916.03
  CHANNEL LENGTH THRU SUBAREA(FEET) =   308.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.655
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8745
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     24.92
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.70
  AVERAGE FLOW DEPTH(FEET) =   0.59   FLOOD WIDTH(FEET) =   42.24
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.90   Tc(MIN.) =   12.00
  SUBAREA AREA(ACRES) =    3.60       SUBAREA RUNOFF(CFS) =    8.36
  TOTAL AREA(ACRES) =       11.8         PEAK FLOW RATE(CFS) =      29.10

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.62   FLOOD WIDTH(FEET) =   45.04
  FLOW VELOCITY(FEET/SEC.) =   2.78   DEPTH*VELOCITY(FT*FT/SEC) =   1.73
```

```
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    302.00 =    1085.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    303.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    916.03
  DOWNSTREAM NODE ELEVATION(FEET) =    914.52
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.473
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8732
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     34.12
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.88
  AVERAGE FLOW DEPTH(FEET) =   0.65   FLOOD WIDTH(FEET) =   48.01
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.76   Tc(MIN.) =   13.76
  SUBAREA AREA(ACRES) =    4.65       SUBAREA RUNOFF(CFS) =   10.04
  TOTAL AREA(ACRES) =       16.4         PEAK FLOW RATE(CFS) =      39.14

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.68   FLOOD WIDTH(FEET) =   50.66
  FLOW VELOCITY(FEET/SEC.) =   2.98   DEPTH*VELOCITY(FT*FT/SEC) =   2.02
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    303.00 =    1389.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    303.00 TO NODE    304.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    914.52
  DOWNSTREAM NODE ELEVATION(FEET) =    912.99
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.332
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8721
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     43.87
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.07
  AVERAGE FLOW DEPTH(FEET) =   0.70   FLOOD WIDTH(FEET) =   52.84
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.65   Tc(MIN.) =   15.41
  SUBAREA AREA(ACRES) =    4.65       SUBAREA RUNOFF(CFS) =    9.46
  TOTAL AREA(ACRES) =       21.0         PEAK FLOW RATE(CFS) =      48.60

  END OF SUBAREA "V" GUTTER HYDRAULICS:
  DEPTH(FEET) =  0.72   FLOOD WIDTH(FEET) =   55.03
  FLOW VELOCITY(FEET/SEC.) =   3.15   DEPTH*VELOCITY(FT*FT/SEC) =   2.27
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    304.00 =    1693.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    304.00 TO NODE    305.00 IS CODE =  91
----------------------------------------------------------------------------
  >>>>>COMPUTE "V" GUTTER FLOW TRAVEL TIME THRU SUBAREA<<<<<
============================================================================
  UPSTREAM NODE ELEVATION(FEET) =    912.99
  DOWNSTREAM NODE ELEVATION(FEET) =    911.48
  CHANNEL LENGTH THRU SUBAREA(FEET) =   304.00
  "V" GUTTER WIDTH(FEET) =   3.00   GUTTER HIKE(FEET) =  0.170
  PAVEMENT LIP(FEET) =  0.031   MANNING'S N = .0150
  PAVEMENT CROSSFALL(DECIMAL NOTATION) = 0.02000
  MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.217
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8711
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     55.70
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.22
  AVERAGE FLOW DEPTH(FEET) =   0.75   FLOOD WIDTH(FEET) =   58.30
  "V" GUTTER FLOW TRAVEL TIME(MIN.) =   1.57   Tc(MIN.) =   16.98
  SUBAREA AREA(ACRES) =    7.35       SUBAREA RUNOFF(CFS) =   14.19
  TOTAL AREA(ACRES) =       28.4         PEAK FLOW RATE(CFS) =      62.79

  END OF SUBAREA "V" GUTTER HYDRAULICS:
```

```
  DEPTH(FEET) =  0.78   FLOOD WIDTH(FEET) =   61.11
  FLOW VELOCITY(FEET/SEC.) =   3.31   DEPTH*VELOCITY(FT*FT/SEC) =   2.59
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    305.00 =    1997.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    305.00 TO NODE    312.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   903.78  DOWNSTREAM(FEET) =   880.65
  FLOW LENGTH(FEET) =  1059.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  30.0 INCH PIPE IS  24.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.87
  ESTIMATED PIPE DIAMETER(INCH) =  30.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      62.79
  PIPE TRAVEL TIME(MIN.) =   1.19    Tc(MIN.) =   18.17
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    312.00 =    3056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    312.00 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.) =   18.17
  RAINFALL INTENSITY(INCH/HR) =   2.14
  TOTAL STREAM AREA(ACRES) =    28.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     62.79

****************************************************************************
  FLOW PROCESS FROM NODE    310.00 TO NODE    311.00 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) =   810.00
  UPSTREAM ELEVATION(FEET) =    914.31
  DOWNSTREAM ELEVATION(FEET) =    908.32
  ELEVATION DIFFERENCE(FEET) =      5.99
  TC = 0.303*[(  810.00**3)/(     5.99)]**.2 =   11.781
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.681
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8747
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      9.50
  TOTAL AREA(ACRES) =      4.05   TOTAL RUNOFF(CFS) =      9.50

****************************************************************************
  FLOW PROCESS FROM NODE    311.00 TO NODE    312.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   902.99  DOWNSTREAM(FEET) =   898.49
  FLOW LENGTH(FEET) =     9.00   MANNING'S N =  0.012
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  31.05
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       9.50
  PIPE TRAVEL TIME(MIN.) =   0.00    Tc(MIN.) =   11.79
  LONGEST FLOWPATH FROM NODE    310.00 TO NODE    312.00 =     819.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    312.00 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.) =   11.79
  RAINFALL INTENSITY(INCH/HR) =   2.68
  TOTAL STREAM AREA(ACRES) =     4.05
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      9.50
```

```
  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       62.79    18.17        2.140         28.40
      2        9.50    11.79        2.681          4.05

  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       50.23    11.79       2.681
      2       70.37    18.17       2.140

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      70.37   Tc(MIN.) =   18.17
  TOTAL AREA(ACRES) =       32.5
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    312.00 =    3056.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    312.00 TO NODE    313.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   880.65  DOWNSTREAM(FEET) =   870.78
  FLOW LENGTH(FEET) =   132.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  18.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  24.92
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      70.37
  PIPE TRAVEL TIME(MIN.) =   0.09    Tc(MIN.) =   18.26
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    313.00 =    3188.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    313.00 TO NODE    314.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.135
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6037
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    4.25   SUBAREA RUNOFF(CFS) =    5.48
  TOTAL AREA(ACRES) =       36.7   TOTAL RUNOFF(CFS) =      75.85
  TC(MIN.) =   18.26

****************************************************************************
  FLOW PROCESS FROM NODE    313.00 TO NODE    314.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.135
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6037
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.95   SUBAREA RUNOFF(CFS) =    2.51
  TOTAL AREA(ACRES) =       38.7   TOTAL RUNOFF(CFS) =      78.37
  TC(MIN.) =   18.26

****************************************************************************
  FLOW PROCESS FROM NODE    314.00 TO NODE    315.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   870.00  DOWNSTREAM(FEET) =   869.52
  FLOW LENGTH(FEET) =   160.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  48.0 INCH PIPE IS  37.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.52
  ESTIMATED PIPE DIAMETER(INCH) =  48.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      78.37
  PIPE TRAVEL TIME(MIN.) =   0.35    Tc(MIN.) =   18.61
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    315.00 =    3348.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================
```

```
  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       60.93    12.26       2.627       38.65
      2       78.37    18.61       2.114       38.65
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    315.00 =    3348.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       41.13    15.78       2.303       32.15
      2       59.68    28.17       1.704       32.15
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    315.00 =    6277.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      92.88      12.26        2.627
      2     107.56      15.78        2.303
      3     117.80      18.61        2.114
      4     122.86      28.17        1.704

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     122.86   Tc(MIN.) =   28.17
  TOTAL AREA(ACRES) =       70.8

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    315.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    315.00 TO NODE    316.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   875.32  DOWNSTREAM(FEET) =   874.96
  FLOW LENGTH(FEET) =   121.00   MANNING'S N =  0.012
  DEPTH OF FLOW IN  57.0 INCH PIPE IS  43.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.39
  ESTIMATED PIPE DIAMETER(INCH) =  57.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     122.86
  PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =   28.41
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    316.00 =    6398.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       92.88    12.51       2.598       70.80
      2      107.56    16.03       2.285       70.80
      3      117.80    18.85       2.100       70.80
      4      122.86    28.41       1.697       70.80
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    316.00 =    6398.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       78.95     8.07       3.264      100.30
      2      124.58    12.94       2.554      100.30
      3      147.93    14.62       2.396      100.30
      4      150.85    15.58       2.319      100.30
      5      151.79    15.95       2.291      100.30
      6      153.04    16.42       2.256      100.30
      7      153.08    16.87       2.224      100.30
      8      151.78    19.31       2.073      100.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    316.00 =    5091.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
```

```
      1     138.86       8.07        3.264
      2     219.46      12.51        2.598
      3     215.87      12.94        2.554
      4     246.09      14.62        2.396
      5     255.42      15.58        2.319
      6     258.83      15.95        2.291
      7     258.97      16.03        2.285
      8     259.25      16.42        2.256
      9     258.51      16.87        2.224
     10     265.96      18.85        2.100
     11     268.11      19.31        2.073
     12     247.05      28.41        1.697

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     268.11   Tc(MIN.) =   19.31
  TOTAL AREA(ACRES) =      171.1

****************************************************************************
  FLOW PROCESS FROM NODE    316.00 TO NODE    316.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =      171.1  TC(MIN.) =     19.31
  PEAK FLOW RATE(CFS)   =     268.11
  *** PEAK FLOW RATE TABLE ***
         Q(CFS)   Tc(MIN.)
  1      138.86       8.07
  2      219.46      12.51
  3      215.87      12.94
  4      246.09      14.62
  5      255.42      15.58
  6      258.83      15.95
  7      258.97      16.03
  8      259.25      16.42
  9      258.51      16.87
 10      265.96      18.85
 11      268.11      19.31
 12      247.05      28.41
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

↑

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

                           Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                          *
* PROPOSED CONDITION 100-YEAR                                              *
* TRUCK YARD NORTHWEST OF BUILDING 2 (NODES 400-401)                       *
 ****************************************************************************

  FILE NAME: W:\3384\PR100B.DAT
  TIME/DATE OF STUDY: 14:50 07/14/2021
----------------------------------------------------------------------------
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =  100.00   1-HOUR INTENSITY(INCH/HOUR) =   1.150
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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    400.00 TO NODE    401.00 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) =   371.00
  UPSTREAM ELEVATION(FEET) =    876.52
  DOWNSTREAM ELEVATION(FEET) =    866.24
  ELEVATION DIFFERENCE(FEET) =     10.28
  TC = 0.303*[(  371.00**3)/(    10.28)]**.2 =    6.619
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.618
  COMMERCIAL DEVELOPMENT RUNOFF COEFFICIENT = .8798
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      6.53
  TOTAL AREA(ACRES) =      2.05   TOTAL RUNOFF(CFS) =      6.53
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        2.0  TC(MIN.) =      6.62
  PEAK FLOW RATE(CFS)   =       6.53
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

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

                           Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY                        *
* PROPOSED CONDITION 100-YEAR                                            *
* LANDSCAPE EAST OF BUILDING 4 (NODES 420-421)                           *
 ************************************************************************

  FILE NAME: W:\3384\PR100C.DAT
  TIME/DATE OF STUDY: 15:21 08/12/2021
----------------------------------------------------------------------------
  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) =  0.520
  100-YEAR, 1-HOUR PRECIPITATION(INCH) =  1.150
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =  100.00   1-HOUR INTENSITY(INCH/HOUR) =   1.150
  SLOPE OF INTENSITY DURATION CURVE = 0.5200
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: CONSIDER ALL CONFLUENCE STREAM COMBINATIONS
        FOR ALL 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)  (FT)    (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    420.00 TO NODE    421.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   295.00
  UPSTREAM ELEVATION(FEET) =    875.00
  DOWNSTREAM ELEVATION(FEET) =    869.35
  ELEVATION DIFFERENCE(FEET) =      5.65
  TC = 0.709*[(  295.00**3)/(     5.65)]**.2 =   15.219
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.347
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6222
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.66
  TOTAL AREA(ACRES) =      0.45   TOTAL RUNOFF(CFS) =      0.66
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        0.4  TC(MIN.) =     15.22
  PEAK FLOW RATE(CFS)   =       0.66
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

APPENDIX C

DETENTION ANALYSIS

BASIN “A”

Job #3384 - Rubidoux Commerce Center, Jurupa Valley
Volume in Water Quality Basin "A"

Elevation	Depth (feet)	Area (sq. ft.)	Volume (c.f.)	Σ Volume (c.f.)	Σ Volume (ac-ft)	Q Discharge (cfs)
877.00	0.00	28680				
			32790	32790	0.75	0.0
878.00	1.00	36900				
			41140	73930	1.70	0.0
879.00	2.00	45380				
			33838	107768	2.47	0.0
879.70	2.70	51300				
			15772	123541	2.84	5.4
880.00	3.00	53850				
			10940	134481	3.09	11.7
880.20	3.20	55550				
			11280	145761	3.35	19.3
880.40	3.40	57250				
			11621	157382	3.61	28.2
880.60	3.60	58960				
			11964	169346	3.89	38.1
880.80	3.80	60680				
			12307	181653	4.17	48.9
881.00	4.00	62390				
			12650	194303	4.46	60.6
881.20	4.20	64110				
			12994	207297	4.76	73.1
881.40	4.40	65830				
			13338	220635	5.07	86.4
881.60	4.60	67550				
			13683	234318	5.38	100.4
881.80	4.80	69280				

2-YEAR FREQUENCY

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

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                Study date  08/18/21 File: 3384A212.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



---------------------------------------------------------------------
2 YEAR
1 HR


--------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            0.52                  20.07

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            1.15                  44.39

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.520(In)
Area Averaged 100-Year Rainfall =    1.150(In)

Point rain (area averaged) =    0.520(In)
Areal adjustment factor =   99.97 %
Adjusted average point rain =    0.520(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

56.0	36.0	0.706	0.900	0.134	1.000	0.134
					Sum (F) =	0.134

Area averaged mean soil loss (F) (In/Hr) = 0.134
Minimum soil loss rate ((In/Hr)) = 0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Slope of intensity-duration curve for a 1 hour storm =0.5500

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	32.552	3.242	1.261
2	0.167	65.104	12.336	4.799
3	0.250	97.656	21.046	8.187
4	0.333	130.208	20.246	7.876
5	0.417	162.760	11.449	4.454
6	0.500	195.313	6.525	2.538
7	0.583	227.865	4.535	1.764
8	0.667	260.417	3.515	1.368
9	0.750	292.969	2.876	1.119
10	0.833	325.521	2.276	0.885
11	0.917	358.073	1.946	0.757
12	1.000	390.625	1.580	0.614
13	1.083	423.177	1.333	0.519
14	1.167	455.729	1.057	0.411
15	1.250	488.281	0.999	0.388
16	1.333	520.833	0.923	0.359
17	1.417	553.385	0.732	0.285
18	1.500	585.938	0.638	0.248
19	1.583	618.490	0.565	0.220
20	1.667	651.042	0.468	0.182
21	1.750	683.594	0.387	0.150
22	1.833	716.146	0.326	0.127
23	1.917	748.698	0.326	0.127
24	2.000	781.250	0.326	0.127
25	2.083	813.802	0.350	0.136
			Sum = 100.000	Sum= 38.902

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	3.30	0.206	(0.134)	0.021	0.185
2	0.17	4.20	0.262	(0.134)	0.026	0.236
3	0.25	4.40	0.274	(0.134)	0.027	0.247
4	0.33	4.80	0.299	(0.134)	0.030	0.269
5	0.42	5.20	0.324	(0.134)	0.032	0.292
6	0.50	6.20	0.387	(0.134)	0.039	0.348
7	0.58	6.80	0.424	(0.134)	0.042	0.382
8	0.67	8.80	0.549	(0.134)	0.055	0.494
9	0.75	13.90	0.867	(0.134)	0.087	0.780
10	0.83	31.40	1.959	0.134	(0.196)	1.825
11	0.92	7.20	0.449	(0.134)	0.045	0.404
12	1.00	3.80	0.237	(0.134)	0.024	0.213
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	5.7

Flood volume = Effective rainfall 0.47(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 1.5(Ac.Ft)
Total soil loss = 0.05(In)

```
Total soil loss =     0.151(Ac.Ft)
Total rainfall =      0.52(In)
Flood volume =       66273.0 Cubic Feet
Total soil loss =        6562.8 Cubic Feet
---------------------------------------------------------------------
 Peak flow rate of this hydrograph =     28.303(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))

---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
----------------------------------------------------------------------
  0+ 5       0.0016      0.23  Q         |         |         |         |
  0+10       0.0098      1.19  VQ        |         |         |         |
  0+15       0.0302      2.96  V  Q      |         |         |         |
  0+20       0.0640      4.92  |V    Q   |         |         |         |
  0+25       0.1079      6.37  | V     Q |         |         |         |
  0+30       0.1597      7.52  |   V     Q         |         |         |
  0+35       0.2196      8.69  |    V    |Q        |         |         |
  0+40       0.2892     10.11  |      V  |  Q      |         |         |
  0+45       0.3730     12.18  |        V|     Q   |         |         |
  0+50       0.4876     16.64  |         | V       | Q       |         |
  0+55       0.6505     23.65  |         |      V  |         |Q        |
  1+ 0       0.8454     28.30  |         |         | V       |      Q  |
  1+ 5       1.0216     25.59  |         |         |     V   |   Q     |
  1+10       1.1431     17.64  |         |         |  Q      V         |
  1+15       1.2230     11.59  |         |    Q    |         | V       |
  1+20       1.2780      8.00  |         Q         |         |  V      |
  1+25       1.3198      6.06  |       Q |         |         |   V     |
  1+30       1.3534      4.88  |     Q   |         |         |    V    |
  1+35       1.3808      3.98  |    Q    |         |         |     V   |
  1+40       1.4038      3.34  |   Q     |         |         |     V   |
  1+45       1.4229      2.77  |  Q      |         |         |      V  |
  1+50       1.4390      2.34  |  Q      |         |         |      V  |
  1+55       1.4526      1.97  | Q       |         |         |       V |
  2+ 0       1.4647      1.76  | Q       |         |         |       V |
  2+ 5       1.4754      1.56  | Q       |         |         |       V |
  2+10       1.4844      1.31  |Q        |         |         |        V|
  2+15       1.4921      1.11  |Q        |         |         |        V|
  2+20       1.4986      0.94  |Q        |         |         |        V|
  2+25       1.5040      0.79  |Q        |         |         |        V|
  2+30       1.5085      0.65  Q         |         |         |        V|
  2+35       1.5122      0.54  Q         |         |         |        V|
  2+40       1.5155      0.48  Q         |         |         |        V|
  2+45       1.5184      0.42  Q         |         |         |        V|
  2+50       1.5207      0.33  Q         |         |         |        V|
  2+55       1.5212      0.08  Q         |         |         |        V|
  3+ 0       1.5214      0.03  Q         |         |         |         V
----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/18/21

        ---------------------------------------------------------------------
                                                        1 HOURS
        2 YEAR
        1 HR


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


        Program License Serial Number 6400

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

                        From study/file name: 3384A212.rte
        ****************************HYDROGRAPH DATA***************************
                        Number of intervals =    36
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       28.303 (CFS)
                        Total volume =       1.521 (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      350.000 to Point/Station      350.000
        **** RETARDING BASIN ROUTING ****
        ______________________________________________________________________

        User entry of depth-outflow-storage data
        ---------------------------------------------------------------------
        Total number of inflow hydrograph intervals = 36
        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      0.750      0.001      0.750        0.750
          2.000      1.700      0.001      1.700        1.700
          2.700      2.470      0.001      2.470        2.470
          3.000      2.840      5.400      2.821        2.859
          3.200      3.090     11.700      3.050        3.130
          3.400      3.350     19.300      3.284        3.416
          3.600      3.610     28.200      3.513        3.707
          3.800      3.890     38.100      3.759        4.021
          4.000      4.170     48.900      4.002        4.338
          4.200      4.460     60.600      4.251        4.669
          4.400      4.760     73.100      4.508        5.012
          4.600      5.070     86.400      4.772        5.368
          4.800      5.380    100.400      5.034        5.726
        ---------------------------------------------------------------------
                        Hydrograph Detention Basin Routing
        ---------------------------------------------------------------------

        Graph values: 'I'= unit inflow; 'O'=outflow at time shown
        ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                      Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       7.1   14.15   21.23   28.30 (Ft.)
 0.083    0.23    0.00      0.001  O       |       |       |       |     0.00
```

```
0.167    1.19    0.00      0.006  OI      |       |       |       |     0.01
0.250    2.96    0.00      0.020  O  I    |       |       |       |     0.03
0.333    4.92    0.00      0.047  O    I  |       |       |       |     0.06
0.417    6.37    0.00      0.086  O      I|       |       |       |     0.11
0.500    7.52    0.00      0.134  O       I       |       |       |     0.18
0.583    8.69    0.00      0.190  O       |I      |       |       |     0.25
0.667   10.11    0.00      0.254  O       |  I    |       |       |     0.34
0.750   12.18    0.00      0.331  O       |    I  |       |       |     0.44
0.833   16.64    0.00      0.430  O       |       | I     |       |     0.57
0.917   23.65    0.00      0.569  O       |       |       | I     |     0.76
1.000   28.30    0.00      0.748  O       |       |       |       I     1.00
1.083   25.59    0.00      0.933  O       |       |       |   I   |     1.19
1.167   17.64    0.00      1.082  O       |       |  I    |       |     1.35
1.250   11.59    0.00      1.183  O       |    I  |       |       |     1.46
1.333    8.00    0.00      1.250  O       |I      |       |       |     1.53
1.417    6.06    0.00      1.299  O     I |       |       |       |     1.58
1.500    4.88    0.00      1.337  O    I  |       |       |       |     1.62
1.583    3.98    0.00      1.367  O   I   |       |       |       |     1.65
1.667    3.34    0.00      1.392  O  I    |       |       |       |     1.68
1.750    2.77    0.00      1.413  O  I    |       |       |       |     1.70
1.833    2.34    0.00      1.431  O I     |       |       |       |     1.72
1.917    1.97    0.00      1.446  O I     |       |       |       |     1.73
2.000    1.76    0.00      1.459  OI      |       |       |       |     1.75
2.083    1.56    0.00      1.470  OI      |       |       |       |     1.76
2.167    1.31    0.00      1.480  OI      |       |       |       |     1.77
2.250    1.11    0.00      1.488  OI      |       |       |       |     1.78
2.333    0.94    0.00      1.495  OI      |       |       |       |     1.78
2.417    0.79    0.00      1.501  O       |       |       |       |     1.79
2.500    0.65    0.00      1.506  O       |       |       |       |     1.80
2.583    0.54    0.00      1.510  O       |       |       |       |     1.80
2.667    0.48    0.00      1.514  O       |       |       |       |     1.80
2.750    0.42    0.00      1.517  O       |       |       |       |     1.81
2.833    0.33    0.00      1.519  O       |       |       |       |     1.81
2.917    0.08    0.00      1.521  O       |       |       |       |     1.81
3.000    0.03    0.00      1.521  O       |       |       |       |     1.81
3.083    0.00    0.00      1.521  O       |       |       |       |     1.81
```

Remaining water in basin = 1.52 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =    37
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        0.001 (CFS)
                Total volume =       0.000 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
***********************************************************************
```

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

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                Study date  08/31/21 File: 3384B232.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



---------------------------------------------------------------------
2 YEAR
3 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            0.95                  30.54

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            1.90                  61.08

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    1.900(In)

Point rain (area averaged) =    0.950(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.950(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

56.0	36.0	0.706	0.900	0.134	1.000	0.134
					Sum (F) =	0.134

Area averaged mean soil loss (F) (In/Hr) = 0.134
Minimum soil loss rate ((In/Hr)) = 0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

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

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	26.882	2.513	0.814
2	0.167	53.763	8.704	2.820
3	0.250	80.645	15.495	5.020
4	0.333	107.527	18.827	6.100
5	0.417	134.409	14.539	4.711
6	0.500	161.290	8.663	2.807
7	0.583	188.172	5.434	1.761
8	0.667	215.054	3.947	1.279
9	0.750	241.935	3.192	1.034
10	0.833	268.817	2.646	0.857
11	0.917	295.699	2.253	0.730
12	1.000	322.581	1.833	0.594
13	1.083	349.462	1.617	0.524
14	1.167	376.344	1.406	0.456
15	1.250	403.226	1.181	0.383
16	1.333	430.108	0.985	0.319
17	1.417	456.989	0.858	0.278
18	1.500	483.871	0.821	0.266
19	1.583	510.753	0.789	0.256
20	1.667	537.634	0.630	0.204
21	1.750	564.516	0.576	0.187
22	1.833	591.398	0.495	0.160
23	1.917	618.280	0.459	0.149
24	2.000	645.161	0.382	0.124
25	2.083	672.043	0.340	0.110
26	2.167	698.925	0.271	0.088
27	2.250	725.806	0.269	0.087
28	2.333	752.688	0.269	0.087
29	2.417	779.570	0.269	0.087
30	2.500	806.452	0.339	0.110
			Sum = 100.000	Sum= 32.401

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	0.148	(0.134)	0.015	0.133
2	0.17	1.30	0.148	(0.134)	0.015	0.133
3	0.25	1.10	0.125	(0.134)	0.013	0.113
4	0.33	1.50	0.171	(0.134)	0.017	0.154
5	0.42	1.50	0.171	(0.134)	0.017	0.154
6	0.50	1.80	0.205	(0.134)	0.021	0.185
7	0.58	1.50	0.171	(0.134)	0.017	0.154
8	0.67	1.80	0.205	(0.134)	0.021	0.185
9	0.75	1.80	0.205	(0.134)	0.021	0.185
10	0.83	1.50	0.171	(0.134)	0.017	0.154
11	0.92	1.60	0.182	(0.134)	0.018	0.164
12	1.00	1.80	0.205	(0.134)	0.021	0.185
13	1.08	2.20	0.251	(0.134)	0.025	0.226
14	1.17	2.20	0.251	(0.134)	0.025	0.226

```
15   1.25     2.20      0.251       (  0.134)       0.025        0.226
16   1.33     2.00      0.228       (  0.134)       0.023        0.205
17   1.42     2.60      0.296       (  0.134)       0.030        0.267
18   1.50     2.70      0.308       (  0.134)       0.031        0.277
19   1.58     2.40      0.274       (  0.134)       0.027        0.246
20   1.67     2.70      0.308       (  0.134)       0.031        0.277
21   1.75     3.30      0.376       (  0.134)       0.038        0.339
22   1.83     3.10      0.353       (  0.134)       0.035        0.318
23   1.92     2.90      0.331       (  0.134)       0.033        0.297
24   2.00     3.00      0.342       (  0.134)       0.034        0.308
25   2.08     3.10      0.353       (  0.134)       0.035        0.318
26   2.17     4.20      0.479       (  0.134)       0.048        0.431
27   2.25     5.00      0.570       (  0.134)       0.057        0.513
28   2.33     3.50      0.399       (  0.134)       0.040        0.359
29   2.42     6.80      0.775       (  0.134)       0.078        0.698
30   2.50     7.30      0.832       (  0.134)       0.083        0.749
31   2.58     8.20      0.935       (  0.134)       0.093        0.841
32   2.67     5.90      0.673       (  0.134)       0.067        0.605
33   2.75     2.00      0.228       (  0.134)       0.023        0.205
34   2.83     1.80      0.205       (  0.134)       0.021        0.185
35   2.92     1.80      0.205       (  0.134)       0.021        0.185
36   3.00     0.60      0.068       (  0.134)       0.007        0.062
               (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    10.3
      Flood volume = Effective rainfall      0.85(In)
       times area      32.1(Ac.)/[(In)/(Ft.)] =       2.3(Ac.Ft)
      Total soil loss =      0.09(In)
      Total soil loss =     0.254(Ac.Ft)
      Total rainfall =      0.95(In)
      Flood volume =       99768.3 Cubic Feet
      Total soil loss =       11085.4 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     18.352(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))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0007      0.11  Q         |         |         |         |
  0+10       0.0041      0.48  Q         |         |         |         |
  0+15       0.0119      1.14  V Q       |         |         |         |
  0+20       0.0252      1.93  V  Q      |         |         |         |
  0+25       0.0429      2.57  V    Q    |         |         |         |
  0+30       0.0639      3.05  |V    Q   |         |         |         |
  0+35       0.0880      3.50  |V    Q   |         |         |         |
  0+40       0.1149      3.90  | V    Q  |         |         |         |
  0+45       0.1440      4.24  | V     Q |         |         |         |
  0+50       0.1749      4.48  |  V    Q |         |         |         |
  0+55       0.2070      4.66  |  V     Q|         |         |         |
  1+ 0       0.2399      4.77  |   V    Q|         |         |         |
  1+ 5       0.2735      4.89  |   V    Q|         |         |         |
  1+10       0.3090      5.15  |    V    Q         |         |         |
  1+15       0.3472      5.54  |     V   |Q        |         |         |
  1+20       0.3880      5.93  |     V   |Q        |         |         |
  1+25       0.4308      6.22  |      V  | Q       |         |         |
  1+30       0.4756      6.50  |       V | Q       |         |         |
  1+35       0.5226      6.83  |        V|  Q      |         |         |
  1+40       0.5722      7.20  |        V|   Q     |         |         |
  1+45       0.6243      7.57  |         V    Q    |         |         |
  1+50       0.6791      7.96  |         |V   Q    |         |         |
  1+55       0.7371      8.41  |         | V   Q   |         |         |
  2+ 0       0.7979      8.83  |         |  V   Q  |         |         |
  2+ 5       0.8603      9.07  |         |    V  Q |         |         |
  2+10       0.9244      9.30  |         |     V Q |         |         |
```

```
   2+15       0.9921      9.84  |         |      V Q|         |         |
   2+20       1.0657     10.68  |         |       V |Q        |         |
   2+25       1.1467     11.76  |         |         V  Q      |         |
   2+30       1.2372     13.14  |         |         |V    Q   |         |
   2+35       1.3398     14.90  |         |         |  V     Q|         |
   2+40       1.4573     17.06  |         |         |    V    |   Q     |
   2+45       1.5837     18.35  |         |         |      V  |     Q   |
   2+50       1.7061     17.78  |         |         |        V|    Q    |
   2+55       1.8126     15.47  |         |         |         QV        |
   3+ 0       1.8989     12.52  |         |         |    Q    |  V      |
   3+ 5       1.9681     10.05  |         |         Q         |   V     |
   3+10       2.0240      8.11  |         |     Q   |         |    V    |
   3+15       2.0680      6.40  |         | Q       |         |     V   |
   3+20       2.1024      4.99  |        Q|         |         |     V   |
   3+25       2.1300      4.01  |       Q |         |         |      V  |
   3+30       2.1529      3.33  |     Q   |         |         |      V  |
   3+35       2.1724      2.83  |    Q    |         |         |      V  |
   3+40       2.1892      2.44  |   Q     |         |         |       V |
   3+45       2.2037      2.10  |   Q     |         |         |       V |
   3+50       2.2161      1.81  |  Q      |         |         |       V |
   3+55       2.2271      1.59  |  Q      |         |         |       V |
   4+ 0       2.2368      1.40  | Q       |         |         |        V|
   4+ 5       2.2453      1.24  | Q       |         |         |        V|
   4+10       2.2527      1.08  | Q       |         |         |        V|
   4+15       2.2591      0.93  |Q        |         |         |        V|
   4+20       2.2647      0.81  |Q        |         |         |        V|
   4+25       2.2696      0.71  |Q        |         |         |        V|
   4+30       2.2737      0.61  |Q        |         |         |        V|
   4+35       2.2774      0.52  |Q        |         |         |        V|
   4+40       2.2804      0.45  Q         |         |         |        V|
   4+45       2.2830      0.37  Q         |         |         |        V|
   4+50       2.2853      0.34  Q         |         |         |        V|
   4+55       2.2872      0.27  Q         |         |         |        V|
   5+ 0       2.2886      0.20  Q         |         |         |        V|
   5+ 5       2.2894      0.12  Q         |         |         |        V|
   5+10       2.2899      0.06  Q         |         |         |        V|
   5+15       2.2901      0.04  Q         |         |         |        V|
   5+20       2.2903      0.03  Q         |         |         |        V|
   5+25       2.2904      0.01  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/18/21

      ---------------------------------------------------------------------
                                                          3 HOURS
      2 YEAR
      3 HR


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


      Program License Serial Number 6400

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

                      From study/file name: 3384A232.rte
      ****************************HYDROGRAPH DATA***************************
                      Number of intervals =    60
                      Time interval =    5.0 (Min.)
                      Maximum/Peak flow rate =       23.346 (CFS)
                      Total volume =       2.750 (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      350.000 to Point/Station      350.000
      **** RETARDING BASIN ROUTING ****
      ______________________________________________________________________

      User entry of depth-outflow-storage data
      ---------------------------------------------------------------------
      Total number of inflow hydrograph intervals = 60
      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      0.750      0.001      0.750        0.750
        2.000      1.700      0.001      1.700        1.700
        2.700      2.470      0.001      2.470        2.470
        3.000      2.840      5.400      2.821        2.859
        3.200      3.090     11.700      3.050        3.130
        3.400      3.350     19.300      3.284        3.416
        3.600      3.610     28.200      3.513        3.707
        3.800      3.890     38.100      3.759        4.021
        4.000      4.170     48.900      4.002        4.338
        4.200      4.460     60.600      4.251        4.669
        4.400      4.760     73.100      4.508        5.012
        4.600      5.070     86.400      4.772        5.368
        4.800      5.380    100.400      5.034        5.726
      ---------------------------------------------------------------------
                      Hydrograph Detention Basin Routing
      ---------------------------------------------------------------------

      Graph values: 'I'= unit inflow; 'O'=outflow at time shown
      ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                      Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       5.8   11.67   17.51   23.35 (Ft.)
 0.083    0.17    0.00      0.001  O       |       |       |       |     0.00
```

```
0.167    0.81    0.00      0.004  OI      |       |       |       |     0.01
0.250    1.88    0.00      0.013  O I     |       |       |       |     0.02
0.333    2.88    0.00      0.030  O  I    |       |       |       |     0.04
0.417    3.50    0.00      0.052  O   I   |       |       |       |     0.07
0.500    4.05    0.00      0.078  O    I  |       |       |       |     0.10
0.583    4.63    0.00      0.107  O     I |       |       |       |     0.14
0.667    5.09    0.00      0.141  O     I |       |       |       |     0.19
0.750    5.44    0.00      0.177  O      I|       |       |       |     0.24
0.833    5.71    0.00      0.216  O      I|       |       |       |     0.29
0.917    5.90    0.00      0.256  O       I       |       |       |     0.34
1.000    5.94    0.00      0.296  O       I       |       |       |     0.40
1.083    6.09    0.00      0.338  O       I       |       |       |     0.45
1.167    6.52    0.00      0.381  O       I       |       |       |     0.51
1.250    7.08    0.00      0.428  O       |I      |       |       |     0.57
1.333    7.54    0.00      0.478  O       | I     |       |       |     0.64
1.417    7.80    0.00      0.531  O       | I     |       |       |     0.71
1.500    8.12    0.00      0.586  O       |  I    |       |       |     0.78
1.583    8.61    0.00      0.644  O       |  I    |       |       |     0.86
1.667    9.09    0.00      0.704  O       |   I   |       |       |     0.94
1.750    9.46    0.00      0.768  O       |   I   |       |       |     1.02
1.833    9.98    0.00      0.835  O       |    I  |       |       |     1.09
1.917   10.64    0.00      0.906  O       |     I |       |       |     1.16
2.000   11.06    0.00      0.981  O       |      I|       |       |     1.24
2.083   11.21    0.00      1.058  O       |      I|       |       |     1.32
2.167   11.48    0.00      1.136  O       |      I|       |       |     1.41
2.250   12.33    0.00      1.218  O       |       I       |       |     1.49
2.333   13.64    0.00      1.307  O       |       | I     |       |     1.59
2.417   15.02    0.00      1.406  O       |       |   I   |       |     1.69
2.500   16.69    0.00      1.515  O       |       |    I  |       |     1.81
2.583   19.34    0.00      1.639  O       |       |       | I     |     1.94
2.667   22.36    0.00      1.783  O       |       |       |    I  |     2.08
2.750   23.35    0.00      1.940  O       |       |       |      I     2.22
2.833   21.29    0.00      2.094  O       |       |       |   I   |     2.36
2.917   17.22    0.00      2.226  O       |       |     I|       |     2.48
3.000   13.50    0.00      2.332  O       |       | I     |       |     2.57
3.083   10.92    0.00      2.416  O       |     I |       |       |     2.65
3.167    8.59    0.19      2.483  O       |  I    |       |       |     2.71
3.250    6.45    0.89      2.531  |O      I       |       |       |     2.75
3.333    4.91    1.35      2.562  |O    I |       |       |       |     2.77
3.417    3.94    1.64      2.582  | O  I  |       |       |       |     2.79
3.500    3.24    1.83      2.595  | O I   |       |       |       |     2.80
3.583    2.70    1.94      2.603  | OI    |       |       |       |     2.81
3.667    2.29    1.99      2.606  | OI    |       |       |       |     2.81
3.750    1.95    2.00      2.607  | O     |       |       |       |     2.81
3.833    1.66    1.98      2.606  | O     |       |       |       |     2.81
3.917    1.40    1.94      2.603  |IO     |       |       |       |     2.81
4.000    1.18    1.88      2.599  |IO     |       |       |       |     2.80
4.083    1.01    1.80      2.594  |IO     |       |       |       |     2.80
4.167    0.85    1.72      2.588  |IO     |       |       |       |     2.80
4.250    0.70    1.63      2.582  I O     |       |       |       |     2.79
4.333    0.57    1.53      2.575  I O     |       |       |       |     2.79
4.417    0.49    1.44      2.569  IO      |       |       |       |     2.78
4.500    0.39    1.34      2.562  IO      |       |       |       |     2.77
4.583    0.28    1.25      2.555  IO      |       |       |       |     2.77
4.667    0.16    1.15      2.549  IO      |       |       |       |     2.76
4.750    0.08    1.05      2.542  IO      |       |       |       |     2.76
4.833    0.06    0.96      2.535  IO      |       |       |       |     2.75
4.917    0.03    0.87      2.530  IO      |       |       |       |     2.75
5.000    0.01    0.79      2.524  IO      |       |       |       |     2.74
5.083    0.00    0.71      2.519  O       |       |       |       |     2.74
5.167    0.00    0.64      2.514  O       |       |       |       |     2.74
5.250    0.00    0.58      2.510  O       |       |       |       |     2.73
5.333    0.00    0.53      2.506  O       |       |       |       |     2.73
5.417    0.00    0.48      2.503  O       |       |       |       |     2.73
5.500    0.00    0.43      2.499  O       |       |       |       |     2.72
5.583    0.00    0.39      2.497  O       |       |       |       |     2.72
5.667    0.00    0.35      2.494  O       |       |       |       |     2.72
5.750    0.00    0.32      2.492  O       |       |       |       |     2.72
5.833    0.00    0.29      2.490  O       |       |       |       |     2.72
5.917    0.00    0.26      2.488  O       |       |       |       |     2.71
6.000    0.00    0.24      2.486  O       |       |       |       |     2.71
6.083    0.00    0.21      2.485  O       |       |       |       |     2.71
6.167    0.00    0.19      2.483  O       |       |       |       |     2.71
6.250    0.00    0.17      2.482  O       |       |       |       |     2.71
6.333    0.00    0.16      2.481  O       |       |       |       |     2.71
6.417    0.00    0.14      2.480  O       |       |       |       |     2.71
6.500    0.00    0.13      2.479  O       |       |       |       |     2.71
6.583    0.00    0.12      2.478  O       |       |       |       |     2.71
6.667    0.00    0.11      2.477  O       |       |       |       |     2.71
```

6.750	0.00	0.10	2.476	O	|	|	|	|	2.71
6.833	0.00	0.09	2.476	O	|	|	|	|	2.70
6.917	0.00	0.08	2.475	O	|	|	|	|	2.70
7.000	0.00	0.07	2.475	O	|	|	|	|	2.70
7.083	0.00	0.06	2.474	O	|	|	|	|	2.70
7.167	0.00	0.06	2.474	O	|	|	|	|	2.70
7.250	0.00	0.05	2.474	O	|	|	|	|	2.70
7.333	0.00	0.05	2.473	O	|	|	|	|	2.70
7.417	0.00	0.04	2.473	O	|	|	|	|	2.70
7.500	0.00	0.04	2.473	O	|	|	|	|	2.70
7.583	0.00	0.03	2.472	O	|	|	|	|	2.70
7.667	0.00	0.03	2.472	O	|	|	|	|	2.70
7.750	0.00	0.03	2.472	O	|	|	|	|	2.70
7.833	0.00	0.03	2.472	O	|	|	|	|	2.70
7.917	0.00	0.02	2.472	O	|	|	|	|	2.70
8.000	0.00	0.02	2.471	O	|	|	|	|	2.70
8.083	0.00	0.02	2.471	O	|	|	|	|	2.70
8.167	0.00	0.02	2.471	O	|	|	|	|	2.70
8.250	0.00	0.02	2.471	O	|	|	|	|	2.70
8.333	0.00	0.01	2.471	O	|	|	|	|	2.70
8.417	0.00	0.01	2.471	O	|	|	|	|	2.70
8.500	0.00	0.01	2.471	O	|	|	|	|	2.70
8.583	0.00	0.01	2.471	O	|	|	|	|	2.70
8.667	0.00	0.01	2.471	O	|	|	|	|	2.70
8.750	0.00	0.01	2.471	O	|	|	|	|	2.70
8.833	0.00	0.01	2.470	O	|	|	|	|	2.70
8.917	0.00	0.01	2.470	O	|	|	|	|	2.70
9.000	0.00	0.01	2.470	O	|	|	|	|	2.70
9.083	0.00	0.01	2.470	O	|	|	|	|	2.70
9.167	0.00	0.01	2.470	O	|	|	|	|	2.70
9.250	0.00	0.00	2.470	O	|	|	|	|	2.70
9.333	0.00	0.00	2.470	O	|	|	|	|	2.70
9.417	0.00	0.00	2.470	O	|	|	|	|	2.70
9.500	0.00	0.00	2.470	O	|	|	|	|	2.70
9.583	0.00	0.00	2.470	O	|	|	|	|	2.70
9.667	0.00	0.00	2.470	O	|	|	|	|	2.70
9.750	0.00	0.00	2.470	O	|	|	|	|	2.70
9.833	0.00	0.00	2.470	O	|	|	|	|	2.70
9.917	0.00	0.00	2.470	O	|	|	|	|	2.70
10.000	0.00	0.00	2.470	O	|	|	|	|	2.70
10.083	0.00	0.00	2.470	O	|	|	|	|	2.70
10.167	0.00	0.00	2.470	O	|	|	|	|	2.70
10.250	0.00	0.00	2.470	O	|	|	|	|	2.70
10.333	0.00	0.00	2.470	O	|	|	|	|	2.70
10.417	0.00	0.00	2.470	O	|	|	|	|	2.70
10.500	0.00	0.00	2.470	O	|	|	|	|	2.70
10.583	0.00	0.00	2.470	O	|	|	|	|	2.70

Remaining water in basin = 2.47 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =   127
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        2.003 (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
***********************************************************************

---------------------------------------------------------------------
```

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/18/21 File: 3384A262.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



---------------------------------------------------------------------
2 YEAR
6 HR


--------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            1.30                  50.18

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            2.50                  96.50

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.300(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.300(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
-------------------------------------------------------------------
               Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.50      0.078       (  0.134)       0.008        0.070
   2   0.17     0.60      0.094       (  0.134)       0.009        0.084
   3   0.25     0.60      0.094       (  0.134)       0.009        0.084
   4   0.33     0.60      0.094       (  0.134)       0.009        0.084
   5   0.42     0.60      0.094       (  0.134)       0.009        0.084
   6   0.50     0.70      0.109       (  0.134)       0.011        0.098
   7   0.58     0.70      0.109       (  0.134)       0.011        0.098
   8   0.67     0.70      0.109       (  0.134)       0.011        0.098
   9   0.75     0.70      0.109       (  0.134)       0.011        0.098
  10   0.83     0.70      0.109       (  0.134)       0.011        0.098
  11   0.92     0.70      0.109       (  0.134)       0.011        0.098
  12   1.00     0.80      0.125       (  0.134)       0.012        0.112
  13   1.08     0.80      0.125       (  0.134)       0.012        0.112
  14   1.17     0.80      0.125       (  0.134)       0.012        0.112
  15   1.25     0.80      0.125       (  0.134)       0.012        0.112
  16   1.33     0.80      0.125       (  0.134)       0.012        0.112
  17   1.42     0.80      0.125       (  0.134)       0.012        0.112
  18   1.50     0.80      0.125       (  0.134)       0.012        0.112
  19   1.58     0.80      0.125       (  0.134)       0.012        0.112
```

20	1.67	0.80	0.125	(0.134)	0.012	0.112
21	1.75	0.80	0.125	(0.134)	0.012	0.112
22	1.83	0.80	0.125	(0.134)	0.012	0.112
23	1.92	0.80	0.125	(0.134)	0.012	0.112
24	2.00	0.90	0.140	(0.134)	0.014	0.126
25	2.08	0.80	0.125	(0.134)	0.012	0.112
26	2.17	0.90	0.140	(0.134)	0.014	0.126
27	2.25	0.90	0.140	(0.134)	0.014	0.126
28	2.33	0.90	0.140	(0.134)	0.014	0.126
29	2.42	0.90	0.140	(0.134)	0.014	0.126
30	2.50	0.90	0.140	(0.134)	0.014	0.126
31	2.58	0.90	0.140	(0.134)	0.014	0.126
32	2.67	0.90	0.140	(0.134)	0.014	0.126
33	2.75	1.00	0.156	(0.134)	0.016	0.140
34	2.83	1.00	0.156	(0.134)	0.016	0.140
35	2.92	1.00	0.156	(0.134)	0.016	0.140
36	3.00	1.00	0.156	(0.134)	0.016	0.140
37	3.08	1.00	0.156	(0.134)	0.016	0.140
38	3.17	1.10	0.172	(0.134)	0.017	0.154
39	3.25	1.10	0.172	(0.134)	0.017	0.154
40	3.33	1.10	0.172	(0.134)	0.017	0.154
41	3.42	1.20	0.187	(0.134)	0.019	0.168
42	3.50	1.30	0.203	(0.134)	0.020	0.182
43	3.58	1.40	0.218	(0.134)	0.022	0.197
44	3.67	1.40	0.218	(0.134)	0.022	0.197
45	3.75	1.50	0.234	(0.134)	0.023	0.211
46	3.83	1.50	0.234	(0.134)	0.023	0.211
47	3.92	1.60	0.250	(0.134)	0.025	0.225
48	4.00	1.60	0.250	(0.134)	0.025	0.225
49	4.08	1.70	0.265	(0.134)	0.027	0.239
50	4.17	1.80	0.281	(0.134)	0.028	0.253
51	4.25	1.90	0.296	(0.134)	0.030	0.267
52	4.33	2.00	0.312	(0.134)	0.031	0.281
53	4.42	2.10	0.328	(0.134)	0.033	0.295
54	4.50	2.10	0.328	(0.134)	0.033	0.295
55	4.58	2.20	0.343	(0.134)	0.034	0.309
56	4.67	2.30	0.359	(0.134)	0.036	0.323
57	4.75	2.40	0.374	(0.134)	0.037	0.337
58	4.83	2.40	0.374	(0.134)	0.037	0.337
59	4.92	2.50	0.390	(0.134)	0.039	0.351
60	5.00	2.60	0.406	(0.134)	0.041	0.365
61	5.08	3.10	0.484	(0.134)	0.048	0.435
62	5.17	3.60	0.562	(0.134)	0.056	0.505
63	5.25	3.90	0.608	(0.134)	0.061	0.547
64	5.33	4.20	0.655	(0.134)	0.066	0.590
65	5.42	4.70	0.733	(0.134)	0.073	0.660
66	5.50	5.60	0.873	(0.134)	0.087	0.786
67	5.58	1.90	0.296	(0.134)	0.030	0.267
68	5.67	0.90	0.140	(0.134)	0.014	0.126
69	5.75	0.60	0.094	(0.134)	0.009	0.084
70	5.83	0.50	0.078	(0.134)	0.008	0.070
71	5.92	0.30	0.047	(0.134)	0.005	0.042
72	6.00	0.20	0.031	(0.134)	0.003	0.028

```
                (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    14.0
      Flood volume = Effective rainfall      1.17(In)
       times area      38.6(Ac.)/[(In)/(Ft.)] =       3.8(Ac.Ft)
      Total soil loss =      0.13(In)
      Total soil loss =     0.418(Ac.Ft)
      Total rainfall =      1.30(In)
      Flood volume =      163916.3 Cubic Feet
      Total soil loss =       18212.9 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     21.165(CFS)
      ---------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                         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        7.5      15.0      22.5      30.0
-----------------------------------------------------------------------
  0+ 5       0.0006      0.09  Q         |         |         |         |
  0+10       0.0037      0.44  Q         |         |         |         |
  0+15       0.0111      1.09  VQ        |         |         |         |
  0+20       0.0232      1.75  V Q       |         |         |         |
  0+25       0.0382      2.18  V Q       |         |         |         |
  0+30       0.0550      2.44  V  Q      |         |         |         |
  0+35       0.0733      2.66  V  Q      |         |         |         |
  0+40       0.0933      2.90  V  Q      |         |         |         |
  0+45       0.1147      3.11  |V  Q     |         |         |         |
  0+50       0.1370      3.25  |V  Q     |         |         |         |
  0+55       0.1601      3.35  |V  Q     |         |         |         |
  1+ 0       0.1838      3.44  |V  Q     |         |         |         |
  1+ 5       0.2085      3.58  | V Q     |         |         |         |
  1+10       0.2342      3.74  | V Q     |         |         |         |
  1+15       0.2611      3.90  | V  Q    |         |         |         |
  1+20       0.2887      4.00  |  V Q    |         |         |         |
  1+25       0.3167      4.07  |  V Q    |         |         |         |
  1+30       0.3451      4.13  |  V Q    |         |         |         |
  1+35       0.3739      4.17  |  V Q    |         |         |         |
  1+40       0.4028      4.21  |   VQ    |         |         |         |
  1+45       0.4320      4.24  |   VQ    |         |         |         |
  1+50       0.4614      4.26  |   VQ    |         |         |         |
  1+55       0.4909      4.29  |    Q    |         |         |         |
  2+ 0       0.5207      4.32  |    Q    |         |         |         |
  2+ 5       0.5509      4.39  |    Q    |         |         |         |
  2+10       0.5817      4.47  |    QV   |         |         |         |
  2+15       0.6130      4.54  |     Q   |         |         |         |
  2+20       0.6447      4.61  |     Q   |         |         |         |
  2+25       0.6771      4.70  |     QV  |         |         |         |
  2+30       0.7099      4.76  |     QV  |         |         |         |
  2+35       0.7429      4.79  |     QV  |         |         |         |
  2+40       0.7760      4.81  |     Q V |         |         |         |
  2+45       0.8094      4.85  |     Q V |         |         |         |
  2+50       0.8434      4.93  |     Q V |         |         |         |
  2+55       0.8782      5.06  |     Q  V|         |         |         |
  3+ 0       0.9139      5.18  |     Q  V|         |         |         |
  3+ 5       0.9501      5.25  |      Q  V         |         |         |
  3+10       0.9866      5.31  |      Q  V         |         |         |
  3+15       1.0239      5.41  |      Q  V         |         |         |
  3+20       1.0621      5.55  |      Q  |V        |         |         |
  3+25       1.1013      5.70  |      Q  |V        |         |         |
  3+30       1.1417      5.86  |      Q  | V       |         |         |
  3+35       1.1837      6.11  |       Q | V       |         |         |
  3+40       1.2281      6.44  |       Q |  V      |         |         |
  3+45       1.2747      6.77  |        Q|  V      |         |         |
  3+50       1.3234      7.07  |        Q|   V     |         |         |
  3+55       1.3740      7.35  |        Q|   V     |         |         |
  4+ 0       1.4265      7.62  |         Q    V    |         |         |
  4+ 5       1.4809      7.89  |         Q    V    |         |         |
  4+10       1.5372      8.18  |         Q     V   |         |         |
  4+15       1.5959      8.52  |         |Q    V   |         |         |
  4+20       1.6573      8.92  |         |Q     V  |         |         |
  4+25       1.7218      9.37  |         | Q     V |         |         |
  4+30       1.7895      9.82  |         |  Q     V|         |         |
  4+35       1.8600     10.24  |         |  Q     V|         |         |
  4+40       1.9331     10.62  |         |   Q     V         |         |
  4+45       2.0089     11.01  |         |   Q     |V        |         |
  4+50       2.0877     11.44  |         |    Q    | V       |         |
  4+55       2.1694     11.85  |         |    Q    |  V      |         |
  5+ 0       2.2536     12.24  |         |     Q   |  V      |         |
  5+ 5       2.3411     12.70  |         |     Q   |   V     |         |
  5+10       2.4341     13.50  |         |      Q  |    V    |         |
  5+15       2.5356     14.75  |         |        Q|     V   |         |
  5+20       2.6480     16.32  |         |         |Q      V |         |
```

```
   5+25       2.7717     17.96  |         |         |  Q     V|         |
   5+30       2.9076     19.73  |         |         |     Q   V         |
   5+35       3.0533     21.17  |         |         |       Q | V       |
   5+40       3.1957     20.67  |         |         |      Q  |  V      |
   5+45       3.3156     17.41  |         |         |  Q      |    V    |
   5+50       3.4052     13.01  |         |      Q  |         |     V   |
   5+55       3.4731      9.85  |         |  Q      |         |     V   |
   6+ 0       3.5271      7.84  |         Q         |         |      V  |
   6+ 5       3.5710      6.37  |       Q |         |         |      V  |
   6+10       3.6063      5.13  |     Q   |         |         |       V |
   6+15       3.6343      4.07  |    Q    |         |         |       V |
   6+20       3.6568      3.26  |   Q     |         |         |       V |
   6+25       3.6752      2.67  |  Q      |         |         |        V|
   6+30       3.6906      2.24  | Q       |         |         |        V|
   6+35       3.7036      1.88  | Q       |         |         |        V|
   6+40       3.7147      1.61  | Q       |         |         |        V|
   6+45       3.7241      1.37  |Q        |         |         |        V|
   6+50       3.7320      1.15  |Q        |         |         |        V|
   6+55       3.7387      0.97  |Q        |         |         |        V|
   7+ 0       3.7443      0.81  |Q        |         |         |        V|
   7+ 5       3.7489      0.68  Q         |         |         |        V|
   7+10       3.7528      0.56  Q         |         |         |        V|
   7+15       3.7559      0.45  Q         |         |         |        V|
   7+20       3.7584      0.37  Q         |         |         |        V|
   7+25       3.7604      0.28  Q         |         |         |        V|
   7+30       3.7617      0.19  Q         |         |         |        V|
   7+35       3.7623      0.08  Q         |         |         |        V|
   7+40       3.7626      0.05  Q         |         |         |        V|
   7+45       3.7628      0.03  Q         |         |         |        V|
   7+50       3.7629      0.02  Q         |         |         |        V|
   7+55       3.7630      0.01  Q         |         |         |        V|
   8+ 0       3.7630      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

      ---------------------------------------------------------------------
                                                        6 HOURS
      2 YEAR
      6 HR

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

      Program License Serial Number 6400

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

                      From study/file name: 3384A262.rte
      ****************************HYDROGRAPH DATA***************************
                      Number of intervals =    96
                      Time interval =    5.0 (Min.)
                      Maximum/Peak flow rate =       21.165 (CFS)
                      Total volume =       3.763 (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      350.000 to Point/Station      350.000
      **** RETARDING BASIN ROUTING ****
      ______________________________________________________________________

      User entry of depth-outflow-storage data
      ---------------------------------------------------------------------
      Total number of inflow hydrograph intervals = 96
      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      0.750      0.001      0.750        0.750
        2.000      1.700      0.001      1.700        1.700
        2.700      2.470      0.001      2.470        2.470
        3.000      2.840      5.400      2.821        2.859
        3.200      3.090     11.700      3.050        3.130
        3.400      3.350     19.300      3.284        3.416
        3.600      3.610     28.200      3.513        3.707
        3.800      3.890     38.100      3.759        4.021
        4.000      4.170     48.900      4.002        4.338
        4.200      4.460     60.600      4.251        4.669
        4.400      4.760     73.100      4.508        5.012
        4.600      5.070     86.400      4.772        5.368
        4.800      5.380    100.400      5.034        5.726
      ---------------------------------------------------------------------
                      Hydrograph Detention Basin Routing
      ---------------------------------------------------------------------

      Graph values: 'I'= unit inflow; 'O'=outflow at time shown
      ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                      Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       5.3   10.58   15.87   21.17 (Ft.)
 0.083    0.09    0.00      0.000  O       |       |       |       |     0.00
```

0.167	0.44	0.00	0.002	O					0.00
0.250	1.09	0.00	0.007	OI					0.01
0.333	1.75	0.00	0.017	O I					0.02
0.417	2.18	0.00	0.031	O I					0.04
0.500	2.44	0.00	0.047	O I					0.06
0.583	2.66	0.00	0.064	O I					0.09
0.667	2.90	0.00	0.083	O I					0.11
0.750	3.11	0.00	0.104	O I					0.14
0.833	3.25	0.00	0.126	O I					0.17
0.917	3.35	0.00	0.149	O I					0.20
1.000	3.44	0.00	0.172	O I					0.23
1.083	3.58	0.00	0.196	O I					0.26
1.167	3.74	0.00	0.221	O I					0.30
1.250	3.90	0.00	0.248	O I					0.33
1.333	4.00	0.00	0.275	O I					0.37
1.417	4.07	0.00	0.303	O I					0.40
1.500	4.13	0.00	0.331	O I					0.44
1.583	4.17	0.00	0.359	O I					0.48
1.667	4.21	0.00	0.388	O I					0.52
1.750	4.24	0.00	0.417	O I					0.56
1.833	4.26	0.00	0.447	O I					0.60
1.917	4.29	0.00	0.476	O I					0.63
2.000	4.32	0.00	0.506	O I					0.67
2.083	4.39	0.00	0.536	O I					0.71
2.167	4.47	0.00	0.566	O I					0.76
2.250	4.54	0.00	0.597	O I					0.80
2.333	4.61	0.00	0.629	O I					0.84
2.417	4.70	0.00	0.661	O I					0.88
2.500	4.76	0.00	0.693	O I					0.92
2.583	4.79	0.00	0.726	O I					0.97
2.667	4.81	0.00	0.759	O I					1.01
2.750	4.85	0.00	0.793	O I					1.04
2.833	4.93	0.00	0.826	O I					1.08
2.917	5.06	0.00	0.861	O I					1.12
3.000	5.18	0.00	0.896	O I					1.15
3.083	5.25	0.00	0.932	O I					1.19
3.167	5.31	0.00	0.968	O I					1.23
3.250	5.41	0.00	1.005	O I					1.27
3.333	5.55	0.00	1.043	O I					1.31
3.417	5.70	0.00	1.082	O I					1.35
3.500	5.86	0.00	1.121	O I					1.39
3.583	6.11	0.00	1.163	O I					1.43
3.667	6.44	0.00	1.206	O I					1.48
3.750	6.77	0.00	1.251	O I					1.53
3.833	7.07	0.00	1.299	O I					1.58
3.917	7.35	0.00	1.349	O I					1.63
4.000	7.62	0.00	1.400	O I					1.68
4.083	7.89	0.00	1.453	O I					1.74
4.167	8.18	0.00	1.509	O I					1.80
4.250	8.52	0.00	1.566	O I					1.86
4.333	8.92	0.00	1.626	O I					1.92
4.417	9.37	0.00	1.689	O I					1.99
4.500	9.82	0.00	1.755	O I					2.05
4.583	10.24	0.00	1.824	O I					2.11
4.667	10.62	0.00	1.896	O I					2.18
4.750	11.01	0.00	1.971	O I					2.25
4.833	11.44	0.00	2.048	O I					2.32
4.917	11.85	0.00	2.128	O I					2.39
5.000	12.24	0.00	2.211	O I					2.46
5.083	12.70	0.00	2.297	O I					2.54
5.167	13.50	0.00	2.387	O I					2.62
5.250	14.75	0.20	2.484	O I					2.71
5.333	16.32	1.67	2.584	O I					2.79
5.417	17.96	3.15	2.686	O I					2.87
5.500	19.73	4.65	2.789	O I					2.96
5.583	21.17	6.67	2.891	O I					3.04
5.667	20.67	8.95	2.981	O I					3.11
5.750	17.41	10.56	3.045	O I					3.16
5.833	13.01	11.30	3.074	O I					3.19
5.917	9.85	11.32	3.075	O I					3.19
6.000	7.84	10.93	3.059	O I					3.18
6.083	6.37	10.32	3.035	O I					3.16
6.167	5.13	9.59	3.006	O I					3.13
6.250	4.07	8.79	2.975	O I					3.11
6.333	3.26	7.97	2.942	O I					3.08
6.417	2.67	7.17	2.910	O I					3.06
6.500	2.24	6.42	2.880	O I					3.03
6.583	1.88	5.72	2.853	O I					3.01
6.667	1.61	5.21	2.827	O I					2.99

6.750	1.37	4.86	2.803	| I O|	|	|	|	2.97
6.833	1.15	4.51	2.779	|I O |	|	|	|	2.95
6.917	0.97	4.18	2.757	|I O |	|	|	|	2.93
7.000	0.81	3.87	2.735	|I O |	|	|	|	2.91
7.083	0.68	3.57	2.714	|I O |	|	|	|	2.90
7.167	0.56	3.29	2.695	I O |	|	|	|	2.88
7.250	0.45	3.02	2.677	I O |	|	|	|	2.87
7.333	0.37	2.77	2.660	I O |	|	|	|	2.85
7.417	0.28	2.54	2.644	I O |	|	|	|	2.84
7.500	0.19	2.32	2.629	I O |	|	|	|	2.83
7.583	0.08	2.11	2.614	I O |	|	|	|	2.82
7.667	0.05	1.91	2.601	I O |	|	|	|	2.81
7.750	0.03	1.73	2.589	I O |	|	|	|	2.80
7.833	0.02	1.57	2.577	I O |	|	|	|	2.79
7.917	0.01	1.42	2.567	I O |	|	|	|	2.78
8.000	0.00	1.29	2.558	IO |	|	|	|	2.77
8.083	0.00	1.16	2.550	IO |	|	|	|	2.76
8.167	0.00	1.05	2.542	IO |	|	|	|	2.76
8.250	0.00	0.95	2.535	IO |	|	|	|	2.75
8.333	0.00	0.86	2.529	IO |	|	|	|	2.75
8.417	0.00	0.78	2.523	IO |	|	|	|	2.74
8.500	0.00	0.70	2.518	IO |	|	|	|	2.74
8.583	0.00	0.64	2.514	O |	|	|	|	2.74
8.667	0.00	0.57	2.509	O |	|	|	|	2.73
8.750	0.00	0.52	2.506	O |	|	|	|	2.73
8.833	0.00	0.47	2.502	O |	|	|	|	2.73
8.917	0.00	0.43	2.499	O |	|	|	|	2.72
9.000	0.00	0.38	2.496	O |	|	|	|	2.72
9.083	0.00	0.35	2.494	O |	|	|	|	2.72
9.167	0.00	0.31	2.491	O |	|	|	|	2.72
9.250	0.00	0.28	2.489	O |	|	|	|	2.72
9.333	0.00	0.26	2.488	O |	|	|	|	2.71
9.417	0.00	0.23	2.486	O |	|	|	|	2.71
9.500	0.00	0.21	2.484	O |	|	|	|	2.71
9.583	0.00	0.19	2.483	O |	|	|	|	2.71
9.667	0.00	0.17	2.482	O |	|	|	|	2.71
9.750	0.00	0.16	2.481	O |	|	|	|	2.71
9.833	0.00	0.14	2.480	O |	|	|	|	2.71
9.917	0.00	0.13	2.479	O |	|	|	|	2.71
10.000	0.00	0.12	2.478	O |	|	|	|	2.71
10.083	0.00	0.10	2.477	O |	|	|	|	2.71
10.167	0.00	0.09	2.476	O |	|	|	|	2.71
10.250	0.00	0.09	2.476	O |	|	|	|	2.70
10.333	0.00	0.08	2.475	O |	|	|	|	2.70
10.417	0.00	0.07	2.475	O |	|	|	|	2.70
10.500	0.00	0.06	2.474	O |	|	|	|	2.70
10.583	0.00	0.06	2.474	O |	|	|	|	2.70
10.667	0.00	0.05	2.473	O |	|	|	|	2.70
10.750	0.00	0.05	2.473	O |	|	|	|	2.70
10.833	0.00	0.04	2.473	O |	|	|	|	2.70
10.917	0.00	0.04	2.473	O |	|	|	|	2.70
11.000	0.00	0.03	2.472	O |	|	|	|	2.70
11.083	0.00	0.03	2.472	O |	|	|	|	2.70
11.167	0.00	0.03	2.472	O |	|	|	|	2.70
11.250	0.00	0.03	2.472	O |	|	|	|	2.70
11.333	0.00	0.02	2.472	O |	|	|	|	2.70
11.417	0.00	0.02	2.471	O |	|	|	|	2.70
11.500	0.00	0.02	2.471	O |	|	|	|	2.70
11.583	0.00	0.02	2.471	O |	|	|	|	2.70
11.667	0.00	0.02	2.471	O |	|	|	|	2.70
11.750	0.00	0.01	2.471	O |	|	|	|	2.70
11.833	0.00	0.01	2.471	O |	|	|	|	2.70
11.917	0.00	0.01	2.471	O |	|	|	|	2.70
12.000	0.00	0.01	2.471	O |	|	|	|	2.70
12.083	0.00	0.01	2.471	O |	|	|	|	2.70
12.167	0.00	0.01	2.471	O |	|	|	|	2.70
12.250	0.00	0.01	2.470	O |	|	|	|	2.70
12.333	0.00	0.01	2.470	O |	|	|	|	2.70
12.417	0.00	0.01	2.470	O |	|	|	|	2.70
12.500	0.00	0.01	2.470	O |	|	|	|	2.70
12.583	0.00	0.01	2.470	O |	|	|	|	2.70
12.667	0.00	0.00	2.470	O |	|	|	|	2.70
12.750	0.00	0.00	2.470	O |	|	|	|	2.70
12.833	0.00	0.00	2.470	O |	|	|	|	2.70
12.917	0.00	0.00	2.470	O |	|	|	|	2.70
13.000	0.00	0.00	2.470	O |	|	|	|	2.70
13.083	0.00	0.00	2.470	O |	|	|	|	2.70
13.167	0.00	0.00	2.470	O |	|	|	|	2.70
13.250	0.00	0.00	2.470	O |	|	|	|	2.70

```
13.333    0.00    0.00      2.470  O       |       |       |       |     2.70
13.417    0.00    0.00      2.470  O       |       |       |       |     2.70
13.500    0.00    0.00      2.470  O       |       |       |       |     2.70
13.583    0.00    0.00      2.470  O       |       |       |       |     2.70
13.667    0.00    0.00      2.470  O       |       |       |       |     2.70
13.750    0.00    0.00      2.470  O       |       |       |       |     2.70
13.833    0.00    0.00      2.470  O       |       |       |       |     2.70
13.917    0.00    0.00      2.470  O       |       |       |       |     2.70
14.000    0.00    0.00      2.470  O       |       |       |       |     2.70

        Remaining water in basin =    2.47 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =   168
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       11.324 (CFS)
                        Total volume =       1.293 (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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        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/18/21 File: 3384A2242.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



---------------------------------------------------------------------
2 YEAR
24 HR


--------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            2.00                  77.20

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            5.50                 212.30

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 =   99.99 %
Adjusted average point rain =    2.000(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

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56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
-------------------------------------------------------------------
               Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.07      0.016       (  0.238)       0.002        0.014
   2   0.17     0.07      0.016       (  0.237)       0.002        0.014
   3   0.25     0.07      0.016       (  0.236)       0.002        0.014
   4   0.33     0.10      0.024       (  0.235)       0.002        0.022
   5   0.42     0.10      0.024       (  0.234)       0.002        0.022
   6   0.50     0.10      0.024       (  0.233)       0.002        0.022
   7   0.58     0.10      0.024       (  0.232)       0.002        0.022
   8   0.67     0.10      0.024       (  0.231)       0.002        0.022
   9   0.75     0.10      0.024       (  0.230)       0.002        0.022
  10   0.83     0.13      0.032       (  0.230)       0.003        0.029
  11   0.92     0.13      0.032       (  0.229)       0.003        0.029
  12   1.00     0.13      0.032       (  0.228)       0.003        0.029
  13   1.08     0.10      0.024       (  0.227)       0.002        0.022
  14   1.17     0.10      0.024       (  0.226)       0.002        0.022
  15   1.25     0.10      0.024       (  0.225)       0.002        0.022
  16   1.33     0.10      0.024       (  0.224)       0.002        0.022
  17   1.42     0.10      0.024       (  0.223)       0.002        0.022
  18   1.50     0.10      0.024       (  0.222)       0.002        0.022
  19   1.58     0.10      0.024       (  0.222)       0.002        0.022
```

20	1.67	0.10	0.024	(0.221)	0.002	0.022
21	1.75	0.10	0.024	(0.220)	0.002	0.022
22	1.83	0.13	0.032	(0.219)	0.003	0.029
23	1.92	0.13	0.032	(0.218)	0.003	0.029
24	2.00	0.13	0.032	(0.217)	0.003	0.029
25	2.08	0.13	0.032	(0.216)	0.003	0.029
26	2.17	0.13	0.032	(0.215)	0.003	0.029
27	2.25	0.13	0.032	(0.214)	0.003	0.029
28	2.33	0.13	0.032	(0.214)	0.003	0.029
29	2.42	0.13	0.032	(0.213)	0.003	0.029
30	2.50	0.13	0.032	(0.212)	0.003	0.029
31	2.58	0.17	0.040	(0.211)	0.004	0.036
32	2.67	0.17	0.040	(0.210)	0.004	0.036
33	2.75	0.17	0.040	(0.209)	0.004	0.036
34	2.83	0.17	0.040	(0.208)	0.004	0.036
35	2.92	0.17	0.040	(0.208)	0.004	0.036
36	3.00	0.17	0.040	(0.207)	0.004	0.036
37	3.08	0.17	0.040	(0.206)	0.004	0.036
38	3.17	0.17	0.040	(0.205)	0.004	0.036
39	3.25	0.17	0.040	(0.204)	0.004	0.036
40	3.33	0.17	0.040	(0.203)	0.004	0.036
41	3.42	0.17	0.040	(0.202)	0.004	0.036
42	3.50	0.17	0.040	(0.202)	0.004	0.036
43	3.58	0.17	0.040	(0.201)	0.004	0.036
44	3.67	0.17	0.040	(0.200)	0.004	0.036
45	3.75	0.17	0.040	(0.199)	0.004	0.036
46	3.83	0.20	0.048	(0.198)	0.005	0.043
47	3.92	0.20	0.048	(0.197)	0.005	0.043
48	4.00	0.20	0.048	(0.197)	0.005	0.043
49	4.08	0.20	0.048	(0.196)	0.005	0.043
50	4.17	0.20	0.048	(0.195)	0.005	0.043
51	4.25	0.20	0.048	(0.194)	0.005	0.043
52	4.33	0.23	0.056	(0.193)	0.006	0.050
53	4.42	0.23	0.056	(0.192)	0.006	0.050
54	4.50	0.23	0.056	(0.192)	0.006	0.050
55	4.58	0.23	0.056	(0.191)	0.006	0.050
56	4.67	0.23	0.056	(0.190)	0.006	0.050
57	4.75	0.23	0.056	(0.189)	0.006	0.050
58	4.83	0.27	0.064	(0.188)	0.006	0.058
59	4.92	0.27	0.064	(0.187)	0.006	0.058
60	5.00	0.27	0.064	(0.187)	0.006	0.058
61	5.08	0.20	0.048	(0.186)	0.005	0.043
62	5.17	0.20	0.048	(0.185)	0.005	0.043
63	5.25	0.20	0.048	(0.184)	0.005	0.043
64	5.33	0.23	0.056	(0.183)	0.006	0.050
65	5.42	0.23	0.056	(0.183)	0.006	0.050
66	5.50	0.23	0.056	(0.182)	0.006	0.050
67	5.58	0.27	0.064	(0.181)	0.006	0.058
68	5.67	0.27	0.064	(0.180)	0.006	0.058
69	5.75	0.27	0.064	(0.179)	0.006	0.058
70	5.83	0.27	0.064	(0.179)	0.006	0.058
71	5.92	0.27	0.064	(0.178)	0.006	0.058
72	6.00	0.27	0.064	(0.177)	0.006	0.058
73	6.08	0.30	0.072	(0.176)	0.007	0.065
74	6.17	0.30	0.072	(0.175)	0.007	0.065
75	6.25	0.30	0.072	(0.175)	0.007	0.065
76	6.33	0.30	0.072	(0.174)	0.007	0.065
77	6.42	0.30	0.072	(0.173)	0.007	0.065
78	6.50	0.30	0.072	(0.172)	0.007	0.065
79	6.58	0.33	0.080	(0.172)	0.008	0.072
80	6.67	0.33	0.080	(0.171)	0.008	0.072
81	6.75	0.33	0.080	(0.170)	0.008	0.072
82	6.83	0.33	0.080	(0.169)	0.008	0.072
83	6.92	0.33	0.080	(0.169)	0.008	0.072
84	7.00	0.33	0.080	(0.168)	0.008	0.072
85	7.08	0.33	0.080	(0.167)	0.008	0.072
86	7.17	0.33	0.080	(0.166)	0.008	0.072
87	7.25	0.33	0.080	(0.165)	0.008	0.072
88	7.33	0.37	0.088	(0.165)	0.009	0.079

89	7.42	0.37	0.088	(0.164)	0.009	0.079
90	7.50	0.37	0.088	(0.163)	0.009	0.079
91	7.58	0.40	0.096	(0.162)	0.010	0.086
92	7.67	0.40	0.096	(0.162)	0.010	0.086
93	7.75	0.40	0.096	(0.161)	0.010	0.086
94	7.83	0.43	0.104	(0.160)	0.010	0.094
95	7.92	0.43	0.104	(0.159)	0.010	0.094
96	8.00	0.43	0.104	(0.159)	0.010	0.094
97	8.08	0.50	0.120	(0.158)	0.012	0.108
98	8.17	0.50	0.120	(0.157)	0.012	0.108
99	8.25	0.50	0.120	(0.157)	0.012	0.108
100	8.33	0.50	0.120	(0.156)	0.012	0.108
101	8.42	0.50	0.120	(0.155)	0.012	0.108
102	8.50	0.50	0.120	(0.154)	0.012	0.108
103	8.58	0.53	0.128	(0.154)	0.013	0.115
104	8.67	0.53	0.128	(0.153)	0.013	0.115
105	8.75	0.53	0.128	(0.152)	0.013	0.115
106	8.83	0.57	0.136	(0.151)	0.014	0.122
107	8.92	0.57	0.136	(0.151)	0.014	0.122
108	9.00	0.57	0.136	(0.150)	0.014	0.122
109	9.08	0.63	0.152	(0.149)	0.015	0.137
110	9.17	0.63	0.152	(0.149)	0.015	0.137
111	9.25	0.63	0.152	(0.148)	0.015	0.137
112	9.33	0.67	0.160	(0.147)	0.016	0.144
113	9.42	0.67	0.160	(0.147)	0.016	0.144
114	9.50	0.67	0.160	(0.146)	0.016	0.144
115	9.58	0.70	0.168	(0.145)	0.017	0.151
116	9.67	0.70	0.168	(0.144)	0.017	0.151
117	9.75	0.70	0.168	(0.144)	0.017	0.151
118	9.83	0.73	0.176	(0.143)	0.018	0.158
119	9.92	0.73	0.176	(0.142)	0.018	0.158
120	10.00	0.73	0.176	(0.142)	0.018	0.158
121	10.08	0.50	0.120	(0.141)	0.012	0.108
122	10.17	0.50	0.120	(0.140)	0.012	0.108
123	10.25	0.50	0.120	(0.140)	0.012	0.108
124	10.33	0.50	0.120	(0.139)	0.012	0.108
125	10.42	0.50	0.120	(0.138)	0.012	0.108
126	10.50	0.50	0.120	(0.138)	0.012	0.108
127	10.58	0.67	0.160	(0.137)	0.016	0.144
128	10.67	0.67	0.160	(0.136)	0.016	0.144
129	10.75	0.67	0.160	(0.136)	0.016	0.144
130	10.83	0.67	0.160	(0.135)	0.016	0.144
131	10.92	0.67	0.160	(0.134)	0.016	0.144
132	11.00	0.67	0.160	(0.134)	0.016	0.144
133	11.08	0.63	0.152	(0.133)	0.015	0.137
134	11.17	0.63	0.152	(0.132)	0.015	0.137
135	11.25	0.63	0.152	(0.132)	0.015	0.137
136	11.33	0.63	0.152	(0.131)	0.015	0.137
137	11.42	0.63	0.152	(0.130)	0.015	0.137
138	11.50	0.63	0.152	(0.130)	0.015	0.137
139	11.58	0.57	0.136	(0.129)	0.014	0.122
140	11.67	0.57	0.136	(0.128)	0.014	0.122
141	11.75	0.57	0.136	(0.128)	0.014	0.122
142	11.83	0.60	0.144	(0.127)	0.014	0.130
143	11.92	0.60	0.144	(0.126)	0.014	0.130
144	12.00	0.60	0.144	(0.126)	0.014	0.130
145	12.08	0.83	0.200	(0.125)	0.020	0.180
146	12.17	0.83	0.200	(0.125)	0.020	0.180
147	12.25	0.83	0.200	(0.124)	0.020	0.180
148	12.33	0.87	0.208	(0.123)	0.021	0.187
149	12.42	0.87	0.208	(0.123)	0.021	0.187
150	12.50	0.87	0.208	(0.122)	0.021	0.187
151	12.58	0.93	0.224	(0.121)	0.022	0.202
152	12.67	0.93	0.224	(0.121)	0.022	0.202
153	12.75	0.93	0.224	(0.120)	0.022	0.202
154	12.83	0.97	0.232	(0.120)	0.023	0.209
155	12.92	0.97	0.232	(0.119)	0.023	0.209
156	13.00	0.97	0.232	(0.118)	0.023	0.209
157	13.08	1.13	0.272	(0.118)	0.027	0.245

158	13.17	1.13	0.272	(0.117)	0.027	0.245
159	13.25	1.13	0.272	(0.117)	0.027	0.245
160	13.33	1.13	0.272	(0.116)	0.027	0.245
161	13.42	1.13	0.272	(0.115)	0.027	0.245
162	13.50	1.13	0.272	(0.115)	0.027	0.245
163	13.58	0.77	0.184	(0.114)	0.018	0.166
164	13.67	0.77	0.184	(0.114)	0.018	0.166
165	13.75	0.77	0.184	(0.113)	0.018	0.166
166	13.83	0.77	0.184	(0.113)	0.018	0.166
167	13.92	0.77	0.184	(0.112)	0.018	0.166
168	14.00	0.77	0.184	(0.111)	0.018	0.166
169	14.08	0.90	0.216	(0.111)	0.022	0.194
170	14.17	0.90	0.216	(0.110)	0.022	0.194
171	14.25	0.90	0.216	(0.110)	0.022	0.194
172	14.33	0.87	0.208	(0.109)	0.021	0.187
173	14.42	0.87	0.208	(0.109)	0.021	0.187
174	14.50	0.87	0.208	(0.108)	0.021	0.187
175	14.58	0.87	0.208	(0.107)	0.021	0.187
176	14.67	0.87	0.208	(0.107)	0.021	0.187
177	14.75	0.87	0.208	(0.106)	0.021	0.187
178	14.83	0.83	0.200	(0.106)	0.020	0.180
179	14.92	0.83	0.200	(0.105)	0.020	0.180
180	15.00	0.83	0.200	(0.105)	0.020	0.180
181	15.08	0.80	0.192	(0.104)	0.019	0.173
182	15.17	0.80	0.192	(0.104)	0.019	0.173
183	15.25	0.80	0.192	(0.103)	0.019	0.173
184	15.33	0.77	0.184	(0.103)	0.018	0.166
185	15.42	0.77	0.184	(0.102)	0.018	0.166
186	15.50	0.77	0.184	(0.102)	0.018	0.166
187	15.58	0.63	0.152	(0.101)	0.015	0.137
188	15.67	0.63	0.152	(0.101)	0.015	0.137
189	15.75	0.63	0.152	(0.100)	0.015	0.137
190	15.83	0.63	0.152	(0.100)	0.015	0.137
191	15.92	0.63	0.152	(0.099)	0.015	0.137
192	16.00	0.63	0.152	(0.099)	0.015	0.137
193	16.08	0.13	0.032	(0.098)	0.003	0.029
194	16.17	0.13	0.032	(0.098)	0.003	0.029
195	16.25	0.13	0.032	(0.097)	0.003	0.029
196	16.33	0.13	0.032	(0.097)	0.003	0.029
197	16.42	0.13	0.032	(0.096)	0.003	0.029
198	16.50	0.13	0.032	(0.096)	0.003	0.029
199	16.58	0.10	0.024	(0.095)	0.002	0.022
200	16.67	0.10	0.024	(0.095)	0.002	0.022
201	16.75	0.10	0.024	(0.094)	0.002	0.022
202	16.83	0.10	0.024	(0.094)	0.002	0.022
203	16.92	0.10	0.024	(0.093)	0.002	0.022
204	17.00	0.10	0.024	(0.093)	0.002	0.022
205	17.08	0.17	0.040	(0.092)	0.004	0.036
206	17.17	0.17	0.040	(0.092)	0.004	0.036
207	17.25	0.17	0.040	(0.091)	0.004	0.036
208	17.33	0.17	0.040	(0.091)	0.004	0.036
209	17.42	0.17	0.040	(0.090)	0.004	0.036
210	17.50	0.17	0.040	(0.090)	0.004	0.036
211	17.58	0.17	0.040	(0.089)	0.004	0.036
212	17.67	0.17	0.040	(0.089)	0.004	0.036
213	17.75	0.17	0.040	(0.089)	0.004	0.036
214	17.83	0.13	0.032	(0.088)	0.003	0.029
215	17.92	0.13	0.032	(0.088)	0.003	0.029
216	18.00	0.13	0.032	(0.087)	0.003	0.029
217	18.08	0.13	0.032	(0.087)	0.003	0.029
218	18.17	0.13	0.032	(0.086)	0.003	0.029
219	18.25	0.13	0.032	(0.086)	0.003	0.029
220	18.33	0.13	0.032	(0.086)	0.003	0.029
221	18.42	0.13	0.032	(0.085)	0.003	0.029
222	18.50	0.13	0.032	(0.085)	0.003	0.029
223	18.58	0.10	0.024	(0.084)	0.002	0.022
224	18.67	0.10	0.024	(0.084)	0.002	0.022
225	18.75	0.10	0.024	(0.084)	0.002	0.022
226	18.83	0.07	0.016	(0.083)	0.002	0.014

227	18.92	0.07	0.016	(0.083)	0.002	0.014
228	19.00	0.07	0.016	(0.082)	0.002	0.014
229	19.08	0.10	0.024	(0.082)	0.002	0.022
230	19.17	0.10	0.024	(0.082)	0.002	0.022
231	19.25	0.10	0.024	(0.081)	0.002	0.022
232	19.33	0.13	0.032	(0.081)	0.003	0.029
233	19.42	0.13	0.032	(0.080)	0.003	0.029
234	19.50	0.13	0.032	(0.080)	0.003	0.029
235	19.58	0.10	0.024	(0.080)	0.002	0.022
236	19.67	0.10	0.024	(0.079)	0.002	0.022
237	19.75	0.10	0.024	(0.079)	0.002	0.022
238	19.83	0.07	0.016	(0.079)	0.002	0.014
239	19.92	0.07	0.016	(0.078)	0.002	0.014
240	20.00	0.07	0.016	(0.078)	0.002	0.014
241	20.08	0.10	0.024	(0.078)	0.002	0.022
242	20.17	0.10	0.024	(0.077)	0.002	0.022
243	20.25	0.10	0.024	(0.077)	0.002	0.022
244	20.33	0.10	0.024	(0.077)	0.002	0.022
245	20.42	0.10	0.024	(0.076)	0.002	0.022
246	20.50	0.10	0.024	(0.076)	0.002	0.022
247	20.58	0.10	0.024	(0.076)	0.002	0.022
248	20.67	0.10	0.024	(0.075)	0.002	0.022
249	20.75	0.10	0.024	(0.075)	0.002	0.022
250	20.83	0.07	0.016	(0.075)	0.002	0.014
251	20.92	0.07	0.016	(0.074)	0.002	0.014
252	21.00	0.07	0.016	(0.074)	0.002	0.014
253	21.08	0.10	0.024	(0.074)	0.002	0.022
254	21.17	0.10	0.024	(0.073)	0.002	0.022
255	21.25	0.10	0.024	(0.073)	0.002	0.022
256	21.33	0.07	0.016	(0.073)	0.002	0.014
257	21.42	0.07	0.016	(0.073)	0.002	0.014
258	21.50	0.07	0.016	(0.072)	0.002	0.014
259	21.58	0.10	0.024	(0.072)	0.002	0.022
260	21.67	0.10	0.024	(0.072)	0.002	0.022
261	21.75	0.10	0.024	(0.072)	0.002	0.022
262	21.83	0.07	0.016	(0.071)	0.002	0.014
263	21.92	0.07	0.016	(0.071)	0.002	0.014
264	22.00	0.07	0.016	(0.071)	0.002	0.014
265	22.08	0.10	0.024	(0.071)	0.002	0.022
266	22.17	0.10	0.024	(0.070)	0.002	0.022
267	22.25	0.10	0.024	(0.070)	0.002	0.022
268	22.33	0.07	0.016	(0.070)	0.002	0.014
269	22.42	0.07	0.016	(0.070)	0.002	0.014
270	22.50	0.07	0.016	(0.069)	0.002	0.014
271	22.58	0.07	0.016	(0.069)	0.002	0.014
272	22.67	0.07	0.016	(0.069)	0.002	0.014
273	22.75	0.07	0.016	(0.069)	0.002	0.014
274	22.83	0.07	0.016	(0.069)	0.002	0.014
275	22.92	0.07	0.016	(0.069)	0.002	0.014
276	23.00	0.07	0.016	(0.068)	0.002	0.014
277	23.08	0.07	0.016	(0.068)	0.002	0.014
278	23.17	0.07	0.016	(0.068)	0.002	0.014
279	23.25	0.07	0.016	(0.068)	0.002	0.014
280	23.33	0.07	0.016	(0.068)	0.002	0.014
281	23.42	0.07	0.016	(0.068)	0.002	0.014
282	23.50	0.07	0.016	(0.068)	0.002	0.014
283	23.58	0.07	0.016	(0.067)	0.002	0.014
284	23.67	0.07	0.016	(0.067)	0.002	0.014
285	23.75	0.07	0.016	(0.067)	0.002	0.014
286	23.83	0.07	0.016	(0.067)	0.002	0.014
287	23.92	0.07	0.016	(0.067)	0.002	0.014
288	24.00	0.07	0.016	(0.067)	0.002	0.014

(Loss Rate Not Used)

Sum = 100.0 Sum = 21.6

Flood volume = Effective rainfall 1.80(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 5.8(Ac.Ft)
Total soil loss = 0.20(In)
Total soil loss = 0.643(Ac.Ft)
Total rainfall = 2.00(In)

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Flood volume =      252193.4 Cubic Feet
Total soil loss =       28021.5 Cubic Feet
---------------------------------------------------------------------
 Peak flow rate of this hydrograph =      9.018(CFS)
---------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    24 - H O U R    S T O R M
                R u n o f f      H y d r o g r a p h
---------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q         |         |         |         |
  0+10       0.0007      0.09  Q         |         |         |         |
  0+15       0.0021      0.21  Q         |         |         |         |
  0+20       0.0044      0.33  VQ        |         |         |         |
  0+25       0.0073      0.43  VQ        |         |         |         |
  0+30       0.0109      0.52  V Q       |         |         |         |
  0+35       0.0151      0.60  V Q       |         |         |         |
  0+40       0.0196      0.66  V Q       |         |         |         |
  0+45       0.0244      0.69  V Q       |         |         |         |
  0+50       0.0294      0.72  V Q       |         |         |         |
  0+55       0.0347      0.78  V  Q      |         |         |         |
  1+ 0       0.0406      0.86  V  Q      |         |         |         |
  1+ 5       0.0469      0.92  V  Q      |         |         |         |
  1+10       0.0533      0.93  V  Q      |         |         |         |
  1+15       0.0595      0.90  V  Q      |         |         |         |
  1+20       0.0654      0.86  V  Q      |         |         |         |
  1+25       0.0713      0.85  V  Q      |         |         |         |
  1+30       0.0770      0.84  V  Q      |         |         |         |
  1+35       0.0828      0.84  V  Q      |         |         |         |
  1+40       0.0886      0.84  V  Q      |         |         |         |
  1+45       0.0944      0.84  V  Q      |         |         |         |
  1+50       0.1003      0.85  V  Q      |         |         |         |
  1+55       0.1064      0.89  V  Q      |         |         |         |
  2+ 0       0.1129      0.95  V  Q      |         |         |         |
  2+ 5       0.1199      1.01  V   Q     |         |         |         |
  2+10       0.1270      1.04  V   Q     |         |         |         |
  2+15       0.1343      1.06  V   Q     |         |         |         |
  2+20       0.1416      1.07  V   Q     |         |         |         |
  2+25       0.1491      1.08  |V  Q     |         |         |         |
  2+30       0.1565      1.08  |V  Q     |         |         |         |
  2+35       0.1641      1.10  |V  Q     |         |         |         |
  2+40       0.1719      1.14  |V  Q     |         |         |         |
  2+45       0.1802      1.20  |V  Q     |         |         |         |
  2+50       0.1889      1.26  |V   Q    |         |         |         |
  2+55       0.1979      1.30  |V   Q    |         |         |         |
  3+ 0       0.2069      1.32  |V   Q    |         |         |         |
  3+ 5       0.2161      1.33  |V   Q    |         |         |         |
  3+10       0.2254      1.34  |V   Q    |         |         |         |
  3+15       0.2347      1.35  |V   Q    |         |         |         |
  3+20       0.2441      1.36  |V   Q    |         |         |         |
  3+25       0.2535      1.37  |V   Q    |         |         |         |
  3+30       0.2629      1.37  |V   Q    |         |         |         |
  3+35       0.2724      1.38  |V   Q    |         |         |         |
  3+40       0.2820      1.38  |V   Q    |         |         |         |
  3+45       0.2915      1.39  | V  Q    |         |         |         |
  3+50       0.3011      1.40  | V  Q    |         |         |         |
  3+55       0.3110      1.44  | V  Q    |         |         |         |
  4+ 0       0.3213      1.50  | V  Q    |         |         |         |
  4+ 5       0.3320      1.55  | V   Q   |         |         |         |
  4+10       0.3430      1.59  | V   Q   |         |         |         |
  4+15       0.3540      1.61  | V   Q   |         |         |         |
  4+20       0.3653      1.63  | V   Q   |         |         |         |
  4+25       0.3768      1.68  | V   Q   |         |         |         |
  4+30       0.3888      1.74  | V   Q   |         |         |         |
  4+35       0.4012      1.81  | V    Q  |         |         |         |
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 4+40       0.4139      1.84  | V    Q  |         |         |         |
 4+45       0.4268      1.87  | V    Q  |         |         |         |
 4+50       0.4398      1.89  |  V   Q  |         |         |         |
 4+55       0.4532      1.94  |  V   Q  |         |         |         |
 5+ 0       0.4670      2.01  |  V    Q |         |         |         |
 5+ 5       0.4812      2.06  |  V    Q |         |         |         |
 5+10       0.4952      2.03  |  V    Q |         |         |         |
 5+15       0.5085      1.93  |  V   Q  |         |         |         |
 5+20       0.5212      1.85  |  V   Q  |         |         |         |
 5+25       0.5339      1.83  |  V   Q  |         |         |         |
 5+30       0.5467      1.87  |  V   Q  |         |         |         |
 5+35       0.5599      1.92  |  V   Q  |         |         |         |
 5+40       0.5735      1.97  |  V   Q  |         |         |         |
 5+45       0.5876      2.04  |   V   Q |         |         |         |
 5+50       0.6021      2.10  |   V   Q |         |         |         |
 5+55       0.6168      2.14  |   V   Q |         |         |         |
 6+ 0       0.6317      2.16  |   V   Q |         |         |         |
 6+ 5       0.6467      2.18  |   V   Q |         |         |         |
 6+10       0.6621      2.23  |   V   Q |         |         |         |
 6+15       0.6779      2.30  |   V    Q|         |         |         |
 6+20       0.6942      2.36  |   V    Q|         |         |         |
 6+25       0.7108      2.40  |   V    Q|         |         |         |
 6+30       0.7275      2.43  |    V   Q|         |         |         |
 6+35       0.7444      2.45  |    V   Q|         |         |         |
 6+40       0.7616      2.50  |    V   Q|         |         |         |
 6+45       0.7793      2.57  |    V    Q         |         |         |
 6+50       0.7974      2.64  |    V    Q         |         |         |
 6+55       0.8158      2.67  |    V    Q         |         |         |
 7+ 0       0.8344      2.70  |    V    Q         |         |         |
 7+ 5       0.8531      2.72  |    V    Q         |         |         |
 7+10       0.8719      2.73  |     V   Q         |         |         |
 7+15       0.8908      2.74  |     V   Q         |         |         |
 7+20       0.9099      2.76  |     V   |Q        |         |         |
 7+25       0.9292      2.81  |     V   |Q        |         |         |
 7+30       0.9490      2.87  |     V   |Q        |         |         |
 7+35       0.9692      2.94  |     V   |Q        |         |         |
 7+40       0.9900      3.02  |     V   | Q       |         |         |
 7+45       1.0113      3.10  |     V   | Q       |         |         |
 7+50       1.0332      3.18  |      V  | Q       |         |         |
 7+55       1.0557      3.26  |      V  |  Q      |         |         |
 8+ 0       1.0787      3.35  |      V  |  Q      |         |         |
 8+ 5       1.1024      3.44  |      V  |  Q      |         |         |
 8+10       1.1269      3.56  |      V  |   Q     |         |         |
 8+15       1.1525      3.71  |      V  |   Q     |         |         |
 8+20       1.1790      3.85  |       V |    Q    |         |         |
 8+25       1.2061      3.93  |       V |    Q    |         |         |
 8+30       1.2335      3.98  |       V |    Q    |         |         |
 8+35       1.2613      4.03  |       V |     Q   |         |         |
 8+40       1.2895      4.10  |       V |     Q   |         |         |
 8+45       1.3183      4.18  |        V|     Q   |         |         |
 8+50       1.3477      4.27  |        V|      Q  |         |         |
 8+55       1.3776      4.35  |        V|      Q  |         |         |
 9+ 0       1.4082      4.44  |        V|      Q  |         |         |
 9+ 5       1.4395      4.54  |        V|       Q |         |         |
 9+10       1.4716      4.66  |         V       Q |         |         |
 9+15       1.5048      4.82  |         V        Q|         |         |
 9+20       1.5390      4.97  |         V        Q|         |         |
 9+25       1.5741      5.09  |         V         Q         |         |
 9+30       1.6099      5.20  |         |V        Q         |         |
 9+35       1.6465      5.31  |         |V        |Q        |         |
 9+40       1.6837      5.41  |         |V        |Q        |         |
 9+45       1.7217      5.51  |         |V        | Q       |         |
 9+50       1.7603      5.61  |         | V       | Q       |         |
 9+55       1.7996      5.71  |         | V       | Q       |         |
10+ 0       1.8396      5.81  |         | V       |  Q      |         |
10+ 5       1.8797      5.83  |         | V       |  Q      |         |
10+10       1.9186      5.65  |         |  V      | Q       |         |
10+15       1.9549      5.27  |         |  V      |Q        |         |
10+20       1.9887      4.91  |         |  V     Q|         |         |
```

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10+25       2.0211      4.71  |          |  V    Q |         |         |
10+30       2.0528      4.60  |          |   V   Q |         |         |
10+35       2.0843      4.57  |          |   V   Q |         |         |
10+40       2.1166      4.69  |          |   V   Q |         |         |
10+45       2.1507      4.94  |          |   V    Q|         |         |
10+50       2.1864      5.19  |          |    V    Q         |         |
10+55       2.2231      5.32  |          |    V    |Q        |         |
11+ 0       2.2602      5.39  |          |    V    |Q        |         |
11+ 5       2.2975      5.43  |          |    V    |Q        |         |
11+10       2.3349      5.42  |          |     V   |Q        |         |
11+15       2.3720      5.39  |          |     V   |Q        |         |
11+20       2.4088      5.35  |          |     V   |Q        |         |
11+25       2.4456      5.33  |          |     V   |Q        |         |
11+30       2.4822      5.33  |          |      V  |Q        |         |
11+35       2.5188      5.30  |          |      V  |Q        |         |
11+40       2.5548      5.23  |          |      V  Q         |         |
11+45       2.5900      5.11  |          |      V  Q         |         |
11+50       2.6245      5.01  |          |       V Q         |         |
11+55       2.6588      4.98  |          |       VQ|         |         |
12+ 0       2.6932      5.00  |          |       VQ|         |         |
12+ 5       2.7283      5.09  |          |       V Q         |         |
12+10       2.7651      5.35  |          |        V|Q        |         |
12+15       2.8049      5.77  |          |        V|  Q      |         |
12+20       2.8474      6.18  |          |        V|   Q     |         |
12+25       2.8917      6.44  |          |        V|    Q    |         |
12+30       2.9373      6.62  |          |         V     Q   |         |
12+35       2.9841      6.79  |          |         V      Q  |         |
12+40       3.0320      6.96  |          |         V      Q  |         |
12+45       3.0813      7.15  |          |         |V      Q |         |
12+50       3.1317      7.33  |          |         |V       Q|         |
12+55       3.1832      7.47  |          |         |V       Q|         |
13+ 0       3.2356      7.60  |          |         | V       Q         |
13+ 5       3.2890      7.76  |          |         | V       |Q        |
13+10       3.3442      8.01  |          |         |  V      | Q       |
13+15       3.4018      8.37  |          |         |  V      |  Q      |
13+20       3.4617      8.70  |          |         |  V      |   Q     |
13+25       3.5230      8.90  |          |         |   V     |    Q    |
13+30       3.5851      9.02  |          |         |   V     |     Q   |
13+35       3.6472      9.01  |          |         |    V    |     Q   |
13+40       3.7071      8.70  |          |         |    V    |   Q     |
13+45       3.7629      8.11  |          |         |    V    | Q       |
13+50       3.8149      7.54  |          |         |     V   Q         |
13+55       3.8646      7.23  |          |         |     V Q |         |
14+ 0       3.9133      7.06  |          |         |      VQ |         |
14+ 5       3.9614      6.99  |          |         |      Q  |         |
14+10       4.0099      7.04  |          |         |      VQ |         |
14+15       4.0596      7.21  |          |         |       Q |         |
14+20       4.1103      7.37  |          |         |       VQ|         |
14+25       4.1614      7.42  |          |         |       VQ|         |
14+30       4.2124      7.40  |          |         |        Q|         |
14+35       4.2631      7.36  |          |         |        Q|         |
14+40       4.3136      7.34  |          |         |        Q|         |
14+45       4.3641      7.33  |          |         |        QV         |
14+50       4.4145      7.31  |          |         |        QV         |
14+55       4.4646      7.27  |          |         |        QV         |
15+ 0       4.5142      7.21  |          |         |       Q |V        |
15+ 5       4.5634      7.14  |          |         |       Q |V        |
15+10       4.6120      7.06  |          |         |       Q |V        |
15+15       4.6601      6.98  |          |         |      Q  | V       |
15+20       4.7076      6.90  |          |         |      Q  | V       |
15+25       4.7546      6.82  |          |         |      Q  | V       |
15+30       4.8009      6.73  |          |         |     Q   |  V      |
15+35       4.8464      6.61  |          |         |     Q   |  V      |
15+40       4.8907      6.43  |          |         |    Q    |  V      |
15+45       4.9331      6.16  |          |         |   Q     |   V     |
15+50       4.9738      5.91  |          |         |  Q      |   V     |
15+55       5.0136      5.77  |          |         |  Q      |   V     |
16+ 0       5.0527      5.68  |          |         | Q       |   V     |
16+ 5       5.0905      5.49  |          |         |Q        |    V    |
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16+10       5.1244      4.92  |         |        Q|         |    V    |
16+15       5.1519      3.99  |         |    Q    |         |    V    |
16+20       5.1732      3.11  |         | Q       |         |    V    |
16+25       5.1911      2.60  |         Q         |         |    V    |
16+30       5.2069      2.30  |        Q|         |         |    V    |
16+35       5.2213      2.08  |       Q |         |         |     V   |
16+40       5.2342      1.88  |      Q  |         |         |     V   |
16+45       5.2458      1.69  |     Q   |         |         |     V   |
16+50       5.2563      1.52  |     Q   |         |         |     V   |
16+55       5.2659      1.39  |    Q    |         |         |     V   |
17+ 0       5.2748      1.30  |    Q    |         |         |     V   |
17+ 5       5.2834      1.24  |   Q     |         |         |     V   |
17+10       5.2920      1.25  |    Q    |         |         |     V   |
17+15       5.3011      1.31  |    Q    |         |         |     V   |
17+20       5.3105      1.38  |    Q    |         |         |     V   |
17+25       5.3202      1.40  |    Q    |         |         |     V   |
17+30       5.3299      1.40  |    Q    |         |         |     V   |
17+35       5.3395      1.40  |    Q    |         |         |     V   |
17+40       5.3491      1.39  |    Q    |         |         |     V   |
17+45       5.3587      1.39  |    Q    |         |         |      V  |
17+50       5.3682      1.38  |    Q    |         |         |      V  |
17+55       5.3774      1.34  |    Q    |         |         |      V  |
18+ 0       5.3861      1.27  |    Q    |         |         |      V  |
18+ 5       5.3945      1.21  |   Q     |         |         |      V  |
18+10       5.4026      1.18  |   Q     |         |         |      V  |
18+15       5.4106      1.17  |   Q     |         |         |      V  |
18+20       5.4186      1.16  |   Q     |         |         |      V  |
18+25       5.4265      1.15  |   Q     |         |         |      V  |
18+30       5.4344      1.15  |   Q     |         |         |      V  |
18+35       5.4422      1.13  |   Q     |         |         |      V  |
18+40       5.4498      1.10  |   Q     |         |         |      V  |
18+45       5.4569      1.03  |   Q     |         |         |      V  |
18+50       5.4636      0.97  |  Q      |         |         |      V  |
18+55       5.4698      0.90  |  Q      |         |         |      V  |
19+ 0       5.4754      0.82  |  Q      |         |         |      V  |
19+ 5       5.4806      0.76  |  Q      |         |         |      V  |
19+10       5.4858      0.75  |  Q      |         |         |      V  |
19+15       5.4912      0.78  |  Q      |         |         |      V  |
19+20       5.4969      0.83  |  Q      |         |         |      V  |
19+25       5.5029      0.88  |  Q      |         |         |       V |
19+30       5.5094      0.94  |  Q      |         |         |       V |
19+35       5.5162      0.99  |  Q      |         |         |       V |
19+40       5.5230      0.99  |  Q      |         |         |       V |
19+45       5.5295      0.95  |  Q      |         |         |       V |
19+50       5.5357      0.89  |  Q      |         |         |       V |
19+55       5.5414      0.84  |  Q      |         |         |       V |
20+ 0       5.5467      0.77  |  Q      |         |         |       V |
20+ 5       5.5516      0.71  | Q       |         |         |       V |
20+10       5.5565      0.71  | Q       |         |         |       V |
20+15       5.5617      0.75  | Q       |         |         |       V |
20+20       5.5671      0.79  |  Q      |         |         |       V |
20+25       5.5726      0.81  |  Q      |         |         |       V |
20+30       5.5783      0.82  |  Q      |         |         |       V |
20+35       5.5839      0.82  |  Q      |         |         |       V |
20+40       5.5896      0.83  |  Q      |         |         |       V |
20+45       5.5953      0.83  |  Q      |         |         |       V |
20+50       5.6010      0.82  |  Q      |         |         |       V |
20+55       5.6064      0.79  |  Q      |         |         |       V |
21+ 0       5.6114      0.73  | Q       |         |         |       V |
21+ 5       5.6162      0.69  | Q       |         |         |       V |
21+10       5.6209      0.69  | Q       |         |         |       V |
21+15       5.6259      0.73  | Q       |         |         |       V |
21+20       5.6312      0.77  |  Q      |         |         |       V |
21+25       5.6364      0.75  |  Q      |         |         |       V |
21+30       5.6412      0.70  | Q       |         |         |       V |
21+35       5.6458      0.66  | Q       |         |         |        V|
21+40       5.6504      0.67  | Q       |         |         |        V|
21+45       5.6553      0.71  | Q       |         |         |        V|
21+50       5.6605      0.75  |  Q      |         |         |        V|
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  21+55       5.6656      0.74  | Q       |         |         |        V|
  22+ 0       5.6704      0.70  | Q       |         |         |        V|
  22+ 5       5.6750      0.66  | Q       |         |         |        V|
  22+10       5.6795      0.67  | Q       |         |         |        V|
  22+15       5.6844      0.71  | Q       |         |         |        V|
  22+20       5.6896      0.75  | Q       |         |         |        V|
  22+25       5.6947      0.74  | Q       |         |         |        V|
  22+30       5.6995      0.69  | Q       |         |         |        V|
  22+35       5.7039      0.65  | Q       |         |         |        V|
  22+40       5.7082      0.62  | Q       |         |         |        V|
  22+45       5.7124      0.61  | Q       |         |         |        V|
  22+50       5.7165      0.60  | Q       |         |         |        V|
  22+55       5.7205      0.59  | Q       |         |         |        V|
  23+ 0       5.7246      0.59  | Q       |         |         |        V|
  23+ 5       5.7286      0.58  | Q       |         |         |        V|
  23+10       5.7326      0.58  | Q       |         |         |        V|
  23+15       5.7365      0.57  | Q       |         |         |        V|
  23+20       5.7405      0.57  | Q       |         |         |        V|
  23+25       5.7444      0.57  | Q       |         |         |        V|
  23+30       5.7483      0.57  | Q       |         |         |        V|
  23+35       5.7522      0.57  | Q       |         |         |        V|
  23+40       5.7561      0.57  | Q       |         |         |        V|
  23+45       5.7600      0.57  | Q       |         |         |        V|
  23+50       5.7639      0.56  | Q       |         |         |        V|
  23+55       5.7678      0.56  | Q       |         |         |        V|
  24+ 0       5.7717      0.56  | Q       |         |         |        V|
  24+ 5       5.7754      0.55  | Q       |         |         |        V|
  24+10       5.7787      0.48  |Q        |         |         |        V|
  24+15       5.7811      0.36  |Q        |         |         |        V|
  24+20       5.7828      0.24  Q         |         |         |        V|
  24+25       5.7840      0.18  Q         |         |         |        V|
  24+30       5.7850      0.14  Q         |         |         |        V|
  24+35       5.7858      0.12  Q         |         |         |        V|
  24+40       5.7865      0.10  Q         |         |         |        V|
  24+45       5.7870      0.08  Q         |         |         |        V|
  24+50       5.7875      0.07  Q         |         |         |        V|
  24+55       5.7879      0.06  Q         |         |         |        V|
  25+ 0       5.7882      0.05  Q         |         |         |        V|
  25+ 5       5.7885      0.04  Q         |         |         |        V|
  25+10       5.7887      0.03  Q         |         |         |        V|
  25+15       5.7889      0.03  Q         |         |         |        V|
  25+20       5.7890      0.02  Q         |         |         |        V|
  25+25       5.7892      0.02  Q         |         |         |        V|
  25+30       5.7893      0.02  Q         |         |         |        V|
  25+35       5.7894      0.01  Q         |         |         |        V|
  25+40       5.7894      0.01  Q         |         |         |        V|
  25+45       5.7895      0.01  Q         |         |         |        V|
  25+50       5.7895      0.01  Q         |         |         |        V|
  25+55       5.7895      0.00  Q         |         |         |        V|
  26+ 0       5.7896      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

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

                                                          24 HOURS
        2 YEAR
        24 HR

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

        Program License Serial Number 6400

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

                        From study/file name: 3384A2242.rte
        ****************************HYDROGRAPH DATA***************************
                        Number of intervals =   312
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =        9.018 (CFS)
                        Total volume =       5.790 (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      350.000 to Point/Station      350.000
        **** RETARDING BASIN ROUTING ****
        ______________________________________________________________________

        User entry of depth-outflow-storage data
        ---------------------------------------------------------------------
        Total number of inflow hydrograph intervals = 312
        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      0.750      0.001      0.750        0.750
          2.000      1.700      0.001      1.700        1.700
          2.700      2.470      0.001      2.470        2.470
          3.000      2.840      5.400      2.821        2.859
          3.200      3.090     11.700      3.050        3.130
          3.400      3.350     19.300      3.284        3.416
          3.600      3.610     28.200      3.513        3.707
          3.800      3.890     38.100      3.759        4.021
          4.000      4.170     48.900      4.002        4.338
          4.200      4.460     60.600      4.251        4.669
          4.400      4.760     73.100      4.508        5.012
          4.600      5.070     86.400      4.772        5.368
          4.800      5.380    100.400      5.034        5.726
        ---------------------------------------------------------------------
                        Hydrograph Detention Basin Routing
        ---------------------------------------------------------------------

        Graph values: 'I'= unit inflow; 'O'=outflow at time shown
        ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                        Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       2.3    4.51    6.76    9.02 (Ft.)
 0.083    0.02    0.00      0.000  O       |       |       |       |     0.00
```

```
0.167    0.09    0.00      0.000  O       |        |        |        |     0.00
0.250    0.21    0.00      0.001  O       |        |        |        |     0.00
0.333    0.33    0.00      0.003  OI      |        |        |        |     0.00
0.417    0.43    0.00      0.006  OI      |        |        |        |     0.01
0.500    0.52    0.00      0.009  OI      |        |        |        |     0.01
0.583    0.60    0.00      0.013  O I     |        |        |        |     0.02
0.667    0.66    0.00      0.017  O I     |        |        |        |     0.02
0.750    0.69    0.00      0.022  O I     |        |        |        |     0.03
0.833    0.72    0.00      0.027  O I     |        |        |        |     0.04
0.917    0.78    0.00      0.032  O I     |        |        |        |     0.04
1.000    0.86    0.00      0.038  O  I    |        |        |        |     0.05
1.083    0.92    0.00      0.044  O  I    |        |        |        |     0.06
1.167    0.93    0.00      0.050  O  I    |        |        |        |     0.07
1.250    0.90    0.00      0.056  O  I    |        |        |        |     0.08
1.333    0.86    0.00      0.062  O  I    |        |        |        |     0.08
1.417    0.85    0.00      0.068  O  I    |        |        |        |     0.09
1.500    0.84    0.00      0.074  O I     |        |        |        |     0.10
1.583    0.84    0.00      0.080  O I     |        |        |        |     0.11
1.667    0.84    0.00      0.086  O I     |        |        |        |     0.11
1.750    0.84    0.00      0.092  O I     |        |        |        |     0.12
1.833    0.85    0.00      0.097  O  I    |        |        |        |     0.13
1.917    0.89    0.00      0.103  O  I    |        |        |        |     0.14
2.000    0.95    0.00      0.110  O  I    |        |        |        |     0.15
2.083    1.01    0.00      0.116  O  I    |        |        |        |     0.16
2.167    1.04    0.00      0.123  O  I    |        |        |        |     0.16
2.250    1.06    0.00      0.131  O  I    |        |        |        |     0.17
2.333    1.07    0.00      0.138  O  I    |        |        |        |     0.18
2.417    1.08    0.00      0.145  O  I    |        |        |        |     0.19
2.500    1.08    0.00      0.153  O  I    |        |        |        |     0.20
2.583    1.10    0.00      0.160  O  I    |        |        |        |     0.21
2.667    1.14    0.00      0.168  O   I   |        |        |        |     0.22
2.750    1.20    0.00      0.176  O   I   |        |        |        |     0.23
2.833    1.26    0.00      0.185  O   I   |        |        |        |     0.25
2.917    1.30    0.00      0.193  O   I   |        |        |        |     0.26
3.000    1.32    0.00      0.202  O   I   |        |        |        |     0.27
3.083    1.33    0.00      0.211  O   I   |        |        |        |     0.28
3.167    1.34    0.00      0.221  O   I   |        |        |        |     0.29
3.250    1.35    0.00      0.230  O   I   |        |        |        |     0.31
3.333    1.36    0.00      0.239  O   I   |        |        |        |     0.32
3.417    1.37    0.00      0.249  O   I   |        |        |        |     0.33
3.500    1.37    0.00      0.258  O   I   |        |        |        |     0.34
3.583    1.38    0.00      0.268  O   I   |        |        |        |     0.36
3.667    1.38    0.00      0.277  O   I   |        |        |        |     0.37
3.750    1.39    0.00      0.287  O   I   |        |        |        |     0.38
3.833    1.40    0.00      0.296  O   I   |        |        |        |     0.40
3.917    1.44    0.00      0.306  O    I  |        |        |        |     0.41
4.000    1.50    0.00      0.316  O    I  |        |        |        |     0.42
4.083    1.55    0.00      0.327  O    I  |        |        |        |     0.44
4.167    1.59    0.00      0.337  O    I  |        |        |        |     0.45
4.250    1.61    0.00      0.348  O    I  |        |        |        |     0.46
4.333    1.63    0.00      0.360  O    I  |        |        |        |     0.48
4.417    1.68    0.00      0.371  O    I  |        |        |        |     0.49
4.500    1.74    0.00      0.383  O     I |        |        |        |     0.51
4.583    1.81    0.00      0.395  O     I |        |        |        |     0.53
4.667    1.84    0.00      0.408  O     I |        |        |        |     0.54
4.750    1.87    0.00      0.420  O     I |        |        |        |     0.56
4.833    1.89    0.00      0.433  O     I |        |        |        |     0.58
4.917    1.94    0.00      0.446  O     I |        |        |        |     0.60
5.000    2.01    0.00      0.460  O      I|        |        |        |     0.61
5.083    2.06    0.00      0.474  O      I|        |        |        |     0.63
5.167    2.03    0.00      0.488  O      I|        |        |        |     0.65
5.250    1.93    0.00      0.502  O     I |        |        |        |     0.67
5.333    1.85    0.00      0.515  O     I |        |        |        |     0.69
5.417    1.83    0.00      0.527  O     I |        |        |        |     0.70
5.500    1.87    0.00      0.540  O     I |        |        |        |     0.72
5.583    1.92    0.00      0.553  O     I |        |        |        |     0.74
5.667    1.97    0.00      0.567  O      I|        |        |        |     0.76
5.750    2.04    0.00      0.580  O      I|        |        |        |     0.77
5.833    2.10    0.00      0.595  O      I|        |        |        |     0.79
5.917    2.14    0.00      0.609  O      I|        |        |        |     0.81
6.000    2.16    0.00      0.624  O      I|        |        |        |     0.83
6.083    2.18    0.00      0.639  O      I|        |        |        |     0.85
6.167    2.23    0.00      0.654  O      I|        |        |        |     0.87
6.250    2.30    0.00      0.670  O       I        |        |        |     0.89
6.333    2.36    0.00      0.686  O       I        |        |        |     0.91
6.417    2.40    0.00      0.702  O       I        |        |        |     0.94
6.500    2.43    0.00      0.719  O       I        |        |        |     0.96
6.583    2.45    0.00      0.736  O       I        |        |        |     0.98
6.667    2.50    0.00      0.753  O       I        |        |        |     1.00
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6.750	2.57	0.00	0.770	O	1.02
6.833	2.64	0.00	0.788	O	1.04
6.917	2.67	0.00	0.806	O	1.06
7.000	2.70	0.00	0.825	O	1.08
7.083	2.72	0.00	0.844	O	1.10
7.167	2.73	0.00	0.862	O	1.12
7.250	2.74	0.00	0.881	O	1.14
7.333	2.76	0.00	0.900	O	1.16
7.417	2.81	0.00	0.919	O	1.18
7.500	2.87	0.00	0.939	O	1.20
7.583	2.94	0.00	0.959	O	1.22
7.667	3.02	0.00	0.979	O	1.24
7.750	3.10	0.00	1.000	O	1.26
7.833	3.18	0.00	1.022	O	1.29
7.917	3.26	0.00	1.044	O	1.31
8.000	3.35	0.00	1.067	O	1.33
8.083	3.44	0.00	1.090	O	1.36
8.167	3.56	0.00	1.114	O	1.38
8.250	3.71	0.00	1.139	O	1.41
8.333	3.85	0.00	1.165	O	1.44
8.417	3.93	0.00	1.192	O	1.47
8.500	3.98	0.00	1.219	O	1.49
8.583	4.03	0.00	1.247	O	1.52
8.667	4.10	0.00	1.275	O	1.55
8.750	4.18	0.00	1.304	O	1.58
8.833	4.27	0.00	1.333	O	1.61
8.917	4.35	0.00	1.362	O	1.64
9.000	4.44	0.00	1.393	O	1.68
9.083	4.54	0.00	1.423	O	1.71
9.167	4.66	0.00	1.455	O	1.74
9.250	4.82	0.00	1.488	O	1.78
9.333	4.97	0.00	1.522	O	1.81
9.417	5.09	0.00	1.556	O	1.85
9.500	5.20	0.00	1.592	O	1.89
9.583	5.31	0.00	1.628	O	1.92
9.667	5.41	0.00	1.665	O	1.96
9.750	5.51	0.00	1.702	O	2.00
9.833	5.61	0.00	1.741	O	2.04
9.917	5.71	0.00	1.779	O	2.07
10.000	5.81	0.00	1.819	O	2.11
10.083	5.83	0.00	1.859	O	2.14
10.167	5.65	0.00	1.899	O	2.18
10.250	5.27	0.00	1.936	O	2.21
10.333	4.91	0.00	1.971	O	2.25
10.417	4.71	0.00	2.004	O	2.28
10.500	4.60	0.00	2.036	O	2.31
10.583	4.57	0.00	2.068	O	2.33
10.667	4.69	0.00	2.100	O	2.36
10.750	4.94	0.00	2.133	O	2.39
10.833	5.19	0.00	2.168	O	2.43
10.917	5.32	0.00	2.204	O	2.46
11.000	5.39	0.00	2.241	O	2.49
11.083	5.43	0.00	2.278	O	2.53
11.167	5.42	0.00	2.316	O	2.56
11.250	5.39	0.00	2.353	O	2.59
11.333	5.35	0.00	2.390	O	2.63
11.417	5.33	0.00	2.427	O	2.66
11.500	5.33	0.00	2.463	O	2.69
11.583	5.30	0.42	2.498	O	2.72
11.667	5.23	0.88	2.530	O	2.75
11.750	5.11	1.29	2.558	O	2.77
11.833	5.01	1.65	2.583	O	2.79
11.917	4.98	1.97	2.605	O	2.81
12.000	5.00	2.26	2.625	O	2.83
12.083	5.09	2.53	2.643	O	2.84
12.167	5.35	2.78	2.661	O	2.85
12.250	5.77	3.05	2.679	O	2.87
12.333	6.18	3.33	2.698	O	2.88
12.417	6.44	3.61	2.718	O	2.90
12.500	6.62	3.89	2.737	O	2.92
12.583	6.79	4.16	2.755	O	2.93
12.667	6.96	4.42	2.773	O	2.95
12.750	7.15	4.67	2.790	O	2.96
12.833	7.33	4.92	2.807	O	2.97
12.917	7.47	5.16	2.823	O	2.99
13.000	7.60	5.38	2.839	O	3.00
13.083	7.76	5.74	2.854	O	3.01
13.167	8.01	6.08	2.867	O	3.02
13.250	8.37	6.42	2.881	O	3.03

13.333	8.70	6.76	2.894	|	|	|	O|	I |	3.04
13.417	8.90	7.08	2.907	|	|	|	|O	I|	3.05
13.500	9.02	7.38	2.919	|	|	|	| O	I	3.06
13.583	9.01	7.64	2.929	|	|	|	| O	I|	3.07
13.667	8.70	7.84	2.937	|	|	|	| O	I |	3.08
13.750	8.11	7.93	2.940	|	|	|	| O |		3.08
13.833	7.54	7.91	2.940	|	|	|	| I O |		3.08
13.917	7.23	7.83	2.936	|	|	|	|I O |		3.08
14.000	7.06	7.72	2.932	|	|	|	|I O |		3.07
14.083	6.99	7.61	2.928	|	|	|	I O |		3.07
14.167	7.04	7.51	2.924	|	|	|	I O |		3.07
14.250	7.21	7.45	2.921	|	|	|	|IO |		3.07
14.333	7.37	7.43	2.920	|	|	|	| O |		3.06
14.417	7.42	7.42	2.920	|	|	|	| O |		3.06
14.500	7.40	7.42	2.920	|	|	|	| O |		3.06
14.583	7.36	7.41	2.920	|	|	|	| O |		3.06
14.667	7.34	7.40	2.919	|	|	|	| O |		3.06
14.750	7.33	7.39	2.919	|	|	|	| O |		3.06
14.833	7.31	7.38	2.919	|	|	|	|IO |		3.06
14.917	7.27	7.37	2.918	|	|	|	|IO |		3.06
15.000	7.21	7.35	2.917	|	|	|	|IO |		3.06
15.083	7.14	7.32	2.916	|	|	|	|O |		3.06
15.167	7.06	7.28	2.915	|	|	|	|O |		3.06
15.250	6.98	7.24	2.913	|	|	|	IO |		3.06
15.333	6.90	7.19	2.911	|	|	|	IO |		3.06
15.417	6.82	7.14	2.909	|	|	|	IO |		3.06
15.500	6.73	7.08	2.907	|	|	|	I|O |		3.05
15.583	6.61	7.02	2.904	|	|	|	IO |		3.05
15.667	6.43	6.94	2.901	|	|	|	I O |		3.05
15.750	6.16	6.83	2.897	|	|	|	I O |		3.05
15.833	5.91	6.71	2.892	|	|	|	I O|		3.04
15.917	5.77	6.57	2.886	|	|	|	I O|		3.04
16.000	5.68	6.43	2.881	|	|	|	I O |		3.03
16.083	5.49	6.30	2.876	|	|	|	I O |		3.03
16.167	4.92	6.12	2.869	|	|	|I O |			3.02
16.250	3.99	5.86	2.858	|	| I |	O |			3.01
16.333	3.11	5.49	2.843	|	I |	O |			3.00
16.417	2.60	5.20	2.826	|	|I |	O |			2.99
16.500	2.30	4.94	2.808	|	I |	|O |			2.97
16.583	2.08	4.67	2.790	|	I|	O |			2.96
16.667	1.88	4.42	2.773	|	I |	O|			2.95
16.750	1.69	4.16	2.755	|	I |	O |			2.93
16.833	1.52	3.92	2.738	|	I |	O |			2.92
16.917	1.39	3.68	2.722	|	I |	O |			2.90
17.000	1.30	3.46	2.707	|	I |	O |			2.89
17.083	1.24	3.25	2.693	|	I |	O |			2.88
17.167	1.25	3.06	2.680	|	I | O |				2.87
17.250	1.31	2.89	2.668	|	I | O |				2.86
17.333	1.38	2.74	2.658	|	I |O |				2.85
17.417	1.40	2.61	2.649	|	I |O |				2.85
17.500	1.40	2.50	2.641	|	I O |				2.84
17.583	1.40	2.39	2.634	|	I O |				2.83
17.667	1.39	2.30	2.627	|	I O |				2.83
17.750	1.39	2.21	2.621	|	I O|				2.82
17.833	1.38	2.13	2.616	|	I O|				2.82
17.917	1.34	2.06	2.611	|	I O|				2.81
18.000	1.27	1.98	2.606	|	I O|				2.81
18.083	1.21	1.91	2.601	|	I O |				2.81
18.167	1.18	1.84	2.596	|	I O |				2.80
18.250	1.17	1.78	2.592	|	I O |				2.80
18.333	1.16	1.72	2.588	|	I O |				2.80
18.417	1.15	1.67	2.584	|	IO |				2.79
18.500	1.15	1.62	2.581	|	IO |				2.79
18.583	1.13	1.57	2.578	|	IO |				2.79
18.667	1.10	1.53	2.575	|	I O |				2.78
18.750	1.03	1.48	2.572	|	I O |				2.78
18.833	0.97	1.44	2.568	|	I O |				2.78
18.917	0.90	1.39	2.565	|	IO |				2.78
19.000	0.82	1.34	2.562	|	I O |				2.77
19.083	0.76	1.29	2.558	|	I O |				2.77
19.167	0.75	1.24	2.555	|	I O |				2.77
19.250	0.78	1.19	2.552	|	I O |				2.77
19.333	0.83	1.15	2.549	|	I O |				2.76
19.417	0.88	1.12	2.547	|	O |				2.76
19.500	0.94	1.10	2.546	|	O |				2.76
19.583	0.99	1.09	2.545	|	O |				2.76
19.667	0.99	1.08	2.544	|	O |				2.76
19.750	0.95	1.07	2.543	|	O |				2.76
19.833	0.89	1.06	2.542	|	O |				2.76

19.917	0.84	1.04	2.541	IO				2.76
20.000	0.77	1.01	2.539	IO				2.76
20.083	0.71	0.99	2.538	IO				2.75
20.167	0.71	0.96	2.536	IO				2.75
20.250	0.75	0.94	2.534	IO				2.75
20.333	0.79	0.92	2.533	IO				2.75
20.417	0.81	0.91	2.532	IO				2.75
20.500	0.82	0.90	2.532	IO				2.75
20.583	0.82	0.89	2.531	IO				2.75
20.667	0.83	0.89	2.531	IO				2.75
20.750	0.83	0.88	2.530	IO				2.75
20.833	0.82	0.88	2.530	IO				2.75
20.917	0.79	0.87	2.529	IO				2.75
21.000	0.73	0.86	2.529	IO				2.75
21.083	0.69	0.84	2.528	O				2.75
21.167	0.69	0.83	2.527	O				2.75
21.250	0.73	0.82	2.526	O				2.75
21.333	0.77	0.81	2.526	O				2.75
21.417	0.75	0.81	2.525	O				2.74
21.500	0.70	0.80	2.525	O				2.74
21.583	0.66	0.79	2.524	O				2.74
21.667	0.67	0.78	2.523	O				2.74
21.750	0.71	0.77	2.523	O				2.74
21.833	0.75	0.76	2.522	O				2.74
21.917	0.74	0.76	2.522	O				2.74
22.000	0.70	0.76	2.522	O				2.74
22.083	0.66	0.75	2.521	O				2.74
22.167	0.67	0.74	2.521	O				2.74
22.250	0.71	0.74	2.520	O				2.74
22.333	0.75	0.74	2.520	O				2.74
22.417	0.74	0.74	2.520	O				2.74
22.500	0.69	0.74	2.520	O				2.74
22.583	0.65	0.73	2.520	O				2.74
22.667	0.62	0.72	2.519	O				2.74
22.750	0.61	0.71	2.519	O				2.74
22.833	0.60	0.70	2.518	O				2.74
22.917	0.59	0.69	2.517	O				2.74
23.000	0.59	0.68	2.516	O				2.74
23.083	0.58	0.67	2.516	O				2.74
23.167	0.58	0.66	2.515	O				2.74
23.250	0.57	0.65	2.515	O				2.74
23.333	0.57	0.65	2.514	O				2.74
23.417	0.57	0.64	2.514	O				2.74
23.500	0.57	0.63	2.513	O				2.74
23.583	0.57	0.63	2.513	O				2.73
23.667	0.57	0.62	2.512	O				2.73
23.750	0.57	0.62	2.512	O				2.73
23.833	0.56	0.61	2.512	O				2.73
23.917	0.56	0.61	2.511	IO				2.73
24.000	0.56	0.60	2.511	IO				2.73
24.083	0.55	0.60	2.511	IO				2.73
24.167	0.48	0.59	2.510	IO				2.73
24.250	0.36	0.57	2.509	IO				2.73
24.333	0.24	0.55	2.507	IO				2.73
24.417	0.18	0.51	2.505	IO				2.73
24.500	0.14	0.48	2.503	IO				2.73
24.583	0.12	0.45	2.501	IO				2.72
24.667	0.10	0.41	2.498	IO				2.72
24.750	0.08	0.38	2.496	IO				2.72
24.833	0.07	0.35	2.494	IO				2.72
24.917	0.06	0.33	2.492	IO				2.72
25.000	0.05	0.30	2.490	IO				2.72
25.083	0.04	0.27	2.489	O				2.72
25.167	0.03	0.25	2.487	O				2.71
25.250	0.03	0.23	2.486	O				2.71
25.333	0.02	0.21	2.484	O				2.71
25.417	0.02	0.19	2.483	O				2.71
25.500	0.02	0.18	2.482	O				2.71
25.583	0.01	0.16	2.481	O				2.71
25.667	0.01	0.15	2.480	O				2.71
25.750	0.01	0.13	2.479	O				2.71
25.833	0.01	0.12	2.478	O				2.71
25.917	0.00	0.11	2.477	O				2.71
26.000	0.00	0.10	2.477	O				2.71
26.083	0.00	0.09	2.476	O				2.70
26.167	0.00	0.08	2.476	O				2.70
26.250	0.00	0.07	2.475	O				2.70
26.333	0.00	0.07	2.474	O				2.70
26.417	0.00	0.06	2.474	O				2.70

26.500	0.00	0.05	2.474	O	|	|	|	|	2.70
26.583	0.00	0.05	2.473	O	|	|	|	|	2.70
26.667	0.00	0.04	2.473	O	|	|	|	|	2.70
26.750	0.00	0.04	2.473	O	|	|	|	|	2.70
26.833	0.00	0.04	2.472	O	|	|	|	|	2.70
26.917	0.00	0.03	2.472	O	|	|	|	|	2.70
27.000	0.00	0.03	2.472	O	|	|	|	|	2.70
27.083	0.00	0.03	2.472	O	|	|	|	|	2.70
27.167	0.00	0.02	2.472	O	|	|	|	|	2.70
27.250	0.00	0.02	2.471	O	|	|	|	|	2.70
27.333	0.00	0.02	2.471	O	|	|	|	|	2.70
27.417	0.00	0.02	2.471	O	|	|	|	|	2.70
27.500	0.00	0.02	2.471	O	|	|	|	|	2.70
27.583	0.00	0.01	2.471	O	|	|	|	|	2.70
27.667	0.00	0.01	2.471	O	|	|	|	|	2.70
27.750	0.00	0.01	2.471	O	|	|	|	|	2.70
27.833	0.00	0.01	2.471	O	|	|	|	|	2.70
27.917	0.00	0.01	2.471	O	|	|	|	|	2.70
28.000	0.00	0.01	2.471	O	|	|	|	|	2.70
28.083	0.00	0.01	2.470	O	|	|	|	|	2.70
28.167	0.00	0.01	2.470	O	|	|	|	|	2.70
28.250	0.00	0.01	2.470	O	|	|	|	|	2.70
28.333	0.00	0.01	2.470	O	|	|	|	|	2.70
28.417	0.00	0.01	2.470	O	|	|	|	|	2.70
28.500	0.00	0.00	2.470	O	|	|	|	|	2.70
28.583	0.00	0.00	2.470	O	|	|	|	|	2.70
28.667	0.00	0.00	2.470	O	|	|	|	|	2.70
28.750	0.00	0.00	2.470	O	|	|	|	|	2.70
28.833	0.00	0.00	2.470	O	|	|	|	|	2.70
28.917	0.00	0.00	2.470	O	|	|	|	|	2.70
29.000	0.00	0.00	2.470	O	|	|	|	|	2.70
29.083	0.00	0.00	2.470	O	|	|	|	|	2.70
29.167	0.00	0.00	2.470	O	|	|	|	|	2.70
29.250	0.00	0.00	2.470	O	|	|	|	|	2.70
29.333	0.00	0.00	2.470	O	|	|	|	|	2.70
29.417	0.00	0.00	2.470	O	|	|	|	|	2.70
29.500	0.00	0.00	2.470	O	|	|	|	|	2.70
29.583	0.00	0.00	2.470	O	|	|	|	|	2.70
29.667	0.00	0.00	2.470	O	|	|	|	|	2.70
29.750	0.00	0.00	2.470	O	|	|	|	|	2.70
29.833	0.00	0.00	2.470	O	|	|	|	|	2.70

Remaining water in basin = 2.47 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =   358
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        7.927 (CFS)
                Total volume =       3.320 (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
*********************************************************************

---------------------------------------------------------------------
```

5-YEAR FREQUENCY

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

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                Study date  08/19/21 File: 3384A515.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



----------------------------------------------------------------------
5 YEAR
1 HR


---------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            0.52                  20.07

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            1.15                  44.39

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.520(In)
Area Averaged 100-Year Rainfall =    1.150(In)

Point rain (area averaged) =    0.668(In)
Areal adjustment factor =   99.97 %
Adjusted average point rain =    0.667(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.5500
-------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-------------------------------------------------------------------
                Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.30      0.264       (  0.134)       0.026        0.238
   2   0.17     4.20      0.336       (  0.134)       0.034        0.303
   3   0.25     4.40      0.352       (  0.134)       0.035        0.317
   4   0.33     4.80      0.384       (  0.134)       0.038        0.346
   5   0.42     5.20      0.416       (  0.134)       0.042        0.375
   6   0.50     6.20      0.496       (  0.134)       0.050        0.447
   7   0.58     6.80      0.545       (  0.134)       0.054        0.490
   8   0.67     8.80      0.705       (  0.134)       0.070        0.634
   9   0.75    13.90      1.113       (  0.134)       0.111        1.002
  10   0.83    31.40      2.514          0.134    (  0.251)        2.380
  11   0.92     7.20      0.577       (  0.134)       0.058        0.519
  12   1.00     3.80      0.304       (  0.134)       0.030        0.274
                (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     7.3
        Flood volume = Effective rainfall      0.61(In)
         times area      38.6(Ac.)/[(In)/(Ft.)] =       2.0(Ac.Ft)
        Total soil loss =      0.06(In)
```

```
Total soil loss =     0.183(Ac.Ft)
Total rainfall =      0.67(In)
Flood volume =       85523.9 Cubic Feet
Total soil loss =        7980.7 Cubic Feet
---------------------------------------------------------------------
 Peak flow rate of this hydrograph =     36.646(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))

---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
----------------------------------------------------------------------
  0+ 5       0.0021      0.30  Q         |         |         |         |
  0+10       0.0126      1.52  VQ        |         |         |         |
  0+15       0.0387      3.80  V  Q      |         |         |         |
  0+20       0.0822      6.31  |V    Q   |         |         |         |
  0+25       0.1385      8.18  | V     Q |         |         |         |
  0+30       0.2050      9.65  |   V    Q|         |         |         |
  0+35       0.2819     11.16  |    V    |Q        |         |         |
  0+40       0.3712     12.97  |      V  | Q       |         |         |
  0+45       0.4789     15.63  |        V|    Q    |         |         |
  0+50       0.6263     21.41  |         | V       |Q        |         |
  0+55       0.8367     30.54  |         |      V  |         Q         |
  1+ 0       1.0890     36.65  |         |         | V       |     Q   |
  1+ 5       1.3174     33.15  |         |         |     V   |  Q      |
  1+10       1.4745     22.82  |         |         | Q       V         |
  1+15       1.5776     14.97  |         |   Q     |         | V       |
  1+20       1.6488     10.34  |         Q         |         |  V      |
  1+25       1.7028      7.83  |      Q  |         |         |   V     |
  1+30       1.7462      6.31  |     Q   |         |         |    V    |
  1+35       1.7816      5.14  |    Q    |         |         |     V   |
  1+40       1.8113      4.31  |   Q     |         |         |     V   |
  1+45       1.8360      3.58  |  Q      |         |         |      V  |
  1+50       1.8568      3.03  |  Q      |         |         |      V  |
  1+55       1.8744      2.55  | Q       |         |         |       V |
  2+ 0       1.8900      2.27  | Q       |         |         |       V |
  2+ 5       1.9039      2.01  | Q       |         |         |       V |
  2+10       1.9155      1.69  |Q        |         |         |        V|
  2+15       1.9254      1.44  |Q        |         |         |        V|
  2+20       1.9338      1.22  |Q        |         |         |        V|
  2+25       1.9408      1.02  |Q        |         |         |        V|
  2+30       1.9466      0.84  Q         |         |         |        V|
  2+35       1.9515      0.70  Q         |         |         |        V|
  2+40       1.9557      0.62  Q         |         |         |        V|
  2+45       1.9594      0.54  Q         |         |         |        V|
  2+50       1.9624      0.42  Q         |         |         |        V|
  2+55       1.9631      0.11  Q         |         |         |        V|
  3+ 0       1.9634      0.04  Q         |         |         |         V
----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

        ------------------------------------------------------------------
                                                              1 HOUR
        5 YEAR
        1 HR


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


        Program License Serial Number 6400

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

                        From study/file name: 3384A515.rte
        ****************************HYDROGRAPH DATA***************************
                        Number of intervals =    36
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       36.646 (CFS)
                        Total volume =       1.963 (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      350.000 to Point/Station      350.000
        **** RETARDING BASIN ROUTING ****
        ______________________________________________________________________

        User entry of depth-outflow-storage data
        ------------------------------------------------------------------
        Total number of inflow hydrograph intervals = 36
        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      0.750      0.001      0.750        0.750
          2.000      1.700      0.001      1.700        1.700
          2.700      2.470      0.001      2.470        2.470
          3.000      2.840      5.400      2.821        2.859
          3.200      3.090     11.700      3.050        3.130
          3.400      3.350     19.300      3.284        3.416
          3.600      3.610     28.200      3.513        3.707
          3.800      3.890     38.100      3.759        4.021
          4.000      4.170     48.900      4.002        4.338
          4.200      4.460     60.600      4.251        4.669
          4.400      4.760     73.100      4.508        5.012
          4.600      5.070     86.400      4.772        5.368
          4.800      5.380    100.400      5.034        5.726
        ------------------------------------------------------------------
                        Hydrograph Detention Basin Routing
        ------------------------------------------------------------------

        Graph values: 'I'= unit inflow; 'O'=outflow at time shown
        ------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                      Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       9.2   18.32   27.48   36.65 (Ft.)
 0.083    0.30    0.00      0.001  O       |       |       |       |     0.00
```

```
0.167    1.52    0.00      0.007  OI      |       |       |       |     0.01
0.250    3.80    0.00      0.026  O  I    |       |       |       |     0.03
0.333    6.31    0.00      0.060  O    I  |       |       |       |     0.08
0.417    8.18    0.00      0.110  O      I|       |       |       |     0.15
0.500    9.65    0.00      0.172  O       I       |       |       |     0.23
0.583   11.16    0.00      0.243  O       |I      |       |       |     0.32
0.667   12.97    0.00      0.327  O       |  I    |       |       |     0.44
0.750   15.63    0.00      0.425  O       |    I  |       |       |     0.57
0.833   21.41    0.00      0.553  O       |       | I     |       |     0.74
0.917   30.54    0.00      0.731  O       |       |       | I     |     0.98
1.000   36.65    0.00      0.963  O       |       |       |       I     1.22
1.083   33.15    0.00      1.203  O       |       |       |   I   |     1.48
1.167   22.82    0.00      1.396  O       |       |  I    |       |     1.68
1.250   14.97    0.00      1.526  O       |    I  |       |       |     1.82
1.333   10.34    0.00      1.613  O       |I      |       |       |     1.91
1.417    7.83    0.00      1.676  O     I |       |       |       |     1.97
1.500    6.31    0.00      1.724  O    I  |       |       |       |     2.02
1.583    5.14    0.00      1.764  O   I   |       |       |       |     2.06
1.667    4.31    0.00      1.796  O  I    |       |       |       |     2.09
1.750    3.58    0.00      1.824  O  I    |       |       |       |     2.11
1.833    3.03    0.00      1.846  O I     |       |       |       |     2.13
1.917    2.55    0.00      1.865  O I     |       |       |       |     2.15
2.000    2.27    0.00      1.882  OI      |       |       |       |     2.17
2.083    2.01    0.00      1.897  OI      |       |       |       |     2.18
2.167    1.69    0.00      1.910  OI      |       |       |       |     2.19
2.250    1.44    0.00      1.920  OI      |       |       |       |     2.20
2.333    1.22    0.00      1.929  OI      |       |       |       |     2.21
2.417    1.02    0.00      1.937  O       |       |       |       |     2.22
2.500    0.84    0.00      1.944  O       |       |       |       |     2.22
2.583    0.70    0.00      1.949  O       |       |       |       |     2.23
2.667    0.62    0.00      1.953  O       |       |       |       |     2.23
2.750    0.54    0.00      1.957  O       |       |       |       |     2.23
2.833    0.42    0.00      1.961  O       |       |       |       |     2.24
2.917    0.11    0.00      1.963  O       |       |       |       |     2.24
3.000    0.04    0.00      1.963  O       |       |       |       |     2.24
3.083    0.00    0.00      1.963  O       |       |       |       |     2.24
```

Remaining water in basin = 1.96 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =    37
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        0.001 (CFS)
                Total volume =       0.000 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
***********************************************************************

-----------------------------------------------------------------
```

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

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                Study date  08/31/21 File: 3384a535.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



---------------------------------------------------------------------
5 YEAR
3 HR


--------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            0.95                  36.67

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            1.90                  73.34

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    1.900(In)

Point rain (area averaged) =    1.173(In)
Areal adjustment factor =   99.98 %
Adjusted average point rain =    1.172(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-----------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
----------------------------------------------------------------
               Unit Hydrograph Data
-----------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-----------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     1.30      0.183       (  0.134)       0.018        0.165
   2   0.17     1.30      0.183       (  0.134)       0.018        0.165
   3   0.25     1.10      0.155       (  0.134)       0.015        0.139
   4   0.33     1.50      0.211       (  0.134)       0.021        0.190
   5   0.42     1.50      0.211       (  0.134)       0.021        0.190
   6   0.50     1.80      0.253       (  0.134)       0.025        0.228
   7   0.58     1.50      0.211       (  0.134)       0.021        0.190
   8   0.67     1.80      0.253       (  0.134)       0.025        0.228
   9   0.75     1.80      0.253       (  0.134)       0.025        0.228
  10   0.83     1.50      0.211       (  0.134)       0.021        0.190
  11   0.92     1.60      0.225       (  0.134)       0.023        0.203
  12   1.00     1.80      0.253       (  0.134)       0.025        0.228
  13   1.08     2.20      0.309       (  0.134)       0.031        0.279
  14   1.17     2.20      0.309       (  0.134)       0.031        0.279
  15   1.25     2.20      0.309       (  0.134)       0.031        0.279
  16   1.33     2.00      0.281       (  0.134)       0.028        0.253
  17   1.42     2.60      0.366       (  0.134)       0.037        0.329
  18   1.50     2.70      0.380       (  0.134)       0.038        0.342
  19   1.58     2.40      0.338       (  0.134)       0.034        0.304
```

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20   1.67     2.70      0.380       (  0.134)       0.038        0.342
21   1.75     3.30      0.464       (  0.134)       0.046        0.418
22   1.83     3.10      0.436       (  0.134)       0.044        0.392
23   1.92     2.90      0.408       (  0.134)       0.041        0.367
24   2.00     3.00      0.422       (  0.134)       0.042        0.380
25   2.08     3.10      0.436       (  0.134)       0.044        0.392
26   2.17     4.20      0.591       (  0.134)       0.059        0.532
27   2.25     5.00      0.703       (  0.134)       0.070        0.633
28   2.33     3.50      0.492       (  0.134)       0.049        0.443
29   2.42     6.80      0.957       (  0.134)       0.096        0.861
30   2.50     7.30      1.027       (  0.134)       0.103        0.924
31   2.58     8.20      1.154       (  0.134)       0.115        1.038
32   2.67     5.90      0.830       (  0.134)       0.083        0.747
33   2.75     2.00      0.281       (  0.134)       0.028        0.253
34   2.83     1.80      0.253       (  0.134)       0.025        0.228
35   2.92     1.80      0.253       (  0.134)       0.025        0.228
36   3.00     0.60      0.084       (  0.134)       0.008        0.076
                (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    12.7
      Flood volume = Effective rainfall      1.06(In)
       times area      38.6(Ac.)/[(In)/(Ft.)] =       3.4(Ac.Ft)
      Total soil loss =      0.12(In)
      Total soil loss =     0.377(Ac.Ft)
      Total rainfall =      1.17(In)
      Flood volume =      147836.2 Cubic Feet
      Total soil loss =       16426.2 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     28.814(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))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0014      0.21  Q         |         |         |         |
  0+10       0.0083      1.00  VQ        |         |         |         |
  0+15       0.0242      2.31  V  Q      |         |         |         |
  0+20       0.0487      3.55  V   Q     |         |         |         |
  0+25       0.0785      4.32  V    Q    |         |         |         |
  0+30       0.1129      5.00  |V    Q   |         |         |         |
  0+35       0.1523      5.72  |V     Q  |         |         |         |
  0+40       0.1956      6.28  | V     Q |         |         |         |
  0+45       0.2418      6.72  | V     Q |         |         |         |
  0+50       0.2904      7.05  |  V     Q|         |         |         |
  0+55       0.3405      7.28  |   V    Q|         |         |         |
  1+ 0       0.3910      7.33  |   V    Q|         |         |         |
  1+ 5       0.4428      7.52  |    V    Q         |         |         |
  1+10       0.4982      8.05  |    V    Q         |         |         |
  1+15       0.5584      8.74  |     V   |Q        |         |         |
  1+20       0.6224      9.30  |      V  | Q       |         |         |
  1+25       0.6887      9.62  |       V | Q       |         |         |
  1+30       0.7577     10.02  |       V |  Q      |         |         |
  1+35       0.8309     10.63  |        V|   Q     |         |         |
  1+40       0.9082     11.22  |         V   Q     |         |         |
  1+45       0.9886     11.67  |         |V   Q    |         |         |
  1+50       1.0734     12.31  |         | V   Q   |         |         |
  1+55       1.1638     13.13  |         |  V   Q  |         |         |
  2+ 0       1.2578     13.65  |         |   V   Q |         |         |
  2+ 5       1.3531     13.83  |         |    V  Q |         |         |
  2+10       1.4506     14.17  |         |      VQ |         |         |
  2+15       1.5554     15.22  |         |       V Q         |         |
  2+20       1.6714     16.84  |         |        V| Q       |         |
  2+25       1.7991     18.54  |         |         |V  Q     |         |
  2+30       1.9410     20.60  |         |         | V    Q  |         |
  2+35       2.1054     23.87  |         |         |   V     |Q        |
```

```
    2+40       2.2954     27.60  |         |         |      V  |     Q   |
    2+45       2.4939     28.81  |         |         |        V|       Q |
    2+50       2.6748     26.27  |         |         |         |V   Q    |
    2+55       2.8212     21.25  |         |         |       Q |  V      |
    3+ 0       2.9359     16.66  |         |         | Q       |   V     |
    3+ 5       3.0287     13.48  |         |      Q  |         |    V    |
    3+10       3.1017     10.60  |         |   Q     |         |     V   |
    3+15       3.1566      7.96  |         Q         |         |      V  |
    3+20       3.1983      6.06  |       Q |         |         |      V  |
    3+25       3.2318      4.86  |     Q   |         |         |       V |
    3+30       3.2594      4.00  |    Q    |         |         |       V |
    3+35       3.2823      3.34  |   Q     |         |         |       V |
    3+40       3.3018      2.82  |  Q      |         |         |       V |
    3+45       3.3184      2.41  |  Q      |         |         |        V|
    3+50       3.3325      2.05  | Q       |         |         |        V|
    3+55       3.3444      1.73  | Q       |         |         |        V|
    4+ 0       3.3545      1.46  |Q        |         |         |        V|
    4+ 5       3.3630      1.24  |Q        |         |         |        V|
    4+10       3.3702      1.05  |Q        |         |         |        V|
    4+15       3.3762      0.87  |Q        |         |         |        V|
    4+20       3.3811      0.70  Q         |         |         |        V|
    4+25       3.3853      0.61  Q         |         |         |        V|
    4+30       3.3885      0.48  Q         |         |         |        V|
    4+35       3.3909      0.35  Q         |         |         |        V|
    4+40       3.3923      0.20  Q         |         |         |        V|
    4+45       3.3930      0.10  Q         |         |         |        V|
    4+50       3.3935      0.07  Q         |         |         |        V|
    4+55       3.3938      0.04  Q         |         |         |        V|
    5+ 0       3.3939      0.01  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

------------------------------------------------------------------
                                                   3 HOURS
5 YEAR
3 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384A535.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =    60
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       28.814 (CFS)
                Total volume =       3.394 (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      350.000 to Point/Station      350.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------
Total number of inflow hydrograph intervals = 60
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      0.750      0.001      0.750        0.750
  2.000      1.700      0.001      1.700        1.700
  2.700      2.470      0.001      2.470        2.470
  3.000      2.840      5.400      2.821        2.859
  3.200      3.090     11.700      3.050        3.130
  3.400      3.350     19.300      3.284        3.416
  3.600      3.610     28.200      3.513        3.707
  3.800      3.890     38.100      3.759        4.021
  4.000      4.170     48.900      4.002        4.338
  4.200      4.460     60.600      4.251        4.669
  4.400      4.760     73.100      4.508        5.012
  4.600      5.070     86.400      4.772        5.368
  4.800      5.380    100.400      5.034        5.726
------------------------------------------------------------------
                Hydrograph Detention Basin Routing
------------------------------------------------------------------

Graph values: 'I'= unit inflow; 'O'=outflow at time shown
------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                    Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       7.2   14.41   21.61   28.81 (Ft.)
 0.083    0.21    0.00      0.001  O       |       |       |       |     0.00
```

0.167	1.00	0.00	0.005	OI					0.01
0.250	2.31	0.00	0.016	O I					0.02
0.333	3.55	0.00	0.036	O I					0.05
0.417	4.32	0.00	0.064	O I					0.08
0.500	5.00	0.00	0.096	O I					0.13
0.583	5.72	0.00	0.133	O I					0.18
0.667	6.28	0.00	0.174	O I					0.23
0.750	6.72	0.00	0.219	O I					0.29
0.833	7.05	0.00	0.266	O I					0.35
0.917	7.28	0.00	0.315	O I					0.42
1.000	7.33	0.00	0.366	O I					0.49
1.083	7.52	0.00	0.417	O I					0.56
1.167	8.05	0.00	0.470	O I					0.63
1.250	8.74	0.00	0.528	O I					0.70
1.333	9.30	0.00	0.590	O I					0.79
1.417	9.62	0.00	0.656	O I					0.87
1.500	10.02	0.00	0.723	O I					0.96
1.583	10.63	0.00	0.794	O I					1.05
1.667	11.22	0.00	0.870	O I					1.13
1.750	11.67	0.00	0.948	O I					1.21
1.833	12.31	0.00	1.031	O I					1.30
1.917	13.13	0.00	1.119	O I					1.39
2.000	13.65	0.00	1.211	O I					1.48
2.083	13.83	0.00	1.305	O I					1.58
2.167	14.17	0.00	1.402	O I					1.69
2.250	15.22	0.00	1.503	O I					1.79
2.333	16.84	0.00	1.613	O I					1.91
2.417	18.54	0.00	1.735	O I					2.03
2.500	20.60	0.00	1.870	O I					2.15
2.583	23.87	0.00	2.023	O I					2.29
2.667	27.60	0.00	2.200	O I					2.45
2.750	28.81	0.00	2.394	O I					2.63
2.833	26.27	1.59	2.579	O I					2.79
2.917	21.25	3.71	2.724	O I					2.91
3.000	16.66	5.17	2.824	O I					2.99
3.083	13.48	6.59	2.887	O I					3.04
3.167	10.60	7.46	2.922	O I					3.07
3.250	7.96	7.75	2.933	O					3.07
3.333	6.06	7.64	2.929	I O					3.07
3.417	4.86	7.29	2.915	I O					3.06
3.500	4.00	6.83	2.897	I O					3.05
3.583	3.34	6.33	2.877	I O					3.03
3.667	2.82	5.81	2.856	I O					3.01
3.750	2.41	5.34	2.836	I O					3.00
3.833	2.05	5.04	2.815	I O					2.98
3.917	1.73	4.74	2.795	I O					2.96
4.000	1.46	4.44	2.774	I O					2.95
4.083	1.24	4.14	2.754	I O					2.93
4.167	1.05	3.86	2.734	I O					2.91
4.250	0.87	3.58	2.715	I O					2.90
4.333	0.70	3.31	2.697	I O					2.88
4.417	0.61	3.06	2.680	I O					2.87
4.500	0.48	2.82	2.663	I O					2.86
4.583	0.35	2.59	2.647	I O					2.84
4.667	0.20	2.37	2.632	I O					2.83
4.750	0.10	2.15	2.618	I O					2.82
4.833	0.07	1.96	2.604	I O					2.81
4.917	0.04	1.77	2.592	IO					2.80
5.000	0.01	1.61	2.580	IO					2.79
5.083	0.00	1.45	2.570	IO					2.78
5.167	0.00	1.31	2.560	IO					2.77
5.250	0.00	1.19	2.551	IO					2.77
5.333	0.00	1.07	2.544	IO					2.76
5.417	0.00	0.97	2.537	IO					2.75
5.500	0.00	0.88	2.530	O					2.75
5.583	0.00	0.79	2.524	O					2.74
5.667	0.00	0.72	2.519	O					2.74
5.750	0.00	0.65	2.514	O					2.74
5.833	0.00	0.59	2.510	O					2.73
5.917	0.00	0.53	2.506	O					2.73
6.000	0.00	0.48	2.503	O					2.73
6.083	0.00	0.43	2.500	O					2.72
6.167	0.00	0.39	2.497	O					2.72
6.250	0.00	0.36	2.494	O					2.72
6.333	0.00	0.32	2.492	O					2.72
6.417	0.00	0.29	2.490	O					2.72
6.500	0.00	0.26	2.488	O					2.71
6.583	0.00	0.24	2.486	O					2.71
6.667	0.00	0.22	2.485	O					2.71

6.750	0.00	0.19	2.483	O	|	|	|	|	2.71
6.833	0.00	0.18	2.482	O	|	|	|	|	2.71
6.917	0.00	0.16	2.481	O	|	|	|	|	2.71
7.000	0.00	0.14	2.480	O	|	|	|	|	2.71
7.083	0.00	0.13	2.479	O	|	|	|	|	2.71
7.167	0.00	0.12	2.478	O	|	|	|	|	2.71
7.250	0.00	0.11	2.477	O	|	|	|	|	2.71
7.333	0.00	0.10	2.477	O	|	|	|	|	2.71
7.417	0.00	0.09	2.476	O	|	|	|	|	2.70
7.500	0.00	0.08	2.475	O	|	|	|	|	2.70
7.583	0.00	0.07	2.475	O	|	|	|	|	2.70
7.667	0.00	0.06	2.474	O	|	|	|	|	2.70
7.750	0.00	0.06	2.474	O	|	|	|	|	2.70
7.833	0.00	0.05	2.474	O	|	|	|	|	2.70
7.917	0.00	0.05	2.473	O	|	|	|	|	2.70
8.000	0.00	0.04	2.473	O	|	|	|	|	2.70
8.083	0.00	0.04	2.473	O	|	|	|	|	2.70
8.167	0.00	0.04	2.472	O	|	|	|	|	2.70
8.250	0.00	0.03	2.472	O	|	|	|	|	2.70
8.333	0.00	0.03	2.472	O	|	|	|	|	2.70
8.417	0.00	0.03	2.472	O	|	|	|	|	2.70
8.500	0.00	0.02	2.472	O	|	|	|	|	2.70
8.583	0.00	0.02	2.471	O	|	|	|	|	2.70
8.667	0.00	0.02	2.471	O	|	|	|	|	2.70
8.750	0.00	0.02	2.471	O	|	|	|	|	2.70
8.833	0.00	0.02	2.471	O	|	|	|	|	2.70
8.917	0.00	0.01	2.471	O	|	|	|	|	2.70
9.000	0.00	0.01	2.471	O	|	|	|	|	2.70
9.083	0.00	0.01	2.471	O	|	|	|	|	2.70
9.167	0.00	0.01	2.471	O	|	|	|	|	2.70
9.250	0.00	0.01	2.471	O	|	|	|	|	2.70
9.333	0.00	0.01	2.471	O	|	|	|	|	2.70
9.417	0.00	0.01	2.470	O	|	|	|	|	2.70
9.500	0.00	0.01	2.470	O	|	|	|	|	2.70
9.583	0.00	0.01	2.470	O	|	|	|	|	2.70
9.667	0.00	0.01	2.470	O	|	|	|	|	2.70
9.750	0.00	0.01	2.470	O	|	|	|	|	2.70
9.833	0.00	0.00	2.470	O	|	|	|	|	2.70
9.917	0.00	0.00	2.470	O	|	|	|	|	2.70
10.000	0.00	0.00	2.470	O	|	|	|	|	2.70
10.083	0.00	0.00	2.470	O	|	|	|	|	2.70
10.167	0.00	0.00	2.470	O	|	|	|	|	2.70
10.250	0.00	0.00	2.470	O	|	|	|	|	2.70
10.333	0.00	0.00	2.470	O	|	|	|	|	2.70
10.417	0.00	0.00	2.470	O	|	|	|	|	2.70
10.500	0.00	0.00	2.470	O	|	|	|	|	2.70
10.583	0.00	0.00	2.470	O	|	|	|	|	2.70
10.667	0.00	0.00	2.470	O	|	|	|	|	2.70
10.750	0.00	0.00	2.470	O	|	|	|	|	2.70
10.833	0.00	0.00	2.470	O	|	|	|	|	2.70
10.917	0.00	0.00	2.470	O	|	|	|	|	2.70
11.000	0.00	0.00	2.470	O	|	|	|	|	2.70
11.083	0.00	0.00	2.470	O	|	|	|	|	2.70
11.167	0.00	0.00	2.470	O	|	|	|	|	2.70

Remaining water in basin = 2.47 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =   134
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        7.754 (CFS)
                Total volume =       0.924 (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
***********************************************************************

---------------------------------------------------------------------
```

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384a565.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



---------------------------------------------------------------------
5 YEAR
6 HR


--------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            1.30                  50.18

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            2.50                  96.50

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.300(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.581(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.581(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-----------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
----------------------------------------------------------------
               Unit Hydrograph Data
-----------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-----------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.50      0.095       (  0.134)       0.009        0.085
   2   0.17     0.60      0.114       (  0.134)       0.011        0.102
   3   0.25     0.60      0.114       (  0.134)       0.011        0.102
   4   0.33     0.60      0.114       (  0.134)       0.011        0.102
   5   0.42     0.60      0.114       (  0.134)       0.011        0.102
   6   0.50     0.70      0.133       (  0.134)       0.013        0.120
   7   0.58     0.70      0.133       (  0.134)       0.013        0.120
   8   0.67     0.70      0.133       (  0.134)       0.013        0.120
   9   0.75     0.70      0.133       (  0.134)       0.013        0.120
  10   0.83     0.70      0.133       (  0.134)       0.013        0.120
  11   0.92     0.70      0.133       (  0.134)       0.013        0.120
  12   1.00     0.80      0.152       (  0.134)       0.015        0.137
  13   1.08     0.80      0.152       (  0.134)       0.015        0.137
  14   1.17     0.80      0.152       (  0.134)       0.015        0.137
  15   1.25     0.80      0.152       (  0.134)       0.015        0.137
  16   1.33     0.80      0.152       (  0.134)       0.015        0.137
  17   1.42     0.80      0.152       (  0.134)       0.015        0.137
  18   1.50     0.80      0.152       (  0.134)       0.015        0.137
  19   1.58     0.80      0.152       (  0.134)       0.015        0.137
```

20	1.67	0.80	0.152	(0.134)	0.015	0.137
21	1.75	0.80	0.152	(0.134)	0.015	0.137
22	1.83	0.80	0.152	(0.134)	0.015	0.137
23	1.92	0.80	0.152	(0.134)	0.015	0.137
24	2.00	0.90	0.171	(0.134)	0.017	0.154
25	2.08	0.80	0.152	(0.134)	0.015	0.137
26	2.17	0.90	0.171	(0.134)	0.017	0.154
27	2.25	0.90	0.171	(0.134)	0.017	0.154
28	2.33	0.90	0.171	(0.134)	0.017	0.154
29	2.42	0.90	0.171	(0.134)	0.017	0.154
30	2.50	0.90	0.171	(0.134)	0.017	0.154
31	2.58	0.90	0.171	(0.134)	0.017	0.154
32	2.67	0.90	0.171	(0.134)	0.017	0.154
33	2.75	1.00	0.190	(0.134)	0.019	0.171
34	2.83	1.00	0.190	(0.134)	0.019	0.171
35	2.92	1.00	0.190	(0.134)	0.019	0.171
36	3.00	1.00	0.190	(0.134)	0.019	0.171
37	3.08	1.00	0.190	(0.134)	0.019	0.171
38	3.17	1.10	0.209	(0.134)	0.021	0.188
39	3.25	1.10	0.209	(0.134)	0.021	0.188
40	3.33	1.10	0.209	(0.134)	0.021	0.188
41	3.42	1.20	0.228	(0.134)	0.023	0.205
42	3.50	1.30	0.247	(0.134)	0.025	0.222
43	3.58	1.40	0.266	(0.134)	0.027	0.239
44	3.67	1.40	0.266	(0.134)	0.027	0.239
45	3.75	1.50	0.285	(0.134)	0.028	0.256
46	3.83	1.50	0.285	(0.134)	0.028	0.256
47	3.92	1.60	0.304	(0.134)	0.030	0.273
48	4.00	1.60	0.304	(0.134)	0.030	0.273
49	4.08	1.70	0.322	(0.134)	0.032	0.290
50	4.17	1.80	0.341	(0.134)	0.034	0.307
51	4.25	1.90	0.360	(0.134)	0.036	0.324
52	4.33	2.00	0.379	(0.134)	0.038	0.341
53	4.42	2.10	0.398	(0.134)	0.040	0.359
54	4.50	2.10	0.398	(0.134)	0.040	0.359
55	4.58	2.20	0.417	(0.134)	0.042	0.376
56	4.67	2.30	0.436	(0.134)	0.044	0.393
57	4.75	2.40	0.455	(0.134)	0.046	0.410
58	4.83	2.40	0.455	(0.134)	0.046	0.410
59	4.92	2.50	0.474	(0.134)	0.047	0.427
60	5.00	2.60	0.493	(0.134)	0.049	0.444
61	5.08	3.10	0.588	(0.134)	0.059	0.529
62	5.17	3.60	0.683	(0.134)	0.068	0.615
63	5.25	3.90	0.740	(0.134)	0.074	0.666
64	5.33	4.20	0.797	(0.134)	0.080	0.717
65	5.42	4.70	0.892	(0.134)	0.089	0.802
66	5.50	5.60	1.062	(0.134)	0.106	0.956
67	5.58	1.90	0.360	(0.134)	0.036	0.324
68	5.67	0.90	0.171	(0.134)	0.017	0.154
69	5.75	0.60	0.114	(0.134)	0.011	0.102
70	5.83	0.50	0.095	(0.134)	0.009	0.085
71	5.92	0.30	0.057	(0.134)	0.006	0.051
72	6.00	0.20	0.038	(0.134)	0.004	0.034

(Loss Rate Not Used)

Sum = 100.0 Sum = 17.1

Flood volume = Effective rainfall 1.42(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 4.6(Ac.Ft)
Total soil loss = 0.16(In)
Total soil loss = 0.509(Ac.Ft)
Total rainfall = 1.58(In)
Flood volume = 199356.2 Cubic Feet
Total soil loss = 22150.7 Cubic Feet

Peak flow rate of this hydrograph = 25.742(CFS)

++

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        7.5      15.0      22.5      30.0
-----------------------------------------------------------------------
  0+ 5       0.0007      0.11  Q         |         |         |         |
  0+10       0.0045      0.54  Q         |         |         |         |
  0+15       0.0135      1.32  VQ        |         |         |         |
  0+20       0.0282      2.13  V Q       |         |         |         |
  0+25       0.0465      2.65  V  Q      |         |         |         |
  0+30       0.0669      2.96  V  Q      |         |         |         |
  0+35       0.0892      3.24  V   Q     |         |         |         |
  0+40       0.1135      3.53  V   Q     |         |         |         |
  0+45       0.1395      3.78  |V   Q    |         |         |         |
  0+50       0.1667      3.95  |V   Q    |         |         |         |
  0+55       0.1947      4.07  |V   Q    |         |         |         |
  1+ 0       0.2236      4.19  |V   Q    |         |         |         |
  1+ 5       0.2535      4.35  | V  Q    |         |         |         |
  1+10       0.2849      4.55  | V   Q   |         |         |         |
  1+15       0.3176      4.74  | V   Q   |         |         |         |
  1+20       0.3511      4.87  |  V  Q   |         |         |         |
  1+25       0.3852      4.95  |  V  Q   |         |         |         |
  1+30       0.4198      5.02  |  V  Q   |         |         |         |
  1+35       0.4547      5.07  |  V  Q   |         |         |         |
  1+40       0.4899      5.12  |   V Q   |         |         |         |
  1+45       0.5254      5.15  |   V Q   |         |         |         |
  1+50       0.5611      5.19  |   V Q   |         |         |         |
  1+55       0.5970      5.21  |    VQ   |         |         |         |
  2+ 0       0.6333      5.26  |    V Q  |         |         |         |
  2+ 5       0.6701      5.34  |    V Q  |         |         |         |
  2+10       0.7075      5.44  |     VQ  |         |         |         |
  2+15       0.7455      5.52  |     VQ  |         |         |         |
  2+20       0.7841      5.61  |     VQ  |         |         |         |
  2+25       0.8235      5.72  |      Q  |         |         |         |
  2+30       0.8634      5.79  |      Q  |         |         |         |
  2+35       0.9035      5.83  |      Q  |         |         |         |
  2+40       0.9438      5.85  |      QV |         |         |         |
  2+45       0.9844      5.90  |      QV |         |         |         |
  2+50       1.0257      6.00  |      QV |         |         |         |
  2+55       1.0681      6.15  |       QV|         |         |         |
  3+ 0       1.1115      6.30  |       QV|         |         |         |
  3+ 5       1.1555      6.39  |       Q V         |         |         |
  3+10       1.2000      6.46  |       Q V         |         |         |
  3+15       1.2453      6.58  |       Q V         |         |         |
  3+20       1.2917      6.75  |       Q |V        |         |         |
  3+25       1.3394      6.93  |        Q|V        |         |         |
  3+30       1.3885      7.13  |        Q| V       |         |         |
  3+35       1.4397      7.43  |        Q| V       |         |         |
  3+40       1.4936      7.83  |         Q  V      |         |         |
  3+45       1.5503      8.24  |         Q  V      |         |         |
  3+50       1.6095      8.60  |         |Q  V     |         |         |
  3+55       1.6711      8.94  |         |Q  V     |         |         |
  4+ 0       1.7349      9.27  |         | Q  V    |         |         |
  4+ 5       1.8010      9.60  |         | Q  V    |         |         |
  4+10       1.8696      9.95  |         |  Q  V   |         |         |
  4+15       1.9409     10.36  |         |  Q  V   |         |         |
  4+20       2.0156     10.85  |         |   Q  V  |         |         |
  4+25       2.0941     11.40  |         |    Q  V |         |         |
  4+30       2.1764     11.94  |         |    Q   V|         |         |
  4+35       2.2621     12.45  |         |     Q  V|         |         |
  4+40       2.3510     12.91  |         |      Q  V         |         |
  4+45       2.4433     13.39  |         |      Q  |V        |         |
  4+50       2.5391     13.91  |         |       Q | V       |         |
  4+55       2.6384     14.42  |         |        Q|  V      |         |
  5+ 0       2.7409     14.88  |         |        Q|  V      |         |
  5+ 5       2.8473     15.45  |         |         Q   V     |         |
  5+10       2.9604     16.42  |         |         |Q   V    |         |
  5+15       3.0839     17.93  |         |         |  Q  V   |         |
  5+20       3.2206     19.85  |         |         |     Q V |         |
```

```
   5+25       3.3710     21.84  |         |         |        Q|         |
   5+30       3.5362     23.99  |         |         |         VQ        |
   5+35       3.7135     25.74  |         |         |         | V Q     |
   5+40       3.8866     25.14  |         |         |         |  Q      |
   5+45       4.0325     21.18  |         |         |       Q |    V    |
   5+50       4.1415     15.83  |         |         |Q        |     V   |
   5+55       4.2240     11.98  |         |    Q    |         |     V   |
   6+ 0       4.2897      9.54  |         | Q       |         |      V  |
   6+ 5       4.3431      7.75  |         Q         |         |      V  |
   6+10       4.3860      6.23  |       Q |         |         |       V |
   6+15       4.4201      4.95  |     Q   |         |         |       V |
   6+20       4.4474      3.97  |    Q    |         |         |       V |
   6+25       4.4698      3.25  |   Q     |         |         |        V|
   6+30       4.4885      2.72  |  Q      |         |         |        V|
   6+35       4.5043      2.29  |  Q      |         |         |        V|
   6+40       4.5178      1.96  | Q       |         |         |        V|
   6+45       4.5293      1.67  | Q       |         |         |        V|
   6+50       4.5389      1.40  |Q        |         |         |        V|
   6+55       4.5470      1.17  |Q        |         |         |        V|
   7+ 0       4.5538      0.99  |Q        |         |         |        V|
   7+ 5       4.5595      0.82  |Q        |         |         |        V|
   7+10       4.5642      0.68  Q         |         |         |        V|
   7+15       4.5680      0.55  Q         |         |         |        V|
   7+20       4.5710      0.44  Q         |         |         |        V|
   7+25       4.5734      0.34  Q         |         |         |        V|
   7+30       4.5750      0.23  Q         |         |         |        V|
   7+35       4.5757      0.10  Q         |         |         |        V|
   7+40       4.5761      0.06  Q         |         |         |        V|
   7+45       4.5763      0.04  Q         |         |         |        V|
   7+50       4.5765      0.02  Q         |         |         |        V|
   7+55       4.5766      0.01  Q         |         |         |        V|
   8+ 0       4.5766      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

      ---------------------------------------------------------------------
                                                        6 HOURS
      5 YEAR
      6 HR

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

      Program License Serial Number 6400

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

                      From study/file name: 3384A565.rte
      ****************************HYDROGRAPH DATA***************************
                      Number of intervals =    96
                      Time interval =    5.0 (Min.)
                      Maximum/Peak flow rate =       25.742 (CFS)
                      Total volume =       4.577 (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      350.000 to Point/Station      350.000
      **** RETARDING BASIN ROUTING ****
      ______________________________________________________________________

      User entry of depth-outflow-storage data
      ---------------------------------------------------------------------
      Total number of inflow hydrograph intervals = 96
      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      0.750      0.001      0.750        0.750
        2.000      1.700      0.001      1.700        1.700
        2.700      2.470      0.001      2.470        2.470
        3.000      2.840      5.400      2.821        2.859
        3.200      3.090     11.700      3.050        3.130
        3.400      3.350     19.300      3.284        3.416
        3.600      3.610     28.200      3.513        3.707
        3.800      3.890     38.100      3.759        4.021
        4.000      4.170     48.900      4.002        4.338
        4.200      4.460     60.600      4.251        4.669
        4.400      4.760     73.100      4.508        5.012
        4.600      5.070     86.400      4.772        5.368
        4.800      5.380    100.400      5.034        5.726
      ---------------------------------------------------------------------
                      Hydrograph Detention Basin Routing
      ---------------------------------------------------------------------

      Graph values: 'I'= unit inflow; 'O'=outflow at time shown
      ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                      Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       6.4   12.87   19.31   25.74 (Ft.)
 0.083    0.11    0.00      0.000  O       |       |       |       |     0.00
```

0.167	0.54	0.00	0.003	O					0.00
0.250	1.32	0.00	0.009	OI					0.01
0.333	2.13	0.00	0.021	O I					0.03
0.417	2.65	0.00	0.037	O I					0.05
0.500	2.96	0.00	0.057	O I					0.08
0.583	3.24	0.00	0.078	O I					0.10
0.667	3.53	0.00	0.101	O I					0.14
0.750	3.78	0.00	0.126	O I					0.17
0.833	3.95	0.00	0.153	O I					0.20
0.917	4.07	0.00	0.181	O I					0.24
1.000	4.19	0.00	0.209	O I					0.28
1.083	4.35	0.00	0.239	O I					0.32
1.167	4.55	0.00	0.269	O I					0.36
1.250	4.74	0.00	0.301	O I					0.40
1.333	4.87	0.00	0.334	O I					0.45
1.417	4.95	0.00	0.368	O I					0.49
1.500	5.02	0.00	0.402	O I					0.54
1.583	5.07	0.00	0.437	O I					0.58
1.667	5.12	0.00	0.472	O I					0.63
1.750	5.15	0.00	0.508	O I					0.68
1.833	5.19	0.00	0.543	O I					0.72
1.917	5.21	0.00	0.579	O I					0.77
2.000	5.26	0.00	0.615	O I					0.82
2.083	5.34	0.00	0.652	O I					0.87
2.167	5.44	0.00	0.689	O I					0.92
2.250	5.52	0.00	0.726	O I					0.97
2.333	5.61	0.00	0.765	O I					1.02
2.417	5.72	0.00	0.804	O I					1.06
2.500	5.79	0.00	0.843	O I					1.10
2.583	5.83	0.00	0.883	O I					1.14
2.667	5.85	0.00	0.924	O I					1.18
2.750	5.90	0.00	0.964	O I					1.23
2.833	6.00	0.00	1.005	O I					1.27
2.917	6.15	0.00	1.047	O I					1.31
3.000	6.30	0.00	1.090	O I					1.36
3.083	6.39	0.00	1.133	O I					1.40
3.167	6.46	0.00	1.178	O I					1.45
3.250	6.58	0.00	1.222	O I					1.50
3.333	6.75	0.00	1.268	O I					1.55
3.417	6.93	0.00	1.315	O I					1.60
3.500	7.13	0.00	1.364	O I					1.65
3.583	7.43	0.00	1.414	O I					1.70
3.667	7.83	0.00	1.466	O I					1.75
3.750	8.24	0.00	1.522	O I					1.81
3.833	8.60	0.00	1.580	O I					1.87
3.917	8.94	0.00	1.640	O I					1.94
4.000	9.27	0.00	1.703	O I					2.00
4.083	9.60	0.00	1.768	O I					2.06
4.167	9.95	0.00	1.835	O I					2.12
4.250	10.36	0.00	1.905	O I					2.19
4.333	10.85	0.00	1.978	O I					2.25
4.417	11.40	0.00	2.055	O I					2.32
4.500	11.94	0.00	2.135	O I					2.40
4.583	12.45	0.00	2.219	O I					2.47
4.667	12.91	0.00	2.306	O I					2.55
4.750	13.39	0.00	2.397	O I					2.63
4.833	13.91	0.29	2.490	O I					2.72
4.917	14.42	1.62	2.581	O I					2.79
5.000	14.88	2.87	2.666	O I					2.86
5.083	15.45	4.04	2.747	O I					2.92
5.167	16.42	5.18	2.825	O I					2.99
5.250	17.93	6.95	2.901	O I					3.05
5.333	19.85	8.86	2.977	O I					3.11
5.417	21.84	10.77	3.053	O I					3.17
5.500	23.99	12.86	3.130	O I					3.23
5.583	25.74	15.05	3.205	O I					3.29
5.667	25.14	16.95	3.270	O I					3.34
5.750	21.18	18.09	3.309	O I					3.37
5.833	15.83	18.16	3.311	O I					3.37
5.917	11.98	17.38	3.284	O I					3.35
6.000	9.54	16.17	3.243	O I					3.32
6.083	7.75	14.80	3.196	O I					3.28
6.167	6.23	13.37	3.147	O I					3.24
6.250	4.95	11.95	3.098	O I					3.21
6.333	3.97	10.72	3.051	O I					3.17
6.417	3.25	9.58	3.006	O I					3.13
6.500	2.72	8.53	2.964	O I					3.10
6.583	2.29	7.57	2.926	O I					3.07
6.667	1.96	6.70	2.892	O I					3.04

6.750	1.67	5.92	2.861	| I O|	|	|	|	3.02
6.833	1.40	5.29	2.833	|I O |	|	|	|	2.99
6.917	1.17	4.91	2.806	|I O |	|	|	|	2.97
7.000	0.99	4.54	2.781	|I O |	|	|	|	2.95
7.083	0.82	4.19	2.757	|I O |	|	|	|	2.93
7.167	0.68	3.86	2.735	I O |	|	|	|	2.91
7.250	0.55	3.55	2.713	I O |	|	|	|	2.90
7.333	0.44	3.26	2.693	I O |	|	|	|	2.88
7.417	0.34	2.99	2.675	I O |	|	|	|	2.87
7.500	0.23	2.73	2.657	I O |	|	|	|	2.85
7.583	0.10	2.48	2.640	I O |	|	|	|	2.84
7.667	0.06	2.25	2.624	I O |	|	|	|	2.83
7.750	0.04	2.04	2.610	I O |	|	|	|	2.81
7.833	0.02	1.85	2.597	I O |	|	|	|	2.80
7.917	0.01	1.67	2.585	I O |	|	|	|	2.79
8.000	0.00	1.51	2.574	IO |	|	|	|	2.78
8.083	0.00	1.37	2.564	IO |	|	|	|	2.78
8.167	0.00	1.24	2.555	IO |	|	|	|	2.77
8.250	0.00	1.12	2.547	IO |	|	|	|	2.76
8.333	0.00	1.01	2.539	IO |	|	|	|	2.76
8.417	0.00	0.92	2.533	IO |	|	|	|	2.75
8.500	0.00	0.83	2.527	IO |	|	|	|	2.75
8.583	0.00	0.75	2.521	O |	|	|	|	2.74
8.667	0.00	0.68	2.516	O |	|	|	|	2.74
8.750	0.00	0.61	2.512	O |	|	|	|	2.73
8.833	0.00	0.55	2.508	O |	|	|	|	2.73
8.917	0.00	0.50	2.504	O |	|	|	|	2.73
9.000	0.00	0.45	2.501	O |	|	|	|	2.73
9.083	0.00	0.41	2.498	O |	|	|	|	2.72
9.167	0.00	0.37	2.495	O |	|	|	|	2.72
9.250	0.00	0.34	2.493	O |	|	|	|	2.72
9.333	0.00	0.30	2.491	O |	|	|	|	2.72
9.417	0.00	0.27	2.489	O |	|	|	|	2.72
9.500	0.00	0.25	2.487	O |	|	|	|	2.71
9.583	0.00	0.22	2.485	O |	|	|	|	2.71
9.667	0.00	0.20	2.484	O |	|	|	|	2.71
9.750	0.00	0.18	2.482	O |	|	|	|	2.71
9.833	0.00	0.17	2.481	O |	|	|	|	2.71
9.917	0.00	0.15	2.480	O |	|	|	|	2.71
10.000	0.00	0.14	2.479	O |	|	|	|	2.71
10.083	0.00	0.12	2.478	O |	|	|	|	2.71
10.167	0.00	0.11	2.478	O |	|	|	|	2.71
10.250	0.00	0.10	2.477	O |	|	|	|	2.71
10.333	0.00	0.09	2.476	O |	|	|	|	2.70
10.417	0.00	0.08	2.476	O |	|	|	|	2.70
10.500	0.00	0.07	2.475	O |	|	|	|	2.70
10.583	0.00	0.07	2.475	O |	|	|	|	2.70
10.667	0.00	0.06	2.474	O |	|	|	|	2.70
10.750	0.00	0.05	2.474	O |	|	|	|	2.70
10.833	0.00	0.05	2.473	O |	|	|	|	2.70
10.917	0.00	0.04	2.473	O |	|	|	|	2.70
11.000	0.00	0.04	2.473	O |	|	|	|	2.70
11.083	0.00	0.04	2.472	O |	|	|	|	2.70
11.167	0.00	0.03	2.472	O |	|	|	|	2.70
11.250	0.00	0.03	2.472	O |	|	|	|	2.70
11.333	0.00	0.03	2.472	O |	|	|	|	2.70
11.417	0.00	0.02	2.472	O |	|	|	|	2.70
11.500	0.00	0.02	2.471	O |	|	|	|	2.70
11.583	0.00	0.02	2.471	O |	|	|	|	2.70
11.667	0.00	0.02	2.471	O |	|	|	|	2.70
11.750	0.00	0.02	2.471	O |	|	|	|	2.70
11.833	0.00	0.01	2.471	O |	|	|	|	2.70
11.917	0.00	0.01	2.471	O |	|	|	|	2.70
12.000	0.00	0.01	2.471	O |	|	|	|	2.70
12.083	0.00	0.01	2.471	O |	|	|	|	2.70
12.167	0.00	0.01	2.471	O |	|	|	|	2.70
12.250	0.00	0.01	2.471	O |	|	|	|	2.70
12.333	0.00	0.01	2.470	O |	|	|	|	2.70
12.417	0.00	0.01	2.470	O |	|	|	|	2.70
12.500	0.00	0.01	2.470	O |	|	|	|	2.70
12.583	0.00	0.01	2.470	O |	|	|	|	2.70
12.667	0.00	0.01	2.470	O |	|	|	|	2.70
12.750	0.00	0.00	2.470	O |	|	|	|	2.70
12.833	0.00	0.00	2.470	O |	|	|	|	2.70
12.917	0.00	0.00	2.470	O |	|	|	|	2.70
13.000	0.00	0.00	2.470	O |	|	|	|	2.70
13.083	0.00	0.00	2.470	O |	|	|	|	2.70
13.167	0.00	0.00	2.470	O |	|	|	|	2.70
13.250	0.00	0.00	2.470	O |	|	|	|	2.70

```
13.333    0.00    0.00      2.470  O       |       |       |       |     2.70
13.417    0.00    0.00      2.470  O       |       |       |       |     2.70
13.500    0.00    0.00      2.470  O       |       |       |       |     2.70
13.583    0.00    0.00      2.470  O       |       |       |       |     2.70
13.667    0.00    0.00      2.470  O       |       |       |       |     2.70
13.750    0.00    0.00      2.470  O       |       |       |       |     2.70
13.833    0.00    0.00      2.470  O       |       |       |       |     2.70
13.917    0.00    0.00      2.470  O       |       |       |       |     2.70
14.000    0.00    0.00      2.470  O       |       |       |       |     2.70
14.083    0.00    0.00      2.470  O       |       |       |       |     2.70

        Remaining water in basin =    2.47 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =   169
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       18.164 (CFS)
                        Total volume =       2.107 (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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        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384a5245.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



---------------------------------------------------------------------
5 YEAR
24 HR


--------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            2.00                  77.20

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            5.50                 212.30

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 =   99.99 %
Adjusted average point rain =    2.820(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

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56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
-------------------------------------------------------------------
               Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.07      0.023       (  0.238)       0.002        0.020
   2   0.17     0.07      0.023       (  0.237)       0.002        0.020
   3   0.25     0.07      0.023       (  0.236)       0.002        0.020
   4   0.33     0.10      0.034       (  0.235)       0.003        0.030
   5   0.42     0.10      0.034       (  0.234)       0.003        0.030
   6   0.50     0.10      0.034       (  0.233)       0.003        0.030
   7   0.58     0.10      0.034       (  0.232)       0.003        0.030
   8   0.67     0.10      0.034       (  0.231)       0.003        0.030
   9   0.75     0.10      0.034       (  0.230)       0.003        0.030
  10   0.83     0.13      0.045       (  0.230)       0.005        0.041
  11   0.92     0.13      0.045       (  0.229)       0.005        0.041
  12   1.00     0.13      0.045       (  0.228)       0.005        0.041
  13   1.08     0.10      0.034       (  0.227)       0.003        0.030
  14   1.17     0.10      0.034       (  0.226)       0.003        0.030
  15   1.25     0.10      0.034       (  0.225)       0.003        0.030
  16   1.33     0.10      0.034       (  0.224)       0.003        0.030
  17   1.42     0.10      0.034       (  0.223)       0.003        0.030
  18   1.50     0.10      0.034       (  0.222)       0.003        0.030
  19   1.58     0.10      0.034       (  0.222)       0.003        0.030
```

20	1.67	0.10	0.034	(0.221)	0.003	0.030
21	1.75	0.10	0.034	(0.220)	0.003	0.030
22	1.83	0.13	0.045	(0.219)	0.005	0.041
23	1.92	0.13	0.045	(0.218)	0.005	0.041
24	2.00	0.13	0.045	(0.217)	0.005	0.041
25	2.08	0.13	0.045	(0.216)	0.005	0.041
26	2.17	0.13	0.045	(0.215)	0.005	0.041
27	2.25	0.13	0.045	(0.214)	0.005	0.041
28	2.33	0.13	0.045	(0.214)	0.005	0.041
29	2.42	0.13	0.045	(0.213)	0.005	0.041
30	2.50	0.13	0.045	(0.212)	0.005	0.041
31	2.58	0.17	0.056	(0.211)	0.006	0.051
32	2.67	0.17	0.056	(0.210)	0.006	0.051
33	2.75	0.17	0.056	(0.209)	0.006	0.051
34	2.83	0.17	0.056	(0.208)	0.006	0.051
35	2.92	0.17	0.056	(0.208)	0.006	0.051
36	3.00	0.17	0.056	(0.207)	0.006	0.051
37	3.08	0.17	0.056	(0.206)	0.006	0.051
38	3.17	0.17	0.056	(0.205)	0.006	0.051
39	3.25	0.17	0.056	(0.204)	0.006	0.051
40	3.33	0.17	0.056	(0.203)	0.006	0.051
41	3.42	0.17	0.056	(0.202)	0.006	0.051
42	3.50	0.17	0.056	(0.202)	0.006	0.051
43	3.58	0.17	0.056	(0.201)	0.006	0.051
44	3.67	0.17	0.056	(0.200)	0.006	0.051
45	3.75	0.17	0.056	(0.199)	0.006	0.051
46	3.83	0.20	0.068	(0.198)	0.007	0.061
47	3.92	0.20	0.068	(0.197)	0.007	0.061
48	4.00	0.20	0.068	(0.197)	0.007	0.061
49	4.08	0.20	0.068	(0.196)	0.007	0.061
50	4.17	0.20	0.068	(0.195)	0.007	0.061
51	4.25	0.20	0.068	(0.194)	0.007	0.061
52	4.33	0.23	0.079	(0.193)	0.008	0.071
53	4.42	0.23	0.079	(0.192)	0.008	0.071
54	4.50	0.23	0.079	(0.192)	0.008	0.071
55	4.58	0.23	0.079	(0.191)	0.008	0.071
56	4.67	0.23	0.079	(0.190)	0.008	0.071
57	4.75	0.23	0.079	(0.189)	0.008	0.071
58	4.83	0.27	0.090	(0.188)	0.009	0.081
59	4.92	0.27	0.090	(0.187)	0.009	0.081
60	5.00	0.27	0.090	(0.187)	0.009	0.081
61	5.08	0.20	0.068	(0.186)	0.007	0.061
62	5.17	0.20	0.068	(0.185)	0.007	0.061
63	5.25	0.20	0.068	(0.184)	0.007	0.061
64	5.33	0.23	0.079	(0.183)	0.008	0.071
65	5.42	0.23	0.079	(0.183)	0.008	0.071
66	5.50	0.23	0.079	(0.182)	0.008	0.071
67	5.58	0.27	0.090	(0.181)	0.009	0.081
68	5.67	0.27	0.090	(0.180)	0.009	0.081
69	5.75	0.27	0.090	(0.179)	0.009	0.081
70	5.83	0.27	0.090	(0.179)	0.009	0.081
71	5.92	0.27	0.090	(0.178)	0.009	0.081
72	6.00	0.27	0.090	(0.177)	0.009	0.081
73	6.08	0.30	0.102	(0.176)	0.010	0.091
74	6.17	0.30	0.102	(0.175)	0.010	0.091
75	6.25	0.30	0.102	(0.175)	0.010	0.091
76	6.33	0.30	0.102	(0.174)	0.010	0.091
77	6.42	0.30	0.102	(0.173)	0.010	0.091
78	6.50	0.30	0.102	(0.172)	0.010	0.091
79	6.58	0.33	0.113	(0.172)	0.011	0.102
80	6.67	0.33	0.113	(0.171)	0.011	0.102
81	6.75	0.33	0.113	(0.170)	0.011	0.102
82	6.83	0.33	0.113	(0.169)	0.011	0.102
83	6.92	0.33	0.113	(0.169)	0.011	0.102
84	7.00	0.33	0.113	(0.168)	0.011	0.102
85	7.08	0.33	0.113	(0.167)	0.011	0.102
86	7.17	0.33	0.113	(0.166)	0.011	0.102
87	7.25	0.33	0.113	(0.165)	0.011	0.102
88	7.33	0.37	0.124	(0.165)	0.012	0.112

89	7.42	0.37	0.124	(0.164)	0.012	0.112
90	7.50	0.37	0.124	(0.163)	0.012	0.112
91	7.58	0.40	0.135	(0.162)	0.014	0.122
92	7.67	0.40	0.135	(0.162)	0.014	0.122
93	7.75	0.40	0.135	(0.161)	0.014	0.122
94	7.83	0.43	0.147	(0.160)	0.015	0.132
95	7.92	0.43	0.147	(0.159)	0.015	0.132
96	8.00	0.43	0.147	(0.159)	0.015	0.132
97	8.08	0.50	0.169	(0.158)	0.017	0.152
98	8.17	0.50	0.169	(0.157)	0.017	0.152
99	8.25	0.50	0.169	(0.157)	0.017	0.152
100	8.33	0.50	0.169	(0.156)	0.017	0.152
101	8.42	0.50	0.169	(0.155)	0.017	0.152
102	8.50	0.50	0.169	(0.154)	0.017	0.152
103	8.58	0.53	0.180	(0.154)	0.018	0.162
104	8.67	0.53	0.180	(0.153)	0.018	0.162
105	8.75	0.53	0.180	(0.152)	0.018	0.162
106	8.83	0.57	0.192	(0.151)	0.019	0.173
107	8.92	0.57	0.192	(0.151)	0.019	0.173
108	9.00	0.57	0.192	(0.150)	0.019	0.173
109	9.08	0.63	0.214	(0.149)	0.021	0.193
110	9.17	0.63	0.214	(0.149)	0.021	0.193
111	9.25	0.63	0.214	(0.148)	0.021	0.193
112	9.33	0.67	0.226	(0.147)	0.023	0.203
113	9.42	0.67	0.226	(0.147)	0.023	0.203
114	9.50	0.67	0.226	(0.146)	0.023	0.203
115	9.58	0.70	0.237	(0.145)	0.024	0.213
116	9.67	0.70	0.237	(0.144)	0.024	0.213
117	9.75	0.70	0.237	(0.144)	0.024	0.213
118	9.83	0.73	0.248	(0.143)	0.025	0.223
119	9.92	0.73	0.248	(0.142)	0.025	0.223
120	10.00	0.73	0.248	(0.142)	0.025	0.223
121	10.08	0.50	0.169	(0.141)	0.017	0.152
122	10.17	0.50	0.169	(0.140)	0.017	0.152
123	10.25	0.50	0.169	(0.140)	0.017	0.152
124	10.33	0.50	0.169	(0.139)	0.017	0.152
125	10.42	0.50	0.169	(0.138)	0.017	0.152
126	10.50	0.50	0.169	(0.138)	0.017	0.152
127	10.58	0.67	0.226	(0.137)	0.023	0.203
128	10.67	0.67	0.226	(0.136)	0.023	0.203
129	10.75	0.67	0.226	(0.136)	0.023	0.203
130	10.83	0.67	0.226	(0.135)	0.023	0.203
131	10.92	0.67	0.226	(0.134)	0.023	0.203
132	11.00	0.67	0.226	(0.134)	0.023	0.203
133	11.08	0.63	0.214	(0.133)	0.021	0.193
134	11.17	0.63	0.214	(0.132)	0.021	0.193
135	11.25	0.63	0.214	(0.132)	0.021	0.193
136	11.33	0.63	0.214	(0.131)	0.021	0.193
137	11.42	0.63	0.214	(0.130)	0.021	0.193
138	11.50	0.63	0.214	(0.130)	0.021	0.193
139	11.58	0.57	0.192	(0.129)	0.019	0.173
140	11.67	0.57	0.192	(0.128)	0.019	0.173
141	11.75	0.57	0.192	(0.128)	0.019	0.173
142	11.83	0.60	0.203	(0.127)	0.020	0.183
143	11.92	0.60	0.203	(0.126)	0.020	0.183
144	12.00	0.60	0.203	(0.126)	0.020	0.183
145	12.08	0.83	0.282	(0.125)	0.028	0.254
146	12.17	0.83	0.282	(0.125)	0.028	0.254
147	12.25	0.83	0.282	(0.124)	0.028	0.254
148	12.33	0.87	0.293	(0.123)	0.029	0.264
149	12.42	0.87	0.293	(0.123)	0.029	0.264
150	12.50	0.87	0.293	(0.122)	0.029	0.264
151	12.58	0.93	0.316	(0.121)	0.032	0.284
152	12.67	0.93	0.316	(0.121)	0.032	0.284
153	12.75	0.93	0.316	(0.120)	0.032	0.284
154	12.83	0.97	0.327	(0.120)	0.033	0.294
155	12.92	0.97	0.327	(0.119)	0.033	0.294
156	13.00	0.97	0.327	(0.118)	0.033	0.294
157	13.08	1.13	0.383	(0.118)	0.038	0.345

158	13.17	1.13	0.383	(0.117)	0.038	0.345
159	13.25	1.13	0.383	(0.117)	0.038	0.345
160	13.33	1.13	0.383	(0.116)	0.038	0.345
161	13.42	1.13	0.383	(0.115)	0.038	0.345
162	13.50	1.13	0.383	(0.115)	0.038	0.345
163	13.58	0.77	0.259	(0.114)	0.026	0.233
164	13.67	0.77	0.259	(0.114)	0.026	0.233
165	13.75	0.77	0.259	(0.113)	0.026	0.233
166	13.83	0.77	0.259	(0.113)	0.026	0.233
167	13.92	0.77	0.259	(0.112)	0.026	0.233
168	14.00	0.77	0.259	(0.111)	0.026	0.233
169	14.08	0.90	0.305	(0.111)	0.030	0.274
170	14.17	0.90	0.305	(0.110)	0.030	0.274
171	14.25	0.90	0.305	(0.110)	0.030	0.274
172	14.33	0.87	0.293	(0.109)	0.029	0.264
173	14.42	0.87	0.293	(0.109)	0.029	0.264
174	14.50	0.87	0.293	(0.108)	0.029	0.264
175	14.58	0.87	0.293	(0.107)	0.029	0.264
176	14.67	0.87	0.293	(0.107)	0.029	0.264
177	14.75	0.87	0.293	(0.106)	0.029	0.264
178	14.83	0.83	0.282	(0.106)	0.028	0.254
179	14.92	0.83	0.282	(0.105)	0.028	0.254
180	15.00	0.83	0.282	(0.105)	0.028	0.254
181	15.08	0.80	0.271	(0.104)	0.027	0.244
182	15.17	0.80	0.271	(0.104)	0.027	0.244
183	15.25	0.80	0.271	(0.103)	0.027	0.244
184	15.33	0.77	0.259	(0.103)	0.026	0.233
185	15.42	0.77	0.259	(0.102)	0.026	0.233
186	15.50	0.77	0.259	(0.102)	0.026	0.233
187	15.58	0.63	0.214	(0.101)	0.021	0.193
188	15.67	0.63	0.214	(0.101)	0.021	0.193
189	15.75	0.63	0.214	(0.100)	0.021	0.193
190	15.83	0.63	0.214	(0.100)	0.021	0.193
191	15.92	0.63	0.214	(0.099)	0.021	0.193
192	16.00	0.63	0.214	(0.099)	0.021	0.193
193	16.08	0.13	0.045	(0.098)	0.005	0.041
194	16.17	0.13	0.045	(0.098)	0.005	0.041
195	16.25	0.13	0.045	(0.097)	0.005	0.041
196	16.33	0.13	0.045	(0.097)	0.005	0.041
197	16.42	0.13	0.045	(0.096)	0.005	0.041
198	16.50	0.13	0.045	(0.096)	0.005	0.041
199	16.58	0.10	0.034	(0.095)	0.003	0.030
200	16.67	0.10	0.034	(0.095)	0.003	0.030
201	16.75	0.10	0.034	(0.094)	0.003	0.030
202	16.83	0.10	0.034	(0.094)	0.003	0.030
203	16.92	0.10	0.034	(0.093)	0.003	0.030
204	17.00	0.10	0.034	(0.093)	0.003	0.030
205	17.08	0.17	0.056	(0.092)	0.006	0.051
206	17.17	0.17	0.056	(0.092)	0.006	0.051
207	17.25	0.17	0.056	(0.091)	0.006	0.051
208	17.33	0.17	0.056	(0.091)	0.006	0.051
209	17.42	0.17	0.056	(0.090)	0.006	0.051
210	17.50	0.17	0.056	(0.090)	0.006	0.051
211	17.58	0.17	0.056	(0.089)	0.006	0.051
212	17.67	0.17	0.056	(0.089)	0.006	0.051
213	17.75	0.17	0.056	(0.089)	0.006	0.051
214	17.83	0.13	0.045	(0.088)	0.005	0.041
215	17.92	0.13	0.045	(0.088)	0.005	0.041
216	18.00	0.13	0.045	(0.087)	0.005	0.041
217	18.08	0.13	0.045	(0.087)	0.005	0.041
218	18.17	0.13	0.045	(0.086)	0.005	0.041
219	18.25	0.13	0.045	(0.086)	0.005	0.041
220	18.33	0.13	0.045	(0.086)	0.005	0.041
221	18.42	0.13	0.045	(0.085)	0.005	0.041
222	18.50	0.13	0.045	(0.085)	0.005	0.041
223	18.58	0.10	0.034	(0.084)	0.003	0.030
224	18.67	0.10	0.034	(0.084)	0.003	0.030
225	18.75	0.10	0.034	(0.084)	0.003	0.030
226	18.83	0.07	0.023	(0.083)	0.002	0.020

227	18.92	0.07	0.023	(	0.083)	0.002	0.020
228	19.00	0.07	0.023	(	0.082)	0.002	0.020
229	19.08	0.10	0.034	(	0.082)	0.003	0.030
230	19.17	0.10	0.034	(	0.082)	0.003	0.030
231	19.25	0.10	0.034	(	0.081)	0.003	0.030
232	19.33	0.13	0.045	(	0.081)	0.005	0.041
233	19.42	0.13	0.045	(	0.080)	0.005	0.041
234	19.50	0.13	0.045	(	0.080)	0.005	0.041
235	19.58	0.10	0.034	(	0.080)	0.003	0.030
236	19.67	0.10	0.034	(	0.079)	0.003	0.030
237	19.75	0.10	0.034	(	0.079)	0.003	0.030
238	19.83	0.07	0.023	(	0.079)	0.002	0.020
239	19.92	0.07	0.023	(	0.078)	0.002	0.020
240	20.00	0.07	0.023	(	0.078)	0.002	0.020
241	20.08	0.10	0.034	(	0.078)	0.003	0.030
242	20.17	0.10	0.034	(	0.077)	0.003	0.030
243	20.25	0.10	0.034	(	0.077)	0.003	0.030
244	20.33	0.10	0.034	(	0.077)	0.003	0.030
245	20.42	0.10	0.034	(	0.076)	0.003	0.030
246	20.50	0.10	0.034	(	0.076)	0.003	0.030
247	20.58	0.10	0.034	(	0.076)	0.003	0.030
248	20.67	0.10	0.034	(	0.075)	0.003	0.030
249	20.75	0.10	0.034	(	0.075)	0.003	0.030
250	20.83	0.07	0.023	(	0.075)	0.002	0.020
251	20.92	0.07	0.023	(	0.074)	0.002	0.020
252	21.00	0.07	0.023	(	0.074)	0.002	0.020
253	21.08	0.10	0.034	(	0.074)	0.003	0.030
254	21.17	0.10	0.034	(	0.073)	0.003	0.030
255	21.25	0.10	0.034	(	0.073)	0.003	0.030
256	21.33	0.07	0.023	(	0.073)	0.002	0.020
257	21.42	0.07	0.023	(	0.073)	0.002	0.020
258	21.50	0.07	0.023	(	0.072)	0.002	0.020
259	21.58	0.10	0.034	(	0.072)	0.003	0.030
260	21.67	0.10	0.034	(	0.072)	0.003	0.030
261	21.75	0.10	0.034	(	0.072)	0.003	0.030
262	21.83	0.07	0.023	(	0.071)	0.002	0.020
263	21.92	0.07	0.023	(	0.071)	0.002	0.020
264	22.00	0.07	0.023	(	0.071)	0.002	0.020
265	22.08	0.10	0.034	(	0.071)	0.003	0.030
266	22.17	0.10	0.034	(	0.070)	0.003	0.030
267	22.25	0.10	0.034	(	0.070)	0.003	0.030
268	22.33	0.07	0.023	(	0.070)	0.002	0.020
269	22.42	0.07	0.023	(	0.070)	0.002	0.020
270	22.50	0.07	0.023	(	0.069)	0.002	0.020
271	22.58	0.07	0.023	(	0.069)	0.002	0.020
272	22.67	0.07	0.023	(	0.069)	0.002	0.020
273	22.75	0.07	0.023	(	0.069)	0.002	0.020
274	22.83	0.07	0.023	(	0.069)	0.002	0.020
275	22.92	0.07	0.023	(	0.069)	0.002	0.020
276	23.00	0.07	0.023	(	0.068)	0.002	0.020
277	23.08	0.07	0.023	(	0.068)	0.002	0.020
278	23.17	0.07	0.023	(	0.068)	0.002	0.020
279	23.25	0.07	0.023	(	0.068)	0.002	0.020
280	23.33	0.07	0.023	(	0.068)	0.002	0.020
281	23.42	0.07	0.023	(	0.068)	0.002	0.020
282	23.50	0.07	0.023	(	0.068)	0.002	0.020
283	23.58	0.07	0.023	(	0.067)	0.002	0.020
284	23.67	0.07	0.023	(	0.067)	0.002	0.020
285	23.75	0.07	0.023	(	0.067)	0.002	0.020
286	23.83	0.07	0.023	(	0.067)	0.002	0.020
287	23.92	0.07	0.023	(	0.067)	0.002	0.020
288	24.00	0.07	0.023	(	0.067)	0.002	0.020

(Loss Rate Not Used)

Sum = 100.0 Sum = 30.5

Flood volume = Effective rainfall 2.54(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 8.2(Ac.Ft)
Total soil loss = 0.28(In)
Total soil loss = 0.907(Ac.Ft)
Total rainfall = 2.82(In)

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Flood volume =      355565.6 Cubic Feet
Total soil loss =       39507.3 Cubic Feet
---------------------------------------------------------------------
 Peak flow rate of this hydrograph =     12.714(CFS)
---------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    24 - H O U R    S T O R M
                R u n o f f      H y d r o g r a p h
---------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0010      0.12  Q         |         |         |         |
  0+15       0.0030      0.29  Q         |         |         |         |
  0+20       0.0062      0.46  Q         |         |         |         |
  0+25       0.0103      0.60  VQ        |         |         |         |
  0+30       0.0154      0.74  VQ        |         |         |         |
  0+35       0.0213      0.85  VQ        |         |         |         |
  0+40       0.0276      0.92  VQ        |         |         |         |
  0+45       0.0344      0.97  VQ        |         |         |         |
  0+50       0.0414      1.02  V Q       |         |         |         |
  0+55       0.0490      1.10  V Q       |         |         |         |
  1+ 0       0.0573      1.21  V Q       |         |         |         |
  1+ 5       0.0662      1.29  V Q       |         |         |         |
  1+10       0.0752      1.31  V Q       |         |         |         |
  1+15       0.0839      1.26  V Q       |         |         |         |
  1+20       0.0922      1.21  V Q       |         |         |         |
  1+25       0.1005      1.19  V Q       |         |         |         |
  1+30       0.1086      1.19  V Q       |         |         |         |
  1+35       0.1168      1.19  V Q       |         |         |         |
  1+40       0.1250      1.19  V Q       |         |         |         |
  1+45       0.1331      1.19  V Q       |         |         |         |
  1+50       0.1414      1.20  V Q       |         |         |         |
  1+55       0.1500      1.25  V Q       |         |         |         |
  2+ 0       0.1592      1.34  V Q       |         |         |         |
  2+ 5       0.1690      1.42  V Q       |         |         |         |
  2+10       0.1791      1.46  V Q       |         |         |         |
  2+15       0.1893      1.49  V Q       |         |         |         |
  2+20       0.1997      1.51  V  Q      |         |         |         |
  2+25       0.2101      1.52  |V Q      |         |         |         |
  2+30       0.2207      1.53  |V Q      |         |         |         |
  2+35       0.2314      1.55  |V Q      |         |         |         |
  2+40       0.2424      1.61  |V Q      |         |         |         |
  2+45       0.2541      1.70  |V Q      |         |         |         |
  2+50       0.2664      1.78  |V Q      |         |         |         |
  2+55       0.2790      1.83  |V Q      |         |         |         |
  3+ 0       0.2918      1.86  |V Q      |         |         |         |
  3+ 5       0.3047      1.88  |V Q      |         |         |         |
  3+10       0.3177      1.89  |V Q      |         |         |         |
  3+15       0.3309      1.91  |V Q      |         |         |         |
  3+20       0.3441      1.92  |V Q      |         |         |         |
  3+25       0.3574      1.93  |V Q      |         |         |         |
  3+30       0.3707      1.94  |V Q      |         |         |         |
  3+35       0.3841      1.94  |V Q      |         |         |         |
  3+40       0.3975      1.95  |V Q      |         |         |         |
  3+45       0.4110      1.95  | VQ      |         |         |         |
  3+50       0.4246      1.97  | VQ      |         |         |         |
  3+55       0.4385      2.02  | V Q     |         |         |         |
  4+ 0       0.4530      2.11  | V Q     |         |         |         |
  4+ 5       0.4681      2.19  | V Q     |         |         |         |
  4+10       0.4835      2.24  | V Q     |         |         |         |
  4+15       0.4991      2.27  | V Q     |         |         |         |
  4+20       0.5150      2.30  | V Q     |         |         |         |
  4+25       0.5312      2.36  | V Q     |         |         |         |
  4+30       0.5482      2.46  | V Q     |         |         |         |
  4+35       0.5657      2.55  | V  Q    |         |         |         |
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 4+40       0.5836      2.60  | V  Q    |         |         |         |
 4+45       0.6017      2.63  | V  Q    |         |         |         |
 4+50       0.6201      2.67  |  V Q    |         |         |         |
 4+55       0.6390      2.74  |  V Q    |         |         |         |
 5+ 0       0.6585      2.83  |  V Q    |         |         |         |
 5+ 5       0.6785      2.90  |  V Q    |         |         |         |
 5+10       0.6982      2.86  |  V Q    |         |         |         |
 5+15       0.7169      2.73  |  V Q    |         |         |         |
 5+20       0.7349      2.61  |  V Q    |         |         |         |
 5+25       0.7527      2.58  |  V Q    |         |         |         |
 5+30       0.7708      2.63  |  V Q    |         |         |         |
 5+35       0.7894      2.70  |  V Q    |         |         |         |
 5+40       0.8086      2.78  |  V Q    |         |         |         |
 5+45       0.8284      2.88  |   VQ    |         |         |         |
 5+50       0.8488      2.97  |   VQ    |         |         |         |
 5+55       0.8696      3.02  |   V Q   |         |         |         |
 6+ 0       0.8906      3.05  |   V Q   |         |         |         |
 6+ 5       0.9118      3.08  |   V Q   |         |         |         |
 6+10       0.9335      3.15  |   V Q   |         |         |         |
 6+15       0.9558      3.24  |   V Q   |         |         |         |
 6+20       0.9788      3.33  |   V Q   |         |         |         |
 6+25       1.0021      3.39  |   V Q   |         |         |         |
 6+30       1.0257      3.42  |    VQ   |         |         |         |
 6+35       1.0495      3.46  |    VQ   |         |         |         |
 6+40       1.0737      3.52  |    V Q  |         |         |         |
 6+45       1.0987      3.62  |    V Q  |         |         |         |
 6+50       1.1243      3.72  |    V Q  |         |         |         |
 6+55       1.1502      3.77  |    V Q  |         |         |         |
 7+ 0       1.1764      3.80  |    V Q  |         |         |         |
 7+ 5       1.2028      3.83  |    V Q  |         |         |         |
 7+10       1.2293      3.85  |     VQ  |         |         |         |
 7+15       1.2560      3.87  |     VQ  |         |         |         |
 7+20       1.2828      3.90  |     VQ  |         |         |         |
 7+25       1.3100      3.96  |     VQ  |         |         |         |
 7+30       1.3379      4.05  |     V Q |         |         |         |
 7+35       1.3665      4.15  |     V Q |         |         |         |
 7+40       1.3958      4.25  |     V Q |         |         |         |
 7+45       1.4259      4.37  |     V Q |         |         |         |
 7+50       1.4567      4.48  |      VQ |         |         |         |
 7+55       1.4884      4.59  |      V Q|         |         |         |
 8+ 0       1.5209      4.72  |      V Q|         |         |         |
 8+ 5       1.5543      4.85  |      V Q|         |         |         |
 8+10       1.5889      5.02  |      V  Q         |         |         |
 8+15       1.6249      5.23  |      V  Q         |         |         |
 8+20       1.6623      5.42  |       V Q         |         |         |
 8+25       1.7004      5.54  |       V |Q        |         |         |
 8+30       1.7391      5.62  |       V |Q        |         |         |
 8+35       1.7783      5.68  |       V |Q        |         |         |
 8+40       1.8180      5.78  |       V |Q        |         |         |
 8+45       1.8586      5.89  |        V|Q        |         |         |
 8+50       1.9001      6.02  |        V| Q       |         |         |
 8+55       1.9423      6.13  |        V| Q       |         |         |
 9+ 0       1.9855      6.26  |        V| Q       |         |         |
 9+ 5       2.0296      6.41  |        V| Q       |         |         |
 9+10       2.0749      6.58  |         V  Q      |         |         |
 9+15       2.1216      6.79  |         V  Q      |         |         |
 9+20       2.1699      7.00  |         V   Q     |         |         |
 9+25       2.2193      7.17  |         V   Q     |         |         |
 9+30       2.2698      7.33  |         |V  Q     |         |         |
 9+35       2.3213      7.48  |         |V  Q     |         |         |
 9+40       2.3738      7.62  |         |V   Q    |         |         |
 9+45       2.4274      7.77  |         |V   Q    |         |         |
 9+50       2.4818      7.91  |         | V  Q    |         |         |
 9+55       2.5372      8.04  |         | V   Q   |         |         |
10+ 0       2.5936      8.19  |         | V   Q   |         |         |
10+ 5       2.6502      8.22  |         | V   Q   |         |         |
10+10       2.7051      7.96  |         |  V Q    |         |         |
10+15       2.7563      7.43  |         |  VQ     |         |         |
10+20       2.8039      6.92  |         |  Q      |         |         |
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10+25       2.8496      6.64  |          |  Q      |         |         |
10+30       2.8942      6.48  |          | Q V     |         |         |
10+35       2.9387      6.45  |          | Q V     |         |         |
10+40       2.9842      6.61  |          |  QV     |         |         |
10+45       3.0322      6.97  |          |  QV     |         |         |
10+50       3.0826      7.32  |          |   QV    |         |         |
10+55       3.1343      7.50  |          |    Q    |         |         |
11+ 0       3.1866      7.60  |          |    Q    |         |         |
11+ 5       3.2393      7.65  |          |    Q    |         |         |
11+10       3.2919      7.65  |          |    QV   |         |         |
11+15       3.3443      7.60  |          |    QV   |         |         |
11+20       3.3962      7.54  |          |    QV   |         |         |
11+25       3.4480      7.52  |          |    QV   |         |         |
11+30       3.4997      7.51  |          |    Q V  |         |         |
11+35       3.5512      7.48  |          |   Q  V  |         |         |
11+40       3.6020      7.38  |          |   Q  V  |         |         |
11+45       3.6516      7.21  |          |   Q  V  |         |         |
11+50       3.7003      7.06  |          |   Q   V |         |         |
11+55       3.7486      7.02  |          |   Q   V |         |         |
12+ 0       3.7972      7.05  |          |   Q   V |         |         |
12+ 5       3.8466      7.18  |          |   Q   V |         |         |
12+10       3.8986      7.54  |          |    Q   V|         |         |
12+15       3.9546      8.13  |          |     Q  V|         |         |
12+20       4.0145      8.71  |          |      Q V|         |         |
12+25       4.0770      9.07  |          |       QV|         |         |
12+30       4.1413      9.34  |          |       Q V         |         |
12+35       4.2073      9.57  |          |        QV         |         |
12+40       4.2749      9.81  |          |        QV         |         |
12+45       4.3443     10.08  |          |         QV        |         |
12+50       4.4154     10.33  |          |         QV        |         |
12+55       4.4880     10.53  |          |         |Q        |         |
13+ 0       4.5618     10.72  |          |         |QV       |         |
13+ 5       4.6372     10.95  |          |         |QV       |         |
13+10       4.7150     11.30  |          |         | QV      |         |
13+15       4.7962     11.80  |          |         |  Q      |         |
13+20       4.8807     12.26  |          |         |  VQ     |         |
13+25       4.9671     12.54  |          |         |   VQ    |         |
13+30       5.0546     12.71  |          |         |   VQ    |         |
13+35       5.1421     12.70  |          |         |    Q    |         |
13+40       5.2266     12.27  |          |         |   QV    |         |
13+45       5.3054     11.44  |          |         | Q  V    |         |
13+50       5.3785     10.63  |          |         |Q    V   |         |
13+55       5.4487     10.19  |          |         Q     V   |         |
14+ 0       5.5173      9.96  |          |        Q|      V  |         |
14+ 5       5.5852      9.86  |          |        Q|      V  |         |
14+10       5.6535      9.93  |          |        Q|      V  |         |
14+15       5.7235     10.16  |          |         Q       V |         |
14+20       5.7951     10.39  |          |         Q       V |         |
14+25       5.8672     10.46  |          |         Q       V |         |
14+30       5.9390     10.43  |          |         Q        V|         |
14+35       6.0105     10.38  |          |         Q        V|         |
14+40       6.0818     10.35  |          |         Q        V|         |
14+45       6.1530     10.34  |          |         Q         V         |
14+50       6.2240     10.31  |          |         Q         V         |
14+55       6.2946     10.25  |          |         Q         V         |
15+ 0       6.3646     10.16  |          |         Q         |V        |
15+ 5       6.4339     10.06  |          |         Q         |V        |
15+10       6.5025      9.96  |          |        Q|         |V        |
15+15       6.5703      9.84  |          |        Q|         | V       |
15+20       6.6373      9.73  |          |        Q|         | V       |
15+25       6.7035      9.61  |          |        Q|         | V       |
15+30       6.7688      9.48  |          |       Q |         |  V      |
15+35       6.8329      9.32  |          |       Q |         |  V      |
15+40       6.8953      9.06  |          |       Q |         |  V      |
15+45       6.9552      8.69  |          |      Q  |         |   V     |
15+50       7.0126      8.34  |          |     Q   |         |   V     |
15+55       7.0686      8.13  |          |     Q   |         |   V     |
16+ 0       7.1238      8.01  |          |     Q   |         |   V     |
16+ 5       7.1771      7.74  |          |    Q    |         |    V    |
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16+10       7.2248      6.93  |          |  Q       |          |    V    |
16+15       7.2636      5.63  |          |Q         |          |    V    |
16+20       7.2937      4.38  |        Q |          |          |    V    |
16+25       7.3189      3.66  |      Q   |          |          |    V    |
16+30       7.3412      3.24  |     Q    |          |          |    V    |
16+35       7.3614      2.93  |    Q     |          |          |     V   |
16+40       7.3797      2.65  |    Q     |          |          |     V   |
16+45       7.3960      2.38  |   Q      |          |          |     V   |
16+50       7.4108      2.14  |   Q      |          |          |     V   |
16+55       7.4243      1.97  |  Q       |          |          |     V   |
17+ 0       7.4370      1.83  |  Q       |          |          |     V   |
17+ 5       7.4490      1.75  |  Q       |          |          |     V   |
17+10       7.4612      1.76  |  Q       |          |          |     V   |
17+15       7.4739      1.85  |  Q       |          |          |     V   |
17+20       7.4873      1.94  |  Q       |          |          |     V   |
17+25       7.5009      1.98  |  Q       |          |          |     V   |
17+30       7.5145      1.98  |  Q       |          |          |     V   |
17+35       7.5281      1.97  |  Q       |          |          |     V   |
17+40       7.5416      1.97  |  Q       |          |          |     V   |
17+45       7.5551      1.96  |  Q       |          |          |      V  |
17+50       7.5685      1.94  |  Q       |          |          |      V  |
17+55       7.5815      1.89  |  Q       |          |          |      V  |
18+ 0       7.5939      1.80  |  Q       |          |          |      V  |
18+ 5       7.6056      1.70  |  Q       |          |          |      V  |
18+10       7.6171      1.66  |  Q       |          |          |      V  |
18+15       7.6284      1.65  |  Q       |          |          |      V  |
18+20       7.6397      1.63  |  Q       |          |          |      V  |
18+25       7.6508      1.62  |  Q       |          |          |      V  |
18+30       7.6620      1.62  |  Q       |          |          |      V  |
18+35       7.6730      1.60  |  Q       |          |          |      V  |
18+40       7.6836      1.54  |  Q       |          |          |      V  |
18+45       7.6937      1.46  | Q        |          |          |      V  |
18+50       7.7030      1.36  | Q        |          |          |      V  |
18+55       7.7118      1.27  | Q        |          |          |      V  |
19+ 0       7.7197      1.16  | Q        |          |          |      V  |
19+ 5       7.7271      1.07  | Q        |          |          |      V  |
19+10       7.7344      1.06  | Q        |          |          |      V  |
19+15       7.7420      1.10  | Q        |          |          |      V  |
19+20       7.7500      1.16  | Q        |          |          |      V  |
19+25       7.7585      1.24  | Q        |          |          |       V |
19+30       7.7676      1.33  | Q        |          |          |       V |
19+35       7.7773      1.39  | Q        |          |          |       V |
19+40       7.7868      1.39  | Q        |          |          |       V |
19+45       7.7960      1.33  | Q        |          |          |       V |
19+50       7.8047      1.26  | Q        |          |          |       V |
19+55       7.8128      1.18  | Q        |          |          |       V |
20+ 0       7.8203      1.08  | Q        |          |          |       V |
20+ 5       7.8272      1.00  | Q        |          |          |       V |
20+10       7.8341      1.00  | Q        |          |          |       V |
20+15       7.8413      1.05  | Q        |          |          |       V |
20+20       7.8490      1.11  | Q        |          |          |       V |
20+25       7.8568      1.14  | Q        |          |          |       V |
20+30       7.8648      1.15  | Q        |          |          |       V |
20+35       7.8727      1.16  | Q        |          |          |       V |
20+40       7.8808      1.16  | Q        |          |          |       V |
20+45       7.8888      1.17  | Q        |          |          |       V |
20+50       7.8968      1.16  | Q        |          |          |       V |
20+55       7.9044      1.11  | Q        |          |          |       V |
21+ 0       7.9115      1.03  | Q        |          |          |       V |
21+ 5       7.9182      0.97  |Q         |          |          |       V |
21+10       7.9249      0.97  |Q         |          |          |       V |
21+15       7.9319      1.03  | Q        |          |          |       V |
21+20       7.9394      1.08  | Q        |          |          |       V |
21+25       7.9467      1.06  | Q        |          |          |       V |
21+30       7.9535      0.99  |Q         |          |          |       V |
21+35       7.9600      0.93  |Q         |          |          |        V|
21+40       7.9665      0.94  |Q         |          |          |        V|
21+45       7.9734      1.01  | Q        |          |          |        V|
21+50       7.9807      1.06  | Q        |          |          |        V|
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 21+55       7.9879      1.05  | Q       |         |         |        V|
 22+ 0       7.9947      0.98  |Q        |         |         |        V|
 22+ 5       8.0011      0.93  |Q        |         |         |        V|
 22+10       8.0076      0.94  |Q        |         |         |        V|
 22+15       8.0145      1.00  | Q       |         |         |        V|
 22+20       8.0217      1.06  | Q       |         |         |        V|
 22+25       8.0289      1.04  | Q       |         |         |        V|
 22+30       8.0357      0.98  |Q        |         |         |        V|
 22+35       8.0419      0.91  |Q        |         |         |        V|
 22+40       8.0479      0.87  |Q        |         |         |        V|
 22+45       8.0538      0.85  |Q        |         |         |        V|
 22+50       8.0596      0.84  |Q        |         |         |        V|
 22+55       8.0653      0.83  |Q        |         |         |        V|
 23+ 0       8.0710      0.83  |Q        |         |         |        V|
 23+ 5       8.0767      0.82  |Q        |         |         |        V|
 23+10       8.0823      0.82  |Q        |         |         |        V|
 23+15       8.0879      0.81  |Q        |         |         |        V|
 23+20       8.0934      0.81  |Q        |         |         |        V|
 23+25       8.0990      0.80  |Q        |         |         |        V|
 23+30       8.1045      0.80  |Q        |         |         |        V|
 23+35       8.1100      0.80  |Q        |         |         |        V|
 23+40       8.1155      0.80  |Q        |         |         |        V|
 23+45       8.1210      0.80  |Q        |         |         |        V|
 23+50       8.1265      0.79  |Q        |         |         |        V|
 23+55       8.1320      0.79  |Q        |         |         |        V|
 24+ 0       8.1374      0.79  |Q        |         |         |        V|
 24+ 5       8.1427      0.77  |Q        |         |         |        V|
 24+10       8.1473      0.67  |Q        |         |         |        V|
 24+15       8.1508      0.50  |Q        |         |         |        V|
 24+20       8.1531      0.34  Q         |         |         |        V|
 24+25       8.1549      0.25  Q         |         |         |        V|
 24+30       8.1562      0.20  Q         |         |         |        V|
 24+35       8.1574      0.16  Q         |         |         |        V|
 24+40       8.1583      0.14  Q         |         |         |        V|
 24+45       8.1591      0.11  Q         |         |         |        V|
 24+50       8.1597      0.09  Q         |         |         |        V|
 24+55       8.1603      0.08  Q         |         |         |        V|
 25+ 0       8.1607      0.07  Q         |         |         |        V|
 25+ 5       8.1611      0.06  Q         |         |         |        V|
 25+10       8.1614      0.05  Q         |         |         |        V|
 25+15       8.1617      0.04  Q         |         |         |        V|
 25+20       8.1619      0.03  Q         |         |         |        V|
 25+25       8.1621      0.03  Q         |         |         |        V|
 25+30       8.1623      0.02  Q         |         |         |        V|
 25+35       8.1624      0.02  Q         |         |         |        V|
 25+40       8.1625      0.01  Q         |         |         |        V|
 25+45       8.1626      0.01  Q         |         |         |        V|
 25+50       8.1626      0.01  Q         |         |         |        V|
 25+55       8.1626      0.01  Q         |         |         |        V|
 26+ 0       8.1627      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

        ---------------------------------------------------------------------
                                                                24 HOURS
        5 YEAR
        24 HR


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


        Program License Serial Number 6400

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

                        From study/file name: 3384A5245.rte
        ****************************HYDROGRAPH DATA***************************
                        Number of intervals =   312
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       12.714 (CFS)
                        Total volume =       8.163 (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      350.000 to Point/Station      350.000
        **** RETARDING BASIN ROUTING ****
        ______________________________________________________________________

        User entry of depth-outflow-storage data
        ---------------------------------------------------------------------
        Total number of inflow hydrograph intervals = 312
        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      0.750      0.001      0.750        0.750
          2.000      1.700      0.001      1.700        1.700
          2.700      2.470      0.001      2.470        2.470
          3.000      2.840      5.400      2.821        2.859
          3.200      3.090     11.700      3.050        3.130
          3.400      3.350     19.300      3.284        3.416
          3.600      3.610     28.200      3.513        3.707
          3.800      3.890     38.100      3.759        4.021
          4.000      4.170     48.900      4.002        4.338
          4.200      4.460     60.600      4.251        4.669
          4.400      4.760     73.100      4.508        5.012
          4.600      5.070     86.400      4.772        5.368
          4.800      5.380    100.400      5.034        5.726
        ---------------------------------------------------------------------
                        Hydrograph Detention Basin Routing
        ---------------------------------------------------------------------

        Graph values: 'I'= unit inflow; 'O'=outflow at time shown
        ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                        Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       3.2    6.36    9.54   12.71 (Ft.)
 0.083    0.03    0.00      0.000  O       |       |       |       |     0.00
```

```
0.167    0.12    0.00      0.001  O       |        |        |        |     0.00
0.250    0.29    0.00      0.002  O       |        |        |        |     0.00
0.333    0.46    0.00      0.005  OI      |        |        |        |     0.01
0.417    0.60    0.00      0.008  OI      |        |        |        |     0.01
0.500    0.74    0.00      0.013  OI      |        |        |        |     0.02
0.583    0.85    0.00      0.018  O I     |        |        |        |     0.02
0.667    0.92    0.00      0.024  O I     |        |        |        |     0.03
0.750    0.97    0.00      0.031  O I     |        |        |        |     0.04
0.833    1.02    0.00      0.038  O I     |        |        |        |     0.05
0.917    1.10    0.00      0.045  O I     |        |        |        |     0.06
1.000    1.21    0.00      0.053  O  I    |        |        |        |     0.07
1.083    1.29    0.00      0.062  O  I    |        |        |        |     0.08
1.167    1.31    0.00      0.071  O  I    |        |        |        |     0.09
1.250    1.26    0.00      0.080  O  I    |        |        |        |     0.11
1.333    1.21    0.00      0.088  O  I    |        |        |        |     0.12
1.417    1.19    0.00      0.096  O  I    |        |        |        |     0.13
1.500    1.19    0.00      0.105  O I     |        |        |        |     0.14
1.583    1.19    0.00      0.113  O I     |        |        |        |     0.15
1.667    1.19    0.00      0.121  O I     |        |        |        |     0.16
1.750    1.19    0.00      0.129  O I     |        |        |        |     0.17
1.833    1.20    0.00      0.137  O  I    |        |        |        |     0.18
1.917    1.25    0.00      0.146  O  I    |        |        |        |     0.19
2.000    1.34    0.00      0.155  O  I    |        |        |        |     0.21
2.083    1.42    0.00      0.164  O  I    |        |        |        |     0.22
2.167    1.46    0.00      0.174  O  I    |        |        |        |     0.23
2.250    1.49    0.00      0.184  O  I    |        |        |        |     0.25
2.333    1.51    0.00      0.194  O  I    |        |        |        |     0.26
2.417    1.52    0.00      0.205  O  I    |        |        |        |     0.27
2.500    1.53    0.00      0.215  O  I    |        |        |        |     0.29
2.583    1.55    0.00      0.226  O  I    |        |        |        |     0.30
2.667    1.61    0.00      0.237  O   I   |        |        |        |     0.32
2.750    1.70    0.00      0.248  O   I   |        |        |        |     0.33
2.833    1.78    0.00      0.260  O   I   |        |        |        |     0.35
2.917    1.83    0.00      0.273  O   I   |        |        |        |     0.36
3.000    1.86    0.00      0.285  O   I   |        |        |        |     0.38
3.083    1.88    0.00      0.298  O   I   |        |        |        |     0.40
3.167    1.89    0.00      0.311  O   I   |        |        |        |     0.41
3.250    1.91    0.00      0.324  O   I   |        |        |        |     0.43
3.333    1.92    0.00      0.337  O   I   |        |        |        |     0.45
3.417    1.93    0.00      0.351  O   I   |        |        |        |     0.47
3.500    1.94    0.00      0.364  O   I   |        |        |        |     0.49
3.583    1.94    0.00      0.377  O   I   |        |        |        |     0.50
3.667    1.95    0.00      0.391  O   I   |        |        |        |     0.52
3.750    1.95    0.00      0.404  O   I   |        |        |        |     0.54
3.833    1.97    0.00      0.418  O   I   |        |        |        |     0.56
3.917    2.02    0.00      0.431  O    I  |        |        |        |     0.58
4.000    2.11    0.00      0.446  O    I  |        |        |        |     0.59
4.083    2.19    0.00      0.460  O    I  |        |        |        |     0.61
4.167    2.24    0.00      0.476  O    I  |        |        |        |     0.63
4.250    2.27    0.00      0.491  O    I  |        |        |        |     0.65
4.333    2.30    0.00      0.507  O    I  |        |        |        |     0.68
4.417    2.36    0.00      0.523  O    I  |        |        |        |     0.70
4.500    2.46    0.00      0.540  O     I |        |        |        |     0.72
4.583    2.55    0.00      0.557  O     I |        |        |        |     0.74
4.667    2.60    0.00      0.575  O     I |        |        |        |     0.77
4.750    2.63    0.00      0.593  O     I |        |        |        |     0.79
4.833    2.67    0.00      0.611  O     I |        |        |        |     0.81
4.917    2.74    0.00      0.629  O     I |        |        |        |     0.84
5.000    2.83    0.00      0.649  O      I|        |        |        |     0.86
5.083    2.90    0.00      0.668  O      I|        |        |        |     0.89
5.167    2.86    0.00      0.688  O      I|        |        |        |     0.92
5.250    2.73    0.00      0.707  O     I |        |        |        |     0.94
5.333    2.61    0.00      0.726  O     I |        |        |        |     0.97
5.417    2.58    0.00      0.744  O     I |        |        |        |     0.99
5.500    2.63    0.00      0.762  O     I |        |        |        |     1.01
5.583    2.70    0.00      0.780  O     I |        |        |        |     1.03
5.667    2.78    0.00      0.799  O      I|        |        |        |     1.05
5.750    2.88    0.00      0.818  O      I|        |        |        |     1.07
5.833    2.97    0.00      0.838  O      I|        |        |        |     1.09
5.917    3.02    0.00      0.859  O      I|        |        |        |     1.11
6.000    3.05    0.00      0.880  O      I|        |        |        |     1.14
6.083    3.08    0.00      0.901  O      I|        |        |        |     1.16
6.167    3.15    0.00      0.922  O      I|        |        |        |     1.18
6.250    3.24    0.00      0.944  O       I        |        |        |     1.20
6.333    3.33    0.00      0.967  O       I        |        |        |     1.23
6.417    3.39    0.00      0.990  O       I        |        |        |     1.25
6.500    3.42    0.00      1.014  O       I        |        |        |     1.28
6.583    3.46    0.00      1.037  O       I        |        |        |     1.30
6.667    3.52    0.00      1.061  O       I        |        |        |     1.33
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6.750	3.62	0.00	1.086	O	1.35
6.833	3.72	0.00	1.111	O	1.38
6.917	3.77	0.00	1.137	O	1.41
7.000	3.80	0.00	1.163	O	1.43
7.083	3.83	0.00	1.189	O	1.46
7.167	3.85	0.00	1.216	O	1.49
7.250	3.87	0.00	1.242	O	1.52
7.333	3.90	0.00	1.269	O	1.55
7.417	3.96	0.00	1.296	O	1.57
7.500	4.05	0.00	1.324	O	1.60
7.583	4.15	0.00	1.352	O	1.63
7.667	4.25	0.00	1.381	O	1.66
7.750	4.37	0.00	1.410	O	1.70
7.833	4.48	0.00	1.441	O	1.73
7.917	4.59	0.00	1.472	O	1.76
8.000	4.72	0.00	1.504	O	1.79
8.083	4.85	0.00	1.537	O	1.83
8.167	5.02	0.00	1.571	O	1.86
8.250	5.23	0.00	1.606	O	1.90
8.333	5.42	0.00	1.643	O	1.94
8.417	5.54	0.00	1.681	O	1.98
8.500	5.62	0.00	1.719	O	2.02
8.583	5.68	0.00	1.758	O	2.05
8.667	5.78	0.00	1.798	O	2.09
8.750	5.89	0.00	1.838	O	2.13
8.833	6.02	0.00	1.879	O	2.16
8.917	6.13	0.00	1.921	O	2.20
9.000	6.26	0.00	1.963	O	2.24
9.083	6.41	0.00	2.007	O	2.28
9.167	6.58	0.00	2.052	O	2.32
9.250	6.79	0.00	2.098	O	2.36
9.333	7.00	0.00	2.145	O	2.40
9.417	7.17	0.00	2.194	O	2.45
9.500	7.33	0.00	2.244	O	2.49
9.583	7.48	0.00	2.295	O	2.54
9.667	7.62	0.00	2.347	O	2.59
9.750	7.77	0.00	2.400	O	2.64
9.833	7.91	0.00	2.454	O	2.69
9.917	8.04	0.54	2.507	O	2.73
10.000	8.19	1.27	2.557	O	2.77
10.083	8.22	1.93	2.602	O	2.81
10.167	7.96	2.52	2.643	O	2.84
10.250	7.43	3.02	2.677	O	2.87
10.333	6.92	3.41	2.704	O	2.89
10.417	6.64	3.74	2.726	O	2.91
10.500	6.48	4.01	2.744	O	2.92
10.583	6.45	4.24	2.761	O	2.94
10.667	6.61	4.46	2.776	O	2.95
10.750	6.97	4.68	2.791	O	2.96
10.833	7.32	4.92	2.807	O	2.97
10.917	7.50	5.16	2.823	O	2.99
11.000	7.60	5.39	2.839	O	3.00
11.083	7.65	5.73	2.853	O	3.01
11.167	7.65	6.04	2.865	O	3.02
11.250	7.60	6.29	2.875	O	3.03
11.333	7.54	6.50	2.884	O	3.03
11.417	7.52	6.66	2.890	O	3.04
11.500	7.51	6.80	2.895	O	3.04
11.583	7.48	6.91	2.900	O	3.05
11.667	7.38	6.99	2.903	O	3.05
11.750	7.21	7.04	2.905	O	3.05
11.833	7.06	7.06	2.906	O	3.05
11.917	7.02	7.05	2.906	O	3.05
12.000	7.05	7.05	2.905	O	3.05
12.083	7.18	7.06	2.906	O	3.05
12.167	7.54	7.11	2.908	O	3.05
12.250	8.13	7.22	2.912	O	3.06
12.333	8.71	7.42	2.920	O	3.06
12.417	9.07	7.65	2.929	O	3.07
12.500	9.34	7.90	2.939	O	3.08
12.583	9.57	8.15	2.949	O	3.09
12.667	9.81	8.39	2.959	O	3.10
12.750	10.08	8.64	2.969	O	3.10
12.833	10.33	8.89	2.979	O	3.11
12.917	10.53	9.14	2.988	O	3.12
13.000	10.72	9.38	2.998	O	3.13
13.083	10.95	9.61	3.007	O	3.13
13.167	11.30	9.85	3.017	O	3.14
13.250	11.80	10.12	3.027	O	3.15

13.333	12.26	10.43	3.039	|	|	|	| O I |	3.16
13.417	12.54	10.74	3.052	|	|	|	| O I|	3.17
13.500	12.71	11.04	3.064	|	|	|	| O I	3.18
13.583	12.70	11.31	3.074	|	|	|	| O I|	3.19
13.667	12.27	11.50	3.082	|	|	|	| O I |	3.19
13.750	11.44	11.55	3.084	|	|	|	| IO |	3.20
13.833	10.63	11.47	3.081	|	|	|	| I O |	3.19
13.917	10.19	11.30	3.074	|	|	|	|I O |	3.19
14.000	9.96	11.10	3.066	|	|	|	|I O |	3.18
14.083	9.86	10.91	3.059	|	|	|	I O |	3.18
14.167	9.93	10.75	3.052	|	|	|	I O |	3.17
14.250	10.16	10.64	3.048	|	|	|	|IO |	3.17
14.333	10.39	10.58	3.046	|	|	|	| O |	3.16
14.417	10.46	10.56	3.045	|	|	|	| O |	3.16
14.500	10.43	10.54	3.044	|	|	|	| O |	3.16
14.583	10.38	10.52	3.043	|	|	|	| O |	3.16
14.667	10.35	10.49	3.042	|	|	|	| O |	3.16
14.750	10.34	10.47	3.041	|	|	|	| O |	3.16
14.833	10.31	10.45	3.040	|	|	|	|IO |	3.16
14.917	10.25	10.42	3.039	|	|	|	|IO |	3.16
15.000	10.16	10.39	3.038	|	|	|	|IO |	3.16
15.083	10.06	10.34	3.036	|	|	|	|IO |	3.16
15.167	9.96	10.29	3.034	|	|	|	|O |	3.16
15.250	9.84	10.23	3.032	|	|	|	IO |	3.15
15.333	9.73	10.16	3.029	|	|	|	IO |	3.15
15.417	9.61	10.08	3.026	|	|	|	IO |	3.15
15.500	9.48	9.99	3.022	|	|	|	I|O |	3.15
15.583	9.32	9.90	3.019	|	|	|	IO |	3.14
15.667	9.06	9.79	3.014	|	|	|	I O |	3.14
15.750	8.69	9.64	3.008	|	|	|	I O |	3.13
15.833	8.34	9.46	3.001	|	|	|	I O| |	3.13
15.917	8.13	9.26	2.993	|	|	|	I O| |	3.12
16.000	8.01	9.07	2.986	|	|	|	I O | |	3.12
16.083	7.74	8.88	2.978	|	|	|	I O | |	3.11
16.167	6.93	8.64	2.968	|	|	|I O | |	3.10
16.250	5.63	8.26	2.953	|	| I |	O | |	3.09
16.333	4.38	7.74	2.933	|	| I |	O | |	3.07
16.417	3.66	7.14	2.909	|	|I |	|O | |	3.06
16.500	3.24	6.55	2.886	|	I |	O | |	3.04
16.583	2.93	6.00	2.864	|	I|	O| |	3.02
16.667	2.65	5.49	2.843	|	I |	O | |	3.00
16.750	2.38	5.17	2.824	|	I |	O | |	2.99
16.833	2.14	4.89	2.805	|	I |	O | |	2.97
16.917	1.97	4.62	2.786	|	I |	O | |	2.96
17.000	1.83	4.36	2.769	|	I |	O | |	2.94
17.083	1.75	4.11	2.752	|	I |	O | |	2.93
17.167	1.76	3.89	2.736	|	I |O | |	2.92
17.250	1.85	3.69	2.723	|	I |O | |	2.90
17.333	1.94	3.52	2.711	|	I O | |	2.90
17.417	1.98	3.37	2.701	|	I O | |	2.89
17.500	1.98	3.23	2.692	|	I O | |	2.88
17.583	1.97	3.11	2.683	|	I O| |	2.87
17.667	1.97	3.00	2.676	|	I O| |	2.87
17.750	1.96	2.90	2.669	|	I O| |	2.86
17.833	1.94	2.81	2.663	|	I O| |	2.86
17.917	1.89	2.73	2.657	|	I O | |	2.85
18.000	1.80	2.64	2.651	|	I O | |	2.85
18.083	1.70	2.56	2.645	|	I O | |	2.84
18.167	1.66	2.47	2.639	|	I O | |	2.84
18.250	1.65	2.40	2.634	|	I O | |	2.83
18.333	1.63	2.32	2.629	|	IO | |	2.83
18.417	1.62	2.26	2.625	|	IO | |	2.83
18.500	1.62	2.20	2.620	|	IO | |	2.82
18.583	1.60	2.14	2.617	|	IO | |	2.82
18.667	1.54	2.09	2.613	|	I O | |	2.82
18.750	1.46	2.03	2.609	|	I O | |	2.81
18.833	1.36	1.97	2.605	|	IO | |	2.81
18.917	1.27	1.91	2.601	|	IO | |	2.81
19.000	1.16	1.84	2.596	|	I O | |	2.80
19.083	1.07	1.77	2.591	|	I O | |	2.80
19.167	1.06	1.70	2.587	|	I O | |	2.79
19.250	1.10	1.64	2.583	|	I O | |	2.79
19.333	1.16	1.60	2.579	|	I O | |	2.79
19.417	1.24	1.56	2.577	|	O | |	2.79
19.500	1.33	1.53	2.575	|	O | |	2.79
19.583	1.39	1.51	2.574	|	O | |	2.78
19.667	1.39	1.50	2.573	|	O | |	2.78
19.750	1.33	1.49	2.572	|	O | |	2.78
19.833	1.26	1.47	2.571	|	O | |	2.78

19.917	1.18	1.45	2.569	IO				2.78
20.000	1.08	1.42	2.567	IO				2.78
20.083	1.00	1.38	2.565	IO				2.78
20.167	1.00	1.34	2.562	IO				2.77
20.250	1.05	1.31	2.560	IO				2.77
20.333	1.11	1.29	2.558	IO				2.77
20.417	1.14	1.28	2.557	IO				2.77
20.500	1.15	1.26	2.557	IO				2.77
20.583	1.16	1.25	2.556	IO				2.77
20.667	1.16	1.24	2.555	IO				2.77
20.750	1.17	1.24	2.555	IO				2.77
20.833	1.16	1.23	2.554	IO				2.77
20.917	1.11	1.22	2.554	IO				2.77
21.000	1.03	1.21	2.553	IO				2.77
21.083	0.97	1.19	2.551	O				2.77
21.167	0.97	1.17	2.550	O				2.76
21.250	1.03	1.15	2.549	O				2.76
21.333	1.08	1.14	2.548	O				2.76
21.417	1.06	1.13	2.548	O				2.76
21.500	0.99	1.12	2.547	O				2.76
21.583	0.93	1.11	2.546	O				2.76
21.667	0.94	1.09	2.545	O				2.76
21.750	1.01	1.08	2.544	O				2.76
21.833	1.06	1.08	2.544	O				2.76
21.917	1.05	1.07	2.544	O				2.76
22.000	0.98	1.07	2.543	O				2.76
22.083	0.93	1.06	2.542	O				2.76
22.167	0.94	1.05	2.542	O				2.76
22.250	1.00	1.04	2.541	O				2.76
22.333	1.06	1.04	2.541	O				2.76
22.417	1.04	1.04	2.541	O				2.76
22.500	0.98	1.04	2.541	O				2.76
22.583	0.91	1.03	2.540	O				2.76
22.667	0.87	1.01	2.539	O				2.76
22.750	0.85	1.00	2.538	O				2.76
22.833	0.84	0.99	2.537	O				2.75
22.917	0.83	0.97	2.536	O				2.75
23.000	0.83	0.96	2.536	O				2.75
23.083	0.82	0.94	2.535	O				2.75
23.167	0.82	0.93	2.534	O				2.75
23.250	0.81	0.92	2.533	O				2.75
23.333	0.81	0.91	2.532	O				2.75
23.417	0.80	0.90	2.532	O				2.75
23.500	0.80	0.89	2.531	O				2.75
23.583	0.80	0.88	2.530	O				2.75
23.667	0.80	0.87	2.530	O				2.75
23.750	0.80	0.87	2.529	O				2.75
23.833	0.79	0.86	2.529	O				2.75
23.917	0.79	0.85	2.528	IO				2.75
24.000	0.79	0.85	2.528	IO				2.75
24.083	0.77	0.84	2.528	IO				2.75
24.167	0.67	0.83	2.527	IO				2.75
24.250	0.50	0.81	2.525	IO				2.74
24.333	0.34	0.77	2.523	IO				2.74
24.417	0.25	0.72	2.520	IO				2.74
24.500	0.20	0.68	2.516	IO				2.74
24.583	0.16	0.63	2.513	IO				2.73
24.667	0.14	0.58	2.510	IO				2.73
24.750	0.11	0.54	2.507	IO				2.73
24.833	0.09	0.50	2.504	IO				2.73
24.917	0.08	0.46	2.501	IO				2.73
25.000	0.07	0.42	2.499	IO				2.72
25.083	0.06	0.39	2.496	O				2.72
25.167	0.05	0.35	2.494	O				2.72
25.250	0.04	0.33	2.492	O				2.72
25.333	0.03	0.30	2.490	O				2.72
25.417	0.03	0.27	2.489	O				2.72
25.500	0.02	0.25	2.487	O				2.71
25.583	0.02	0.23	2.485	O				2.71
25.667	0.01	0.21	2.484	O				2.71
25.750	0.01	0.19	2.483	O				2.71
25.833	0.01	0.17	2.482	O				2.71
25.917	0.01	0.15	2.481	O				2.71
26.000	0.00	0.14	2.480	O				2.71
26.083	0.00	0.13	2.479	O				2.71
26.167	0.00	0.11	2.478	O				2.71
26.250	0.00	0.10	2.477	O				2.71
26.333	0.00	0.09	2.476	O				2.71
26.417	0.00	0.08	2.476	O				2.70

26.500	0.00	0.08	2.475	O	|	|	|	|	2.70
26.583	0.00	0.07	2.475	O	|	|	|	|	2.70
26.667	0.00	0.06	2.474	O	|	|	|	|	2.70
26.750	0.00	0.06	2.474	O	|	|	|	|	2.70
26.833	0.00	0.05	2.473	O	|	|	|	|	2.70
26.917	0.00	0.05	2.473	O	|	|	|	|	2.70
27.000	0.00	0.04	2.473	O	|	|	|	|	2.70
27.083	0.00	0.04	2.473	O	|	|	|	|	2.70
27.167	0.00	0.03	2.472	O	|	|	|	|	2.70
27.250	0.00	0.03	2.472	O	|	|	|	|	2.70
27.333	0.00	0.03	2.472	O	|	|	|	|	2.70
27.417	0.00	0.03	2.472	O	|	|	|	|	2.70
27.500	0.00	0.02	2.472	O	|	|	|	|	2.70
27.583	0.00	0.02	2.471	O	|	|	|	|	2.70
27.667	0.00	0.02	2.471	O	|	|	|	|	2.70
27.750	0.00	0.02	2.471	O	|	|	|	|	2.70
27.833	0.00	0.02	2.471	O	|	|	|	|	2.70
27.917	0.00	0.01	2.471	O	|	|	|	|	2.70
28.000	0.00	0.01	2.471	O	|	|	|	|	2.70
28.083	0.00	0.01	2.471	O	|	|	|	|	2.70
28.167	0.00	0.01	2.471	O	|	|	|	|	2.70
28.250	0.00	0.01	2.471	O	|	|	|	|	2.70
28.333	0.00	0.01	2.471	O	|	|	|	|	2.70
28.417	0.00	0.01	2.470	O	|	|	|	|	2.70
28.500	0.00	0.01	2.470	O	|	|	|	|	2.70
28.583	0.00	0.01	2.470	O	|	|	|	|	2.70
28.667	0.00	0.01	2.470	O	|	|	|	|	2.70
28.750	0.00	0.01	2.470	O	|	|	|	|	2.70
28.833	0.00	0.00	2.470	O	|	|	|	|	2.70
28.917	0.00	0.00	2.470	O	|	|	|	|	2.70
29.000	0.00	0.00	2.470	O	|	|	|	|	2.70
29.083	0.00	0.00	2.470	O	|	|	|	|	2.70
29.167	0.00	0.00	2.470	O	|	|	|	|	2.70
29.250	0.00	0.00	2.470	O	|	|	|	|	2.70
29.333	0.00	0.00	2.470	O	|	|	|	|	2.70
29.417	0.00	0.00	2.470	O	|	|	|	|	2.70
29.500	0.00	0.00	2.470	O	|	|	|	|	2.70
29.583	0.00	0.00	2.470	O	|	|	|	|	2.70
29.667	0.00	0.00	2.470	O	|	|	|	|	2.70
29.750	0.00	0.00	2.470	O	|	|	|	|	2.70
29.833	0.00	0.00	2.470	O	|	|	|	|	2.70
29.917	0.00	0.00	2.470	O	|	|	|	|	2.70
30.000	0.00	0.00	2.470	O	|	|	|	|	2.70
30.083	0.00	0.00	2.470	O	|	|	|	|	2.70
30.167	0.00	0.00	2.470	O	|	|	|	|	2.70

Remaining water in basin = 2.47 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =   362
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       11.553 (CFS)
                Total volume =       5.693 (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
***********************************************************************

---------------------------------------------------------------------
```

10-YEAR FREQUENCY

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384a10110.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



----------------------------------------------------------------------
10 YEAR
1 HR


---------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            0.52                  20.07

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            1.15                  44.39

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.520(In)
Area Averaged 100-Year Rainfall =    1.150(In)

Point rain (area averaged) =    0.779(In)
Areal adjustment factor =   99.97 %
Adjusted average point rain =    0.779(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  56.0      0.511     0.900        0.097       1.000      0.097
                                                  Sum (F) =   0.097
Area averaged mean soil loss (F) (In/Hr) =  0.097
Minimum soil loss rate ((In/Hr)) =  0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.5500
-------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-------------------------------------------------------------------
                Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.30      0.308       (  0.097)       0.031        0.278
   2   0.17     4.20      0.393       (  0.097)       0.039        0.353
   3   0.25     4.40      0.411       (  0.097)       0.041        0.370
   4   0.33     4.80      0.449       (  0.097)       0.045        0.404
   5   0.42     5.20      0.486       (  0.097)       0.049        0.437
   6   0.50     6.20      0.580       (  0.097)       0.058        0.522
   7   0.58     6.80      0.636       (  0.097)       0.064        0.572
   8   0.67     8.80      0.823       (  0.097)       0.082        0.740
   9   0.75    13.90      1.299          0.097    (  0.130)        1.202
  10   0.83    31.40      2.935          0.097    (  0.293)        2.838
  11   0.92     7.20      0.673       (  0.097)       0.067        0.606
  12   1.00     3.80      0.355       (  0.097)       0.036        0.320
                (Loss Rate Not Used)
     Sum =     100.0                                   Sum =     8.6
        Flood volume = Effective rainfall      0.72(In)
         times area      38.6(Ac.)/[(In)/(Ft.)] =       2.3(Ac.Ft)
        Total soil loss =      0.06(In)
```

```
Total soil loss =     0.189(Ac.Ft)
Total rainfall =      0.78(In)
Flood volume =      100903.5 Cubic Feet
Total soil loss =        8236.4 Cubic Feet
-------------------------------------------------------------------
 Peak flow rate of this hydrograph =     43.520(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))

-------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
-----------------------------------------------------------------------
  0+ 5       0.0024      0.35  Q         |         |         |         |
  0+10       0.0147      1.78  VQ        |         |         |         |
  0+15       0.0452      4.44  V  Q      |         |         |         |
  0+20       0.0960      7.37  |V   Q    |         |         |         |
  0+25       0.1617      9.54  | V    Q  |         |         |         |
  0+30       0.2393     11.26  |   V    Q|         |         |         |
  0+35       0.3290     13.03  |    V    Q         |         |         |
  0+40       0.4333     15.14  |      V  | Q       |         |         |
  0+45       0.5592     18.29  |        V|   Q     |         |         |
  0+50       0.7329     25.22  |         | V       Q         |         |
  0+55       0.9823     36.21  |         |     V   |       Q |         |
  1+ 0       1.2820     43.52  |         |         | V       |   Q     |
  1+ 5       1.5527     39.31  |         |         |     V   |Q        |
  1+10       1.7386     26.98  |         |         |Q        V         |
  1+15       1.8604     17.69  |         |   Q     |         | V       |
  1+20       1.9445     12.21  |        Q|         |         |  V      |
  1+25       2.0083      9.26  |      Q  |         |         |   V     |
  1+30       2.0596      7.46  |    Q    |         |         |    V    |
  1+35       2.1015      6.08  |   Q     |         |         |     V   |
  1+40       2.1366      5.10  |   Q     |         |         |     V   |
  1+45       2.1658      4.24  |  Q      |         |         |      V  |
  1+50       2.1904      3.58  | Q       |         |         |      V  |
  1+55       2.1111      3.01  | Q       |         |         |       V |
  2+ 0       2.2296      2.69  | Q       |         |         |       V |
  2+ 5       2.2460      2.38  |Q        |         |         |       V |
  2+10       2.2598      2.00  |Q        |         |         |        V|
  2+15       2.2715      1.70  |Q        |         |         |        V|
  2+20       2.2814      1.44  |Q        |         |         |        V|
  2+25       2.2897      1.20  Q         |         |         |        V|
  2+30       2.2966      1.00  Q         |         |         |        V|
  2+35       2.3023      0.83  Q         |         |         |        V|
  2+40       2.3074      0.74  Q         |         |         |        V|
  2+45       2.3118      0.64  Q         |         |         |        V|
  2+50       2.3153      0.50  Q         |         |         |        V|
  2+55       2.3161      0.12  Q         |         |         |        V|
  3+ 0       2.3164      0.04  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

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


        10 YEAR
        1 HR


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


        Program License Serial Number 6400

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

                        From study/file name: 3384A10110.rte
        ****************************HYDROGRAPH DATA***************************
                        Number of intervals =    36
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       43.520 (CFS)
                        Total volume =       2.316 (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      350.000 to Point/Station      350.000
        **** RETARDING BASIN ROUTING ****
        ______________________________________________________________________

        User entry of depth-outflow-storage data
        ---------------------------------------------------------------------
        Total number of inflow hydrograph intervals = 36
        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      0.750      0.001      0.750        0.750
          2.000      1.700      0.001      1.700        1.700
          2.700      2.470      0.001      2.470        2.470
          3.000      2.840      5.400      2.821        2.859
          3.200      3.090     11.700      3.050        3.130
          3.400      3.350     19.300      3.284        3.416
          3.600      3.610     28.200      3.513        3.707
          3.800      3.890     38.100      3.759        4.021
          4.000      4.170     48.900      4.002        4.338
          4.200      4.460     60.600      4.251        4.669
          4.400      4.760     73.100      4.508        5.012
          4.600      5.070     86.400      4.772        5.368
          4.800      5.380    100.400      5.034        5.726
        ---------------------------------------------------------------------
                        Hydrograph Detention Basin Routing
        ---------------------------------------------------------------------

        Graph values: 'I'= unit inflow; 'O'=outflow at time shown
        ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                        Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0      10.9   21.76   32.64   43.52 (Ft.)
 0.083    0.35    0.00      0.001  O       |       |       |       |     0.00
```

```
0.167    1.78    0.00      0.009  OI      |       |       |       |     0.01
0.250    4.44    0.00      0.030  O  I    |       |       |       |     0.04
0.333    7.37    0.00      0.071  O    I  |       |       |       |     0.09
0.417    9.54    0.00      0.129  O      I|       |       |       |     0.17
0.500   11.26    0.00      0.200  O       I       |       |       |     0.27
0.583   13.03    0.00      0.284  O       |I      |       |       |     0.38
0.667   15.14    0.00      0.381  O       |  I    |       |       |     0.51
0.750   18.29    0.00      0.496  O       |    I  |       |       |     0.66
0.833   25.22    0.00      0.646  O       |       | I     |       |     0.86
0.917   36.21    0.00      0.858  O       |       |       | I     |     1.11
1.000   43.52    0.00      1.132  O       |       |       |       I     1.40
1.083   39.31    0.00      1.417  O       |       |       |   I   |     1.70
1.167   26.98    0.00      1.646  O       |       |  I    |       |     1.94
1.250   17.69    0.00      1.799  O       |    I  |       |       |     2.09
1.333   12.21    0.00      1.902  O       I       |       |       |     2.18
1.417    9.26    0.00      1.976  O     I |       |       |       |     2.25
1.500    7.46    0.00      2.034  O    I  |       |       |       |     2.30
1.583    6.08    0.00      2.080  O   I   |       |       |       |     2.35
1.667    5.10    0.00      2.119  O  I    |       |       |       |     2.38
1.750    4.24    0.00      2.151  O  I    |       |       |       |     2.41
1.833    3.58    0.00      2.178  O I     |       |       |       |     2.43
1.917    3.01    0.00      2.201  O I     |       |       |       |     2.46
2.000    2.69    0.00      2.220  OI      |       |       |       |     2.47
2.083    2.38    0.00      2.238  OI      |       |       |       |     2.49
2.167    2.00    0.00      2.253  OI      |       |       |       |     2.50
2.250    1.70    0.00      2.265  OI      |       |       |       |     2.51
2.333    1.44    0.00      2.276  OI      |       |       |       |     2.52
2.417    1.20    0.00      2.285  O       |       |       |       |     2.53
2.500    1.00    0.00      2.293  O       |       |       |       |     2.54
2.583    0.83    0.00      2.299  O       |       |       |       |     2.54
2.667    0.74    0.00      2.305  O       |       |       |       |     2.55
2.750    0.64    0.00      2.309  O       |       |       |       |     2.55
2.833    0.50    0.00      2.313  O       |       |       |       |     2.56
2.917    0.12    0.00      2.316  O       |       |       |       |     2.56
3.000    0.04    0.00      2.316  O       |       |       |       |     2.56
3.083    0.00    0.00      2.316  O       |       |       |       |     2.56
```

Remaining water in basin = 2.32 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =    37
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        0.001 (CFS)
                Total volume =       0.000 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
***********************************************************************
```

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

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                Study date  08/31/21 File: 3384a10310.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



---------------------------------------------------------------------
10 YEAR
3 HR


--------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            0.95                  36.67

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            1.90                  73.34

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    1.900(In)

Point rain (area averaged) =    1.341(In)
Areal adjustment factor =   99.98 %
Adjusted average point rain =    1.341(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  56.0      0.511     0.900        0.097       1.000      0.097
                                                 Sum (F) =   0.097
Area averaged mean soil loss (F) (In/Hr) =  0.097
Minimum soil loss rate ((In/Hr)) =  0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
-------------------------------------------------------------------
               Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     1.30      0.209       (  0.097)       0.021        0.188
   2   0.17     1.30      0.209       (  0.097)       0.021        0.188
   3   0.25     1.10      0.177       (  0.097)       0.018        0.159
   4   0.33     1.50      0.241       (  0.097)       0.024        0.217
   5   0.42     1.50      0.241       (  0.097)       0.024        0.217
   6   0.50     1.80      0.290       (  0.097)       0.029        0.261
   7   0.58     1.50      0.241       (  0.097)       0.024        0.217
   8   0.67     1.80      0.290       (  0.097)       0.029        0.261
   9   0.75     1.80      0.290       (  0.097)       0.029        0.261
  10   0.83     1.50      0.241       (  0.097)       0.024        0.217
  11   0.92     1.60      0.257       (  0.097)       0.026        0.232
  12   1.00     1.80      0.290       (  0.097)       0.029        0.261
  13   1.08     2.20      0.354       (  0.097)       0.035        0.319
  14   1.17     2.20      0.354       (  0.097)       0.035        0.319
  15   1.25     2.20      0.354       (  0.097)       0.035        0.319
  16   1.33     2.00      0.322       (  0.097)       0.032        0.290
  17   1.42     2.60      0.418       (  0.097)       0.042        0.376
  18   1.50     2.70      0.434       (  0.097)       0.043        0.391
  19   1.58     2.40      0.386       (  0.097)       0.039        0.347
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20   1.67     2.70      0.434       (  0.097)       0.043        0.391
21   1.75     3.30      0.531       (  0.097)       0.053        0.478
22   1.83     3.10      0.499       (  0.097)       0.050        0.449
23   1.92     2.90      0.467       (  0.097)       0.047        0.420
24   2.00     3.00      0.483       (  0.097)       0.048        0.434
25   2.08     3.10      0.499       (  0.097)       0.050        0.449
26   2.17     4.20      0.676       (  0.097)       0.068        0.608
27   2.25     5.00      0.804       (  0.097)       0.080        0.724
28   2.33     3.50      0.563       (  0.097)       0.056        0.507
29   2.42     6.80      1.094          0.097    (  0.109)        0.997
30   2.50     7.30      1.174          0.097    (  0.117)        1.077
31   2.58     8.20      1.319          0.097    (  0.132)        1.222
32   2.67     5.90      0.949       (  0.097)       0.095        0.854
33   2.75     2.00      0.322       (  0.097)       0.032        0.290
34   2.83     1.80      0.290       (  0.097)       0.029        0.261
35   2.92     1.80      0.290       (  0.097)       0.029        0.261
36   3.00     0.60      0.097       (  0.097)       0.010        0.087
                (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    14.5
      Flood volume = Effective rainfall      1.21(In)
       times area      38.6(Ac.)/[(In)/(Ft.)] =       3.9(Ac.Ft)
      Total soil loss =      0.13(In)
      Total soil loss =     0.413(Ac.Ft)
      Total rainfall =      1.34(In)
      Flood volume =      169848.6 Cubic Feet
      Total soil loss =       17995.1 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     33.452(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))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
-------------------------------------------------------------------
  0+ 5       0.0016      0.24  Q         |         |         |         |
  0+10       0.0095      1.14  VQ        |         |         |         |
  0+15       0.0277      2.65  V Q       |         |         |         |
  0+20       0.0557      4.06  V   Q     |         |         |         |
  0+25       0.0898      4.94  V   Q     |         |         |         |
  0+30       0.1292      5.72  |V   Q    |         |         |         |
  0+35       0.1742      6.54  |V    Q   |         |         |         |
  0+40       0.2236      7.18  | V    Q  |         |         |         |
  0+45       0.2765      7.68  | V    Q  |         |         |         |
  0+50       0.3321      8.06  |  V    Q |         |         |         |
  0+55       0.3894      8.32  |  V    Q |         |         |         |
  1+ 0       0.4471      8.39  |   V   Q |         |         |         |
  1+ 5       0.5063      8.59  |    V  Q |         |         |         |
  1+10       0.5697      9.20  |    V   Q|         |         |         |
  1+15       0.6385     10.00  |     V  Q|         |         |         |
  1+20       0.7118     10.64  |      V  Q         |         |         |
  1+25       0.7876     11.00  |       V |Q        |         |         |
  1+30       0.8665     11.46  |       V |Q        |         |         |
  1+35       0.9502     12.15  |        V| Q       |         |         |
  1+40       1.0386     12.83  |         V Q       |         |         |
  1+45       1.1305     13.35  |         |V Q      |         |         |
  1+50       1.2275     14.08  |         | V Q     |         |         |
  1+55       1.3309     15.01  |         |  V Q    |         |         |
  2+ 0       1.4384     15.61  |         |   VQ    |         |         |
  2+ 5       1.5473     15.82  |         |    Q    |         |         |
  2+10       1.6589     16.20  |         |     QV  |         |         |
  2+15       1.7787     17.40  |         |      QV |         |         |
  2+20       1.9114     19.26  |         |        Q|         |         |
  2+25       2.0575     21.22  |         |         |Q        |         |
  2+30       2.2203     23.64  |         |         | VQ      |         |
  2+35       2.4100     27.54  |         |         |   V  Q  |         |
```

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    2+40       2.6303     31.99  |         |         |     V   |Q        |
    2+45       2.8607     33.45  |         |         |        V|  Q      |
    2+50       3.0703     30.44  |         |         |         QV        |
    2+55       3.2393     24.53  |         |         |   Q     |  V      |
    3+ 0       3.3715     19.20  |         |        Q|         |   V     |
    3+ 5       3.4783     15.52  |         |    Q    |         |    V    |
    3+10       3.5624     12.20  |         | Q       |         |     V   |
    3+15       3.6255      9.17  |        Q|         |         |      V  |
    3+20       3.6736      6.98  |     Q   |         |         |      V  |
    3+25       3.7122      5.61  |    Q    |         |         |       V |
    3+30       3.7440      4.61  |   Q     |         |         |       V |
    3+35       3.7705      3.85  |  Q      |         |         |       V |
    3+40       3.7929      3.26  |  Q      |         |         |       V |
    3+45       3.8120      2.78  | Q       |         |         |        V|
    3+50       3.8284      2.37  | Q       |         |         |        V|
    3+55       3.8421      2.00  |Q        |         |         |        V|
    4+ 0       3.8537      1.68  |Q        |         |         |        V|
    4+ 5       3.8636      1.43  |Q        |         |         |        V|
    4+10       3.8719      1.21  |Q        |         |         |        V|
    4+15       3.8788      1.00  Q         |         |         |        V|
    4+20       3.8844      0.81  Q         |         |         |        V|
    4+25       3.8893      0.71  Q         |         |         |        V|
    4+30       3.8931      0.55  Q         |         |         |        V|
    4+35       3.8958      0.40  Q         |         |         |        V|
    4+40       3.8974      0.23  Q         |         |         |        V|
    4+45       3.8982      0.12  Q         |         |         |        V|
    4+50       3.8988      0.08  Q         |         |         |        V|
    4+55       3.8991      0.05  Q         |         |         |        V|
    5+ 0       3.8992      0.01  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

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


        10 YEAR
        3 HR


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


        Program License Serial Number 6400

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

                        From study/file name: 3384A10310.rte
        ****************************HYDROGRAPH DATA***************************
                        Number of intervals =    60
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       33.452 (CFS)
                        Total volume =       3.899 (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      350.000 to Point/Station      350.000
        **** RETARDING BASIN ROUTING ****
        ______________________________________________________________________

        User entry of depth-outflow-storage data
        ---------------------------------------------------------------------
        Total number of inflow hydrograph intervals = 60
        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      0.750      0.001      0.750        0.750
          2.000      1.700      0.001      1.700        1.700
          2.700      2.470      0.001      2.470        2.470
          3.000      2.840      5.400      2.821        2.859
          3.200      3.090     11.700      3.050        3.130
          3.400      3.350     19.300      3.284        3.416
          3.600      3.610     28.200      3.513        3.707
          3.800      3.890     38.100      3.759        4.021
          4.000      4.170     48.900      4.002        4.338
          4.200      4.460     60.600      4.251        4.669
          4.400      4.760     73.100      4.508        5.012
          4.600      5.070     86.400      4.772        5.368
          4.800      5.380    100.400      5.034        5.726
        ---------------------------------------------------------------------
                        Hydrograph Detention Basin Routing
        ---------------------------------------------------------------------

        Graph values: 'I'= unit inflow; 'O'=outflow at time shown
        ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                      Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       8.4   16.73   25.09   33.45 (Ft.)
 0.083    0.24    0.00      0.001  O       |       |       |       |     0.00
```

0.167	1.14	0.00	0.006	OI					0.01
0.250	2.65	0.00	0.019	O I					0.02
0.333	4.06	0.00	0.042	O I					0.06
0.417	4.94	0.00	0.073	O I					0.10
0.500	5.72	0.00	0.109	O I					0.15
0.583	6.54	0.00	0.152	O I					0.20
0.667	7.18	0.00	0.199	O I					0.27
0.750	7.68	0.00	0.250	O I					0.33
0.833	8.06	0.00	0.304	O I					0.41
0.917	8.32	0.00	0.361	O I					0.48
1.000	8.39	0.00	0.418	O I					0.56
1.083	8.59	0.00	0.477	O I					0.64
1.167	9.20	0.00	0.538	O I					0.72
1.250	10.00	0.00	0.604	O I					0.81
1.333	10.64	0.00	0.675	O I					0.90
1.417	11.00	0.00	0.750	O I					1.00
1.500	11.46	0.00	0.827	O I					1.08
1.583	12.15	0.00	0.908	O I					1.17
1.667	12.83	0.00	0.994	O I					1.26
1.750	13.35	0.00	1.084	O I					1.35
1.833	14.08	0.00	1.179	O I					1.45
1.917	15.01	0.00	1.279	O I					1.56
2.000	15.61	0.00	1.385	O I					1.67
2.083	15.82	0.00	1.493	O I					1.78
2.167	16.20	0.00	1.603	O I					1.90
2.250	17.40	0.00	1.719	O I					2.02
2.333	19.26	0.00	1.845	O I					2.13
2.417	21.22	0.00	1.984	O I					2.26
2.500	23.64	0.00	2.139	O I					2.40
2.583	27.54	0.00	2.315	O I					2.56
2.667	31.99	0.70	2.518	O I					2.74
2.750	33.45	3.76	2.728	O I					2.91
2.833	30.44	7.16	2.910	O I					3.06
2.917	24.53	10.41	3.039	O I					3.16
3.000	19.20	12.32	3.111	O I					3.22
3.083	15.52	13.24	3.143	O I					3.24
3.167	12.20	13.35	3.147	IO					3.24
3.250	9.17	12.86	3.130	I O					3.23
3.333	6.98	11.99	3.100	I O					3.21
3.417	5.61	11.04	3.064	I O					3.18
3.500	4.61	10.10	3.026	I O					3.15
3.583	3.85	9.16	2.989	I O					3.12
3.667	3.26	8.26	2.954	I O					3.09
3.750	2.78	7.43	2.920	I O					3.06
3.833	2.37	6.65	2.890	I O					3.04
3.917	2.00	5.94	2.861	I O					3.02
4.000	1.68	5.33	2.835	I O					3.00
4.083	1.43	4.97	2.810	I O					2.98
4.167	1.21	4.62	2.787	I O					2.96
4.250	1.00	4.28	2.763	I O					2.94
4.333	0.81	3.96	2.741	I O					2.92
4.417	0.71	3.65	2.720	I O					2.90
4.500	0.55	3.36	2.701	I O					2.89
4.583	0.40	3.09	2.682	I O					2.87
4.667	0.23	2.82	2.663	I O					2.86
4.750	0.12	2.57	2.646	I O					2.84
4.833	0.08	2.33	2.630	I O					2.83
4.917	0.05	2.12	2.615	I O					2.82
5.000	0.01	1.92	2.601	IO					2.81
5.083	0.00	1.73	2.589	IO					2.80
5.167	0.00	1.57	2.577	IO					2.79
5.250	0.00	1.42	2.567	IO					2.78
5.333	0.00	1.28	2.558	IO					2.77
5.417	0.00	1.16	2.549	IO					2.76
5.500	0.00	1.05	2.542	IO					2.76
5.583	0.00	0.95	2.535	O					2.75
5.667	0.00	0.86	2.529	O					2.75
5.750	0.00	0.78	2.523	O					2.74
5.833	0.00	0.70	2.518	O					2.74
5.917	0.00	0.63	2.513	O					2.74
6.000	0.00	0.57	2.509	O					2.73
6.083	0.00	0.52	2.505	O					2.73
6.167	0.00	0.47	2.502	O					2.73
6.250	0.00	0.42	2.499	O					2.72
6.333	0.00	0.38	2.496	O					2.72
6.417	0.00	0.35	2.494	O					2.72
6.500	0.00	0.31	2.491	O					2.72
6.583	0.00	0.28	2.489	O					2.72
6.667	0.00	0.26	2.488	O					2.71

6.750	0.00	0.23	2.486	O	|	|	|	|	2.71
6.833	0.00	0.21	2.484	O	|	|	|	|	2.71
6.917	0.00	0.19	2.483	O	|	|	|	|	2.71
7.000	0.00	0.17	2.482	O	|	|	|	|	2.71
7.083	0.00	0.16	2.481	O	|	|	|	|	2.71
7.167	0.00	0.14	2.480	O	|	|	|	|	2.71
7.250	0.00	0.13	2.479	O	|	|	|	|	2.71
7.333	0.00	0.11	2.478	O	|	|	|	|	2.71
7.417	0.00	0.10	2.477	O	|	|	|	|	2.71
7.500	0.00	0.09	2.476	O	|	|	|	|	2.71
7.583	0.00	0.08	2.476	O	|	|	|	|	2.70
7.667	0.00	0.08	2.475	O	|	|	|	|	2.70
7.750	0.00	0.07	2.475	O	|	|	|	|	2.70
7.833	0.00	0.06	2.474	O	|	|	|	|	2.70
7.917	0.00	0.06	2.474	O	|	|	|	|	2.70
8.000	0.00	0.05	2.473	O	|	|	|	|	2.70
8.083	0.00	0.05	2.473	O	|	|	|	|	2.70
8.167	0.00	0.04	2.473	O	|	|	|	|	2.70
8.250	0.00	0.04	2.473	O	|	|	|	|	2.70
8.333	0.00	0.03	2.472	O	|	|	|	|	2.70
8.417	0.00	0.03	2.472	O	|	|	|	|	2.70
8.500	0.00	0.03	2.472	O	|	|	|	|	2.70
8.583	0.00	0.03	2.472	O	|	|	|	|	2.70
8.667	0.00	0.02	2.472	O	|	|	|	|	2.70
8.750	0.00	0.02	2.471	O	|	|	|	|	2.70
8.833	0.00	0.02	2.471	O	|	|	|	|	2.70
8.917	0.00	0.02	2.471	O	|	|	|	|	2.70
9.000	0.00	0.02	2.471	O	|	|	|	|	2.70
9.083	0.00	0.01	2.471	O	|	|	|	|	2.70
9.167	0.00	0.01	2.471	O	|	|	|	|	2.70
9.250	0.00	0.01	2.471	O	|	|	|	|	2.70
9.333	0.00	0.01	2.471	O	|	|	|	|	2.70
9.417	0.00	0.01	2.471	O	|	|	|	|	2.70
9.500	0.00	0.01	2.471	O	|	|	|	|	2.70
9.583	0.00	0.01	2.470	O	|	|	|	|	2.70
9.667	0.00	0.01	2.470	O	|	|	|	|	2.70
9.750	0.00	0.01	2.470	O	|	|	|	|	2.70
9.833	0.00	0.01	2.470	O	|	|	|	|	2.70
9.917	0.00	0.01	2.470	O	|	|	|	|	2.70
10.000	0.00	0.00	2.470	O	|	|	|	|	2.70
10.083	0.00	0.00	2.470	O	|	|	|	|	2.70
10.167	0.00	0.00	2.470	O	|	|	|	|	2.70
10.250	0.00	0.00	2.470	O	|	|	|	|	2.70
10.333	0.00	0.00	2.470	O	|	|	|	|	2.70
10.417	0.00	0.00	2.470	O	|	|	|	|	2.70
10.500	0.00	0.00	2.470	O	|	|	|	|	2.70
10.583	0.00	0.00	2.470	O	|	|	|	|	2.70
10.667	0.00	0.00	2.470	O	|	|	|	|	2.70
10.750	0.00	0.00	2.470	O	|	|	|	|	2.70
10.833	0.00	0.00	2.470	O	|	|	|	|	2.70
10.917	0.00	0.00	2.470	O	|	|	|	|	2.70
11.000	0.00	0.00	2.470	O	|	|	|	|	2.70
11.083	0.00	0.00	2.470	O	|	|	|	|	2.70
11.167	0.00	0.00	2.470	O	|	|	|	|	2.70
11.250	0.00	0.00	2.470	O	|	|	|	|	2.70
11.333	0.00	0.00	2.470	O	|	|	|	|	2.70

Remaining water in basin = 2.47 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =   136
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       13.352 (CFS)
                Total volume =       1.429 (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
***********************************************************************

---------------------------------------------------------------------
```

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384a10610.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



---------------------------------------------------------------------
10 YEAR
6 HR


--------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            1.30                  50.18

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            2.50                  96.50

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.300(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.794(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.793(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  56.0      0.511     0.900        0.097       1.000      0.097
                                                  Sum (F) =   0.097
Area averaged mean soil loss (F) (In/Hr) =  0.097
Minimum soil loss rate ((In/Hr)) =  0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
-----------------------------------------------------------------
               Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-----------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.50      0.108       (  0.097)       0.011        0.097
   2   0.17     0.60      0.129       (  0.097)       0.013        0.116
   3   0.25     0.60      0.129       (  0.097)       0.013        0.116
   4   0.33     0.60      0.129       (  0.097)       0.013        0.116
   5   0.42     0.60      0.129       (  0.097)       0.013        0.116
   6   0.50     0.70      0.151       (  0.097)       0.015        0.136
   7   0.58     0.70      0.151       (  0.097)       0.015        0.136
   8   0.67     0.70      0.151       (  0.097)       0.015        0.136
   9   0.75     0.70      0.151       (  0.097)       0.015        0.136
  10   0.83     0.70      0.151       (  0.097)       0.015        0.136
  11   0.92     0.70      0.151       (  0.097)       0.015        0.136
  12   1.00     0.80      0.172       (  0.097)       0.017        0.155
  13   1.08     0.80      0.172       (  0.097)       0.017        0.155
  14   1.17     0.80      0.172       (  0.097)       0.017        0.155
  15   1.25     0.80      0.172       (  0.097)       0.017        0.155
  16   1.33     0.80      0.172       (  0.097)       0.017        0.155
  17   1.42     0.80      0.172       (  0.097)       0.017        0.155
  18   1.50     0.80      0.172       (  0.097)       0.017        0.155
  19   1.58     0.80      0.172       (  0.097)       0.017        0.155
```

20	1.67	0.80	0.172	(0.097)	0.017	0.155
21	1.75	0.80	0.172	(0.097)	0.017	0.155
22	1.83	0.80	0.172	(0.097)	0.017	0.155
23	1.92	0.80	0.172	(0.097)	0.017	0.155
24	2.00	0.90	0.194	(0.097)	0.019	0.174
25	2.08	0.80	0.172	(0.097)	0.017	0.155
26	2.17	0.90	0.194	(0.097)	0.019	0.174
27	2.25	0.90	0.194	(0.097)	0.019	0.174
28	2.33	0.90	0.194	(0.097)	0.019	0.174
29	2.42	0.90	0.194	(0.097)	0.019	0.174
30	2.50	0.90	0.194	(0.097)	0.019	0.174
31	2.58	0.90	0.194	(0.097)	0.019	0.174
32	2.67	0.90	0.194	(0.097)	0.019	0.174
33	2.75	1.00	0.215	(0.097)	0.022	0.194
34	2.83	1.00	0.215	(0.097)	0.022	0.194
35	2.92	1.00	0.215	(0.097)	0.022	0.194
36	3.00	1.00	0.215	(0.097)	0.022	0.194
37	3.08	1.00	0.215	(0.097)	0.022	0.194
38	3.17	1.10	0.237	(0.097)	0.024	0.213
39	3.25	1.10	0.237	(0.097)	0.024	0.213
40	3.33	1.10	0.237	(0.097)	0.024	0.213
41	3.42	1.20	0.258	(0.097)	0.026	0.232
42	3.50	1.30	0.280	(0.097)	0.028	0.252
43	3.58	1.40	0.301	(0.097)	0.030	0.271
44	3.67	1.40	0.301	(0.097)	0.030	0.271
45	3.75	1.50	0.323	(0.097)	0.032	0.291
46	3.83	1.50	0.323	(0.097)	0.032	0.291
47	3.92	1.60	0.344	(0.097)	0.034	0.310
48	4.00	1.60	0.344	(0.097)	0.034	0.310
49	4.08	1.70	0.366	(0.097)	0.037	0.329
50	4.17	1.80	0.387	(0.097)	0.039	0.349
51	4.25	1.90	0.409	(0.097)	0.041	0.368
52	4.33	2.00	0.430	(0.097)	0.043	0.387
53	4.42	2.10	0.452	(0.097)	0.045	0.407
54	4.50	2.10	0.452	(0.097)	0.045	0.407
55	4.58	2.20	0.473	(0.097)	0.047	0.426
56	4.67	2.30	0.495	(0.097)	0.049	0.445
57	4.75	2.40	0.517	(0.097)	0.052	0.465
58	4.83	2.40	0.517	(0.097)	0.052	0.465
59	4.92	2.50	0.538	(0.097)	0.054	0.484
60	5.00	2.60	0.560	(0.097)	0.056	0.504
61	5.08	3.10	0.667	(0.097)	0.067	0.600
62	5.17	3.60	0.775	(0.097)	0.077	0.697
63	5.25	3.90	0.839	(0.097)	0.084	0.755
64	5.33	4.20	0.904	(0.097)	0.090	0.814
65	5.42	4.70	1.012	0.097	(0.101)	0.914
66	5.50	5.60	1.205	0.097	(0.121)	1.108
67	5.58	1.90	0.409	(0.097)	0.041	0.368
68	5.67	0.90	0.194	(0.097)	0.019	0.174
69	5.75	0.60	0.129	(0.097)	0.013	0.116
70	5.83	0.50	0.108	(0.097)	0.011	0.097
71	5.92	0.30	0.065	(0.097)	0.006	0.058
72	6.00	0.20	0.043	(0.097)	0.004	0.039

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.4

Flood volume = Effective rainfall 1.62(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 5.2(Ac.Ft)
Total soil loss = 0.18(In)
Total soil loss = 0.570(Ac.Ft)
Total rainfall = 1.79(In)
Flood volume = 226487.3 Cubic Feet
Total soil loss = 24807.6 Cubic Feet

Peak flow rate of this hydrograph = 29.350(CFS)

++

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        7.5      15.0      22.5      30.0
-----------------------------------------------------------------------
  0+ 5       0.0008      0.12  Q         |         |         |         |
  0+10       0.0051      0.61  Q         |         |         |         |
  0+15       0.0154      1.50  VQ        |         |         |         |
  0+20       0.0320      2.42  V  Q      |         |         |         |
  0+25       0.0527      3.00  V   Q     |         |         |         |
  0+30       0.0759      3.36  V   Q     |         |         |         |
  0+35       0.1012      3.67  V   Q     |         |         |         |
  0+40       0.1287      4.00  V    Q    |         |         |         |
  0+45       0.1582      4.29  |V   Q    |         |         |         |
  0+50       0.1891      4.48  |V   Q    |         |         |         |
  0+55       0.2209      4.62  |V    Q   |         |         |         |
  1+ 0       0.2536      4.75  |V    Q   |         |         |         |
  1+ 5       0.2876      4.93  | V   Q   |         |         |         |
  1+10       0.3232      5.16  | V   Q   |         |         |         |
  1+15       0.3603      5.38  | V    Q  |         |         |         |
  1+20       0.3983      5.52  |  V   Q  |         |         |         |
  1+25       0.4370      5.62  |  V   Q  |         |         |         |
  1+30       0.4762      5.69  |  V   Q  |         |         |         |
  1+35       0.5158      5.75  |  V   Q  |         |         |         |
  1+40       0.5558      5.80  |   V  Q  |         |         |         |
  1+45       0.5961      5.85  |   V  Q  |         |         |         |
  1+50       0.6366      5.88  |   V  Q  |         |         |         |
  1+55       0.6773      5.91  |    V Q  |         |         |         |
  2+ 0       0.7184      5.97  |    V Q  |         |         |         |
  2+ 5       0.7602      6.06  |    V  Q |         |         |         |
  2+10       0.8026      6.17  |     V Q |         |         |         |
  2+15       0.8458      6.26  |     V Q |         |         |         |
  2+20       0.8896      6.36  |     V Q |         |         |         |
  2+25       0.9343      6.49  |      VQ |         |         |         |
  2+30       0.9795      6.56  |      VQ |         |         |         |
  2+35       1.0250      6.61  |      VQ |         |         |         |
  2+40       1.0707      6.64  |       Q |         |         |         |
  2+45       1.1168      6.69  |       Q |         |         |         |
  2+50       1.1637      6.80  |       VQ|         |         |         |
  2+55       1.2117      6.98  |        Q|         |         |         |
  3+ 0       1.2610      7.15  |        Q|         |         |         |
  3+ 5       1.3109      7.24  |        QV         |         |         |
  3+10       1.3613      7.33  |        QV         |         |         |
  3+15       1.4127      7.46  |        QV         |         |         |
  3+20       1.4654      7.65  |         QV        |         |         |
  3+25       1.5195      7.86  |         QV        |         |         |
  3+30       1.5752      8.08  |         Q V       |         |         |
  3+35       1.6333      8.43  |         |QV       |         |         |
  3+40       1.6944      8.88  |         |Q V      |         |         |
  3+45       1.7588      9.34  |         | QV      |         |         |
  3+50       1.8260      9.76  |         |  QV     |         |         |
  3+55       1.8958     10.14  |         |  QV     |         |         |
  4+ 0       1.9683     10.52  |         |   QV    |         |         |
  4+ 5       2.0432     10.89  |         |   QV    |         |         |
  4+10       2.1210     11.29  |         |    QV   |         |         |
  4+15       2.2019     11.75  |         |    QV   |         |         |
  4+20       2.2867     12.31  |         |     QV  |         |         |
  4+25       2.3757     12.93  |         |      QV |         |         |
  4+30       2.4690     13.55  |         |       Q |         |         |
  4+35       2.5663     14.12  |         |       QV|         |         |
  4+40       2.6672     14.65  |         |        QV         |         |
  4+45       2.7718     15.19  |         |         QV        |         |
  4+50       2.8805     15.79  |         |         |QV       |         |
  4+55       2.9932     16.36  |         |         |Q V      |         |
  5+ 0       3.1095     16.88  |         |         | QV      |         |
  5+ 5       3.2302     17.53  |         |         |  QV     |         |
  5+10       3.3585     18.62  |         |         |   QV    |         |
  5+15       3.4986     20.35  |         |         |     VQ  |         |
  5+20       3.6536     22.52  |         |         |       V Q         |
```

```
   5+25       3.8243     24.78  |         |         |        V|  Q      |
   5+30       4.0121     27.27  |         |         |         V     Q   |
   5+35       4.2143     29.35  |         |         |         | V      Q|
   5+40       4.4122     28.74  |         |         |         |  V    Q |
   5+45       4.5791     24.23  |         |         |         | Q  V    |
   5+50       4.7035     18.07  |         |         |   Q     |     V   |
   5+55       4.7976     13.66  |         |       Q |         |     V   |
   6+ 0       4.8725     10.87  |         |   Q     |         |      V  |
   6+ 5       4.9333      8.83  |         |Q        |         |      V  |
   6+10       4.9822      7.10  |        Q|         |         |       V |
   6+15       5.0210      5.64  |      Q  |         |         |       V |
   6+20       5.0521      4.52  |     Q   |         |         |       V |
   6+25       5.0777      3.71  |   Q     |         |         |        V|
   6+30       5.0990      3.10  |   Q     |         |         |        V|
   6+35       5.1170      2.61  |  Q      |         |         |        V|
   6+40       5.1324      2.24  | Q       |         |         |        V|
   6+45       5.1455      1.90  | Q       |         |         |        V|
   6+50       5.1565      1.59  | Q       |         |         |        V|
   6+55       5.1657      1.34  |Q        |         |         |        V|
   7+ 0       5.1734      1.13  |Q        |         |         |        V|
   7+ 5       5.1799      0.94  |Q        |         |         |        V|
   7+10       5.1852      0.77  |Q        |         |         |        V|
   7+15       5.1896      0.63  Q         |         |         |        V|
   7+20       5.1931      0.51  Q         |         |         |        V|
   7+25       5.1958      0.39  Q         |         |         |        V|
   7+30       5.1976      0.27  Q         |         |         |        V|
   7+35       5.1984      0.12  Q         |         |         |        V|
   7+40       5.1989      0.06  Q         |         |         |        V|
   7+45       5.1991      0.04  Q         |         |         |        V|
   7+50       5.1993      0.03  Q         |         |         |        V|
   7+55       5.1994      0.01  Q         |         |         |        V|
   8+ 0       5.1994      0.01  Q         |         |         |        V|
-------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

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


        10 YEAR
        6 HR


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


        Program License Serial Number 6400

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

                        From study/file name: 3384A10610.rte
        ****************************HYDROGRAPH DATA***************************
                        Number of intervals =    96
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       29.350 (CFS)
                        Total volume =       5.199 (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      350.000 to Point/Station      350.000
        **** RETARDING BASIN ROUTING ****
        ______________________________________________________________________

        User entry of depth-outflow-storage data
        ---------------------------------------------------------------------
        Total number of inflow hydrograph intervals = 96
        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      0.750      0.001      0.750        0.750
          2.000      1.700      0.001      1.700        1.700
          2.700      2.470      0.001      2.470        2.470
          3.000      2.840      5.400      2.821        2.859
          3.200      3.090     11.700      3.050        3.130
          3.400      3.350     19.300      3.284        3.416
          3.600      3.610     28.200      3.513        3.707
          3.800      3.890     38.100      3.759        4.021
          4.000      4.170     48.900      4.002        4.338
          4.200      4.460     60.600      4.251        4.669
          4.400      4.760     73.100      4.508        5.012
          4.600      5.070     86.400      4.772        5.368
          4.800      5.380    100.400      5.034        5.726
        ---------------------------------------------------------------------
                        Hydrograph Detention Basin Routing
        ---------------------------------------------------------------------

        Graph values: 'I'= unit inflow; 'O'=outflow at time shown
        ---------------------------------------------------------------------
  Time   Inflow  Outflow    Storage                                      Depth
 (Hours)  (CFS)   (CFS)     (Ac.Ft) .0       7.3   14.67   22.01   29.35 (Ft.)
  0.083    0.12    0.00      0.000  O       |       |       |       |     0.00
```

0.167	0.61	0.00	0.003	O					0.00
0.250	1.50	0.00	0.010	OI					0.01
0.333	2.42	0.00	0.024	O I					0.03
0.417	3.00	0.00	0.042	O I					0.06
0.500	3.36	0.00	0.064	O I					0.09
0.583	3.67	0.00	0.089	O I					0.12
0.667	4.00	0.00	0.115	O I					0.15
0.750	4.29	0.00	0.143	O I					0.19
0.833	4.48	0.00	0.174	O I					0.23
0.917	4.62	0.00	0.205	O I					0.27
1.000	4.75	0.00	0.237	O I					0.32
1.083	4.93	0.00	0.271	O I					0.36
1.167	5.16	0.00	0.305	O I					0.41
1.250	5.38	0.00	0.342	O I					0.46
1.333	5.52	0.00	0.379	O I					0.51
1.417	5.62	0.00	0.418	O I					0.56
1.500	5.69	0.00	0.457	O I					0.61
1.583	5.75	0.00	0.496	O I					0.66
1.667	5.80	0.00	0.536	O I					0.71
1.750	5.85	0.00	0.576	O I					0.77
1.833	5.88	0.00	0.616	O I					0.82
1.917	5.91	0.00	0.657	O I					0.88
2.000	5.97	0.00	0.698	O I					0.93
2.083	6.06	0.00	0.739	O I					0.99
2.167	6.17	0.00	0.781	O I					1.03
2.250	6.26	0.00	0.824	O I					1.08
2.333	6.36	0.00	0.868	O I					1.12
2.417	6.49	0.00	0.912	O I					1.17
2.500	6.56	0.00	0.957	O I					1.22
2.583	6.61	0.00	1.002	O I					1.27
2.667	6.64	0.00	1.048	O I					1.31
2.750	6.69	0.00	1.094	O I					1.36
2.833	6.80	0.00	1.140	O I					1.41
2.917	6.98	0.00	1.188	O I					1.46
3.000	7.15	0.00	1.236	O I					1.51
3.083	7.24	0.00	1.286	O I					1.56
3.167	7.33	0.00	1.336	O I					1.62
3.250	7.46	0.00	1.387	O I					1.67
3.333	7.65	0.00	1.439	O I					1.73
3.417	7.86	0.00	1.492	O I					1.78
3.500	8.08	0.00	1.547	O I					1.84
3.583	8.43	0.00	1.604	O I					1.90
3.667	8.88	0.00	1.664	O I					1.96
3.750	9.34	0.00	1.726	O I					2.02
3.833	9.76	0.00	1.792	O I					2.08
3.917	10.14	0.00	1.861	O I					2.15
4.000	10.52	0.00	1.932	O I					2.21
4.083	10.89	0.00	2.006	O I					2.28
4.167	11.29	0.00	2.082	O I					2.35
4.250	11.75	0.00	2.161	O I					2.42
4.333	12.31	0.00	2.244	O I					2.49
4.417	12.93	0.00	2.331	O I					2.57
4.500	13.55	0.00	2.422	O I					2.66
4.583	14.12	0.66	2.515	O I					2.74
4.667	14.65	1.97	2.605	O I					2.81
4.750	15.19	3.21	2.690	O I					2.88
4.833	15.79	4.39	2.771	O I					2.94
4.917	16.36	5.57	2.847	O I					3.01
5.000	16.88	7.34	2.917	O I					3.06
5.083	17.53	8.91	2.979	O I					3.11
5.167	18.62	10.38	3.038	O I					3.16
5.250	20.35	11.85	3.095	O I					3.20
5.333	22.52	13.60	3.155	O I					3.25
5.417	24.78	15.44	3.218	O I					3.30
5.500	27.27	17.38	3.284	O I					3.35
5.583	29.35	19.39	3.353	O I					3.40
5.667	28.74	21.43	3.412	O I					3.45
5.750	24.23	22.49	3.443	O I					3.47
5.833	18.07	22.21	3.435	O I					3.47
5.917	13.66	20.87	3.396	O I					3.44
6.000	10.87	19.09	3.343	O I					3.39
6.083	8.83	17.40	3.285	O I					3.35
6.167	7.10	15.67	3.226	O I					3.30
6.250	5.64	13.97	3.168	O I					3.26
6.333	4.52	12.34	3.112	O I					3.22
6.417	3.71	10.95	3.060	O I					3.18
6.500	3.10	9.74	3.012	O I					3.14
6.583	2.61	8.64	2.969	O I					3.10
6.667	2.24	7.65	2.929	O I					3.07

6.750	1.90	6.76	2.894	| I O|	|	|	|	3.04
6.833	1.59	5.96	2.862	|I O |	|	|	|	3.02
6.917	1.34	5.31	2.833	|I O |	|	|	|	2.99
7.000	1.13	4.92	2.807	|I O |	|	|	|	2.97
7.083	0.94	4.54	2.781	|I O |	|	|	|	2.95
7.167	0.77	4.19	2.757	I O |	|	|	|	2.93
7.250	0.63	3.86	2.734	I O |	|	|	|	2.91
7.333	0.51	3.54	2.713	I O |	|	|	|	2.90
7.417	0.39	3.25	2.692	I O |	|	|	|	2.88
7.500	0.27	2.97	2.673	I O |	|	|	|	2.86
7.583	0.12	2.70	2.655	I O |	|	|	|	2.85
7.667	0.06	2.45	2.638	I O |	|	|	|	2.84
7.750	0.04	2.22	2.622	I O |	|	|	|	2.82
7.833	0.03	2.01	2.608	I O |	|	|	|	2.81
7.917	0.01	1.82	2.595	IO |	|	|	|	2.80
8.000	0.01	1.65	2.583	IO |	|	|	|	2.79
8.083	0.00	1.49	2.572	IO |	|	|	|	2.78
8.167	0.00	1.35	2.562	IO |	|	|	|	2.77
8.250	0.00	1.22	2.553	IO |	|	|	|	2.77
8.333	0.00	1.10	2.545	IO |	|	|	|	2.76
8.417	0.00	1.00	2.538	IO |	|	|	|	2.76
8.500	0.00	0.90	2.532	O |	|	|	|	2.75
8.583	0.00	0.82	2.526	O |	|	|	|	2.75
8.667	0.00	0.74	2.520	O |	|	|	|	2.74
8.750	0.00	0.67	2.516	O |	|	|	|	2.74
8.833	0.00	0.60	2.511	O |	|	|	|	2.73
8.917	0.00	0.55	2.507	O |	|	|	|	2.73
9.000	0.00	0.49	2.504	O |	|	|	|	2.73
9.083	0.00	0.45	2.500	O |	|	|	|	2.72
9.167	0.00	0.40	2.498	O |	|	|	|	2.72
9.250	0.00	0.36	2.495	O |	|	|	|	2.72
9.333	0.00	0.33	2.493	O |	|	|	|	2.72
9.417	0.00	0.30	2.490	O |	|	|	|	2.72
9.500	0.00	0.27	2.488	O |	|	|	|	2.71
9.583	0.00	0.24	2.487	O |	|	|	|	2.71
9.667	0.00	0.22	2.485	O |	|	|	|	2.71
9.750	0.00	0.20	2.484	O |	|	|	|	2.71
9.833	0.00	0.18	2.482	O |	|	|	|	2.71
9.917	0.00	0.16	2.481	O |	|	|	|	2.71
10.000	0.00	0.15	2.480	O |	|	|	|	2.71
10.083	0.00	0.13	2.479	O |	|	|	|	2.71
10.167	0.00	0.12	2.478	O |	|	|	|	2.71
10.250	0.00	0.11	2.477	O |	|	|	|	2.71
10.333	0.00	0.10	2.477	O |	|	|	|	2.71
10.417	0.00	0.09	2.476	O |	|	|	|	2.70
10.500	0.00	0.08	2.475	O |	|	|	|	2.70
10.583	0.00	0.07	2.475	O |	|	|	|	2.70
10.667	0.00	0.07	2.474	O |	|	|	|	2.70
10.750	0.00	0.06	2.474	O |	|	|	|	2.70
10.833	0.00	0.05	2.474	O |	|	|	|	2.70
10.917	0.00	0.05	2.473	O |	|	|	|	2.70
11.000	0.00	0.04	2.473	O |	|	|	|	2.70
11.083	0.00	0.04	2.473	O |	|	|	|	2.70
11.167	0.00	0.04	2.472	O |	|	|	|	2.70
11.250	0.00	0.03	2.472	O |	|	|	|	2.70
11.333	0.00	0.03	2.472	O |	|	|	|	2.70
11.417	0.00	0.03	2.472	O |	|	|	|	2.70
11.500	0.00	0.02	2.472	O |	|	|	|	2.70
11.583	0.00	0.02	2.471	O |	|	|	|	2.70
11.667	0.00	0.02	2.471	O |	|	|	|	2.70
11.750	0.00	0.02	2.471	O |	|	|	|	2.70
11.833	0.00	0.02	2.471	O |	|	|	|	2.70
11.917	0.00	0.01	2.471	O |	|	|	|	2.70
12.000	0.00	0.01	2.471	O |	|	|	|	2.70
12.083	0.00	0.01	2.471	O |	|	|	|	2.70
12.167	0.00	0.01	2.471	O |	|	|	|	2.70
12.250	0.00	0.01	2.471	O |	|	|	|	2.70
12.333	0.00	0.01	2.471	O |	|	|	|	2.70
12.417	0.00	0.01	2.470	O |	|	|	|	2.70
12.500	0.00	0.01	2.470	O |	|	|	|	2.70
12.583	0.00	0.01	2.470	O |	|	|	|	2.70
12.667	0.00	0.01	2.470	O |	|	|	|	2.70
12.750	0.00	0.01	2.470	O |	|	|	|	2.70
12.833	0.00	0.00	2.470	O |	|	|	|	2.70
12.917	0.00	0.00	2.470	O |	|	|	|	2.70
13.000	0.00	0.00	2.470	O |	|	|	|	2.70
13.083	0.00	0.00	2.470	O |	|	|	|	2.70
13.167	0.00	0.00	2.470	O |	|	|	|	2.70
13.250	0.00	0.00	2.470	O |	|	|	|	2.70

```
13.333    0.00    0.00      2.470  O       |       |       |       |     2.70
13.417    0.00    0.00      2.470  O       |       |       |       |     2.70
13.500    0.00    0.00      2.470  O       |       |       |       |     2.70
13.583    0.00    0.00      2.470  O       |       |       |       |     2.70
13.667    0.00    0.00      2.470  O       |       |       |       |     2.70
13.750    0.00    0.00      2.470  O       |       |       |       |     2.70
13.833    0.00    0.00      2.470  O       |       |       |       |     2.70
13.917    0.00    0.00      2.470  O       |       |       |       |     2.70
14.000    0.00    0.00      2.470  O       |       |       |       |     2.70
14.083    0.00    0.00      2.470  O       |       |       |       |     2.70
14.167    0.00    0.00      2.470  O       |       |       |       |     2.70

        Remaining water in basin =    2.47 (Ac.Ft)


        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =   170
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       22.492 (CFS)
                        Total volume =       2.729 (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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        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  08/31/21 File: 3384a102410.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



----------------------------------------------------------------------
10 YEAR
24 HR


---------------------------------------------------------------------
Drainage Area =      38.60(Ac.)  =      0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      38.60(Ac.)  =      0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.256 Hr.
Lag time =    15.36 Min.
25% of lag time =     3.84 Min.
40% of lag time =     6.14 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]
       38.60            2.00                  77.20

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       38.60            5.50                 212.30

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 =   99.99 %
Adjusted average point rain =    3.440(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    38.600           56.00         0.900
 Total Area Entered =     38.60(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  56.0      0.511     0.900        0.097       1.000      0.097
                                                 Sum (F) =   0.097
Area averaged mean soil loss (F) (In/Hr) =  0.097
Minimum soil loss rate ((In/Hr)) =  0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
-------------------------------------------------------------------
               Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         32.552          3.242              1.261
    2   0.167         65.104         12.336              4.799
    3   0.250         97.656         21.046              8.187
    4   0.333        130.208         20.246              7.876
    5   0.417        162.760         11.449              4.454
    6   0.500        195.313          6.525              2.538
    7   0.583        227.865          4.535              1.764
    8   0.667        260.417          3.515              1.368
    9   0.750        292.969          2.876              1.119
   10   0.833        325.521          2.276              0.885
   11   0.917        358.073          1.946              0.757
   12   1.000        390.625          1.580              0.614
   13   1.083        423.177          1.333              0.519
   14   1.167        455.729          1.057              0.411
   15   1.250        488.281          0.999              0.388
   16   1.333        520.833          0.923              0.359
   17   1.417        553.385          0.732              0.285
   18   1.500        585.938          0.638              0.248
   19   1.583        618.490          0.565              0.220
   20   1.667        651.042          0.468              0.182
   21   1.750        683.594          0.387              0.150
   22   1.833        716.146          0.326              0.127
   23   1.917        748.698          0.326              0.127
   24   2.000        781.250          0.326              0.127
   25   2.083        813.802          0.350              0.136
                                 Sum = 100.000   Sum=      38.902
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.07      0.028       (  0.172)       0.003        0.025
   2   0.17     0.07      0.028       (  0.171)       0.003        0.025
   3   0.25     0.07      0.028       (  0.171)       0.003        0.025
   4   0.33     0.10      0.041       (  0.170)       0.004        0.037
   5   0.42     0.10      0.041       (  0.169)       0.004        0.037
   6   0.50     0.10      0.041       (  0.169)       0.004        0.037
   7   0.58     0.10      0.041       (  0.168)       0.004        0.037
   8   0.67     0.10      0.041       (  0.167)       0.004        0.037
   9   0.75     0.10      0.041       (  0.167)       0.004        0.037
  10   0.83     0.13      0.055       (  0.166)       0.006        0.050
  11   0.92     0.13      0.055       (  0.165)       0.006        0.050
  12   1.00     0.13      0.055       (  0.165)       0.006        0.050
  13   1.08     0.10      0.041       (  0.164)       0.004        0.037
  14   1.17     0.10      0.041       (  0.163)       0.004        0.037
  15   1.25     0.10      0.041       (  0.163)       0.004        0.037
  16   1.33     0.10      0.041       (  0.162)       0.004        0.037
  17   1.42     0.10      0.041       (  0.162)       0.004        0.037
  18   1.50     0.10      0.041       (  0.161)       0.004        0.037
  19   1.58     0.10      0.041       (  0.160)       0.004        0.037
```

20	1.67	0.10	0.041	(0.160)	0.004	0.037
21	1.75	0.10	0.041	(0.159)	0.004	0.037
22	1.83	0.13	0.055	(0.158)	0.006	0.050
23	1.92	0.13	0.055	(0.158)	0.006	0.050
24	2.00	0.13	0.055	(0.157)	0.006	0.050
25	2.08	0.13	0.055	(0.156)	0.006	0.050
26	2.17	0.13	0.055	(0.156)	0.006	0.050
27	2.25	0.13	0.055	(0.155)	0.006	0.050
28	2.33	0.13	0.055	(0.155)	0.006	0.050
29	2.42	0.13	0.055	(0.154)	0.006	0.050
30	2.50	0.13	0.055	(0.153)	0.006	0.050
31	2.58	0.17	0.069	(0.153)	0.007	0.062
32	2.67	0.17	0.069	(0.152)	0.007	0.062
33	2.75	0.17	0.069	(0.151)	0.007	0.062
34	2.83	0.17	0.069	(0.151)	0.007	0.062
35	2.92	0.17	0.069	(0.150)	0.007	0.062
36	3.00	0.17	0.069	(0.150)	0.007	0.062
37	3.08	0.17	0.069	(0.149)	0.007	0.062
38	3.17	0.17	0.069	(0.148)	0.007	0.062
39	3.25	0.17	0.069	(0.148)	0.007	0.062
40	3.33	0.17	0.069	(0.147)	0.007	0.062
41	3.42	0.17	0.069	(0.146)	0.007	0.062
42	3.50	0.17	0.069	(0.146)	0.007	0.062
43	3.58	0.17	0.069	(0.145)	0.007	0.062
44	3.67	0.17	0.069	(0.145)	0.007	0.062
45	3.75	0.17	0.069	(0.144)	0.007	0.062
46	3.83	0.20	0.083	(0.143)	0.008	0.074
47	3.92	0.20	0.083	(0.143)	0.008	0.074
48	4.00	0.20	0.083	(0.142)	0.008	0.074
49	4.08	0.20	0.083	(0.142)	0.008	0.074
50	4.17	0.20	0.083	(0.141)	0.008	0.074
51	4.25	0.20	0.083	(0.140)	0.008	0.074
52	4.33	0.23	0.096	(0.140)	0.010	0.087
53	4.42	0.23	0.096	(0.139)	0.010	0.087
54	4.50	0.23	0.096	(0.139)	0.010	0.087
55	4.58	0.23	0.096	(0.138)	0.010	0.087
56	4.67	0.23	0.096	(0.137)	0.010	0.087
57	4.75	0.23	0.096	(0.137)	0.010	0.087
58	4.83	0.27	0.110	(0.136)	0.011	0.099
59	4.92	0.27	0.110	(0.136)	0.011	0.099
60	5.00	0.27	0.110	(0.135)	0.011	0.099
61	5.08	0.20	0.083	(0.134)	0.008	0.074
62	5.17	0.20	0.083	(0.134)	0.008	0.074
63	5.25	0.20	0.083	(0.133)	0.008	0.074
64	5.33	0.23	0.096	(0.133)	0.010	0.087
65	5.42	0.23	0.096	(0.132)	0.010	0.087
66	5.50	0.23	0.096	(0.132)	0.010	0.087
67	5.58	0.27	0.110	(0.131)	0.011	0.099
68	5.67	0.27	0.110	(0.130)	0.011	0.099
69	5.75	0.27	0.110	(0.130)	0.011	0.099
70	5.83	0.27	0.110	(0.129)	0.011	0.099
71	5.92	0.27	0.110	(0.129)	0.011	0.099
72	6.00	0.27	0.110	(0.128)	0.011	0.099
73	6.08	0.30	0.124	(0.128)	0.012	0.111
74	6.17	0.30	0.124	(0.127)	0.012	0.111
75	6.25	0.30	0.124	(0.126)	0.012	0.111
76	6.33	0.30	0.124	(0.126)	0.012	0.111
77	6.42	0.30	0.124	(0.125)	0.012	0.111
78	6.50	0.30	0.124	(0.125)	0.012	0.111
79	6.58	0.33	0.138	(0.124)	0.014	0.124
80	6.67	0.33	0.138	(0.124)	0.014	0.124
81	6.75	0.33	0.138	(0.123)	0.014	0.124
82	6.83	0.33	0.138	(0.122)	0.014	0.124
83	6.92	0.33	0.138	(0.122)	0.014	0.124
84	7.00	0.33	0.138	(0.121)	0.014	0.124
85	7.08	0.33	0.138	(0.121)	0.014	0.124
86	7.17	0.33	0.138	(0.120)	0.014	0.124
87	7.25	0.33	0.138	(0.120)	0.014	0.124
88	7.33	0.37	0.151	(0.119)	0.015	0.136

89	7.42	0.37	0.151	(0.119)	0.015	0.136
90	7.50	0.37	0.151	(0.118)	0.015	0.136
91	7.58	0.40	0.165	(0.118)	0.017	0.149
92	7.67	0.40	0.165	(0.117)	0.017	0.149
93	7.75	0.40	0.165	(0.116)	0.017	0.149
94	7.83	0.43	0.179	(0.116)	0.018	0.161
95	7.92	0.43	0.179	(0.115)	0.018	0.161
96	8.00	0.43	0.179	(0.115)	0.018	0.161
97	8.08	0.50	0.206	(0.114)	0.021	0.186
98	8.17	0.50	0.206	(0.114)	0.021	0.186
99	8.25	0.50	0.206	(0.113)	0.021	0.186
100	8.33	0.50	0.206	(0.113)	0.021	0.186
101	8.42	0.50	0.206	(0.112)	0.021	0.186
102	8.50	0.50	0.206	(0.112)	0.021	0.186
103	8.58	0.53	0.220	(0.111)	0.022	0.198
104	8.67	0.53	0.220	(0.111)	0.022	0.198
105	8.75	0.53	0.220	(0.110)	0.022	0.198
106	8.83	0.57	0.234	(0.110)	0.023	0.211
107	8.92	0.57	0.234	(0.109)	0.023	0.211
108	9.00	0.57	0.234	(0.109)	0.023	0.211
109	9.08	0.63	0.261	(0.108)	0.026	0.235
110	9.17	0.63	0.261	(0.108)	0.026	0.235
111	9.25	0.63	0.261	(0.107)	0.026	0.235
112	9.33	0.67	0.275	(0.107)	0.028	0.248
113	9.42	0.67	0.275	(0.106)	0.028	0.248
114	9.50	0.67	0.275	(0.105)	0.028	0.248
115	9.58	0.70	0.289	(0.105)	0.029	0.260
116	9.67	0.70	0.289	(0.104)	0.029	0.260
117	9.75	0.70	0.289	(0.104)	0.029	0.260
118	9.83	0.73	0.303	(0.103)	0.030	0.272
119	9.92	0.73	0.303	(0.103)	0.030	0.272
120	10.00	0.73	0.303	(0.102)	0.030	0.272
121	10.08	0.50	0.206	(0.102)	0.021	0.186
122	10.17	0.50	0.206	(0.101)	0.021	0.186
123	10.25	0.50	0.206	(0.101)	0.021	0.186
124	10.33	0.50	0.206	(0.101)	0.021	0.186
125	10.42	0.50	0.206	(0.100)	0.021	0.186
126	10.50	0.50	0.206	(0.100)	0.021	0.186
127	10.58	0.67	0.275	(0.099)	0.028	0.248
128	10.67	0.67	0.275	(0.099)	0.028	0.248
129	10.75	0.67	0.275	(0.098)	0.028	0.248
130	10.83	0.67	0.275	(0.098)	0.028	0.248
131	10.92	0.67	0.275	(0.097)	0.028	0.248
132	11.00	0.67	0.275	(0.097)	0.028	0.248
133	11.08	0.63	0.261	(0.096)	0.026	0.235
134	11.17	0.63	0.261	(0.096)	0.026	0.235
135	11.25	0.63	0.261	(0.095)	0.026	0.235
136	11.33	0.63	0.261	(0.095)	0.026	0.235
137	11.42	0.63	0.261	(0.094)	0.026	0.235
138	11.50	0.63	0.261	(0.094)	0.026	0.235
139	11.58	0.57	0.234	(0.093)	0.023	0.211
140	11.67	0.57	0.234	(0.093)	0.023	0.211
141	11.75	0.57	0.234	(0.092)	0.023	0.211
142	11.83	0.60	0.248	(0.092)	0.025	0.223
143	11.92	0.60	0.248	(0.092)	0.025	0.223
144	12.00	0.60	0.248	(0.091)	0.025	0.223
145	12.08	0.83	0.344	(0.091)	0.034	0.310
146	12.17	0.83	0.344	(0.090)	0.034	0.310
147	12.25	0.83	0.344	(0.090)	0.034	0.310
148	12.33	0.87	0.358	(0.089)	0.036	0.322
149	12.42	0.87	0.358	(0.089)	0.036	0.322
150	12.50	0.87	0.358	(0.088)	0.036	0.322
151	12.58	0.93	0.385	(0.088)	0.039	0.347
152	12.67	0.93	0.385	(0.087)	0.039	0.347
153	12.75	0.93	0.385	(0.087)	0.039	0.347
154	12.83	0.97	0.399	(0.087)	0.040	0.359
155	12.92	0.97	0.399	(0.086)	0.040	0.359
156	13.00	0.97	0.399	(0.086)	0.040	0.359
157	13.08	1.13	0.468	(0.085)	0.047	0.421

158	13.17	1.13	0.468	(0.085)	0.047	0.421
159	13.25	1.13	0.468	(0.084)	0.047	0.421
160	13.33	1.13	0.468	(0.084)	0.047	0.421
161	13.42	1.13	0.468	(0.084)	0.047	0.421
162	13.50	1.13	0.468	(0.083)	0.047	0.421
163	13.58	0.77	0.316	(0.083)	0.032	0.285
164	13.67	0.77	0.316	(0.082)	0.032	0.285
165	13.75	0.77	0.316	(0.082)	0.032	0.285
166	13.83	0.77	0.316	(0.081)	0.032	0.285
167	13.92	0.77	0.316	(0.081)	0.032	0.285
168	14.00	0.77	0.316	(0.081)	0.032	0.285
169	14.08	0.90	0.371	(0.080)	0.037	0.334
170	14.17	0.90	0.371	(0.080)	0.037	0.334
171	14.25	0.90	0.371	(0.079)	0.037	0.334
172	14.33	0.87	0.358	(0.079)	0.036	0.322
173	14.42	0.87	0.358	(0.079)	0.036	0.322
174	14.50	0.87	0.358	(0.078)	0.036	0.322
175	14.58	0.87	0.358	(0.078)	0.036	0.322
176	14.67	0.87	0.358	(0.077)	0.036	0.322
177	14.75	0.87	0.358	(0.077)	0.036	0.322
178	14.83	0.83	0.344	(0.077)	0.034	0.310
179	14.92	0.83	0.344	(0.076)	0.034	0.310
180	15.00	0.83	0.344	(0.076)	0.034	0.310
181	15.08	0.80	0.330	(0.075)	0.033	0.297
182	15.17	0.80	0.330	(0.075)	0.033	0.297
183	15.25	0.80	0.330	(0.075)	0.033	0.297
184	15.33	0.77	0.316	(0.074)	0.032	0.285
185	15.42	0.77	0.316	(0.074)	0.032	0.285
186	15.50	0.77	0.316	(0.073)	0.032	0.285
187	15.58	0.63	0.261	(0.073)	0.026	0.235
188	15.67	0.63	0.261	(0.073)	0.026	0.235
189	15.75	0.63	0.261	(0.072)	0.026	0.235
190	15.83	0.63	0.261	(0.072)	0.026	0.235
191	15.92	0.63	0.261	(0.072)	0.026	0.235
192	16.00	0.63	0.261	(0.071)	0.026	0.235
193	16.08	0.13	0.055	(0.071)	0.006	0.050
194	16.17	0.13	0.055	(0.071)	0.006	0.050
195	16.25	0.13	0.055	(0.070)	0.006	0.050
196	16.33	0.13	0.055	(0.070)	0.006	0.050
197	16.42	0.13	0.055	(0.069)	0.006	0.050
198	16.50	0.13	0.055	(0.069)	0.006	0.050
199	16.58	0.10	0.041	(0.069)	0.004	0.037
200	16.67	0.10	0.041	(0.068)	0.004	0.037
201	16.75	0.10	0.041	(0.068)	0.004	0.037
202	16.83	0.10	0.041	(0.068)	0.004	0.037
203	16.92	0.10	0.041	(0.067)	0.004	0.037
204	17.00	0.10	0.041	(0.067)	0.004	0.037
205	17.08	0.17	0.069	(0.067)	0.007	0.062
206	17.17	0.17	0.069	(0.066)	0.007	0.062
207	17.25	0.17	0.069	(0.066)	0.007	0.062
208	17.33	0.17	0.069	(0.066)	0.007	0.062
209	17.42	0.17	0.069	(0.065)	0.007	0.062
210	17.50	0.17	0.069	(0.065)	0.007	0.062
211	17.58	0.17	0.069	(0.065)	0.007	0.062
212	17.67	0.17	0.069	(0.064)	0.007	0.062
213	17.75	0.17	0.069	(0.064)	0.007	0.062
214	17.83	0.13	0.055	(0.064)	0.006	0.050
215	17.92	0.13	0.055	(0.063)	0.006	0.050
216	18.00	0.13	0.055	(0.063)	0.006	0.050
217	18.08	0.13	0.055	(0.063)	0.006	0.050
218	18.17	0.13	0.055	(0.063)	0.006	0.050
219	18.25	0.13	0.055	(0.062)	0.006	0.050
220	18.33	0.13	0.055	(0.062)	0.006	0.050
221	18.42	0.13	0.055	(0.062)	0.006	0.050
222	18.50	0.13	0.055	(0.061)	0.006	0.050
223	18.58	0.10	0.041	(0.061)	0.004	0.037
224	18.67	0.10	0.041	(0.061)	0.004	0.037
225	18.75	0.10	0.041	(0.060)	0.004	0.037
226	18.83	0.07	0.028	(0.060)	0.003	0.025

227	18.92	0.07	0.028	(0.060)	0.003	0.025
228	19.00	0.07	0.028	(0.060)	0.003	0.025
229	19.08	0.10	0.041	(0.059)	0.004	0.037
230	19.17	0.10	0.041	(0.059)	0.004	0.037
231	19.25	0.10	0.041	(0.059)	0.004	0.037
232	19.33	0.13	0.055	(0.058)	0.006	0.050
233	19.42	0.13	0.055	(0.058)	0.006	0.050
234	19.50	0.13	0.055	(0.058)	0.006	0.050
235	19.58	0.10	0.041	(0.058)	0.004	0.037
236	19.67	0.10	0.041	(0.057)	0.004	0.037
237	19.75	0.10	0.041	(0.057)	0.004	0.037
238	19.83	0.07	0.028	(0.057)	0.003	0.025
239	19.92	0.07	0.028	(0.057)	0.003	0.025
240	20.00	0.07	0.028	(0.056)	0.003	0.025
241	20.08	0.10	0.041	(0.056)	0.004	0.037
242	20.17	0.10	0.041	(0.056)	0.004	0.037
243	20.25	0.10	0.041	(0.056)	0.004	0.037
244	20.33	0.10	0.041	(0.055)	0.004	0.037
245	20.42	0.10	0.041	(0.055)	0.004	0.037
246	20.50	0.10	0.041	(0.055)	0.004	0.037
247	20.58	0.10	0.041	(0.055)	0.004	0.037
248	20.67	0.10	0.041	(0.054)	0.004	0.037
249	20.75	0.10	0.041	(0.054)	0.004	0.037
250	20.83	0.07	0.028	(0.054)	0.003	0.025
251	20.92	0.07	0.028	(0.054)	0.003	0.025
252	21.00	0.07	0.028	(0.054)	0.003	0.025
253	21.08	0.10	0.041	(0.053)	0.004	0.037
254	21.17	0.10	0.041	(0.053)	0.004	0.037
255	21.25	0.10	0.041	(0.053)	0.004	0.037
256	21.33	0.07	0.028	(0.053)	0.003	0.025
257	21.42	0.07	0.028	(0.053)	0.003	0.025
258	21.50	0.07	0.028	(0.052)	0.003	0.025
259	21.58	0.10	0.041	(0.052)	0.004	0.037
260	21.67	0.10	0.041	(0.052)	0.004	0.037
261	21.75	0.10	0.041	(0.052)	0.004	0.037
262	21.83	0.07	0.028	(0.052)	0.003	0.025
263	21.92	0.07	0.028	(0.051)	0.003	0.025
264	22.00	0.07	0.028	(0.051)	0.003	0.025
265	22.08	0.10	0.041	(0.051)	0.004	0.037
266	22.17	0.10	0.041	(0.051)	0.004	0.037
267	22.25	0.10	0.041	(0.051)	0.004	0.037
268	22.33	0.07	0.028	(0.051)	0.003	0.025
269	22.42	0.07	0.028	(0.050)	0.003	0.025
270	22.50	0.07	0.028	(0.050)	0.003	0.025
271	22.58	0.07	0.028	(0.050)	0.003	0.025
272	22.67	0.07	0.028	(0.050)	0.003	0.025
273	22.75	0.07	0.028	(0.050)	0.003	0.025
274	22.83	0.07	0.028	(0.050)	0.003	0.025
275	22.92	0.07	0.028	(0.050)	0.003	0.025
276	23.00	0.07	0.028	(0.049)	0.003	0.025
277	23.08	0.07	0.028	(0.049)	0.003	0.025
278	23.17	0.07	0.028	(0.049)	0.003	0.025
279	23.25	0.07	0.028	(0.049)	0.003	0.025
280	23.33	0.07	0.028	(0.049)	0.003	0.025
281	23.42	0.07	0.028	(0.049)	0.003	0.025
282	23.50	0.07	0.028	(0.049)	0.003	0.025
283	23.58	0.07	0.028	(0.049)	0.003	0.025
284	23.67	0.07	0.028	(0.049)	0.003	0.025
285	23.75	0.07	0.028	(0.049)	0.003	0.025
286	23.83	0.07	0.028	(0.049)	0.003	0.025
287	23.92	0.07	0.028	(0.049)	0.003	0.025
288	24.00	0.07	0.028	(0.049)	0.003	0.025

(Loss Rate Not Used)

Sum = 100.0 Sum = 37.1

Flood volume = Effective rainfall 3.10(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 10.0(Ac.Ft)
Total soil loss = 0.34(In)
Total soil loss = 1.106(Ac.Ft)
Total rainfall = 3.44(In)

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Flood volume =      433763.6 Cubic Feet
Total soil loss =       48196.0 Cubic Feet
---------------------------------------------------------------------
 Peak flow rate of this hydrograph =     15.511(CFS)
---------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    24 - H O U R    S T O R M
                R u n o f f      H y d r o g r a p h
---------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0012      0.15  Q         |         |         |         |
  0+15       0.0037      0.35  Q         |         |         |         |
  0+20       0.0076      0.56  VQ        |         |         |         |
  0+25       0.0126      0.73  VQ        |         |         |         |
  0+30       0.0188      0.90  VQ        |         |         |         |
  0+35       0.0260      1.04  V Q       |         |         |         |
  0+40       0.0337      1.13  V Q       |         |         |         |
  0+45       0.0419      1.19  V Q       |         |         |         |
  0+50       0.0505      1.25  V Q       |         |         |         |
  0+55       0.0597      1.34  V Q       |         |         |         |
  1+ 0       0.0699      1.47  V Q       |         |         |         |
  1+ 5       0.0807      1.58  V  Q      |         |         |         |
  1+10       0.0917      1.59  V  Q      |         |         |         |
  1+15       0.1023      1.54  V  Q      |         |         |         |
  1+20       0.1125      1.48  V Q       |         |         |         |
  1+25       0.1225      1.45  V Q       |         |         |         |
  1+30       0.1325      1.45  V Q       |         |         |         |
  1+35       0.1425      1.45  V Q       |         |         |         |
  1+40       0.1525      1.45  V Q       |         |         |         |
  1+45       0.1624      1.45  V Q       |         |         |         |
  1+50       0.1725      1.46  V Q       |         |         |         |
  1+55       0.1830      1.53  V  Q      |         |         |         |
  2+ 0       0.1942      1.63  V  Q      |         |         |         |
  2+ 5       0.2061      1.73  V  Q      |         |         |         |
  2+10       0.2184      1.78  V  Q      |         |         |         |
  2+15       0.2309      1.82  V  Q      |         |         |         |
  2+20       0.2436      1.84  V  Q      |         |         |         |
  2+25       0.2564      1.85  |V Q      |         |         |         |
  2+30       0.2692      1.87  |V Q      |         |         |         |
  2+35       0.2822      1.89  |V Q      |         |         |         |
  2+40       0.2957      1.96  |V Q      |         |         |         |
  2+45       0.3100      2.07  |V  Q     |         |         |         |
  2+50       0.3249      2.17  |V  Q     |         |         |         |
  2+55       0.3403      2.23  |V  Q     |         |         |         |
  3+ 0       0.3559      2.27  |V  Q     |         |         |         |
  3+ 5       0.3717      2.29  |V  Q     |         |         |         |
  3+10       0.3876      2.31  |V  Q     |         |         |         |
  3+15       0.4036      2.33  |V  Q     |         |         |         |
  3+20       0.4198      2.34  |V  Q     |         |         |         |
  3+25       0.4360      2.35  |V  Q     |         |         |         |
  3+30       0.4523      2.36  |V  Q     |         |         |         |
  3+35       0.4686      2.37  |V  Q     |         |         |         |
  3+40       0.4850      2.38  |V  Q     |         |         |         |
  3+45       0.5014      2.38  | V Q     |         |         |         |
  3+50       0.5179      2.41  | V Q     |         |         |         |
  3+55       0.5349      2.47  | V Q     |         |         |         |
  4+ 0       0.5527      2.57  | V  Q    |         |         |         |
  4+ 5       0.5711      2.67  | V  Q    |         |         |         |
  4+10       0.5899      2.73  | V  Q    |         |         |         |
  4+15       0.6089      2.76  | V  Q    |         |         |         |
  4+20       0.6282      2.80  | V  Q    |         |         |         |
  4+25       0.6481      2.88  | V  Q    |         |         |         |
  4+30       0.6687      3.00  | V  Q    |         |         |         |
  4+35       0.6901      3.11  | V   Q   |         |         |         |
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 4+40       0.7120      3.17  | V   Q   |         |         |         |
 4+45       0.7341      3.21  | V   Q   |         |         |         |
 4+50       0.7565      3.26  |  V  Q   |         |         |         |
 4+55       0.7795      3.34  |  V  Q   |         |         |         |
 5+ 0       0.8033      3.46  |  V  Q   |         |         |         |
 5+ 5       0.8277      3.54  |  V   Q  |         |         |         |
 5+10       0.8517      3.49  |  V  Q   |         |         |         |
 5+15       0.8746      3.33  |  V  Q   |         |         |         |
 5+20       0.8965      3.18  |  V  Q   |         |         |         |
 5+25       0.9182      3.15  |  V  Q   |         |         |         |
 5+30       0.9403      3.21  |  V  Q   |         |         |         |
 5+35       0.9631      3.30  |  V  Q   |         |         |         |
 5+40       0.9864      3.39  |  V  Q   |         |         |         |
 5+45       1.0106      3.51  |   V  Q  |         |         |         |
 5+50       1.0355      3.62  |   V  Q  |         |         |         |
 5+55       1.0609      3.68  |   V  Q  |         |         |         |
 6+ 0       1.0865      3.72  |   V  Q  |         |         |         |
 6+ 5       1.1123      3.76  |   V  Q  |         |         |         |
 6+10       1.1388      3.84  |   V  Q  |         |         |         |
 6+15       1.1660      3.96  |   V  Q  |         |         |         |
 6+20       1.1940      4.07  |   V   Q |         |         |         |
 6+25       1.2225      4.13  |   V   Q |         |         |         |
 6+30       1.2512      4.17  |    V  Q |         |         |         |
 6+35       1.2803      4.22  |    V  Q |         |         |         |
 6+40       1.3099      4.30  |    V  Q |         |         |         |
 6+45       1.3403      4.42  |    V  Q |         |         |         |
 6+50       1.3715      4.53  |    V   Q|         |         |         |
 6+55       1.4032      4.60  |    V   Q|         |         |         |
 7+ 0       1.4352      4.64  |    V   Q|         |         |         |
 7+ 5       1.4673      4.67  |    V   Q|         |         |         |
 7+10       1.4997      4.70  |     V  Q|         |         |         |
 7+15       1.5322      4.72  |     V  Q|         |         |         |
 7+20       1.5649      4.75  |     V  Q|         |         |         |
 7+25       1.5982      4.83  |     V  Q|         |         |         |
 7+30       1.6322      4.94  |     V  Q|         |         |         |
 7+35       1.6671      5.06  |     V   Q         |         |         |
 7+40       1.7028      5.19  |     V   Q         |         |         |
 7+45       1.7395      5.33  |     V   Q         |         |         |
 7+50       1.7771      5.47  |      V  Q         |         |         |
 7+55       1.8157      5.60  |      V  |Q        |         |         |
 8+ 0       1.8554      5.76  |      V  |Q        |         |         |
 8+ 5       1.8961      5.92  |      V  |Q        |         |         |
 8+10       1.9383      6.12  |      V  | Q       |         |         |
 8+15       1.9823      6.38  |      V  | Q       |         |         |
 8+20       2.0278      6.62  |       V |  Q      |         |         |
 8+25       2.0744      6.76  |       V |  Q      |         |         |
 8+30       2.1216      6.85  |       V |  Q      |         |         |
 8+35       2.1693      6.93  |       V |  Q      |         |         |
 8+40       2.2179      7.05  |       V |   Q     |         |         |
 8+45       2.2674      7.19  |        V|   Q     |         |         |
 8+50       2.3179      7.34  |        V|   Q     |         |         |
 8+55       2.3695      7.48  |        V|   Q     |         |         |
 9+ 0       2.4221      7.64  |        V|    Q    |         |         |
 9+ 5       2.4759      7.81  |        V|    Q    |         |         |
 9+10       2.5312      8.02  |         V     Q   |         |         |
 9+15       2.5882      8.29  |         V     Q   |         |         |
 9+20       2.6471      8.55  |         V      Q  |         |         |
 9+25       2.7074      8.75  |         V      Q  |         |         |
 9+30       2.7690      8.95  |         |V     Q  |         |         |
 9+35       2.8319      9.13  |         |V      Q |         |         |
 9+40       2.8959      9.30  |         |V      Q |         |         |
 9+45       2.9612      9.48  |         |V      Q |         |         |
 9+50       3.0277      9.65  |         | V      Q|         |         |
 9+55       3.0952      9.81  |         | V      Q|         |         |
10+ 0       3.1640      9.99  |         | V      Q|         |         |
10+ 5       3.2331     10.03  |         | V       Q         |         |
10+10       3.3000      9.71  |         |  V     Q|         |         |
10+15       3.3624      9.07  |         |  V    Q |         |         |
10+20       3.4205      8.44  |         |  V  Q   |         |         |
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10+25       3.4763      8.09  |          |  V  Q   |         |         |
10+30       3.5308      7.91  |          |   VQ    |         |         |
10+35       3.5849      7.87  |          |   VQ    |         |         |
10+40       3.6405      8.07  |          |   V Q   |         |         |
10+45       3.6990      8.50  |          |   V Q   |         |         |
10+50       3.7605      8.93  |          |    V Q  |         |         |
10+55       3.8236      9.15  |          |    V  Q |         |         |
11+ 0       3.8874      9.27  |          |    V  Q |         |         |
11+ 5       3.9517      9.33  |          |    V  Q |         |         |
11+10       4.0159      9.33  |          |     V Q |         |         |
11+15       4.0798      9.27  |          |     V Q |         |         |
11+20       4.1431      9.20  |          |     V Q |         |         |
11+25       4.2063      9.17  |          |     V Q |         |         |
11+30       4.2694      9.16  |          |      VQ |         |         |
11+35       4.3322      9.12  |          |      VQ |         |         |
11+40       4.3942      9.00  |          |      Q  |         |         |
11+45       4.4547      8.79  |          |      Q  |         |         |
11+50       4.5141      8.62  |          |      QV |         |         |
11+55       4.5731      8.56  |          |      QV |         |         |
12+ 0       4.6323      8.60  |          |      QV |         |         |
12+ 5       4.6926      8.76  |          |      QV |         |         |
12+10       4.7560      9.20  |          |       QV|         |         |
12+15       4.8243      9.92  |          |        Q|         |         |
12+20       4.8974     10.62  |          |        V|Q        |         |
12+25       4.9737     11.07  |          |        V| Q       |         |
12+30       5.0521     11.39  |          |         V Q       |         |
12+35       5.1326     11.68  |          |         V  Q      |         |
12+40       5.2150     11.97  |          |         V  Q      |         |
12+45       5.2997     12.30  |          |         |V  Q     |         |
12+50       5.3865     12.60  |          |         |V   Q    |         |
12+55       5.4750     12.85  |          |         |V   Q    |         |
13+ 0       5.5651     13.08  |          |         | V   Q   |         |
13+ 5       5.6570     13.35  |          |         | V   Q   |         |
13+10       5.7520     13.78  |          |         |  V   Q  |         |
13+15       5.8511     14.39  |          |         |  V    Q |         |
13+20       5.9541     14.96  |          |         |  V     Q|         |
13+25       6.0594     15.30  |          |         |   V     Q         |
13+30       6.1663     15.51  |          |         |   V     |Q        |
13+35       6.2730     15.49  |          |         |    V    Q         |
13+40       6.3760     14.96  |          |         |    V   Q|         |
13+45       6.4721     13.95  |          |         |    V Q  |         |
13+50       6.5614     12.97  |          |         |    QV   |         |
13+55       6.6470     12.43  |          |         |   Q V   |         |
14+ 0       6.7307     12.15  |          |         |   Q  V  |         |
14+ 5       6.8135     12.02  |          |         |   Q  V  |         |
14+10       6.8969     12.11  |          |         |   Q  V  |         |
14+15       6.9823     12.40  |          |         |   Q   V |         |
14+20       7.0696     12.68  |          |         |    Q  V |         |
14+25       7.1575     12.76  |          |         |    Q  V |         |
14+30       7.2451     12.72  |          |         |    Q   V|         |
14+35       7.3323     12.66  |          |         |    Q   V|         |
14+40       7.4193     12.63  |          |         |    Q   V|         |
14+45       7.5061     12.61  |          |         |    Q    V         |
14+50       7.5928     12.58  |          |         |    Q    V         |
14+55       7.6789     12.51  |          |         |    Q    V         |
15+ 0       7.7643     12.40  |          |         |   Q     |V        |
15+ 5       7.8489     12.28  |          |         |   Q     |V        |
15+10       7.9325     12.15  |          |         |   Q     |V        |
15+15       8.0152     12.01  |          |         |   Q     | V       |
15+20       8.0970     11.87  |          |         |  Q      | V       |
15+25       8.1777     11.73  |          |         |  Q      | V       |
15+30       8.2574     11.57  |          |         |  Q      |  V      |
15+35       8.3357     11.37  |          |         | Q       |  V      |
15+40       8.4118     11.05  |          |         | Q       |  V      |
15+45       8.4848     10.60  |          |         |Q        |   V     |
15+50       8.5548     10.17  |          |        Q        |   V     |
15+55       8.6232      9.92  |          |       Q|        |   V     |
16+ 0       8.6905      9.78  |          |       Q|        |   V     |
16+ 5       8.7555      9.44  |          |      Q |        |    V    |
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16+10       8.8137      8.46  |         |     Q   |         |    V    |
16+15       8.8610      6.86  |         |  Q      |         |    V    |
16+20       8.8978      5.34  |         Q         |         |    V    |
16+25       8.9285      4.46  |       Q |         |         |    V    |
16+30       8.9558      3.95  |      Q  |         |         |    V    |
16+35       8.9804      3.57  |      Q  |         |         |     V   |
16+40       9.0026      3.23  |     Q   |         |         |     V   |
16+45       9.0226      2.90  |    Q    |         |         |     V   |
16+50       9.0406      2.61  |    Q    |         |         |     V   |
16+55       9.0571      2.40  |   Q     |         |         |     V   |
17+ 0       9.0725      2.24  |   Q     |         |         |     V   |
17+ 5       9.0872      2.14  |   Q     |         |         |     V   |
17+10       9.1021      2.15  |   Q     |         |         |     V   |
17+15       9.1176      2.26  |   Q     |         |         |     V   |
17+20       9.1339      2.37  |   Q     |         |         |     V   |
17+25       9.1505      2.41  |   Q     |         |         |     V   |
17+30       9.1672      2.41  |   Q     |         |         |     V   |
17+35       9.1837      2.40  |   Q     |         |         |     V   |
17+40       9.2002      2.40  |   Q     |         |         |     V   |
17+45       9.2167      2.39  |   Q     |         |         |      V  |
17+50       9.2330      2.37  |   Q     |         |         |      V  |
17+55       9.2489      2.30  |   Q     |         |         |      V  |
18+ 0       9.2640      2.19  |   Q     |         |         |      V  |
18+ 5       9.2783      2.08  |   Q     |         |         |      V  |
18+10       9.2923      2.03  |   Q     |         |         |      V  |
18+15       9.3061      2.01  |   Q     |         |         |      V  |
18+20       9.3198      1.99  |  Q      |         |         |      V  |
18+25       9.3335      1.98  |  Q      |         |         |      V  |
18+30       9.3470      1.97  |  Q      |         |         |      V  |
18+35       9.3605      1.95  |  Q      |         |         |      V  |
18+40       9.3734      1.88  |  Q      |         |         |      V  |
18+45       9.3857      1.78  |  Q      |         |         |      V  |
18+50       9.3971      1.66  |  Q      |         |         |      V  |
18+55       9.4078      1.55  |  Q      |         |         |      V  |
19+ 0       9.4175      1.41  | Q       |         |         |      V  |
19+ 5       9.4265      1.31  | Q       |         |         |      V  |
19+10       9.4354      1.29  | Q       |         |         |      V  |
19+15       9.4446      1.34  | Q       |         |         |      V  |
19+20       9.4544      1.42  | Q       |         |         |      V  |
19+25       9.4648      1.51  |  Q      |         |         |       V |
19+30       9.4760      1.62  |  Q      |         |         |       V |
19+35       9.4877      1.70  |  Q      |         |         |       V |
19+40       9.4994      1.70  |  Q      |         |         |       V |
19+45       9.5106      1.63  |  Q      |         |         |       V |
19+50       9.5212      1.54  |  Q      |         |         |       V |
19+55       9.5311      1.44  | Q       |         |         |       V |
20+ 0       9.5401      1.32  | Q       |         |         |       V |
20+ 5       9.5486      1.23  | Q       |         |         |       V |
20+10       9.5570      1.22  | Q       |         |         |       V |
20+15       9.5658      1.28  | Q       |         |         |       V |
20+20       9.5752      1.36  | Q       |         |         |       V |
20+25       9.5848      1.39  | Q       |         |         |       V |
20+30       9.5944      1.40  | Q       |         |         |       V |
20+35       9.6042      1.41  | Q       |         |         |       V |
20+40       9.6139      1.42  | Q       |         |         |       V |
20+45       9.6237      1.42  | Q       |         |         |       V |
20+50       9.6335      1.41  | Q       |         |         |       V |
20+55       9.6428      1.36  | Q       |         |         |       V |
21+ 0       9.6515      1.26  | Q       |         |         |       V |
21+ 5       9.6596      1.18  | Q       |         |         |       V |
21+10       9.6677      1.18  | Q       |         |         |       V |
21+15       9.6764      1.26  | Q       |         |         |       V |
21+20       9.6855      1.32  | Q       |         |         |       V |
21+25       9.6944      1.30  | Q       |         |         |       V |
21+30       9.7027      1.21  | Q       |         |         |       V |
21+35       9.7106      1.14  | Q       |         |         |        V|
21+40       9.7185      1.15  | Q       |         |         |        V|
21+45       9.7270      1.23  | Q       |         |         |        V|
21+50       9.7359      1.29  | Q       |         |         |        V|
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  21+55       9.7447      1.28  | Q       |         |         |        V|
  22+ 0       9.7529      1.20  | Q       |         |         |        V|
  22+ 5       9.7607      1.13  | Q       |         |         |        V|
  22+10       9.7686      1.14  | Q       |         |         |        V|
  22+15       9.7770      1.22  | Q       |         |         |        V|
  22+20       9.7859      1.29  | Q       |         |         |        V|
  22+25       9.7947      1.27  | Q       |         |         |        V|
  22+30       9.8029      1.19  | Q       |         |         |        V|
  22+35       9.8106      1.11  | Q       |         |         |        V|
  22+40       9.8179      1.06  | Q       |         |         |        V|
  22+45       9.8251      1.04  | Q       |         |         |        V|
  22+50       9.8321      1.03  | Q       |         |         |        V|
  22+55       9.8391      1.02  | Q       |         |         |        V|
  23+ 0       9.8461      1.01  | Q       |         |         |        V|
  23+ 5       9.8530      1.00  | Q       |         |         |        V|
  23+10       9.8598      0.99  |Q        |         |         |        V|
  23+15       9.8666      0.99  |Q        |         |         |        V|
  23+20       9.8734      0.98  |Q        |         |         |        V|
  23+25       9.8801      0.98  |Q        |         |         |        V|
  23+30       9.8869      0.98  |Q        |         |         |        V|
  23+35       9.8936      0.98  |Q        |         |         |        V|
  23+40       9.9003      0.98  |Q        |         |         |        V|
  23+45       9.9070      0.97  |Q        |         |         |        V|
  23+50       9.9137      0.97  |Q        |         |         |        V|
  23+55       9.9204      0.97  |Q        |         |         |        V|
  24+ 0       9.9271      0.97  |Q        |         |         |        V|
  24+ 5       9.9335      0.94  |Q        |         |         |        V|
  24+10       9.9392      0.82  |Q        |         |         |        V|
  24+15       9.9434      0.61  |Q        |         |         |        V|
  24+20       9.9462      0.42  Q         |         |         |        V|
  24+25       9.9483      0.31  Q         |         |         |        V|
  24+30       9.9500      0.24  Q         |         |         |        V|
  24+35       9.9514      0.20  Q         |         |         |        V|
  24+40       9.9525      0.16  Q         |         |         |        V|
  24+45       9.9535      0.14  Q         |         |         |        V|
  24+50       9.9542      0.12  Q         |         |         |        V|
  24+55       9.9549      0.10  Q         |         |         |        V|
  25+ 0       9.9555      0.08  Q         |         |         |        V|
  25+ 5       9.9559      0.07  Q         |         |         |        V|
  25+10       9.9563      0.06  Q         |         |         |        V|
  25+15       9.9567      0.05  Q         |         |         |        V|
  25+20       9.9570      0.04  Q         |         |         |        V|
  25+25       9.9572      0.03  Q         |         |         |        V|
  25+30       9.9574      0.03  Q         |         |         |        V|
  25+35       9.9575      0.02  Q         |         |         |        V|
  25+40       9.9576      0.02  Q         |         |         |        V|
  25+45       9.9577      0.01  Q         |         |         |        V|
  25+50       9.9578      0.01  Q         |         |         |        V|
  25+55       9.9578      0.01  Q         |         |         |        V|
  26+ 0       9.9578      0.00  Q         |         |         |        V|
----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
              Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                          Study date: 08/19/21

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


        10 YEAR
        24 HR


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


        Program License Serial Number 6400

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

                        From study/file name: 3384A102410.rte
        ****************************HYDROGRAPH DATA***************************
                        Number of intervals =   312
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       15.511 (CFS)
                        Total volume =       9.958 (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      350.000 to Point/Station      350.000
        **** RETARDING BASIN ROUTING ****
        ______________________________________________________________________

        User entry of depth-outflow-storage data
        ---------------------------------------------------------------------
        Total number of inflow hydrograph intervals = 312
        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      0.750      0.001      0.750        0.750
          2.000      1.700      0.001      1.700        1.700
          2.700      2.470      0.001      2.470        2.470
          3.000      2.840      5.400      2.821        2.859
          3.200      3.090     11.700      3.050        3.130
          3.400      3.350     19.300      3.284        3.416
          3.600      3.610     28.200      3.513        3.707
          3.800      3.890     38.100      3.759        4.021
          4.000      4.170     48.900      4.002        4.338
          4.200      4.460     60.600      4.251        4.669
          4.400      4.760     73.100      4.508        5.012
          4.600      5.070     86.400      4.772        5.368
          4.800      5.380    100.400      5.034        5.726
        ---------------------------------------------------------------------
                        Hydrograph Detention Basin Routing
        ---------------------------------------------------------------------

        Graph values: 'I'= unit inflow; 'O'=outflow at time shown
        ---------------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                        Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       3.9    7.76   11.63   15.51 (Ft.)
 0.083    0.03    0.00      0.000  O       |       |       |       |     0.00
```

```
0.167    0.15    0.00      0.001  O       |        |        |        |     0.00
0.250    0.35    0.00      0.002  O       |        |        |        |     0.00
0.333    0.56    0.00      0.006  OI      |        |        |        |     0.01
0.417    0.73    0.00      0.010  OI      |        |        |        |     0.01
0.500    0.90    0.00      0.016  OI      |        |        |        |     0.02
0.583    1.04    0.00      0.022  O I     |        |        |        |     0.03
0.667    1.13    0.00      0.030  O I     |        |        |        |     0.04
0.750    1.19    0.00      0.038  O I     |        |        |        |     0.05
0.833    1.25    0.00      0.046  O I     |        |        |        |     0.06
0.917    1.34    0.00      0.055  O I     |        |        |        |     0.07
1.000    1.47    0.00      0.065  O  I    |        |        |        |     0.09
1.083    1.58    0.00      0.075  O  I    |        |        |        |     0.10
1.167    1.59    0.00      0.086  O  I    |        |        |        |     0.11
1.250    1.54    0.00      0.097  O  I    |        |        |        |     0.13
1.333    1.48    0.00      0.107  O  I    |        |        |        |     0.14
1.417    1.45    0.00      0.118  O  I    |        |        |        |     0.16
1.500    1.45    0.00      0.128  O I     |        |        |        |     0.17
1.583    1.45    0.00      0.137  O I     |        |        |        |     0.18
1.667    1.45    0.00      0.147  O I     |        |        |        |     0.20
1.750    1.45    0.00      0.157  O I     |        |        |        |     0.21
1.833    1.46    0.00      0.167  O  I    |        |        |        |     0.22
1.917    1.53    0.00      0.178  O  I    |        |        |        |     0.24
2.000    1.63    0.00      0.189  O  I    |        |        |        |     0.25
2.083    1.73    0.00      0.200  O  I    |        |        |        |     0.27
2.167    1.78    0.00      0.212  O  I    |        |        |        |     0.28
2.250    1.82    0.00      0.225  O  I    |        |        |        |     0.30
2.333    1.84    0.00      0.237  O  I    |        |        |        |     0.32
2.417    1.85    0.00      0.250  O  I    |        |        |        |     0.33
2.500    1.87    0.00      0.263  O  I    |        |        |        |     0.35
2.583    1.89    0.00      0.276  O  I    |        |        |        |     0.37
2.667    1.96    0.00      0.289  O   I   |        |        |        |     0.39
2.750    2.07    0.00      0.303  O   I   |        |        |        |     0.40
2.833    2.17    0.00      0.317  O   I   |        |        |        |     0.42
2.917    2.23    0.00      0.333  O   I   |        |        |        |     0.44
3.000    2.27    0.00      0.348  O   I   |        |        |        |     0.46
3.083    2.29    0.00      0.364  O   I   |        |        |        |     0.49
3.167    2.31    0.00      0.380  O   I   |        |        |        |     0.51
3.250    2.33    0.00      0.396  O   I   |        |        |        |     0.53
3.333    2.34    0.00      0.412  O   I   |        |        |        |     0.55
3.417    2.35    0.00      0.428  O   I   |        |        |        |     0.57
3.500    2.36    0.00      0.444  O   I   |        |        |        |     0.59
3.583    2.37    0.00      0.460  O   I   |        |        |        |     0.61
3.667    2.38    0.00      0.477  O   I   |        |        |        |     0.64
3.750    2.38    0.00      0.493  O   I   |        |        |        |     0.66
3.833    2.41    0.00      0.510  O   I   |        |        |        |     0.68
3.917    2.47    0.00      0.526  O    I  |        |        |        |     0.70
4.000    2.57    0.00      0.544  O    I  |        |        |        |     0.72
4.083    2.67    0.00      0.562  O    I  |        |        |        |     0.75
4.167    2.73    0.00      0.580  O    I  |        |        |        |     0.77
4.250    2.76    0.00      0.599  O    I  |        |        |        |     0.80
4.333    2.80    0.00      0.618  O    I  |        |        |        |     0.82
4.417    2.88    0.00      0.638  O    I  |        |        |        |     0.85
4.500    3.00    0.00      0.658  O     I |        |        |        |     0.88
4.583    3.11    0.00      0.679  O     I |        |        |        |     0.91
4.667    3.17    0.00      0.701  O     I |        |        |        |     0.93
4.750    3.21    0.00      0.723  O     I |        |        |        |     0.96
4.833    3.26    0.00      0.745  O     I |        |        |        |     0.99
4.917    3.34    0.00      0.768  O     I |        |        |        |     1.02
5.000    3.46    0.00      0.791  O      I|        |        |        |     1.04
5.083    3.54    0.00      0.815  O      I|        |        |        |     1.07
5.167    3.49    0.00      0.840  O      I|        |        |        |     1.09
5.250    3.33    0.00      0.863  O     I |        |        |        |     1.12
5.333    3.18    0.00      0.885  O     I |        |        |        |     1.14
5.417    3.15    0.00      0.907  O     I |        |        |        |     1.17
5.500    3.21    0.00      0.929  O     I |        |        |        |     1.19
5.583    3.30    0.00      0.951  O     I |        |        |        |     1.21
5.667    3.39    0.00      0.975  O      I|        |        |        |     1.24
5.750    3.51    0.00      0.998  O      I|        |        |        |     1.26
5.833    3.62    0.00      1.023  O      I|        |        |        |     1.29
5.917    3.68    0.00      1.048  O      I|        |        |        |     1.31
6.000    3.72    0.00      1.073  O      I|        |        |        |     1.34
6.083    3.76    0.00      1.099  O      I|        |        |        |     1.37
6.167    3.84    0.00      1.125  O      I|        |        |        |     1.40
6.250    3.96    0.00      1.152  O       I        |        |        |     1.42
6.333    4.07    0.00      1.180  O       I        |        |        |     1.45
6.417    4.13    0.00      1.208  O       I        |        |        |     1.48
6.500    4.17    0.00      1.237  O       I        |        |        |     1.51
6.583    4.22    0.00      1.265  O       I        |        |        |     1.54
6.667    4.30    0.00      1.295  O       I        |        |        |     1.57
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 6.750    4.42    0.00      1.325  O       |I      |       |       |     1.61
 6.833    4.53    0.00      1.356  O       |I      |       |       |     1.64
 6.917    4.60    0.00      1.387  O       |I      |       |       |     1.67
 7.000    4.64    0.00      1.419  O       |I      |       |       |     1.70
 7.083    4.67    0.00      1.451  O       |I      |       |       |     1.74
 7.167    4.70    0.00      1.483  O       |I      |       |       |     1.77
 7.250    4.72    0.00      1.516  O       |I      |       |       |     1.81
 7.333    4.75    0.00      1.548  O       |I      |       |       |     1.84
 7.417    4.83    0.00      1.581  O       |I      |       |       |     1.87
 7.500    4.94    0.00      1.615  O       | I     |       |       |     1.91
 7.583    5.06    0.00      1.649  O       | I     |       |       |     1.95
 7.667    5.19    0.00      1.685  O       | I     |       |       |     1.98
 7.750    5.33    0.00      1.721  O       | I     |       |       |     2.02
 7.833    5.47    0.00      1.758  O       |  I    |       |       |     2.05
 7.917    5.60    0.00      1.796  O       |  I    |       |       |     2.09
 8.000    5.76    0.00      1.835  O       |  I    |       |       |     2.12
 8.083    5.92    0.00      1.875  O       |   I   |       |       |     2.16
 8.167    6.12    0.00      1.917  O       |   I   |       |       |     2.20
 8.250    6.38    0.00      1.960  O       |    I  |       |       |     2.24
 8.333    6.62    0.00      2.005  O       |    I  |       |       |     2.28
 8.417    6.76    0.00      2.051  O       |    I  |       |       |     2.32
 8.500    6.85    0.00      2.098  O       |     I |       |       |     2.36
 8.583    6.93    0.00      2.145  O       |     I |       |       |     2.40
 8.667    7.05    0.00      2.193  O       |     I |       |       |     2.45
 8.750    7.19    0.00      2.242  O       |     I |       |       |     2.49
 8.833    7.34    0.00      2.292  O       |      I|       |       |     2.54
 8.917    7.48    0.00      2.343  O       |      I|       |       |     2.58
 9.000    7.64    0.00      2.395  O       |      I|       |       |     2.63
 9.083    7.81    0.00      2.449  O       |       I       |       |     2.68
 9.167    8.02    0.46      2.501  O       |       I       |       |     2.73
 9.250    8.29    1.20      2.552  | O     |       |I      |       |     2.77
 9.333    8.55    1.89      2.599  |  O    |       |I      |       |     2.80
 9.417    8.75    2.53      2.644  |    O  |       | I     |       |     2.84
 9.500    8.95    3.14      2.685  |     O |       | I     |       |     2.87
 9.583    9.13    3.70      2.724  |      O|       | I     |       |     2.91
 9.667    9.30    4.23      2.760  |       O       |  I    |       |     2.94
 9.750    9.48    4.72      2.794  |       |O      |  I    |       |     2.96
 9.833    9.65    5.19      2.825  |       | O     |  I    |       |     2.99
 9.917    9.81    5.77      2.855  |       |  O    |   I   |       |     3.01
10.000    9.99    6.43      2.881  |       |    O  |   I   |       |     3.03
10.083   10.03    7.00      2.904  |       |     O |   I   |       |     3.05
10.167    9.71    7.46      2.922  |       |      O|   I   |       |     3.07
10.250    9.07    7.77      2.934  |       |       O I     |       |     3.08
10.333    8.44    7.93      2.940  |       |       OI      |       |     3.08
10.417    8.09    7.98      2.942  |       |       O       |       |     3.08
10.500    7.91    7.98      2.943  |       |       O       |       |     3.08
10.583    7.87    7.97      2.942  |       |       O       |       |     3.08
10.667    8.07    7.97      2.942  |       |       O       |       |     3.08
10.750    8.50    8.02      2.944  |       |       OI      |       |     3.08
10.833    8.93    8.13      2.948  |       |       O I     |       |     3.09
10.917    9.15    8.28      2.954  |       |       |OI     |       |     3.09
11.000    9.27    8.42      2.960  |       |       |O I    |       |     3.10
11.083    9.33    8.56      2.966  |       |       |O I    |       |     3.10
11.167    9.33    8.69      2.970  |       |       |O I    |       |     3.10
11.250    9.27    8.78      2.974  |       |       | OI    |       |     3.11
11.333    9.20    8.86      2.977  |       |       | O     |       |     3.11
11.417    9.17    8.91      2.979  |       |       | O     |       |     3.11
11.500    9.16    8.95      2.981  |       |       | O     |       |     3.11
11.583    9.12    8.98      2.982  |       |       | O     |       |     3.11
11.667    9.00    8.99      2.983  |       |       | O     |       |     3.11
11.750    8.79    8.98      2.982  |       |       | O     |       |     3.11
11.833    8.62    8.93      2.980  |       |       |IO     |       |     3.11
11.917    8.56    8.88      2.978  |       |       |IO     |       |     3.11
12.000    8.60    8.83      2.976  |       |       |IO     |       |     3.11
12.083    8.76    8.81      2.975  |       |       | O     |       |     3.11
12.167    9.20    8.83      2.976  |       |       | O     |       |     3.11
12.250    9.92    8.95      2.981  |       |       | O I   |       |     3.11
12.333   10.62    9.16      2.989  |       |       | O  I  |       |     3.12
12.417   11.07    9.43      3.000  |       |       |  O  I |       |     3.13
12.500   11.39    9.72      3.011  |       |       |   O  I|       |     3.14
12.583   11.68   10.01      3.023  |       |       |   O   I       |     3.15
12.667   11.97   10.30      3.034  |       |       |    O  I       |     3.16
12.750   12.30   10.59      3.046  |       |       |    O  |I      |     3.16
12.833   12.60   10.89      3.058  |       |       |     O |I      |     3.17
12.917   12.85   11.18      3.069  |       |       |      O| I    |     3.18
13.000   13.08   11.47      3.081  |       |       |      O| I    |     3.19
13.083   13.35   11.75      3.092  |       |       |       O  I   |     3.20
13.167   13.78   12.08      3.103  |       |       |       O   I  |     3.21
13.250   14.39   12.45      3.116  |       |       |       |O   I |     3.22
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13.333	14.96	12.86	3.130	|	|	|	| O I |	3.23
13.417	15.30	13.27	3.144	|	|	|	| O I|	3.24
13.500	15.51	13.66	3.157	|	|	|	| O I	3.25
13.583	15.49	14.00	3.169	|	|	|	| O I|	3.26
13.667	14.96	14.22	3.176	|	|	|	| OI |	3.27
13.750	13.95	14.27	3.178	|	|	|	| IO |	3.27
13.833	12.97	14.12	3.173	|	|	|	| I O |	3.26
13.917	12.43	13.86	3.164	|	|	|	|I O |	3.26
14.000	12.15	13.57	3.154	|	|	|	|I O |	3.25
14.083	12.02	13.30	3.145	|	|	|	I O |	3.24
14.167	12.11	13.07	3.137	|	|	|	I O |	3.24
14.250	12.40	12.92	3.132	|	|	|	|IO |	3.23
14.333	12.68	12.85	3.129	|	|	|	| O |	3.23
14.417	12.76	12.83	3.129	|	|	|	| O |	3.23
14.500	12.72	12.81	3.128	|	|	|	| O |	3.23
14.583	12.66	12.79	3.127	|	|	|	| O |	3.23
14.667	12.63	12.76	3.126	|	|	|	| O |	3.23
14.750	12.61	12.74	3.126	|	|	|	| O |	3.23
14.833	12.58	12.71	3.125	|	|	|	|IO |	3.23
14.917	12.51	12.68	3.124	|	|	|	|IO |	3.23
15.000	12.40	12.64	3.122	|	|	|	|IO |	3.22
15.083	12.28	12.58	3.120	|	|	|	|O |	3.22
15.167	12.15	12.52	3.118	|	|	|	|O |	3.22
15.250	12.01	12.44	3.115	|	|	|	IO |	3.22
15.333	11.87	12.34	3.112	|	|	|	IO |	3.22
15.417	11.73	12.24	3.109	|	|	|	IO |	3.21
15.500	11.57	12.14	3.105	|	|	|	I|O |	3.21
15.583	11.37	12.01	3.101	|	|	|	IO |	3.21
15.667	11.05	11.87	3.096	|	|	|	I O |	3.20
15.750	10.60	11.68	3.089	|	|	|	I O |	3.20
15.833	10.17	11.47	3.081	|	|	|	I O| |	3.19
15.917	9.92	11.24	3.072	|	|	|	I O| |	3.19
16.000	9.78	11.02	3.063	|	|	|	I O | |	3.18
16.083	9.44	10.80	3.054	|	|	|	I O | |	3.17
16.167	8.46	10.50	3.042	|	|	|I O | |	3.16
16.250	6.86	10.05	3.024	|	| I |	O | |	3.15
16.333	5.34	9.42	2.999	|	| I |	O | |	3.13
16.417	4.46	8.70	2.971	|	|I |	|O | |	3.10
16.500	3.95	7.98	2.942	|	I |	O | |	3.08
16.583	3.57	7.31	2.916	|	I|	O| |	3.06
16.667	3.23	6.68	2.891	|	I |	O | |	3.04
16.750	2.90	6.11	2.868	|	I |	O | |	3.02
16.833	2.61	5.57	2.847	|	I |	O | |	3.01
16.917	2.40	5.21	2.827	|	I |	O | |	2.99
17.000	2.24	4.93	2.808	|	I |	O | |	2.97
17.083	2.14	4.67	2.790	|	I |O | |	2.96
17.167	2.15	4.43	2.773	|	I |O | |	2.95
17.250	2.26	4.22	2.759	|	I O | |	2.93
17.333	2.37	4.03	2.746	|	I O | |	2.92
17.417	2.41	3.88	2.736	|	I O| |	2.92
17.500	2.41	3.74	2.726	|	I O| |	2.91
17.583	2.40	3.61	2.717	|	I O| |	2.90
17.667	2.40	3.49	2.709	|	I O| |	2.89
17.750	2.39	3.39	2.702	|	I O | |	2.89
17.833	2.37	3.29	2.696	|	I O | |	2.88
17.917	2.30	3.20	2.689	|	I O | |	2.88
18.000	2.19	3.11	2.683	|	I O | |	2.87
18.083	2.08	3.02	2.677	|	I O | |	2.87
18.167	2.03	2.92	2.670	|	I O | |	2.86
18.250	2.01	2.84	2.664	|	IO | |	2.86
18.333	1.99	2.76	2.659	|	IO | |	2.85
18.417	1.98	2.68	2.654	|	IO | |	2.85
18.500	1.97	2.62	2.649	|	IO | |	2.85
18.583	1.95	2.55	2.645	|	IO | |	2.84
18.667	1.88	2.49	2.641	|	I O | |	2.84
18.750	1.78	2.43	2.636	|	I O | |	2.83
18.833	1.66	2.36	2.632	|	IO | |	2.83
18.917	1.55	2.29	2.627	|	IO | |	2.83
19.000	1.41	2.21	2.621	|	I O | |	2.82
19.083	1.31	2.13	2.616	|	I O | |	2.82
19.167	1.29	2.05	2.610	|	I O | |	2.81
19.250	1.34	1.98	2.606	|	I O | |	2.81
19.333	1.42	1.92	2.602	|	IO | |	2.81
19.417	1.51	1.88	2.599	|	O | |	2.80
19.500	1.62	1.85	2.597	|	O | |	2.80
19.583	1.70	1.83	2.595	|	O | |	2.80
19.667	1.70	1.82	2.595	|	O | |	2.80
19.750	1.63	1.80	2.594	|	O | |	2.80
19.833	1.54	1.78	2.592	|	O | |	2.80

19.917	1.44	1.75	2.590	IO				2.80
20.000	1.32	1.72	2.588	IO				2.80
20.083	1.23	1.68	2.585	IO				2.79
20.167	1.22	1.63	2.582	IO				2.79
20.250	1.28	1.60	2.579	IO				2.79
20.333	1.36	1.57	2.577	IO				2.79
20.417	1.39	1.55	2.576	IO				2.79
20.500	1.40	1.54	2.575	IO				2.79
20.583	1.41	1.52	2.574	IO				2.78
20.667	1.42	1.51	2.574	IO				2.78
20.750	1.42	1.50	2.573	IO				2.78
20.833	1.41	1.50	2.572	IO				2.78
20.917	1.36	1.49	2.572	IO				2.78
21.000	1.26	1.47	2.571	IO				2.78
21.083	1.18	1.44	2.569	O				2.78
21.167	1.18	1.42	2.567	O				2.78
21.250	1.26	1.40	2.566	O				2.78
21.333	1.32	1.39	2.565	O				2.78
21.417	1.30	1.38	2.565	O				2.78
21.500	1.21	1.37	2.564	O				2.78
21.583	1.14	1.35	2.562	O				2.77
21.667	1.15	1.33	2.561	O				2.77
21.750	1.23	1.32	2.560	O				2.77
21.833	1.29	1.31	2.560	O				2.77
21.917	1.28	1.31	2.560	O				2.77
22.000	1.20	1.30	2.559	O				2.77
22.083	1.13	1.29	2.558	O				2.77
22.167	1.14	1.28	2.557	O				2.77
22.250	1.22	1.27	2.557	O				2.77
22.333	1.29	1.27	2.557	O				2.77
22.417	1.27	1.27	2.557	O				2.77
22.500	1.19	1.26	2.557	O				2.77
22.583	1.11	1.25	2.556	O				2.77
22.667	1.06	1.24	2.555	O				2.77
22.750	1.04	1.22	2.554	O				2.77
22.833	1.03	1.20	2.552	O				2.77
22.917	1.02	1.18	2.551	O				2.77
23.000	1.01	1.17	2.550	O				2.76
23.083	1.00	1.15	2.549	O				2.76
23.167	0.99	1.14	2.548	O				2.76
23.250	0.99	1.12	2.547	O				2.76
23.333	0.98	1.11	2.546	O				2.76
23.417	0.98	1.10	2.545	O				2.76
23.500	0.98	1.09	2.544	O				2.76
23.583	0.98	1.08	2.544	O				2.76
23.667	0.98	1.07	2.543	O				2.76
23.750	0.97	1.06	2.542	O				2.76
23.833	0.97	1.05	2.542	O				2.76
23.917	0.97	1.04	2.541	IO				2.76
24.000	0.97	1.04	2.541	IO				2.76
24.083	0.94	1.03	2.540	IO				2.76
24.167	0.82	1.01	2.539	IO				2.76
24.250	0.61	0.98	2.537	IO				2.75
24.333	0.42	0.94	2.534	IO				2.75
24.417	0.31	0.88	2.531	IO				2.75
24.500	0.24	0.83	2.527	IO				2.75
24.583	0.20	0.77	2.523	IO				2.74
24.667	0.16	0.71	2.519	IO				2.74
24.750	0.14	0.66	2.515	IO				2.74
24.833	0.12	0.61	2.512	IO				2.73
24.917	0.10	0.56	2.508	IO				2.73
25.000	0.08	0.51	2.505	IO				2.73
25.083	0.07	0.47	2.502	O				2.73
25.167	0.06	0.43	2.500	O				2.72
25.250	0.05	0.40	2.497	O				2.72
25.333	0.04	0.36	2.495	O				2.72
25.417	0.03	0.33	2.493	O				2.72
25.500	0.03	0.30	2.491	O				2.72
25.583	0.02	0.28	2.489	O				2.72
25.667	0.02	0.25	2.487	O				2.71
25.750	0.01	0.23	2.486	O				2.71
25.833	0.01	0.21	2.484	O				2.71
25.917	0.01	0.19	2.483	O				2.71
26.000	0.00	0.17	2.482	O				2.71
26.083	0.00	0.16	2.481	O				2.71
26.167	0.00	0.14	2.480	O				2.71
26.250	0.00	0.13	2.479	O				2.71
26.333	0.00	0.11	2.478	O				2.71
26.417	0.00	0.10	2.477	O				2.71

26.500	0.00	0.09	2.476	O	|	|	|	|	2.71
26.583	0.00	0.08	2.476	O	|	|	|	|	2.70
26.667	0.00	0.08	2.475	O	|	|	|	|	2.70
26.750	0.00	0.07	2.475	O	|	|	|	|	2.70
26.833	0.00	0.06	2.474	O	|	|	|	|	2.70
26.917	0.00	0.06	2.474	O	|	|	|	|	2.70
27.000	0.00	0.05	2.473	O	|	|	|	|	2.70
27.083	0.00	0.05	2.473	O	|	|	|	|	2.70
27.167	0.00	0.04	2.473	O	|	|	|	|	2.70
27.250	0.00	0.04	2.473	O	|	|	|	|	2.70
27.333	0.00	0.03	2.472	O	|	|	|	|	2.70
27.417	0.00	0.03	2.472	O	|	|	|	|	2.70
27.500	0.00	0.03	2.472	O	|	|	|	|	2.70
27.583	0.00	0.03	2.472	O	|	|	|	|	2.70
27.667	0.00	0.02	2.472	O	|	|	|	|	2.70
27.750	0.00	0.02	2.471	O	|	|	|	|	2.70
27.833	0.00	0.02	2.471	O	|	|	|	|	2.70
27.917	0.00	0.02	2.471	O	|	|	|	|	2.70
28.000	0.00	0.02	2.471	O	|	|	|	|	2.70
28.083	0.00	0.01	2.471	O	|	|	|	|	2.70
28.167	0.00	0.01	2.471	O	|	|	|	|	2.70
28.250	0.00	0.01	2.471	O	|	|	|	|	2.70
28.333	0.00	0.01	2.471	O	|	|	|	|	2.70
28.417	0.00	0.01	2.471	O	|	|	|	|	2.70
28.500	0.00	0.01	2.471	O	|	|	|	|	2.70
28.583	0.00	0.01	2.470	O	|	|	|	|	2.70
28.667	0.00	0.01	2.470	O	|	|	|	|	2.70
28.750	0.00	0.01	2.470	O	|	|	|	|	2.70
28.833	0.00	0.01	2.470	O	|	|	|	|	2.70
28.917	0.00	0.01	2.470	O	|	|	|	|	2.70
29.000	0.00	0.00	2.470	O	|	|	|	|	2.70
29.083	0.00	0.00	2.470	O	|	|	|	|	2.70
29.167	0.00	0.00	2.470	O	|	|	|	|	2.70
29.250	0.00	0.00	2.470	O	|	|	|	|	2.70
29.333	0.00	0.00	2.470	O	|	|	|	|	2.70
29.417	0.00	0.00	2.470	O	|	|	|	|	2.70
29.500	0.00	0.00	2.470	O	|	|	|	|	2.70
29.583	0.00	0.00	2.470	O	|	|	|	|	2.70
29.667	0.00	0.00	2.470	O	|	|	|	|	2.70
29.750	0.00	0.00	2.470	O	|	|	|	|	2.70
29.833	0.00	0.00	2.470	O	|	|	|	|	2.70
29.917	0.00	0.00	2.470	O	|	|	|	|	2.70
30.000	0.00	0.00	2.470	O	|	|	|	|	2.70
30.083	0.00	0.00	2.470	O	|	|	|	|	2.70
30.167	0.00	0.00	2.470	O	|	|	|	|	2.70
30.250	0.00	0.00	2.470	O	|	|	|	|	2.70
30.333	0.00	0.00	2.470	O	|	|	|	|	2.70

Remaining water in basin = 2.47 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =   364
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       14.267 (CFS)
                Total volume =       7.488 (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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100-YEAR FREQUENCY

Unit Hydrograph Analysis

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Study date 08/02/19 File: 3384A1100.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

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "A"
100-YEAR 1 HOUR

Drainage Area = 38.60(Ac.) = 0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 38.60(Ac.) = 0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.256 Hr.
Lag time = 15.36 Min.
25% of lag time = 3.84 Min.
40% of lag time = 6.14 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]
38.60	0.52	20.07

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
38.60	1.15	44.39

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.520(In)
Area Averaged 100-Year Rainfall = 1.150(In)

Point rain (area averaged) = 1.150(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 1.150(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
38.600	56.00	0.900

Total Area Entered = 38.60(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	74.8	0.305	0.900	0.058	1.000	0.058
					Sum (F) =	0.058

Area averaged mean soil loss (F) (In/Hr) = 0.058
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Slope of intensity-duration curve for a 1 hour storm =0.5500

Unit Hydrograph
VALLEY S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	32.552	3.242	1.261
2	0.167	65.104	12.336	4.799
3	0.250	97.656	21.046	8.187
4	0.333	130.208	20.246	7.876
5	0.417	162.760	11.449	4.454
6	0.500	195.313	6.525	2.538
7	0.583	227.865	4.535	1.764
8	0.667	260.417	3.515	1.368
9	0.750	292.969	2.876	1.119
10	0.833	325.521	2.276	0.885
11	0.917	358.073	1.946	0.757
12	1.000	390.625	1.580	0.614

13	1.083	423.177	1.333	0.519
14	1.167	455.729	1.057	0.411
15	1.250	488.281	0.999	0.388
16	1.333	520.833	0.923	0.359
17	1.417	553.385	0.732	0.285
18	1.500	585.938	0.638	0.248
19	1.583	618.490	0.565	0.220
20	1.667	651.042	0.468	0.182
21	1.750	683.594	0.387	0.150
22	1.833	716.146	0.326	0.127
23	1.917	748.698	0.326	0.127
24	2.000	781.250	0.326	0.127
25	2.083	813.802	0.350	0.136
			Sum = 100.000	Sum= 38.902

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	3.30	0.455	(0.058)	0.046	0.410
2	0.17	4.20	0.579	(0.058)	0.058	0.521
3	0.25	4.40	0.607	0.058	(0.061)	0.549
4	0.33	4.80	0.662	0.058	(0.066)	0.604
5	0.42	5.20	0.717	0.058	(0.072)	0.659
6	0.50	6.20	0.855	0.058	(0.086)	0.797
7	0.58	6.80	0.938	0.058	(0.094)	0.880
8	0.67	8.80	1.214	0.058	(0.121)	1.156
9	0.75	13.90	1.918	0.058	(0.192)	1.860
10	0.83	31.40	4.332	0.058	(0.433)	4.274
11	0.92	7.20	0.993	0.058	(0.099)	0.935
12	1.00	3.80	0.524	(0.058)	0.052	0.472
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	13.1

Flood volume = Effective rainfall 1.09(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 3.5(Ac.Ft)
Total soil loss = 0.06(In)
Total soil loss = 0.182(Ac.Ft)
Total rainfall = 1.15(In)
Flood volume = 153162.1 Cubic Feet
Total soil loss = 7917.3 Cubic Feet

Peak flow rate of this hydrograph = 66.251(CFS)

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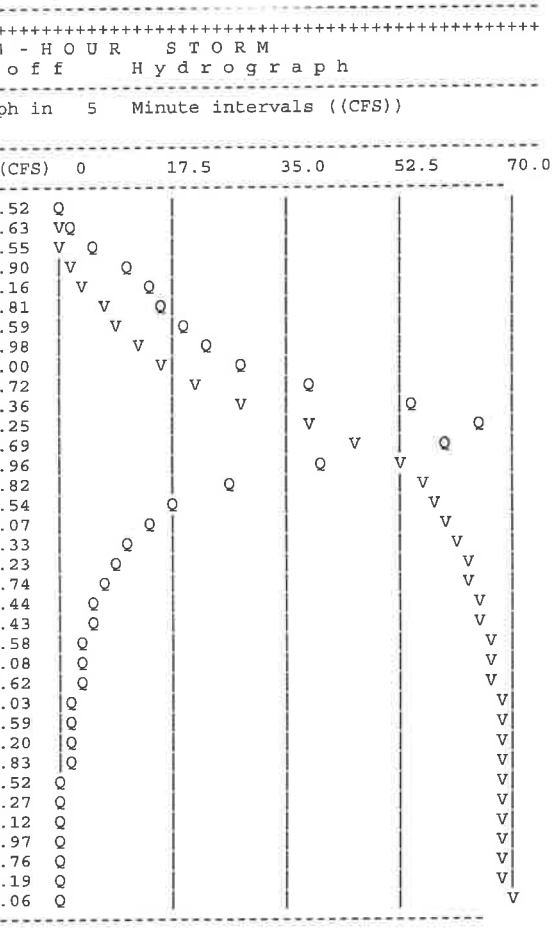
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)
0+ 5	0.0036	0.52
0+10	0.0216	2.63
0+15	0.0668	6.55
0+20	0.1418	10.90
0+25	0.2394	14.16
0+30	0.3552	16.81
0+35	0.4901	19.59
0+40	0.6483	22.98
0+45	0.8412	28.00
0+50	1.1078	38.72
0+55	1.4891	55.36
1+ 0	1.9454	66.25
1+ 5	2.3565	59.69
1+10	2.6386	40.96
1+15	2.8233	26.82
1+20	2.9510	18.54
1+25	3.0478	14.07
1+30	3.1258	11.33
1+35	3.1894	9.23
1+40	3.2428	7.74
1+45	3.2871	6.44
1+50	3.3245	5.43
1+55	3.3560	4.58
2+ 0	3.3841	4.08
2+ 5	3.4091	3.62
2+10	3.4300	3.03
2+15	3.4478	2.59
2+20	3.4629	2.20
2+25	3.4755	1.83
2+30	3.4860	1.52
2+35	3.4947	1.27
2+40	3.5024	1.12
2+45	3.5091	0.97
2+50	3.5144	0.76
2+55	3.5157	0.19
3+ 0	3.5161	0.06



FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 08/02/19

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "A"
100-YEAR 1-HOUR DETENTION

Program License Serial Number 6400

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

From study/file name: 3384A1100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 36
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 66.251 (CFS)
Total volume = 3.516 (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 350.000 to Point/Station 350.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 36
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	0.750	0.001	0.750	0.750
2.000	1.700	0.001	1.700	1.700
2.700	2.470	0.001	2.470	2.470
3.000	2.840	5.400	2.821	2.859
3.200	3.090	11.700	3.050	3.130
3.400	3.350	19.300	3.284	3.416
3.600	3.610	28.200	3.513	3.707
3.800	3.890	38.100	3.759	4.021
4.000	4.170	48.900	4.002	4.338
4.200	4.460	60.600	4.251	4.669
4.400	4.760	73.100	4.508	5.012
4.600	5.070	86.400	4.772	5.368
4.800	5.380	100.400	5.034	5.726

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	Depth (Ft.)
0.083	0.52	0.00	0.002	0.00
0.167	2.63	0.00	0.013	0.02
0.250	6.55	0.00	0.044	0.06
0.333	10.90	0.00	0.104	0.14
0.417	14.16	0.00	0.191	0.25
0.500	16.81	0.00	0.297	0.40
0.583	19.59	0.00	0.423	0.56
0.667	22.98	0.00	0.569	0.76
0.750	28.00	0.00	0.745	0.99
0.833	38.72	0.00	0.974	1.24
0.917	55.36	0.00	1.298	1.58
1.000	66.25	0.00	1.717	2.02
1.083	59.69	0.00	2.151	2.41
1.167	40.96	0.38	2.496	2.72
1.250	26.82	3.59	2.716	2.90
1.333	18.54	5.43	2.841	3.00
1.417	14.07	7.16	2.910	3.06
1.500	11.33	8.05	2.945	3.08
1.583	9.23	8.40	2.959	3.10
1.667	7.74	8.42	2.960	3.10
1.750	6.44	8.20	2.951	3.09

1.833	5.43	7.84	2.937	IO				3.08
1.917	4.58	7.39	2.919	IO				3.06
2.000	4.08	6.90	2.900	I O				3.05
2.083	3.62	6.41	2.880	I O				3.03
2.167	3.03	5.92	2.861	IO				3.02
2.250	2.59	5.42	2.841	IO				3.00
2.333	2.20	5.12	2.821	IO				2.98
2.417	1.83	4.83	2.801	I O				2.97
2.500	1.52	4.52	2.780	I O				2.95
2.583	1.27	4.23	2.759	I O				2.93
2.667	1.12	3.94	2.740	IO				2.92
2.750	0.97	3.66	2.721	IO				2.90
2.833	0.76	3.39	2.702	IO				2.89
2.917	0.19	3.11	2.683	IO				2.87
3.000	0.06	2.83	2.664	IO				2.86
3.083	0.00	2.56	2.645	IO				2.84
3.167	0.00	2.31	2.629	IO				2.83
3.250	0.00	2.09	2.613	IO				2.82
3.333	0.00	1.89	2.600	O				2.81
3.417	0.00	1.71	2.587	O				2.80
3.500	0.00	1.55	2.576	O				2.79
3.583	0.00	1.40	2.566	O				2.78
3.667	0.00	1.27	2.557	O				2.77
3.750	0.00	1.14	2.548	O				2.76
3.833	0.00	1.04	2.541	O				2.76
3.917	0.00	0.94	2.534	O				2.75
4.000	0.00	0.85	2.528	O				2.75
4.083	0.00	0.77	2.522	O				2.74
4.167	0.00	0.69	2.517	O				2.74
4.250	0.00	0.63	2.513	O				2.73
4.333	0.00	0.57	2.509	O				2.73
4.417	0.00	0.51	2.505	O				2.73
4.500	0.00	0.46	2.502	O				2.73
4.583	0.00	0.42	2.499	O				2.72
4.667	0.00	0.38	2.496	O				2.72
4.750	0.00	0.34	2.493	O				2.72
4.833	0.00	0.31	2.491	O				2.72
4.917	0.00	0.28	2.489	O				2.72
5.000	0.00	0.25	2.487	O				2.71
5.083	0.00	0.23	2.486	O				2.71
5.167	0.00	0.21	2.484	O				2.71
5.250	0.00	0.19	2.483	O				2.71
5.333	0.00	0.17	2.482	O				2.71
5.417	0.00	0.15	2.480	O				2.71
5.500	0.00	0.14	2.479	O				2.71
5.583	0.00	0.13	2.479	O				2.71
5.667	0.00	0.11	2.478	O				2.71
5.750	0.00	0.10	2.477	O				2.71
5.833	0.00	0.09	2.476	O				2.71
5.917	0.00	0.08	2.476	O				2.70
6.000	0.00	0.08	2.475	O				2.70
6.083	0.00	0.07	2.475	O				2.70
6.167	0.00	0.06	2.474	O				2.70
6.250	0.00	0.06	2.474	O				2.70
6.333	0.00	0.05	2.473	O				2.70
6.417	0.00	0.05	2.473	O				2.70
6.500	0.00	0.04	2.473	O				2.70
6.583	0.00	0.04	2.472	O				2.70
6.667	0.00	0.03	2.472	O				2.70
6.750	0.00	0.03	2.472	O				2.70
6.833	0.00	0.03	2.472	O				2.70
6.917	0.00	0.03	2.472	O				2.70
7.000	0.00	0.02	2.471	O				2.70
7.083	0.00	0.02	2.471	O				2.70
7.167	0.00	0.02	2.471	O				2.70
7.250	0.00	0.02	2.471	O				2.70
7.333	0.00	0.02	2.471	O				2.70
7.417	0.00	0.01	2.471	O				2.70
7.500	0.00	0.01	2.471	O				2.70
7.583	0.00	0.01	2.471	O				2.70
7.667	0.00	0.01	2.471	O				2.70
7.750	0.00	0.01	2.471	O				2.70
7.833	0.00	0.01	2.470	O				2.70
7.917	0.00	0.01	2.470	O				2.70
8.000	0.00	0.01	2.470	O				2.70
8.083	0.00	0.01	2.470	O				2.70
8.167	0.00	0.01	2.470	O				2.70
8.250	0.00	0.01	2.470	O				2.70
8.333	0.00	0.00	2.470	O				2.70
8.417	0.00	0.00	2.470	O				2.70
8.500	0.00	0.00	2.470	O				2.70
8.583	0.00	0.00	2.470	O				2.70
8.667	0.00	0.00	2.470	O				2.70
8.750	0.00	0.00	2.470	O				2.70
8.833	0.00	0.00	2.470	O				2.70
8.917	0.00	0.00	2.470	O				2.70
9.000	0.00	0.00	2.470	O				2.70
9.083	0.00	0.00	2.470	O				2.70
9.167	0.00	0.00	2.470	O				2.70
9.250	0.00	0.00	2.470	O				2.70
9.333	0.00	0.00	2.470	O				2.70
9.417	0.00	0.00	2.470	O				2.70
9.500	0.00	0.00	2.470	O				2.70
9.583	0.00	0.00	2.470	O				2.70
9.667	0.00	0.00	2.470	O				2.70

Remaining water in basin = 2.47 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =   116
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        8.417 (CFS)
                Total volume =       1.046 (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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U n i t H y d r o g r a p h A n a l y s i s

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Study date 08/02/19 File: 3384A3100.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

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "A"
100-YEAR 3HOUR

Drainage Area = 38.60(Ac.) = 0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 38.60(Ac.) = 0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.256 Hr.
Lag time = 15.36 Min.
25% of lag time = 3.84 Min.
40% of lag time = 6.14 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]
38.60	0.95	36.67

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
38.60	1.90	73.34

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 1.900(In)

Point rain (area averaged) = 1.900(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.900(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
38.600	56.00	0.900

Total Area Entered = 38.60(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	74.8	0.305	0.900	0.058	1.000	0.058
					Sum (F) =	0.058

Area averaged mean soil loss (F) (In/Hr) = 0.058
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

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

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	32.552	3.242	1.261
2	0.167	65.104	12.336	4.799
3	0.250	97.656	21.046	8.187
4	0.333	130.208	20.246	7.876
5	0.417	162.760	11.449	4.454
6	0.500	195.313	6.525	2.538
7	0.583	227.865	4.535	1.764
8	0.667	260.417	3.515	1.368
9	0.750	292.969	2.876	1.119
10	0.833	325.521	2.276	0.885
11	0.917	358.073	1.946	0.757
12	1.000	390.625	1.580	0.614
13	1.083	423.177	1.333	0.519
14	1.167	455.729	1.057	0.411

15	1.250	488.281	0.999	0.388
16	1.333	520.833	0.923	0.359
17	1.417	553.385	0.732	0.285
18	1.500	585.938	0.638	0.248
19	1.583	618.490	0.565	0.220
20	1.667	651.042	0.468	0.182
21	1.750	683.594	0.387	0.150
22	1.833	716.146	0.326	0.127
23	1.917	748.698	0.326	0.127
24	2.000	781.250	0.326	0.127
25	2.083	813.802	0.350	0.136
			Sum = 100.000	Sum= 38.902

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	0.296	(0.058)	0.030	0.267
2	0.17	1.30	0.296	(0.058)	0.030	0.267
3	0.25	1.10	0.251	(0.058)	0.025	0.226
4	0.33	1.50	0.342	(0.058)	0.034	0.308
5	0.42	1.50	0.342	(0.058)	0.034	0.308
6	0.50	1.80	0.410	(0.058)	0.041	0.369
7	0.58	1.50	0.342	(0.058)	0.034	0.308
8	0.67	1.80	0.410	(0.058)	0.041	0.369
9	0.75	1.80	0.410	(0.058)	0.041	0.369
10	0.83	1.50	0.342	(0.058)	0.034	0.308
11	0.92	1.60	0.365	(0.058)	0.036	0.328
12	1.00	1.80	0.410	(0.058)	0.041	0.369
13	1.08	2.20	0.502	(0.058)	0.050	0.451
14	1.17	2.20	0.502	(0.058)	0.050	0.451
15	1.25	2.20	0.502	(0.058)	0.050	0.451
16	1.33	2.00	0.456	(0.058)	0.046	0.410
17	1.42	2.60	0.593	0.058	(0.059)	0.535
18	1.50	2.70	0.615	0.058	(0.062)	0.557
19	1.58	2.40	0.547	(0.058)	0.055	0.492
20	1.67	2.70	0.615	0.058	(0.062)	0.557
21	1.75	3.30	0.752	0.058	(0.075)	0.694
22	1.83	3.10	0.707	0.058	(0.071)	0.649
23	1.92	2.90	0.661	0.058	(0.066)	0.603
24	2.00	3.00	0.684	0.058	(0.068)	0.626
25	2.08	3.10	0.707	0.058	(0.071)	0.649
26	2.17	4.20	0.957	0.058	(0.096)	0.899
27	2.25	5.00	1.140	0.058	(0.114)	1.082
28	2.33	3.50	0.798	0.058	(0.080)	0.740
29	2.42	6.80	1.550	0.058	(0.155)	1.492
30	2.50	7.30	1.664	0.058	(0.166)	1.606
31	2.58	8.20	1.869	0.058	(0.187)	1.811
32	2.67	5.90	1.345	0.058	(0.134)	1.287
33	2.75	2.00	0.456	(0.058)	0.046	0.410
34	2.83	1.80	0.410	(0.058)	0.041	0.369
35	2.92	1.80	0.410	(0.058)	0.041	0.369
36	3.00	0.60	0.137	(0.058)	0.014	0.123
		(Loss Rate Not Used)				

Sum = 100.0 Sum = 21.1

Flood volume = Effective rainfall 1.76(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 5.7(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.451(Ac.Ft)
Total rainfall = 1.90(In)
Flood volume = 246514.9 Cubic Feet
Total soil loss = 19664.4 Cubic Feet

Peak flow rate of this hydrograph = 49.657(CFS)

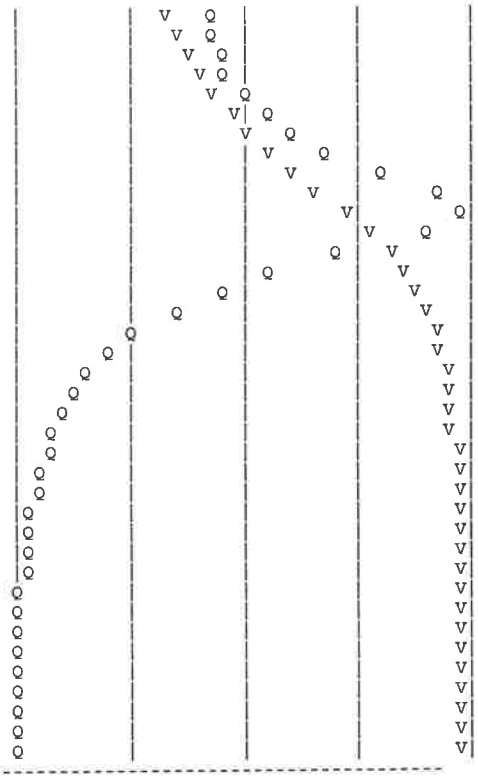
++

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))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	12.5	25.0	37.5	50.0
0+ 5	0.0023	0.34	Q				
0+10	0.0135	1.62	VQ				
0+15	0.0393	3.75	V Q				
0+20	0.0789	5.76	V Q				
0+25	0.1272	7.00	V Q				
0+30	0.1830	8.11	|V Q				
0+35	0.2468	9.26	|V Q				
0+40	0.3169	10.17	| V Q				
0+45	0.3918	10.88	| V Q				
0+50	0.4705	11.43	| V Q|				
0+55	0.5517	11.79	| V Q|				
1+ 0	0.6336	11.88	| V Q|				
1+ 5	0.7175	12.18	| V Q|				
1+10	0.8072	13.04	| V Q				
1+15	0.9048	14.17	| V |Q				
1+20	1.0086	15.07	| V | Q				
1+25	1.1161	15.60	| V | Q				
1+30	1.2280	16.25	| V | Q				
1+35	1.3468	17.25	| V| Q				
1+40	1.4723	18.22	| V Q				
1+45	1.6030	18.99	| |V Q				
1+50	1.7414	20.10	| | V Q				

1+55	1.8897	21.52
2+ 0	2.0442	22.44
2+ 5	2.2008	22.74
2+10	2.3614	23.32
2+15	2.5350	25.20
2+20	2.7286	28.11
2+25	2.9432	31.17
2+30	3.1834	34.87
2+35	3.4640	40.75
2+40	3.7908	47.45
2+45	4.1328	49.66
2+50	4.4437	45.15
2+55	4.6931	36.22
3+ 0	4.8868	28.12
3+ 5	5.0427	22.63
3+10	5.1652	17.79
3+15	5.2574	13.40
3+20	5.3279	10.23
3+25	5.3845	8.22
3+30	5.4311	6.77
3+35	5.4700	5.64
3+40	5.5030	4.78
3+45	5.5311	4.08
3+50	5.5550	3.48
3+55	5.5753	2.94
4+ 0	5.5923	2.48
4+ 5	5.6069	2.11
4+10	5.6192	1.78
4+15	5.6293	1.47
4+20	5.6376	1.20
4+25	5.6447	1.04
4+30	5.6503	0.81
4+35	5.6544	0.59
4+40	5.6567	0.34
4+45	5.6579	0.17
4+50	5.6586	0.11
4+55	5.6591	0.07
5+ 0	5.6592	0.02



FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 08/02/19

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "A"
100-YEAR 3 HOUR DETENTION

Program License Serial Number 6400

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

From study/file name: 3384a3100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 60
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 49.657 (CFS)
Total volume = 5.659 (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 350.000 to Point/Station 350.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 60
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	0.750	0.001	0.750	0.750
2.000	1.700	0.001	1.700	1.700
2.700	2.470	0.001	2.470	2.470
3.000	2.840	5.400	2.821	2.859
3.200	3.090	11.700	3.050	3.130
3.400	3.350	19.300	3.284	3.416
3.600	3.610	28.200	3.513	3.707
3.800	3.890	38.100	3.759	4.021
4.000	4.170	48.900	4.002	4.338
4.200	4.460	60.600	4.251	4.669
4.400	4.760	73.100	4.508	5.012
4.600	5.070	86.400	4.772	5.368
4.800	5.380	100.400	5.034	5.726

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 12.4 24.83 37.24 49.66	Depth (Ft.)
0.083	0.34	0.00	0.001	O	0.00
0.167	1.62	0.00	0.008	OI	0.01
0.250	3.75	0.00	0.026	O I	0.04
0.333	5.76	0.00	0.059	O I	0.08
0.417	7.00	0.00	0.103	O I	0.14
0.500	8.11	0.00	0.155	O I	0.21
0.583	9.26	0.00	0.215	O I	0.29
0.667	10.17	0.00	0.282	O I	0.38
0.750	10.88	0.00	0.354	O I	0.47
0.833	11.43	0.00	0.431	O I	0.57
0.917	11.79	0.00	0.511	O I	0.68
1.000	11.88	0.00	0.593	O I	0.79
1.083	12.18	0.00	0.675	O I	0.90
1.167	13.04	0.00	0.762	O I	1.01
1.250	14.17	0.00	0.856	O I	1.11
1.333	15.07	0.00	0.957	O I	1.22
1.417	15.60	0.00	1.062	O I	1.33
1.500	16.25	0.00	1.172	O I	1.44
1.583	17.25	0.00	1.287	O I	1.57
1.667	18.22	0.00	1.409	O I	1.69
1.750	18.99	0.00	1.538	O I	1.83

1.833	20.10	0.00	1.672	1.97
1.917	21.52	0.00	1.815	2.10
2.000	22.44	0.00	1.967	2.24
2.083	22.74	0.00	2.122	2.38
2.167	23.32	0.00	2.281	2.53
2.250	25.20	0.00	2.448	2.68
2.333	28.11	2.25	2.624	2.82
2.417	31.17	4.87	2.804	2.97
2.500	34.87	9.01	2.983	3.11
2.583	40.75	13.88	3.165	3.26
2.667	47.45	19.43	3.354	3.40
2.750	49.66	25.57	3.533	3.54
2.833	45.15	30.23	3.667	3.64
2.917	36.22	32.50	3.732	3.69
3.000	28.12	32.43	3.730	3.69
3.083	22.63	30.90	3.686	3.65
3.167	17.79	28.58	3.621	3.61
3.250	13.40	25.83	3.541	3.55
3.333	10.23	22.87	3.454	3.48
3.417	8.22	19.99	3.370	3.42
3.500	6.77	17.62	3.292	3.36
3.583	5.64	15.53	3.221	3.30
3.667	4.78	13.64	3.156	3.25
3.750	4.08	11.96	3.099	3.21
3.833	3.48	10.62	3.047	3.17
3.917	2.94	9.44	3.000	3.13
4.000	2.48	8.36	2.958	3.09
4.083	2.11	7.39	2.919	3.06
4.167	1.78	6.52	2.885	3.04
4.250	1.47	5.74	2.854	3.01
4.333	1.20	5.18	2.825	2.99
4.417	1.04	4.79	2.798	2.97
4.500	0.81	4.42	2.773	2.95
4.583	0.59	4.07	2.749	2.93
4.667	0.34	3.72	2.725	2.91
4.750	0.17	3.39	2.702	2.89
4.833	0.11	3.08	2.681	2.87
4.917	0.07	2.79	2.661	2.86
5.000	0.02	2.53	2.643	2.84
5.083	0.00	2.29	2.627	2.83
5.167	0.00	2.07	2.612	2.81
5.250	0.00	1.87	2.598	2.80
5.333	0.00	1.69	2.586	2.79
5.417	0.00	1.53	2.575	2.79
5.500	0.00	1.38	2.565	2.78
5.583	0.00	1.25	2.556	2.77
5.667	0.00	1.13	2.548	2.76
5.750	0.00	1.02	2.540	2.76
5.833	0.00	0.93	2.533	2.75
5.917	0.00	0.84	2.527	2.75
6.000	0.00	0.76	2.522	2.74
6.083	0.00	0.68	2.517	2.74
6.167	0.00	0.62	2.512	2.73
6.250	0.00	0.56	2.508	2.73
6.333	0.00	0.51	2.505	2.73
6.417	0.00	0.46	2.501	2.73
6.500	0.00	0.41	2.498	2.72
6.583	0.00	0.37	2.496	2.72
6.667	0.00	0.34	2.493	2.72
6.750	0.00	0.31	2.491	2.72
6.833	0.00	0.28	2.489	2.72
6.917	0.00	0.25	2.487	2.71
7.000	0.00	0.23	2.485	2.71
7.083	0.00	0.20	2.484	2.71
7.167	0.00	0.19	2.483	2.71
7.250	0.00	0.17	2.481	2.71
7.333	0.00	0.15	2.480	2.71
7.417	0.00	0.14	2.479	2.71
7.500	0.00	0.12	2.478	2.71
7.583	0.00	0.11	2.478	2.71
7.667	0.00	0.10	2.477	2.71
7.750	0.00	0.09	2.476	2.71
7.833	0.00	0.08	2.476	2.70
7.917	0.00	0.07	2.475	2.70
8.000	0.00	0.07	2.475	2.70
8.083	0.00	0.06	2.474	2.70
8.167	0.00	0.06	2.474	2.70
8.250	0.00	0.05	2.473	2.70
8.333	0.00	0.05	2.473	2.70
8.417	0.00	0.04	2.473	2.70
8.500	0.00	0.04	2.472	2.70
8.583	0.00	0.03	2.472	2.70
8.667	0.00	0.03	2.472	2.70
8.750	0.00	0.03	2.472	2.70
8.833	0.00	0.02	2.472	2.70
8.917	0.00	0.02	2.471	2.70
9.000	0.00	0.02	2.471	2.70
9.083	0.00	0.02	2.471	2.70
9.167	0.00	0.02	2.471	2.70
9.250	0.00	0.01	2.471	2.70
9.333	0.00	0.01	2.471	2.70
9.417	0.00	0.01	2.471	2.70
9.500	0.00	0.01	2.471	2.70
9.583	0.00	0.01	2.471	2.70
9.667	0.00	0.01	2.471	2.70
9.750	0.00	0.01	2.470	2.70
9.833	0.00	0.01	2.470	2.70
9.917	0.00	0.01	2.470	2.70
10.000	0.00	0.01	2.470	2.70

10.083	0.00	0.01	2.470	O	|	|	|	|	2.70
10.167	0.00	0.00	2.470	O	|	|	|	|	2.70
10.250	0.00	0.00	2.470	O	|	|	|	|	2.70
10.333	0.00	0.00	2.470	O	|	|	|	|	2.70
10.417	0.00	0.00	2.470	O	|	|	|	|	2.70
10.500	0.00	0.00	2.470	O	|	|	|	|	2.70
10.583	0.00	0.00	2.470	O	|	|	|	|	2.70
10.667	0.00	0.00	2.470	O	|	|	|	|	2.70
10.750	0.00	0.00	2.470	O	|	|	|	|	2.70
10.833	0.00	0.00	2.470	O	|	|	|	|	2.70
10.917	0.00	0.00	2.470	O	|	|	|	|	2.70
11.000	0.00	0.00	2.470	O	|	|	|	|	2.70
11.083	0.00	0.00	2.470	O	|	|	|	|	2.70
11.167	0.00	0.00	2.470	O	|	|	|	|	2.70
11.250	0.00	0.00	2.470	O	|	|	|	|	2.70
11.333	0.00	0.00	2.470	O	|	|	|	|	2.70
11.417	0.00	0.00	2.470	O	|	|	|	|	2.70
11.500	0.00	0.00	2.470	O	|	|	|	|	2.70

Remaining water in basin = 2.47 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =   138
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       32.500 (CFS)
                Total volume =       3.189 (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
***********************************************************************

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

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Study date 08/02/19 File: 3384A6100.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

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "A"
100-YEAR 6 HOUR

Drainage Area = 38.60(Ac.) = 0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 38.60(Ac.) = 0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.256 Hr.
Lag time = 15.36 Min.
25% of lag time = 3.84 Min.
40% of lag time = 6.14 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]
38.60	1.30	50.18

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
38.60	2.50	96.50

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 2.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
38.600	56.00	0.900

Total Area Entered = 38.60(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	74.8	0.305	0.900	0.058	1.000	0.058
					Sum (F) =	0.058

Area averaged mean soil loss (F) (In/Hr) = 0.058
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

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

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	32.552	3.242	1.261
2	0.167	65.104	12.336	4.799
3	0.250	97.656	21.046	8.187
4	0.333	130.208	20.246	7.876
5	0.417	162.760	11.449	4.454
6	0.500	195.313	6.525	2.538
7	0.583	227.865	4.535	1.764
8	0.667	260.417	3.515	1.368
9	0.750	292.969	2.876	1.119
10	0.833	325.521	2.276	0.885
11	0.917	358.073	1.946	0.757
12	1.000	390.625	1.580	0.614
13	1.083	423.177	1.333	0.519
14	1.167	455.729	1.057	0.411

15	1.250	488.281	0.999	0.388
16	1.333	520.833	0.923	0.359
17	1.417	553.385	0.732	0.285
18	1.500	585.938	0.638	0.248
19	1.583	618.490	0.565	0.220
20	1.667	651.042	0.468	0.182
21	1.750	683.594	0.387	0.150
22	1.833	716.146	0.326	0.127
23	1.917	748.698	0.326	0.127
24	2.000	781.250	0.326	0.127
25	2.083	813.802	0.350	0.136
			Sum = 100.000	Sum= 38.902

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	0.150	(0.058)	0.015	0.135
2	0.17	0.60	0.180	(0.058)	0.018	0.162
3	0.25	0.60	0.180	(0.058)	0.018	0.162
4	0.33	0.60	0.180	(0.058)	0.018	0.162
5	0.42	0.60	0.180	(0.058)	0.018	0.162
6	0.50	0.70	0.210	(0.058)	0.021	0.189
7	0.58	0.70	0.210	(0.058)	0.021	0.189
8	0.67	0.70	0.210	(0.058)	0.021	0.189
9	0.75	0.70	0.210	(0.058)	0.021	0.189
10	0.83	0.70	0.210	(0.058)	0.021	0.189
11	0.92	0.70	0.210	(0.058)	0.021	0.189
12	1.00	0.80	0.240	(0.058)	0.024	0.216
13	1.08	0.80	0.240	(0.058)	0.024	0.216
14	1.17	0.80	0.240	(0.058)	0.024	0.216
15	1.25	0.80	0.240	(0.058)	0.024	0.216
16	1.33	0.80	0.240	(0.058)	0.024	0.216
17	1.42	0.80	0.240	(0.058)	0.024	0.216
18	1.50	0.80	0.240	(0.058)	0.024	0.216
19	1.58	0.80	0.240	(0.058)	0.024	0.216
20	1.67	0.80	0.240	(0.058)	0.024	0.216
21	1.75	0.80	0.240	(0.058)	0.024	0.216
22	1.83	0.80	0.240	(0.058)	0.024	0.216
23	1.92	0.80	0.240	(0.058)	0.024	0.216
24	2.00	0.90	0.270	(0.058)	0.027	0.243
25	2.08	0.80	0.240	(0.058)	0.024	0.216
26	2.17	0.90	0.270	(0.058)	0.027	0.243
27	2.25	0.90	0.270	(0.058)	0.027	0.243
28	2.33	0.90	0.270	(0.058)	0.027	0.243
29	2.42	0.90	0.270	(0.058)	0.027	0.243
30	2.50	0.90	0.270	(0.058)	0.027	0.243
31	2.58	0.90	0.270	(0.058)	0.027	0.243
32	2.67	0.90	0.270	(0.058)	0.027	0.243
33	2.75	1.00	0.300	(0.058)	0.030	0.270
34	2.83	1.00	0.300	(0.058)	0.030	0.270
35	2.92	1.00	0.300	(0.058)	0.030	0.270
36	3.00	1.00	0.300	(0.058)	0.030	0.270
37	3.08	1.00	0.300	(0.058)	0.030	0.270
38	3.17	1.10	0.330	(0.058)	0.033	0.297
39	3.25	1.10	0.330	(0.058)	0.033	0.297
40	3.33	1.10	0.330	(0.058)	0.033	0.297
41	3.42	1.20	0.360	(0.058)	0.036	0.324
42	3.50	1.30	0.390	(0.058)	0.039	0.351
43	3.58	1.40	0.420	(0.058)	0.042	0.378
44	3.67	1.40	0.420	(0.058)	0.042	0.378
45	3.75	1.50	0.450	(0.058)	0.045	0.405
46	3.83	1.50	0.450	(0.058)	0.045	0.405
47	3.92	1.60	0.480	(0.058)	0.048	0.432
48	4.00	1.60	0.480	(0.058)	0.048	0.432
49	4.08	1.70	0.510	(0.058)	0.051	0.459
50	4.17	1.80	0.540	(0.058)	0.054	0.486
51	4.25	1.90	0.570	(0.058)	0.057	0.513
52	4.33	2.00	0.600	0.058	(0.060)	0.542
53	4.42	2.10	0.630	0.058	(0.063)	0.572
54	4.50	2.10	0.630	0.058	(0.063)	0.572
55	4.58	2.20	0.660	0.058	(0.066)	0.602
56	4.67	2.30	0.690	0.058	(0.069)	0.632
57	4.75	2.40	0.720	0.058	(0.072)	0.662
58	4.83	2.40	0.720	0.058	(0.072)	0.662
59	4.92	2.50	0.750	0.058	(0.075)	0.692
60	5.00	2.60	0.780	0.058	(0.078)	0.722
61	5.08	3.10	0.930	0.058	(0.093)	0.872
62	5.17	3.60	1.080	0.058	(0.108)	1.022
63	5.25	3.90	1.170	0.058	(0.117)	1.112
64	5.33	4.20	1.260	0.058	(0.126)	1.202
65	5.42	4.70	1.410	0.058	(0.141)	1.352
66	5.50	5.60	1.680	0.058	(0.168)	1.622
67	5.58	1.90	0.570	(0.058)	0.057	0.513
68	5.67	0.90	0.270	(0.058)	0.027	0.243
69	5.75	0.60	0.180	(0.058)	0.018	0.162
70	5.83	0.50	0.150	(0.058)	0.015	0.135
71	5.92	0.30	0.090	(0.058)	0.009	0.081
72	6.00	0.20	0.060	(0.058)	0.006	0.054
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	27.5

Flood volume = Effective rainfall 2.29(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 7.4(Ac.Ft)
Total soil loss = 0.21(In)
Total soil loss = 0.670(Ac.Ft)
Total rainfall = 2.50(In)

Flood volume = 321068.2 Cubic Feet
Total soil loss = 29180.3 Cubic Feet

Peak flow rate of this hydrograph = 42.982(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 12.5 25.0 37.5 50.0
0+ 5	0.0012	0.17	Q
0+10	0.0070	0.85	Q
0+15	0.0214	2.09	VQ
0+20	0.0446	3.37	V Q
0+25	0.0735	4.19	V Q
0+30	0.1057	4.68	V Q
0+35	0.1410	5.12	V Q
0+40	0.1794	5.57	V Q
0+45	0.2205	5.97	V Q
0+50	0.2636	6.24	V Q
0+55	0.3079	6.44	V Q
1+ 0	0.3535	6.62	V Q
1+ 5	0.4009	6.88	V Q
1+10	0.4505	7.20	V Q
1+15	0.5021	7.50	V Q
1+20	0.5551	7.70	V Q
1+25	0.6091	7.83	V Q
1+30	0.6637	7.93	V Q
1+35	0.7190	8.02	V Q
1+40	0.7747	8.09	V Q
1+45	0.8308	8.15	V Q
1+50	0.8873	8.20	V Q
1+55	0.9440	8.24	VQ
2+ 0	1.0013	8.32	VQ
2+ 5	1.0595	8.45	VQ
2+10	1.1187	8.59	Q
2+15	1.1788	8.73	Q
2+20	1.2399	8.87	VQ
2+25	1.3021	9.04	Q
2+30	1.3652	9.15	Q
2+35	1.4286	9.21	Q
2+40	1.4923	9.26	QV
2+45	1.5566	9.32	QV
2+50	1.6219	9.48	QV
2+55	1.6889	9.73	Q V
3+ 0	1.7575	9.96	Q V
3+ 5	1.8270	10.10	QV
3+10	1.8974	10.21	Q V
3+15	1.9690	10.40	Q V
3+20	2.0425	10.67	Q V
3+25	2.1179	10.95	Q V
3+30	2.1955	11.27	Q V
3+35	2.2764	11.75	Q V
3+40	2.3617	12.38	Q V
3+45	2.4514	13.02	Q V
3+50	2.5450	13.60	Q V
3+55	2.6423	14.13	Q V
4+ 0	2.7433	14.66	Q V
4+ 5	2.8478	15.17	Q V
4+10	2.9562	15.73	Q V
4+15	3.0690	16.38	Q V
4+20	3.1871	17.16	Q V
4+25	3.3113	18.03	Q V
4+30	3.4417	18.93	Q V
4+35	3.5779	19.78	Q V
4+40	3.7195	20.56	Q V
4+45	3.8667	21.38	Q V
4+50	4.0202	22.28	Q V
4+55	4.1796	23.15	Q V
5+ 0	4.3445	23.95	Q V
5+ 5	4.5163	24.94	Q V
5+10	4.6996	26.62	Q V
5+15	4.9013	29.28	Q V
5+20	5.1261	32.64	QV
5+25	5.3750	36.13	QV
5+30	5.6499	39.92	VQ
5+35	5.9459	42.98	V Q
5+40	6.2349	41.96	Q
5+45	6.4770	35.16	Q V
5+50	6.6565	26.06	Q V
5+55	6.7918	19.64	Q V
6+ 0	6.8994	15.62	Q V
6+ 5	6.9867	12.68	Q V
6+10	7.0570	10.21	Q V
6+15	7.1129	8.11	Q V
6+20	7.1578	6.52	Q V
6+25	7.1946	5.35	Q V
6+30	7.2254	4.47	Q V
6+35	7.2514	3.77	Q V
6+40	7.2737	3.24	Q V
6+45	7.2927	2.76	Q V
6+50	7.3086	2.30	Q V
6+55	7.3219	1.94	Q V
7+ 0	7.3332	1.63	Q V
7+ 5	7.3425	1.36	Q V

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7+10        7.3503       1.12  Q          |          |          |          V|
7+15        7.3566       0.91  Q          |          |          |          V|
7+20        7.3616       0.74  Q          |          |          |          V|
7+25        7.3655       0.57  Q          |          |          |          V|
7+30        7.3682       0.38  Q          |          |          |          V|
7+35        7.3693       0.16  Q          |          |          |          V|
7+40        7.3699       0.09  Q          |          |          |          V|
7+45        7.3703       0.06  Q          |          |          |          V|
7+50        7.3705       0.04  Q          |          |          |          V|
7+55        7.3707       0.02  Q          |          |          |          V|
8+ 0        7.3707       0.01  Q          |          |          |           V
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FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
Study date: 08/02/19

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "A"
100-YEAR 6-HOUR DETENTION

Program License Serial Number 6400

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

From study/file name: 3384a6100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 96
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 42.982 (CFS)
Total volume = 7.371 (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 350.000 to Point/Station 350.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 96
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	0.750	0.001	0.750	0.750
2.000	1.700	0.001	1.700	1.700
2.700	2.470	0.001	2.470	2.470
3.000	2.840	5.400	2.821	2.859
3.200	3.090	11.700	3.050	3.130
3.400	3.350	19.300	3.284	3.416
3.600	3.610	28.200	3.513	3.707
3.800	3.890	38.100	3.759	4.021
4.000	4.170	48.900	4.002	4.338
4.200	4.460	60.600	4.251	4.669
4.400	4.760	73.100	4.508	5.012
4.600	5.070	86.400	4.772	5.368
4.800	5.380	100.400	5.034	5.726

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 10.7 21.49 32.24 42.98	Depth (Ft.)
0.083	0.17	0.00	0.001	O	0.00
0.167	0.85	0.00	0.004	O	0.01
0.250	2.09	0.00	0.014	OI	0.02
0.333	3.37	0.00	0.033	O I	0.04
0.417	4.19	0.00	0.059	O I	0.08
0.500	4.68	0.00	0.090	O I	0.12
0.583	5.12	0.00	0.123	O I	0.16
0.667	5.57	0.00	0.160	O I	0.21
0.750	5.97	0.00	0.200	O I	0.27
0.833	6.24	0.00	0.242	O I	0.32
0.917	6.44	0.00	0.286	O I	0.38
1.000	6.62	0.00	0.331	O I	0.44
1.083	6.88	0.00	0.377	O I	0.50
1.167	7.20	0.00	0.426	O I	0.57
1.250	7.50	0.00	0.476	O I	0.64
1.333	7.70	0.00	0.529	O I	0.70
1.417	7.83	0.00	0.582	O I	0.78
1.500	7.93	0.00	0.636	O I	0.85
1.583	8.02	0.00	0.691	O I	0.92
1.667	8.09	0.00	0.747	O I	1.00
1.750	8.15	0.00	0.803	O I	1.06

1.833	8.20	0.00	0.859		1.11
1.917	8.24	0.00	0.916		1.17
2.000	8.32	0.00	0.973		1.23
2.083	8.45	0.00	1.030		1.30
2.167	8.59	0.00	1.089		1.36
2.250	8.73	0.00	1.149		1.42
2.333	8.87	0.00	1.209		1.48
2.417	9.04	0.00	1.271		1.55
2.500	9.15	0.00	1.334		1.61
2.583	9.21	0.00	1.397		1.68
2.667	9.26	0.00	1.460		1.75
2.750	9.32	0.00	1.524		1.82
2.833	9.48	0.00	1.589		1.88
2.917	9.73	0.00	1.655		1.95
3.000	9.96	0.00	1.723		2.02
3.083	10.10	0.00	1.792		2.08
3.167	10.21	0.00	1.862		2.15
3.250	10.40	0.00	1.933		2.21
3.333	10.67	0.00	2.006		2.28
3.417	10.95	0.00	2.080		2.35
3.500	11.27	0.00	2.157		2.42
3.583	11.75	0.00	2.236		2.49
3.667	12.38	0.00	2.319		2.56
3.750	13.02	0.00	2.406		2.64
3.833	13.60	0.39	2.497		2.72
3.917	14.13	1.68	2.585		2.79
4.000	14.66	2.90	2.668		2.86
4.083	15.17	4.05	2.747		2.92
4.167	15.73	5.14	2.822		2.99
4.250	16.38	6.71	2.892		3.04
4.333	17.16	8.31	2.956		3.09
4.417	18.03	9.80	3.014		3.14
4.500	18.93	11.18	3.069		3.18
4.583	19.78	12.60	3.121		3.22
4.667	20.56	13.99	3.168		3.26
4.750	21.38	15.26	3.212		3.29
4.833	22.28	16.46	3.253		3.33
4.917	23.15	17.61	3.292		3.36
5.000	23.95	18.69	3.329		3.38
5.083	24.94	19.81	3.365		3.41
5.167	26.62	21.07	3.402		3.44
5.250	29.28	22.52	3.444		3.47
5.333	32.64	24.30	3.496		3.51
5.417	36.13	26.43	3.558		3.56
5.500	39.92	28.89	3.630		3.61
5.583	42.98	31.62	3.707		3.67
5.667	41.96	33.98	3.773		3.72
5.750	35.16	34.97	3.802		3.74
5.833	26.06	34.02	3.775		3.72
5.917	19.64	31.60	3.706		3.67
6.000	15.62	28.57	3.620		3.61
6.083	12.68	25.52	3.532		3.54
6.167	10.21	22.55	3.445		3.47
6.250	8.11	19.72	3.362		3.41
6.333	6.52	17.40	3.285		3.35
6.417	5.35	15.30	3.213		3.29
6.500	4.47	13.40	3.148		3.24
6.583	3.77	11.70	3.090		3.20
6.667	3.24	10.39	3.038		3.16
6.750	2.76	9.21	2.991		3.12
6.833	2.30	8.15	2.949		3.09
6.917	1.94	7.18	2.911		3.06
7.000	1.63	6.32	2.877		3.03
7.083	1.36	5.55	2.846		3.00
7.167	1.12	5.08	2.818		2.98
7.250	0.91	4.69	2.791		2.96
7.333	0.74	4.32	2.766		2.94
7.417	0.57	3.97	2.742		2.92
7.500	0.38	3.63	2.719		2.90
7.583	0.16	3.31	2.697		2.88
7.667	0.09	3.01	2.676		2.87
7.750	0.06	2.73	2.657		2.85
7.833	0.04	2.47	2.639		2.84
7.917	0.02	2.24	2.623		2.82
8.000	0.01	2.02	2.609		2.81
8.083	0.00	1.83	2.595		2.80
8.167	0.00	1.66	2.583		2.79
8.250	0.00	1.50	2.573		2.78
8.333	0.00	1.35	2.563		2.78
8.417	0.00	1.22	2.554		2.77
8.500	0.00	1.11	2.546		2.76
8.583	0.00	1.00	2.539		2.76
8.667	0.00	0.91	2.532		2.75
8.750	0.00	0.82	2.526		2.75
8.833	0.00	0.74	2.521		2.74
8.917	0.00	0.67	2.516		2.74
9.000	0.00	0.61	2.511		2.73
9.083	0.00	0.55	2.507		2.73
9.167	0.00	0.50	2.504		2.73
9.250	0.00	0.45	2.501		2.72
9.333	0.00	0.40	2.498		2.72
9.417	0.00	0.37	2.495		2.72
9.500	0.00	0.33	2.493		2.72
9.583	0.00	0.30	2.490		2.72
9.667	0.00	0.27	2.488		2.71
9.750	0.00	0.24	2.487		2.71
9.833	0.00	0.22	2.485		2.71
9.917	0.00	0.20	2.484		2.71
10.000	0.00	0.18	2.482		2.71

10.083	0.00	0.16	2.481	O	|	|	|	|	2.71
10.167	0.00	0.15	2.480	O	|	|	|	|	2.71
10.250	0.00	0.13	2.479	O	|	|	|	|	2.71
10.333	0.00	0.12	2.478	O	|	|	|	|	2.71
10.417	0.00	0.11	2.477	O	|	|	|	|	2.71
10.500	0.00	0.10	2.477	O	|	|	|	|	2.71
10.583	0.00	0.09	2.476	O	|	|	|	|	2.70
10.667	0.00	0.08	2.475	O	|	|	|	|	2.70
10.750	0.00	0.07	2.475	O	|	|	|	|	2.70
10.833	0.00	0.07	2.474	O	|	|	|	|	2.70
10.917	0.00	0.06	2.474	O	|	|	|	|	2.70
11.000	0.00	0.05	2.474	O	|	|	|	|	2.70
11.083	0.00	0.05	2.473	O	|	|	|	|	2.70
11.167	0.00	0.04	2.473	O	|	|	|	|	2.70
11.250	0.00	0.04	2.473	O	|	|	|	|	2.70
11.333	0.00	0.04	2.472	O	|	|	|	|	2.70
11.417	0.00	0.03	2.472	O	|	|	|	|	2.70
11.500	0.00	0.03	2.472	O	|	|	|	|	2.70
11.583	0.00	0.03	2.472	O	|	|	|	|	2.70
11.667	0.00	0.02	2.472	O	|	|	|	|	2.70
11.750	0.00	0.02	2.471	O	|	|	|	|	2.70
11.833	0.00	0.02	2.471	O	|	|	|	|	2.70
11.917	0.00	0.02	2.471	O	|	|	|	|	2.70
12.000	0.00	0.02	2.471	O	|	|	|	|	2.70
12.083	0.00	0.01	2.471	O	|	|	|	|	2.70
12.167	0.00	0.01	2.471	O	|	|	|	|	2.70
12.250	0.00	0.01	2.471	O	|	|	|	|	2.70
12.333	0.00	0.01	2.471	O	|	|	|	|	2.70
12.417	0.00	0.01	2.471	O	|	|	|	|	2.70
12.500	0.00	0.01	2.471	O	|	|	|	|	2.70
12.583	0.00	0.01	2.470	O	|	|	|	|	2.70
12.667	0.00	0.01	2.470	O	|	|	|	|	2.70
12.750	0.00	0.01	2.470	O	|	|	|	|	2.70
12.833	0.00	0.01	2.470	O	|	|	|	|	2.70
12.917	0.00	0.01	2.470	O	|	|	|	|	2.70
13.000	0.00	0.00	2.470	O	|	|	|	|	2.70
13.083	0.00	0.00	2.470	O	|	|	|	|	2.70
13.167	0.00	0.00	2.470	O	|	|	|	|	2.70
13.250	0.00	0.00	2.470	O	|	|	|	|	2.70
13.333	0.00	0.00	2.470	O	|	|	|	|	2.70
13.417	0.00	0.00	2.470	O	|	|	|	|	2.70
13.500	0.00	0.00	2.470	O	|	|	|	|	2.70
13.583	0.00	0.00	2.470	O	|	|	|	|	2.70
13.667	0.00	0.00	2.470	O	|	|	|	|	2.70
13.750	0.00	0.00	2.470	O	|	|	|	|	2.70
13.833	0.00	0.00	2.470	O	|	|	|	|	2.70
13.917	0.00	0.00	2.470	O	|	|	|	|	2.70
14.000	0.00	0.00	2.470	O	|	|	|	|	2.70
14.083	0.00	0.00	2.470	O	|	|	|	|	2.70
14.167	0.00	0.00	2.470	O	|	|	|	|	2.70
14.250	0.00	0.00	2.470	O	|	|	|	|	2.70
14.333	0.00	0.00	2.470	O	|	|	|	|	2.70

Remaining water in basin = 2.47 (Ac.Ft)

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****************************HYDROGRAPH DATA****************************
                Number of intervals =   172
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       34.971 (CFS)
                Total volume =       4.901 (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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U n i t H y d r o g r a p h A n a l y s i s

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Study date 08/02/19 File: 3384A24100.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

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "A"
100-YEAR 24 HOUR

Drainage Area = 38.60(Ac.) = 0.060 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 38.60(Ac.) = 0.060 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.256 Hr.
Lag time = 15.36 Min.
25% of lag time = 3.84 Min.
40% of lag time = 6.14 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]
38.60	2.00	77.20

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
38.60	5.50	212.30

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.500(In)

Point rain (area averaged) = 5.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 5.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
38.600	56.00	0.900

Total Area Entered = 38.60(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	74.8	0.305	0.900	0.058	1.000	0.058
					Sum (F) =	0.058

Area averaged mean soil loss (F) (In/Hr) = 0.058
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

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

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	32.552	3.242	1.261
2	0.167	65.104	12.336	4.799
3	0.250	97.656	21.046	8.187
4	0.333	130.208	20.246	7.876
5	0.417	162.760	11.449	4.454
6	0.500	195.313	6.525	2.538
7	0.583	227.865	4.535	1.764
8	0.667	260.417	3.515	1.368
9	0.750	292.969	2.876	1.119
10	0.833	325.521	2.276	0.885
11	0.917	358.073	1.946	0.757
12	1.000	390.625	1.580	0.614
13	1.083	423.177	1.333	0.519
14	1.167	455.729	1.057	0.411

15	1.250	488.281	0.999	0.388
16	1.333	520.833	0.923	0.359
17	1.417	553.385	0.732	0.285
18	1.500	585.938	0.638	0.248
19	1.583	618.490	0.565	0.220
20	1.667	651.042	0.468	0.182
21	1.750	683.594	0.387	0.150
22	1.833	716.146	0.326	0.127
23	1.917	748.698	0.326	0.127
24	2.000	781.250	0.326	0.127
25	2.083	813.802	0.350	0.136
			Sum = 100.000	Sum= 38.902

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	0.044	(0.103)	0.004	0.040
2	0.17	0.07	0.044	(0.102)	0.004	0.040
3	0.25	0.07	0.044	(0.102)	0.004	0.040
4	0.33	0.10	0.066	(0.102)	0.007	0.059
5	0.42	0.10	0.066	(0.101)	0.007	0.059
6	0.50	0.10	0.066	(0.101)	0.007	0.059
7	0.58	0.10	0.066	(0.100)	0.007	0.059
8	0.67	0.10	0.066	(0.100)	0.007	0.059
9	0.75	0.10	0.066	(0.100)	0.007	0.059
10	0.83	0.13	0.088	(0.099)	0.009	0.079
11	0.92	0.13	0.088	(0.099)	0.009	0.079
12	1.00	0.13	0.088	(0.099)	0.009	0.079
13	1.08	0.10	0.066	(0.098)	0.007	0.059
14	1.17	0.10	0.066	(0.098)	0.007	0.059
15	1.25	0.10	0.066	(0.097)	0.007	0.059
16	1.33	0.10	0.066	(0.097)	0.007	0.059
17	1.42	0.10	0.066	(0.097)	0.007	0.059
18	1.50	0.10	0.066	(0.096)	0.007	0.059
19	1.58	0.10	0.066	(0.096)	0.007	0.059
20	1.67	0.10	0.066	(0.095)	0.007	0.059
21	1.75	0.10	0.066	(0.095)	0.007	0.059
22	1.83	0.13	0.088	(0.095)	0.009	0.079
23	1.92	0.13	0.088	(0.094)	0.009	0.079
24	2.00	0.13	0.088	(0.094)	0.009	0.079
25	2.08	0.13	0.088	(0.094)	0.009	0.079
26	2.17	0.13	0.088	(0.093)	0.009	0.079
27	2.25	0.13	0.088	(0.093)	0.009	0.079
28	2.33	0.13	0.088	(0.092)	0.009	0.079
29	2.42	0.13	0.088	(0.092)	0.009	0.079
30	2.50	0.13	0.088	(0.092)	0.009	0.079
31	2.58	0.17	0.110	(0.091)	0.011	0.099
32	2.67	0.17	0.110	(0.091)	0.011	0.099
33	2.75	0.17	0.110	(0.091)	0.011	0.099
34	2.83	0.17	0.110	(0.090)	0.011	0.099
35	2.92	0.17	0.110	(0.090)	0.011	0.099
36	3.00	0.17	0.110	(0.089)	0.011	0.099
37	3.08	0.17	0.110	(0.089)	0.011	0.099
38	3.17	0.17	0.110	(0.089)	0.011	0.099
39	3.25	0.17	0.110	(0.088)	0.011	0.099
40	3.33	0.17	0.110	(0.088)	0.011	0.099
41	3.42	0.17	0.110	(0.088)	0.011	0.099
42	3.50	0.17	0.110	(0.087)	0.011	0.099
43	3.58	0.17	0.110	(0.087)	0.011	0.099
44	3.67	0.17	0.110	(0.086)	0.011	0.099
45	3.75	0.17	0.110	(0.086)	0.011	0.099
46	3.83	0.20	0.132	(0.086)	0.013	0.119
47	3.92	0.20	0.132	(0.085)	0.013	0.119
48	4.00	0.20	0.132	(0.085)	0.013	0.119
49	4.08	0.20	0.132	(0.085)	0.013	0.119
50	4.17	0.20	0.132	(0.084)	0.013	0.119
51	4.25	0.20	0.132	(0.084)	0.013	0.119
52	4.33	0.23	0.154	(0.084)	0.015	0.139
53	4.42	0.23	0.154	(0.083)	0.015	0.139
54	4.50	0.23	0.154	(0.083)	0.015	0.139
55	4.58	0.23	0.154	(0.082)	0.015	0.139
56	4.67	0.23	0.154	(0.082)	0.015	0.139
57	4.75	0.23	0.154	(0.082)	0.015	0.139
58	4.83	0.27	0.176	(0.081)	0.018	0.158
59	4.92	0.27	0.176	(0.081)	0.018	0.158
60	5.00	0.27	0.176	(0.081)	0.018	0.158
61	5.08	0.20	0.132	(0.080)	0.013	0.119
62	5.17	0.20	0.132	(0.080)	0.013	0.119
63	5.25	0.20	0.132	(0.080)	0.013	0.119
64	5.33	0.23	0.154	(0.079)	0.015	0.139
65	5.42	0.23	0.154	(0.079)	0.015	0.139
66	5.50	0.23	0.154	(0.079)	0.015	0.139
67	5.58	0.27	0.176	(0.078)	0.018	0.158
68	5.67	0.27	0.176	(0.078)	0.018	0.158
69	5.75	0.27	0.176	(0.078)	0.018	0.158
70	5.83	0.27	0.176	(0.077)	0.018	0.158
71	5.92	0.27	0.176	(0.077)	0.018	0.158
72	6.00	0.27	0.176	(0.077)	0.018	0.158
73	6.08	0.30	0.198	(0.076)	0.020	0.178
74	6.17	0.30	0.198	(0.076)	0.020	0.178
75	6.25	0.30	0.198	(0.076)	0.020	0.178
76	6.33	0.30	0.198	(0.075)	0.020	0.178
77	6.42	0.30	0.198	(0.075)	0.020	0.178
78	6.50	0.30	0.198	(0.075)	0.020	0.178
79	6.58	0.33	0.220	(0.074)	0.022	0.198

80	6.67	0.33	0.220	(0.074)	0.022	0.198
81	6.75	0.33	0.220	(0.074)	0.022	0.198
82	6.83	0.33	0.220	(0.073)	0.022	0.198
83	6.92	0.33	0.220	(0.073)	0.022	0.198
84	7.00	0.33	0.220	(0.073)	0.022	0.198
85	7.08	0.33	0.220	(0.072)	0.022	0.198
86	7.17	0.33	0.220	(0.072)	0.022	0.198
87	7.25	0.33	0.220	(0.072)	0.022	0.198
88	7.33	0.37	0.242	(0.071)	0.024	0.218
89	7.42	0.37	0.242	(0.071)	0.024	0.218
90	7.50	0.37	0.242	(0.071)	0.024	0.218
91	7.58	0.40	0.264	(0.070)	0.026	0.238
92	7.67	0.40	0.264	(0.070)	0.026	0.238
93	7.75	0.40	0.264	(0.070)	0.026	0.238
94	7.83	0.43	0.286	(0.069)	0.029	0.257
95	7.92	0.43	0.286	(0.069)	0.029	0.257
96	8.00	0.43	0.286	(0.069)	0.029	0.257
97	8.08	0.50	0.330	(0.068)	0.033	0.297
98	8.17	0.50	0.330	(0.068)	0.033	0.297
99	8.25	0.50	0.330	(0.068)	0.033	0.297
100	8.33	0.50	0.330	(0.067)	0.033	0.297
101	8.42	0.50	0.330	(0.067)	0.033	0.297
102	8.50	0.50	0.330	(0.067)	0.033	0.297
103	8.58	0.53	0.352	(0.066)	0.035	0.317
104	8.67	0.53	0.352	(0.066)	0.035	0.317
105	8.75	0.53	0.352	(0.066)	0.035	0.317
106	8.83	0.57	0.374	(0.066)	0.037	0.337
107	8.92	0.57	0.374	(0.065)	0.037	0.337
108	9.00	0.57	0.374	(0.065)	0.037	0.337
109	9.08	0.63	0.418	(0.065)	0.042	0.376
110	9.17	0.63	0.418	(0.064)	0.042	0.376
111	9.25	0.63	0.418	(0.064)	0.042	0.376
112	9.33	0.67	0.440	(0.064)	0.044	0.396
113	9.42	0.67	0.440	(0.063)	0.044	0.396
114	9.50	0.67	0.440	(0.063)	0.044	0.396
115	9.58	0.70	0.462	(0.063)	0.046	0.416
116	9.67	0.70	0.462	(0.062)	0.046	0.416
117	9.75	0.70	0.462	(0.062)	0.046	0.416
118	9.83	0.73	0.484	(0.062)	0.048	0.436
119	9.92	0.73	0.484	(0.062)	0.048	0.436
120	10.00	0.73	0.484	(0.061)	0.048	0.436
121	10.08	0.50	0.330	(0.061)	0.033	0.297
122	10.17	0.50	0.330	(0.061)	0.033	0.297
123	10.25	0.50	0.330	(0.060)	0.033	0.297
124	10.33	0.50	0.330	(0.060)	0.033	0.297
125	10.42	0.50	0.330	(0.060)	0.033	0.297
126	10.50	0.50	0.330	(0.060)	0.033	0.297
127	10.58	0.67	0.440	(0.059)	0.044	0.396
128	10.67	0.67	0.440	(0.059)	0.044	0.396
129	10.75	0.67	0.440	(0.059)	0.044	0.396
130	10.83	0.67	0.440	(0.058)	0.044	0.396
131	10.92	0.67	0.440	(0.058)	0.044	0.396
132	11.00	0.67	0.440	(0.058)	0.044	0.396
133	11.08	0.63	0.418	(0.057)	0.042	0.376
134	11.17	0.63	0.418	(0.057)	0.042	0.376
135	11.25	0.63	0.418	(0.057)	0.042	0.376
136	11.33	0.63	0.418	(0.057)	0.042	0.376
137	11.42	0.63	0.418	(0.056)	0.042	0.376
138	11.50	0.63	0.418	(0.056)	0.042	0.376
139	11.58	0.57	0.374	(0.056)	0.037	0.337
140	11.67	0.57	0.374	(0.056)	0.037	0.337
141	11.75	0.57	0.374	(0.055)	0.037	0.337
142	11.83	0.60	0.396	(0.055)	0.040	0.356
143	11.92	0.60	0.396	(0.055)	0.040	0.356
144	12.00	0.60	0.396	(0.054)	0.040	0.356
145	12.08	0.83	0.550	0.054	(0.055)	0.496
146	12.17	0.83	0.550	0.054	(0.055)	0.496
147	12.25	0.83	0.550	0.054	(0.055)	0.496
148	12.33	0.87	0.572	0.053	(0.057)	0.519
149	12.42	0.87	0.572	0.053	(0.057)	0.519
150	12.50	0.87	0.572	0.053	(0.057)	0.519
151	12.58	0.93	0.616	0.053	(0.062)	0.563
152	12.67	0.93	0.616	0.052	(0.062)	0.564
153	12.75	0.93	0.616	0.052	(0.062)	0.564
154	12.83	0.97	0.638	0.052	(0.064)	0.586
155	12.92	0.97	0.638	0.051	(0.064)	0.586
156	13.00	0.97	0.638	0.051	(0.064)	0.587
157	13.08	1.13	0.748	0.051	(0.075)	0.697
158	13.17	1.13	0.748	0.051	(0.075)	0.697
159	13.25	1.13	0.748	0.050	(0.075)	0.697
160	13.33	1.13	0.748	0.050	(0.075)	0.698
161	13.42	1.13	0.748	0.050	(0.075)	0.698
162	13.50	1.13	0.748	0.050	(0.075)	0.698
163	13.58	0.77	0.506	0.049	(0.051)	0.457
164	13.67	0.77	0.506	0.049	(0.051)	0.457
165	13.75	0.77	0.506	0.049	(0.051)	0.457
166	13.83	0.77	0.506	0.049	(0.051)	0.457
167	13.92	0.77	0.506	0.048	(0.051)	0.458
168	14.00	0.77	0.506	0.048	(0.051)	0.458
169	14.08	0.90	0.594	0.048	(0.059)	0.546
170	14.17	0.90	0.594	0.048	(0.059)	0.546
171	14.25	0.90	0.594	0.047	(0.059)	0.546
172	14.33	0.87	0.572	0.047	(0.057)	0.525
173	14.42	0.87	0.572	0.047	(0.057)	0.525
174	14.50	0.87	0.572	0.047	(0.057)	0.525
175	14.58	0.87	0.572	0.046	(0.057)	0.525
176	14.67	0.87	0.572	0.046	(0.057)	0.526
177	14.75	0.87	0.572	0.046	(0.057)	0.526
178	14.83	0.83	0.550	0.046	(0.055)	0.504

179	14.92	0.83	0.550	0.046	(0.055)	0.504
180	15.00	0.83	0.550	0.045	(0.055)	0.505
181	15.08	0.80	0.528	0.045	(0.053)	0.483
182	15.17	0.80	0.528	0.045	(0.053)	0.483
183	15.25	0.80	0.528	0.045	(0.053)	0.483
184	15.33	0.77	0.506	0.044	(0.051)	0.462
185	15.42	0.77	0.506	0.044	(0.051)	0.462
186	15.50	0.77	0.506	0.044	(0.051)	0.462
187	15.58	0.63	0.418	(0.044)	0.042	0.376
188	15.67	0.63	0.418	(0.043)	0.042	0.376
189	15.75	0.63	0.418	(0.043)	0.042	0.376
190	15.83	0.63	0.418	(0.043)	0.042	0.376
191	15.92	0.63	0.418	(0.043)	0.042	0.376
192	16.00	0.63	0.418	(0.043)	0.042	0.376
193	16.08	0.13	0.088	(0.042)	0.009	0.079
194	16.17	0.13	0.088	(0.042)	0.009	0.079
195	16.25	0.13	0.088	(0.042)	0.009	0.079
196	16.33	0.13	0.088	(0.042)	0.009	0.079
197	16.42	0.13	0.088	(0.042)	0.009	0.079
198	16.50	0.13	0.088	(0.041)	0.009	0.079
199	16.58	0.10	0.066	(0.041)	0.007	0.059
200	16.67	0.10	0.066	(0.041)	0.007	0.059
201	16.75	0.10	0.066	(0.041)	0.007	0.059
202	16.83	0.10	0.066	(0.040)	0.007	0.059
203	16.92	0.10	0.066	(0.040)	0.007	0.059
204	17.00	0.10	0.066	(0.040)	0.007	0.059
205	17.08	0.17	0.110	(0.040)	0.011	0.099
206	17.17	0.17	0.110	(0.040)	0.011	0.099
207	17.25	0.17	0.110	(0.039)	0.011	0.099
208	17.33	0.17	0.110	(0.039)	0.011	0.099
209	17.42	0.17	0.110	(0.039)	0.011	0.099
210	17.50	0.17	0.110	(0.039)	0.011	0.099
211	17.58	0.17	0.110	(0.039)	0.011	0.099
212	17.67	0.17	0.110	(0.038)	0.011	0.099
213	17.75	0.17	0.110	(0.038)	0.011	0.099
214	17.83	0.13	0.088	(0.038)	0.009	0.079
215	17.92	0.13	0.088	(0.038)	0.009	0.079
216	18.00	0.13	0.088	(0.038)	0.009	0.079
217	18.08	0.13	0.088	(0.038)	0.009	0.079
218	18.17	0.13	0.088	(0.037)	0.009	0.079
219	18.25	0.13	0.088	(0.037)	0.009	0.079
220	18.33	0.13	0.088	(0.037)	0.009	0.079
221	18.42	0.13	0.088	(0.037)	0.009	0.079
222	18.50	0.13	0.088	(0.037)	0.009	0.079
223	18.58	0.10	0.066	(0.036)	0.007	0.059
224	18.67	0.10	0.066	(0.036)	0.007	0.059
225	18.75	0.10	0.066	(0.036)	0.007	0.059
226	18.83	0.07	0.044	(0.036)	0.004	0.040
227	18.92	0.07	0.044	(0.036)	0.004	0.040
228	19.00	0.07	0.044	(0.036)	0.004	0.040
229	19.08	0.10	0.066	(0.035)	0.007	0.059
230	19.17	0.10	0.066	(0.035)	0.007	0.059
231	19.25	0.10	0.066	(0.035)	0.007	0.059
232	19.33	0.13	0.088	(0.035)	0.009	0.079
233	19.42	0.13	0.088	(0.035)	0.009	0.079
234	19.50	0.13	0.088	(0.035)	0.009	0.079
235	19.58	0.10	0.066	(0.034)	0.007	0.059
236	19.67	0.10	0.066	(0.034)	0.007	0.059
237	19.75	0.10	0.066	(0.034)	0.007	0.059
238	19.83	0.07	0.044	(0.034)	0.004	0.040
239	19.92	0.07	0.044	(0.034)	0.004	0.040
240	20.00	0.07	0.044	(0.034)	0.004	0.040
241	20.08	0.10	0.066	(0.034)	0.007	0.059
242	20.17	0.10	0.066	(0.033)	0.007	0.059
243	20.25	0.10	0.066	(0.033)	0.007	0.059
244	20.33	0.10	0.066	(0.033)	0.007	0.059
245	20.42	0.10	0.066	(0.033)	0.007	0.059
246	20.50	0.10	0.066	(0.033)	0.007	0.059
247	20.58	0.10	0.066	(0.033)	0.007	0.059
248	20.67	0.10	0.066	(0.033)	0.007	0.059
249	20.75	0.10	0.066	(0.032)	0.007	0.059
250	20.83	0.07	0.044	(0.032)	0.004	0.040
251	20.92	0.07	0.044	(0.032)	0.004	0.040
252	21.00	0.07	0.044	(0.032)	0.004	0.040
253	21.08	0.10	0.066	(0.032)	0.007	0.059
254	21.17	0.10	0.066	(0.032)	0.007	0.059
255	21.25	0.10	0.066	(0.032)	0.007	0.059
256	21.33	0.07	0.044	(0.032)	0.004	0.040
257	21.42	0.07	0.044	(0.031)	0.004	0.040
258	21.50	0.07	0.044	(0.031)	0.004	0.040
259	21.58	0.10	0.066	(0.031)	0.007	0.059
260	21.67	0.10	0.066	(0.031)	0.007	0.059
261	21.75	0.10	0.066	(0.031)	0.007	0.059
262	21.83	0.07	0.044	(0.031)	0.004	0.040
263	21.92	0.07	0.044	(0.031)	0.004	0.040
264	22.00	0.07	0.044	(0.031)	0.004	0.040
265	22.08	0.10	0.066	(0.031)	0.007	0.059
266	22.17	0.10	0.066	(0.030)	0.007	0.059
267	22.25	0.10	0.066	(0.030)	0.007	0.059
268	22.33	0.07	0.044	(0.030)	0.004	0.040
269	22.42	0.07	0.044	(0.030)	0.004	0.040
270	22.50	0.07	0.044	(0.030)	0.004	0.040
271	22.58	0.07	0.044	(0.030)	0.004	0.040
272	22.67	0.07	0.044	(0.030)	0.004	0.040
273	22.75	0.07	0.044	(0.030)	0.004	0.040
274	22.83	0.07	0.044	(0.030)	0.004	0.040
275	22.92	0.07	0.044	(0.030)	0.004	0.040
276	23.00	0.07	0.044	(0.030)	0.004	0.040
277	23.08	0.07	0.044	(0.030)	0.004	0.040

278	23.17	0.07	0.044	(0.029)	0.004	0.040
279	23.25	0.07	0.044	(0.029)	0.004	0.040
280	23.33	0.07	0.044	(0.029)	0.004	0.040
281	23.42	0.07	0.044	(0.029)	0.004	0.040
282	23.50	0.07	0.044	(0.029)	0.004	0.040
283	23.58	0.07	0.044	(0.029)	0.004	0.040
284	23.67	0.07	0.044	(0.029)	0.004	0.040
285	23.75	0.07	0.044	(0.029)	0.004	0.040
286	23.83	0.07	0.044	(0.029)	0.004	0.040
287	23.92	0.07	0.044	(0.029)	0.004	0.040
288	24.00	0.07	0.044	(0.029)	0.004	0.040

(Loss Rate Not Used)

Sum = 100.0 Sum = 59.8

Flood volume = Effective rainfall 4.98(In)
times area 38.6(Ac.)/[(In)/(Ft.)] = 16.0(Ac.Ft)
Total soil loss = 0.52(In)
Total soil loss = 1.660(Ac.Ft)
Total rainfall = 5.50(In)
Flood volume = 698295.7 Cubic Feet
Total soil loss = 72295.2 Cubic Feet

Peak flow rate of this hydrograph = 25.591(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 7.5 15.0 22.5 30.0
0+ 5	0.0003	0.05	Q
0+10	0.0020	0.24	Q
0+15	0.0059	0.56	Q
0+20	0.0121	0.90	VQ
0+25	0.0202	1.17	VQ
0+30	0.0301	1.44	VQ
0+35	0.0415	1.66	V Q
0+40	0.0539	1.80	V Q
0+45	0.0670	1.90	V Q
0+50	0.0807	1.99	V Q
0+55	0.0955	2.15	V Q
1+ 0	0.1117	2.35	V Q
1+ 5	0.1291	2.52	V Q
1+10	0.1467	2.55	V Q
1+15	0.1636	2.46	V Q
1+20	0.1799	2.37	V Q
1+25	0.1959	2.33	V Q
1+30	0.2119	2.31	V Q
1+35	0.2278	2.31	V Q
1+40	0.2437	2.31	V Q
1+45	0.2597	2.31	V Q
1+50	0.2758	2.34	V Q
1+55	0.2926	2.44	V Q
2+ 0	0.3106	2.60	V Q
2+ 5	0.3296	2.77	V Q
2+10	0.3493	2.85	V Q
2+15	0.3692	2.90	V Q
2+20	0.3895	2.94	V Q
2+25	0.4099	2.96	V Q
2+30	0.4304	2.98	V Q
2+35	0.4513	3.02	V Q
2+40	0.4728	3.13	V Q
2+45	0.4956	3.31	V Q
2+50	0.5195	3.47	V Q
2+55	0.5441	3.57	V Q
3+ 0	0.5691	3.62	V Q
3+ 5	0.5943	3.66	V Q
3+10	0.6197	3.70	V Q
3+15	0.6454	3.72	V Q
3+20	0.6712	3.74	V Q
3+25	0.6971	3.76	V Q
3+30	0.7231	3.78	V Q
3+35	0.7492	3.79	V Q
3+40	0.7754	3.80	V Q
3+45	0.8016	3.81	V Q
3+50	0.8281	3.85	V Q
3+55	0.8553	3.95	V Q
4+ 0	0.8836	4.11	V Q
4+ 5	0.9131	4.27	V Q
4+10	0.9431	4.37	V Q
4+15	0.9736	4.42	V Q
4+20	1.0044	4.48	V Q
4+25	1.0362	4.61	V Q
4+30	1.0692	4.79	V Q
4+35	1.1034	4.97	V Q
4+40	1.1383	5.07	V Q
4+45	1.1737	5.14	V Q
4+50	1.2096	5.21	V Q
4+55	1.2463	5.34	V Q
5+ 0	1.2844	5.53	V Q
5+ 5	1.3234	5.66	V Q
5+10	1.3618	5.58	V Q
5+15	1.3984	5.32	V Q
5+20	1.4334	5.08	V Q
5+25	1.4681	5.04	V Q
5+30	1.5035	5.13	V Q
5+35	1.5398	5.27	V Q

5+40	1.5772	5.43	V Q
5+45	1.6158	5.61	V Q
5+50	1.6557	5.79	V Q
5+55	1.6962	5.88	V Q
6+ 0	1.7371	5.94	V Q
6+ 5	1.7785	6.01	V Q
6+10	1.8208	6.14	V Q
6+15	1.8643	6.33	V Q
6+20	1.9091	6.50	V Q
6+25	1.9546	6.61	V Q
6+30	2.0006	6.67	V Q
6+35	2.0470	6.74	V Q
6+40	2.0943	6.87	V Q
6+45	2.1430	7.07	V Q
6+50	2.1929	7.25	V Q
6+55	2.2435	7.36	V Q
7+ 0	2.2947	7.42	V Q
7+ 5	2.3461	7.47	V Q
7+10	2.3978	7.51	V Q
7+15	2.4498	7.54	V Q
7+20	2.5021	7.60	V Q
7+25	2.5553	7.72	V Q
7+30	2.6097	7.90	V Q
7+35	2.6654	8.10	V Q
7+40	2.7225	8.29	V Q
7+45	2.7812	8.52	V Q
7+50	2.8414	8.74	V Q
7+55	2.9031	8.96	V Q
8+ 0	2.9665	9.20	V Q
8+ 5	3.0317	9.47	V Q
8+10	3.0991	9.79	V Q
8+15	3.1694	10.20	V Q
8+20	3.2422	10.58	V Q
8+25	3.3167	10.81	V Q
8+30	3.3921	10.96	V Q
8+35	3.4685	11.09	V Q
8+40	3.5461	11.27	V Q
8+45	3.6253	11.50	V Q
8+50	3.7061	11.73	V Q
8+55	3.7885	11.97	V Q
9+ 0	3.8726	12.22	V Q
9+ 5	3.9587	12.49	V Q
9+10	4.0470	12.83	V Q
9+15	4.1383	13.25	V Q
9+20	4.2324	13.66	V Q
9+25	4.3287	13.99	V Q
9+30	4.4273	14.31	V Q
9+35	4.5278	14.60	V Q
9+40	4.6302	14.87	V Q
9+45	4.7346	15.15	V Q
9+50	4.8408	15.43	V Q
9+55	4.9489	15.69	V Q
10+ 0	5.0588	15.97	V Q
10+ 5	5.1693	16.04	V Q
10+10	5.2762	15.53	V Q
10+15	5.3761	14.50	V Q
10+20	5.4690	13.49	V Q
10+25	5.5581	12.94	V Q
10+30	5.6452	12.65	V Q
10+35	5.7319	12.58	V Q
10+40	5.8207	12.90	V Q
10+45	5.9143	13.59	V Q
10+50	6.0126	14.28	V Q
10+55	6.1134	14.63	V Q
11+ 0	6.2155	14.82	V Q
11+ 5	6.3182	14.92	V Q
11+10	6.4209	14.91	V Q
11+15	6.5230	14.82	V Q
11+20	6.6243	14.71	V Q
11+25	6.7253	14.66	V Q
11+30	6.8262	14.65	V Q
11+35	6.9266	14.59	V Q
11+40	7.0257	14.39	V Q
11+45	7.1226	14.06	VQ
11+50	7.2174	13.78	Q
11+55	7.3117	13.69	Q
12+ 0	7.4064	13.75	Q
12+ 5	7.5029	14.00	Q
12+10	7.6042	14.72	VQ
12+15	7.7135	15.87	V Q
12+20	7.8307	17.01	V Q
12+25	7.9529	17.75	V Q
12+30	8.0789	18.29	V Q
12+35	8.2082	18.78	V Q
12+40	8.3410	19.28	V Q
12+45	8.4778	19.86	V Q
12+50	8.6183	20.40	V Q
12+55	8.7618	20.84	V Q
13+ 0	8.9081	21.25	V Q
13+ 5	9.0578	21.73	V Q
13+10	9.2128	22.50	V Q
13+15	9.3752	23.58	V Q
13+20	9.5446	24.60	V Q
13+25	9.7183	25.21	V Q
13+30	9.8945	25.59	V Q
13+35	10.0706	25.57	V Q
13+40	10.2403	24.64	V Q
13+45	10.3976	22.85	V Q
13+50	10.5429	21.10	V Q

13+55	10.6817	20.16	
14+ 0	10.8171	19.66	
14+ 5	10.9511	19.45	
14+10	11.0861	19.61	
14+15	11.2248	20.13	
14+20	11.3670	20.64	
14+25	11.5102	20.80	
14+30	11.6530	20.74	
14+35	11.7952	20.64	
14+40	11.9370	20.59	
14+45	12.0787	20.57	
14+50	12.2200	20.52	
14+55	12.3605	20.41	
15+ 0	12.4998	20.22	
15+ 5	12.6376	20.01	
15+10	12.7739	19.80	
15+15	12.9086	19.55	
15+20	13.0416	19.31	
15+25	13.1729	19.07	
15+30	13.3024	18.80	
15+35	13.4295	18.45	
15+40	13.5529	17.91	
15+45	13.6708	17.13	
15+50	13.7837	16.39	
15+55	13.8936	15.96	
16+ 0	14.0018	15.71	
16+ 5	14.1062	15.15	
16+10	14.1997	13.58	
16+15	14.2756	11.02	
16+20	14.3346	8.58	
16+25	14.3840	7.17	
16+30	14.4277	6.35	
16+35	14.4672	5.74	
16+40	14.5030	5.19	
16+45	14.5350	4.65	
16+50	14.5639	4.19	
16+55	14.5903	3.85	
17+ 0	14.6150	3.59	
17+ 5	14.6386	3.42	
17+10	14.6623	3.44	
17+15	14.6872	3.62	
17+20	14.7133	3.79	
17+25	14.7399	3.86	
17+30	14.7665	3.86	
17+35	14.7929	3.84	
17+40	14.8193	3.83	
17+45	14.8457	3.83	
17+50	14.8718	3.79	
17+55	14.8971	3.68	
18+ 0	14.9213	3.50	
18+ 5	14.9441	3.32	
18+10	14.9665	3.25	
18+15	14.9886	3.21	
18+20	15.0105	3.19	
18+25	15.0324	3.17	
18+30	15.0541	3.15	
18+35	15.0755	3.12	
18+40	15.0963	3.01	
18+45	15.1159	2.84	
18+50	15.1342	2.66	
18+55	15.1512	2.47	
19+ 0	15.1667	2.26	
19+ 5	15.1811	2.09	
19+10	15.1953	2.06	
19+15	15.2101	2.15	
19+20	15.2258	2.27	
19+25	15.2424	2.41	
19+30	15.2602	2.58	
19+35	15.2789	2.72	
19+40	15.2976	2.72	
19+45	15.3155	2.60	
19+50	15.3325	2.45	
19+55	15.3483	2.30	
20+ 0	15.3628	2.11	
20+ 5	15.3763	1.96	
20+10	15.3898	1.95	
20+15	15.4039	2.05	
20+20	15.4188	2.17	
20+25	15.4341	2.22	
20+30	15.4496	2.25	
20+35	15.4652	2.26	
20+40	15.4808	2.27	
20+45	15.4965	2.28	
20+50	15.5120	2.26	
20+55	15.5270	2.17	
21+ 0	15.5408	2.01	
21+ 5	15.5538	1.88	
21+10	15.5668	1.89	
21+15	15.5807	2.01	
21+20	15.5952	2.11	
21+25	15.6094	2.07	
21+30	15.6228	1.94	
21+35	15.6353	1.82	
21+40	15.6480	1.84	
21+45	15.6615	1.97	
21+50	15.6758	2.07	
21+55	15.6899	2.04	
22+ 0	15.7031	1.92	
22+ 5	15.7155	1.81	

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22+10      15.7281      1.83  | Q        |         |         |        V|
22+15      15.7416      1.95  | Q        |         |         |        V|
22+20      15.7558      2.06  | Q        |         |         |        V|
22+25      15.7698      2.04  | Q        |         |         |        V|
22+30      15.7829      1.91  | Q        |         |         |        V|
22+35      15.7952      1.77  | Q        |         |         |        V|
22+40      15.8069      1.70  | Q        |         |         |        V|
22+45      15.8184      1.67  | Q        |         |         |        V|
22+50      15.8297      1.64  | Q        |         |         |        V|
22+55      15.8408      1.62  | Q        |         |         |        V|
23+ 0      15.8519      1.61  | Q        |         |         |        V|
23+ 5      15.8630      1.60  | Q        |         |         |        V|
23+10      15.8739      1.59  | Q        |         |         |        V|
23+15      15.8848      1.58  | Q        |         |         |        V|
23+20      15.8956      1.57  | Q        |         |         |        V|
23+25      15.9064      1.57  | Q        |         |         |        V|
23+30      15.9172      1.57  | Q        |         |         |        V|
23+35      15.9280      1.56  | Q        |         |         |        V|
23+40      15.9387      1.56  | Q        |         |         |        V|
23+45      15.9494      1.55  | Q        |         |         |        V|
23+50      15.9601      1.55  | Q        |         |         |        V|
23+55      15.9708      1.55  | Q        |         |         |        V|
24+ 0      15.9815      1.55  | Q        |         |         |        V|
24+ 5      15.9918      1.50  |Q         |         |         |        V|
24+10      16.0008      1.31  |Q         |         |         |        V|
24+15      16.0075      0.98  |Q         |         |         |        V|
24+20      16.0121      0.66  Q          |         |         |        V|
24+25      16.0155      0.49  Q          |         |         |        V|
24+30      16.0181      0.39  Q          |         |         |        V|
24+35      16.0203      0.32  Q          |         |         |        V|
24+40      16.0221      0.26  Q          |         |         |        V|
24+45      16.0237      0.22  Q          |         |         |        V|
24+50      16.0249      0.18  Q          |         |         |        V|
24+55      16.0260      0.15  Q          |         |         |        V|
25+ 0      16.0269      0.13  Q          |         |         |        V|
25+ 5      16.0276      0.11  Q          |         |         |        V|
25+10      16.0283      0.09  Q          |         |         |        V|
25+15      16.0288      0.08  Q          |         |         |        V|
25+20      16.0292      0.06  Q          |         |         |        V|
25+25      16.0296      0.05  Q          |         |         |        V|
25+30      16.0299      0.04  Q          |         |         |        V|
25+35      16.0301      0.03  Q          |         |         |        V|
25+40      16.0303      0.03  Q          |         |         |        V|
25+45      16.0304      0.02  Q          |         |         |        V|
25+50      16.0306      0.02  Q          |         |         |        V|
25+55      16.0306      0.01  Q          |         |         |        V|
26+ 0      16.0307      0.01  Q          |         |         |         V
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FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
Study date: 08/02/19

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "A"
100-YEAR 24-HOUR DETENTION

Program License Serial Number 6400

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

From study/file name: 3384a24100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 312
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 25.591 (CFS)
Total volume = 16.031 (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 350.000 to Point/Station 350.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 312
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	0.750	0.001	0.750	0.750
2.000	1.700	0.001	1.700	1.700
2.700	2.470	0.001	2.470	2.470
3.000	2.840	5.400	2.821	2.859
3.200	3.090	11.700	3.050	3.130
3.400	3.350	19.300	3.284	3.416
3.600	3.610	28.200	3.513	3.707
3.800	3.890	38.100	3.759	4.021
4.000	4.170	48.900	4.002	4.338
4.200	4.460	60.600	4.251	4.669
4.400	4.760	73.100	4.508	5.012
4.600	5.070	86.400	4.772	5.368
4.800	5.380	100.400	5.034	5.726

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 6.4 12.80 19.19 25.59	Depth (Ft.)
0.083	0.05	0.00	0.000	O	0.00
0.167	0.24	0.00	0.001	O	0.00
0.250	0.56	0.00	0.004	O	0.01
0.333	0.90	0.00	0.009	OI	0.01
0.417	1.17	0.00	0.016	OI	0.02
0.500	1.44	0.00	0.025	OI	0.03
0.583	1.66	0.00	0.036	O I	0.05
0.667	1.80	0.00	0.048	O I	0.06
0.750	1.90	0.00	0.060	O I	0.08
0.833	1.99	0.00	0.074	O I	0.10
0.917	2.15	0.00	0.088	O I	0.12
1.000	2.35	0.00	0.104	O I	0.14
1.083	2.52	0.00	0.120	O I	0.16
1.167	2.55	0.00	0.138	O I	0.18
1.250	2.46	0.00	0.155	O I	0.21
1.333	2.37	0.00	0.172	O I	0.23
1.417	2.33	0.00	0.188	O I	0.25
1.500	2.31	0.00	0.204	O I	0.27
1.583	2.31	0.00	0.220	O I	0.29
1.667	2.31	0.00	0.236	O I	0.31
1.750	2.31	0.00	0.252	O I	0.34

1.833	2.34	0.00	0.268	O I	0.36
1.917	2.44	0.00	0.284	O I	0.38
2.000	2.60	0.00	0.302	O I	0.40
2.083	2.77	0.00	0.320	O I	0.43
2.167	2.85	0.00	0.339	O I	0.45
2.250	2.90	0.00	0.359	O I	0.48
2.333	2.94	0.00	0.379	O I	0.51
2.417	2.96	0.00	0.400	O I	0.53
2.500	2.98	0.00	0.420	O I	0.56
2.583	3.02	0.00	0.441	O I	0.59
2.667	3.13	0.00	0.462	O I	0.62
2.750	3.31	0.00	0.484	O I	0.65
2.833	3.47	0.00	0.508	O I	0.68
2.917	3.57	0.00	0.532	O I	0.71
3.000	3.62	0.00	0.557	O I	0.74
3.083	3.66	0.00	0.582	O I	0.78
3.167	3.70	0.00	0.607	O I	0.81
3.250	3.72	0.00	0.632	O I	0.84
3.333	3.74	0.00	0.658	O I	0.88
3.417	3.76	0.00	0.684	O I	0.91
3.500	3.78	0.00	0.710	O I	0.95
3.583	3.79	0.00	0.736	O I	0.98
3.667	3.80	0.00	0.762	O I	1.01
3.750	3.81	0.00	0.788	O I	1.04
3.833	3.85	0.00	0.815	O I	1.07
3.917	3.95	0.00	0.842	O I	1.10
4.000	4.11	0.00	0.869	O I	1.13
4.083	4.27	0.00	0.898	O I	1.16
4.167	4.37	0.00	0.928	O I	1.19
4.250	4.42	0.00	0.958	O I	1.22
4.333	4.48	0.00	0.989	O I	1.25
4.417	4.61	0.00	1.020	O I	1.28
4.500	4.79	0.00	1.052	O I	1.32
4.583	4.97	0.00	1.086	O I	1.35
4.667	5.07	0.00	1.121	O I	1.39
4.750	5.14	0.00	1.156	O I	1.43
4.833	5.21	0.00	1.191	O I	1.46
4.917	5.34	0.00	1.228	O I	1.50
5.000	5.53	0.00	1.265	O I	1.54
5.083	5.66	0.00	1.304	O I	1.58
5.167	5.58	0.00	1.342	O I	1.62
5.250	5.32	0.00	1.380	O I	1.66
5.333	5.08	0.00	1.416	O I	1.70
5.417	5.04	0.00	1.451	O I	1.74
5.500	5.13	0.00	1.486	O I	1.77
5.583	5.27	0.00	1.521	O I	1.81
5.667	5.43	0.00	1.558	O I	1.85
5.750	5.61	0.00	1.596	O I	1.89
5.833	5.79	0.00	1.635	O I	1.93
5.917	5.88	0.00	1.676	O I	1.97
6.000	5.94	0.00	1.716	O I	2.01
6.083	6.01	0.00	1.757	O I	2.05
6.167	6.14	0.00	1.799	O I	2.09
6.250	6.33	0.00	1.842	O I	2.13
6.333	6.50	0.00	1.886	O I	2.17
6.417	6.61	0.00	1.932	O I	2.21
6.500	6.67	0.00	1.977	O I	2.25
6.583	6.74	0.00	2.023	O I	2.29
6.667	6.87	0.00	2.070	O I	2.34
6.750	7.07	0.00	2.118	O I	2.38
6.833	7.25	0.00	2.168	O I	2.43
6.917	7.36	0.00	2.218	O I	2.47
7.000	7.42	0.00	2.269	O I	2.52
7.083	7.47	0.00	2.320	O I	2.56
7.167	7.51	0.00	2.372	O I	2.61
7.250	7.54	0.00	2.423	O I	2.66
7.333	7.60	0.08	2.475	O I	2.70
7.417	7.72	0.80	2.525	O I	2.74
7.500	7.90	1.47	2.571	O I	2.78
7.583	8.10	2.10	2.614	O I	2.82
7.667	8.29	2.68	2.654	O I	2.85
7.750	8.52	3.23	2.691	O I	2.88
7.833	8.74	3.75	2.727	O I	2.91
7.917	8.96	4.23	2.760	O I	2.94
8.000	9.20	4.70	2.792	O I	2.96
8.083	9.47	5.14	2.822	O I	2.99
8.167	9.79	5.69	2.851	O I	3.01
8.250	10.20	6.37	2.879	O I	3.03
8.333	10.58	7.02	2.904	O I	3.05
8.417	10.81	7.60	2.927	O I	3.07
8.500	10.96	8.13	2.948	O I	3.09
8.583	11.09	8.59	2.967	O I	3.10
8.667	11.27	9.00	2.983	O I	3.11
8.750	11.50	9.38	2.998	O I	3.13
8.833	11.73	9.74	3.012	O I	3.14
8.917	11.97	10.08	3.026	O I	3.15
9.000	12.22	10.40	3.038	O I	3.16
9.083	12.49	10.71	3.051	O I	3.17
9.167	12.83	11.02	3.063	O I	3.18
9.250	13.25	11.34	3.076	O I	3.19
9.333	13.66	11.68	3.089	O I	3.20
9.417	13.99	12.07	3.103	O I	3.21
9.500	14.31	12.45	3.116	O I	3.22
9.583	14.60	12.82	3.128	O I	3.23
9.667	14.87	13.17	3.140	O I	3.24
9.750	15.15	13.50	3.152	O I	3.25
9.833	15.43	13.83	3.163	O I	3.26
9.917	15.69	14.15	3.174	O I	3.26
10.000	15.97	14.46	3.184	O I	3.27

10.083	16.04	14.74	3.194	3.28
10.167	15.53	14.93	3.200	3.28
10.250	14.50	14.94	3.201	3.29
10.333	13.49	14.77	3.195	3.28
10.417	12.94	14.49	3.185	3.27
10.500	12.65	14.18	3.175	3.27
10.583	12.58	13.89	3.165	3.26
10.667	12.90	13.68	3.158	3.25
10.750	13.59	13.60	3.155	3.25
10.833	14.28	13.66	3.157	3.25
10.917	14.63	13.81	3.162	3.26
11.000	14.82	13.98	3.168	3.26
11.083	14.92	14.14	3.173	3.26
11.167	14.91	14.28	3.178	3.27
11.250	14.82	14.39	3.182	3.27
11.333	14.71	14.46	3.184	3.27
11.417	14.66	14.50	3.186	3.27
11.500	14.65	14.53	3.187	3.27
11.583	14.59	14.54	3.187	3.27
11.667	14.39	14.53	3.187	3.27
11.750	14.06	14.48	3.185	3.27
11.833	13.78	14.37	3.182	3.27
11.917	13.69	14.26	3.178	3.27
12.000	13.75	14.16	3.174	3.26
12.083	14.00	14.11	3.172	3.26
12.167	14.72	14.15	3.174	3.26
12.250	15.87	14.36	3.181	3.27
12.333	17.01	14.74	3.194	3.28
12.417	17.75	15.22	3.211	3.29
12.500	18.29	15.74	3.228	3.31
12.583	18.78	16.25	3.246	3.32
12.667	19.28	16.76	3.263	3.33
12.750	19.86	17.27	3.281	3.35
12.833	20.40	17.79	3.299	3.36
12.917	20.84	18.31	3.316	3.37
13.000	21.25	18.81	3.333	3.39
13.083	21.73	19.30	3.350	3.40
13.167	22.50	19.90	3.367	3.41
13.250	23.58	20.56	3.387	3.43
13.333	24.60	21.30	3.409	3.45
13.417	25.21	22.06	3.431	3.46
13.500	25.59	22.77	3.451	3.48
13.583	25.57	23.36	3.469	3.49
13.667	24.64	23.73	3.479	3.50
13.750	22.85	23.73	3.479	3.50
13.833	21.10	23.36	3.469	3.49
13.917	20.16	22.78	3.452	3.48
14.000	19.66	22.18	3.434	3.46
14.083	19.45	21.62	3.418	3.45
14.167	19.61	21.18	3.405	3.44
14.250	20.13	20.91	3.397	3.44
14.333	20.64	20.80	3.394	3.43
14.417	20.80	20.78	3.393	3.43
14.500	20.74	20.78	3.393	3.43
14.583	20.64	20.76	3.393	3.43
14.667	20.59	20.73	3.392	3.43
14.750	20.57	20.70	3.391	3.43
14.833	20.52	20.67	3.390	3.43
14.917	20.41	20.62	3.389	3.43
15.000	20.22	20.56	3.387	3.43
15.083	20.01	20.46	3.384	3.43
15.167	19.80	20.35	3.381	3.42
15.250	19.55	20.20	3.376	3.42
15.333	19.31	20.04	3.372	3.42
15.417	19.07	19.86	3.366	3.41
15.500	18.80	19.67	3.361	3.41
15.583	18.45	19.45	3.354	3.40
15.667	17.91	19.20	3.346	3.40
15.750	17.13	18.89	3.336	3.39
15.833	16.39	18.50	3.323	3.38
15.917	15.96	18.07	3.308	3.37
16.000	15.71	17.67	3.294	3.36
16.083	15.15	17.26	3.280	3.35
16.167	13.58	16.73	3.262	3.33
16.250	11.02	15.92	3.234	3.31
16.333	8.58	14.80	3.196	3.28
16.417	7.17	13.53	3.153	3.25
16.500	6.35	12.29	3.110	3.22
16.583	5.74	11.22	3.071	3.18
16.667	5.19	10.30	3.034	3.16
16.750	4.65	9.44	3.000	3.13
16.833	4.19	8.64	2.969	3.10
16.917	3.85	7.90	2.939	3.08
17.000	3.59	7.23	2.913	3.06
17.083	3.42	6.64	2.889	3.04
17.167	3.44	6.13	2.869	3.02
17.250	3.62	5.71	2.852	3.01
17.333	3.79	5.39	2.840	3.00
17.417	3.86	5.24	2.829	2.99
17.500	3.86	5.11	2.820	2.98
17.583	3.84	4.99	2.812	2.98
17.667	3.83	4.88	2.804	2.97
17.750	3.83	4.78	2.797	2.97
17.833	3.79	4.69	2.791	2.96
17.917	3.68	4.60	2.785	2.96
18.000	3.50	4.50	2.778	2.95
18.083	3.32	4.40	2.771	2.94
18.167	3.25	4.29	2.764	2.94
18.250	3.21	4.19	2.757	2.93

18.333	3.19	4.09	2.750	I O				2.93
18.417	3.17	4.01	2.744	I O				2.92
18.500	3.15	3.92	2.739	IO				2.92
18.583	3.12	3.85	2.734	IO				2.91
18.667	3.01	3.77	2.729	IO				2.91
18.750	2.84	3.69	2.723	IO				2.91
18.833	2.66	3.60	2.717	IO				2.90
18.917	2.47	3.50	2.710	IO				2.89
19.000	2.26	3.39	2.703	I O				2.89
19.083	2.09	3.28	2.695	I O				2.88
19.167	2.06	3.16	2.687	IO				2.88
19.250	2.15	3.06	2.680	IO				2.87
19.333	2.27	2.98	2.674	IO				2.87
19.417	2.41	2.92	2.670	O				2.86
19.500	2.58	2.88	2.667	O				2.86
19.583	2.72	2.86	2.666	O				2.86
19.667	2.72	2.84	2.665	O				2.86
19.750	2.60	2.83	2.664	O				2.86
19.833	2.45	2.80	2.662	O				2.86
19.917	2.30	2.76	2.659	IO				2.85
20.000	2.11	2.70	2.655	IO				2.85
20.083	1.96	2.64	2.651	IO				2.85
20.167	1.95	2.57	2.646	IO				2.84
20.250	2.05	2.52	2.643	IO				2.84
20.333	2.17	2.48	2.640	IO				2.84
20.417	2.22	2.45	2.638	IO				2.84
20.500	2.25	2.43	2.637	IO				2.84
20.583	2.26	2.42	2.635	IO				2.83
20.667	2.27	2.40	2.634	IO				2.83
20.750	2.28	2.39	2.634	O				2.83
20.833	2.26	2.38	2.633	O				2.83
20.917	2.17	2.36	2.632	O				2.83
21.000	2.01	2.34	2.630	O				2.83
21.083	1.88	2.30	2.627	O				2.83
21.167	1.89	2.26	2.625	O				2.83
21.250	2.01	2.23	2.623	O				2.82
21.333	2.11	2.21	2.622	O				2.82
21.417	2.07	2.20	2.621	O				2.82
21.500	1.94	2.18	2.619	O				2.82
21.583	1.82	2.15	2.618	O				2.82
21.667	1.84	2.12	2.615	O				2.82
21.750	1.97	2.10	2.614	O				2.82
21.833	2.07	2.09	2.613	O				2.82
21.917	2.04	2.09	2.613	O				2.82
22.000	1.92	2.08	2.612	O				2.82
22.083	1.81	2.06	2.611	O				2.81
22.167	1.83	2.04	2.609	O				2.81
22.250	1.95	2.02	2.609	O				2.81
22.333	2.06	2.02	2.608	O				2.81
22.417	2.04	2.02	2.609	O				2.81
22.500	1.91	2.02	2.608	O				2.81
22.583	1.77	2.00	2.607	O				2.81
22.667	1.70	1.98	2.605	O				2.81
22.750	1.67	1.95	2.603	O				2.81
22.833	1.64	1.92	2.602	O				2.81
22.917	1.62	1.89	2.600	O				2.81
23.000	1.61	1.87	2.598	O				2.80
23.083	1.60	1.84	2.596	O				2.80
23.167	1.59	1.82	2.595	IO				2.80
23.250	1.58	1.80	2.593	IO				2.80
23.333	1.57	1.77	2.592	IO				2.80
23.417	1.57	1.76	2.590	IO				2.80
23.500	1.57	1.74	2.589	IO				2.80
23.583	1.56	1.72	2.588	IO				2.80
23.667	1.56	1.71	2.587	IO				2.79
23.750	1.55	1.69	2.586	IO				2.79
23.833	1.55	1.68	2.585	IO				2.79
23.917	1.55	1.67	2.584	IO				2.79
24.000	1.55	1.65	2.583	IO				2.79
24.083	1.50	1.64	2.582	IO				2.79
24.167	1.31	1.62	2.581	IO				2.79
24.250	0.98	1.57	2.578	O				2.79
24.333	0.66	1.50	2.573	IO				2.78
24.417	0.49	1.41	2.567	IO				2.78
24.500	0.39	1.32	2.560	IO				2.77
24.583	0.32	1.23	2.554	IO				2.77
24.667	0.26	1.14	2.548	IO				2.76
24.750	0.22	1.05	2.542	IO				2.76
24.833	0.18	0.97	2.536	IO				2.75
24.917	0.15	0.89	2.531	IO				2.75
25.000	0.13	0.82	2.526	IO				2.75
25.083	0.11	0.75	2.522	O				2.74
25.167	0.09	0.69	2.517	O				2.74
25.250	0.08	0.63	2.513	O				2.74
25.333	0.06	0.58	2.510	O				2.73
25.417	0.05	0.53	2.506	O				2.73
25.500	0.04	0.48	2.503	O				2.73
25.583	0.03	0.44	2.500	O				2.72
25.667	0.03	0.40	2.497	O				2.72
25.750	0.02	0.37	2.495	O				2.72
25.833	0.02	0.33	2.493	O				2.72
25.917	0.01	0.30	2.491	O				2.72
26.000	0.01	0.27	2.489	O				2.72
26.083	0.00	0.25	2.487	O				2.71
26.167	0.00	0.22	2.485	O				2.71
26.250	0.00	0.20	2.484	O				2.71
26.333	0.00	0.18	2.482	O				2.71
26.417	0.00	0.17	2.481	O				2.71
26.500	0.00	0.15	2.480	O				2.71

26.583	0.00	0.14	2.479	O	|	|	|	|	2.71
26.667	0.00	0.12	2.478	O	|	|	|	|	2.71
26.750	0.00	0.11	2.478	O	|	|	|	|	2.71
26.833	0.00	0.10	2.477	O	|	|	|	|	2.71
26.917	0.00	0.09	2.476	O	|	|	|	|	2.70
27.000	0.00	0.08	2.476	O	|	|	|	|	2.70
27.083	0.00	0.07	2.475	O	|	|	|	|	2.70
27.167	0.00	0.07	2.475	O	|	|	|	|	2.70
27.250	0.00	0.06	2.474	O	|	|	|	|	2.70
27.333	0.00	0.05	2.474	O	|	|	|	|	2.70
27.417	0.00	0.05	2.473	O	|	|	|	|	2.70
27.500	0.00	0.04	2.473	O	|	|	|	|	2.70
27.583	0.00	0.04	2.473	O	|	|	|	|	2.70
27.667	0.00	0.04	2.472	O	|	|	|	|	2.70
27.750	0.00	0.03	2.472	O	|	|	|	|	2.70
27.833	0.00	0.03	2.472	O	|	|	|	|	2.70
27.917	0.00	0.03	2.472	O	|	|	|	|	2.70
28.000	0.00	0.02	2.472	O	|	|	|	|	2.70
28.083	0.00	0.02	2.471	O	|	|	|	|	2.70
28.167	0.00	0.02	2.471	O	|	|	|	|	2.70
28.250	0.00	0.02	2.471	O	|	|	|	|	2.70
28.333	0.00	0.02	2.471	O	|	|	|	|	2.70
28.417	0.00	0.01	2.471	O	|	|	|	|	2.70
28.500	0.00	0.01	2.471	O	|	|	|	|	2.70
28.583	0.00	0.01	2.471	O	|	|	|	|	2.70
28.667	0.00	0.01	2.471	O	|	|	|	|	2.70
28.750	0.00	0.01	2.471	O	|	|	|	|	2.70
28.833	0.00	0.01	2.471	O	|	|	|	|	2.70
28.917	0.00	0.01	2.470	O	|	|	|	|	2.70
29.000	0.00	0.01	2.470	O	|	|	|	|	2.70
29.083	0.00	0.01	2.470	O	|	|	|	|	2.70
29.167	0.00	0.01	2.470	O	|	|	|	|	2.70
29.250	0.00	0.01	2.470	O	|	|	|	|	2.70
29.333	0.00	0.00	2.470	O	|	|	|	|	2.70
29.417	0.00	0.00	2.470	O	|	|	|	|	2.70
29.500	0.00	0.00	2.470	O	|	|	|	|	2.70
29.583	0.00	0.00	2.470	O	|	|	|	|	2.70
29.667	0.00	0.00	2.470	O	|	|	|	|	2.70
29.750	0.00	0.00	2.470	O	|	|	|	|	2.70
29.833	0.00	0.00	2.470	O	|	|	|	|	2.70
29.917	0.00	0.00	2.470	O	|	|	|	|	2.70
30.000	0.00	0.00	2.470	O	|	|	|	|	2.70
30.083	0.00	0.00	2.470	O	|	|	|	|	2.70
30.167	0.00	0.00	2.470	O	|	|	|	|	2.70
30.250	0.00	0.00	2.470	O	|	|	|	|	2.70
30.333	0.00	0.00	2.470	O	|	|	|	|	2.70
30.417	0.00	0.00	2.470	O	|	|	|	|	2.70
30.500	0.00	0.00	2.470	O	|	|	|	|	2.70
30.583	0.00	0.00	2.470	O	|	|	|	|	2.70
30.667	0.00	0.00	2.470	O	|	|	|	|	2.70

Remaining water in basin = 2.47 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =   368
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       23.730 (CFS)
                Total volume =      13.561 (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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BASIN “B”

Job #3384 - Rubidoux Commerce Center, Jurupa Valley
Volume in Water Quality Basin "B"

Elevation	Depth (feet)	Area (sq. ft.)	Volume (c.f.)	Σ Volume (c.f.)	Σ Volume (ac-ft)	Q Discharge (cfs)
879.73	0.00	25680				
			7051	7051	0.16	0.0
880.00	0.27	26550				
			28165	35216	0.81	0.0
881.00	1.27	29780				
			22615	57831	1.33	0.0
881.73	2.00	32180				
			8810	66642	1.53	0.0
882.00	2.27	33080				
			6683	73325	1.68	0.0
882.20	2.47	33750				
			6817	80142	1.84	3.0
882.40	2.67	34420				
			6951	87093	2.00	6.8
882.60	2.87	35090				
			7087	94180	2.16	11.6
882.80	3.07	35780				
			7223	101403	2.33	17.2
883.00	3.27	36450				
			7358	108761	2.50	23.5
883.20	3.47	37130				
			7495	116256	2.67	30.4
883.40	3.67	37820				
			7633	123889	2.84	37.8
883.60	3.87	38510				
			7771	131660	3.02	45.8
883.80	4.07	39200				
			7909	139569	3.20	52.4
884.00	4.27	39890				
			8048	147617	3.39	55.1
884.20	4.47	40590				
			8188	155805	3.58	57.7
884.40	4.67	41290				
			8328	164133	3.77	60.2
884.60	4.87	41990				
			5489	169621	3.89	62.6
884.73	5.00	42450				

2-YEAR FREQUENCY

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384B212.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



---------------------------------------------------------------------
2 YEAR
1 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            0.52                  16.72

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            1.15                  36.97

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.520(In)
Area Averaged 100-Year Rainfall =    1.150(In)

Point rain (area averaged) =    0.520(In)
Areal adjustment factor =   99.97 %
Adjusted average point rain =    0.520(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.5500
-------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-------------------------------------------------------------------
                Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.30      0.206       (  0.134)       0.021        0.185
   2   0.17     4.20      0.262       (  0.134)       0.026        0.236
   3   0.25     4.40      0.274       (  0.134)       0.027        0.247
   4   0.33     4.80      0.299       (  0.134)       0.030        0.269
   5   0.42     5.20      0.324       (  0.134)       0.032        0.292
   6   0.50     6.20      0.387       (  0.134)       0.039        0.348
   7   0.58     6.80      0.424       (  0.134)       0.042        0.382
   8   0.67     8.80      0.549       (  0.134)       0.055        0.494
   9   0.75    13.90      0.867       (  0.134)       0.087        0.780
  10   0.83    31.40      1.959          0.134    (  0.196)        1.825
  11   0.92     7.20      0.449       (  0.134)       0.045        0.404
  12   1.00     3.80      0.237       (  0.134)       0.024        0.213
```

```
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     5.7
      Flood volume = Effective rainfall      0.47(In)
       times area      32.1(Ac.)/[(In)/(Ft.)] =       1.3(Ac.Ft)
      Total soil loss =      0.05(In)
      Total soil loss =     0.125(Ac.Ft)
      Total rainfall =      0.52(In)
      Flood volume =       55202.2 Cubic Feet
      Total soil loss =        5466.4 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     20.903(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))

      ---------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
  ---------------------------------------------------------------------
    0+ 5       0.0010      0.15  Q         |         |         |         |
    0+10       0.0060      0.71  Q         |         |         |         |
    0+15       0.0183      1.80  V Q       |         |         |         |
    0+20       0.0406      3.23  |V  Q     |         |         |         |
    0+25       0.0719      4.55  | V   Q   |         |         |         |
    0+30       0.1105      5.60  |  V   Q  |         |         |         |
    0+35       0.1557      6.56  |   V   Q |         |         |         |
    0+40       0.2082      7.63  |     V   Q         |         |         |
    0+45       0.2711      9.13  |       V | Q       |         |         |
    0+50       0.3548     12.15  |         |V    Q   |         |         |
    0+55       0.4694     16.64  |         |   V     | Q       |         |
    1+ 0       0.6099     20.40  |         |        V|      Q  |         |
    1+ 5       0.7539     20.90  |         |         |  V   Q  |         |
    1+10       0.8700     16.85  |         |         | Q    V  |         |
    1+15       0.9506     11.71  |         |    Q    |         V         |
    1+20       1.0059      8.02  |         Q         |         |V        |
    1+25       1.0462      5.86  |      Q  |         |         |  V      |
    1+30       1.0783      4.65  |     Q   |         |         |   V     |
    1+35       1.1048      3.86  |    Q    |         |         |   V     |
    1+40       1.1273      3.26  |   Q     |         |         |    V    |
    1+45       1.1463      2.75  |  Q      |         |         |     V   |
    1+50       1.1627      2.39  |  Q      |         |         |     V   |
    1+55       1.1769      2.07  | Q       |         |         |      V  |
    2+ 0       1.1892      1.78  | Q       |         |         |      V  |
    2+ 5       1.1998      1.54  | Q       |         |         |      V  |
    2+10       1.2091      1.36  |Q        |         |         |       V |
    2+15       1.2176      1.23  |Q        |         |         |       V |
    2+20       1.2253      1.12  |Q        |         |         |       V |
    2+25       1.2320      0.97  |Q        |         |         |       V |
    2+30       1.2380      0.87  |Q        |         |         |        V|
    2+35       1.2433      0.76  |Q        |         |         |        V|
    2+40       1.2479      0.67  Q         |         |         |        V|
    2+45       1.2518      0.57  Q         |         |         |        V|
    2+50       1.2552      0.49  Q         |         |         |        V|
    2+55       1.2580      0.41  Q         |         |         |        V|
    3+ 0       1.2606      0.37  Q         |         |         |        V|
    3+ 5       1.2629      0.34  Q         |         |         |        V|
    3+10       1.2649      0.30  Q         |         |         |        V|
    3+15       1.2667      0.25  Q         |         |         |        V|
    3+20       1.2671      0.06  Q         |         |         |        V|
    3+25       1.2673      0.02  Q         |         |         |        V|
---------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


2 YEAR
1 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B212.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =    41
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       20.903 (CFS)
                Total volume =       1.267 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------
Total number of inflow hydrograph intervals = 41
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
------------------------------------------------------------------
------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
------------------------------------------------------------------
------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
------------------------------------------------------------------
                Hydrograph Detention Basin Routing
------------------------------------------------------------------
```

```
Graph values: 'I'= unit inflow; 'O'=outflow at time shown
-----------------------------------------------------------------
 Time   Inflow  Outflow    Storage                                      Depth
(Hours)  (CFS)   (CFS)     (Ac.Ft) .0       5.2   10.45   15.68   20.90 (Ft.)
 0.083    0.15    0.00      0.001  O       |       |       |       |     0.00
 0.167    0.71    0.00      0.004  OI      |       |       |       |     0.01
 0.250    1.80    0.00      0.012  O I     |       |       |       |     0.02
 0.333    3.23    0.00      0.029  O   I   |       |       |       |     0.05
 0.417    4.55    0.00      0.056  O     I |       |       |       |     0.09
 0.500    5.60    0.00      0.091  O       I       |       |       |     0.15
 0.583    6.56    0.00      0.133  O       | I     |       |       |     0.22
 0.667    7.63    0.00      0.182  O       |  I    |       |       |     0.30
 0.750    9.13    0.00      0.240  O       |    I  |       |       |     0.39
 0.833   12.15    0.00      0.313  O       |       | I     |       |     0.51
 0.917   16.64    0.00      0.412  O       |       |       |I      |     0.66
 1.000   20.40    0.00      0.540  O       |       |       |      I|     0.85
 1.083   20.90    0.00      0.682  O       |       |       |      I|     1.07
 1.167   16.85    0.00      0.812  O       |       |       |I      |     1.27
 1.250   11.71    0.00      0.910  O       |       |I      |       |     1.41
 1.333    8.02    0.00      0.978  O       |   I   |       |       |     1.51
 1.417    5.86    0.00      1.026  O       I       |       |       |     1.57
 1.500    4.65    0.00      1.062  O      I|       |       |       |     1.62
 1.583    3.86    0.00      1.091  O    I  |       |       |       |     1.67
 1.667    3.26    0.00      1.116  O   I   |       |       |       |     1.70
 1.750    2.75    0.00      1.137  O   I   |       |       |       |     1.73
 1.833    2.39    0.00      1.154  O  I    |       |       |       |     1.75
 1.917    2.07    0.00      1.170  O  I    |       |       |       |     1.77
 2.000    1.78    0.00      1.183  O I     |       |       |       |     1.79
 2.083    1.54    0.00      1.194  O I     |       |       |       |     1.81
 2.167    1.36    0.00      1.204  O I     |       |       |       |     1.82
 2.250    1.23    0.00      1.213  OI      |       |       |       |     1.84
 2.333    1.12    0.00      1.221  OI      |       |       |       |     1.85
 2.417    0.97    0.00      1.229  OI      |       |       |       |     1.86
 2.500    0.87    0.00      1.235  OI      |       |       |       |     1.87
 2.583    0.76    0.00      1.240  OI      |       |       |       |     1.87
 2.667    0.67    0.00      1.245  OI      |       |       |       |     1.88
 2.750    0.57    0.00      1.250  O       |       |       |       |     1.89
 2.833    0.49    0.00      1.253  O       |       |       |       |     1.89
 2.917    0.41    0.00      1.256  O       |       |       |       |     1.90
 3.000    0.37    0.00      1.259  O       |       |       |       |     1.90
 3.083    0.34    0.00      1.261  O       |       |       |       |     1.90
 3.167    0.30    0.00      1.264  O       |       |       |       |     1.91
 3.250    0.25    0.00      1.266  O       |       |       |       |     1.91
 3.333    0.06    0.00      1.267  O       |       |       |       |     1.91
 3.417    0.02    0.00      1.267  O       |       |       |       |     1.91
 3.500    0.00    0.00      1.267  O       |       |       |       |     1.91


Remaining water in basin =    1.27 (Ac.Ft)


****************************HYDROGRAPH DATA****************************
                Number of intervals =    42
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        0.001 (CFS)
                Total volume =       0.000 (Ac.Ft)
        Status of hydrographs being held in storage
                   Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
*********************************************************************

-----------------------------------------------------------------
```

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384B232.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



---------------------------------------------------------------------
2 YEAR
3 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            0.95                  30.54

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            1.90                  61.08

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    1.900(In)

Point rain (area averaged) =    0.950(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    0.950(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

56.0	36.0	0.706	0.900	0.134	1.000	0.134
					Sum (F) =	0.134

Area averaged mean soil loss (F) (In/Hr) = 0.134
Minimum soil loss rate ((In/Hr)) = 0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

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

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	26.882	2.513	0.814
2	0.167	53.763	8.704	2.820
3	0.250	80.645	15.495	5.020
4	0.333	107.527	18.827	6.100
5	0.417	134.409	14.539	4.711
6	0.500	161.290	8.663	2.807
7	0.583	188.172	5.434	1.761
8	0.667	215.054	3.947	1.279
9	0.750	241.935	3.192	1.034
10	0.833	268.817	2.646	0.857
11	0.917	295.699	2.253	0.730
12	1.000	322.581	1.833	0.594
13	1.083	349.462	1.617	0.524
14	1.167	376.344	1.406	0.456
15	1.250	403.226	1.181	0.383
16	1.333	430.108	0.985	0.319
17	1.417	456.989	0.858	0.278
18	1.500	483.871	0.821	0.266
19	1.583	510.753	0.789	0.256
20	1.667	537.634	0.630	0.204
21	1.750	564.516	0.576	0.187
22	1.833	591.398	0.495	0.160
23	1.917	618.280	0.459	0.149
24	2.000	645.161	0.382	0.124
25	2.083	672.043	0.340	0.110
26	2.167	698.925	0.271	0.088
27	2.250	725.806	0.269	0.087
28	2.333	752.688	0.269	0.087
29	2.417	779.570	0.269	0.087
30	2.500	806.452	0.339	0.110
			Sum = 100.000	Sum= 32.401

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	0.148	(0.134)	0.015	0.133
2	0.17	1.30	0.148	(0.134)	0.015	0.133
3	0.25	1.10	0.125	(0.134)	0.013	0.113
4	0.33	1.50	0.171	(0.134)	0.017	0.154
5	0.42	1.50	0.171	(0.134)	0.017	0.154
6	0.50	1.80	0.205	(0.134)	0.021	0.185
7	0.58	1.50	0.171	(0.134)	0.017	0.154
8	0.67	1.80	0.205	(0.134)	0.021	0.185
9	0.75	1.80	0.205	(0.134)	0.021	0.185
10	0.83	1.50	0.171	(0.134)	0.017	0.154
11	0.92	1.60	0.182	(0.134)	0.018	0.164
12	1.00	1.80	0.205	(0.134)	0.021	0.185
13	1.08	2.20	0.251	(0.134)	0.025	0.226
14	1.17	2.20	0.251	(0.134)	0.025	0.226

```
15   1.25     2.20      0.251       (  0.134)       0.025        0.226
16   1.33     2.00      0.228       (  0.134)       0.023        0.205
17   1.42     2.60      0.296       (  0.134)       0.030        0.267
18   1.50     2.70      0.308       (  0.134)       0.031        0.277
19   1.58     2.40      0.274       (  0.134)       0.027        0.246
20   1.67     2.70      0.308       (  0.134)       0.031        0.277
21   1.75     3.30      0.376       (  0.134)       0.038        0.339
22   1.83     3.10      0.353       (  0.134)       0.035        0.318
23   1.92     2.90      0.331       (  0.134)       0.033        0.297
24   2.00     3.00      0.342       (  0.134)       0.034        0.308
25   2.08     3.10      0.353       (  0.134)       0.035        0.318
26   2.17     4.20      0.479       (  0.134)       0.048        0.431
27   2.25     5.00      0.570       (  0.134)       0.057        0.513
28   2.33     3.50      0.399       (  0.134)       0.040        0.359
29   2.42     6.80      0.775       (  0.134)       0.078        0.698
30   2.50     7.30      0.832       (  0.134)       0.083        0.749
31   2.58     8.20      0.935       (  0.134)       0.093        0.841
32   2.67     5.90      0.673       (  0.134)       0.067        0.605
33   2.75     2.00      0.228       (  0.134)       0.023        0.205
34   2.83     1.80      0.205       (  0.134)       0.021        0.185
35   2.92     1.80      0.205       (  0.134)       0.021        0.185
36   3.00     0.60      0.068       (  0.134)       0.007        0.062
               (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    10.3
      Flood volume = Effective rainfall      0.85(In)
       times area      32.1(Ac.)/[(In)/(Ft.)] =       2.3(Ac.Ft)
      Total soil loss =      0.09(In)
      Total soil loss =     0.254(Ac.Ft)
      Total rainfall =      0.95(In)
      Flood volume =       99768.3 Cubic Feet
      Total soil loss =       11085.4 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     18.352(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))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0007      0.11  Q         |         |         |         |
  0+10       0.0041      0.48  Q         |         |         |         |
  0+15       0.0119      1.14  V Q       |         |         |         |
  0+20       0.0252      1.93  V  Q      |         |         |         |
  0+25       0.0429      2.57  V    Q    |         |         |         |
  0+30       0.0639      3.05  |V    Q   |         |         |         |
  0+35       0.0880      3.50  |V    Q   |         |         |         |
  0+40       0.1149      3.90  | V    Q  |         |         |         |
  0+45       0.1440      4.24  | V     Q |         |         |         |
  0+50       0.1749      4.48  |  V    Q |         |         |         |
  0+55       0.2070      4.66  |  V     Q|         |         |         |
  1+ 0       0.2399      4.77  |   V    Q|         |         |         |
  1+ 5       0.2735      4.89  |   V    Q|         |         |         |
  1+10       0.3090      5.15  |    V    Q         |         |         |
  1+15       0.3472      5.54  |     V   |Q        |         |         |
  1+20       0.3880      5.93  |     V   |Q        |         |         |
  1+25       0.4308      6.22  |      V  | Q       |         |         |
  1+30       0.4756      6.50  |       V | Q       |         |         |
  1+35       0.5226      6.83  |        V|  Q      |         |         |
  1+40       0.5722      7.20  |        V|   Q     |         |         |
  1+45       0.6243      7.57  |         V    Q    |         |         |
  1+50       0.6791      7.96  |         |V   Q    |         |         |
  1+55       0.7371      8.41  |         | V   Q   |         |         |
  2+ 0       0.7979      8.83  |         |  V   Q  |         |         |
  2+ 5       0.8603      9.07  |         |    V  Q |         |         |
  2+10       0.9244      9.30  |         |     V Q |         |         |
```

```
   2+15       0.9921      9.84  |         |      V Q|         |         |
   2+20       1.0657     10.68  |         |       V |Q        |         |
   2+25       1.1467     11.76  |         |         V  Q      |         |
   2+30       1.2372     13.14  |         |         |V    Q   |         |
   2+35       1.3398     14.90  |         |         |  V     Q|         |
   2+40       1.4573     17.06  |         |         |    V    |   Q     |
   2+45       1.5837     18.35  |         |         |      V  |     Q   |
   2+50       1.7061     17.78  |         |         |        V|    Q    |
   2+55       1.8126     15.47  |         |         |         QV        |
   3+ 0       1.8989     12.52  |         |         |    Q    |  V      |
   3+ 5       1.9681     10.05  |         |         Q         |   V     |
   3+10       2.0240      8.11  |         |     Q   |         |    V    |
   3+15       2.0680      6.40  |         | Q       |         |     V   |
   3+20       2.1024      4.99  |        Q|         |         |     V   |
   3+25       2.1300      4.01  |       Q |         |         |      V  |
   3+30       2.1529      3.33  |     Q   |         |         |      V  |
   3+35       2.1724      2.83  |    Q    |         |         |      V  |
   3+40       2.1892      2.44  |   Q     |         |         |       V |
   3+45       2.2037      2.10  |   Q     |         |         |       V |
   3+50       2.2161      1.81  |  Q      |         |         |       V |
   3+55       2.2271      1.59  |  Q      |         |         |       V |
   4+ 0       2.2368      1.40  | Q       |         |         |        V|
   4+ 5       2.2453      1.24  | Q       |         |         |        V|
   4+10       2.2527      1.08  | Q       |         |         |        V|
   4+15       2.2591      0.93  |Q        |         |         |        V|
   4+20       2.2647      0.81  |Q        |         |         |        V|
   4+25       2.2696      0.71  |Q        |         |         |        V|
   4+30       2.2737      0.61  |Q        |         |         |        V|
   4+35       2.2774      0.52  |Q        |         |         |        V|
   4+40       2.2804      0.45  Q         |         |         |        V|
   4+45       2.2830      0.37  Q         |         |         |        V|
   4+50       2.2853      0.34  Q         |         |         |        V|
   4+55       2.2872      0.27  Q         |         |         |        V|
   5+ 0       2.2886      0.20  Q         |         |         |        V|
   5+ 5       2.2894      0.12  Q         |         |         |        V|
   5+10       2.2899      0.06  Q         |         |         |        V|
   5+15       2.2901      0.04  Q         |         |         |        V|
   5+20       2.2903      0.03  Q         |         |         |        V|
   5+25       2.2904      0.01  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


2 YEAR
3 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B232.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =    65
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       18.352 (CFS)
                Total volume =       2.290 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------
Total number of inflow hydrograph intervals = 65
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
------------------------------------------------------------------
------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
------------------------------------------------------------------
------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
------------------------------------------------------------------
                Hydrograph Detention Basin Routing
------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 4.6 9.18 13.76 18.35	Depth (Ft.)
0.083	0.11	0.00	0.000	O | | | |	0.00
0.167	0.48	0.00	0.002	O | | | |	0.00
0.250	1.14	0.00	0.008	OI | | | |	0.01
0.333	1.93	0.00	0.019	O I | | | |	0.03
0.417	2.57	0.00	0.034	O I | | | |	0.06
0.500	3.05	0.00	0.053	O I | | | |	0.09
0.583	3.50	0.00	0.076	O I | | | |	0.13
0.667	3.90	0.00	0.101	O I | | | |	0.17
0.750	4.24	0.00	0.129	O I| | | |	0.22
0.833	4.48	0.00	0.159	O I| | | |	0.27
0.917	4.66	0.00	0.191	O I | | | |	0.32
1.000	4.77	0.00	0.223	O I | | | |	0.37
1.083	4.89	0.00	0.257	O I | | | |	0.42
1.167	5.15	0.00	0.291	O I | | | |	0.47
1.250	5.54	0.00	0.328	O |I | | | |	0.53
1.333	5.93	0.00	0.368	O | I | | | |	0.59
1.417	6.22	0.00	0.409	O | I | | | |	0.65
1.500	6.50	0.00	0.453	O | I | | | |	0.72
1.583	6.83	0.00	0.499	O | I | | | |	0.79
1.667	7.20	0.00	0.547	O | I | | | |	0.87
1.750	7.57	0.00	0.598	O | I | | | |	0.94
1.833	7.96	0.00	0.652	O | I | | | |	1.03
1.917	8.41	0.00	0.708	O | I | | | |	1.11
2.000	8.83	0.00	0.767	O | I| | | |	1.20
2.083	9.07	0.00	0.829	O | I| | | |	1.30
2.167	9.30	0.00	0.892	O | I | | |	1.39
2.250	9.84	0.00	0.958	O | |I | | |	1.48
2.333	10.68	0.00	1.029	O | | I | | |	1.58
2.417	11.76	0.00	1.106	O | | I | | |	1.69
2.500	13.14	0.00	1.192	O | | | I | |	1.81
2.583	14.90	0.00	1.288	O | | | |I |	1.94
2.667	17.06	0.00	1.398	O | | | | I |	2.09
2.750	18.35	0.01	1.520	O | | | | I	2.26
2.833	17.78	0.01	1.645	O | | | | I |	2.42
2.917	15.47	1.40	1.754	| O | | | I |	2.56
3.000	12.52	2.92	1.836	| O | | | I | |	2.66
3.083	10.05	4.17	1.889	| O| |I | | |	2.73
3.167	8.11	4.91	1.920	| O | I | | |	2.77
3.250	6.40	5.26	1.935	| |O I | | |	2.79
3.333	4.99	5.33	1.938	| IO | | |	2.79
3.417	4.01	5.20	1.933	| I |O | | |	2.79
3.500	3.33	4.97	1.923	| I O | | |	2.77
3.583	2.83	4.69	1.911	| I O | | |	2.76
3.667	2.44	4.38	1.898	| I O| | |	2.74
3.750	2.10	4.06	1.884	| I O| | |	2.73
3.833	1.81	3.74	1.871	| I O | | |	2.71
3.917	1.59	3.43	1.858	| I O | | |	2.69
4.000	1.40	3.14	1.846	| I O | | |	2.68
4.083	1.24	2.89	1.834	| I O | | |	2.66
4.167	1.08	2.68	1.823	|I O | | |	2.65
4.250	0.93	2.48	1.812	|I O | | |	2.64
4.333	0.81	2.28	1.802	|I O | | |	2.62
4.417	0.71	2.10	1.792	|I O | | |	2.61
4.500	0.61	1.93	1.782	|I O | | |	2.60
4.583	0.52	1.76	1.774	I O | | |	2.59
4.667	0.45	1.61	1.765	I O | | |	2.58
4.750	0.37	1.46	1.758	I O | | |	2.57
4.833	0.34	1.33	1.751	I O | | |	2.56
4.917	0.27	1.20	1.744	I O | | |	2.55
5.000	0.20	1.09	1.738	IO | | |	2.54
5.083	0.12	0.98	1.732	IO | | |	2.53
5.167	0.06	0.87	1.726	IO | | |	2.53
5.250	0.04	0.77	1.721	IO | | |	2.52
5.333	0.03	0.68	1.716	IO | | |	2.51
5.417	0.01	0.60	1.712	IO | | |	2.51
5.500	0.00	0.53	1.708	O | | |	2.50
5.583	0.00	0.46	1.704	O | | |	2.50
5.667	0.00	0.41	1.701	O | | |	2.50
5.750	0.00	0.36	1.699	O | | |	2.49
5.833	0.00	0.32	1.696	O | | |	2.49
5.917	0.00	0.28	1.694	O | | |	2.49
6.000	0.00	0.24	1.693	O | | |	2.49
6.083	0.00	0.21	1.691	O | | |	2.48
6.167	0.00	0.19	1.690	O | | |	2.48
6.250	0.00	0.17	1.688	O | | |	2.48

```
414.500    0.00    0.00      1.404  O       |       |       |       |     2.10
414.583    0.00    0.00      1.404  O       |       |       |       |     2.10
414.667    0.00    0.00      1.404  O       |       |       |       |     2.10
414.750    0.00    0.00      1.404  O       |       |       |       |     2.10
414.833    0.00    0.00      1.404  O       |       |       |       |     2.10
414.917    0.00    0.00      1.404  O       |       |       |       |     2.10
415.000    0.00    0.00      1.404  O       |       |       |       |     2.10
415.083    0.00    0.00      1.404  O       |       |       |       |     2.10
415.167    0.00    0.00      1.404  O       |       |       |       |     2.10
415.250    0.00    0.00      1.404  O       |       |       |       |     2.10
415.333    0.00    0.00      1.404  O       |       |       |       |     2.10
415.417    0.00    0.00      1.404  O       |       |       |       |     2.10
415.500    0.00    0.00      1.404  O       |       |       |       |     2.10
415.583    0.00    0.00      1.404  O       |       |       |       |     2.10
415.667    0.00    0.00      1.404  O       |       |       |       |     2.10
415.750    0.00    0.00      1.404  O       |       |       |       |     2.10
415.833    0.00    0.00      1.404  O       |       |       |       |     2.10
415.917    0.00    0.00      1.404  O       |       |       |       |     2.10
416.000    0.00    0.00      1.404  O       |       |       |       |     2.10
416.083    0.00    0.00      1.403  O       |       |       |       |     2.10
416.167    0.00    0.00      1.403  O       |       |       |       |     2.10
416.250    0.00    0.00      1.403  O       |       |       |       |     2.10
416.333    0.00    0.00      1.403  O       |       |       |       |     2.10
416.417    0.00    0.00      1.403  O       |       |       |       |     2.10
416.500    0.00    0.00      1.403  O       |       |       |       |     2.10
416.583    0.00    0.00      1.403  O       |       |       |       |     2.10
416.667    0.00    0.00      1.403  O       |       |       |       |     2.10

        Remaining water in basin =    1.40 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =        5.329 (CFS)
                        Total volume =       0.887 (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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        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384B262.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



---------------------------------------------------------------------
2 YEAR
6 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            1.30                  41.80

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            2.50                  80.38

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.300(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.300(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.300(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-----------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
----------------------------------------------------------------
               Unit Hydrograph Data
-----------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-----------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.50      0.078       (  0.134)       0.008        0.070
   2   0.17     0.60      0.094       (  0.134)       0.009        0.084
   3   0.25     0.60      0.094       (  0.134)       0.009        0.084
   4   0.33     0.60      0.094       (  0.134)       0.009        0.084
   5   0.42     0.60      0.094       (  0.134)       0.009        0.084
   6   0.50     0.70      0.109       (  0.134)       0.011        0.098
   7   0.58     0.70      0.109       (  0.134)       0.011        0.098
   8   0.67     0.70      0.109       (  0.134)       0.011        0.098
   9   0.75     0.70      0.109       (  0.134)       0.011        0.098
  10   0.83     0.70      0.109       (  0.134)       0.011        0.098
  11   0.92     0.70      0.109       (  0.134)       0.011        0.098
  12   1.00     0.80      0.125       (  0.134)       0.012        0.112
  13   1.08     0.80      0.125       (  0.134)       0.012        0.112
  14   1.17     0.80      0.125       (  0.134)       0.012        0.112
```

15	1.25	0.80	0.125	(0.134)	0.012	0.112
16	1.33	0.80	0.125	(0.134)	0.012	0.112
17	1.42	0.80	0.125	(0.134)	0.012	0.112
18	1.50	0.80	0.125	(0.134)	0.012	0.112
19	1.58	0.80	0.125	(0.134)	0.012	0.112
20	1.67	0.80	0.125	(0.134)	0.012	0.112
21	1.75	0.80	0.125	(0.134)	0.012	0.112
22	1.83	0.80	0.125	(0.134)	0.012	0.112
23	1.92	0.80	0.125	(0.134)	0.012	0.112
24	2.00	0.90	0.140	(0.134)	0.014	0.126
25	2.08	0.80	0.125	(0.134)	0.012	0.112
26	2.17	0.90	0.140	(0.134)	0.014	0.126
27	2.25	0.90	0.140	(0.134)	0.014	0.126
28	2.33	0.90	0.140	(0.134)	0.014	0.126
29	2.42	0.90	0.140	(0.134)	0.014	0.126
30	2.50	0.90	0.140	(0.134)	0.014	0.126
31	2.58	0.90	0.140	(0.134)	0.014	0.126
32	2.67	0.90	0.140	(0.134)	0.014	0.126
33	2.75	1.00	0.156	(0.134)	0.016	0.140
34	2.83	1.00	0.156	(0.134)	0.016	0.140
35	2.92	1.00	0.156	(0.134)	0.016	0.140
36	3.00	1.00	0.156	(0.134)	0.016	0.140
37	3.08	1.00	0.156	(0.134)	0.016	0.140
38	3.17	1.10	0.172	(0.134)	0.017	0.154
39	3.25	1.10	0.172	(0.134)	0.017	0.154
40	3.33	1.10	0.172	(0.134)	0.017	0.154
41	3.42	1.20	0.187	(0.134)	0.019	0.168
42	3.50	1.30	0.203	(0.134)	0.020	0.182
43	3.58	1.40	0.218	(0.134)	0.022	0.197
44	3.67	1.40	0.218	(0.134)	0.022	0.197
45	3.75	1.50	0.234	(0.134)	0.023	0.211
46	3.83	1.50	0.234	(0.134)	0.023	0.211
47	3.92	1.60	0.250	(0.134)	0.025	0.225
48	4.00	1.60	0.250	(0.134)	0.025	0.225
49	4.08	1.70	0.265	(0.134)	0.027	0.239
50	4.17	1.80	0.281	(0.134)	0.028	0.253
51	4.25	1.90	0.296	(0.134)	0.030	0.267
52	4.33	2.00	0.312	(0.134)	0.031	0.281
53	4.42	2.10	0.328	(0.134)	0.033	0.295
54	4.50	2.10	0.328	(0.134)	0.033	0.295
55	4.58	2.20	0.343	(0.134)	0.034	0.309
56	4.67	2.30	0.359	(0.134)	0.036	0.323
57	4.75	2.40	0.374	(0.134)	0.037	0.337
58	4.83	2.40	0.374	(0.134)	0.037	0.337
59	4.92	2.50	0.390	(0.134)	0.039	0.351
60	5.00	2.60	0.406	(0.134)	0.041	0.365
61	5.08	3.10	0.484	(0.134)	0.048	0.435
62	5.17	3.60	0.562	(0.134)	0.056	0.505
63	5.25	3.90	0.608	(0.134)	0.061	0.547
64	5.33	4.20	0.655	(0.134)	0.066	0.590
65	5.42	4.70	0.733	(0.134)	0.073	0.660
66	5.50	5.60	0.874	(0.134)	0.087	0.786
67	5.58	1.90	0.296	(0.134)	0.030	0.267
68	5.67	0.90	0.140	(0.134)	0.014	0.126
69	5.75	0.60	0.094	(0.134)	0.009	0.084
70	5.83	0.50	0.078	(0.134)	0.008	0.070
71	5.92	0.30	0.047	(0.134)	0.005	0.042
72	6.00	0.20	0.031	(0.134)	0.003	0.028

(Loss Rate Not Used)

Sum = 100.0 Sum = 14.0

Flood volume = Effective rainfall 1.17(In)
times area 32.1(Ac.)/[(In)/(Ft.)] = 3.1(Ac.Ft)
Total soil loss = 0.13(In)
Total soil loss = 0.348(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 136529.2 Cubic Feet
Total soil loss = 15169.9 Cubic Feet

Peak flow rate of this hydrograph = 16.735(CFS)

```
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          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        5.0      10.0      15.0      20.0
-------------------------------------------------------------------
  0+ 5       0.0004      0.06  Q         |         |         |         |
  0+10       0.0022      0.27  Q         |         |         |         |
  0+15       0.0068      0.66  VQ        |         |         |         |
  0+20       0.0147      1.16  V Q       |         |         |         |
  0+25       0.0256      1.57  V  Q      |         |         |         |
  0+30       0.0383      1.85  V  Q      |         |         |         |
  0+35       0.0524      2.05  V   Q     |         |         |         |
  0+40       0.0679      2.24  V   Q     |         |         |         |
  0+45       0.0845      2.41  |V  Q     |         |         |         |
  0+50       0.1021      2.55  |V   Q    |         |         |         |
  0+55       0.1204      2.66  |V   Q    |         |         |         |
  1+ 0       0.1393      2.74  |V   Q    |         |         |         |
  1+ 5       0.1589      2.85  | V  Q    |         |         |         |
  1+10       0.1793      2.97  | V  Q    |         |         |         |
  1+15       0.2007      3.10  | V   Q   |         |         |         |
  1+20       0.2228      3.21  | V   Q   |         |         |         |
  1+25       0.2454      3.28  |  V  Q   |         |         |         |
  1+30       0.2683      3.33  |  V  Q   |         |         |         |
  1+35       0.2916      3.38  |  V  Q   |         |         |         |
  1+40       0.3151      3.42  |   V Q   |         |         |         |
  1+45       0.3389      3.45  |   V Q   |         |         |         |
  1+50       0.3629      3.48  |   V Q   |         |         |         |
  1+55       0.3870      3.50  |   V  Q  |         |         |         |
  2+ 0       0.4113      3.54  |    V Q  |         |         |         |
  2+ 5       0.4360      3.58  |    V Q  |         |         |         |
  2+10       0.4611      3.64  |    V Q  |         |         |         |
  2+15       0.4866      3.71  |     VQ  |         |         |         |
  2+20       0.5126      3.77  |     VQ  |         |         |         |
  2+25       0.5391      3.85  |     VQ  |         |         |         |
  2+30       0.5661      3.91  |      Q  |         |         |         |
  2+35       0.5933      3.95  |      Q  |         |         |         |
  2+40       0.6206      3.97  |      Q  |         |         |         |
  2+45       0.6482      4.01  |       Q |         |         |         |
  2+50       0.6762      4.06  |       Q |         |         |         |
  2+55       0.7047      4.14  |       Q |         |         |         |
  3+ 0       0.7339      4.24  |       QV|         |         |         |
  3+ 5       0.7637      4.32  |       QV|         |         |         |
  3+10       0.7938      4.37  |       Q V         |         |         |
  3+15       0.8244      4.45  |       Q V         |         |         |
  3+20       0.8557      4.54  |        QV         |         |         |
  3+25       0.8877      4.66  |        Q|V        |         |         |
  3+30       0.9207      4.79  |        Q|V        |         |         |
  3+35       0.9549      4.96  |        Q| V       |         |         |
  3+40       0.9907      5.20  |         Q V       |         |         |
  3+45       1.0283      5.46  |         Q  V      |         |         |
  3+50       1.0677      5.71  |         |Q V      |         |         |
  3+55       1.1086      5.94  |         |Q  V     |         |         |
  4+ 0       1.1511      6.17  |         | Q V     |         |         |
  4+ 5       1.1951      6.39  |         | Q  V    |         |         |
  4+10       1.2407      6.62  |         |  Q V    |         |         |
  4+15       1.2881      6.88  |         |  Q  V   |         |         |
  4+20       1.3376      7.19  |         |   Q  V  |         |         |
  4+25       1.3894      7.53  |         |    Q V  |         |         |
  4+30       1.4438      7.89  |         |    Q  V |         |         |
  4+35       1.5006      8.24  |         |     Q  V|         |         |
  4+40       1.5596      8.57  |         |      Q V|         |         |
  4+45       1.6208      8.89  |         |      Q  V         |         |
  4+50       1.6843      9.22  |         |       Q |V        |         |
  4+55       1.7502      9.57  |         |        Q| V       |         |
```

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   5+ 0       1.8183      9.89  |         |        Q|  V      |         |
   5+ 5       1.8891     10.27  |         |         Q   V     |         |
   5+10       1.9636     10.82  |         |         |Q   V    |         |
   5+15       2.0440     11.67  |         |         |  Q  V   |         |
   5+20       2.1321     12.80  |         |         |    Q V  |         |
   5+25       2.2292     14.09  |         |         |       Q |         |
   5+30       2.3359     15.49  |         |         |        VQ         |
   5+35       2.4505     16.65  |         |         |         |V Q      |
   5+40       2.5658     16.73  |         |         |         | VQ      |
   5+45       2.6706     15.22  |         |         |         Q   V     |
   5+50       2.7554     12.32  |         |         |   Q     |    V    |
   5+55       2.8207      9.48  |         |       Q |         |    V    |
   6+ 0       2.8722      7.47  |         |   Q     |         |     V   |
   6+ 5       2.9141      6.09  |         | Q       |         |      V  |
   6+10       2.9486      5.02  |         Q         |         |      V  |
   6+15       2.9770      4.12  |       Q |         |         |      V  |
   6+20       3.0003      3.38  |     Q   |         |         |       V |
   6+25       3.0196      2.81  |    Q    |         |         |       V |
   6+30       3.0361      2.39  |   Q     |         |         |       V |
   6+35       3.0502      2.06  |   Q     |         |         |       V |
   6+40       3.0625      1.78  |  Q      |         |         |        V|
   6+45       3.0731      1.54  |  Q      |         |         |        V|
   6+50       3.0824      1.35  | Q       |         |         |        V|
   6+55       3.0907      1.19  | Q       |         |         |        V|
   7+ 0       3.0979      1.05  | Q       |         |         |        V|
   7+ 5       3.1041      0.90  |Q        |         |         |        V|
   7+10       3.1095      0.78  |Q        |         |         |        V|
   7+15       3.1142      0.68  |Q        |         |         |        V|
   7+20       3.1182      0.58  |Q        |         |         |        V|
   7+25       3.1216      0.50  Q         |         |         |        V|
   7+30       3.1246      0.43  Q         |         |         |        V|
   7+35       3.1271      0.36  Q         |         |         |        V|
   7+40       3.1292      0.31  Q         |         |         |        V|
   7+45       3.1310      0.25  Q         |         |         |        V|
   7+50       3.1323      0.20  Q         |         |         |        V|
   7+55       3.1333      0.14  Q         |         |         |        V|
   8+ 0       3.1337      0.06  Q         |         |         |        V|
   8+ 5       3.1340      0.03  Q         |         |         |        V|
   8+10       3.1341      0.02  Q         |         |         |        V|
   8+15       3.1342      0.01  Q         |         |         |        V|
   8+20       3.1343      0.01  Q         |         |         |        V|
   8+25       3.1343      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


2 YEAR
6 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B262.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =   101
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       16.735 (CFS)
                Total volume =       3.134 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
-------------------------------------------------------------------
Total number of inflow hydrograph intervals = 101
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
-------------------------------------------------------------------
-------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
-------------------------------------------------------------------
-------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
-------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
-------------------------------------------------------------------
                Hydrograph Detention Basin Routing
-------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 4.2 8.37 12.55 16.73	Depth (Ft.)
0.083	0.06	0.00	0.000	O | | | |	0.00
0.167	0.27	0.00	0.001	O | | | |	0.00
0.250	0.66	0.00	0.004	OI | | | |	0.01
0.333	1.16	0.00	0.011	O I | | | |	0.02
0.417	1.57	0.00	0.020	O I | | | |	0.03
0.500	1.85	0.00	0.032	O I | | | |	0.05
0.583	2.05	0.00	0.045	O I | | | |	0.08
0.667	2.24	0.00	0.060	O I | | | |	0.10
0.750	2.41	0.00	0.076	O I | | | |	0.13
0.833	2.55	0.00	0.093	O I | | | |	0.16
0.917	2.66	0.00	0.111	O I | | | |	0.19
1.000	2.74	0.00	0.130	O I | | | |	0.22
1.083	2.85	0.00	0.149	O I | | | |	0.25
1.167	2.97	0.00	0.169	O I | | | |	0.28
1.250	3.10	0.00	0.190	O I | | | |	0.32
1.333	3.21	0.00	0.212	O I | | | |	0.35
1.417	3.28	0.00	0.234	O I | | | |	0.38
1.500	3.33	0.00	0.257	O I | | | |	0.42
1.583	3.38	0.00	0.280	O I | | | |	0.45
1.667	3.42	0.00	0.303	O I | | | |	0.49
1.750	3.45	0.00	0.327	O I | | | |	0.53
1.833	3.48	0.00	0.351	O I | | | |	0.56
1.917	3.50	0.00	0.375	O I | | | |	0.60
2.000	3.54	0.00	0.399	O I | | | |	0.64
2.083	3.58	0.00	0.424	O I | | | |	0.68
2.167	3.64	0.00	0.448	O I | | | |	0.71
2.250	3.71	0.00	0.474	O I| | | |	0.75
2.333	3.77	0.00	0.500	O I| | | |	0.79
2.417	3.85	0.00	0.526	O I| | | |	0.83
2.500	3.91	0.00	0.552	O I| | | |	0.87
2.583	3.95	0.00	0.580	O I| | | |	0.92
2.667	3.97	0.00	0.607	O I| | | |	0.96
2.750	4.01	0.00	0.634	O I| | | |	1.00
2.833	4.06	0.00	0.662	O I| | | |	1.04
2.917	4.14	0.00	0.690	O I| | | |	1.09
3.000	4.24	0.00	0.719	O I | | |	1.13
3.083	4.32	0.00	0.749	O I | | |	1.18
3.167	4.37	0.00	0.779	O I | | |	1.22
3.250	4.45	0.00	0.809	O I | | |	1.27
3.333	4.54	0.00	0.840	O I | | |	1.31
3.417	4.66	0.00	0.871	O I | | |	1.36
3.500	4.79	0.00	0.904	O |I | | |	1.40
3.583	4.96	0.00	0.938	O |I | | |	1.45
3.667	5.20	0.00	0.973	O |I | | |	1.50
3.750	5.46	0.00	1.009	O | I | | |	1.55
3.833	5.71	0.00	1.048	O | I | | |	1.60
3.917	5.94	0.00	1.088	O | I | | |	1.66
4.000	6.17	0.00	1.130	O | I | | |	1.72
4.083	6.39	0.00	1.173	O | I | | |	1.78
4.167	6.62	0.00	1.218	O | I | | |	1.84
4.250	6.88	0.00	1.264	O | I | | |	1.91
4.333	7.19	0.00	1.313	O | I | | |	1.98
4.417	7.53	0.00	1.363	O | I | | |	2.04
4.500	7.89	0.00	1.416	O | I| | |	2.12
4.583	8.24	0.01	1.472	O | I| | |	2.19
4.667	8.57	0.01	1.530	O | I | |	2.27
4.750	8.89	0.01	1.590	O | I | |	2.35
4.833	9.22	0.01	1.652	O | |I | |	2.43
4.917	9.57	0.65	1.714	|O | | I | |	2.51
5.000	9.89	1.75	1.773	| O | | I | |	2.59
5.083	10.27	2.76	1.827	| O | | I | |	2.65
5.167	10.82	3.87	1.877	| O| | I | |	2.72
5.250	11.67	4.99	1.924	| |O | I | |	2.77
5.333	12.80	6.09	1.970	| | O | I |	2.83
5.417	14.09	7.29	2.016	| | O | | I |	2.89
5.500	15.49	8.70	2.063	| | O | I |	2.95
5.583	16.65	10.08	2.109	| | | O | I|	3.01
5.667	16.73	11.32	2.151	| | | O | I	3.06
5.750	15.22	12.24	2.179	| | | O| I |	3.09
5.833	12.32	12.55	2.189	| | | IO |	3.10
5.917	9.48	12.22	2.179	| | | I O| |	3.09
6.000	7.47	11.47	2.156	| | I | O | |	3.06
6.083	6.09	10.59	2.126	| | I | O | |	3.03
6.167	5.02	9.64	2.095	| |I | O | |	2.99
6.250	4.12	8.69	2.063	| I| O | |	2.95

6.333	3.38	7.77	2.032	| I | O |				2.91
6.417	2.81	6.89	2.003	| I | O |				2.87
6.500	2.39	6.23	1.976	| I | O |				2.84
6.583	2.06	5.62	1.950	| I | O |				2.81
6.667	1.78	5.06	1.927	| I |O |				2.78
6.750	1.54	4.55	1.905	| I O |				2.75
6.833	1.35	4.08	1.885	| I O|				2.73
6.917	1.19	3.65	1.868	| I O |				2.70
7.000	1.05	3.27	1.851	| I O |				2.68
7.083	0.90	2.94	1.837	|I O |				2.67
7.167	0.78	2.69	1.823	|I O |				2.65
7.250	0.68	2.45	1.811	|I O |				2.63
7.333	0.58	2.23	1.799	|I O |				2.62
7.417	0.50	2.03	1.788	I O |				2.60
7.500	0.43	1.84	1.778	I O |				2.59
7.583	0.36	1.66	1.768	I O |				2.58
7.667	0.31	1.50	1.760	I O |				2.57
7.750	0.25	1.35	1.752	I O |				2.56
7.833	0.20	1.22	1.745	I O |				2.55
7.917	0.14	1.09	1.738	I O |				2.54
8.000	0.06	0.97	1.731	IO |				2.53
8.083	0.03	0.86	1.725	IO |				2.53
8.167	0.02	0.76	1.720	IO |				2.52
8.250	0.01	0.67	1.715	IO |				2.51
8.333	0.01	0.59	1.711	IO |				2.51
8.417	0.00	0.52	1.707	O |				2.50
8.500	0.00	0.46	1.704	O |				2.50
8.583	0.00	0.40	1.701	O |				2.50
8.667	0.00	0.35	1.698	O |				2.49
8.750	0.00	0.31	1.696	O |				2.49
8.833	0.00	0.27	1.694	O |				2.49
8.917	0.00	0.24	1.692	O |				2.49
9.000	0.00	0.21	1.691	O |				2.48
9.083	0.00	0.19	1.689	O |				2.48
9.167	0.00	0.16	1.688	O |				2.48
9.250	0.00	0.14	1.687	O |				2.48
9.333	0.00	0.13	1.686	O |				2.48
9.417	0.00	0.11	1.685	O |				2.48
9.500	0.00	0.10	1.685	O |				2.48
9.583	0.00	0.09	1.684	O |				2.48
9.667	0.00	0.08	1.683	O |				2.47
9.750	0.00	0.07	1.683	O |				2.47
9.833	0.00	0.06	1.683	O |				2.47
9.917	0.00	0.05	1.682	O |				2.47
10.000	0.00	0.04	1.682	O |				2.47
10.083	0.00	0.04	1.682	O |				2.47
10.167	0.00	0.03	1.681	O |				2.47
10.250	0.00	0.03	1.681	O |				2.47
10.333	0.00	0.03	1.681	O |				2.47
10.417	0.00	0.02	1.681	O |				2.47
10.500	0.00	0.02	1.681	O |				2.47
10.583	0.00	0.02	1.680	O |				2.47
10.667	0.00	0.02	1.680	O |				2.47
10.750	0.00	0.01	1.680	O |				2.47
10.833	0.00	0.01	1.680	O |				2.47
10.917	0.00	0.01	1.680	O |				2.47
11.000	0.00	0.01	1.680	O |				2.47
11.083	0.00	0.01	1.680	O |				2.47
11.167	0.00	0.01	1.680	O |				2.47
11.250	0.00	0.01	1.680	O |				2.47
11.333	0.00	0.01	1.680	O |				2.47
11.417	0.00	0.01	1.680	O |				2.47
11.500	0.00	0.01	1.680	O |				2.47
11.583	0.00	0.01	1.679	O |				2.47
11.667	0.00	0.01	1.679	O |				2.47
11.750	0.00	0.01	1.679	O |				2.47
11.833	0.00	0.01	1.679	O |				2.47
11.917	0.00	0.01	1.679	O |				2.47
12.000	0.00	0.01	1.679	O |				2.47
12.083	0.00	0.01	1.679	O |				2.47
12.167	0.00	0.01	1.679	O |				2.47
12.250	0.00	0.01	1.679	O |				2.47
12.333	0.00	0.01	1.679	O |				2.47
12.417	0.00	0.01	1.679	O |				2.47
12.500	0.00	0.01	1.679	O |				2.47
12.583	0.00	0.01	1.679	O |				2.47
12.667	0.00	0.01	1.679	O |				2.47
12.750	0.00	0.01	1.679	O |				2.47
12.833	0.00	0.01	1.678	O |				2.47

```
414.500    0.00    0.00      1.405  O       |       |       |       |     2.10
414.583    0.00    0.00      1.405  O       |       |       |       |     2.10
414.667    0.00    0.00      1.405  O       |       |       |       |     2.10
414.750    0.00    0.00      1.405  O       |       |       |       |     2.10
414.833    0.00    0.00      1.405  O       |       |       |       |     2.10
414.917    0.00    0.00      1.405  O       |       |       |       |     2.10
415.000    0.00    0.00      1.405  O       |       |       |       |     2.10
415.083    0.00    0.00      1.405  O       |       |       |       |     2.10
415.167    0.00    0.00      1.405  O       |       |       |       |     2.10
415.250    0.00    0.00      1.405  O       |       |       |       |     2.10
415.333    0.00    0.00      1.405  O       |       |       |       |     2.10
415.417    0.00    0.00      1.405  O       |       |       |       |     2.10
415.500    0.00    0.00      1.405  O       |       |       |       |     2.10
415.583    0.00    0.00      1.405  O       |       |       |       |     2.10
415.667    0.00    0.00      1.405  O       |       |       |       |     2.10
415.750    0.00    0.00      1.405  O       |       |       |       |     2.10
415.833    0.00    0.00      1.405  O       |       |       |       |     2.10
415.917    0.00    0.00      1.405  O       |       |       |       |     2.10
416.000    0.00    0.00      1.405  O       |       |       |       |     2.10
416.083    0.00    0.00      1.405  O       |       |       |       |     2.10
416.167    0.00    0.00      1.404  O       |       |       |       |     2.10
416.250    0.00    0.00      1.404  O       |       |       |       |     2.10
416.333    0.00    0.00      1.404  O       |       |       |       |     2.10
416.417    0.00    0.00      1.404  O       |       |       |       |     2.10
416.500    0.00    0.00      1.404  O       |       |       |       |     2.10
416.583    0.00    0.00      1.404  O       |       |       |       |     2.10
416.667    0.00    0.00      1.404  O       |       |       |       |     2.10

        Remaining water in basin =    1.40 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       12.552 (CFS)
                        Total volume =       1.730 (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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        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  08/31/21 File: 3384B2242.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



---------------------------------------------------------------------
2 YEAR
24 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            2.00                  64.30

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            5.50                 176.82

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 =   99.99 %
Adjusted average point rain =    2.000(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-----------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
----------------------------------------------------------------
               Unit Hydrograph Data
-----------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-----------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.07      0.016       (  0.238)       0.002        0.014
   2   0.17     0.07      0.016       (  0.237)       0.002        0.014
   3   0.25     0.07      0.016       (  0.236)       0.002        0.014
   4   0.33     0.10      0.024       (  0.235)       0.002        0.022
   5   0.42     0.10      0.024       (  0.234)       0.002        0.022
   6   0.50     0.10      0.024       (  0.233)       0.002        0.022
   7   0.58     0.10      0.024       (  0.232)       0.002        0.022
   8   0.67     0.10      0.024       (  0.231)       0.002        0.022
   9   0.75     0.10      0.024       (  0.230)       0.002        0.022
  10   0.83     0.13      0.032       (  0.230)       0.003        0.029
  11   0.92     0.13      0.032       (  0.229)       0.003        0.029
  12   1.00     0.13      0.032       (  0.228)       0.003        0.029
  13   1.08     0.10      0.024       (  0.227)       0.002        0.022
  14   1.17     0.10      0.024       (  0.226)       0.002        0.022
```

15	1.25	0.10	0.024	(0.225)	0.002	0.022
16	1.33	0.10	0.024	(0.224)	0.002	0.022
17	1.42	0.10	0.024	(0.223)	0.002	0.022
18	1.50	0.10	0.024	(0.222)	0.002	0.022
19	1.58	0.10	0.024	(0.222)	0.002	0.022
20	1.67	0.10	0.024	(0.221)	0.002	0.022
21	1.75	0.10	0.024	(0.220)	0.002	0.022
22	1.83	0.13	0.032	(0.219)	0.003	0.029
23	1.92	0.13	0.032	(0.218)	0.003	0.029
24	2.00	0.13	0.032	(0.217)	0.003	0.029
25	2.08	0.13	0.032	(0.216)	0.003	0.029
26	2.17	0.13	0.032	(0.215)	0.003	0.029
27	2.25	0.13	0.032	(0.214)	0.003	0.029
28	2.33	0.13	0.032	(0.214)	0.003	0.029
29	2.42	0.13	0.032	(0.213)	0.003	0.029
30	2.50	0.13	0.032	(0.212)	0.003	0.029
31	2.58	0.17	0.040	(0.211)	0.004	0.036
32	2.67	0.17	0.040	(0.210)	0.004	0.036
33	2.75	0.17	0.040	(0.209)	0.004	0.036
34	2.83	0.17	0.040	(0.208)	0.004	0.036
35	2.92	0.17	0.040	(0.208)	0.004	0.036
36	3.00	0.17	0.040	(0.207)	0.004	0.036
37	3.08	0.17	0.040	(0.206)	0.004	0.036
38	3.17	0.17	0.040	(0.205)	0.004	0.036
39	3.25	0.17	0.040	(0.204)	0.004	0.036
40	3.33	0.17	0.040	(0.203)	0.004	0.036
41	3.42	0.17	0.040	(0.202)	0.004	0.036
42	3.50	0.17	0.040	(0.202)	0.004	0.036
43	3.58	0.17	0.040	(0.201)	0.004	0.036
44	3.67	0.17	0.040	(0.200)	0.004	0.036
45	3.75	0.17	0.040	(0.199)	0.004	0.036
46	3.83	0.20	0.048	(0.198)	0.005	0.043
47	3.92	0.20	0.048	(0.197)	0.005	0.043
48	4.00	0.20	0.048	(0.197)	0.005	0.043
49	4.08	0.20	0.048	(0.196)	0.005	0.043
50	4.17	0.20	0.048	(0.195)	0.005	0.043
51	4.25	0.20	0.048	(0.194)	0.005	0.043
52	4.33	0.23	0.056	(0.193)	0.006	0.050
53	4.42	0.23	0.056	(0.192)	0.006	0.050
54	4.50	0.23	0.056	(0.192)	0.006	0.050
55	4.58	0.23	0.056	(0.191)	0.006	0.050
56	4.67	0.23	0.056	(0.190)	0.006	0.050
57	4.75	0.23	0.056	(0.189)	0.006	0.050
58	4.83	0.27	0.064	(0.188)	0.006	0.058
59	4.92	0.27	0.064	(0.187)	0.006	0.058
60	5.00	0.27	0.064	(0.187)	0.006	0.058
61	5.08	0.20	0.048	(0.186)	0.005	0.043
62	5.17	0.20	0.048	(0.185)	0.005	0.043
63	5.25	0.20	0.048	(0.184)	0.005	0.043
64	5.33	0.23	0.056	(0.183)	0.006	0.050
65	5.42	0.23	0.056	(0.183)	0.006	0.050
66	5.50	0.23	0.056	(0.182)	0.006	0.050
67	5.58	0.27	0.064	(0.181)	0.006	0.058
68	5.67	0.27	0.064	(0.180)	0.006	0.058
69	5.75	0.27	0.064	(0.179)	0.006	0.058
70	5.83	0.27	0.064	(0.179)	0.006	0.058
71	5.92	0.27	0.064	(0.178)	0.006	0.058
72	6.00	0.27	0.064	(0.177)	0.006	0.058
73	6.08	0.30	0.072	(0.176)	0.007	0.065
74	6.17	0.30	0.072	(0.175)	0.007	0.065
75	6.25	0.30	0.072	(0.175)	0.007	0.065
76	6.33	0.30	0.072	(0.174)	0.007	0.065
77	6.42	0.30	0.072	(0.173)	0.007	0.065
78	6.50	0.30	0.072	(0.172)	0.007	0.065
79	6.58	0.33	0.080	(0.172)	0.008	0.072
80	6.67	0.33	0.080	(0.171)	0.008	0.072
81	6.75	0.33	0.080	(0.170)	0.008	0.072
82	6.83	0.33	0.080	(0.169)	0.008	0.072
83	6.92	0.33	0.080	(0.169)	0.008	0.072

84	7.00	0.33	0.080	(0.168)	0.008	0.072
85	7.08	0.33	0.080	(0.167)	0.008	0.072
86	7.17	0.33	0.080	(0.166)	0.008	0.072
87	7.25	0.33	0.080	(0.165)	0.008	0.072
88	7.33	0.37	0.088	(0.165)	0.009	0.079
89	7.42	0.37	0.088	(0.164)	0.009	0.079
90	7.50	0.37	0.088	(0.163)	0.009	0.079
91	7.58	0.40	0.096	(0.162)	0.010	0.086
92	7.67	0.40	0.096	(0.162)	0.010	0.086
93	7.75	0.40	0.096	(0.161)	0.010	0.086
94	7.83	0.43	0.104	(0.160)	0.010	0.094
95	7.92	0.43	0.104	(0.159)	0.010	0.094
96	8.00	0.43	0.104	(0.159)	0.010	0.094
97	8.08	0.50	0.120	(0.158)	0.012	0.108
98	8.17	0.50	0.120	(0.157)	0.012	0.108
99	8.25	0.50	0.120	(0.157)	0.012	0.108
100	8.33	0.50	0.120	(0.156)	0.012	0.108
101	8.42	0.50	0.120	(0.155)	0.012	0.108
102	8.50	0.50	0.120	(0.154)	0.012	0.108
103	8.58	0.53	0.128	(0.154)	0.013	0.115
104	8.67	0.53	0.128	(0.153)	0.013	0.115
105	8.75	0.53	0.128	(0.152)	0.013	0.115
106	8.83	0.57	0.136	(0.151)	0.014	0.122
107	8.92	0.57	0.136	(0.151)	0.014	0.122
108	9.00	0.57	0.136	(0.150)	0.014	0.122
109	9.08	0.63	0.152	(0.149)	0.015	0.137
110	9.17	0.63	0.152	(0.149)	0.015	0.137
111	9.25	0.63	0.152	(0.148)	0.015	0.137
112	9.33	0.67	0.160	(0.147)	0.016	0.144
113	9.42	0.67	0.160	(0.147)	0.016	0.144
114	9.50	0.67	0.160	(0.146)	0.016	0.144
115	9.58	0.70	0.168	(0.145)	0.017	0.151
116	9.67	0.70	0.168	(0.144)	0.017	0.151
117	9.75	0.70	0.168	(0.144)	0.017	0.151
118	9.83	0.73	0.176	(0.143)	0.018	0.158
119	9.92	0.73	0.176	(0.142)	0.018	0.158
120	10.00	0.73	0.176	(0.142)	0.018	0.158
121	10.08	0.50	0.120	(0.141)	0.012	0.108
122	10.17	0.50	0.120	(0.140)	0.012	0.108
123	10.25	0.50	0.120	(0.140)	0.012	0.108
124	10.33	0.50	0.120	(0.139)	0.012	0.108
125	10.42	0.50	0.120	(0.138)	0.012	0.108
126	10.50	0.50	0.120	(0.138)	0.012	0.108
127	10.58	0.67	0.160	(0.137)	0.016	0.144
128	10.67	0.67	0.160	(0.136)	0.016	0.144
129	10.75	0.67	0.160	(0.136)	0.016	0.144
130	10.83	0.67	0.160	(0.135)	0.016	0.144
131	10.92	0.67	0.160	(0.134)	0.016	0.144
132	11.00	0.67	0.160	(0.134)	0.016	0.144
133	11.08	0.63	0.152	(0.133)	0.015	0.137
134	11.17	0.63	0.152	(0.132)	0.015	0.137
135	11.25	0.63	0.152	(0.132)	0.015	0.137
136	11.33	0.63	0.152	(0.131)	0.015	0.137
137	11.42	0.63	0.152	(0.130)	0.015	0.137
138	11.50	0.63	0.152	(0.130)	0.015	0.137
139	11.58	0.57	0.136	(0.129)	0.014	0.122
140	11.67	0.57	0.136	(0.128)	0.014	0.122
141	11.75	0.57	0.136	(0.128)	0.014	0.122
142	11.83	0.60	0.144	(0.127)	0.014	0.130
143	11.92	0.60	0.144	(0.126)	0.014	0.130
144	12.00	0.60	0.144	(0.126)	0.014	0.130
145	12.08	0.83	0.200	(0.125)	0.020	0.180
146	12.17	0.83	0.200	(0.125)	0.020	0.180
147	12.25	0.83	0.200	(0.124)	0.020	0.180
148	12.33	0.87	0.208	(0.123)	0.021	0.187
149	12.42	0.87	0.208	(0.123)	0.021	0.187
150	12.50	0.87	0.208	(0.122)	0.021	0.187
151	12.58	0.93	0.224	(0.121)	0.022	0.202
152	12.67	0.93	0.224	(0.121)	0.022	0.202

153	12.75	0.93	0.224	(0.120)	0.022	0.202
154	12.83	0.97	0.232	(0.120)	0.023	0.209
155	12.92	0.97	0.232	(0.119)	0.023	0.209
156	13.00	0.97	0.232	(0.118)	0.023	0.209
157	13.08	1.13	0.272	(0.118)	0.027	0.245
158	13.17	1.13	0.272	(0.117)	0.027	0.245
159	13.25	1.13	0.272	(0.117)	0.027	0.245
160	13.33	1.13	0.272	(0.116)	0.027	0.245
161	13.42	1.13	0.272	(0.115)	0.027	0.245
162	13.50	1.13	0.272	(0.115)	0.027	0.245
163	13.58	0.77	0.184	(0.114)	0.018	0.166
164	13.67	0.77	0.184	(0.114)	0.018	0.166
165	13.75	0.77	0.184	(0.113)	0.018	0.166
166	13.83	0.77	0.184	(0.113)	0.018	0.166
167	13.92	0.77	0.184	(0.112)	0.018	0.166
168	14.00	0.77	0.184	(0.111)	0.018	0.166
169	14.08	0.90	0.216	(0.111)	0.022	0.194
170	14.17	0.90	0.216	(0.110)	0.022	0.194
171	14.25	0.90	0.216	(0.110)	0.022	0.194
172	14.33	0.87	0.208	(0.109)	0.021	0.187
173	14.42	0.87	0.208	(0.109)	0.021	0.187
174	14.50	0.87	0.208	(0.108)	0.021	0.187
175	14.58	0.87	0.208	(0.107)	0.021	0.187
176	14.67	0.87	0.208	(0.107)	0.021	0.187
177	14.75	0.87	0.208	(0.106)	0.021	0.187
178	14.83	0.83	0.200	(0.106)	0.020	0.180
179	14.92	0.83	0.200	(0.105)	0.020	0.180
180	15.00	0.83	0.200	(0.105)	0.020	0.180
181	15.08	0.80	0.192	(0.104)	0.019	0.173
182	15.17	0.80	0.192	(0.104)	0.019	0.173
183	15.25	0.80	0.192	(0.103)	0.019	0.173
184	15.33	0.77	0.184	(0.103)	0.018	0.166
185	15.42	0.77	0.184	(0.102)	0.018	0.166
186	15.50	0.77	0.184	(0.102)	0.018	0.166
187	15.58	0.63	0.152	(0.101)	0.015	0.137
188	15.67	0.63	0.152	(0.101)	0.015	0.137
189	15.75	0.63	0.152	(0.100)	0.015	0.137
190	15.83	0.63	0.152	(0.100)	0.015	0.137
191	15.92	0.63	0.152	(0.099)	0.015	0.137
192	16.00	0.63	0.152	(0.099)	0.015	0.137
193	16.08	0.13	0.032	(0.098)	0.003	0.029
194	16.17	0.13	0.032	(0.098)	0.003	0.029
195	16.25	0.13	0.032	(0.097)	0.003	0.029
196	16.33	0.13	0.032	(0.097)	0.003	0.029
197	16.42	0.13	0.032	(0.096)	0.003	0.029
198	16.50	0.13	0.032	(0.096)	0.003	0.029
199	16.58	0.10	0.024	(0.095)	0.002	0.022
200	16.67	0.10	0.024	(0.095)	0.002	0.022
201	16.75	0.10	0.024	(0.094)	0.002	0.022
202	16.83	0.10	0.024	(0.094)	0.002	0.022
203	16.92	0.10	0.024	(0.093)	0.002	0.022
204	17.00	0.10	0.024	(0.093)	0.002	0.022
205	17.08	0.17	0.040	(0.092)	0.004	0.036
206	17.17	0.17	0.040	(0.092)	0.004	0.036
207	17.25	0.17	0.040	(0.091)	0.004	0.036
208	17.33	0.17	0.040	(0.091)	0.004	0.036
209	17.42	0.17	0.040	(0.090)	0.004	0.036
210	17.50	0.17	0.040	(0.090)	0.004	0.036
211	17.58	0.17	0.040	(0.089)	0.004	0.036
212	17.67	0.17	0.040	(0.089)	0.004	0.036
213	17.75	0.17	0.040	(0.089)	0.004	0.036
214	17.83	0.13	0.032	(0.088)	0.003	0.029
215	17.92	0.13	0.032	(0.088)	0.003	0.029
216	18.00	0.13	0.032	(0.087)	0.003	0.029
217	18.08	0.13	0.032	(0.087)	0.003	0.029
218	18.17	0.13	0.032	(0.086)	0.003	0.029
219	18.25	0.13	0.032	(0.086)	0.003	0.029
220	18.33	0.13	0.032	(0.086)	0.003	0.029
221	18.42	0.13	0.032	(0.085)	0.003	0.029

222	18.50	0.13	0.032	(0.085)	0.003	0.029
223	18.58	0.10	0.024	(0.084)	0.002	0.022
224	18.67	0.10	0.024	(0.084)	0.002	0.022
225	18.75	0.10	0.024	(0.084)	0.002	0.022
226	18.83	0.07	0.016	(0.083)	0.002	0.014
227	18.92	0.07	0.016	(0.083)	0.002	0.014
228	19.00	0.07	0.016	(0.082)	0.002	0.014
229	19.08	0.10	0.024	(0.082)	0.002	0.022
230	19.17	0.10	0.024	(0.082)	0.002	0.022
231	19.25	0.10	0.024	(0.081)	0.002	0.022
232	19.33	0.13	0.032	(0.081)	0.003	0.029
233	19.42	0.13	0.032	(0.080)	0.003	0.029
234	19.50	0.13	0.032	(0.080)	0.003	0.029
235	19.58	0.10	0.024	(0.080)	0.002	0.022
236	19.67	0.10	0.024	(0.079)	0.002	0.022
237	19.75	0.10	0.024	(0.079)	0.002	0.022
238	19.83	0.07	0.016	(0.079)	0.002	0.014
239	19.92	0.07	0.016	(0.078)	0.002	0.014
240	20.00	0.07	0.016	(0.078)	0.002	0.014
241	20.08	0.10	0.024	(0.078)	0.002	0.022
242	20.17	0.10	0.024	(0.077)	0.002	0.022
243	20.25	0.10	0.024	(0.077)	0.002	0.022
244	20.33	0.10	0.024	(0.077)	0.002	0.022
245	20.42	0.10	0.024	(0.076)	0.002	0.022
246	20.50	0.10	0.024	(0.076)	0.002	0.022
247	20.58	0.10	0.024	(0.076)	0.002	0.022
248	20.67	0.10	0.024	(0.075)	0.002	0.022
249	20.75	0.10	0.024	(0.075)	0.002	0.022
250	20.83	0.07	0.016	(0.075)	0.002	0.014
251	20.92	0.07	0.016	(0.074)	0.002	0.014
252	21.00	0.07	0.016	(0.074)	0.002	0.014
253	21.08	0.10	0.024	(0.074)	0.002	0.022
254	21.17	0.10	0.024	(0.073)	0.002	0.022
255	21.25	0.10	0.024	(0.073)	0.002	0.022
256	21.33	0.07	0.016	(0.073)	0.002	0.014
257	21.42	0.07	0.016	(0.073)	0.002	0.014
258	21.50	0.07	0.016	(0.072)	0.002	0.014
259	21.58	0.10	0.024	(0.072)	0.002	0.022
260	21.67	0.10	0.024	(0.072)	0.002	0.022
261	21.75	0.10	0.024	(0.072)	0.002	0.022
262	21.83	0.07	0.016	(0.071)	0.002	0.014
263	21.92	0.07	0.016	(0.071)	0.002	0.014
264	22.00	0.07	0.016	(0.071)	0.002	0.014
265	22.08	0.10	0.024	(0.071)	0.002	0.022
266	22.17	0.10	0.024	(0.070)	0.002	0.022
267	22.25	0.10	0.024	(0.070)	0.002	0.022
268	22.33	0.07	0.016	(0.070)	0.002	0.014
269	22.42	0.07	0.016	(0.070)	0.002	0.014
270	22.50	0.07	0.016	(0.069)	0.002	0.014
271	22.58	0.07	0.016	(0.069)	0.002	0.014
272	22.67	0.07	0.016	(0.069)	0.002	0.014
273	22.75	0.07	0.016	(0.069)	0.002	0.014
274	22.83	0.07	0.016	(0.069)	0.002	0.014
275	22.92	0.07	0.016	(0.069)	0.002	0.014
276	23.00	0.07	0.016	(0.068)	0.002	0.014
277	23.08	0.07	0.016	(0.068)	0.002	0.014
278	23.17	0.07	0.016	(0.068)	0.002	0.014
279	23.25	0.07	0.016	(0.068)	0.002	0.014
280	23.33	0.07	0.016	(0.068)	0.002	0.014
281	23.42	0.07	0.016	(0.068)	0.002	0.014
282	23.50	0.07	0.016	(0.068)	0.002	0.014
283	23.58	0.07	0.016	(0.067)	0.002	0.014
284	23.67	0.07	0.016	(0.067)	0.002	0.014
285	23.75	0.07	0.016	(0.067)	0.002	0.014
286	23.83	0.07	0.016	(0.067)	0.002	0.014
287	23.92	0.07	0.016	(0.067)	0.002	0.014
288	24.00	0.07	0.016	(0.067)	0.002	0.014
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	21.6

```
Flood volume = Effective rainfall      1.80(In)
 times area      32.1(Ac.)/[(In)/(Ft.)] =       4.8(Ac.Ft)
Total soil loss =      0.20(In)
Total soil loss =     0.536(Ac.Ft)
Total rainfall =      2.00(In)
Flood volume =      210054.9 Cubic Feet
Total soil loss =       23339.4 Cubic Feet
--------------------------------------------------------------------
 Peak flow rate of this hydrograph =      7.398(CFS)
--------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                     24 - H O U R    S T O R M
                R u n o f f      H y d r o g r a p h
--------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

--------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q         |         |         |         |
  0+10       0.0004      0.05  Q         |         |         |         |
  0+15       0.0013      0.12  Q         |         |         |         |
  0+20       0.0028      0.22  Q         |         |         |         |
  0+25       0.0049      0.31  VQ        |         |         |         |
  0+30       0.0076      0.38  VQ        |         |         |         |
  0+35       0.0107      0.45  VQ        |         |         |         |
  0+40       0.0141      0.50  V Q       |         |         |         |
  0+45       0.0179      0.54  V Q       |         |         |         |
  0+50       0.0218      0.57  V Q       |         |         |         |
  0+55       0.0260      0.61  V Q       |         |         |         |
  1+ 0       0.0306      0.66  V Q       |         |         |         |
  1+ 5       0.0355      0.71  V Q       |         |         |         |
  1+10       0.0406      0.74  V Q       |         |         |         |
  1+15       0.0457      0.73  V Q       |         |         |         |
  1+20       0.0506      0.71  V Q       |         |         |         |
  1+25       0.0553      0.69  V Q       |         |         |         |
  1+30       0.0601      0.69  V Q       |         |         |         |
  1+35       0.0648      0.69  V Q       |         |         |         |
  1+40       0.0695      0.69  V Q       |         |         |         |
  1+45       0.0743      0.69  V Q       |         |         |         |
  1+50       0.0791      0.70  V Q       |         |         |         |
  1+55       0.0840      0.72  V Q       |         |         |         |
  2+ 0       0.0893      0.76  V  Q      |         |         |         |
  2+ 5       0.0948      0.80  V  Q      |         |         |         |
  2+10       0.1005      0.84  V  Q      |         |         |         |
  2+15       0.1065      0.86  V  Q      |         |         |         |
  2+20       0.1125      0.87  V  Q      |         |         |         |
  2+25       0.1186      0.88  V  Q      |         |         |         |
  2+30       0.1247      0.89  |V Q      |         |         |         |
  2+35       0.1309      0.90  |V Q      |         |         |         |
  2+40       0.1373      0.93  |V Q      |         |         |         |
  2+45       0.1440      0.97  |V Q      |         |         |         |
  2+50       0.1510      1.02  |V  Q     |         |         |         |
  2+55       0.1583      1.06  |V  Q     |         |         |         |
  3+ 0       0.1657      1.08  |V  Q     |         |         |         |
  3+ 5       0.1733      1.09  |V  Q     |         |         |         |
  3+10       0.1809      1.10  |V  Q     |         |         |         |
  3+15       0.1885      1.11  |V  Q     |         |         |         |
  3+20       0.1963      1.12  |V  Q     |         |         |         |
  3+25       0.2040      1.13  |V  Q     |         |         |         |
  3+30       0.2118      1.13  |V  Q     |         |         |         |
  3+35       0.2196      1.14  |V  Q     |         |         |         |
  3+40       0.2275      1.14  |V  Q     |         |         |         |
  3+45       0.2354      1.14  |V  Q     |         |         |         |
  3+50       0.2433      1.15  | V Q     |         |         |         |
  3+55       0.2514      1.18  | V Q     |         |         |         |
  4+ 0       0.2598      1.22  | V Q     |         |         |         |
  4+ 5       0.2685      1.26  | V  Q    |         |         |         |
  4+10       0.2774      1.30  | V  Q    |         |         |         |
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4+15       0.2865      1.32  | V  Q    |         |         |         |
4+20       0.2957      1.34  | V  Q    |         |         |         |
4+25       0.3052      1.37  | V  Q    |         |         |         |
4+30       0.3149      1.41  | V  Q    |         |         |         |
4+35       0.3250      1.47  | V  Q    |         |         |         |
4+40       0.3354      1.51  | V   Q   |         |         |         |
4+45       0.3459      1.53  | V   Q   |         |         |         |
4+50       0.3566      1.55  | V   Q   |         |         |         |
4+55       0.3676      1.59  |  V  Q   |         |         |         |
5+ 0       0.3788      1.63  |  V  Q   |         |         |         |
5+ 5       0.3904      1.68  |  V  Q   |         |         |         |
5+10       0.4019      1.68  |  V  Q   |         |         |         |
5+15       0.4131      1.63  |  V  Q   |         |         |         |
5+20       0.4239      1.57  |  V  Q   |         |         |         |
5+25       0.4345      1.53  |  V  Q   |         |         |         |
5+30       0.4451      1.54  |  V  Q   |         |         |         |
5+35       0.4559      1.57  |  V  Q   |         |         |         |
5+40       0.4671      1.62  |  V  Q   |         |         |         |
5+45       0.4785      1.67  |  V  Q   |         |         |         |
5+50       0.4904      1.72  |   V Q   |         |         |         |
5+55       0.5024      1.76  |   V  Q  |         |         |         |
6+ 0       0.5147      1.78  |   V  Q  |         |         |         |
6+ 5       0.5271      1.80  |   V  Q  |         |         |         |
6+10       0.5397      1.83  |   V  Q  |         |         |         |
6+15       0.5527      1.88  |   V  Q  |         |         |         |
6+20       0.5659      1.93  |   V  Q  |         |         |         |
6+25       0.5795      1.97  |   V  Q  |         |         |         |
6+30       0.5933      2.00  |   V  Q  |         |         |         |
6+35       0.6072      2.02  |    V  Q |         |         |         |
6+40       0.6213      2.05  |    V  Q |         |         |         |
6+45       0.6358      2.10  |    V  Q |         |         |         |
6+50       0.6506      2.15  |    V  Q |         |         |         |
6+55       0.6657      2.19  |    V  Q |         |         |         |
7+ 0       0.6810      2.22  |    V  Q |         |         |         |
7+ 5       0.6964      2.24  |    V  Q |         |         |         |
7+10       0.7119      2.25  |    V   Q|         |         |         |
7+15       0.7275      2.27  |     V  Q|         |         |         |
7+20       0.7432      2.28  |     V  Q|         |         |         |
7+25       0.7591      2.31  |     V  Q|         |         |         |
7+30       0.7753      2.35  |     V  Q|         |         |         |
7+35       0.7919      2.41  |     V  Q|         |         |         |
7+40       0.8089      2.47  |     V  Q|         |         |         |
7+45       0.8263      2.53  |     V   Q         |         |         |
7+50       0.8442      2.60  |      V  Q         |         |         |
7+55       0.8625      2.66  |      V  Q         |         |         |
8+ 0       0.8813      2.73  |      V  Q         |         |         |
8+ 5       0.9007      2.81  |      V  |Q        |         |         |
8+10       0.9206      2.90  |      V  |Q        |         |         |
8+15       0.9413      3.01  |      V  | Q       |         |         |
8+20       0.9628      3.12  |      V  | Q       |         |         |
8+25       0.9849      3.20  |       V | Q       |         |         |
8+30       1.0073      3.26  |       V |  Q      |         |         |
8+35       1.0301      3.31  |       V |  Q      |         |         |
8+40       1.0532      3.36  |       V |  Q      |         |         |
8+45       1.0767      3.42  |       V |  Q      |         |         |
8+50       1.1007      3.49  |        V|  Q      |         |         |
8+55       1.1252      3.56  |        V|   Q     |         |         |
9+ 0       1.1502      3.63  |        V|   Q     |         |         |
9+ 5       1.1758      3.71  |        V|   Q     |         |         |
9+10       1.2020      3.81  |        V|    Q    |         |         |
9+15       1.2290      3.92  |         V    Q    |         |         |
9+20       1.2568      4.04  |         V     Q   |         |         |
9+25       1.2854      4.15  |         V     Q   |         |         |
9+30       1.3146      4.24  |         V     Q   |         |         |
9+35       1.3444      4.33  |         |V     Q  |         |         |
9+40       1.3749      4.42  |         |V     Q  |         |         |
9+45       1.4059      4.50  |         |V      Q |         |         |
9+50       1.4375      4.59  |         |V      Q |         |         |
9+55       1.4697      4.67  |         | V     Q |         |         |
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10+ 0       1.5024      4.75  |          | V      Q|         |         |
10+ 5       1.5353      4.79  |          | V      Q|         |         |
10+10       1.5677      4.70  |          |  V    Q |         |         |
10+15       1.5987      4.49  |          |  V   Q  |         |         |
10+20       1.6278      4.22  |          |  V  Q   |         |         |
10+25       1.6553      4.01  |          |  V  Q   |         |         |
10+30       1.6821      3.89  |          |  V Q    |         |         |
10+35       1.7086      3.85  |          |   VQ    |         |         |
10+40       1.7354      3.90  |          |   VQ    |         |         |
10+45       1.7633      4.04  |          |   V Q   |         |         |
10+50       1.7924      4.23  |          |   V Q   |         |         |
10+55       1.8225      4.37  |          |    V Q  |         |         |
11+ 0       1.8531      4.45  |          |    V Q  |         |         |
11+ 5       1.8841      4.49  |          |    V Q  |         |         |
11+10       1.9150      4.50  |          |    V Q  |         |         |
11+15       1.9459      4.49  |          |     VQ  |         |         |
11+20       1.9767      4.46  |          |     VQ  |         |         |
11+25       2.0073      4.45  |          |     VQ  |         |         |
11+30       2.0379      4.44  |          |     VQ  |         |         |
11+35       2.0683      4.42  |          |      Q  |         |         |
11+40       2.0985      4.38  |          |      Q  |         |         |
11+45       2.1281      4.31  |          |      Q  |         |         |
11+50       2.1572      4.22  |          |     QV  |         |         |
11+55       2.1860      4.17  |          |     Q V |         |         |
12+ 0       2.2147      4.17  |          |     Q V |         |         |
12+ 5       2.2439      4.23  |          |     Q V |         |         |
12+10       2.2741      4.39  |          |      QV |         |         |
12+15       2.3061      4.65  |          |       QV|         |         |
12+20       2.3403      4.96  |          |        Q|         |         |
12+25       2.3762      5.22  |          |        VQ         |         |
12+30       2.4133      5.39  |          |         VQ        |         |
12+35       2.4514      5.54  |          |         V Q       |         |
12+40       2.4905      5.67  |          |         V Q       |         |
12+45       2.5306      5.82  |          |         V  Q      |         |
12+50       2.5717      5.97  |          |         |V Q      |         |
12+55       2.6138      6.11  |          |         |V  Q     |         |
13+ 0       2.6566      6.22  |          |         | V Q     |         |
13+ 5       2.7004      6.35  |          |         | V  Q    |         |
13+10       2.7453      6.53  |          |         | V   Q   |         |
13+15       2.7920      6.77  |          |         |  V   Q  |         |
13+20       2.8404      7.03  |          |         |  V    Q |         |
13+25       2.8903      7.24  |          |         |  V    Q |         |
13+30       2.9410      7.37  |          |         |   V    Q|         |
13+35       2.9920      7.40  |          |         |   V    Q|         |
13+40       3.0419      7.24  |          |         |    V  Q |         |
13+45       3.0894      6.91  |          |         |    V Q  |         |
13+50       3.1340      6.47  |          |         |    Q    |         |
13+55       3.1763      6.14  |          |         |   Q V   |         |
14+ 0       3.2173      5.95  |          |         |  Q  V   |         |
14+ 5       3.2577      5.87  |          |         |  Q   V  |         |
14+10       3.2981      5.87  |          |         |  Q   V  |         |
14+15       3.3392      5.96  |          |         |  Q   V  |         |
14+20       3.3811      6.08  |          |         |   Q   V |         |
14+25       3.4235      6.16  |          |         |   Q   V |         |
14+30       3.4661      6.18  |          |         |   Q   V |         |
14+35       3.5085      6.16  |          |         |   Q    V|         |
14+40       3.5507      6.13  |          |         |   Q    V|         |
14+45       3.5929      6.12  |          |         |   Q    V|         |
14+50       3.6349      6.11  |          |         |   Q     V         |
14+55       3.6769      6.09  |          |         |   Q     V         |
15+ 0       3.7185      6.05  |          |         |   Q     V         |
15+ 5       3.7598      5.99  |          |         |  Q      |V        |
15+10       3.8006      5.93  |          |         |  Q      |V        |
15+15       3.8410      5.87  |          |         |  Q      |V        |
15+20       3.8810      5.80  |          |         |  Q      | V       |
15+25       3.9205      5.74  |          |         | Q       | V       |
15+30       3.9596      5.67  |          |         | Q       | V       |
15+35       3.9980      5.58  |          |         | Q       |  V      |
15+40       4.0355      5.45  |          |         |Q        |  V      |
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15+45       4.0718      5.27  |         |         |Q        |  V      |
15+50       4.1067      5.07  |         |         Q         |   V     |
15+55       4.1405      4.91  |         |        Q|         |   V     |
16+ 0       4.1736      4.81  |         |        Q|         |   V     |
16+ 5       4.2057      4.66  |         |       Q |         |   V     |
16+10       4.2354      4.31  |         |      Q  |         |    V    |
16+15       4.2610      3.73  |         |   Q     |         |    V    |
16+20       4.2820      3.04  |         | Q       |         |    V    |
16+25       4.2992      2.50  |         Q         |         |    V    |
16+30       4.3142      2.18  |       Q |         |         |    V    |
16+35       4.3277      1.96  |      Q  |         |         |    V    |
16+40       4.3400      1.78  |      Q  |         |         |     V   |
16+45       4.3512      1.62  |     Q   |         |         |     V   |
16+50       4.3613      1.47  |    Q    |         |         |     V   |
16+55       4.3706      1.35  |    Q    |         |         |     V   |
17+ 0       4.3792      1.25  |    Q    |         |         |     V   |
17+ 5       4.3874      1.19  |   Q     |         |         |     V   |
17+10       4.3953      1.16  |   Q     |         |         |     V   |
17+15       4.4034      1.17  |   Q     |         |         |     V   |
17+20       4.4118      1.22  |   Q     |         |         |     V   |
17+25       4.4204      1.24  |   Q     |         |         |     V   |
17+30       4.4289      1.25  |   Q     |         |         |     V   |
17+35       4.4375      1.24  |   Q     |         |         |     V   |
17+40       4.4459      1.23  |   Q     |         |         |     V   |
17+45       4.4543      1.21  |   Q     |         |         |     V   |
17+50       4.4625      1.20  |   Q     |         |         |      V  |
17+55       4.4706      1.17  |   Q     |         |         |      V  |
18+ 0       4.4783      1.12  |   Q     |         |         |      V  |
18+ 5       4.4857      1.07  |   Q     |         |         |      V  |
18+10       4.4928      1.03  |   Q     |         |         |      V  |
18+15       4.4997      1.01  |   Q     |         |         |      V  |
18+20       4.5066      0.99  |  Q      |         |         |      V  |
18+25       4.5133      0.97  |  Q      |         |         |      V  |
18+30       4.5199      0.96  |  Q      |         |         |      V  |
18+35       4.5264      0.95  |  Q      |         |         |      V  |
18+40       4.5328      0.93  |  Q      |         |         |      V  |
18+45       4.5389      0.89  |  Q      |         |         |      V  |
18+50       4.5446      0.83  |  Q      |         |         |      V  |
18+55       4.5500      0.78  |  Q      |         |         |      V  |
19+ 0       4.5549      0.72  | Q       |         |         |      V  |
19+ 5       4.5596      0.67  | Q       |         |         |      V  |
19+10       4.5640      0.65  | Q       |         |         |      V  |
19+15       4.5685      0.65  | Q       |         |         |      V  |
19+20       4.5732      0.68  | Q       |         |         |      V  |
19+25       4.5782      0.72  | Q       |         |         |      V  |
19+30       4.5835      0.77  |  Q      |         |         |       V |
19+35       4.5890      0.81  |  Q      |         |         |       V |
19+40       4.5947      0.82  |  Q      |         |         |       V |
19+45       4.6002      0.80  |  Q      |         |         |       V |
19+50       4.6055      0.77  |  Q      |         |         |       V |
19+55       4.6105      0.72  | Q       |         |         |       V |
20+ 0       4.6151      0.67  | Q       |         |         |       V |
20+ 5       4.6194      0.63  | Q       |         |         |       V |
20+10       4.6236      0.61  | Q       |         |         |       V |
20+15       4.6279      0.62  | Q       |         |         |       V |
20+20       4.6323      0.65  | Q       |         |         |       V |
20+25       4.6369      0.67  | Q       |         |         |       V |
20+30       4.6416      0.68  | Q       |         |         |       V |
20+35       4.6463      0.69  | Q       |         |         |       V |
20+40       4.6511      0.69  | Q       |         |         |       V |
20+45       4.6558      0.69  | Q       |         |         |       V |
20+50       4.6605      0.69  | Q       |         |         |       V |
20+55       4.6651      0.67  | Q       |         |         |       V |
21+ 0       4.6695      0.63  | Q       |         |         |       V |
21+ 5       4.6736      0.59  | Q       |         |         |       V |
21+10       4.6776      0.58  | Q       |         |         |       V |
21+15       4.6817      0.60  | Q       |         |         |       V |
21+20       4.6860      0.62  | Q       |         |         |       V |
21+25       4.6903      0.63  | Q       |         |         |       V |
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   21+30       4.6945      0.61  | Q       |         |         |       V |
   21+35       4.6984      0.57  | Q       |         |         |       V |
   21+40       4.7023      0.57  | Q       |         |         |        V|
   21+45       4.7063      0.59  | Q       |         |         |        V|
   21+50       4.7106      0.61  | Q       |         |         |        V|
   21+55       4.7148      0.62  | Q       |         |         |        V|
   22+ 0       4.7189      0.60  | Q       |         |         |        V|
   22+ 5       4.7228      0.57  | Q       |         |         |        V|
   22+10       4.7267      0.56  | Q       |         |         |        V|
   22+15       4.7307      0.58  | Q       |         |         |        V|
   22+20       4.7348      0.61  | Q       |         |         |        V|
   22+25       4.7391      0.61  | Q       |         |         |        V|
   22+30       4.7432      0.59  | Q       |         |         |        V|
   22+35       4.7470      0.56  | Q       |         |         |        V|
   22+40       4.7507      0.53  | Q       |         |         |        V|
   22+45       4.7542      0.51  | Q       |         |         |        V|
   22+50       4.7577      0.51  | Q       |         |         |        V|
   22+55       4.7611      0.50  |Q        |         |         |        V|
   23+ 0       4.7645      0.49  |Q        |         |         |        V|
   23+ 5       4.7679      0.49  |Q        |         |         |        V|
   23+10       4.7713      0.49  |Q        |         |         |        V|
   23+15       4.7746      0.48  |Q        |         |         |        V|
   23+20       4.7779      0.48  |Q        |         |         |        V|
   23+25       4.7812      0.48  |Q        |         |         |        V|
   23+30       4.7845      0.48  |Q        |         |         |        V|
   23+35       4.7878      0.48  |Q        |         |         |        V|
   23+40       4.7911      0.48  |Q        |         |         |        V|
   23+45       4.7943      0.47  |Q        |         |         |        V|
   23+50       4.7976      0.47  |Q        |         |         |        V|
   23+55       4.8008      0.47  |Q        |         |         |        V|
   24+ 0       4.8041      0.47  |Q        |         |         |        V|
   24+ 5       4.8072      0.46  |Q        |         |         |        V|
   24+10       4.8101      0.42  |Q        |         |         |        V|
   24+15       4.8125      0.34  |Q        |         |         |        V|
   24+20       4.8142      0.26  |Q        |         |         |        V|
   24+25       4.8155      0.19  Q         |         |         |        V|
   24+30       4.8166      0.15  Q         |         |         |        V|
   24+35       4.8174      0.12  Q         |         |         |        V|
   24+40       4.8181      0.10  Q         |         |         |        V|
   24+45       4.8187      0.09  Q         |         |         |        V|
   24+50       4.8192      0.07  Q         |         |         |        V|
   24+55       4.8197      0.06  Q         |         |         |        V|
   25+ 0       4.8201      0.06  Q         |         |         |        V|
   25+ 5       4.8204      0.05  Q         |         |         |        V|
   25+10       4.8207      0.04  Q         |         |         |        V|
   25+15       4.8209      0.04  Q         |         |         |        V|
   25+20       4.8211      0.03  Q         |         |         |        V|
   25+25       4.8213      0.03  Q         |         |         |        V|
   25+30       4.8215      0.02  Q         |         |         |        V|
   25+35       4.8216      0.02  Q         |         |         |        V|
   25+40       4.8217      0.02  Q         |         |         |        V|
   25+45       4.8218      0.01  Q         |         |         |        V|
   25+50       4.8219      0.01  Q         |         |         |        V|
   25+55       4.8220      0.01  Q         |         |         |        V|
   26+ 0       4.8221      0.01  Q         |         |         |        V|
   26+ 5       4.8221      0.01  Q         |         |         |        V|
   26+10       4.8221      0.01  Q         |         |         |        V|
   26+15       4.8222      0.00  Q         |         |         |        V|
   26+20       4.8222      0.00  Q         |         |         |        V|
   26+25       4.8222      0.00  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


2 YEAR
24 HR



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


Program License Serial Number 6400

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

                From study/file name: 3384B2242.rte
****************************HYDROGRAPH DATA****************************
                Number of intervals =   317
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        7.398 (CFS)
                Total volume =       4.822 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
-----------------------------------------------------------------
Total number of inflow hydrograph intervals = 317
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
-----------------------------------------------------------------
-----------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
-----------------------------------------------------------------
-----------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
-----------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
-----------------------------------------------------------------
                Hydrograph Detention Basin Routing
-----------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	1.8	3.70	5.55	7.40	Depth (Ft.)
0.083	0.01	0.00	0.000	O	|	|	|	|	0.00
0.167	0.05	0.00	0.000	O	|	|	|	|	0.00
0.250	0.12	0.00	0.001	O	|	|	|	|	0.00
0.333	0.22	0.00	0.002	O	|	|	|	|	0.00
0.417	0.31	0.00	0.004	OI	|	|	|	|	0.01
0.500	0.38	0.00	0.006	OI	|	|	|	|	0.01
0.583	0.45	0.00	0.009	OI	|	|	|	|	0.02
0.667	0.50	0.00	0.012	O I	|	|	|	|	0.02
0.750	0.54	0.00	0.016	O I	|	|	|	|	0.03
0.833	0.57	0.00	0.020	O I	|	|	|	|	0.03
0.917	0.61	0.00	0.024	O I	|	|	|	|	0.04
1.000	0.66	0.00	0.028	O I	|	|	|	|	0.05
1.083	0.71	0.00	0.033	O I	|	|	|	|	0.06
1.167	0.74	0.00	0.038	O I	|	|	|	|	0.06
1.250	0.73	0.00	0.043	O I	|	|	|	|	0.07
1.333	0.71	0.00	0.048	O I	|	|	|	|	0.08
1.417	0.69	0.00	0.053	O I	|	|	|	|	0.09
1.500	0.69	0.00	0.058	O I	|	|	|	|	0.10
1.583	0.69	0.00	0.062	O I	|	|	|	|	0.11
1.667	0.69	0.00	0.067	O I	|	|	|	|	0.11
1.750	0.69	0.00	0.072	O I	|	|	|	|	0.12
1.833	0.70	0.00	0.077	O I	|	|	|	|	0.13
1.917	0.72	0.00	0.082	O I	|	|	|	|	0.14
2.000	0.76	0.00	0.087	O I	|	|	|	|	0.15
2.083	0.80	0.00	0.092	O I	|	|	|	|	0.16
2.167	0.84	0.00	0.098	O I	|	|	|	|	0.16
2.250	0.86	0.00	0.103	O I	|	|	|	|	0.17
2.333	0.87	0.00	0.109	O I	|	|	|	|	0.18
2.417	0.88	0.00	0.115	O I	|	|	|	|	0.19
2.500	0.89	0.00	0.122	O I	|	|	|	|	0.21
2.583	0.90	0.00	0.128	O I	|	|	|	|	0.22
2.667	0.93	0.00	0.134	O I	|	|	|	|	0.23
2.750	0.97	0.00	0.141	O I	|	|	|	|	0.24
2.833	1.02	0.00	0.147	O I	|	|	|	|	0.25
2.917	1.06	0.00	0.155	O I	|	|	|	|	0.26
3.000	1.08	0.00	0.162	O I	|	|	|	|	0.27
3.083	1.09	0.00	0.169	O I	|	|	|	|	0.28
3.167	1.10	0.00	0.177	O I	|	|	|	|	0.30
3.250	1.11	0.00	0.185	O I	|	|	|	|	0.31
3.333	1.12	0.00	0.192	O I	|	|	|	|	0.32
3.417	1.13	0.00	0.200	O I	|	|	|	|	0.33
3.500	1.13	0.00	0.208	O I	|	|	|	|	0.34
3.583	1.14	0.00	0.216	O I	|	|	|	|	0.36
3.667	1.14	0.00	0.223	O I	|	|	|	|	0.37
3.750	1.14	0.00	0.231	O I	|	|	|	|	0.38
3.833	1.15	0.00	0.239	O I	|	|	|	|	0.39
3.917	1.18	0.00	0.247	O I	|	|	|	|	0.40
4.000	1.22	0.00	0.255	O I	|	|	|	|	0.42
4.083	1.26	0.00	0.264	O I	|	|	|	|	0.43
4.167	1.30	0.00	0.273	O I	|	|	|	|	0.44
4.250	1.32	0.00	0.282	O I	|	|	|	|	0.46
4.333	1.34	0.00	0.291	O I	|	|	|	|	0.47
4.417	1.37	0.00	0.300	O I	|	|	|	|	0.49
4.500	1.41	0.00	0.310	O I	|	|	|	|	0.50
4.583	1.47	0.00	0.320	O I	|	|	|	|	0.52
4.667	1.51	0.00	0.330	O I	|	|	|	|	0.53
4.750	1.53	0.00	0.340	O I	|	|	|	|	0.55
4.833	1.55	0.00	0.351	O I	|	|	|	|	0.56
4.917	1.59	0.00	0.362	O I	|	|	|	|	0.58
5.000	1.63	0.00	0.373	O I	|	|	|	|	0.60
5.083	1.68	0.00	0.384	O I	|	|	|	|	0.62
5.167	1.68	0.00	0.396	O I	|	|	|	|	0.63
5.250	1.63	0.00	0.407	O I	|	|	|	|	0.65
5.333	1.57	0.00	0.418	O I	|	|	|	|	0.67
5.417	1.53	0.00	0.429	O I	|	|	|	|	0.68
5.500	1.54	0.00	0.439	O I	|	|	|	|	0.70
5.583	1.57	0.00	0.450	O I	|	|	|	|	0.72
5.667	1.62	0.00	0.461	O I	|	|	|	|	0.73
5.750	1.67	0.00	0.472	O I	|	|	|	|	0.75
5.833	1.72	0.00	0.484	O I	|	|	|	|	0.77
5.917	1.76	0.00	0.496	O I	|	|	|	|	0.79
6.000	1.78	0.00	0.508	O I	|	|	|	|	0.81
6.083	1.80	0.00	0.521	O I	|	|	|	|	0.82
6.167	1.83	0.00	0.533	O I	|	|	|	|	0.84

```
 6.250    1.88    0.00      0.546  O       I       |       |       |     0.86
 6.333    1.93    0.00      0.559  O       I       |       |       |     0.88
 6.417    1.97    0.00      0.572  O       I       |       |       |     0.90
 6.500    2.00    0.00      0.586  O       I       |       |       |     0.93
 6.583    2.02    0.00      0.600  O       I       |       |       |     0.95
 6.667    2.05    0.00      0.614  O       I       |       |       |     0.97
 6.750    2.10    0.00      0.628  O       |I      |       |       |     0.99
 6.833    2.15    0.00      0.643  O       |I      |       |       |     1.01
 6.917    2.19    0.00      0.658  O       |I      |       |       |     1.04
 7.000    2.22    0.00      0.673  O       |I      |       |       |     1.06
 7.083    2.24    0.00      0.688  O       |I      |       |       |     1.08
 7.167    2.25    0.00      0.704  O       |I      |       |       |     1.11
 7.250    2.27    0.00      0.719  O       |I      |       |       |     1.13
 7.333    2.28    0.00      0.735  O       |I      |       |       |     1.15
 7.417    2.31    0.00      0.751  O       |I      |       |       |     1.18
 7.500    2.35    0.00      0.767  O       | I     |       |       |     1.20
 7.583    2.41    0.00      0.783  O       | I     |       |       |     1.23
 7.667    2.47    0.00      0.800  O       | I     |       |       |     1.25
 7.750    2.53    0.00      0.817  O       | I     |       |       |     1.28
 7.833    2.60    0.00      0.835  O       |  I    |       |       |     1.30
 7.917    2.66    0.00      0.853  O       |  I    |       |       |     1.33
 8.000    2.73    0.00      0.871  O       |  I    |       |       |     1.36
 8.083    2.81    0.00      0.890  O       |   I   |       |       |     1.38
 8.167    2.90    0.00      0.910  O       |   I   |       |       |     1.41
 8.250    3.01    0.00      0.930  O       |   I   |       |       |     1.44
 8.333    3.12    0.00      0.952  O       |    I  |       |       |     1.47
 8.417    3.20    0.00      0.973  O       |    I  |       |       |     1.50
 8.500    3.26    0.00      0.996  O       |     I |       |       |     1.53
 8.583    3.31    0.00      1.018  O       |     I |       |       |     1.56
 8.667    3.36    0.00      1.041  O       |     I |       |       |     1.59
 8.750    3.42    0.00      1.064  O       |     I |       |       |     1.63
 8.833    3.49    0.00      1.088  O       |      I|       |       |     1.66
 8.917    3.56    0.00      1.112  O       |      I|       |       |     1.69
 9.000    3.63    0.00      1.137  O       |      I|       |       |     1.73
 9.083    3.71    0.00      1.162  O       |       I       |       |     1.76
 9.167    3.81    0.00      1.188  O       |       I       |       |     1.80
 9.250    3.92    0.00      1.215  O       |       I       |       |     1.84
 9.333    4.04    0.00      1.242  O       |       |I      |       |     1.88
 9.417    4.15    0.00      1.270  O       |       |I      |       |     1.92
 9.500    4.24    0.00      1.299  O       |       | I     |       |     1.96
 9.583    4.33    0.00      1.329  O       |       | I     |       |     2.00
 9.667    4.42    0.00      1.359  O       |       |  I    |       |     2.04
 9.750    4.50    0.00      1.390  O       |       |  I    |       |     2.08
 9.833    4.59    0.01      1.421  O       |       |  I    |       |     2.12
 9.917    4.67    0.01      1.453  O       |       |   I   |       |     2.17
10.000    4.75    0.01      1.485  O       |       |   I   |       |     2.21
10.083    4.79    0.01      1.518  O       |       |   I   |       |     2.25
10.167    4.70    0.01      1.551  O       |       |   I   |       |     2.30
10.250    4.49    0.01      1.582  O       |       |  I    |       |     2.34
10.333    4.22    0.01      1.612  O       |       | I     |       |     2.38
10.417    4.01    0.01      1.640  O       |       |I      |       |     2.42
10.500    3.89    0.01      1.668  O       |       I       |       |     2.45
10.583    3.85    0.26      1.693  |O      |       I       |       |     2.49
10.667    3.90    0.69      1.717  |  O    |       I       |       |     2.52
10.750    4.04    1.09      1.738  |   O   |       |I      |       |     2.54
10.833    4.23    1.46      1.758  |     O |       | I     |       |     2.57
10.917    4.37    1.80      1.776  |      O|       | I     |       |     2.59
11.000    4.45    2.12      1.793  |       |O      |  I    |       |     2.61
11.083    4.49    2.40      1.808  |       | O     |  I    |       |     2.63
11.167    4.50    2.65      1.822  |       |  O    |  I    |       |     2.65
11.250    4.49    2.88      1.833  |       |   O   |  I    |       |     2.66
11.333    4.46    3.09      1.844  |       |    O  |  I    |       |     2.67
11.417    4.45    3.29      1.852  |       |     O |  I    |       |     2.69
11.500    4.44    3.47      1.860  |       |     O |  I    |       |     2.69
11.583    4.42    3.61      1.866  |       |      O|  I    |       |     2.70
11.667    4.38    3.73      1.871  |       |       O I     |       |     2.71
11.750    4.31    3.82      1.875  |       |       O I     |       |     2.71
11.833    4.22    3.89      1.878  |       |       O I     |       |     2.72
11.917    4.17    3.94      1.879  |       |       |OI     |       |     2.72
12.000    4.17    3.97      1.881  |       |       |OI     |       |     2.72
12.083    4.23    4.01      1.882  |       |       |OI     |       |     2.72
12.167    4.39    4.05      1.884  |       |       |OI     |       |     2.73
12.250    4.65    4.12      1.887  |       |       |O  I   |       |     2.73
12.333    4.96    4.23      1.892  |       |       | O  I  |       |     2.73
12.417    5.22    4.36      1.897  |       |       | O   I |       |     2.74
12.500    5.39    4.50      1.903  |       |       |  O   I|       |     2.75
12.583    5.54    4.65      1.909  |       |       |   O  I|       |     2.76
12.667    5.67    4.79      1.915  |       |       |   O   I       |     2.76
12.750    5.82    4.94      1.921  |       |       |    O  |I      |     2.77
```

12.833	5.97	5.08	1.928	|	|	|	O |	I |	2.78
12.917	6.11	5.23	1.934	|	|	|	O |	I |	2.79
13.000	6.22	5.37	1.940	|	|	|	O |	I |	2.79
13.083	6.35	5.51	1.946	|	|	|	O |	I |	2.80
13.167	6.53	5.65	1.951	|	|	|	O	I |	2.81
13.250	6.77	5.80	1.958	|	|	|	O	I |	2.82
13.333	7.03	5.97	1.965	|	|	|	O	I |	2.83
13.417	7.24	6.14	1.972	|	|	|	O	I |	2.84
13.500	7.37	6.32	1.980	|	|	|	O	I |	2.84
13.583	7.40	6.48	1.987	|	|	|	O	I	2.85
13.667	7.24	6.61	1.992	|	|	|	O	I |	2.86
13.750	6.91	6.68	1.995	|	|	|	OI	|	2.86
13.833	6.47	6.68	1.995	|	|	|	IO	|	2.86
13.917	6.14	6.62	1.993	|	|	|	I O	|	2.86
14.000	5.95	6.54	1.989	|	|	|	I O	|	2.86
14.083	5.87	6.44	1.985	|	|	|	I O	|	2.85
14.167	5.87	6.35	1.981	|	|	|	I O	|	2.85
14.250	5.96	6.29	1.978	|	|	|	I O	|	2.84
14.333	6.08	6.25	1.977	|	|	|	IO	|	2.84
14.417	6.16	6.23	1.976	|	|	|	O	|	2.84
14.500	6.18	6.22	1.976	|	|	|	O	|	2.84
14.583	6.16	6.21	1.975	|	|	|	O	|	2.84
14.667	6.13	6.20	1.975	|	|	|	O	|	2.84
14.750	6.12	6.19	1.974	|	|	|	O	|	2.84
14.833	6.11	6.18	1.974	|	|	|	O	|	2.84
14.917	6.09	6.17	1.973	|	|	|	O	|	2.84
15.000	6.05	6.15	1.973	|	|	|	O	|	2.84
15.083	5.99	6.13	1.972	|	|	|	IO	|	2.83
15.167	5.93	6.11	1.971	|	|	|	IO	|	2.83
15.250	5.87	6.07	1.969	|	|	|	IO	|	2.83
15.333	5.80	6.04	1.968	|	|	|	IO	|	2.83
15.417	5.74	6.00	1.966	|	|	|	IO	|	2.83
15.500	5.67	5.95	1.964	|	|	|	IO	|	2.83
15.583	5.58	5.90	1.962	|	|	|	IO	|	2.82
15.667	5.45	5.85	1.960	|	|	|	I |	O |	2.82
15.750	5.27	5.77	1.957	|	|	|	I O	|	2.82
15.833	5.07	5.68	1.953	|	|	|	I O	|	2.81
15.917	4.91	5.58	1.948	|	|	|	I O	|	2.81
16.000	4.81	5.47	1.944	|	|	|	I O |	|	2.80
16.083	4.66	5.36	1.939	|	|	|	I O |	|	2.79
16.167	4.31	5.22	1.934	|	|	| I	O |	|	2.79
16.250	3.73	5.04	1.926	|	|	I	O |	|	2.78
16.333	3.04	4.79	1.915	|	I |	O |	|	|	2.76
16.417	2.50	4.49	1.903	|	I |	O |	|	|	2.75
16.500	2.18	4.16	1.889	|	I |	O |	|	|	2.73
16.583	1.96	3.84	1.876	|	I	O |	|	|	2.71
16.667	1.78	3.55	1.863	|	I |	O |	|	|	2.70
16.750	1.62	3.27	1.851	|	I |	O |	|	|	2.68
16.833	1.47	3.01	1.840	|	I |	O |	|	|	2.67
16.917	1.35	2.81	1.830	|	I |	O |	|	|	2.66
17.000	1.25	2.63	1.820	|	I |	O |	|	|	2.65
17.083	1.19	2.46	1.811	|	I |	O |	|	|	2.63
17.167	1.16	2.30	1.803	|	I |	O |	|	|	2.62
17.250	1.17	2.17	1.795	|	I |	O |	|	|	2.61
17.333	1.22	2.05	1.789	|	I	O |	|	|	2.61
17.417	1.24	1.95	1.784	|	I	O |	|	|	2.60
17.500	1.25	1.86	1.779	|	I	O |	|	|	2.59
17.583	1.24	1.79	1.775	|	I	O |	|	|	2.59
17.667	1.23	1.72	1.772	|	I	O |	|	|	2.58
17.750	1.21	1.66	1.768	|	I	O |	|	|	2.58
17.833	1.20	1.61	1.765	|	I	O |	|	|	2.58
17.917	1.17	1.55	1.763	|	I	O |	|	|	2.57
18.000	1.12	1.51	1.760	|	I	O |	|	|	2.57
18.083	1.07	1.46	1.757	|	I	O |	|	|	2.57
18.167	1.03	1.41	1.755	|	I	O |	|	|	2.56
18.250	1.01	1.36	1.752	|	I	O |	|	|	2.56
18.333	0.99	1.32	1.750	|	I	O |	|	|	2.56
18.417	0.97	1.28	1.748	|	I	O |	|	|	2.55
18.500	0.96	1.24	1.746	|	I	O |	|	|	2.55
18.583	0.95	1.20	1.744	|	I	O |	|	|	2.55
18.667	0.93	1.17	1.742	|	I	O |	|	|	2.55
18.750	0.89	1.14	1.740	|	I	O |	|	|	2.55
18.833	0.83	1.11	1.739	|	I	O |	|	|	2.54
18.917	0.78	1.07	1.737	|	I	O |	|	|	2.54
19.000	0.72	1.03	1.735	|	I	O |	|	|	2.54
19.083	0.67	0.99	1.732	|	I	O |	|	|	2.54
19.167	0.65	0.95	1.730	|	I	O |	|	|	2.53
19.250	0.65	0.91	1.728	|	I	O |	|	|	2.53
19.333	0.68	0.88	1.727	|	I	O |	|	|	2.53

19.417	0.72	0.86	1.726	O				2.53
19.500	0.77	0.85	1.725	O				2.53
19.583	0.81	0.84	1.724	O				2.53
19.667	0.82	0.84	1.724	O				2.53
19.750	0.80	0.83	1.724	O				2.53
19.833	0.77	0.83	1.724	O				2.52
19.917	0.72	0.82	1.723	O				2.52
20.000	0.67	0.80	1.722	IO				2.52
20.083	0.63	0.79	1.721	IO				2.52
20.167	0.61	0.76	1.720	IO				2.52
20.250	0.62	0.75	1.719	IO				2.52
20.333	0.65	0.73	1.719	IO				2.52
20.417	0.67	0.72	1.718	IO				2.52
20.500	0.68	0.72	1.718	IO				2.52
20.583	0.69	0.71	1.718	IO				2.52
20.667	0.69	0.71	1.717	IO				2.52
20.750	0.69	0.71	1.717	IO				2.52
20.833	0.69	0.71	1.717	IO				2.52
20.917	0.67	0.70	1.717	IO				2.52
21.000	0.63	0.70	1.717	IO				2.52
21.083	0.59	0.69	1.716	O				2.52
21.167	0.58	0.67	1.715	O				2.51
21.250	0.60	0.66	1.715	O				2.51
21.333	0.62	0.66	1.715	O				2.51
21.417	0.63	0.65	1.714	O				2.51
21.500	0.61	0.65	1.714	O				2.51
21.583	0.57	0.64	1.714	O				2.51
21.667	0.57	0.63	1.713	O				2.51
21.750	0.59	0.63	1.713	O				2.51
21.833	0.61	0.62	1.713	O				2.51
21.917	0.62	0.62	1.713	O				2.51
22.000	0.60	0.62	1.713	O				2.51
22.083	0.57	0.62	1.712	O				2.51
22.167	0.56	0.61	1.712	O				2.51
22.250	0.58	0.60	1.712	O				2.51
22.333	0.61	0.60	1.712	O				2.51
22.417	0.61	0.60	1.712	O				2.51
22.500	0.59	0.60	1.712	O				2.51
22.583	0.56	0.60	1.712	O				2.51
22.667	0.53	0.59	1.711	O				2.51
22.750	0.51	0.59	1.711	O				2.51
22.833	0.51	0.58	1.710	O				2.51
22.917	0.50	0.57	1.710	O				2.51
23.000	0.49	0.56	1.709	O				2.51
23.083	0.49	0.55	1.709	O				2.51
23.167	0.49	0.54	1.709	O				2.51
23.250	0.48	0.54	1.708	O				2.51
23.333	0.48	0.53	1.708	O				2.50
23.417	0.48	0.52	1.707	O				2.50
23.500	0.48	0.52	1.707	O				2.50
23.583	0.48	0.51	1.707	O				2.50
23.667	0.48	0.51	1.707	O				2.50
23.750	0.47	0.50	1.706	O				2.50
23.833	0.47	0.50	1.706	O				2.50
23.917	0.47	0.50	1.706	O				2.50
24.000	0.47	0.49	1.706	O				2.50
24.083	0.46	0.49	1.706	IO				2.50
24.167	0.42	0.48	1.705	IO				2.50
24.250	0.34	0.47	1.705	IO				2.50
24.333	0.26	0.45	1.704	O				2.50
24.417	0.19	0.42	1.702	IO				2.50
24.500	0.15	0.39	1.700	IO				2.50
24.583	0.12	0.36	1.699	IO				2.49
24.667	0.10	0.33	1.697	IO				2.49
24.750	0.09	0.30	1.696	IO				2.49
24.833	0.07	0.28	1.694	IO				2.49
24.917	0.06	0.25	1.693	IO				2.49
25.000	0.06	0.23	1.692	O				2.48
25.083	0.05	0.21	1.691	O				2.48
25.167	0.04	0.19	1.689	O				2.48
25.250	0.04	0.17	1.689	O				2.48
25.333	0.03	0.15	1.688	O				2.48
25.417	0.03	0.14	1.687	O				2.48
25.500	0.02	0.12	1.686	O				2.48
25.583	0.02	0.11	1.685	O				2.48
25.667	0.02	0.10	1.685	O				2.48
25.750	0.01	0.09	1.684	O				2.48
25.833	0.01	0.08	1.684	O				2.47
25.917	0.01	0.07	1.683	O				2.47

407.833	0.00	0.00	1.414	O	|	|	|	|	2.11
407.917	0.00	0.00	1.414	O	|	|	|	|	2.11
408.000	0.00	0.00	1.414	O	|	|	|	|	2.11
408.083	0.00	0.00	1.414	O	|	|	|	|	2.11
408.167	0.00	0.00	1.414	O	|	|	|	|	2.11
408.250	0.00	0.00	1.414	O	|	|	|	|	2.11
408.333	0.00	0.00	1.414	O	|	|	|	|	2.11
408.417	0.00	0.00	1.414	O	|	|	|	|	2.11
408.500	0.00	0.00	1.413	O	|	|	|	|	2.11
408.583	0.00	0.00	1.413	O	|	|	|	|	2.11
408.667	0.00	0.00	1.413	O	|	|	|	|	2.11
408.750	0.00	0.00	1.413	O	|	|	|	|	2.11
408.833	0.00	0.00	1.413	O	|	|	|	|	2.11
408.917	0.00	0.00	1.413	O	|	|	|	|	2.11
409.000	0.00	0.00	1.413	O	|	|	|	|	2.11
409.083	0.00	0.00	1.413	O	|	|	|	|	2.11
409.167	0.00	0.00	1.413	O	|	|	|	|	2.11
409.250	0.00	0.00	1.413	O	|	|	|	|	2.11
409.333	0.00	0.00	1.413	O	|	|	|	|	2.11
409.417	0.00	0.00	1.413	O	|	|	|	|	2.11
409.500	0.00	0.00	1.413	O	|	|	|	|	2.11
409.583	0.00	0.00	1.413	O	|	|	|	|	2.11
409.667	0.00	0.00	1.413	O	|	|	|	|	2.11
409.750	0.00	0.00	1.413	O	|	|	|	|	2.11
409.833	0.00	0.00	1.413	O	|	|	|	|	2.11
409.917	0.00	0.00	1.413	O	|	|	|	|	2.11
410.000	0.00	0.00	1.413	O	|	|	|	|	2.11
410.083	0.00	0.00	1.413	O	|	|	|	|	2.11
410.167	0.00	0.00	1.413	O	|	|	|	|	2.11
410.250	0.00	0.00	1.413	O	|	|	|	|	2.11
410.333	0.00	0.00	1.413	O	|	|	|	|	2.11
410.417	0.00	0.00	1.413	O	|	|	|	|	2.11
410.500	0.00	0.00	1.413	O	|	|	|	|	2.11
410.583	0.00	0.00	1.413	O	|	|	|	|	2.11
410.667	0.00	0.00	1.413	O	|	|	|	|	2.11
410.750	0.00	0.00	1.413	O	|	|	|	|	2.11
410.833	0.00	0.00	1.413	O	|	|	|	|	2.11
410.917	0.00	0.00	1.413	O	|	|	|	|	2.11
411.000	0.00	0.00	1.413	O	|	|	|	|	2.11
411.083	0.00	0.00	1.412	O	|	|	|	|	2.11
411.167	0.00	0.00	1.412	O	|	|	|	|	2.11
411.250	0.00	0.00	1.412	O	|	|	|	|	2.11
411.333	0.00	0.00	1.412	O	|	|	|	|	2.11
411.417	0.00	0.00	1.412	O	|	|	|	|	2.11
411.500	0.00	0.00	1.412	O	|	|	|	|	2.11
411.583	0.00	0.00	1.412	O	|	|	|	|	2.11
411.667	0.00	0.00	1.412	O	|	|	|	|	2.11
411.750	0.00	0.00	1.412	O	|	|	|	|	2.11
411.833	0.00	0.00	1.412	O	|	|	|	|	2.11
411.917	0.00	0.00	1.412	O	|	|	|	|	2.11
412.000	0.00	0.00	1.412	O	|	|	|	|	2.11
412.083	0.00	0.00	1.412	O	|	|	|	|	2.11
412.167	0.00	0.00	1.412	O	|	|	|	|	2.11
412.250	0.00	0.00	1.412	O	|	|	|	|	2.11
412.333	0.00	0.00	1.412	O	|	|	|	|	2.11
412.417	0.00	0.00	1.412	O	|	|	|	|	2.11
412.500	0.00	0.00	1.412	O	|	|	|	|	2.11
412.583	0.00	0.00	1.412	O	|	|	|	|	2.11
412.667	0.00	0.00	1.412	O	|	|	|	|	2.11
412.750	0.00	0.00	1.412	O	|	|	|	|	2.11
412.833	0.00	0.00	1.412	O	|	|	|	|	2.11
412.917	0.00	0.00	1.412	O	|	|	|	|	2.11
413.000	0.00	0.00	1.412	O	|	|	|	|	2.11
413.083	0.00	0.00	1.412	O	|	|	|	|	2.11
413.167	0.00	0.00	1.412	O	|	|	|	|	2.11
413.250	0.00	0.00	1.412	O	|	|	|	|	2.11
413.333	0.00	0.00	1.412	O	|	|	|	|	2.11
413.417	0.00	0.00	1.412	O	|	|	|	|	2.11
413.500	0.00	0.00	1.412	O	|	|	|	|	2.11
413.583	0.00	0.00	1.412	O	|	|	|	|	2.11
413.667	0.00	0.00	1.411	O	|	|	|	|	2.11
413.750	0.00	0.00	1.411	O	|	|	|	|	2.11
413.833	0.00	0.00	1.411	O	|	|	|	|	2.11
413.917	0.00	0.00	1.411	O	|	|	|	|	2.11
414.000	0.00	0.00	1.411	O	|	|	|	|	2.11
414.083	0.00	0.00	1.411	O	|	|	|	|	2.11
414.167	0.00	0.00	1.411	O	|	|	|	|	2.11
414.250	0.00	0.00	1.411	O	|	|	|	|	2.11
414.333	0.00	0.00	1.411	O	|	|	|	|	2.11

```
414.417    0.00    0.00      1.411  O       |       |       |       |     2.11
414.500    0.00    0.00      1.411  O       |       |       |       |     2.11
414.583    0.00    0.00      1.411  O       |       |       |       |     2.11
414.667    0.00    0.00      1.411  O       |       |       |       |     2.11
414.750    0.00    0.00      1.411  O       |       |       |       |     2.11
414.833    0.00    0.00      1.411  O       |       |       |       |     2.11
414.917    0.00    0.00      1.411  O       |       |       |       |     2.11
415.000    0.00    0.00      1.411  O       |       |       |       |     2.11
415.083    0.00    0.00      1.411  O       |       |       |       |     2.11
415.167    0.00    0.00      1.411  O       |       |       |       |     2.11
415.250    0.00    0.00      1.411  O       |       |       |       |     2.11
415.333    0.00    0.00      1.411  O       |       |       |       |     2.11
415.417    0.00    0.00      1.411  O       |       |       |       |     2.11
415.500    0.00    0.00      1.411  O       |       |       |       |     2.11
415.583    0.00    0.00      1.411  O       |       |       |       |     2.11
415.667    0.00    0.00      1.411  O       |       |       |       |     2.11
415.750    0.00    0.00      1.411  O       |       |       |       |     2.11
415.833    0.00    0.00      1.411  O       |       |       |       |     2.11
415.917    0.00    0.00      1.411  O       |       |       |       |     2.11
416.000    0.00    0.00      1.411  O       |       |       |       |     2.11
416.083    0.00    0.00      1.411  O       |       |       |       |     2.11
416.167    0.00    0.00      1.411  O       |       |       |       |     2.11
416.250    0.00    0.00      1.410  O       |       |       |       |     2.11
416.333    0.00    0.00      1.410  O       |       |       |       |     2.11
416.417    0.00    0.00      1.410  O       |       |       |       |     2.11
416.500    0.00    0.00      1.410  O       |       |       |       |     2.11
416.583    0.00    0.00      1.410  O       |       |       |       |     2.11
416.667    0.00    0.00      1.410  O       |       |       |       |     2.11

         Remaining water in basin =    1.41 (Ac.Ft)

         ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =        6.679 (CFS)
                        Total volume =       3.412 (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
         ***********************************************************************

         ----------------------------------------------------------------
```

5-YEAR FREQUENCY

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384B515.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



---------------------------------------------------------------------
5 YEAR
1 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            0.52                  16.72

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            1.15                  36.97

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.520(In)
Area Averaged 100-Year Rainfall =    1.150(In)

Point rain (area averaged) =    0.668(In)
Areal adjustment factor =   99.97 %
Adjusted average point rain =    0.667(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.5500
-------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-------------------------------------------------------------------
                Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-------------------------------------------------------------------


 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.30      0.264       (  0.134)       0.026        0.238
   2   0.17     4.20      0.336       (  0.134)       0.034        0.303
   3   0.25     4.40      0.352       (  0.134)       0.035        0.317
   4   0.33     4.80      0.384       (  0.134)       0.038        0.346
   5   0.42     5.20      0.416       (  0.134)       0.042        0.375
   6   0.50     6.20      0.497       (  0.134)       0.050        0.447
   7   0.58     6.80      0.545       (  0.134)       0.054        0.490
   8   0.67     8.80      0.705       (  0.134)       0.070        0.634
   9   0.75    13.90      1.113       (  0.134)       0.111        1.002
  10   0.83    31.40      2.515          0.134    (  0.251)       2.380
  11   0.92     7.20      0.577       (  0.134)       0.058        0.519
  12   1.00     3.80      0.304       (  0.134)       0.030        0.274
```

```
                (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     7.3
       Flood volume = Effective rainfall      0.61(In)
        times area      32.1(Ac.)/[(In)/(Ft.)] =       1.6(Ac.Ft)
       Total soil loss =      0.06(In)
       Total soil loss =     0.153(Ac.Ft)
       Total rainfall =      0.67(In)
       Flood volume =       71237.3 Cubic Feet
       Total soil loss =        6647.5 Cubic Feet
       ---------------------------------------------------------------------
        Peak flow rate of this hydrograph =     27.067(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))

       ---------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
  ---------------------------------------------------------------------
    0+ 5       0.0013      0.19  Q         |         |         |         |
    0+10       0.0077      0.92  VQ        |         |         |         |
    0+15       0.0235      2.31  V  Q      |         |         |         |
    0+20       0.0521      4.15  |V   Q    |         |         |         |
    0+25       0.0924      5.84  | V    Q  |         |         |         |
    0+30       0.1419      7.19  |  V     Q|         |         |         |
    0+35       0.1999      8.42  |   V     |Q        |         |         |
    0+40       0.2673      9.79  |     V   |  Q      |         |         |
    0+45       0.3480     11.73  |       V |    Q    |         |         |
    0+50       0.4557     15.63  |         |V        Q         |         |
    0+55       0.6036     21.47  |         |   V     |       Q |         |
    1+ 0       0.7853     26.38  |         |        V|         |    Q    |
    1+ 5       0.9717     27.07  |         |         |  V      |     Q   |
    1+10       1.1219     21.81  |         |         |      V Q|         |
    1+15       1.2262     15.14  |         |         Q        V|         |
    1+20       1.2976     10.37  |         |  Q      |         |V        |
    1+25       1.3498      7.57  |         Q         |         |  V      |
    1+30       1.3912      6.01  |        Q |         |         |   V     |
    1+35       1.4255      4.98  |     Q   |         |         |   V     |
    1+40       1.4545      4.22  |    Q    |         |         |    V    |
    1+45       1.4790      3.56  |   Q     |         |         |     V   |
    1+50       1.5003      3.08  |   Q     |         |         |     V   |
    1+55       1.5186      2.67  |  Q      |         |         |      V  |
    2+ 0       1.5345      2.30  |  Q      |         |         |      V  |
    2+ 5       1.5481      1.98  | Q       |         |         |      V  |
    2+10       1.5602      1.75  | Q       |         |         |       V |
    2+15       1.5712      1.60  | Q       |         |         |       V |
    2+20       1.5812      1.45  |Q        |         |         |       V |
    2+25       1.5898      1.26  |Q        |         |         |       V |
    2+30       1.5976      1.13  |Q        |         |         |        V|
    2+35       1.6044      0.98  |Q        |         |         |        V|
    2+40       1.6103      0.86  |Q        |         |         |        V|
    2+45       1.6153      0.73  Q         |         |         |        V|
    2+50       1.6197      0.63  Q         |         |         |        V|
    2+55       1.6234      0.53  Q         |         |         |        V|
    3+ 0       1.6267      0.48  Q         |         |         |        V|
    3+ 5       1.6297      0.43  Q         |         |         |        V|
    3+10       1.6323      0.39  Q         |         |         |        V|
    3+15       1.6346      0.33  Q         |         |         |        V|
    3+20       1.6352      0.08  Q         |         |         |        V|
    3+25       1.6354      0.03  Q         |         |         |         V
---------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


5 YEAR
1 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B515.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =    41
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       27.067 (CFS)
                Total volume =       1.635 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------
Total number of inflow hydrograph intervals = 41
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
------------------------------------------------------------------
------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
------------------------------------------------------------------
------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
------------------------------------------------------------------
                Hydrograph Detention Basin Routing
------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 6.8 13.53 20.30 27.07	Depth (Ft.)
0.083	0.19	0.00	0.001	O	0.00
0.167	0.92	0.00	0.004	OI	0.01
0.250	2.31	0.00	0.016	O I	0.03
0.333	4.15	0.00	0.038	O I	0.06
0.417	5.84	0.00	0.072	O I	0.12
0.500	7.19	0.00	0.117	O I	0.20
0.583	8.42	0.00	0.171	O I	0.29
0.667	9.79	0.00	0.234	O I	0.38
0.750	11.73	0.00	0.308	O I	0.50
0.833	15.63	0.00	0.402	O I	0.64
0.917	21.47	0.00	0.530	O I	0.84
1.000	26.38	0.00	0.694	O I	1.09
1.083	27.07	0.00	0.878	O I	1.37
1.167	21.81	0.00	1.047	O I	1.60
1.250	15.14	0.00	1.174	O I	1.78
1.333	10.37	0.00	1.262	O I	1.90
1.417	7.57	0.00	1.324	O I	1.99
1.500	6.01	0.00	1.370	O I	2.05
1.583	4.98	0.00	1.408	O I	2.11
1.667	4.22	0.01	1.440	O I	2.15
1.750	3.56	0.01	1.467	O I	2.18
1.833	3.08	0.01	1.489	O I	2.22
1.917	2.67	0.01	1.509	O I	2.24
2.000	2.30	0.01	1.526	O I	2.26
2.083	1.98	0.01	1.541	O I	2.28
2.167	1.75	0.01	1.554	O I	2.30
2.250	1.60	0.01	1.565	OI	2.32
2.333	1.45	0.01	1.576	OI	2.33
2.417	1.26	0.01	1.585	OI	2.34
2.500	1.13	0.01	1.593	OI	2.35
2.583	0.98	0.01	1.600	OI	2.36
2.667	0.86	0.01	1.606	OI	2.37
2.750	0.73	0.01	1.612	O	2.38
2.833	0.63	0.01	1.616	O	2.39
2.917	0.53	0.01	1.620	O	2.39
3.000	0.48	0.01	1.624	O	2.40
3.083	0.43	0.01	1.627	O	2.40
3.167	0.39	0.01	1.630	O	2.40
3.250	0.33	0.01	1.632	O	2.41
3.333	0.08	0.01	1.633	O	2.41
3.417	0.03	0.01	1.634	O	2.41
3.500	0.00	0.01	1.634	O	2.41
3.583	0.00	0.01	1.634	O	2.41
3.667	0.00	0.01	1.634	O	2.41
3.750	0.00	0.01	1.634	O	2.41
3.833	0.00	0.01	1.633	O	2.41
3.917	0.00	0.01	1.633	O	2.41
4.000	0.00	0.01	1.633	O	2.41
4.083	0.00	0.01	1.633	O	2.41
4.167	0.00	0.01	1.633	O	2.41
4.250	0.00	0.01	1.633	O	2.41
4.333	0.00	0.01	1.633	O	2.41
4.417	0.00	0.01	1.633	O	2.41
4.500	0.00	0.01	1.633	O	2.41
4.583	0.00	0.01	1.633	O	2.41
4.667	0.00	0.01	1.633	O	2.41
4.750	0.00	0.01	1.633	O	2.41
4.833	0.00	0.01	1.633	O	2.41
4.917	0.00	0.01	1.633	O	2.41
5.000	0.00	0.01	1.633	O	2.41
5.083	0.00	0.01	1.632	O	2.41
5.167	0.00	0.01	1.632	O	2.41
5.250	0.00	0.01	1.632	O	2.41
5.333	0.00	0.01	1.632	O	2.41
5.417	0.00	0.01	1.632	O	2.41
5.500	0.00	0.01	1.632	O	2.41
5.583	0.00	0.01	1.632	O	2.41
5.667	0.00	0.01	1.632	O	2.41
5.750	0.00	0.01	1.632	O	2.41
5.833	0.00	0.01	1.632	O	2.41
5.917	0.00	0.01	1.632	O	2.41
6.000	0.00	0.01	1.632	O	2.41
6.083	0.00	0.01	1.632	O	2.41
6.167	0.00	0.01	1.632	O	2.41
6.250	0.00	0.01	1.631	O	2.41

6.333	0.00	0.01	1.631	O					2.41
6.417	0.00	0.01	1.631	O					2.41
6.500	0.00	0.01	1.631	O					2.41
6.583	0.00	0.01	1.631	O					2.40
6.667	0.00	0.01	1.631	O					2.40
6.750	0.00	0.01	1.631	O					2.40
6.833	0.00	0.01	1.631	O					2.40
6.917	0.00	0.01	1.631	O					2.40
7.000	0.00	0.01	1.631	O					2.40
7.083	0.00	0.01	1.631	O					2.40
7.167	0.00	0.01	1.631	O					2.40
7.250	0.00	0.01	1.631	O					2.40
7.333	0.00	0.01	1.631	O					2.40
7.417	0.00	0.01	1.631	O					2.40
7.500	0.00	0.01	1.630	O					2.40
7.583	0.00	0.01	1.630	O					2.40
7.667	0.00	0.01	1.630	O					2.40
7.750	0.00	0.01	1.630	O					2.40
7.833	0.00	0.01	1.630	O					2.40
7.917	0.00	0.01	1.630	O					2.40
8.000	0.00	0.01	1.630	O					2.40
8.083	0.00	0.01	1.630	O					2.40
8.167	0.00	0.01	1.630	O					2.40
8.250	0.00	0.01	1.630	O					2.40
8.333	0.00	0.01	1.630	O					2.40
8.417	0.00	0.01	1.630	O					2.40
8.500	0.00	0.01	1.630	O					2.40
8.583	0.00	0.01	1.630	O					2.40
8.667	0.00	0.01	1.629	O					2.40
8.750	0.00	0.01	1.629	O					2.40
8.833	0.00	0.01	1.629	O					2.40
8.917	0.00	0.01	1.629	O					2.40
9.000	0.00	0.01	1.629	O					2.40
9.083	0.00	0.01	1.629	O					2.40
9.167	0.00	0.01	1.629	O					2.40
9.250	0.00	0.01	1.629	O					2.40
9.333	0.00	0.01	1.629	O					2.40
9.417	0.00	0.01	1.629	O					2.40
9.500	0.00	0.01	1.629	O					2.40
9.583	0.00	0.01	1.629	O					2.40
9.667	0.00	0.01	1.629	O					2.40
9.750	0.00	0.01	1.629	O					2.40
9.833	0.00	0.01	1.629	O					2.40
9.917	0.00	0.01	1.628	O					2.40
10.000	0.00	0.01	1.628	O					2.40
10.083	0.00	0.01	1.628	O					2.40
10.167	0.00	0.01	1.628	O					2.40
10.250	0.00	0.01	1.628	O					2.40
10.333	0.00	0.01	1.628	O					2.40
10.417	0.00	0.01	1.628	O					2.40
10.500	0.00	0.01	1.628	O					2.40
10.583	0.00	0.01	1.628	O					2.40
10.667	0.00	0.01	1.628	O					2.40
10.750	0.00	0.01	1.628	O					2.40
10.833	0.00	0.01	1.628	O					2.40
10.917	0.00	0.01	1.628	O					2.40
11.000	0.00	0.01	1.628	O					2.40
11.083	0.00	0.01	1.627	O					2.40
11.167	0.00	0.01	1.627	O					2.40
11.250	0.00	0.01	1.627	O					2.40
11.333	0.00	0.01	1.627	O					2.40
11.417	0.00	0.01	1.627	O					2.40
11.500	0.00	0.01	1.627	O					2.40
11.583	0.00	0.01	1.627	O					2.40
11.667	0.00	0.01	1.627	O					2.40
11.750	0.00	0.01	1.627	O					2.40
11.833	0.00	0.01	1.627	O					2.40
11.917	0.00	0.01	1.627	O					2.40
12.000	0.00	0.01	1.627	O					2.40
12.083	0.00	0.01	1.627	O					2.40
12.167	0.00	0.01	1.627	O					2.40
12.250	0.00	0.01	1.627	O					2.40
12.333	0.00	0.01	1.626	O					2.40
12.417	0.00	0.01	1.626	O					2.40
12.500	0.00	0.01	1.626	O					2.40
12.583	0.00	0.01	1.626	O					2.40
12.667	0.00	0.01	1.626	O					2.40
12.750	0.00	0.01	1.626	O					2.40
12.833	0.00	0.01	1.626	O					2.40

```
414.500    0.00    0.00      1.385  O       |       |       |       |     2.07
414.583    0.00    0.00      1.385  O       |       |       |       |     2.07
414.667    0.00    0.00      1.385  O       |       |       |       |     2.07
414.750    0.00    0.00      1.385  O       |       |       |       |     2.07
414.833    0.00    0.00      1.385  O       |       |       |       |     2.07
414.917    0.00    0.00      1.385  O       |       |       |       |     2.07
415.000    0.00    0.00      1.385  O       |       |       |       |     2.07
415.083    0.00    0.00      1.384  O       |       |       |       |     2.07
415.167    0.00    0.00      1.384  O       |       |       |       |     2.07
415.250    0.00    0.00      1.384  O       |       |       |       |     2.07
415.333    0.00    0.00      1.384  O       |       |       |       |     2.07
415.417    0.00    0.00      1.384  O       |       |       |       |     2.07
415.500    0.00    0.00      1.384  O       |       |       |       |     2.07
415.583    0.00    0.00      1.384  O       |       |       |       |     2.07
415.667    0.00    0.00      1.384  O       |       |       |       |     2.07
415.750    0.00    0.00      1.384  O       |       |       |       |     2.07
415.833    0.00    0.00      1.384  O       |       |       |       |     2.07
415.917    0.00    0.00      1.384  O       |       |       |       |     2.07
416.000    0.00    0.00      1.384  O       |       |       |       |     2.07
416.083    0.00    0.00      1.384  O       |       |       |       |     2.07
416.167    0.00    0.00      1.384  O       |       |       |       |     2.07
416.250    0.00    0.00      1.384  O       |       |       |       |     2.07
416.333    0.00    0.00      1.384  O       |       |       |       |     2.07
416.417    0.00    0.00      1.384  O       |       |       |       |     2.07
416.500    0.00    0.00      1.384  O       |       |       |       |     2.07
416.583    0.00    0.00      1.384  O       |       |       |       |     2.07
416.667    0.00    0.00      1.384  O       |       |       |       |     2.07

        Remaining water in basin =    1.38 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =        0.010 (CFS)
                        Total volume =       0.251 (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
        ***********************************************************************

        ----------------------------------------------------------------------
```

5YR 3-HR

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384B535.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



--------------------------------------------------------------------
5 YEAR
3 HR


-------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            0.95                  30.54

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            1.90                  61.08

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    1.900(In)

Point rain (area averaged) =    1.173(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.172(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-----------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
----------------------------------------------------------------
               Unit Hydrograph Data
-----------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-----------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     1.30      0.183       (  0.134)       0.018        0.165
   2   0.17     1.30      0.183       (  0.134)       0.018        0.165
   3   0.25     1.10      0.155       (  0.134)       0.015        0.139
   4   0.33     1.50      0.211       (  0.134)       0.021        0.190
   5   0.42     1.50      0.211       (  0.134)       0.021        0.190
   6   0.50     1.80      0.253       (  0.134)       0.025        0.228
   7   0.58     1.50      0.211       (  0.134)       0.021        0.190
   8   0.67     1.80      0.253       (  0.134)       0.025        0.228
   9   0.75     1.80      0.253       (  0.134)       0.025        0.228
  10   0.83     1.50      0.211       (  0.134)       0.021        0.190
  11   0.92     1.60      0.225       (  0.134)       0.023        0.203
  12   1.00     1.80      0.253       (  0.134)       0.025        0.228
  13   1.08     2.20      0.309       (  0.134)       0.031        0.279
  14   1.17     2.20      0.309       (  0.134)       0.031        0.279
```

```
15   1.25     2.20      0.309       (  0.134)       0.031        0.279
16   1.33     2.00      0.281       (  0.134)       0.028        0.253
17   1.42     2.60      0.366       (  0.134)       0.037        0.329
18   1.50     2.70      0.380       (  0.134)       0.038        0.342
19   1.58     2.40      0.338       (  0.134)       0.034        0.304
20   1.67     2.70      0.380       (  0.134)       0.038        0.342
21   1.75     3.30      0.464       (  0.134)       0.046        0.418
22   1.83     3.10      0.436       (  0.134)       0.044        0.393
23   1.92     2.90      0.408       (  0.134)       0.041        0.367
24   2.00     3.00      0.422       (  0.134)       0.042        0.380
25   2.08     3.10      0.436       (  0.134)       0.044        0.393
26   2.17     4.20      0.591       (  0.134)       0.059        0.532
27   2.25     5.00      0.703       (  0.134)       0.070        0.633
28   2.33     3.50      0.492       (  0.134)       0.049        0.443
29   2.42     6.80      0.957       (  0.134)       0.096        0.861
30   2.50     7.30      1.027       (  0.134)       0.103        0.924
31   2.58     8.20      1.154       (  0.134)       0.115        1.038
32   2.67     5.90      0.830       (  0.134)       0.083        0.747
33   2.75     2.00      0.281       (  0.134)       0.028        0.253
34   2.83     1.80      0.253       (  0.134)       0.025        0.228
35   2.92     1.80      0.253       (  0.134)       0.025        0.228
36   3.00     0.60      0.084       (  0.134)       0.008        0.076
               (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    12.7
      Flood volume = Effective rainfall      1.06(In)
       times area      32.1(Ac.)/[(In)/(Ft.)] =       2.8(Ac.Ft)
      Total soil loss =      0.12(In)
      Total soil loss =     0.314(Ac.Ft)
      Total rainfall =      1.17(In)
      Flood volume =      123136.5 Cubic Feet
      Total soil loss =       13681.8 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     22.650(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))

      --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0009      0.13  Q         |         |         |         |
  0+10       0.0050      0.60  Q         |         |         |         |
  0+15       0.0147      1.40  VQ        |         |         |         |
  0+20       0.0311      2.38  V  Q      |         |         |         |
  0+25       0.0529      3.17  V   Q     |         |         |         |
  0+30       0.0789      3.76  |V   Q    |         |         |         |
  0+35       0.1086      4.32  |V   Q    |         |         |         |
  0+40       0.1418      4.81  | V   Q   |         |         |         |
  0+45       0.1778      5.23  | V   Q   |         |         |         |
  0+50       0.2159      5.53  |  V   Q  |         |         |         |
  0+55       0.2555      5.75  |  V   Q  |         |         |         |
  1+ 0       0.2961      5.89  |   V  Q  |         |         |         |
  1+ 5       0.3376      6.03  |   V   Q |         |         |         |
  1+10       0.3814      6.36  |    V  Q |         |         |         |
  1+15       0.4285      6.84  |     V  Q|         |         |         |
  1+20       0.4789      7.32  |     V  Q|         |         |         |
  1+25       0.5317      7.68  |      V  Q         |         |         |
  1+30       0.5870      8.02  |       V Q         |         |         |
  1+35       0.6450      8.42  |        V|Q        |         |         |
  1+40       0.7062      8.89  |        V|Q        |         |         |
  1+45       0.7706      9.34  |         V Q       |         |         |
  1+50       0.8382      9.82  |         |V Q      |         |         |
  1+55       0.9097     10.38  |         | VQ      |         |         |
  2+ 0       0.9848     10.90  |         |  VQ     |         |         |
  2+ 5       1.0619     11.19  |         |   QV    |         |         |
  2+10       1.1409     11.48  |         |    QV   |         |         |
```

```
   2+15       1.2245     12.14  |         |     QV  |         |         |
   2+20       1.3153     13.18  |         |      QV |         |         |
   2+25       1.4153     14.52  |         |        QV         |         |
   2+30       1.5270     16.21  |         |         |Q        |         |
   2+35       1.6536     18.39  |         |         |  VQ     |         |
   2+40       1.7986     21.05  |         |         |    V  Q |         |
   2+45       1.9546     22.65  |         |         |      V  Q         |
   2+50       2.1057     21.94  |         |         |        Q|         |
   2+55       2.2372     19.09  |         |         |    Q    |V        |
   3+ 0       2.3436     15.45  |         |         Q         |  V      |
   3+ 5       2.4291     12.41  |         |     Q   |         |   V     |
   3+10       2.4980     10.01  |         |  Q      |         |    V    |
   3+15       2.5524      7.90  |         Q         |         |     V   |
   3+20       2.5948      6.16  |       Q |         |         |     V   |
   3+25       2.6289      4.94  |     Q   |         |         |      V  |
   3+30       2.6572      4.11  |    Q    |         |         |      V  |
   3+35       2.6813      3.49  |   Q     |         |         |      V  |
   3+40       2.7020      3.01  |   Q     |         |         |       V |
   3+45       2.7198      2.59  |  Q      |         |         |       V |
   3+50       2.7352      2.24  | Q       |         |         |       V |
   3+55       2.7487      1.96  | Q       |         |         |       V |
   4+ 0       2.7607      1.73  | Q       |         |         |        V|
   4+ 5       2.7712      1.53  | Q       |         |         |        V|
   4+10       2.7803      1.33  |Q        |         |         |        V|
   4+15       2.7882      1.15  |Q        |         |         |        V|
   4+20       2.7951      1.00  |Q        |         |         |        V|
   4+25       2.8011      0.87  |Q        |         |         |        V|
   4+30       2.8063      0.75  Q         |         |         |        V|
   4+35       2.8108      0.65  Q         |         |         |        V|
   4+40       2.8146      0.55  Q         |         |         |        V|
   4+45       2.8178      0.46  Q         |         |         |        V|
   4+50       2.8206      0.42  Q         |         |         |        V|
   4+55       2.8229      0.33  Q         |         |         |        V|
   5+ 0       2.8246      0.25  Q         |         |         |        V|
   5+ 5       2.8257      0.15  Q         |         |         |        V|
   5+10       2.8262      0.07  Q         |         |         |        V|
   5+15       2.8265      0.05  Q         |         |         |        V|
   5+20       2.8268      0.03  Q         |         |         |        V|
   5+25       2.8268      0.01  Q         |         |         |         V
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


5 YEAR
3 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B535.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =    65
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       22.650 (CFS)
                Total volume =       2.827 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------
Total number of inflow hydrograph intervals = 65
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
------------------------------------------------------------------
------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
------------------------------------------------------------------
------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
------------------------------------------------------------------
                Hydrograph Detention Basin Routing
------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 5.7 11.33 16.99 22.65	Depth (Ft.)
0.083	0.13	0.00	0.000	O	0.00
0.167	0.60	0.00	0.003	O	0.01
0.250	1.40	0.00	0.010	OI	0.02
0.333	2.38	0.00	0.023	O I	0.04
0.417	3.17	0.00	0.042	O I	0.07
0.500	3.76	0.00	0.066	O I	0.11
0.583	4.32	0.00	0.094	O I	0.16
0.667	4.81	0.00	0.125	O I	0.21
0.750	5.23	0.00	0.160	O I	0.27
0.833	5.53	0.00	0.197	O I	0.33
0.917	5.75	0.00	0.236	O I	0.39
1.000	5.89	0.00	0.276	O I	0.45
1.083	6.03	0.00	0.317	O I	0.51
1.167	6.36	0.00	0.359	O I	0.58
1.250	6.84	0.00	0.405	O I	0.65
1.333	7.32	0.00	0.454	O I	0.72
1.417	7.68	0.00	0.505	O I	0.80
1.500	8.02	0.00	0.559	O I	0.88
1.583	8.42	0.00	0.616	O I	0.97
1.667	8.89	0.00	0.676	O I	1.06
1.750	9.34	0.00	0.738	O I	1.16
1.833	9.82	0.00	0.804	O I	1.26
1.917	10.38	0.00	0.874	O I	1.36
2.000	10.90	0.00	0.947	O I	1.46
2.083	11.19	0.00	1.023	O I	1.57
2.167	11.48	0.00	1.101	O I	1.68
2.250	12.14	0.00	1.183	O I	1.79
2.333	13.18	0.00	1.270	O I	1.92
2.417	14.52	0.00	1.365	O I	2.05
2.500	16.21	0.01	1.471	O I	2.19
2.583	18.39	0.01	1.590	O I	2.35
2.667	21.05	0.81	1.723	O I	2.52
2.750	22.65	3.45	1.859	O I	2.69
2.833	21.94	6.30	1.979	O I	2.84
2.917	19.09	8.84	2.068	O I	2.95
3.000	15.45	10.42	2.121	O I	3.02
3.083	12.41	11.08	2.143	O I	3.05
3.167	10.01	11.10	2.143	IO	3.05
3.250	7.90	10.70	2.130	I O	3.03
3.333	6.16	10.01	2.107	I O	3.00
3.417	4.94	9.18	2.079	I O	2.97
3.500	4.11	8.31	2.050	I O	2.93
3.583	3.49	7.46	2.022	I O	2.90
3.667	3.01	6.70	1.996	I O	2.86
3.750	2.59	6.11	1.971	I O	2.83
3.833	2.24	5.55	1.947	I O	2.80
3.917	1.96	5.03	1.925	I O	2.78
4.000	1.73	4.55	1.905	I O	2.75
4.083	1.53	4.11	1.887	I O	2.73
4.167	1.33	3.70	1.870	I O	2.71
4.250	1.15	3.33	1.854	I O	2.69
4.333	1.00	2.99	1.839	I O	2.67
4.417	0.87	2.74	1.826	I O	2.65
4.500	0.75	2.51	1.814	I O	2.64
4.583	0.65	2.29	1.802	I O	2.62
4.667	0.55	2.09	1.791	I O	2.61
4.750	0.46	1.89	1.781	I O	2.60
4.833	0.42	1.72	1.771	I O	2.58
4.917	0.33	1.56	1.763	I O	2.57
5.000	0.25	1.40	1.755	IO	2.56
5.083	0.15	1.26	1.747	IO	2.55
5.167	0.07	1.12	1.739	IO	2.54
5.250	0.05	0.99	1.733	IO	2.54
5.333	0.03	0.88	1.726	IO	2.53
5.417	0.01	0.77	1.721	IO	2.52
5.500	0.00	0.68	1.716	O	2.51
5.583	0.00	0.60	1.711	O	2.51
5.667	0.00	0.53	1.708	O	2.50
5.750	0.00	0.46	1.704	O	2.50
5.833	0.00	0.41	1.701	O	2.50
5.917	0.00	0.36	1.699	O	2.49
6.000	0.00	0.31	1.696	O	2.49
6.083	0.00	0.28	1.694	O	2.49
6.167	0.00	0.24	1.692	O	2.49
6.250	0.00	0.21	1.691	O	2.48

407.917	0.00	0.00	1.406	O	|	|	|	|	2.10
408.000	0.00	0.00	1.406	O	|	|	|	|	2.10
408.083	0.00	0.00	1.406	O	|	|	|	|	2.10
408.167	0.00	0.00	1.406	O	|	|	|	|	2.10
408.250	0.00	0.00	1.406	O	|	|	|	|	2.10
408.333	0.00	0.00	1.406	O	|	|	|	|	2.10
408.417	0.00	0.00	1.406	O	|	|	|	|	2.10
408.500	0.00	0.00	1.406	O	|	|	|	|	2.10
408.583	0.00	0.00	1.406	O	|	|	|	|	2.10
408.667	0.00	0.00	1.406	O	|	|	|	|	2.10
408.750	0.00	0.00	1.406	O	|	|	|	|	2.10
408.833	0.00	0.00	1.406	O	|	|	|	|	2.10
408.917	0.00	0.00	1.406	O	|	|	|	|	2.10
409.000	0.00	0.00	1.406	O	|	|	|	|	2.10
409.083	0.00	0.00	1.406	O	|	|	|	|	2.10
409.167	0.00	0.00	1.406	O	|	|	|	|	2.10
409.250	0.00	0.00	1.406	O	|	|	|	|	2.10
409.333	0.00	0.00	1.406	O	|	|	|	|	2.10
409.417	0.00	0.00	1.406	O	|	|	|	|	2.10
409.500	0.00	0.00	1.406	O	|	|	|	|	2.10
409.583	0.00	0.00	1.406	O	|	|	|	|	2.10
409.667	0.00	0.00	1.406	O	|	|	|	|	2.10
409.750	0.00	0.00	1.406	O	|	|	|	|	2.10
409.833	0.00	0.00	1.406	O	|	|	|	|	2.10
409.917	0.00	0.00	1.406	O	|	|	|	|	2.10
410.000	0.00	0.00	1.406	O	|	|	|	|	2.10
410.083	0.00	0.00	1.406	O	|	|	|	|	2.10
410.167	0.00	0.00	1.406	O	|	|	|	|	2.10
410.250	0.00	0.00	1.406	O	|	|	|	|	2.10
410.333	0.00	0.00	1.406	O	|	|	|	|	2.10
410.417	0.00	0.00	1.406	O	|	|	|	|	2.10
410.500	0.00	0.00	1.406	O	|	|	|	|	2.10
410.583	0.00	0.00	1.406	O	|	|	|	|	2.10
410.667	0.00	0.00	1.405	O	|	|	|	|	2.10
410.750	0.00	0.00	1.405	O	|	|	|	|	2.10
410.833	0.00	0.00	1.405	O	|	|	|	|	2.10
410.917	0.00	0.00	1.405	O	|	|	|	|	2.10
411.000	0.00	0.00	1.405	O	|	|	|	|	2.10
411.083	0.00	0.00	1.405	O	|	|	|	|	2.10
411.167	0.00	0.00	1.405	O	|	|	|	|	2.10
411.250	0.00	0.00	1.405	O	|	|	|	|	2.10
411.333	0.00	0.00	1.405	O	|	|	|	|	2.10
411.417	0.00	0.00	1.405	O	|	|	|	|	2.10
411.500	0.00	0.00	1.405	O	|	|	|	|	2.10
411.583	0.00	0.00	1.405	O	|	|	|	|	2.10
411.667	0.00	0.00	1.405	O	|	|	|	|	2.10
411.750	0.00	0.00	1.405	O	|	|	|	|	2.10
411.833	0.00	0.00	1.405	O	|	|	|	|	2.10
411.917	0.00	0.00	1.405	O	|	|	|	|	2.10
412.000	0.00	0.00	1.405	O	|	|	|	|	2.10
412.083	0.00	0.00	1.405	O	|	|	|	|	2.10
412.167	0.00	0.00	1.405	O	|	|	|	|	2.10
412.250	0.00	0.00	1.405	O	|	|	|	|	2.10
412.333	0.00	0.00	1.405	O	|	|	|	|	2.10
412.417	0.00	0.00	1.405	O	|	|	|	|	2.10
412.500	0.00	0.00	1.405	O	|	|	|	|	2.10
412.583	0.00	0.00	1.405	O	|	|	|	|	2.10
412.667	0.00	0.00	1.405	O	|	|	|	|	2.10
412.750	0.00	0.00	1.405	O	|	|	|	|	2.10
412.833	0.00	0.00	1.405	O	|	|	|	|	2.10
412.917	0.00	0.00	1.405	O	|	|	|	|	2.10
413.000	0.00	0.00	1.405	O	|	|	|	|	2.10
413.083	0.00	0.00	1.405	O	|	|	|	|	2.10
413.167	0.00	0.00	1.405	O	|	|	|	|	2.10
413.250	0.00	0.00	1.405	O	|	|	|	|	2.10
413.333	0.00	0.00	1.405	O	|	|	|	|	2.10
413.417	0.00	0.00	1.404	O	|	|	|	|	2.10
413.500	0.00	0.00	1.404	O	|	|	|	|	2.10
413.583	0.00	0.00	1.404	O	|	|	|	|	2.10
413.667	0.00	0.00	1.404	O	|	|	|	|	2.10
413.750	0.00	0.00	1.404	O	|	|	|	|	2.10
413.833	0.00	0.00	1.404	O	|	|	|	|	2.10
413.917	0.00	0.00	1.404	O	|	|	|	|	2.10
414.000	0.00	0.00	1.404	O	|	|	|	|	2.10
414.083	0.00	0.00	1.404	O	|	|	|	|	2.10
414.167	0.00	0.00	1.404	O	|	|	|	|	2.10
414.250	0.00	0.00	1.404	O	|	|	|	|	2.10
414.333	0.00	0.00	1.404	O	|	|	|	|	2.10
414.417	0.00	0.00	1.404	O	|	|	|	|	2.10

```
414.500    0.00    0.00      1.404  O       |       |       |       |     2.10
414.583    0.00    0.00      1.404  O       |       |       |       |     2.10
414.667    0.00    0.00      1.404  O       |       |       |       |     2.10
414.750    0.00    0.00      1.404  O       |       |       |       |     2.10
414.833    0.00    0.00      1.404  O       |       |       |       |     2.10
414.917    0.00    0.00      1.404  O       |       |       |       |     2.10
415.000    0.00    0.00      1.404  O       |       |       |       |     2.10
415.083    0.00    0.00      1.404  O       |       |       |       |     2.10
415.167    0.00    0.00      1.404  O       |       |       |       |     2.10
415.250    0.00    0.00      1.404  O       |       |       |       |     2.10
415.333    0.00    0.00      1.404  O       |       |       |       |     2.10
415.417    0.00    0.00      1.404  O       |       |       |       |     2.10
415.500    0.00    0.00      1.404  O       |       |       |       |     2.10
415.583    0.00    0.00      1.404  O       |       |       |       |     2.10
415.667    0.00    0.00      1.404  O       |       |       |       |     2.10
415.750    0.00    0.00      1.404  O       |       |       |       |     2.10
415.833    0.00    0.00      1.404  O       |       |       |       |     2.10
415.917    0.00    0.00      1.404  O       |       |       |       |     2.10
416.000    0.00    0.00      1.404  O       |       |       |       |     2.10
416.083    0.00    0.00      1.404  O       |       |       |       |     2.10
416.167    0.00    0.00      1.404  O       |       |       |       |     2.10
416.250    0.00    0.00      1.403  O       |       |       |       |     2.10
416.333    0.00    0.00      1.403  O       |       |       |       |     2.10
416.417    0.00    0.00      1.403  O       |       |       |       |     2.10
416.500    0.00    0.00      1.403  O       |       |       |       |     2.10
416.583    0.00    0.00      1.403  O       |       |       |       |     2.10
416.667    0.00    0.00      1.403  O       |       |       |       |     2.10

        Remaining water in basin =    1.40 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       11.102 (CFS)
                        Total volume =       1.424 (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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        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  08/31/21 File: 3384B565.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



---------------------------------------------------------------------
5 YEAR
6 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            1.30                  41.80

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            2.50                  80.38

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.300(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.581(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.581(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

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56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-----------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
----------------------------------------------------------------
               Unit Hydrograph Data
-----------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-----------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.50      0.095       (  0.134)       0.009        0.085
   2   0.17     0.60      0.114       (  0.134)       0.011        0.102
   3   0.25     0.60      0.114       (  0.134)       0.011        0.102
   4   0.33     0.60      0.114       (  0.134)       0.011        0.102
   5   0.42     0.60      0.114       (  0.134)       0.011        0.102
   6   0.50     0.70      0.133       (  0.134)       0.013        0.120
   7   0.58     0.70      0.133       (  0.134)       0.013        0.120
   8   0.67     0.70      0.133       (  0.134)       0.013        0.120
   9   0.75     0.70      0.133       (  0.134)       0.013        0.120
  10   0.83     0.70      0.133       (  0.134)       0.013        0.120
  11   0.92     0.70      0.133       (  0.134)       0.013        0.120
  12   1.00     0.80      0.152       (  0.134)       0.015        0.137
  13   1.08     0.80      0.152       (  0.134)       0.015        0.137
  14   1.17     0.80      0.152       (  0.134)       0.015        0.137
```

15	1.25	0.80	0.152	(0.134)	0.015	0.137
16	1.33	0.80	0.152	(0.134)	0.015	0.137
17	1.42	0.80	0.152	(0.134)	0.015	0.137
18	1.50	0.80	0.152	(0.134)	0.015	0.137
19	1.58	0.80	0.152	(0.134)	0.015	0.137
20	1.67	0.80	0.152	(0.134)	0.015	0.137
21	1.75	0.80	0.152	(0.134)	0.015	0.137
22	1.83	0.80	0.152	(0.134)	0.015	0.137
23	1.92	0.80	0.152	(0.134)	0.015	0.137
24	2.00	0.90	0.171	(0.134)	0.017	0.154
25	2.08	0.80	0.152	(0.134)	0.015	0.137
26	2.17	0.90	0.171	(0.134)	0.017	0.154
27	2.25	0.90	0.171	(0.134)	0.017	0.154
28	2.33	0.90	0.171	(0.134)	0.017	0.154
29	2.42	0.90	0.171	(0.134)	0.017	0.154
30	2.50	0.90	0.171	(0.134)	0.017	0.154
31	2.58	0.90	0.171	(0.134)	0.017	0.154
32	2.67	0.90	0.171	(0.134)	0.017	0.154
33	2.75	1.00	0.190	(0.134)	0.019	0.171
34	2.83	1.00	0.190	(0.134)	0.019	0.171
35	2.92	1.00	0.190	(0.134)	0.019	0.171
36	3.00	1.00	0.190	(0.134)	0.019	0.171
37	3.08	1.00	0.190	(0.134)	0.019	0.171
38	3.17	1.10	0.209	(0.134)	0.021	0.188
39	3.25	1.10	0.209	(0.134)	0.021	0.188
40	3.33	1.10	0.209	(0.134)	0.021	0.188
41	3.42	1.20	0.228	(0.134)	0.023	0.205
42	3.50	1.30	0.247	(0.134)	0.025	0.222
43	3.58	1.40	0.266	(0.134)	0.027	0.239
44	3.67	1.40	0.266	(0.134)	0.027	0.239
45	3.75	1.50	0.285	(0.134)	0.028	0.256
46	3.83	1.50	0.285	(0.134)	0.028	0.256
47	3.92	1.60	0.304	(0.134)	0.030	0.273
48	4.00	1.60	0.304	(0.134)	0.030	0.273
49	4.08	1.70	0.323	(0.134)	0.032	0.290
50	4.17	1.80	0.341	(0.134)	0.034	0.307
51	4.25	1.90	0.360	(0.134)	0.036	0.324
52	4.33	2.00	0.379	(0.134)	0.038	0.341
53	4.42	2.10	0.398	(0.134)	0.040	0.359
54	4.50	2.10	0.398	(0.134)	0.040	0.359
55	4.58	2.20	0.417	(0.134)	0.042	0.376
56	4.67	2.30	0.436	(0.134)	0.044	0.393
57	4.75	2.40	0.455	(0.134)	0.046	0.410
58	4.83	2.40	0.455	(0.134)	0.046	0.410
59	4.92	2.50	0.474	(0.134)	0.047	0.427
60	5.00	2.60	0.493	(0.134)	0.049	0.444
61	5.08	3.10	0.588	(0.134)	0.059	0.529
62	5.17	3.60	0.683	(0.134)	0.068	0.615
63	5.25	3.90	0.740	(0.134)	0.074	0.666
64	5.33	4.20	0.797	(0.134)	0.080	0.717
65	5.42	4.70	0.892	(0.134)	0.089	0.802
66	5.50	5.60	1.062	(0.134)	0.106	0.956
67	5.58	1.90	0.360	(0.134)	0.036	0.324
68	5.67	0.90	0.171	(0.134)	0.017	0.154
69	5.75	0.60	0.114	(0.134)	0.011	0.102
70	5.83	0.50	0.095	(0.134)	0.009	0.085
71	5.92	0.30	0.057	(0.134)	0.006	0.051
72	6.00	0.20	0.038	(0.134)	0.004	0.034

(Loss Rate Not Used)

Sum = 100.0 Sum = 17.1

Flood volume = Effective rainfall 1.42(In)
times area 32.1(Ac.)/[(In)/(Ft.)] = 3.8(Ac.Ft)
Total soil loss = 0.16(In)
Total soil loss = 0.424(Ac.Ft)
Total rainfall = 1.58(In)
Flood volume = 166047.7 Cubic Feet
Total soil loss = 18449.7 Cubic Feet

Peak flow rate of this hydrograph = 20.353(CFS)

```
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          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        7.5      15.0      22.5      30.0
-------------------------------------------------------------------
  0+ 5       0.0005      0.07  Q         |         |         |         |
  0+10       0.0027      0.32  Q         |         |         |         |
  0+15       0.0082      0.80  VQ        |         |         |         |
  0+20       0.0179      1.41  VQ        |         |         |         |
  0+25       0.0311      1.91  V Q       |         |         |         |
  0+30       0.0466      2.25  V Q       |         |         |         |
  0+35       0.0638      2.50  V  Q      |         |         |         |
  0+40       0.0825      2.72  V  Q      |         |         |         |
  0+45       0.1027      2.93  |V Q      |         |         |         |
  0+50       0.1241      3.11  |V  Q     |         |         |         |
  0+55       0.1464      3.23  |V  Q     |         |         |         |
  1+ 0       0.1694      3.34  |V  Q     |         |         |         |
  1+ 5       0.1932      3.46  | V Q     |         |         |         |
  1+10       0.2181      3.61  | V Q     |         |         |         |
  1+15       0.2441      3.77  | V  Q    |         |         |         |
  1+20       0.2710      3.90  | V  Q    |         |         |         |
  1+25       0.2984      3.99  |  V Q    |         |         |         |
  1+30       0.3264      4.05  |  V Q    |         |         |         |
  1+35       0.3547      4.11  |  V Q    |         |         |         |
  1+40       0.3833      4.16  |   VQ    |         |         |         |
  1+45       0.4122      4.20  |   VQ    |         |         |         |
  1+50       0.4413      4.23  |   VQ    |         |         |         |
  1+55       0.4707      4.26  |   VQ    |         |         |         |
  2+ 0       0.5003      4.30  |    Q    |         |         |         |
  2+ 5       0.5303      4.36  |    Q    |         |         |         |
  2+10       0.5608      4.43  |    Q    |         |         |         |
  2+15       0.5918      4.51  |     Q   |         |         |         |
  2+20       0.6235      4.59  |     Q   |         |         |         |
  2+25       0.6557      4.68  |     Q   |         |         |         |
  2+30       0.6884      4.76  |     QV  |         |         |         |
  2+35       0.7215      4.80  |     QV  |         |         |         |
  2+40       0.7548      4.83  |     QV  |         |         |         |
  2+45       0.7884      4.87  |     Q V |         |         |         |
  2+50       0.8224      4.94  |     Q V |         |         |         |
  2+55       0.8571      5.04  |     Q V |         |         |         |
  3+ 0       0.8926      5.16  |     Q  V|         |         |         |
  3+ 5       0.9288      5.25  |     Q  V|         |         |         |
  3+10       0.9654      5.32  |      Q  V         |         |         |
  3+15       1.0026      5.41  |      Q  V         |         |         |
  3+20       1.0407      5.52  |      Q  V         |         |         |
  3+25       1.0797      5.66  |      Q  |V        |         |         |
  3+30       1.1198      5.83  |      Q  |V        |         |         |
  3+35       1.1614      6.04  |       Q | V       |         |         |
  3+40       1.2049      6.32  |       Q | V       |         |         |
  3+45       1.2507      6.64  |       Q |  V      |         |         |
  3+50       1.2985      6.95  |        Q|  V      |         |         |
  3+55       1.3483      7.23  |        Q|   V     |         |         |
  4+ 0       1.4000      7.50  |         Q   V     |         |         |
  4+ 5       1.4535      7.77  |         Q    V    |         |         |
  4+10       1.5089      8.05  |         Q    V    |         |         |
  4+15       1.5666      8.37  |         |Q    V   |         |         |
  4+20       1.6268      8.74  |         |Q     V  |         |         |
  4+25       1.6899      9.16  |         | Q    V  |         |         |
  4+30       1.7560      9.60  |         | Q     V |         |         |
  4+35       1.8250     10.02  |         |  Q     V|         |         |
  4+40       1.8968     10.42  |         |  Q     V|         |         |
  4+45       1.9712     10.81  |         |   Q     V         |         |
  4+50       2.0485     11.22  |         |   Q     |V        |         |
  4+55       2.1286     11.63  |         |    Q    | V       |         |
```

```
   5+ 0       2.2115     12.03  |         |     Q   |  V      |         |
   5+ 5       2.2975     12.49  |         |     Q   |   V     |         |
   5+10       2.3881     13.16  |         |      Q  |    V    |         |
   5+15       2.4859     14.19  |         |       Q |     V   |         |
   5+20       2.5931     15.57  |         |         Q      V  |         |
   5+25       2.7111     17.14  |         |         | Q     V |         |
   5+30       2.8409     18.84  |         |         |    Q   V|         |
   5+35       2.9803     20.25  |         |         |     Q   |V        |
   5+40       3.1205     20.35  |         |         |      Q  | V       |
   5+45       3.2480     18.51  |         |         |   Q     |   V     |
   5+50       3.3512     14.99  |         |        Q|         |    V    |
   5+55       3.4306     11.53  |         |    Q    |         |    V    |
   6+ 0       3.4931      9.08  |         | Q       |         |     V   |
   6+ 5       3.5441      7.40  |        Q|         |         |      V  |
   6+10       3.5861      6.10  |       Q |         |         |      V  |
   6+15       3.6206      5.01  |     Q   |         |         |      V  |
   6+20       3.6489      4.11  |    Q    |         |         |       V |
   6+25       3.6724      3.41  |   Q     |         |         |       V |
   6+30       3.6925      2.91  |  Q      |         |         |       V |
   6+35       3.7097      2.50  |  Q      |         |         |       V |
   6+40       3.7246      2.16  | Q       |         |         |        V|
   6+45       3.7375      1.88  | Q       |         |         |        V|
   6+50       3.7489      1.65  | Q       |         |         |        V|
   6+55       3.7589      1.45  |Q        |         |         |        V|
   7+ 0       3.7677      1.28  |Q        |         |         |        V|
   7+ 5       3.7752      1.10  |Q        |         |         |        V|
   7+10       3.7818      0.95  |Q        |         |         |        V|
   7+15       3.7875      0.82  |Q        |         |         |        V|
   7+20       3.7924      0.71  Q         |         |         |        V|
   7+25       3.7966      0.61  Q         |         |         |        V|
   7+30       3.8002      0.52  Q         |         |         |        V|
   7+35       3.8032      0.44  Q         |         |         |        V|
   7+40       3.8058      0.37  Q         |         |         |        V|
   7+45       3.8079      0.31  Q         |         |         |        V|
   7+50       3.8096      0.24  Q         |         |         |        V|
   7+55       3.8108      0.17  Q         |         |         |        V|
   8+ 0       3.8113      0.07  Q         |         |         |        V|
   8+ 5       3.8116      0.04  Q         |         |         |        V|
   8+10       3.8117      0.03  Q         |         |         |        V|
   8+15       3.8118      0.02  Q         |         |         |        V|
   8+20       3.8119      0.01  Q         |         |         |        V|
   8+25       3.8119      0.00  Q         |         |         |        V|
-------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


5 YEAR
6 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B565.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =   101
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       20.353 (CFS)
                Total volume =       3.812 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
-------------------------------------------------------------------
Total number of inflow hydrograph intervals = 101
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
-------------------------------------------------------------------
-------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
-------------------------------------------------------------------
-------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
-------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
-------------------------------------------------------------------
                Hydrograph Detention Basin Routing
-------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 5.1 10.18 15.26 20.35	Depth (Ft.)
0.083	0.07	0.00	0.000	O	0.00
0.167	0.32	0.00	0.002	O	0.00
0.250	0.80	0.00	0.005	OI	0.01
0.333	1.41	0.00	0.013	O I	0.02
0.417	1.91	0.00	0.025	O I	0.04
0.500	2.25	0.00	0.039	O I	0.07
0.583	2.50	0.00	0.055	O I	0.09
0.667	2.72	0.00	0.073	O I	0.12
0.750	2.93	0.00	0.093	O I	0.16
0.833	3.11	0.00	0.113	O I	0.19
0.917	3.23	0.00	0.135	O I	0.23
1.000	3.34	0.00	0.158	O I	0.27
1.083	3.46	0.00	0.181	O I	0.30
1.167	3.61	0.00	0.206	O I	0.34
1.250	3.77	0.00	0.231	O I	0.38
1.333	3.90	0.00	0.257	O I	0.42
1.417	3.99	0.00	0.285	O I	0.46
1.500	4.05	0.00	0.312	O I	0.50
1.583	4.11	0.00	0.340	O I	0.55
1.667	4.16	0.00	0.369	O I	0.59
1.750	4.20	0.00	0.398	O I	0.64
1.833	4.23	0.00	0.427	O I	0.68
1.917	4.26	0.00	0.456	O I	0.73
2.000	4.30	0.00	0.485	O I	0.77
2.083	4.36	0.00	0.515	O I	0.82
2.167	4.43	0.00	0.545	O I	0.86
2.250	4.51	0.00	0.576	O I	0.91
2.333	4.59	0.00	0.608	O I	0.96
2.417	4.68	0.00	0.639	O I	1.01
2.500	4.76	0.00	0.672	O I	1.06
2.583	4.80	0.00	0.705	O I	1.11
2.667	4.83	0.00	0.738	O I	1.16
2.750	4.87	0.00	0.771	O I	1.21
2.833	4.94	0.00	0.805	O I	1.26
2.917	5.04	0.00	0.840	O I	1.31
3.000	5.16	0.00	0.875	O I	1.36
3.083	5.25	0.00	0.910	O I	1.41
3.167	5.32	0.00	0.947	O I	1.46
3.250	5.41	0.00	0.984	O I	1.51
3.333	5.52	0.00	1.021	O I	1.57
3.417	5.66	0.00	1.060	O I	1.62
3.500	5.83	0.00	1.100	O I	1.68
3.583	6.04	0.00	1.140	O I	1.73
3.667	6.32	0.00	1.183	O I	1.79
3.750	6.64	0.00	1.228	O I	1.86
3.833	6.95	0.00	1.274	O I	1.92
3.917	7.23	0.00	1.323	O I	1.99
4.000	7.50	0.00	1.374	O I	2.06
4.083	7.77	0.01	1.426	O I	2.13
4.167	8.05	0.01	1.481	O I	2.20
4.250	8.37	0.01	1.537	O I	2.28
4.333	8.74	0.01	1.596	O I	2.36
4.417	9.16	0.01	1.658	O I	2.44
4.500	9.60	0.75	1.720	O I	2.52
4.583	10.02	1.85	1.778	O I	2.59
4.667	10.42	2.86	1.833	O I	2.66
4.750	10.81	4.00	1.882	O I	2.72
4.833	11.22	5.06	1.927	O I	2.78
4.917	11.63	6.02	1.967	O I	2.83
5.000	12.03	6.92	2.004	O I	2.88
5.083	12.49	7.92	2.037	O I	2.92
5.167	13.16	8.84	2.068	O I	2.96
5.250	14.19	9.75	2.098	O I	2.99
5.333	15.57	10.71	2.130	O I	3.03
5.417	17.14	11.78	2.165	O I	3.08
5.500	18.84	13.05	2.204	O I	3.12
5.583	20.25	14.37	2.244	O I	3.17
5.667	20.35	15.58	2.281	O I	3.21
5.750	18.51	16.36	2.305	O I	3.24
5.833	14.99	16.44	2.307	O I	3.24
5.917	11.53	15.79	2.287	O I	3.22
6.000	9.08	14.67	2.253	O I	3.18
6.083	7.40	13.36	2.214	O I	3.13
6.167	6.10	12.02	2.173	O I	3.08
6.250	5.01	10.77	2.132	O I	3.04

6.333	4.11	9.61	2.094	| I | O|				2.99
6.417	3.41	8.51	2.057	| I | O |				2.94
6.500	2.91	7.51	2.024	| I | O |				2.90
6.583	2.50	6.65	1.994	| I | O |				2.86
6.667	2.16	6.00	1.966	| I |O |				2.83
6.750	1.88	5.39	1.941	| I O |				2.80
6.833	1.65	4.85	1.918	| I O|				2.77
6.917	1.45	4.35	1.897	| I O |				2.74
7.000	1.28	3.90	1.878	| I O |				2.72
7.083	1.10	3.49	1.860	|I O |				2.70
7.167	0.95	3.11	1.845	|I O |				2.68
7.250	0.82	2.82	1.830	|I O |				2.66
7.333	0.71	2.57	1.817	|I O |				2.64
7.417	0.61	2.34	1.805	I O |				2.63
7.500	0.52	2.13	1.793	I O |				2.61
7.583	0.44	1.93	1.783	I O |				2.60
7.667	0.37	1.74	1.773	I O |				2.59
7.750	0.31	1.57	1.764	I O |				2.57
7.833	0.24	1.42	1.755	I O |				2.56
7.917	0.17	1.27	1.748	IO |				2.55
8.000	0.07	1.13	1.740	IO |				2.55
8.083	0.04	1.00	1.733	IO |				2.54
8.167	0.03	0.89	1.727	IO |				2.53
8.250	0.02	0.78	1.721	IO |				2.52
8.333	0.01	0.69	1.716	IO |				2.52
8.417	0.00	0.61	1.712	O |				2.51
8.500	0.00	0.53	1.708	O |				2.50
8.583	0.00	0.47	1.705	O |				2.50
8.667	0.00	0.41	1.701	O |				2.50
8.750	0.00	0.36	1.699	O |				2.49
8.833	0.00	0.32	1.696	O |				2.49
8.917	0.00	0.28	1.694	O |				2.49
9.000	0.00	0.25	1.693	O |				2.49
9.083	0.00	0.22	1.691	O |				2.48
9.167	0.00	0.19	1.690	O |				2.48
9.250	0.00	0.17	1.688	O |				2.48
9.333	0.00	0.15	1.687	O |				2.48
9.417	0.00	0.13	1.686	O |				2.48
9.500	0.00	0.11	1.686	O |				2.48
9.583	0.00	0.10	1.685	O |				2.48
9.667	0.00	0.09	1.684	O |				2.48
9.750	0.00	0.08	1.684	O |				2.47
9.833	0.00	0.07	1.683	O |				2.47
9.917	0.00	0.06	1.683	O |				2.47
10.000	0.00	0.05	1.682	O |				2.47
10.083	0.00	0.05	1.682	O |				2.47
10.167	0.00	0.04	1.682	O |				2.47
10.250	0.00	0.04	1.681	O |				2.47
10.333	0.00	0.03	1.681	O |				2.47
10.417	0.00	0.03	1.681	O |				2.47
10.500	0.00	0.02	1.681	O |				2.47
10.583	0.00	0.02	1.681	O |				2.47
10.667	0.00	0.02	1.680	O |				2.47
10.750	0.00	0.02	1.680	O |				2.47
10.833	0.00	0.01	1.680	O |				2.47
10.917	0.00	0.01	1.680	O |				2.47
11.000	0.00	0.01	1.680	O |				2.47
11.083	0.00	0.01	1.680	O |				2.47
11.167	0.00	0.01	1.680	O |				2.47
11.250	0.00	0.01	1.680	O |				2.47
11.333	0.00	0.01	1.680	O |				2.47
11.417	0.00	0.01	1.680	O |				2.47
11.500	0.00	0.01	1.680	O |				2.47
11.583	0.00	0.01	1.680	O |				2.47
11.667	0.00	0.01	1.680	O |				2.47
11.750	0.00	0.01	1.679	O |				2.47
11.833	0.00	0.01	1.679	O |				2.47
11.917	0.00	0.01	1.679	O |				2.47
12.000	0.00	0.01	1.679	O |				2.47
12.083	0.00	0.01	1.679	O |				2.47
12.167	0.00	0.01	1.679	O |				2.47
12.250	0.00	0.01	1.679	O |				2.47
12.333	0.00	0.01	1.679	O |				2.47
12.417	0.00	0.01	1.679	O |				2.47
12.500	0.00	0.01	1.679	O |				2.47
12.583	0.00	0.01	1.679	O |				2.47
12.667	0.00	0.01	1.679	O |				2.47
12.750	0.00	0.01	1.679	O |				2.47
12.833	0.00	0.01	1.679	O |				2.47

```
414.500    0.00    0.00      1.405  O       |       |       |       |     2.10
414.583    0.00    0.00      1.405  O       |       |       |       |     2.10
414.667    0.00    0.00      1.405  O       |       |       |       |     2.10
414.750    0.00    0.00      1.405  O       |       |       |       |     2.10
414.833    0.00    0.00      1.405  O       |       |       |       |     2.10
414.917    0.00    0.00      1.405  O       |       |       |       |     2.10
415.000    0.00    0.00      1.405  O       |       |       |       |     2.10
415.083    0.00    0.00      1.405  O       |       |       |       |     2.10
415.167    0.00    0.00      1.405  O       |       |       |       |     2.10
415.250    0.00    0.00      1.405  O       |       |       |       |     2.10
415.333    0.00    0.00      1.405  O       |       |       |       |     2.10
415.417    0.00    0.00      1.405  O       |       |       |       |     2.10
415.500    0.00    0.00      1.405  O       |       |       |       |     2.10
415.583    0.00    0.00      1.405  O       |       |       |       |     2.10
415.667    0.00    0.00      1.405  O       |       |       |       |     2.10
415.750    0.00    0.00      1.405  O       |       |       |       |     2.10
415.833    0.00    0.00      1.405  O       |       |       |       |     2.10
415.917    0.00    0.00      1.405  O       |       |       |       |     2.10
416.000    0.00    0.00      1.405  O       |       |       |       |     2.10
416.083    0.00    0.00      1.405  O       |       |       |       |     2.10
416.167    0.00    0.00      1.405  O       |       |       |       |     2.10
416.250    0.00    0.00      1.404  O       |       |       |       |     2.10
416.333    0.00    0.00      1.404  O       |       |       |       |     2.10
416.417    0.00    0.00      1.404  O       |       |       |       |     2.10
416.500    0.00    0.00      1.404  O       |       |       |       |     2.10
416.583    0.00    0.00      1.404  O       |       |       |       |     2.10
416.667    0.00    0.00      1.404  O       |       |       |       |     2.10

        Remaining water in basin =    1.40 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       16.441 (CFS)
                        Total volume =       2.408 (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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        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  08/31/21 File: 3384B5245.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



---------------------------------------------------------------------
5 YEAR
24 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            2.00                  64.30

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            5.50                 176.82

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 =   99.99 %
Adjusted average point rain =    2.820(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  36.0      0.706     0.900        0.134       1.000      0.134
                                                 Sum (F) =   0.134
Area averaged mean soil loss (F) (In/Hr) =  0.134
Minimum soil loss rate ((In/Hr)) =  0.067
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-----------------------------------------------------------------

               U n i t  H y d r o g r a p h
                      VALLEY S-Curve
----------------------------------------------------------------
               Unit Hydrograph Data
-----------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-----------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.07      0.023       (  0.238)       0.002        0.020
   2   0.17     0.07      0.023       (  0.237)       0.002        0.020
   3   0.25     0.07      0.023       (  0.236)       0.002        0.020
   4   0.33     0.10      0.034       (  0.235)       0.003        0.030
   5   0.42     0.10      0.034       (  0.234)       0.003        0.030
   6   0.50     0.10      0.034       (  0.233)       0.003        0.030
   7   0.58     0.10      0.034       (  0.232)       0.003        0.030
   8   0.67     0.10      0.034       (  0.231)       0.003        0.030
   9   0.75     0.10      0.034       (  0.230)       0.003        0.030
  10   0.83     0.13      0.045       (  0.230)       0.005        0.041
  11   0.92     0.13      0.045       (  0.229)       0.005        0.041
  12   1.00     0.13      0.045       (  0.228)       0.005        0.041
  13   1.08     0.10      0.034       (  0.227)       0.003        0.030
  14   1.17     0.10      0.034       (  0.226)       0.003        0.030
```

15	1.25	0.10	0.034	(0.225)	0.003	0.030
16	1.33	0.10	0.034	(0.224)	0.003	0.030
17	1.42	0.10	0.034	(0.223)	0.003	0.030
18	1.50	0.10	0.034	(0.222)	0.003	0.030
19	1.58	0.10	0.034	(0.222)	0.003	0.030
20	1.67	0.10	0.034	(0.221)	0.003	0.030
21	1.75	0.10	0.034	(0.220)	0.003	0.030
22	1.83	0.13	0.045	(0.219)	0.005	0.041
23	1.92	0.13	0.045	(0.218)	0.005	0.041
24	2.00	0.13	0.045	(0.217)	0.005	0.041
25	2.08	0.13	0.045	(0.216)	0.005	0.041
26	2.17	0.13	0.045	(0.215)	0.005	0.041
27	2.25	0.13	0.045	(0.214)	0.005	0.041
28	2.33	0.13	0.045	(0.214)	0.005	0.041
29	2.42	0.13	0.045	(0.213)	0.005	0.041
30	2.50	0.13	0.045	(0.212)	0.005	0.041
31	2.58	0.17	0.056	(0.211)	0.006	0.051
32	2.67	0.17	0.056	(0.210)	0.006	0.051
33	2.75	0.17	0.056	(0.209)	0.006	0.051
34	2.83	0.17	0.056	(0.208)	0.006	0.051
35	2.92	0.17	0.056	(0.208)	0.006	0.051
36	3.00	0.17	0.056	(0.207)	0.006	0.051
37	3.08	0.17	0.056	(0.206)	0.006	0.051
38	3.17	0.17	0.056	(0.205)	0.006	0.051
39	3.25	0.17	0.056	(0.204)	0.006	0.051
40	3.33	0.17	0.056	(0.203)	0.006	0.051
41	3.42	0.17	0.056	(0.202)	0.006	0.051
42	3.50	0.17	0.056	(0.202)	0.006	0.051
43	3.58	0.17	0.056	(0.201)	0.006	0.051
44	3.67	0.17	0.056	(0.200)	0.006	0.051
45	3.75	0.17	0.056	(0.199)	0.006	0.051
46	3.83	0.20	0.068	(0.198)	0.007	0.061
47	3.92	0.20	0.068	(0.197)	0.007	0.061
48	4.00	0.20	0.068	(0.197)	0.007	0.061
49	4.08	0.20	0.068	(0.196)	0.007	0.061
50	4.17	0.20	0.068	(0.195)	0.007	0.061
51	4.25	0.20	0.068	(0.194)	0.007	0.061
52	4.33	0.23	0.079	(0.193)	0.008	0.071
53	4.42	0.23	0.079	(0.192)	0.008	0.071
54	4.50	0.23	0.079	(0.192)	0.008	0.071
55	4.58	0.23	0.079	(0.191)	0.008	0.071
56	4.67	0.23	0.079	(0.190)	0.008	0.071
57	4.75	0.23	0.079	(0.189)	0.008	0.071
58	4.83	0.27	0.090	(0.188)	0.009	0.081
59	4.92	0.27	0.090	(0.187)	0.009	0.081
60	5.00	0.27	0.090	(0.187)	0.009	0.081
61	5.08	0.20	0.068	(0.186)	0.007	0.061
62	5.17	0.20	0.068	(0.185)	0.007	0.061
63	5.25	0.20	0.068	(0.184)	0.007	0.061
64	5.33	0.23	0.079	(0.183)	0.008	0.071
65	5.42	0.23	0.079	(0.183)	0.008	0.071
66	5.50	0.23	0.079	(0.182)	0.008	0.071
67	5.58	0.27	0.090	(0.181)	0.009	0.081
68	5.67	0.27	0.090	(0.180)	0.009	0.081
69	5.75	0.27	0.090	(0.179)	0.009	0.081
70	5.83	0.27	0.090	(0.179)	0.009	0.081
71	5.92	0.27	0.090	(0.178)	0.009	0.081
72	6.00	0.27	0.090	(0.177)	0.009	0.081
73	6.08	0.30	0.102	(0.176)	0.010	0.091
74	6.17	0.30	0.102	(0.175)	0.010	0.091
75	6.25	0.30	0.102	(0.175)	0.010	0.091
76	6.33	0.30	0.102	(0.174)	0.010	0.091
77	6.42	0.30	0.102	(0.173)	0.010	0.091
78	6.50	0.30	0.102	(0.172)	0.010	0.091
79	6.58	0.33	0.113	(0.172)	0.011	0.102
80	6.67	0.33	0.113	(0.171)	0.011	0.102
81	6.75	0.33	0.113	(0.170)	0.011	0.102
82	6.83	0.33	0.113	(0.169)	0.011	0.102
83	6.92	0.33	0.113	(0.169)	0.011	0.102

84	7.00	0.33	0.113	(0.168)	0.011	0.102
85	7.08	0.33	0.113	(0.167)	0.011	0.102
86	7.17	0.33	0.113	(0.166)	0.011	0.102
87	7.25	0.33	0.113	(0.165)	0.011	0.102
88	7.33	0.37	0.124	(0.165)	0.012	0.112
89	7.42	0.37	0.124	(0.164)	0.012	0.112
90	7.50	0.37	0.124	(0.163)	0.012	0.112
91	7.58	0.40	0.135	(0.162)	0.014	0.122
92	7.67	0.40	0.135	(0.162)	0.014	0.122
93	7.75	0.40	0.135	(0.161)	0.014	0.122
94	7.83	0.43	0.147	(0.160)	0.015	0.132
95	7.92	0.43	0.147	(0.159)	0.015	0.132
96	8.00	0.43	0.147	(0.159)	0.015	0.132
97	8.08	0.50	0.169	(0.158)	0.017	0.152
98	8.17	0.50	0.169	(0.157)	0.017	0.152
99	8.25	0.50	0.169	(0.157)	0.017	0.152
100	8.33	0.50	0.169	(0.156)	0.017	0.152
101	8.42	0.50	0.169	(0.155)	0.017	0.152
102	8.50	0.50	0.169	(0.154)	0.017	0.152
103	8.58	0.53	0.180	(0.154)	0.018	0.162
104	8.67	0.53	0.180	(0.153)	0.018	0.162
105	8.75	0.53	0.180	(0.152)	0.018	0.162
106	8.83	0.57	0.192	(0.151)	0.019	0.173
107	8.92	0.57	0.192	(0.151)	0.019	0.173
108	9.00	0.57	0.192	(0.150)	0.019	0.173
109	9.08	0.63	0.214	(0.149)	0.021	0.193
110	9.17	0.63	0.214	(0.149)	0.021	0.193
111	9.25	0.63	0.214	(0.148)	0.021	0.193
112	9.33	0.67	0.226	(0.147)	0.023	0.203
113	9.42	0.67	0.226	(0.147)	0.023	0.203
114	9.50	0.67	0.226	(0.146)	0.023	0.203
115	9.58	0.70	0.237	(0.145)	0.024	0.213
116	9.67	0.70	0.237	(0.144)	0.024	0.213
117	9.75	0.70	0.237	(0.144)	0.024	0.213
118	9.83	0.73	0.248	(0.143)	0.025	0.223
119	9.92	0.73	0.248	(0.142)	0.025	0.223
120	10.00	0.73	0.248	(0.142)	0.025	0.223
121	10.08	0.50	0.169	(0.141)	0.017	0.152
122	10.17	0.50	0.169	(0.140)	0.017	0.152
123	10.25	0.50	0.169	(0.140)	0.017	0.152
124	10.33	0.50	0.169	(0.139)	0.017	0.152
125	10.42	0.50	0.169	(0.138)	0.017	0.152
126	10.50	0.50	0.169	(0.138)	0.017	0.152
127	10.58	0.67	0.226	(0.137)	0.023	0.203
128	10.67	0.67	0.226	(0.136)	0.023	0.203
129	10.75	0.67	0.226	(0.136)	0.023	0.203
130	10.83	0.67	0.226	(0.135)	0.023	0.203
131	10.92	0.67	0.226	(0.134)	0.023	0.203
132	11.00	0.67	0.226	(0.134)	0.023	0.203
133	11.08	0.63	0.214	(0.133)	0.021	0.193
134	11.17	0.63	0.214	(0.132)	0.021	0.193
135	11.25	0.63	0.214	(0.132)	0.021	0.193
136	11.33	0.63	0.214	(0.131)	0.021	0.193
137	11.42	0.63	0.214	(0.130)	0.021	0.193
138	11.50	0.63	0.214	(0.130)	0.021	0.193
139	11.58	0.57	0.192	(0.129)	0.019	0.173
140	11.67	0.57	0.192	(0.128)	0.019	0.173
141	11.75	0.57	0.192	(0.128)	0.019	0.173
142	11.83	0.60	0.203	(0.127)	0.020	0.183
143	11.92	0.60	0.203	(0.126)	0.020	0.183
144	12.00	0.60	0.203	(0.126)	0.020	0.183
145	12.08	0.83	0.282	(0.125)	0.028	0.254
146	12.17	0.83	0.282	(0.125)	0.028	0.254
147	12.25	0.83	0.282	(0.124)	0.028	0.254
148	12.33	0.87	0.293	(0.123)	0.029	0.264
149	12.42	0.87	0.293	(0.123)	0.029	0.264
150	12.50	0.87	0.293	(0.122)	0.029	0.264
151	12.58	0.93	0.316	(0.121)	0.032	0.284
152	12.67	0.93	0.316	(0.121)	0.032	0.284

153	12.75	0.93	0.316	(0.120)	0.032	0.284
154	12.83	0.97	0.327	(0.120)	0.033	0.294
155	12.92	0.97	0.327	(0.119)	0.033	0.294
156	13.00	0.97	0.327	(0.118)	0.033	0.294
157	13.08	1.13	0.383	(0.118)	0.038	0.345
158	13.17	1.13	0.383	(0.117)	0.038	0.345
159	13.25	1.13	0.383	(0.117)	0.038	0.345
160	13.33	1.13	0.383	(0.116)	0.038	0.345
161	13.42	1.13	0.383	(0.115)	0.038	0.345
162	13.50	1.13	0.383	(0.115)	0.038	0.345
163	13.58	0.77	0.259	(0.114)	0.026	0.233
164	13.67	0.77	0.259	(0.114)	0.026	0.233
165	13.75	0.77	0.259	(0.113)	0.026	0.233
166	13.83	0.77	0.259	(0.113)	0.026	0.233
167	13.92	0.77	0.259	(0.112)	0.026	0.233
168	14.00	0.77	0.259	(0.111)	0.026	0.233
169	14.08	0.90	0.305	(0.111)	0.030	0.274
170	14.17	0.90	0.305	(0.110)	0.030	0.274
171	14.25	0.90	0.305	(0.110)	0.030	0.274
172	14.33	0.87	0.293	(0.109)	0.029	0.264
173	14.42	0.87	0.293	(0.109)	0.029	0.264
174	14.50	0.87	0.293	(0.108)	0.029	0.264
175	14.58	0.87	0.293	(0.107)	0.029	0.264
176	14.67	0.87	0.293	(0.107)	0.029	0.264
177	14.75	0.87	0.293	(0.106)	0.029	0.264
178	14.83	0.83	0.282	(0.106)	0.028	0.254
179	14.92	0.83	0.282	(0.105)	0.028	0.254
180	15.00	0.83	0.282	(0.105)	0.028	0.254
181	15.08	0.80	0.271	(0.104)	0.027	0.244
182	15.17	0.80	0.271	(0.104)	0.027	0.244
183	15.25	0.80	0.271	(0.103)	0.027	0.244
184	15.33	0.77	0.259	(0.103)	0.026	0.233
185	15.42	0.77	0.259	(0.102)	0.026	0.233
186	15.50	0.77	0.259	(0.102)	0.026	0.233
187	15.58	0.63	0.214	(0.101)	0.021	0.193
188	15.67	0.63	0.214	(0.101)	0.021	0.193
189	15.75	0.63	0.214	(0.100)	0.021	0.193
190	15.83	0.63	0.214	(0.100)	0.021	0.193
191	15.92	0.63	0.214	(0.099)	0.021	0.193
192	16.00	0.63	0.214	(0.099)	0.021	0.193
193	16.08	0.13	0.045	(0.098)	0.005	0.041
194	16.17	0.13	0.045	(0.098)	0.005	0.041
195	16.25	0.13	0.045	(0.097)	0.005	0.041
196	16.33	0.13	0.045	(0.097)	0.005	0.041
197	16.42	0.13	0.045	(0.096)	0.005	0.041
198	16.50	0.13	0.045	(0.096)	0.005	0.041
199	16.58	0.10	0.034	(0.095)	0.003	0.030
200	16.67	0.10	0.034	(0.095)	0.003	0.030
201	16.75	0.10	0.034	(0.094)	0.003	0.030
202	16.83	0.10	0.034	(0.094)	0.003	0.030
203	16.92	0.10	0.034	(0.093)	0.003	0.030
204	17.00	0.10	0.034	(0.093)	0.003	0.030
205	17.08	0.17	0.056	(0.092)	0.006	0.051
206	17.17	0.17	0.056	(0.092)	0.006	0.051
207	17.25	0.17	0.056	(0.091)	0.006	0.051
208	17.33	0.17	0.056	(0.091)	0.006	0.051
209	17.42	0.17	0.056	(0.090)	0.006	0.051
210	17.50	0.17	0.056	(0.090)	0.006	0.051
211	17.58	0.17	0.056	(0.089)	0.006	0.051
212	17.67	0.17	0.056	(0.089)	0.006	0.051
213	17.75	0.17	0.056	(0.089)	0.006	0.051
214	17.83	0.13	0.045	(0.088)	0.005	0.041
215	17.92	0.13	0.045	(0.088)	0.005	0.041
216	18.00	0.13	0.045	(0.087)	0.005	0.041
217	18.08	0.13	0.045	(0.087)	0.005	0.041
218	18.17	0.13	0.045	(0.086)	0.005	0.041
219	18.25	0.13	0.045	(0.086)	0.005	0.041
220	18.33	0.13	0.045	(0.086)	0.005	0.041
221	18.42	0.13	0.045	(0.085)	0.005	0.041

222	18.50	0.13	0.045	(0.085)	0.005	0.041
223	18.58	0.10	0.034	(0.084)	0.003	0.030
224	18.67	0.10	0.034	(0.084)	0.003	0.030
225	18.75	0.10	0.034	(0.084)	0.003	0.030
226	18.83	0.07	0.023	(0.083)	0.002	0.020
227	18.92	0.07	0.023	(0.083)	0.002	0.020
228	19.00	0.07	0.023	(0.082)	0.002	0.020
229	19.08	0.10	0.034	(0.082)	0.003	0.030
230	19.17	0.10	0.034	(0.082)	0.003	0.030
231	19.25	0.10	0.034	(0.081)	0.003	0.030
232	19.33	0.13	0.045	(0.081)	0.005	0.041
233	19.42	0.13	0.045	(0.080)	0.005	0.041
234	19.50	0.13	0.045	(0.080)	0.005	0.041
235	19.58	0.10	0.034	(0.080)	0.003	0.030
236	19.67	0.10	0.034	(0.079)	0.003	0.030
237	19.75	0.10	0.034	(0.079)	0.003	0.030
238	19.83	0.07	0.023	(0.079)	0.002	0.020
239	19.92	0.07	0.023	(0.078)	0.002	0.020
240	20.00	0.07	0.023	(0.078)	0.002	0.020
241	20.08	0.10	0.034	(0.078)	0.003	0.030
242	20.17	0.10	0.034	(0.077)	0.003	0.030
243	20.25	0.10	0.034	(0.077)	0.003	0.030
244	20.33	0.10	0.034	(0.077)	0.003	0.030
245	20.42	0.10	0.034	(0.076)	0.003	0.030
246	20.50	0.10	0.034	(0.076)	0.003	0.030
247	20.58	0.10	0.034	(0.076)	0.003	0.030
248	20.67	0.10	0.034	(0.075)	0.003	0.030
249	20.75	0.10	0.034	(0.075)	0.003	0.030
250	20.83	0.07	0.023	(0.075)	0.002	0.020
251	20.92	0.07	0.023	(0.074)	0.002	0.020
252	21.00	0.07	0.023	(0.074)	0.002	0.020
253	21.08	0.10	0.034	(0.074)	0.003	0.030
254	21.17	0.10	0.034	(0.073)	0.003	0.030
255	21.25	0.10	0.034	(0.073)	0.003	0.030
256	21.33	0.07	0.023	(0.073)	0.002	0.020
257	21.42	0.07	0.023	(0.073)	0.002	0.020
258	21.50	0.07	0.023	(0.072)	0.002	0.020
259	21.58	0.10	0.034	(0.072)	0.003	0.030
260	21.67	0.10	0.034	(0.072)	0.003	0.030
261	21.75	0.10	0.034	(0.072)	0.003	0.030
262	21.83	0.07	0.023	(0.071)	0.002	0.020
263	21.92	0.07	0.023	(0.071)	0.002	0.020
264	22.00	0.07	0.023	(0.071)	0.002	0.020
265	22.08	0.10	0.034	(0.071)	0.003	0.030
266	22.17	0.10	0.034	(0.070)	0.003	0.030
267	22.25	0.10	0.034	(0.070)	0.003	0.030
268	22.33	0.07	0.023	(0.070)	0.002	0.020
269	22.42	0.07	0.023	(0.070)	0.002	0.020
270	22.50	0.07	0.023	(0.069)	0.002	0.020
271	22.58	0.07	0.023	(0.069)	0.002	0.020
272	22.67	0.07	0.023	(0.069)	0.002	0.020
273	22.75	0.07	0.023	(0.069)	0.002	0.020
274	22.83	0.07	0.023	(0.069)	0.002	0.020
275	22.92	0.07	0.023	(0.069)	0.002	0.020
276	23.00	0.07	0.023	(0.068)	0.002	0.020
277	23.08	0.07	0.023	(0.068)	0.002	0.020
278	23.17	0.07	0.023	(0.068)	0.002	0.020
279	23.25	0.07	0.023	(0.068)	0.002	0.020
280	23.33	0.07	0.023	(0.068)	0.002	0.020
281	23.42	0.07	0.023	(0.068)	0.002	0.020
282	23.50	0.07	0.023	(0.068)	0.002	0.020
283	23.58	0.07	0.023	(0.067)	0.002	0.020
284	23.67	0.07	0.023	(0.067)	0.002	0.020
285	23.75	0.07	0.023	(0.067)	0.002	0.020
286	23.83	0.07	0.023	(0.067)	0.002	0.020
287	23.92	0.07	0.023	(0.067)	0.002	0.020
288	24.00	0.07	0.023	(0.067)	0.002	0.020
		(Loss Rate Not Used)				
	Sum =	100.0			Sum =	30.5

```
Flood volume = Effective rainfall      2.54(In)
 times area      32.1(Ac.)/[(In)/(Ft.)] =       6.8(Ac.Ft)
Total soil loss =      0.28(In)
Total soil loss =     0.755(Ac.Ft)
Total rainfall =      2.82(In)
Flood volume =      296154.8 Cubic Feet
Total soil loss =       32906.1 Cubic Feet
--------------------------------------------------------------------
 Peak flow rate of this hydrograph =     10.431(CFS)
--------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    24 - H O U R    S T O R M
                R u n o f f      H y d r o g r a p h
--------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

--------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q         |         |         |         |
  0+10       0.0006      0.07  Q         |         |         |         |
  0+15       0.0018      0.18  Q         |         |         |         |
  0+20       0.0040      0.31  Q         |         |         |         |
  0+25       0.0069      0.43  Q         |         |         |         |
  0+30       0.0107      0.54  VQ        |         |         |         |
  0+35       0.0150      0.64  VQ        |         |         |         |
  0+40       0.0199      0.71  VQ        |         |         |         |
  0+45       0.0252      0.76  VQ        |         |         |         |
  0+50       0.0307      0.80  VQ        |         |         |         |
  0+55       0.0367      0.86  VQ        |         |         |         |
  1+ 0       0.0431      0.93  VQ        |         |         |         |
  1+ 5       0.0500      1.01  V Q       |         |         |         |
  1+10       0.0572      1.04  V Q       |         |         |         |
  1+15       0.0644      1.04  V Q       |         |         |         |
  1+20       0.0713      1.00  V Q       |         |         |         |
  1+25       0.0780      0.98  VQ        |         |         |         |
  1+30       0.0847      0.97  VQ        |         |         |         |
  1+35       0.0914      0.97  VQ        |         |         |         |
  1+40       0.0980      0.97  VQ        |         |         |         |
  1+45       0.1047      0.97  VQ        |         |         |         |
  1+50       0.1115      0.98  VQ        |         |         |         |
  1+55       0.1185      1.01  V Q       |         |         |         |
  2+ 0       0.1258      1.07  V Q       |         |         |         |
  2+ 5       0.1336      1.13  V Q       |         |         |         |
  2+10       0.1418      1.18  V Q       |         |         |         |
  2+15       0.1501      1.21  V Q       |         |         |         |
  2+20       0.1586      1.23  V Q       |         |         |         |
  2+25       0.1671      1.25  V Q       |         |         |         |
  2+30       0.1758      1.26  |VQ       |         |         |         |
  2+35       0.1846      1.28  |VQ       |         |         |         |
  2+40       0.1936      1.31  |VQ       |         |         |         |
  2+45       0.2031      1.37  |VQ       |         |         |         |
  2+50       0.2130      1.44  |VQ       |         |         |         |
  2+55       0.2232      1.49  |VQ       |         |         |         |
  3+ 0       0.2337      1.52  |V Q      |         |         |         |
  3+ 5       0.2443      1.54  |V Q      |         |         |         |
  3+10       0.2550      1.56  |V Q      |         |         |         |
  3+15       0.2658      1.57  |V Q      |         |         |         |
  3+20       0.2767      1.58  |V Q      |         |         |         |
  3+25       0.2876      1.59  |V Q      |         |         |         |
  3+30       0.2986      1.60  |V Q      |         |         |         |
  3+35       0.3097      1.60  |V Q      |         |         |         |
  3+40       0.3207      1.61  |V Q      |         |         |         |
  3+45       0.3319      1.61  |V Q      |         |         |         |
  3+50       0.3431      1.63  | VQ      |         |         |         |
  3+55       0.3545      1.66  | VQ      |         |         |         |
  4+ 0       0.3663      1.71  | VQ      |         |         |         |
  4+ 5       0.3785      1.78  | VQ      |         |         |         |
  4+10       0.3911      1.83  | VQ      |         |         |         |
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4+15       0.4040      1.86  | VQ      |         |         |         |
4+20       0.4170      1.89  | VQ      |         |         |         |
4+25       0.4303      1.93  | VQ      |         |         |         |
4+30       0.4440      1.99  | VQ      |         |         |         |
4+35       0.4583      2.07  | V Q     |         |         |         |
4+40       0.4729      2.12  | V Q     |         |         |         |
4+45       0.4877      2.16  | V Q     |         |         |         |
4+50       0.5028      2.19  | V Q     |         |         |         |
4+55       0.5182      2.24  |  VQ     |         |         |         |
5+ 0       0.5341      2.30  |  VQ     |         |         |         |
5+ 5       0.5504      2.36  |  VQ     |         |         |         |
5+10       0.5666      2.36  |  VQ     |         |         |         |
5+15       0.5825      2.30  |  VQ     |         |         |         |
5+20       0.5977      2.21  |  VQ     |         |         |         |
5+25       0.6126      2.16  |  VQ     |         |         |         |
5+30       0.6275      2.17  |  VQ     |         |         |         |
5+35       0.6428      2.22  |  VQ     |         |         |         |
5+40       0.6585      2.28  |  VQ     |         |         |         |
5+45       0.6747      2.35  |  VQ     |         |         |         |
5+50       0.6914      2.42  |   Q     |         |         |         |
5+55       0.7084      2.47  |   Q     |         |         |         |
6+ 0       0.7257      2.51  |   VQ    |         |         |         |
6+ 5       0.7432      2.54  |   VQ    |         |         |         |
6+10       0.7609      2.58  |   VQ    |         |         |         |
6+15       0.7792      2.65  |   VQ    |         |         |         |
6+20       0.7979      2.72  |   VQ    |         |         |         |
6+25       0.8171      2.78  |   VQ    |         |         |         |
6+30       0.8364      2.81  |   VQ    |         |         |         |
6+35       0.8560      2.85  |    Q    |         |         |         |
6+40       0.8760      2.89  |    Q    |         |         |         |
6+45       0.8964      2.96  |    Q    |         |         |         |
6+50       0.9173      3.03  |    VQ   |         |         |         |
6+55       0.9386      3.09  |    VQ   |         |         |         |
7+ 0       0.9601      3.13  |    VQ   |         |         |         |
7+ 5       0.9819      3.16  |    VQ   |         |         |         |
7+10       1.0037      3.18  |    VQ   |         |         |         |
7+15       1.0257      3.19  |     Q   |         |         |         |
7+20       1.0479      3.21  |     Q   |         |         |         |
7+25       1.0703      3.25  |     Q   |         |         |         |
7+30       1.0931      3.31  |     Q   |         |         |         |
7+35       1.1165      3.39  |     Q   |         |         |         |
7+40       1.1404      3.48  |     Q   |         |         |         |
7+45       1.1650      3.57  |     VQ  |         |         |         |
7+50       1.1902      3.66  |      Q  |         |         |         |
7+55       1.2161      3.75  |      Q  |         |         |         |
8+ 0       1.2426      3.85  |      Q  |         |         |         |
8+ 5       1.2698      3.96  |      Q  |         |         |         |
8+10       1.2980      4.09  |      VQ |         |         |         |
8+15       1.3272      4.24  |      VQ |         |         |         |
8+20       1.3574      4.40  |      VQ |         |         |         |
8+25       1.3885      4.52  |       VQ|         |         |         |
8+30       1.4202      4.60  |       VQ|         |         |         |
8+35       1.4523      4.66  |       VQ|         |         |         |
8+40       1.4849      4.73  |       VQ|         |         |         |
8+45       1.5181      4.82  |       VQ|         |         |         |
8+50       1.5519      4.92  |        Q|         |         |         |
8+55       1.5865      5.02  |        VQ         |         |         |
9+ 0       1.6217      5.12  |        VQ         |         |         |
9+ 5       1.6578      5.23  |        VQ         |         |         |
9+10       1.6947      5.37  |        VQ         |         |         |
9+15       1.7328      5.52  |         VQ        |         |         |
9+20       1.7720      5.69  |         VQ        |         |         |
9+25       1.8122      5.85  |         VQ        |         |         |
9+30       1.8534      5.98  |         VQ        |         |         |
9+35       1.8955      6.11  |         |VQ       |         |         |
9+40       1.9384      6.23  |         |VQ       |         |         |
9+45       1.9822      6.35  |         |VQ       |         |         |
9+50       2.0267      6.47  |         |VQ       |         |         |
9+55       2.0721      6.59  |         | VQ      |         |         |
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10+ 0       2.1182      6.70  |         | VQ      |         |         |
10+ 5       2.1647      6.75  |         | VQ      |         |         |
10+10       2.2104      6.63  |         |  Q      |         |         |
10+15       2.2540      6.34  |         | QV      |         |         |
10+20       2.2950      5.95  |         |Q V      |         |         |
10+25       2.3339      5.65  |         |Q V      |         |         |
10+30       2.3716      5.48  |         Q  V      |         |         |
10+35       2.4089      5.42  |         Q   V     |         |         |
10+40       2.4468      5.50  |         Q   V     |         |         |
10+45       2.4860      5.70  |         |Q  V     |         |         |
10+50       2.5271      5.96  |         |Q  V     |         |         |
10+55       2.5695      6.16  |         | Q  V    |         |         |
11+ 0       2.6127      6.28  |         | Q  V    |         |         |
11+ 5       2.6563      6.33  |         | Q  V    |         |         |
11+10       2.7000      6.34  |         | Q  V    |         |         |
11+15       2.7436      6.33  |         | Q   V   |         |         |
11+20       2.7869      6.29  |         | Q   V   |         |         |
11+25       2.8301      6.27  |         | Q   V   |         |         |
11+30       2.8732      6.26  |         | Q   V   |         |         |
11+35       2.9161      6.23  |         | Q    V  |         |         |
11+40       2.9586      6.18  |         | Q    V  |         |         |
11+45       3.0004      6.07  |         | Q    V  |         |         |
11+50       3.0415      5.96  |         |Q     V  |         |         |
11+55       3.0820      5.89  |         |Q      V |         |         |
12+ 0       3.1225      5.88  |         |Q      V |         |         |
12+ 5       3.1636      5.97  |         |Q      V |         |         |
12+10       3.2062      6.19  |         | Q     V |         |         |
12+15       3.2513      6.55  |         |  Q     V|         |         |
12+20       3.2995      6.99  |         |  Q     V|         |         |
12+25       3.3502      7.35  |         |   Q    V|         |         |
12+30       3.4025      7.60  |         |    Q    V         |         |
12+35       3.4562      7.80  |         |    Q    V         |         |
12+40       3.5113      8.00  |         |     Q   V         |         |
12+45       3.5679      8.21  |         |     Q   V         |         |
12+50       3.6258      8.42  |         |     Q   |V        |         |
12+55       3.6851      8.61  |         |      Q  |V        |         |
13+ 0       3.7455      8.77  |         |      Q  | V       |         |
13+ 5       3.8072      8.95  |         |      Q  | V       |         |
13+10       3.8706      9.21  |         |       Q | V       |         |
13+15       3.9364      9.54  |         |        Q|  V      |         |
13+20       4.0047      9.92  |         |        Q|  V      |         |
13+25       4.0750     10.21  |         |         Q  V      |         |
13+30       4.1465     10.39  |         |         Q   V     |         |
13+35       4.2184     10.43  |         |         Q   V     |         |
13+40       4.2887     10.21  |         |         Q    V    |         |
13+45       4.3558      9.74  |         |        Q|    V    |         |
13+50       4.4186      9.12  |         |       Q |    V    |         |
13+55       4.4782      8.66  |         |      Q  |     V   |         |
14+ 0       4.5360      8.39  |         |     Q   |     V   |         |
14+ 5       4.5930      8.27  |         |     Q   |      V  |         |
14+10       4.6500      8.28  |         |     Q   |      V  |         |
14+15       4.7079      8.41  |         |     Q   |      V  |         |
14+20       4.7670      8.58  |         |      Q  |       V |         |
14+25       4.8268      8.69  |         |      Q  |       V |         |
14+30       4.8868      8.71  |         |      Q  |       V |         |
14+35       4.9466      8.68  |         |      Q  |        V|         |
14+40       5.0061      8.65  |         |      Q  |        V|         |
14+45       5.0656      8.63  |         |      Q  |        V|         |
14+50       5.1249      8.61  |         |      Q  |         V         |
14+55       5.1840      8.58  |         |      Q  |         V         |
15+ 0       5.2427      8.52  |         |      Q  |         V         |
15+ 5       5.3009      8.44  |         |     Q   |         |V        |
15+10       5.3584      8.36  |         |     Q   |         |V        |
15+15       5.4154      8.28  |         |     Q   |         |V        |
15+20       5.4718      8.18  |         |     Q   |         | V       |
15+25       5.5275      8.09  |         |     Q   |         | V       |
15+30       5.5826      8.00  |         |    Q    |         | V       |
15+35       5.6368      7.87  |         |    Q    |         |  V      |
15+40       5.6897      7.68  |         |    Q    |         |  V      |
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15+45       5.7408      7.43  |          |   Q     |          |  V      |
15+50       5.7900      7.14  |          |   Q     |          |   V     |
15+55       5.8377      6.92  |          |  Q      |          |   V     |
16+ 0       5.8844      6.78  |          |  Q      |          |   V     |
16+ 5       5.9296      6.57  |          |  Q      |          |   V     |
16+10       5.9714      6.07  |          | Q       |          |    V    |
16+15       6.0076      5.26  |          Q         |          |    V    |
16+20       6.0371      4.28  |        Q |         |          |    V    |
16+25       6.0614      3.53  |       Q  |         |          |    V    |
16+30       6.0825      3.07  |     Q    |         |          |    V    |
16+35       6.1016      2.77  |    Q     |         |          |    V    |
16+40       6.1189      2.52  |    Q     |         |          |     V   |
16+45       6.1347      2.29  |   Q      |         |          |     V   |
16+50       6.1490      2.07  |   Q      |         |          |     V   |
16+55       6.1620      1.90  |  Q       |         |          |     V   |
17+ 0       6.1742      1.77  |  Q       |         |          |     V   |
17+ 5       6.1857      1.67  |  Q       |         |          |     V   |
17+10       6.1970      1.63  |  Q       |         |          |     V   |
17+15       6.2084      1.66  |  Q       |         |          |     V   |
17+20       6.2202      1.71  |  Q       |         |          |     V   |
17+25       6.2322      1.75  |  Q       |         |          |     V   |
17+30       6.2443      1.76  |  Q       |         |          |     V   |
17+35       6.2563      1.74  |  Q       |         |          |     V   |
17+40       6.2682      1.73  |  Q       |         |          |     V   |
17+45       6.2800      1.71  |  Q       |         |          |     V   |
17+50       6.2917      1.69  |  Q       |         |          |      V  |
17+55       6.3030      1.65  |  Q       |         |          |      V  |
18+ 0       6.3139      1.58  |  Q       |         |          |      V  |
18+ 5       6.3243      1.51  |  Q       |         |          |      V  |
18+10       6.3344      1.46  | Q        |         |          |      V  |
18+15       6.3441      1.42  | Q        |         |          |      V  |
18+20       6.3538      1.40  | Q        |         |          |      V  |
18+25       6.3632      1.37  | Q        |         |          |      V  |
18+30       6.3725      1.35  | Q        |         |          |      V  |
18+35       6.3817      1.34  | Q        |         |          |      V  |
18+40       6.3907      1.30  | Q        |         |          |      V  |
18+45       6.3993      1.25  | Q        |         |          |      V  |
18+50       6.4074      1.18  | Q        |         |          |      V  |
18+55       6.4150      1.10  | Q        |         |          |      V  |
19+ 0       6.4220      1.02  | Q        |         |          |      V  |
19+ 5       6.4285      0.94  |Q         |         |          |      V  |
19+10       6.4347      0.91  |Q         |         |          |      V  |
19+15       6.4411      0.92  |Q         |         |          |      V  |
19+20       6.4477      0.96  |Q         |         |          |      V  |
19+25       6.4548      1.02  | Q        |         |          |      V  |
19+30       6.4622      1.08  | Q        |         |          |       V |
19+35       6.4701      1.14  | Q        |         |          |       V |
19+40       6.4780      1.16  | Q        |         |          |       V |
19+45       6.4858      1.13  | Q        |         |          |       V |
19+50       6.4933      1.08  | Q        |         |          |       V |
19+55       6.5003      1.02  | Q        |         |          |       V |
20+ 0       6.5068      0.95  |Q         |         |          |       V |
20+ 5       6.5129      0.88  |Q         |         |          |       V |
20+10       6.5188      0.86  |Q         |         |          |       V |
20+15       6.5248      0.87  |Q         |         |          |       V |
20+20       6.5311      0.91  |Q         |         |          |       V |
20+25       6.5376      0.94  |Q         |         |          |       V |
20+30       6.5442      0.96  |Q         |         |          |       V |
20+35       6.5508      0.97  |Q         |         |          |       V |
20+40       6.5575      0.97  |Q         |         |          |       V |
20+45       6.5642      0.97  |Q         |         |          |       V |
20+50       6.5709      0.97  |Q         |         |          |       V |
20+55       6.5773      0.94  |Q         |         |          |       V |
21+ 0       6.5835      0.89  |Q         |         |          |       V |
21+ 5       6.5892      0.84  |Q         |         |          |       V |
21+10       6.5949      0.82  |Q         |         |          |       V |
21+15       6.6007      0.84  |Q         |         |          |       V |
21+20       6.6067      0.88  |Q         |         |          |       V |
21+25       6.6128      0.89  |Q         |         |          |       V |
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 21+30       6.6187      0.85  |Q        |         |         |       V |
 21+35       6.6243      0.81  |Q        |         |         |       V |
 21+40       6.6298      0.80  |Q        |         |         |        V|
 21+45       6.6354      0.83  |Q        |         |         |        V|
 21+50       6.6414      0.86  |Q        |         |         |        V|
 21+55       6.6474      0.87  |Q        |         |         |        V|
 22+ 0       6.6532      0.84  |Q        |         |         |        V|
 22+ 5       6.6587      0.80  |Q        |         |         |        V|
 22+10       6.6641      0.79  |Q        |         |         |        V|
 22+15       6.6697      0.82  |Q        |         |         |        V|
 22+20       6.6756      0.86  |Q        |         |         |        V|
 22+25       6.6816      0.87  |Q        |         |         |        V|
 22+30       6.6874      0.84  |Q        |         |         |        V|
 22+35       6.6928      0.79  |Q        |         |         |        V|
 22+40       6.6979      0.75  |Q        |         |         |        V|
 22+45       6.7029      0.73  |Q        |         |         |        V|
 22+50       6.7078      0.71  |Q        |         |         |        V|
 22+55       6.7127      0.70  |Q        |         |         |        V|
 23+ 0       6.7175      0.70  |Q        |         |         |        V|
 23+ 5       6.7222      0.69  |Q        |         |         |        V|
 23+10       6.7270      0.69  |Q        |         |         |        V|
 23+15       6.7317      0.68  |Q        |         |         |        V|
 23+20       6.7363      0.68  |Q        |         |         |        V|
 23+25       6.7410      0.68  |Q        |         |         |        V|
 23+30       6.7456      0.67  |Q        |         |         |        V|
 23+35       6.7503      0.67  |Q        |         |         |        V|
 23+40       6.7549      0.67  |Q        |         |         |        V|
 23+45       6.7595      0.67  |Q        |         |         |        V|
 23+50       6.7641      0.67  |Q        |         |         |        V|
 23+55       6.7686      0.67  |Q        |         |         |        V|
 24+ 0       6.7732      0.67  |Q        |         |         |        V|
 24+ 5       6.7777      0.65  |Q        |         |         |        V|
 24+10       6.7817      0.59  |Q        |         |         |        V|
 24+15       6.7851      0.49  Q         |         |         |        V|
 24+20       6.7876      0.36  Q         |         |         |        V|
 24+25       6.7894      0.27  Q         |         |         |        V|
 24+30       6.7908      0.21  Q         |         |         |        V|
 24+35       6.7920      0.17  Q         |         |         |        V|
 24+40       6.7930      0.15  Q         |         |         |        V|
 24+45       6.7939      0.12  Q         |         |         |        V|
 24+50       6.7946      0.11  Q         |         |         |        V|
 24+55       6.7952      0.09  Q         |         |         |        V|
 25+ 0       6.7958      0.08  Q         |         |         |        V|
 25+ 5       6.7962      0.07  Q         |         |         |        V|
 25+10       6.7966      0.06  Q         |         |         |        V|
 25+15       6.7970      0.05  Q         |         |         |        V|
 25+20       6.7973      0.04  Q         |         |         |        V|
 25+25       6.7976      0.04  Q         |         |         |        V|
 25+30       6.7978      0.03  Q         |         |         |        V|
 25+35       6.7980      0.03  Q         |         |         |        V|
 25+40       6.7981      0.02  Q         |         |         |        V|
 25+45       6.7983      0.02  Q         |         |         |        V|
 25+50       6.7984      0.02  Q         |         |         |        V|
 25+55       6.7985      0.01  Q         |         |         |        V|
 26+ 0       6.7986      0.01  Q         |         |         |        V|
 26+ 5       6.7986      0.01  Q         |         |         |        V|
 26+10       6.7987      0.01  Q         |         |         |        V|
 26+15       6.7987      0.01  Q         |         |         |        V|
 26+20       6.7988      0.00  Q         |         |         |        V|
 26+25       6.7988      0.00  Q         |         |         |         V
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                    FLOOD HYDROGRAPH ROUTING PROGRAM
            Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                        Study date: 08/31/21

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


5 YEAR
24 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B5245.rte
****************************HYDROGRAPH DATA****************************
                Number of intervals =   317
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       10.431 (CFS)
                Total volume =       6.799 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
-----------------------------------------------------------------
Total number of inflow hydrograph intervals = 317
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
-----------------------------------------------------------------
-----------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
-----------------------------------------------------------------
-----------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
-----------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
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4.070	3.020	45.800	2.862	3.178
4.270	3.200	52.400	3.020	3.380
4.470	3.390	55.100	3.200	3.580
4.670	3.580	57.700	3.381	3.779
4.870	3.770	60.200	3.563	3.977
5.000	3.890	62.600	3.674	4.106

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	5.22	7.82	10.43	Depth (Ft.)
0.083	0.02	0.00	0.000	O					0.00
0.167	0.07	0.00	0.000	O					0.00
0.250	0.18	0.00	0.001	O					0.00
0.333	0.31	0.00	0.003	O					0.00
0.417	0.43	0.00	0.005	OI					0.01
0.500	0.54	0.00	0.009	OI					0.01
0.583	0.64	0.00	0.013	OI					0.02
0.667	0.71	0.00	0.017	O I					0.03
0.750	0.76	0.00	0.023	O I					0.04
0.833	0.80	0.00	0.028	O I					0.05
0.917	0.86	0.00	0.034	O I					0.06
1.000	0.93	0.00	0.040	O I					0.07
1.083	1.01	0.00	0.047	O I					0.08
1.167	1.04	0.00	0.054	O I					0.09
1.250	1.04	0.00	0.061	O I					0.10
1.333	1.00	0.00	0.068	O I					0.11
1.417	0.98	0.00	0.075	O I					0.13
1.500	0.97	0.00	0.081	O I					0.14
1.583	0.97	0.00	0.088	O I					0.15
1.667	0.97	0.00	0.095	O I					0.16
1.750	0.97	0.00	0.101	O I					0.17
1.833	0.98	0.00	0.108	O I					0.18
1.917	1.01	0.00	0.115	O I					0.19
2.000	1.07	0.00	0.122	O I					0.21
2.083	1.13	0.00	0.130	O I					0.22
2.167	1.18	0.00	0.138	O I					0.23
2.250	1.21	0.00	0.146	O I					0.25
2.333	1.23	0.00	0.154	O I					0.26
2.417	1.25	0.00	0.163	O I					0.27
2.500	1.26	0.00	0.171	O I					0.29
2.583	1.28	0.00	0.180	O I					0.30
2.667	1.31	0.00	0.189	O I					0.31
2.750	1.37	0.00	0.198	O I					0.33
2.833	1.44	0.00	0.208	O I					0.34
2.917	1.49	0.00	0.218	O I					0.36
3.000	1.52	0.00	0.228	O I					0.38
3.083	1.54	0.00	0.239	O I					0.39
3.167	1.56	0.00	0.249	O I					0.41
3.250	1.57	0.00	0.260	O I					0.42
3.333	1.58	0.00	0.271	O I					0.44
3.417	1.59	0.00	0.282	O I					0.46
3.500	1.60	0.00	0.293	O I					0.47
3.583	1.60	0.00	0.304	O I					0.49
3.667	1.61	0.00	0.315	O I					0.51
3.750	1.61	0.00	0.326	O I					0.53
3.833	1.63	0.00	0.337	O I					0.54
3.917	1.66	0.00	0.349	O I					0.56
4.000	1.71	0.00	0.360	O I					0.58
4.083	1.78	0.00	0.372	O I					0.60
4.167	1.83	0.00	0.385	O I					0.62
4.250	1.86	0.00	0.397	O I					0.64
4.333	1.89	0.00	0.410	O I					0.65
4.417	1.93	0.00	0.423	O I					0.68
4.500	1.99	0.00	0.437	O I					0.70
4.583	2.07	0.00	0.451	O I					0.72

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 4.667    2.12    0.00      0.465  O     I |       |       |       |     0.74
 4.750    2.16    0.00      0.480  O     I |       |       |       |     0.76
 4.833    2.19    0.00      0.495  O     I |       |       |       |     0.79
 4.917    2.24    0.00      0.510  O     I |       |       |       |     0.81
 5.000    2.30    0.00      0.526  O      I|       |       |       |     0.83
 5.083    2.36    0.00      0.542  O      I|       |       |       |     0.86
 5.167    2.36    0.00      0.558  O      I|       |       |       |     0.88
 5.250    2.30    0.00      0.574  O      I|       |       |       |     0.91
 5.333    2.21    0.00      0.590  O     I |       |       |       |     0.93
 5.417    2.16    0.00      0.605  O     I |       |       |       |     0.95
 5.500    2.17    0.00      0.620  O     I |       |       |       |     0.98
 5.583    2.22    0.00      0.635  O     I |       |       |       |     1.00
 5.667    2.28    0.00      0.650  O     I |       |       |       |     1.02
 5.750    2.35    0.00      0.666  O      I|       |       |       |     1.05
 5.833    2.42    0.00      0.683  O      I|       |       |       |     1.07
 5.917    2.47    0.00      0.700  O      I|       |       |       |     1.10
 6.000    2.51    0.00      0.717  O      I|       |       |       |     1.13
 6.083    2.54    0.00      0.734  O      I|       |       |       |     1.15
 6.167    2.58    0.00      0.752  O      I|       |       |       |     1.18
 6.250    2.65    0.00      0.770  O       I       |       |       |     1.21
 6.333    2.72    0.00      0.788  O       I       |       |       |     1.24
 6.417    2.78    0.00      0.807  O       I       |       |       |     1.27
 6.500    2.81    0.00      0.826  O       I       |       |       |     1.29
 6.583    2.85    0.00      0.846  O       I       |       |       |     1.32
 6.667    2.89    0.00      0.866  O       I       |       |       |     1.35
 6.750    2.96    0.00      0.886  O       |I      |       |       |     1.38
 6.833    3.03    0.00      0.906  O       |I      |       |       |     1.41
 6.917    3.09    0.00      0.927  O       |I      |       |       |     1.43
 7.000    3.13    0.00      0.949  O       |I      |       |       |     1.46
 7.083    3.16    0.00      0.971  O       |I      |       |       |     1.50
 7.167    3.18    0.00      0.992  O       |I      |       |       |     1.53
 7.250    3.19    0.00      1.014  O       |I      |       |       |     1.56
 7.333    3.21    0.00      1.036  O       |I      |       |       |     1.59
 7.417    3.25    0.00      1.059  O       |I      |       |       |     1.62
 7.500    3.31    0.00      1.081  O       | I     |       |       |     1.65
 7.583    3.39    0.00      1.104  O       | I     |       |       |     1.68
 7.667    3.48    0.00      1.128  O       | I     |       |       |     1.72
 7.750    3.57    0.00      1.152  O       | I     |       |       |     1.75
 7.833    3.66    0.00      1.177  O       |  I    |       |       |     1.79
 7.917    3.75    0.00      1.203  O       |  I    |       |       |     1.82
 8.000    3.85    0.00      1.229  O       |  I    |       |       |     1.86
 8.083    3.96    0.00      1.256  O       |   I   |       |       |     1.90
 8.167    4.09    0.00      1.283  O       |   I   |       |       |     1.93
 8.250    4.24    0.00      1.312  O       |   I   |       |       |     1.97
 8.333    4.40    0.00      1.342  O       |    I  |       |       |     2.02
 8.417    4.52    0.00      1.372  O       |    I  |       |       |     2.06
 8.500    4.60    0.00      1.404  O       |     I |       |       |     2.10
 8.583    4.66    0.01      1.436  O       |     I |       |       |     2.14
 8.667    4.73    0.01      1.468  O       |     I |       |       |     2.19
 8.750    4.82    0.01      1.501  O       |     I |       |       |     2.23
 8.833    4.92    0.01      1.534  O       |      I|       |       |     2.28
 8.917    5.02    0.01      1.568  O       |      I|       |       |     2.32
 9.000    5.12    0.01      1.603  O       |      I|       |       |     2.37
 9.083    5.23    0.01      1.639  O       |       I       |       |     2.41
 9.167    5.37    0.01      1.675  O       |       I       |       |     2.46
 9.250    5.52    0.58      1.711  |O      |       I       |       |     2.51
 9.333    5.69    1.19      1.743  |  O    |       |I      |       |     2.55
 9.417    5.85    1.74      1.773  |    O  |       |I      |       |     2.59
 9.500    5.98    2.25      1.800  |     O |       | I     |       |     2.62
 9.583    6.11    2.71      1.824  |       O       | I     |       |     2.65
 9.667    6.23    3.16      1.847  |       |O      |  I    |       |     2.68
 9.750    6.35    3.63      1.867  |       |  O    |  I    |       |     2.70
 9.833    6.47    4.05      1.884  |       |   O   |  I    |       |     2.73
 9.917    6.59    4.43      1.900  |       |    O  |   I   |       |     2.75
10.000    6.70    4.76      1.914  |       |     O |   I   |       |     2.76
10.083    6.75    5.06      1.927  |       |      O|   I   |       |     2.78
10.167    6.63    5.30      1.937  |       |       O   I   |       |     2.79
10.250    6.34    5.48      1.945  |       |       O  I    |       |     2.80
10.333    5.95    5.58      1.949  |       |       |OI     |       |     2.81
```

10.417	5.65	5.62	1.950	|	|	|O	|	|	2.81
10.500	5.48	5.61	1.950	|	|	IO	|	|	2.81
10.583	5.42	5.58	1.949	|	|	IO	|	|	2.81
10.667	5.50	5.56	1.948	|	|	IO	|	|	2.80
10.750	5.70	5.57	1.948	|	|	|O	|	|	2.81
10.833	5.96	5.61	1.950	|	|	|OI	|	|	2.81
10.917	6.16	5.68	1.953	|	|	|OI	|	|	2.81
11.000	6.28	5.76	1.956	|	|	|O I	|	|	2.82
11.083	6.33	5.84	1.960	|	|	|O I	|	|	2.82
11.167	6.34	5.92	1.963	|	|	| OI	|	|	2.82
11.250	6.33	5.98	1.965	|	|	| OI	|	|	2.83
11.333	6.29	6.03	1.968	|	|	| OI	|	|	2.83
11.417	6.27	6.07	1.969	|	|	| OI	|	|	2.83
11.500	6.26	6.10	1.970	|	|	| OI	|	|	2.83
11.583	6.23	6.12	1.971	|	|	| OI	|	|	2.83
11.667	6.18	6.13	1.972	|	|	| O	|	|	2.83
11.750	6.07	6.13	1.972	|	|	| O	|	|	2.83
11.833	5.96	6.11	1.971	|	|	| O	|	|	2.83
11.917	5.89	6.08	1.970	|	|	| O	|	|	2.83
12.000	5.88	6.05	1.969	|	|	| O	|	|	2.83
12.083	5.97	6.03	1.968	|	|	| O	|	|	2.83
12.167	6.19	6.04	1.968	|	|	| O	|	|	2.83
12.250	6.55	6.09	1.970	|	|	| O I	|	|	2.83
12.333	6.99	6.19	1.974	|	|	| O I	|	|	2.84
12.417	7.35	6.34	1.981	|	|	| O I	|	|	2.85
12.500	7.60	6.51	1.988	|	|	| O I|	|	2.85
12.583	7.80	6.69	1.996	|	|	| O I|	|	2.86
12.667	8.00	6.89	2.003	|	|	| O I	|	2.87
12.750	8.21	7.12	2.011	|	|	| O |I	|	2.88
12.833	8.42	7.34	2.018	|	|	| O |I	|	2.89
12.917	8.61	7.56	2.025	|	|	| O| I	|	2.90
13.000	8.77	7.77	2.032	|	|	| O| I	|	2.91
13.083	8.95	7.98	2.039	|	|	| O I	|	2.92
13.167	9.21	8.18	2.046	|	|	| |O I	|	2.93
13.250	9.54	8.41	2.054	|	|	| |O I	|	2.94
13.333	9.92	8.66	2.062	|	|	| | O I	|	2.95
13.417	10.21	8.92	2.071	|	|	| | O I|	|	2.96
13.500	10.39	9.18	2.079	|	|	| | O I|	|	2.97
13.583	10.43	9.41	2.087	|	|	| | O I	|	2.98
13.667	10.21	9.58	2.093	|	|	| | O I|	|	2.99
13.750	9.74	9.65	2.095	|	|	| | O |	|	2.99
13.833	9.12	9.61	2.094	|	|	| | I O |	|	2.99
13.917	8.66	9.48	2.089	|	|	| | I O |	|	2.98
14.000	8.39	9.30	2.083	|	|	| |I O |	|	2.97
14.083	8.27	9.12	2.077	|	|	| |I O |	|	2.97
14.167	8.28	8.96	2.072	|	|	| |I O |	|	2.96
14.250	8.41	8.84	2.068	|	|	| |I O |	|	2.96
14.333	8.58	8.78	2.066	|	|	| | O |	|	2.95
14.417	8.69	8.75	2.065	|	|	| | O |	|	2.95
14.500	8.71	8.74	2.065	|	|	| | O |	|	2.95
14.583	8.68	8.73	2.064	|	|	| | O |	|	2.95
14.667	8.65	8.72	2.064	|	|	| | O |	|	2.95
14.750	8.63	8.70	2.063	|	|	| | O |	|	2.95
14.833	8.61	8.69	2.063	|	|	| | O |	|	2.95
14.917	8.58	8.67	2.062	|	|	| | O |	|	2.95
15.000	8.52	8.65	2.062	|	|	| | O |	|	2.95
15.083	8.44	8.62	2.061	|	|	| |IO |	|	2.95
15.167	8.36	8.58	2.059	|	|	| |IO |	|	2.94
15.250	8.28	8.53	2.058	|	|	| |IO |	|	2.94
15.333	8.18	8.47	2.056	|	|	| |O |	|	2.94
15.417	8.09	8.41	2.054	|	|	| IO |	|	2.94
15.500	8.00	8.34	2.051	|	|	| IO |	|	2.93
15.583	7.87	8.26	2.049	|	|	| IO |	|	2.93
15.667	7.68	8.17	2.046	|	|	| I|O |	|	2.93
15.750	7.43	8.06	2.042	|	|	| I O |	|	2.92
15.833	7.14	7.91	2.037	|	|	| I O |	|	2.92
15.917	6.92	7.75	2.032	|	|	| I O|	|	2.91
16.000	6.78	7.58	2.026	|	|	| I O|	|	2.90
16.083	6.57	7.41	2.020	|	|	| I O |	|	2.90

16.167	6.07	7.21	2.014				I O		2.89
16.250	5.26	6.92	2.004			I	O		2.87
16.333	4.28	6.57	1.990		I		O		2.86
16.417	3.53	6.17	1.973	I		O			2.84
16.500	3.07	5.73	1.955	I		O			2.81
16.583	2.77	5.31	1.937	I		O			2.79
16.667	2.52	4.90	1.920	I		O			2.77
16.750	2.29	4.53	1.904	I	O				2.75
16.833	2.07	4.17	1.889	I	O				2.73
16.917	1.90	3.84	1.875	I	O				2.71
17.000	1.77	3.54	1.863	I	O				2.70
17.083	1.67	3.26	1.851	I	O				2.68
17.167	1.63	3.02	1.841	I	O				2.67
17.250	1.66	2.85	1.832	I	O				2.66
17.333	1.71	2.71	1.824	I	O				2.65
17.417	1.75	2.59	1.818	I	O				2.64
17.500	1.76	2.49	1.813	I	O				2.64
17.583	1.74	2.40	1.808	I	O				2.63
17.667	1.73	2.32	1.804	I	O				2.62
17.750	1.71	2.25	1.800	I	O				2.62
17.833	1.69	2.18	1.796	I	O				2.62
17.917	1.65	2.12	1.793	I	O				2.61
18.000	1.58	2.06	1.790	I	O				2.61
18.083	1.51	2.00	1.786	I	O				2.60
18.167	1.46	1.93	1.783	I	O				2.60
18.250	1.42	1.87	1.780	I	O				2.59
18.333	1.40	1.82	1.777	I	O				2.59
18.417	1.37	1.77	1.774	I	O				2.59
18.500	1.35	1.72	1.771	I	O				2.58
18.583	1.34	1.67	1.769	I	O				2.58
18.667	1.30	1.63	1.767		O				2.58
18.750	1.25	1.59	1.764	I	O				2.58
18.833	1.18	1.54	1.762	I	O				2.57
18.917	1.10	1.49	1.759	I	O				2.57
19.000	1.02	1.44	1.757	I	O				2.57
19.083	0.94	1.38	1.754	I	O				2.56
19.167	0.91	1.33	1.751	I	O				2.56
19.250	0.92	1.28	1.748	I	O				2.55
19.333	0.96	1.24	1.746	I	O				2.55
19.417	1.02	1.21	1.744		O				2.55
19.500	1.08	1.19	1.743		O				2.55
19.583	1.14	1.18	1.743		O				2.55
19.667	1.16	1.18	1.742		O				2.55
19.750	1.13	1.17	1.742		O				2.55
19.833	1.08	1.16	1.742		O				2.55
19.917	1.02	1.15	1.741		O				2.55
20.000	0.95	1.13	1.740	I	O				2.54
20.083	0.88	1.10	1.739	I	O				2.54
20.167	0.86	1.08	1.737	I	O				2.54
20.250	0.87	1.05	1.736	I	O				2.54
20.333	0.91	1.03	1.735	I	O				2.54
20.417	0.94	1.02	1.734	I	O				2.54
20.500	0.96	1.01	1.734	I	O				2.54
20.583	0.97	1.00	1.733	I	O				2.54
20.667	0.97	1.00	1.733	I	O				2.54
20.750	0.97	1.00	1.733	I	O				2.54
20.833	0.97	0.99	1.733	I	O				2.54
20.917	0.94	0.99	1.732	I	O				2.54
21.000	0.89	0.98	1.732	I	O				2.53
21.083	0.84	0.97	1.731	O					2.53
21.167	0.82	0.95	1.730	O					2.53
21.250	0.84	0.93	1.729	O					2.53
21.333	0.88	0.93	1.729	O					2.53
21.417	0.89	0.92	1.729	O					2.53
21.500	0.85	0.91	1.728	O					2.53
21.583	0.81	0.90	1.728	O					2.53
21.667	0.80	0.89	1.727	O					2.53
21.750	0.83	0.88	1.727	O					2.53
21.833	0.86	0.88	1.726	O					2.53

21.917	0.87	0.88	1.726	O				2.53
22.000	0.84	0.87	1.726	O				2.53
22.083	0.80	0.87	1.726	O				2.53
22.167	0.79	0.86	1.725	O				2.53
22.250	0.82	0.85	1.725	O				2.53
22.333	0.86	0.85	1.725	O				2.53
22.417	0.87	0.85	1.725	O				2.53
22.500	0.84	0.85	1.725	O				2.53
22.583	0.79	0.85	1.725	O				2.53
22.667	0.75	0.84	1.724	O				2.53
22.750	0.73	0.82	1.724	O				2.52
22.833	0.71	0.81	1.723	O				2.52
22.917	0.70	0.80	1.722	O				2.52
23.000	0.70	0.79	1.722	O				2.52
23.083	0.69	0.78	1.721	O				2.52
23.167	0.69	0.77	1.720	O				2.52
23.250	0.68	0.76	1.720	O				2.52
23.333	0.68	0.75	1.719	O				2.52
23.417	0.68	0.74	1.719	O				2.52
23.500	0.67	0.73	1.719	O				2.52
23.583	0.67	0.72	1.718	O				2.52
23.667	0.67	0.72	1.718	O				2.52
23.750	0.67	0.71	1.718	O				2.52
23.833	0.67	0.71	1.717	O				2.52
23.917	0.67	0.70	1.717	O				2.52
24.000	0.67	0.70	1.717	O				2.52
24.083	0.65	0.69	1.716	IO				2.52
24.167	0.59	0.68	1.716	IO				2.52
24.250	0.49	0.67	1.715	IO				2.51
24.333	0.36	0.64	1.714	O				2.51
24.417	0.27	0.60	1.711	IO				2.51
24.500	0.21	0.55	1.709	IO				2.51
24.583	0.17	0.51	1.707	IO				2.50
24.667	0.15	0.47	1.704	IO				2.50
24.750	0.12	0.43	1.702	IO				2.50
24.833	0.11	0.39	1.700	IO				2.50
24.917	0.09	0.35	1.698	IO				2.49
25.000	0.08	0.32	1.697	O				2.49
25.083	0.07	0.29	1.695	O				2.49
25.167	0.06	0.26	1.694	O				2.49
25.250	0.05	0.24	1.692	O				2.49
25.333	0.04	0.22	1.691	O				2.48
25.417	0.04	0.19	1.690	O				2.48
25.500	0.03	0.18	1.689	O				2.48
25.583	0.03	0.16	1.688	O				2.48
25.667	0.02	0.14	1.687	O				2.48
25.750	0.02	0.13	1.686	O				2.48
25.833	0.02	0.11	1.686	O				2.48
25.917	0.01	0.10	1.685	O				2.48
26.000	0.01	0.09	1.684	O				2.48
26.083	0.01	0.08	1.684	O				2.47
26.167	0.01	0.07	1.683	O				2.47
26.250	0.01	0.06	1.683	O				2.47
26.333	0.00	0.06	1.683	O				2.47
26.417	0.00	0.05	1.682	O				2.47
26.500	0.00	0.04	1.682	O				2.47
26.583	0.00	0.04	1.682	O				2.47
26.667	0.00	0.03	1.681	O				2.47
26.750	0.00	0.03	1.681	O				2.47
26.833	0.00	0.03	1.681	O				2.47
26.917	0.00	0.02	1.681	O				2.47
27.000	0.00	0.02	1.681	O				2.47
27.083	0.00	0.02	1.680	O				2.47
27.167	0.00	0.02	1.680	O				2.47
27.250	0.00	0.01	1.680	O				2.47
27.333	0.00	0.01	1.680	O				2.47
27.417	0.00	0.01	1.680	O				2.47
27.500	0.00	0.01	1.680	O				2.47
27.583	0.00	0.01	1.680	O				2.47

412.917	0.00	0.00	1.412	O	|	|	|	|	2.11
413.000	0.00	0.00	1.412	O	|	|	|	|	2.11
413.083	0.00	0.00	1.412	O	|	|	|	|	2.11
413.167	0.00	0.00	1.412	O	|	|	|	|	2.11
413.250	0.00	0.00	1.412	O	|	|	|	|	2.11
413.333	0.00	0.00	1.412	O	|	|	|	|	2.11
413.417	0.00	0.00	1.412	O	|	|	|	|	2.11
413.500	0.00	0.00	1.412	O	|	|	|	|	2.11
413.583	0.00	0.00	1.412	O	|	|	|	|	2.11
413.667	0.00	0.00	1.412	O	|	|	|	|	2.11
413.750	0.00	0.00	1.412	O	|	|	|	|	2.11
413.833	0.00	0.00	1.412	O	|	|	|	|	2.11
413.917	0.00	0.00	1.411	O	|	|	|	|	2.11
414.000	0.00	0.00	1.411	O	|	|	|	|	2.11
414.083	0.00	0.00	1.411	O	|	|	|	|	2.11
414.167	0.00	0.00	1.411	O	|	|	|	|	2.11
414.250	0.00	0.00	1.411	O	|	|	|	|	2.11
414.333	0.00	0.00	1.411	O	|	|	|	|	2.11
414.417	0.00	0.00	1.411	O	|	|	|	|	2.11
414.500	0.00	0.00	1.411	O	|	|	|	|	2.11
414.583	0.00	0.00	1.411	O	|	|	|	|	2.11
414.667	0.00	0.00	1.411	O	|	|	|	|	2.11
414.750	0.00	0.00	1.411	O	|	|	|	|	2.11
414.833	0.00	0.00	1.411	O	|	|	|	|	2.11
414.917	0.00	0.00	1.411	O	|	|	|	|	2.11
415.000	0.00	0.00	1.411	O	|	|	|	|	2.11
415.083	0.00	0.00	1.411	O	|	|	|	|	2.11
415.167	0.00	0.00	1.411	O	|	|	|	|	2.11
415.250	0.00	0.00	1.411	O	|	|	|	|	2.11
415.333	0.00	0.00	1.411	O	|	|	|	|	2.11
415.417	0.00	0.00	1.411	O	|	|	|	|	2.11
415.500	0.00	0.00	1.411	O	|	|	|	|	2.11
415.583	0.00	0.00	1.411	O	|	|	|	|	2.11
415.667	0.00	0.00	1.411	O	|	|	|	|	2.11
415.750	0.00	0.00	1.411	O	|	|	|	|	2.11
415.833	0.00	0.00	1.411	O	|	|	|	|	2.11
415.917	0.00	0.00	1.411	O	|	|	|	|	2.11
416.000	0.00	0.00	1.411	O	|	|	|	|	2.11
416.083	0.00	0.00	1.411	O	|	|	|	|	2.11
416.167	0.00	0.00	1.411	O	|	|	|	|	2.11
416.250	0.00	0.00	1.411	O	|	|	|	|	2.11
416.333	0.00	0.00	1.411	O	|	|	|	|	2.11
416.417	0.00	0.00	1.411	O	|	|	|	|	2.11
416.500	0.00	0.00	1.410	O	|	|	|	|	2.11
416.583	0.00	0.00	1.410	O	|	|	|	|	2.11
416.667	0.00	0.00	1.410	O	|	|	|	|	2.11

Remaining water in basin = 1.41 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =  5001
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =        9.654 (CFS)
                Total volume =       5.388 (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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10-YEAR FREQUENCY

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384B10110.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



---------------------------------------------------------------------
10 YEAR
1 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            0.52                  16.72

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            1.15                  36.97

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.520(In)
Area Averaged 100-Year Rainfall =    1.150(In)

Point rain (area averaged) =    0.779(In)
Areal adjustment factor =   99.97 %
Adjusted average point rain =    0.779(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
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56.0  56.0      0.511     0.900        0.097       1.000      0.097
                                                 Sum (F) =   0.097
Area averaged mean soil loss (F) (In/Hr) =  0.097
Minimum soil loss rate ((In/Hr)) =  0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.5500
-------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-------------------------------------------------------------------
                Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.30      0.308       (  0.097)       0.031        0.278
   2   0.17     4.20      0.393       (  0.097)       0.039        0.353
   3   0.25     4.40      0.411       (  0.097)       0.041        0.370
   4   0.33     4.80      0.449       (  0.097)       0.045        0.404
   5   0.42     5.20      0.486       (  0.097)       0.049        0.437
   6   0.50     6.20      0.580       (  0.097)       0.058        0.522
   7   0.58     6.80      0.636       (  0.097)       0.064        0.572
   8   0.67     8.80      0.823       (  0.097)       0.082        0.740
   9   0.75    13.90      1.299          0.097    (  0.130)        1.202
  10   0.83    31.40      2.935          0.097    (  0.294)        2.838
  11   0.92     7.20      0.673       (  0.097)       0.067        0.606
  12   1.00     3.80      0.355       (  0.097)       0.036        0.320
```

```
                (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     8.6
       Flood volume = Effective rainfall      0.72(In)
        times area      32.1(Ac.)/[(In)/(Ft.)] =       1.9(Ac.Ft)
       Total soil loss =      0.06(In)
       Total soil loss =     0.157(Ac.Ft)
       Total rainfall =      0.78(In)
       Flood volume =       84047.7 Cubic Feet
       Total soil loss =        6860.4 Cubic Feet
       ---------------------------------------------------------------------
        Peak flow rate of this hydrograph =     32.112(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))

       ---------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
  ---------------------------------------------------------------------
    0+ 5       0.0016      0.23  Q         |         |         |         |
    0+10       0.0089      1.07  VQ        |         |         |         |
    0+15       0.0275      2.69  V Q       |         |         |         |
    0+20       0.0608      4.84  |V  Q     |         |         |         |
    0+25       0.1078      6.82  | V   Q   |         |         |         |
    0+30       0.1656      8.39  |  V    Q |         |         |         |
    0+35       0.2333      9.83  |   V    Q|         |         |         |
    0+40       0.3120     11.43  |     V   |Q        |         |         |
    0+45       0.4064     13.71  |       V |  Q      |         |         |
    0+50       0.5331     18.39  |         |V      Q |         |         |
    0+55       0.7080     25.40  |         |   V     |    Q    |         |
    1+ 0       0.9235     31.30  |         |        V|         |Q        |
    1+ 5       1.1447     32.11  |         |         |  V      | Q       |
    1+10       1.3226     25.83  |         |         |    Q V  |         |
    1+15       1.4459     17.90  |         |      Q  |        V|         |
    1+20       1.5302     12.25  |         | Q       |         |V        |
    1+25       1.5918      8.95  |       Q |         |         |  V      |
    1+30       1.6408      7.10  |      Q  |         |         |   V     |
    1+35       1.6813      5.89  |    Q    |         |         |   V     |
    1+40       1.7156      4.98  |   Q     |         |         |    V    |
    1+45       1.7446      4.20  |   Q     |         |         |     V   |
    1+50       1.7697      3.65  |  Q      |         |         |     V   |
    1+55       1.7915      3.16  |  Q      |         |         |      V  |
    2+ 0       1.8102      2.72  | Q       |         |         |      V  |
    2+ 5       1.8263      2.34  | Q       |         |         |      V  |
    2+10       1.8406      2.07  | Q       |         |         |       V |
    2+15       1.8536      1.89  |Q        |         |         |       V |
    2+20       1.8654      1.72  |Q        |         |         |       V |
    2+25       1.8756      1.48  |Q        |         |         |       V |
    2+30       1.8848      1.33  |Q        |         |         |        V|
    2+35       1.8928      1.16  |Q        |         |         |        V|
    2+40       1.8998      1.02  |Q        |         |         |        V|
    2+45       1.9057      0.87  Q         |         |         |        V|
    2+50       1.9109      0.75  Q         |         |         |        V|
    2+55       1.9153      0.63  Q         |         |         |        V|
    3+ 0       1.9192      0.57  Q         |         |         |        V|
    3+ 5       1.9227      0.51  Q         |         |         |        V|
    3+10       1.9259      0.46  Q         |         |         |        V|
    3+15       1.9286      0.39  Q         |         |         |        V|
    3+20       1.9292      0.09  Q         |         |         |        V|
    3+25       1.9295      0.04  Q         |         |         |         V
---------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


10 YEAR
1 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B10110.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =    41
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       32.112 (CFS)
                Total volume =       1.929 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------
Total number of inflow hydrograph intervals = 41
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
------------------------------------------------------------------
------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
------------------------------------------------------------------
------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
------------------------------------------------------------------
                Hydrograph Detention Basin Routing
------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 8.0 16.06 24.08 32.11	Depth (Ft.)
0.083	0.23	0.00	0.001	O	0.00
0.167	1.07	0.00	0.005	OI	0.01
0.250	2.69	0.00	0.018	O I	0.03
0.333	4.84	0.00	0.044	O I	0.07
0.417	6.82	0.00	0.084	O I	0.14
0.500	8.39	0.00	0.137	O I	0.23
0.583	9.83	0.00	0.199	O I	0.33
0.667	11.43	0.00	0.273	O I	0.44
0.750	13.71	0.00	0.359	O I	0.58
0.833	18.39	0.00	0.470	O I	0.75
0.917	25.40	0.00	0.620	O I	0.98
1.000	31.30	0.00	0.816	O I	1.28
1.083	32.11	0.00	1.034	O I	1.58
1.167	25.83	0.00	1.234	O I	1.86
1.250	17.90	0.00	1.384	O I	2.07
1.333	12.25	0.01	1.488	O I	2.21
1.417	8.95	0.01	1.561	O I	2.31
1.500	7.10	0.01	1.616	O I	2.38
1.583	5.89	0.01	1.661	O I	2.44
1.667	4.98	0.33	1.697	O I	2.49
1.750	4.20	0.84	1.725	O I	2.53
1.833	3.65	1.22	1.745	O I	2.55
1.917	3.16	1.48	1.759	O I	2.57
2.000	2.72	1.66	1.768	OI	2.58
2.083	2.34	1.76	1.774	OI	2.59
2.167	2.07	1.82	1.777	OI	2.59
2.250	1.89	1.84	1.778	O	2.59
2.333	1.72	1.83	1.777	O	2.59
2.417	1.48	1.80	1.776	O	2.59
2.500	1.33	1.76	1.773	O	2.59
2.583	1.16	1.69	1.770	O	2.58
2.667	1.02	1.62	1.766	O	2.58
2.750	0.87	1.54	1.762	IO	2.57
2.833	0.75	1.45	1.757	IO	2.57
2.917	0.63	1.36	1.752	IO	2.56
3.000	0.57	1.27	1.747	IO	2.55
3.083	0.51	1.18	1.743	IO	2.55
3.167	0.46	1.10	1.738	IO	2.54
3.250	0.39	1.01	1.734	IO	2.54
3.333	0.09	0.92	1.729	O	2.53
3.417	0.04	0.82	1.723	O	2.52
3.500	0.00	0.72	1.718	O	2.52
3.583	0.00	0.63	1.713	O	2.51
3.667	0.00	0.56	1.709	O	2.51
3.750	0.00	0.49	1.706	O	2.50
3.833	0.00	0.43	1.703	O	2.50
3.917	0.00	0.38	1.700	O	2.49
4.000	0.00	0.33	1.697	O	2.49
4.083	0.00	0.29	1.695	O	2.49
4.167	0.00	0.26	1.693	O	2.49
4.250	0.00	0.23	1.692	O	2.48
4.333	0.00	0.20	1.690	O	2.48
4.417	0.00	0.17	1.689	O	2.48
4.500	0.00	0.15	1.688	O	2.48
4.583	0.00	0.13	1.687	O	2.48
4.667	0.00	0.12	1.686	O	2.48
4.750	0.00	0.10	1.685	O	2.48
4.833	0.00	0.09	1.684	O	2.48
4.917	0.00	0.08	1.684	O	2.47
5.000	0.00	0.07	1.683	O	2.47
5.083	0.00	0.06	1.683	O	2.47
5.167	0.00	0.05	1.682	O	2.47
5.250	0.00	0.05	1.682	O	2.47
5.333	0.00	0.04	1.682	O	2.47
5.417	0.00	0.04	1.681	O	2.47
5.500	0.00	0.03	1.681	O	2.47
5.583	0.00	0.03	1.681	O	2.47
5.667	0.00	0.03	1.681	O	2.47
5.750	0.00	0.02	1.681	O	2.47
5.833	0.00	0.02	1.681	O	2.47
5.917	0.00	0.02	1.680	O	2.47
6.000	0.00	0.02	1.680	O	2.47
6.083	0.00	0.01	1.680	O	2.47
6.167	0.00	0.01	1.680	O	2.47
6.250	0.00	0.01	1.680	O	2.47

407.917	0.00	0.00	1.406	O	|	|	|	|	2.10
408.000	0.00	0.00	1.406	O	|	|	|	|	2.10
408.083	0.00	0.00	1.406	O	|	|	|	|	2.10
408.167	0.00	0.00	1.406	O	|	|	|	|	2.10
408.250	0.00	0.00	1.406	O	|	|	|	|	2.10
408.333	0.00	0.00	1.406	O	|	|	|	|	2.10
408.417	0.00	0.00	1.406	O	|	|	|	|	2.10
408.500	0.00	0.00	1.406	O	|	|	|	|	2.10
408.583	0.00	0.00	1.406	O	|	|	|	|	2.10
408.667	0.00	0.00	1.406	O	|	|	|	|	2.10
408.750	0.00	0.00	1.405	O	|	|	|	|	2.10
408.833	0.00	0.00	1.405	O	|	|	|	|	2.10
408.917	0.00	0.00	1.405	O	|	|	|	|	2.10
409.000	0.00	0.00	1.405	O	|	|	|	|	2.10
409.083	0.00	0.00	1.405	O	|	|	|	|	2.10
409.167	0.00	0.00	1.405	O	|	|	|	|	2.10
409.250	0.00	0.00	1.405	O	|	|	|	|	2.10
409.333	0.00	0.00	1.405	O	|	|	|	|	2.10
409.417	0.00	0.00	1.405	O	|	|	|	|	2.10
409.500	0.00	0.00	1.405	O	|	|	|	|	2.10
409.583	0.00	0.00	1.405	O	|	|	|	|	2.10
409.667	0.00	0.00	1.405	O	|	|	|	|	2.10
409.750	0.00	0.00	1.405	O	|	|	|	|	2.10
409.833	0.00	0.00	1.405	O	|	|	|	|	2.10
409.917	0.00	0.00	1.405	O	|	|	|	|	2.10
410.000	0.00	0.00	1.405	O	|	|	|	|	2.10
410.083	0.00	0.00	1.405	O	|	|	|	|	2.10
410.167	0.00	0.00	1.405	O	|	|	|	|	2.10
410.250	0.00	0.00	1.405	O	|	|	|	|	2.10
410.333	0.00	0.00	1.405	O	|	|	|	|	2.10
410.417	0.00	0.00	1.405	O	|	|	|	|	2.10
410.500	0.00	0.00	1.405	O	|	|	|	|	2.10
410.583	0.00	0.00	1.405	O	|	|	|	|	2.10
410.667	0.00	0.00	1.405	O	|	|	|	|	2.10
410.750	0.00	0.00	1.405	O	|	|	|	|	2.10
410.833	0.00	0.00	1.405	O	|	|	|	|	2.10
410.917	0.00	0.00	1.405	O	|	|	|	|	2.10
411.000	0.00	0.00	1.405	O	|	|	|	|	2.10
411.083	0.00	0.00	1.405	O	|	|	|	|	2.10
411.167	0.00	0.00	1.405	O	|	|	|	|	2.10
411.250	0.00	0.00	1.405	O	|	|	|	|	2.10
411.333	0.00	0.00	1.405	O	|	|	|	|	2.10
411.417	0.00	0.00	1.405	O	|	|	|	|	2.10
411.500	0.00	0.00	1.404	O	|	|	|	|	2.10
411.583	0.00	0.00	1.404	O	|	|	|	|	2.10
411.667	0.00	0.00	1.404	O	|	|	|	|	2.10
411.750	0.00	0.00	1.404	O	|	|	|	|	2.10
411.833	0.00	0.00	1.404	O	|	|	|	|	2.10
411.917	0.00	0.00	1.404	O	|	|	|	|	2.10
412.000	0.00	0.00	1.404	O	|	|	|	|	2.10
412.083	0.00	0.00	1.404	O	|	|	|	|	2.10
412.167	0.00	0.00	1.404	O	|	|	|	|	2.10
412.250	0.00	0.00	1.404	O	|	|	|	|	2.10
412.333	0.00	0.00	1.404	O	|	|	|	|	2.10
412.417	0.00	0.00	1.404	O	|	|	|	|	2.10
412.500	0.00	0.00	1.404	O	|	|	|	|	2.10
412.583	0.00	0.00	1.404	O	|	|	|	|	2.10
412.667	0.00	0.00	1.404	O	|	|	|	|	2.10
412.750	0.00	0.00	1.404	O	|	|	|	|	2.10
412.833	0.00	0.00	1.404	O	|	|	|	|	2.10
412.917	0.00	0.00	1.404	O	|	|	|	|	2.10
413.000	0.00	0.00	1.404	O	|	|	|	|	2.10
413.083	0.00	0.00	1.404	O	|	|	|	|	2.10
413.167	0.00	0.00	1.404	O	|	|	|	|	2.10
413.250	0.00	0.00	1.404	O	|	|	|	|	2.10
413.333	0.00	0.00	1.404	O	|	|	|	|	2.10
413.417	0.00	0.00	1.404	O	|	|	|	|	2.10
413.500	0.00	0.00	1.404	O	|	|	|	|	2.10
413.583	0.00	0.00	1.404	O	|	|	|	|	2.10
413.667	0.00	0.00	1.404	O	|	|	|	|	2.10
413.750	0.00	0.00	1.404	O	|	|	|	|	2.10
413.833	0.00	0.00	1.404	O	|	|	|	|	2.10
413.917	0.00	0.00	1.404	O	|	|	|	|	2.10
414.000	0.00	0.00	1.404	O	|	|	|	|	2.10
414.083	0.00	0.00	1.404	O	|	|	|	|	2.10
414.167	0.00	0.00	1.404	O	|	|	|	|	2.10
414.250	0.00	0.00	1.403	O	|	|	|	|	2.10
414.333	0.00	0.00	1.403	O	|	|	|	|	2.10
414.417	0.00	0.00	1.403	O	|	|	|	|	2.10

```
414.500    0.00    0.00      1.403  O       |       |       |       |     2.10
414.583    0.00    0.00      1.403  O       |       |       |       |     2.10
414.667    0.00    0.00      1.403  O       |       |       |       |     2.10
414.750    0.00    0.00      1.403  O       |       |       |       |     2.10
414.833    0.00    0.00      1.403  O       |       |       |       |     2.10
414.917    0.00    0.00      1.403  O       |       |       |       |     2.10
415.000    0.00    0.00      1.403  O       |       |       |       |     2.10
415.083    0.00    0.00      1.403  O       |       |       |       |     2.10
415.167    0.00    0.00      1.403  O       |       |       |       |     2.10
415.250    0.00    0.00      1.403  O       |       |       |       |     2.10
415.333    0.00    0.00      1.403  O       |       |       |       |     2.10
415.417    0.00    0.00      1.403  O       |       |       |       |     2.10
415.500    0.00    0.00      1.403  O       |       |       |       |     2.10
415.583    0.00    0.00      1.403  O       |       |       |       |     2.10
415.667    0.00    0.00      1.403  O       |       |       |       |     2.10
415.750    0.00    0.00      1.403  O       |       |       |       |     2.10
415.833    0.00    0.00      1.403  O       |       |       |       |     2.10
415.917    0.00    0.00      1.403  O       |       |       |       |     2.10
416.000    0.00    0.00      1.403  O       |       |       |       |     2.10
416.083    0.00    0.00      1.403  O       |       |       |       |     2.10
416.167    0.00    0.00      1.403  O       |       |       |       |     2.10
416.250    0.00    0.00      1.403  O       |       |       |       |     2.10
416.333    0.00    0.00      1.403  O       |       |       |       |     2.10
416.417    0.00    0.00      1.403  O       |       |       |       |     2.10
416.500    0.00    0.00      1.403  O       |       |       |       |     2.10
416.583    0.00    0.00      1.403  O       |       |       |       |     2.10
416.667    0.00    0.00      1.403  O       |       |       |       |     2.10

        Remaining water in basin =    1.40 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =        1.836 (CFS)
                        Total volume =       0.527 (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
        ***********************************************************************

        ----------------------------------------------------------------------
```

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

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                Study date  08/31/21 File: 3384B10310.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



---------------------------------------------------------------------
10 YEAR
3 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            0.95                  30.54

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            1.90                  61.08

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    1.900(In)

Point rain (area averaged) =    1.341(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.341(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  56.0      0.511     0.900        0.097       1.000      0.097
                                                 Sum (F) =   0.097
Area averaged mean soil loss (F) (In/Hr) =  0.097
Minimum soil loss rate ((In/Hr)) =  0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-------------------------------------------------------------------
                Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     1.30      0.209       (  0.097)       0.021        0.188
   2   0.17     1.30      0.209       (  0.097)       0.021        0.188
   3   0.25     1.10      0.177       (  0.097)       0.018        0.159
   4   0.33     1.50      0.241       (  0.097)       0.024        0.217
   5   0.42     1.50      0.241       (  0.097)       0.024        0.217
   6   0.50     1.80      0.290       (  0.097)       0.029        0.261
   7   0.58     1.50      0.241       (  0.097)       0.024        0.217
   8   0.67     1.80      0.290       (  0.097)       0.029        0.261
   9   0.75     1.80      0.290       (  0.097)       0.029        0.261
  10   0.83     1.50      0.241       (  0.097)       0.024        0.217
  11   0.92     1.60      0.257       (  0.097)       0.026        0.232
  12   1.00     1.80      0.290       (  0.097)       0.029        0.261
  13   1.08     2.20      0.354       (  0.097)       0.035        0.319
  14   1.17     2.20      0.354       (  0.097)       0.035        0.319
```

```
15   1.25     2.20      0.354       (  0.097)       0.035        0.319
16   1.33     2.00      0.322       (  0.097)       0.032        0.290
17   1.42     2.60      0.418       (  0.097)       0.042        0.376
18   1.50     2.70      0.434       (  0.097)       0.043        0.391
19   1.58     2.40      0.386       (  0.097)       0.039        0.347
20   1.67     2.70      0.434       (  0.097)       0.043        0.391
21   1.75     3.30      0.531       (  0.097)       0.053        0.478
22   1.83     3.10      0.499       (  0.097)       0.050        0.449
23   1.92     2.90      0.467       (  0.097)       0.047        0.420
24   2.00     3.00      0.483       (  0.097)       0.048        0.434
25   2.08     3.10      0.499       (  0.097)       0.050        0.449
26   2.17     4.20      0.676       (  0.097)       0.068        0.608
27   2.25     5.00      0.804       (  0.097)       0.080        0.724
28   2.33     3.50      0.563       (  0.097)       0.056        0.507
29   2.42     6.80      1.094          0.097    (  0.109)        0.997
30   2.50     7.30      1.174          0.097    (  0.117)        1.077
31   2.58     8.20      1.319          0.097    (  0.132)        1.222
32   2.67     5.90      0.949       (  0.097)       0.095        0.854
33   2.75     2.00      0.322       (  0.097)       0.032        0.290
34   2.83     1.80      0.290       (  0.097)       0.029        0.261
35   2.92     1.80      0.290       (  0.097)       0.029        0.261
36   3.00     0.60      0.097       (  0.097)       0.010        0.087
                (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    14.5
      Flood volume = Effective rainfall      1.21(In)
       times area      32.1(Ac.)/[(In)/(Ft.)] =       3.2(Ac.Ft)
      Total soil loss =      0.13(In)
      Total soil loss =     0.344(Ac.Ft)
      Total rainfall =      1.34(In)
      Flood volume =      141471.3 Cubic Feet
      Total soil loss =       14988.5 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     26.260(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))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0011      0.15  Q         |         |         |         |
  0+10       0.0058      0.68  Q         |         |         |         |
  0+15       0.0168      1.61  V Q       |         |         |         |
  0+20       0.0356      2.72  V  Q      |         |         |         |
  0+25       0.0605      3.63  V   Q     |         |         |         |
  0+30       0.0902      4.30  |V   Q    |         |         |         |
  0+35       0.1242      4.94  |V    Q   |         |         |         |
  0+40       0.1621      5.50  |V     Q  |         |         |         |
  0+45       0.2033      5.98  | V    Q  |         |         |         |
  0+50       0.2469      6.33  |  V    Q |         |         |         |
  0+55       0.2922      6.58  |  V    Q |         |         |         |
  1+ 0       0.3386      6.73  |   V   Q |         |         |         |
  1+ 5       0.3861      6.90  |   V    Q|         |         |         |
  1+10       0.4361      7.27  |    V   Q|         |         |         |
  1+15       0.4900      7.82  |     V   Q         |         |         |
  1+20       0.5476      8.37  |     V   |Q        |         |         |
  1+25       0.6081      8.78  |      V  |Q        |         |         |
  1+30       0.6712      9.17  |       V | Q       |         |         |
  1+35       0.7376      9.63  |        V| Q       |         |         |
  1+40       0.8076     10.16  |        V|  Q      |         |         |
  1+45       0.8812     10.69  |         V   Q     |         |         |
  1+50       0.9585     11.23  |         |V  Q     |         |         |
  1+55       1.0403     11.88  |         | V  Q    |         |         |
  2+ 0       1.1261     12.46  |         |  V  Q   |         |         |
  2+ 5       1.2143     12.80  |         |   V  Q  |         |         |
  2+10       1.3047     13.12  |         |     VQ  |         |         |
```

```
   2+15       1.4003     13.89  |         |      VQ |         |         |
   2+20       1.5041     15.07  |         |       V Q         |         |
   2+25       1.6186     16.61  |         |        V| Q       |         |
   2+30       1.7466     18.59  |         |         |V  Q     |         |
   2+35       1.8924     21.18  |         |         |  V    Q |         |
   2+40       2.0601     24.35  |         |         |    V    | Q       |
   2+45       2.2410     26.26  |         |         |      V  |    Q    |
   2+50       2.4161     25.43  |         |         |        V|  Q      |
   2+55       2.5682     22.08  |         |         |        Q|V        |
   3+ 0       2.6909     17.82  |         |         |  Q      |  V      |
   3+ 5       2.7894     14.29  |         |        Q|         |   V     |
   3+10       2.8687     11.52  |         |    Q    |         |    V    |
   3+15       2.9314      9.09  |         | Q       |         |     V   |
   3+20       2.9802      7.10  |        Q|         |         |     V   |
   3+25       3.0195      5.70  |      Q  |         |         |      V  |
   3+30       3.0521      4.74  |     Q   |         |         |      V  |
   3+35       3.0799      4.03  |    Q    |         |         |      V  |
   3+40       3.1037      3.47  |   Q     |         |         |       V |
   3+45       3.1243      2.98  |  Q      |         |         |       V |
   3+50       3.1420      2.58  |  Q      |         |         |       V |
   3+55       3.1576      2.26  |  Q      |         |         |       V |
   4+ 0       3.1714      1.99  | Q       |         |         |        V|
   4+ 5       3.1835      1.76  | Q       |         |         |        V|
   4+10       3.1941      1.53  | Q       |         |         |        V|
   4+15       3.2032      1.33  |Q        |         |         |        V|
   4+20       3.2111      1.15  |Q        |         |         |        V|
   4+25       3.2181      1.01  |Q        |         |         |        V|
   4+30       3.2240      0.86  |Q        |         |         |        V|
   4+35       3.2292      0.75  Q        |         |         |        V|
   4+40       3.2336      0.64  Q        |         |         |        V|
   4+45       3.2373      0.53  Q        |         |         |        V|
   4+50       3.2406      0.48  Q        |         |         |        V|
   4+55       3.2433      0.39  Q        |         |         |        V|
   5+ 0       3.2452      0.29  Q        |         |         |        V|
   5+ 5       3.2464      0.17  Q        |         |         |        V|
   5+10       3.2470      0.08  Q        |         |         |        V|
   5+15       3.2474      0.06  Q        |         |         |        V|
   5+20       3.2477      0.04  Q        |         |         |        V|
   5+25       3.2477      0.01  Q        |         |         |        V|
-----------------------------------------------------------------------
```

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

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                Study date  08/31/21 File: 3384B10610.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



---------------------------------------------------------------------
10 YEAR
6 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            1.30                  41.80

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            2.50                  80.38

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.300(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.794(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.793(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

```
56.0  56.0      0.511     0.900        0.097       1.000      0.097
                                                 Sum (F) =   0.097
Area averaged mean soil loss (F) (In/Hr) =  0.097
Minimum soil loss rate ((In/Hr)) =  0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-------------------------------------------------------------------
                Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.50      0.108       (  0.097)       0.011        0.097
   2   0.17     0.60      0.129       (  0.097)       0.013        0.116
   3   0.25     0.60      0.129       (  0.097)       0.013        0.116
   4   0.33     0.60      0.129       (  0.097)       0.013        0.116
   5   0.42     0.60      0.129       (  0.097)       0.013        0.116
   6   0.50     0.70      0.151       (  0.097)       0.015        0.136
   7   0.58     0.70      0.151       (  0.097)       0.015        0.136
   8   0.67     0.70      0.151       (  0.097)       0.015        0.136
   9   0.75     0.70      0.151       (  0.097)       0.015        0.136
  10   0.83     0.70      0.151       (  0.097)       0.015        0.136
  11   0.92     0.70      0.151       (  0.097)       0.015        0.136
  12   1.00     0.80      0.172       (  0.097)       0.017        0.155
  13   1.08     0.80      0.172       (  0.097)       0.017        0.155
  14   1.17     0.80      0.172       (  0.097)       0.017        0.155
```

15	1.25	0.80	0.172	(0.097)	0.017	0.155
16	1.33	0.80	0.172	(0.097)	0.017	0.155
17	1.42	0.80	0.172	(0.097)	0.017	0.155
18	1.50	0.80	0.172	(0.097)	0.017	0.155
19	1.58	0.80	0.172	(0.097)	0.017	0.155
20	1.67	0.80	0.172	(0.097)	0.017	0.155
21	1.75	0.80	0.172	(0.097)	0.017	0.155
22	1.83	0.80	0.172	(0.097)	0.017	0.155
23	1.92	0.80	0.172	(0.097)	0.017	0.155
24	2.00	0.90	0.194	(0.097)	0.019	0.174
25	2.08	0.80	0.172	(0.097)	0.017	0.155
26	2.17	0.90	0.194	(0.097)	0.019	0.174
27	2.25	0.90	0.194	(0.097)	0.019	0.174
28	2.33	0.90	0.194	(0.097)	0.019	0.174
29	2.42	0.90	0.194	(0.097)	0.019	0.174
30	2.50	0.90	0.194	(0.097)	0.019	0.174
31	2.58	0.90	0.194	(0.097)	0.019	0.174
32	2.67	0.90	0.194	(0.097)	0.019	0.174
33	2.75	1.00	0.215	(0.097)	0.022	0.194
34	2.83	1.00	0.215	(0.097)	0.022	0.194
35	2.92	1.00	0.215	(0.097)	0.022	0.194
36	3.00	1.00	0.215	(0.097)	0.022	0.194
37	3.08	1.00	0.215	(0.097)	0.022	0.194
38	3.17	1.10	0.237	(0.097)	0.024	0.213
39	3.25	1.10	0.237	(0.097)	0.024	0.213
40	3.33	1.10	0.237	(0.097)	0.024	0.213
41	3.42	1.20	0.258	(0.097)	0.026	0.232
42	3.50	1.30	0.280	(0.097)	0.028	0.252
43	3.58	1.40	0.301	(0.097)	0.030	0.271
44	3.67	1.40	0.301	(0.097)	0.030	0.271
45	3.75	1.50	0.323	(0.097)	0.032	0.291
46	3.83	1.50	0.323	(0.097)	0.032	0.291
47	3.92	1.60	0.344	(0.097)	0.034	0.310
48	4.00	1.60	0.344	(0.097)	0.034	0.310
49	4.08	1.70	0.366	(0.097)	0.037	0.329
50	4.17	1.80	0.387	(0.097)	0.039	0.349
51	4.25	1.90	0.409	(0.097)	0.041	0.368
52	4.33	2.00	0.430	(0.097)	0.043	0.387
53	4.42	2.10	0.452	(0.097)	0.045	0.407
54	4.50	2.10	0.452	(0.097)	0.045	0.407
55	4.58	2.20	0.473	(0.097)	0.047	0.426
56	4.67	2.30	0.495	(0.097)	0.050	0.446
57	4.75	2.40	0.517	(0.097)	0.052	0.465
58	4.83	2.40	0.517	(0.097)	0.052	0.465
59	4.92	2.50	0.538	(0.097)	0.054	0.484
60	5.00	2.60	0.560	(0.097)	0.056	0.504
61	5.08	3.10	0.667	(0.097)	0.067	0.600
62	5.17	3.60	0.775	(0.097)	0.077	0.697
63	5.25	3.90	0.839	(0.097)	0.084	0.755
64	5.33	4.20	0.904	(0.097)	0.090	0.814
65	5.42	4.70	1.012	0.097	(0.101)	0.914
66	5.50	5.60	1.205	0.097	(0.121)	1.108
67	5.58	1.90	0.409	(0.097)	0.041	0.368
68	5.67	0.90	0.194	(0.097)	0.019	0.174
69	5.75	0.60	0.129	(0.097)	0.013	0.116
70	5.83	0.50	0.108	(0.097)	0.011	0.097
71	5.92	0.30	0.065	(0.097)	0.006	0.058
72	6.00	0.20	0.043	(0.097)	0.004	0.039

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.4

Flood volume = Effective rainfall 1.62(In)
times area 32.1(Ac.)/[(In)/(Ft.)] = 4.3(Ac.Ft)
Total soil loss = 0.18(In)
Total soil loss = 0.474(Ac.Ft)
Total rainfall = 1.79(In)
Flood volume = 188645.8 Cubic Feet
Total soil loss = 20662.7 Cubic Feet

Peak flow rate of this hydrograph = 23.233(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        7.5      15.0      22.5      30.0
-------------------------------------------------------------------
  0+ 5       0.0005      0.08  Q         |         |         |         |
  0+10       0.0031      0.37  Q         |         |         |         |
  0+15       0.0093      0.91  VQ        |         |         |         |
  0+20       0.0203      1.60  V Q       |         |         |         |
  0+25       0.0353      2.17  V Q       |         |         |         |
  0+30       0.0529      2.55  V  Q      |         |         |         |
  0+35       0.0724      2.83  V  Q      |         |         |         |
  0+40       0.0936      3.09  V   Q     |         |         |         |
  0+45       0.1166      3.33  |V  Q     |         |         |         |
  0+50       0.1408      3.52  |V  Q     |         |         |         |
  0+55       0.1661      3.67  |V  Q     |         |         |         |
  1+ 0       0.1921      3.79  |V   Q    |         |         |         |
  1+ 5       0.2192      3.93  | V  Q    |         |         |         |
  1+10       0.2474      4.10  | V  Q    |         |         |         |
  1+15       0.2769      4.28  | V  Q    |         |         |         |
  1+20       0.3074      4.43  | V  Q    |         |         |         |
  1+25       0.3386      4.52  |  V  Q   |         |         |         |
  1+30       0.3702      4.60  |  V  Q   |         |         |         |
  1+35       0.4024      4.66  |  V  Q   |         |         |         |
  1+40       0.4348      4.72  |   V Q   |         |         |         |
  1+45       0.4676      4.76  |   V Q   |         |         |         |
  1+50       0.5007      4.80  |   V Q   |         |         |         |
  1+55       0.5339      4.83  |   V Q   |         |         |         |
  2+ 0       0.5675      4.88  |    VQ   |         |         |         |
  2+ 5       0.6016      4.94  |    VQ   |         |         |         |
  2+10       0.6362      5.02  |    VQ   |         |         |         |
  2+15       0.6714      5.12  |     Q   |         |         |         |
  2+20       0.7073      5.21  |     Q   |         |         |         |
  2+25       0.7438      5.31  |     VQ  |         |         |         |
  2+30       0.7810      5.40  |      Q  |         |         |         |
  2+35       0.8185      5.45  |      Q  |         |         |         |
  2+40       0.8563      5.48  |      Q  |         |         |         |
  2+45       0.8944      5.53  |      QV |         |         |         |
  2+50       0.9330      5.60  |      QV |         |         |         |
  2+55       0.9724      5.72  |      QV |         |         |         |
  3+ 0       1.0127      5.85  |      Q V|         |         |         |
  3+ 5       1.0537      5.96  |      Q V|         |         |         |
  3+10       1.0952      6.04  |       Q V         |         |         |
  3+15       1.1375      6.13  |       Q V         |         |         |
  3+20       1.1806      6.26  |       Q V         |         |         |
  3+25       1.2249      6.43  |       Q |V        |         |         |
  3+30       1.2704      6.61  |       Q |V        |         |         |
  3+35       1.3176      6.85  |        Q| V       |         |         |
  3+40       1.3670      7.17  |        Q| V       |         |         |
  3+45       1.4188      7.53  |         Q  V      |         |         |
  3+50       1.4731      7.88  |         Q  V      |         |         |
  3+55       1.5296      8.20  |         Q   V     |         |         |
  4+ 0       1.5882      8.51  |         |Q  V     |         |         |
  4+ 5       1.6489      8.81  |         |Q   V    |         |         |
  4+10       1.7118      9.14  |         | Q  V    |         |         |
  4+15       1.7772      9.49  |         | Q   V   |         |         |
  4+20       1.8455      9.92  |         |  Q   V  |         |         |
  4+25       1.9171     10.39  |         |  Q   V  |         |         |
  4+30       1.9921     10.89  |         |   Q   V |         |         |
  4+35       2.0704     11.37  |         |    Q   V|         |         |
  4+40       2.1518     11.82  |         |    Q   V|         |         |
  4+45       2.2363     12.26  |         |     Q   V         |         |
  4+50       2.3240     12.73  |         |     Q   |V        |         |
  4+55       2.4149     13.20  |         |      Q  | V       |         |
```

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   5+ 0       2.5089     13.65  |         |       Q |  V      |         |
   5+ 5       2.6064     14.17  |         |       Q |   V     |         |
   5+10       2.7093     14.93  |         |        Q|    V    |         |
   5+15       2.8202     16.10  |         |         |Q    V   |         |
   5+20       2.9418     17.66  |         |         |  Q   V  |         |
   5+25       3.0757     19.44  |         |         |    Q  V |         |
   5+30       3.2232     21.41  |         |         |       QV|         |
   5+35       3.3820     23.06  |         |         |         QV        |
   5+40       3.5420     23.23  |         |         |         Q V       |
   5+45       3.6877     21.16  |         |         |       Q |   V     |
   5+50       3.8056     17.12  |         |         | Q       |    V    |
   5+55       3.8962     13.15  |         |      Q  |         |    V    |
   6+ 0       3.9675     10.35  |         |  Q      |         |     V   |
   6+ 5       4.0256      8.43  |         |Q        |         |      V  |
   6+10       4.0734      6.95  |        Q|         |         |      V  |
   6+15       4.1127      5.70  |      Q  |         |         |      V  |
   6+20       4.1450      4.68  |     Q   |         |         |       V |
   6+25       4.1718      3.89  |    Q    |         |         |       V |
   6+30       4.1946      3.31  |   Q     |         |         |       V |
   6+35       4.2142      2.85  |  Q      |         |         |       V |
   6+40       4.2312      2.46  |  Q      |         |         |        V|
   6+45       4.2459      2.14  | Q       |         |         |        V|
   6+50       4.2588      1.87  | Q       |         |         |        V|
   6+55       4.2702      1.66  | Q       |         |         |        V|
   7+ 0       4.2802      1.45  |Q        |         |         |        V|
   7+ 5       4.2889      1.25  |Q        |         |         |        V|
   7+10       4.2964      1.09  |Q        |         |         |        V|
   7+15       4.3028      0.94  |Q        |         |         |        V|
   7+20       4.3084      0.81  |Q        |         |         |        V|
   7+25       4.3132      0.69  Q         |         |         |        V|
   7+30       4.3173      0.60  Q         |         |         |        V|
   7+35       4.3207      0.50  Q         |         |         |        V|
   7+40       4.3237      0.43  Q         |         |         |        V|
   7+45       4.3261      0.35  Q         |         |         |        V|
   7+50       4.3280      0.28  Q         |         |         |        V|
   7+55       4.3294      0.20  Q         |         |         |        V|
   8+ 0       4.3300      0.08  Q         |         |         |        V|
   8+ 5       4.3303      0.05  Q         |         |         |        V|
   8+10       4.3305      0.03  Q         |         |         |        V|
   8+15       4.3306      0.02  Q         |         |         |        V|
   8+20       4.3307      0.01  Q         |         |         |        V|
   8+25       4.3307      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

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                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


10 YEAR
3 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B10310.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =    65
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       26.260 (CFS)
                Total volume =       3.248 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------
Total number of inflow hydrograph intervals = 65
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
------------------------------------------------------------------
------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
------------------------------------------------------------------
------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
------------------------------------------------------------------
                Hydrograph Detention Basin Routing
------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 6.6 13.13 19.69 26.26	Depth (Ft.)
0.083	0.15	0.00	0.001	O | | | |	0.00
0.167	0.68	0.00	0.003	O | | | |	0.01
0.250	1.61	0.00	0.011	OI | | | |	0.02
0.333	2.72	0.00	0.026	O I | | | |	0.04
0.417	3.63	0.00	0.048	O I | | | |	0.08
0.500	4.30	0.00	0.075	O I | | | |	0.13
0.583	4.94	0.00	0.107	O I | | | |	0.18
0.667	5.50	0.00	0.143	O I | | | |	0.24
0.750	5.98	0.00	0.183	O I| | | |	0.30
0.833	6.33	0.00	0.225	O I| | | |	0.37
0.917	6.58	0.00	0.269	O I | | |	0.44
1.000	6.73	0.00	0.315	O I | | |	0.51
1.083	6.90	0.00	0.362	O I | | |	0.58
1.167	7.27	0.00	0.411	O I | | |	0.66
1.250	7.82	0.00	0.463	O |I | | |	0.74
1.333	8.37	0.00	0.519	O | I | | |	0.82
1.417	8.78	0.00	0.578	O | I | | |	0.91
1.500	9.17	0.00	0.640	O | I | | |	1.01
1.583	9.63	0.00	0.704	O | I | | |	1.11
1.667	10.16	0.00	0.772	O | I | | |	1.21
1.750	10.69	0.00	0.844	O | | I | | |	1.32
1.833	11.23	0.00	0.920	O | | I | | |	1.42
1.917	11.88	0.00	0.999	O | | I | | |	1.54
2.000	12.46	0.00	1.083	O | | I| | |	1.65
2.083	12.80	0.00	1.170	O | | I| | |	1.78
2.167	13.12	0.00	1.259	O | | I| | |	1.90
2.250	13.89	0.00	1.352	O | | I | |	2.03
2.333	15.07	0.01	1.452	O | | | I | |	2.16
2.417	16.61	0.01	1.561	O | | | I | |	2.31
2.500	18.59	0.05	1.682	O | | | I | |	2.47
2.583	21.18	2.45	1.810	| O | | |I |	2.63
2.667	24.35	5.38	1.940	| O | | | I |	2.80
2.750	26.26	8.77	2.066	| | O | | | I	2.95
2.833	25.43	12.00	2.172	| | O | | I |	3.08
2.917	22.08	14.40	2.245	| | |O | I |	3.17
3.000	17.82	15.53	2.279	| | | O I | |	3.21
3.083	14.29	15.64	2.283	| | |I O | |	3.21
3.167	11.52	15.08	2.266	| | O | O | |	3.19
3.250	9.09	14.11	2.236	| | I |O | |	3.16
3.333	7.10	12.88	2.199	| I O| | |	3.12
3.417	5.70	11.56	2.159	| I | O | | |	3.07
3.500	4.74	10.38	2.119	| I | O | | |	3.02
3.583	4.03	9.25	2.082	| I | O | | |	2.97
3.667	3.47	8.22	2.047	| I | O | | |	2.93
3.750	2.98	7.29	2.016	| I O | | |	2.89
3.833	2.58	6.51	1.988	| I O| | | |	2.85
3.917	2.26	5.89	1.962	| I O| | | |	2.82
4.000	1.99	5.32	1.938	| I O | | | |	2.79
4.083	1.76	4.80	1.916	| I O | | | |	2.76
4.167	1.53	4.33	1.896	|I O | | | |	2.74
4.250	1.33	3.89	1.877	|I O | | | |	2.72
4.333	1.15	3.49	1.861	|I O | | | |	2.70
4.417	1.01	3.12	1.845	|I O | | | |	2.68
4.500	0.86	2.83	1.831	|I O | | | |	2.66
4.583	0.75	2.59	1.818	I O | | | |	2.64
4.667	0.64	2.36	1.806	I O | | | |	2.63
4.750	0.53	2.15	1.794	I O | | | |	2.61
4.833	0.48	1.95	1.784	I O | | | |	2.60
4.917	0.39	1.76	1.774	I O | | | |	2.59
5.000	0.29	1.59	1.765	IO | | | |	2.58
5.083	0.17	1.43	1.756	IO | | | |	2.56
5.167	0.08	1.27	1.747	IO | | | |	2.55
5.250	0.06	1.13	1.740	IO | | | |	2.54
5.333	0.04	1.00	1.733	IO | | | |	2.54
5.417	0.01	0.88	1.726	IO | | | |	2.53
5.500	0.00	0.77	1.721	O | | | |	2.52
5.583	0.00	0.68	1.716	O | | | |	2.51
5.667	0.00	0.60	1.711	O | | | |	2.51
5.750	0.00	0.52	1.708	O | | | |	2.50
5.833	0.00	0.46	1.704	O | | | |	2.50
5.917	0.00	0.41	1.701	O | | | |	2.50
6.000	0.00	0.36	1.699	O | | | |	2.49
6.083	0.00	0.31	1.696	O | | | |	2.49
6.167	0.00	0.28	1.694	O | | | |	2.49
6.250	0.00	0.24	1.692	O | | | |	2.49

6.333	0.00	0.21	1.691	O	|	|	|	|	2.48
6.417	0.00	0.19	1.689	O	|	|	|	|	2.48
6.500	0.00	0.16	1.688	O	|	|	|	|	2.48
6.583	0.00	0.14	1.687	O	|	|	|	|	2.48
6.667	0.00	0.13	1.686	O	|	|	|	|	2.48
6.750	0.00	0.11	1.685	O	|	|	|	|	2.48
6.833	0.00	0.10	1.685	O	|	|	|	|	2.48
6.917	0.00	0.09	1.684	O	|	|	|	|	2.48
7.000	0.00	0.08	1.684	O	|	|	|	|	2.47
7.083	0.00	0.07	1.683	O	|	|	|	|	2.47
7.167	0.00	0.06	1.683	O	|	|	|	|	2.47
7.250	0.00	0.05	1.682	O	|	|	|	|	2.47
7.333	0.00	0.05	1.682	O	|	|	|	|	2.47
7.417	0.00	0.04	1.682	O	|	|	|	|	2.47
7.500	0.00	0.04	1.681	O	|	|	|	|	2.47
7.583	0.00	0.03	1.681	O	|	|	|	|	2.47
7.667	0.00	0.03	1.681	O	|	|	|	|	2.47
7.750	0.00	0.02	1.681	O	|	|	|	|	2.47
7.833	0.00	0.02	1.681	O	|	|	|	|	2.47
7.917	0.00	0.02	1.680	O	|	|	|	|	2.47
8.000	0.00	0.02	1.680	O	|	|	|	|	2.47
8.083	0.00	0.01	1.680	O	|	|	|	|	2.47
8.167	0.00	0.01	1.680	O	|	|	|	|	2.47
8.250	0.00	0.01	1.680	O	|	|	|	|	2.47
8.333	0.00	0.01	1.680	O	|	|	|	|	2.47
8.417	0.00	0.01	1.680	O	|	|	|	|	2.47
8.500	0.00	0.01	1.680	O	|	|	|	|	2.47
8.583	0.00	0.01	1.680	O	|	|	|	|	2.47
8.667	0.00	0.01	1.680	O	|	|	|	|	2.47
8.750	0.00	0.01	1.680	O	|	|	|	|	2.47
8.833	0.00	0.01	1.680	O	|	|	|	|	2.47
8.917	0.00	0.01	1.679	O	|	|	|	|	2.47
9.000	0.00	0.01	1.679	O	|	|	|	|	2.47
9.083	0.00	0.01	1.679	O	|	|	|	|	2.47
9.167	0.00	0.01	1.679	O	|	|	|	|	2.47
9.250	0.00	0.01	1.679	O	|	|	|	|	2.47
9.333	0.00	0.01	1.679	O	|	|	|	|	2.47
9.417	0.00	0.01	1.679	O	|	|	|	|	2.47
9.500	0.00	0.01	1.679	O	|	|	|	|	2.47
9.583	0.00	0.01	1.679	O	|	|	|	|	2.47
9.667	0.00	0.01	1.679	O	|	|	|	|	2.47
9.750	0.00	0.01	1.679	O	|	|	|	|	2.47
9.833	0.00	0.01	1.679	O	|	|	|	|	2.47
9.917	0.00	0.01	1.679	O	|	|	|	|	2.47
10.000	0.00	0.01	1.679	O	|	|	|	|	2.47
10.083	0.00	0.01	1.679	O	|	|	|	|	2.47
10.167	0.00	0.01	1.678	O	|	|	|	|	2.47
10.250	0.00	0.01	1.678	O	|	|	|	|	2.47
10.333	0.00	0.01	1.678	O	|	|	|	|	2.47
10.417	0.00	0.01	1.678	O	|	|	|	|	2.47
10.500	0.00	0.01	1.678	O	|	|	|	|	2.47
10.583	0.00	0.01	1.678	O	|	|	|	|	2.47
10.667	0.00	0.01	1.678	O	|	|	|	|	2.47
10.750	0.00	0.01	1.678	O	|	|	|	|	2.47
10.833	0.00	0.01	1.678	O	|	|	|	|	2.47
10.917	0.00	0.01	1.678	O	|	|	|	|	2.47
11.000	0.00	0.01	1.678	O	|	|	|	|	2.47
11.083	0.00	0.01	1.678	O	|	|	|	|	2.47
11.167	0.00	0.01	1.678	O	|	|	|	|	2.47
11.250	0.00	0.01	1.678	O	|	|	|	|	2.47
11.333	0.00	0.01	1.678	O	|	|	|	|	2.47
11.417	0.00	0.01	1.677	O	|	|	|	|	2.47
11.500	0.00	0.01	1.677	O	|	|	|	|	2.47
11.583	0.00	0.01	1.677	O	|	|	|	|	2.47
11.667	0.00	0.01	1.677	O	|	|	|	|	2.47
11.750	0.00	0.01	1.677	O	|	|	|	|	2.47
11.833	0.00	0.01	1.677	O	|	|	|	|	2.47
11.917	0.00	0.01	1.677	O	|	|	|	|	2.47
12.000	0.00	0.01	1.677	O	|	|	|	|	2.47
12.083	0.00	0.01	1.677	O	|	|	|	|	2.47
12.167	0.00	0.01	1.677	O	|	|	|	|	2.47
12.250	0.00	0.01	1.677	O	|	|	|	|	2.47
12.333	0.00	0.01	1.677	O	|	|	|	|	2.47
12.417	0.00	0.01	1.677	O	|	|	|	|	2.47
12.500	0.00	0.01	1.677	O	|	|	|	|	2.47
12.583	0.00	0.01	1.676	O	|	|	|	|	2.47
12.667	0.00	0.01	1.676	O	|	|	|	|	2.47
12.750	0.00	0.01	1.676	O	|	|	|	|	2.47
12.833	0.00	0.01	1.676	O	|	|	|	|	2.47

12.917	0.00	0.01	1.676	O					2.46
13.000	0.00	0.01	1.676	O					2.46
13.083	0.00	0.01	1.676	O					2.46
13.167	0.00	0.01	1.676	O					2.46
13.250	0.00	0.01	1.676	O					2.46
13.333	0.00	0.01	1.676	O					2.46
13.417	0.00	0.01	1.676	O					2.46
13.500	0.00	0.01	1.676	O					2.46
13.583	0.00	0.01	1.676	O					2.46
13.667	0.00	0.01	1.676	O					2.46
13.750	0.00	0.01	1.676	O					2.46
13.833	0.00	0.01	1.675	O					2.46
13.917	0.00	0.01	1.675	O					2.46
14.000	0.00	0.01	1.675	O					2.46
14.083	0.00	0.01	1.675	O					2.46
14.167	0.00	0.01	1.675	O					2.46
14.250	0.00	0.01	1.675	O					2.46
14.333	0.00	0.01	1.675	O					2.46
14.417	0.00	0.01	1.675	O					2.46
14.500	0.00	0.01	1.675	O					2.46
14.583	0.00	0.01	1.675	O					2.46
14.667	0.00	0.01	1.675	O					2.46
14.750	0.00	0.01	1.675	O					2.46
14.833	0.00	0.01	1.675	O					2.46
14.917	0.00	0.01	1.675	O					2.46
15.000	0.00	0.01	1.674	O					2.46
15.083	0.00	0.01	1.674	O					2.46
15.167	0.00	0.01	1.674	O					2.46
15.250	0.00	0.01	1.674	O					2.46
15.333	0.00	0.01	1.674	O					2.46
15.417	0.00	0.01	1.674	O					2.46
15.500	0.00	0.01	1.674	O					2.46
15.583	0.00	0.01	1.674	O					2.46
15.667	0.00	0.01	1.674	O					2.46
15.750	0.00	0.01	1.674	O					2.46
15.833	0.00	0.01	1.674	O					2.46
15.917	0.00	0.01	1.674	O					2.46
16.000	0.00	0.01	1.674	O					2.46
16.083	0.00	0.01	1.674	O					2.46
16.167	0.00	0.01	1.674	O					2.46
16.250	0.00	0.01	1.673	O					2.46
16.333	0.00	0.01	1.673	O					2.46
16.417	0.00	0.01	1.673	O					2.46
16.500	0.00	0.01	1.673	O					2.46
16.583	0.00	0.01	1.673	O					2.46
16.667	0.00	0.01	1.673	O					2.46
16.750	0.00	0.01	1.673	O					2.46
16.833	0.00	0.01	1.673	O					2.46
16.917	0.00	0.01	1.673	O					2.46
17.000	0.00	0.01	1.673	O					2.46
17.083	0.00	0.01	1.673	O					2.46
17.167	0.00	0.01	1.673	O					2.46
17.250	0.00	0.01	1.673	O					2.46
17.333	0.00	0.01	1.673	O					2.46
17.417	0.00	0.01	1.672	O					2.46
17.500	0.00	0.01	1.672	O					2.46
17.583	0.00	0.01	1.672	O					2.46
17.667	0.00	0.01	1.672	O					2.46
17.750	0.00	0.01	1.672	O					2.46
17.833	0.00	0.01	1.672	O					2.46
17.917	0.00	0.01	1.672	O					2.46
18.000	0.00	0.01	1.672	O					2.46
18.083	0.00	0.01	1.672	O					2.46
18.167	0.00	0.01	1.672	O					2.46
18.250	0.00	0.01	1.672	O					2.46
18.333	0.00	0.01	1.672	O					2.46
18.417	0.00	0.01	1.672	O					2.46
18.500	0.00	0.01	1.672	O					2.46
18.583	0.00	0.01	1.672	O					2.46
18.667	0.00	0.01	1.671	O					2.46
18.750	0.00	0.01	1.671	O					2.46
18.833	0.00	0.01	1.671	O					2.46
18.917	0.00	0.01	1.671	O					2.46
19.000	0.00	0.01	1.671	O					2.46
19.083	0.00	0.01	1.671	O					2.46
19.167	0.00	0.01	1.671	O					2.46
19.250	0.00	0.01	1.671	O					2.46
19.333	0.00	0.01	1.671	O					2.46
19.417	0.00	0.01	1.671	O					2.46

407.917	0.00	0.00	1.407	O	|	|	|	|	2.10
408.000	0.00	0.00	1.406	O	|	|	|	|	2.10
408.083	0.00	0.00	1.406	O	|	|	|	|	2.10
408.167	0.00	0.00	1.406	O	|	|	|	|	2.10
408.250	0.00	0.00	1.406	O	|	|	|	|	2.10
408.333	0.00	0.00	1.406	O	|	|	|	|	2.10
408.417	0.00	0.00	1.406	O	|	|	|	|	2.10
408.500	0.00	0.00	1.406	O	|	|	|	|	2.10
408.583	0.00	0.00	1.406	O	|	|	|	|	2.10
408.667	0.00	0.00	1.406	O	|	|	|	|	2.10
408.750	0.00	0.00	1.406	O	|	|	|	|	2.10
408.833	0.00	0.00	1.406	O	|	|	|	|	2.10
408.917	0.00	0.00	1.406	O	|	|	|	|	2.10
409.000	0.00	0.00	1.406	O	|	|	|	|	2.10
409.083	0.00	0.00	1.406	O	|	|	|	|	2.10
409.167	0.00	0.00	1.406	O	|	|	|	|	2.10
409.250	0.00	0.00	1.406	O	|	|	|	|	2.10
409.333	0.00	0.00	1.406	O	|	|	|	|	2.10
409.417	0.00	0.00	1.406	O	|	|	|	|	2.10
409.500	0.00	0.00	1.406	O	|	|	|	|	2.10
409.583	0.00	0.00	1.406	O	|	|	|	|	2.10
409.667	0.00	0.00	1.406	O	|	|	|	|	2.10
409.750	0.00	0.00	1.406	O	|	|	|	|	2.10
409.833	0.00	0.00	1.406	O	|	|	|	|	2.10
409.917	0.00	0.00	1.406	O	|	|	|	|	2.10
410.000	0.00	0.00	1.406	O	|	|	|	|	2.10
410.083	0.00	0.00	1.406	O	|	|	|	|	2.10
410.167	0.00	0.00	1.406	O	|	|	|	|	2.10
410.250	0.00	0.00	1.406	O	|	|	|	|	2.10
410.333	0.00	0.00	1.406	O	|	|	|	|	2.10
410.417	0.00	0.00	1.406	O	|	|	|	|	2.10
410.500	0.00	0.00	1.406	O	|	|	|	|	2.10
410.583	0.00	0.00	1.406	O	|	|	|	|	2.10
410.667	0.00	0.00	1.406	O	|	|	|	|	2.10
410.750	0.00	0.00	1.405	O	|	|	|	|	2.10
410.833	0.00	0.00	1.405	O	|	|	|	|	2.10
410.917	0.00	0.00	1.405	O	|	|	|	|	2.10
411.000	0.00	0.00	1.405	O	|	|	|	|	2.10
411.083	0.00	0.00	1.405	O	|	|	|	|	2.10
411.167	0.00	0.00	1.405	O	|	|	|	|	2.10
411.250	0.00	0.00	1.405	O	|	|	|	|	2.10
411.333	0.00	0.00	1.405	O	|	|	|	|	2.10
411.417	0.00	0.00	1.405	O	|	|	|	|	2.10
411.500	0.00	0.00	1.405	O	|	|	|	|	2.10
411.583	0.00	0.00	1.405	O	|	|	|	|	2.10
411.667	0.00	0.00	1.405	O	|	|	|	|	2.10
411.750	0.00	0.00	1.405	O	|	|	|	|	2.10
411.833	0.00	0.00	1.405	O	|	|	|	|	2.10
411.917	0.00	0.00	1.405	O	|	|	|	|	2.10
412.000	0.00	0.00	1.405	O	|	|	|	|	2.10
412.083	0.00	0.00	1.405	O	|	|	|	|	2.10
412.167	0.00	0.00	1.405	O	|	|	|	|	2.10
412.250	0.00	0.00	1.405	O	|	|	|	|	2.10
412.333	0.00	0.00	1.405	O	|	|	|	|	2.10
412.417	0.00	0.00	1.405	O	|	|	|	|	2.10
412.500	0.00	0.00	1.405	O	|	|	|	|	2.10
412.583	0.00	0.00	1.405	O	|	|	|	|	2.10
412.667	0.00	0.00	1.405	O	|	|	|	|	2.10
412.750	0.00	0.00	1.405	O	|	|	|	|	2.10
412.833	0.00	0.00	1.405	O	|	|	|	|	2.10
412.917	0.00	0.00	1.405	O	|	|	|	|	2.10
413.000	0.00	0.00	1.405	O	|	|	|	|	2.10
413.083	0.00	0.00	1.405	O	|	|	|	|	2.10
413.167	0.00	0.00	1.405	O	|	|	|	|	2.10
413.250	0.00	0.00	1.405	O	|	|	|	|	2.10
413.333	0.00	0.00	1.405	O	|	|	|	|	2.10
413.417	0.00	0.00	1.405	O	|	|	|	|	2.10
413.500	0.00	0.00	1.404	O	|	|	|	|	2.10
413.583	0.00	0.00	1.404	O	|	|	|	|	2.10
413.667	0.00	0.00	1.404	O	|	|	|	|	2.10
413.750	0.00	0.00	1.404	O	|	|	|	|	2.10
413.833	0.00	0.00	1.404	O	|	|	|	|	2.10
413.917	0.00	0.00	1.404	O	|	|	|	|	2.10
414.000	0.00	0.00	1.404	O	|	|	|	|	2.10
414.083	0.00	0.00	1.404	O	|	|	|	|	2.10
414.167	0.00	0.00	1.404	O	|	|	|	|	2.10
414.250	0.00	0.00	1.404	O	|	|	|	|	2.10
414.333	0.00	0.00	1.404	O	|	|	|	|	2.10
414.417	0.00	0.00	1.404	O	|	|	|	|	2.10

```
414.500    0.00    0.00      1.404  O       |       |       |       |     2.10
414.583    0.00    0.00      1.404  O       |       |       |       |     2.10
414.667    0.00    0.00      1.404  O       |       |       |       |     2.10
414.750    0.00    0.00      1.404  O       |       |       |       |     2.10
414.833    0.00    0.00      1.404  O       |       |       |       |     2.10
414.917    0.00    0.00      1.404  O       |       |       |       |     2.10
415.000    0.00    0.00      1.404  O       |       |       |       |     2.10
415.083    0.00    0.00      1.404  O       |       |       |       |     2.10
415.167    0.00    0.00      1.404  O       |       |       |       |     2.10
415.250    0.00    0.00      1.404  O       |       |       |       |     2.10
415.333    0.00    0.00      1.404  O       |       |       |       |     2.10
415.417    0.00    0.00      1.404  O       |       |       |       |     2.10
415.500    0.00    0.00      1.404  O       |       |       |       |     2.10
415.583    0.00    0.00      1.404  O       |       |       |       |     2.10
415.667    0.00    0.00      1.404  O       |       |       |       |     2.10
415.750    0.00    0.00      1.404  O       |       |       |       |     2.10
415.833    0.00    0.00      1.404  O       |       |       |       |     2.10
415.917    0.00    0.00      1.404  O       |       |       |       |     2.10
416.000    0.00    0.00      1.404  O       |       |       |       |     2.10
416.083    0.00    0.00      1.404  O       |       |       |       |     2.10
416.167    0.00    0.00      1.404  O       |       |       |       |     2.10
416.250    0.00    0.00      1.404  O       |       |       |       |     2.10
416.333    0.00    0.00      1.403  O       |       |       |       |     2.10
416.417    0.00    0.00      1.403  O       |       |       |       |     2.10
416.500    0.00    0.00      1.403  O       |       |       |       |     2.10
416.583    0.00    0.00      1.403  O       |       |       |       |     2.10
416.667    0.00    0.00      1.403  O       |       |       |       |     2.10

        Remaining water in basin =    1.40 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       15.637 (CFS)
                        Total volume =       1.844 (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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        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0
                Study date  08/31/21 File: 3384B10610.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



---------------------------------------------------------------------
10 YEAR
6 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            1.30                  41.80

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            2.50                  80.38

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.300(In)
Area Averaged 100-Year Rainfall =    2.500(In)

Point rain (area averaged) =    1.794(In)
Areal adjustment factor =   99.99 %
Adjusted average point rain =    1.793(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

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56.0  56.0      0.511     0.900        0.097       1.000      0.097
                                                 Sum (F) =   0.097
Area averaged mean soil loss (F) (In/Hr) =  0.097
Minimum soil loss rate ((In/Hr)) =  0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-------------------------------------------------------------------
                Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.50      0.108       (  0.097)       0.011        0.097
   2   0.17     0.60      0.129       (  0.097)       0.013        0.116
   3   0.25     0.60      0.129       (  0.097)       0.013        0.116
   4   0.33     0.60      0.129       (  0.097)       0.013        0.116
   5   0.42     0.60      0.129       (  0.097)       0.013        0.116
   6   0.50     0.70      0.151       (  0.097)       0.015        0.136
   7   0.58     0.70      0.151       (  0.097)       0.015        0.136
   8   0.67     0.70      0.151       (  0.097)       0.015        0.136
   9   0.75     0.70      0.151       (  0.097)       0.015        0.136
  10   0.83     0.70      0.151       (  0.097)       0.015        0.136
  11   0.92     0.70      0.151       (  0.097)       0.015        0.136
  12   1.00     0.80      0.172       (  0.097)       0.017        0.155
  13   1.08     0.80      0.172       (  0.097)       0.017        0.155
  14   1.17     0.80      0.172       (  0.097)       0.017        0.155
```

15	1.25	0.80	0.172	(0.097)	0.017	0.155
16	1.33	0.80	0.172	(0.097)	0.017	0.155
17	1.42	0.80	0.172	(0.097)	0.017	0.155
18	1.50	0.80	0.172	(0.097)	0.017	0.155
19	1.58	0.80	0.172	(0.097)	0.017	0.155
20	1.67	0.80	0.172	(0.097)	0.017	0.155
21	1.75	0.80	0.172	(0.097)	0.017	0.155
22	1.83	0.80	0.172	(0.097)	0.017	0.155
23	1.92	0.80	0.172	(0.097)	0.017	0.155
24	2.00	0.90	0.194	(0.097)	0.019	0.174
25	2.08	0.80	0.172	(0.097)	0.017	0.155
26	2.17	0.90	0.194	(0.097)	0.019	0.174
27	2.25	0.90	0.194	(0.097)	0.019	0.174
28	2.33	0.90	0.194	(0.097)	0.019	0.174
29	2.42	0.90	0.194	(0.097)	0.019	0.174
30	2.50	0.90	0.194	(0.097)	0.019	0.174
31	2.58	0.90	0.194	(0.097)	0.019	0.174
32	2.67	0.90	0.194	(0.097)	0.019	0.174
33	2.75	1.00	0.215	(0.097)	0.022	0.194
34	2.83	1.00	0.215	(0.097)	0.022	0.194
35	2.92	1.00	0.215	(0.097)	0.022	0.194
36	3.00	1.00	0.215	(0.097)	0.022	0.194
37	3.08	1.00	0.215	(0.097)	0.022	0.194
38	3.17	1.10	0.237	(0.097)	0.024	0.213
39	3.25	1.10	0.237	(0.097)	0.024	0.213
40	3.33	1.10	0.237	(0.097)	0.024	0.213
41	3.42	1.20	0.258	(0.097)	0.026	0.232
42	3.50	1.30	0.280	(0.097)	0.028	0.252
43	3.58	1.40	0.301	(0.097)	0.030	0.271
44	3.67	1.40	0.301	(0.097)	0.030	0.271
45	3.75	1.50	0.323	(0.097)	0.032	0.291
46	3.83	1.50	0.323	(0.097)	0.032	0.291
47	3.92	1.60	0.344	(0.097)	0.034	0.310
48	4.00	1.60	0.344	(0.097)	0.034	0.310
49	4.08	1.70	0.366	(0.097)	0.037	0.329
50	4.17	1.80	0.387	(0.097)	0.039	0.349
51	4.25	1.90	0.409	(0.097)	0.041	0.368
52	4.33	2.00	0.430	(0.097)	0.043	0.387
53	4.42	2.10	0.452	(0.097)	0.045	0.407
54	4.50	2.10	0.452	(0.097)	0.045	0.407
55	4.58	2.20	0.473	(0.097)	0.047	0.426
56	4.67	2.30	0.495	(0.097)	0.050	0.446
57	4.75	2.40	0.517	(0.097)	0.052	0.465
58	4.83	2.40	0.517	(0.097)	0.052	0.465
59	4.92	2.50	0.538	(0.097)	0.054	0.484
60	5.00	2.60	0.560	(0.097)	0.056	0.504
61	5.08	3.10	0.667	(0.097)	0.067	0.600
62	5.17	3.60	0.775	(0.097)	0.077	0.697
63	5.25	3.90	0.839	(0.097)	0.084	0.755
64	5.33	4.20	0.904	(0.097)	0.090	0.814
65	5.42	4.70	1.012	0.097	(0.101)	0.914
66	5.50	5.60	1.205	0.097	(0.121)	1.108
67	5.58	1.90	0.409	(0.097)	0.041	0.368
68	5.67	0.90	0.194	(0.097)	0.019	0.174
69	5.75	0.60	0.129	(0.097)	0.013	0.116
70	5.83	0.50	0.108	(0.097)	0.011	0.097
71	5.92	0.30	0.065	(0.097)	0.006	0.058
72	6.00	0.20	0.043	(0.097)	0.004	0.039

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.4

Flood volume = Effective rainfall 1.62(In)
times area 32.1(Ac.)/[(In)/(Ft.)] = 4.3(Ac.Ft)
Total soil loss = 0.18(In)
Total soil loss = 0.474(Ac.Ft)
Total rainfall = 1.79(In)
Flood volume = 188645.8 Cubic Feet
Total soil loss = 20662.7 Cubic Feet

Peak flow rate of this hydrograph = 23.233(CFS)

```
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          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        7.5      15.0      22.5      30.0
-------------------------------------------------------------------
  0+ 5       0.0005      0.08  Q         |         |         |         |
  0+10       0.0031      0.37  Q         |         |         |         |
  0+15       0.0093      0.91  VQ        |         |         |         |
  0+20       0.0203      1.60  V Q       |         |         |         |
  0+25       0.0353      2.17  V Q       |         |         |         |
  0+30       0.0529      2.55  V  Q      |         |         |         |
  0+35       0.0724      2.83  V  Q      |         |         |         |
  0+40       0.0936      3.09  V   Q     |         |         |         |
  0+45       0.1166      3.33  |V  Q     |         |         |         |
  0+50       0.1408      3.52  |V  Q     |         |         |         |
  0+55       0.1661      3.67  |V  Q     |         |         |         |
  1+ 0       0.1921      3.79  |V   Q    |         |         |         |
  1+ 5       0.2192      3.93  | V  Q    |         |         |         |
  1+10       0.2474      4.10  | V  Q    |         |         |         |
  1+15       0.2769      4.28  | V  Q    |         |         |         |
  1+20       0.3074      4.43  | V  Q    |         |         |         |
  1+25       0.3386      4.52  |  V  Q   |         |         |         |
  1+30       0.3702      4.60  |  V  Q   |         |         |         |
  1+35       0.4024      4.66  |  V  Q   |         |         |         |
  1+40       0.4348      4.72  |   V Q   |         |         |         |
  1+45       0.4676      4.76  |   V Q   |         |         |         |
  1+50       0.5007      4.80  |   V Q   |         |         |         |
  1+55       0.5339      4.83  |   V Q   |         |         |         |
  2+ 0       0.5675      4.88  |    VQ   |         |         |         |
  2+ 5       0.6016      4.94  |    VQ   |         |         |         |
  2+10       0.6362      5.02  |    VQ   |         |         |         |
  2+15       0.6714      5.12  |     Q   |         |         |         |
  2+20       0.7073      5.21  |     Q   |         |         |         |
  2+25       0.7438      5.31  |     VQ  |         |         |         |
  2+30       0.7810      5.40  |      Q  |         |         |         |
  2+35       0.8185      5.45  |      Q  |         |         |         |
  2+40       0.8563      5.48  |      Q  |         |         |         |
  2+45       0.8944      5.53  |      QV |         |         |         |
  2+50       0.9330      5.60  |      QV |         |         |         |
  2+55       0.9724      5.72  |      QV |         |         |         |
  3+ 0       1.0127      5.85  |      Q V|         |         |         |
  3+ 5       1.0537      5.96  |      Q V|         |         |         |
  3+10       1.0952      6.04  |       Q V         |         |         |
  3+15       1.1375      6.13  |       Q V         |         |         |
  3+20       1.1806      6.26  |       Q V         |         |         |
  3+25       1.2249      6.43  |       Q |V        |         |         |
  3+30       1.2704      6.61  |       Q |V        |         |         |
  3+35       1.3176      6.85  |        Q| V       |         |         |
  3+40       1.3670      7.17  |        Q| V       |         |         |
  3+45       1.4188      7.53  |         Q  V      |         |         |
  3+50       1.4731      7.88  |         Q  V      |         |         |
  3+55       1.5296      8.20  |         Q   V     |         |         |
  4+ 0       1.5882      8.51  |         |Q  V     |         |         |
  4+ 5       1.6489      8.81  |         |Q   V    |         |         |
  4+10       1.7118      9.14  |         | Q  V    |         |         |
  4+15       1.7772      9.49  |         | Q   V   |         |         |
  4+20       1.8455      9.92  |         |  Q   V  |         |         |
  4+25       1.9171     10.39  |         |  Q   V  |         |         |
  4+30       1.9921     10.89  |         |   Q   V |         |         |
  4+35       2.0704     11.37  |         |    Q   V|         |         |
  4+40       2.1518     11.82  |         |    Q   V|         |         |
  4+45       2.2363     12.26  |         |     Q   V         |         |
  4+50       2.3240     12.73  |         |     Q   |V        |         |
  4+55       2.4149     13.20  |         |      Q  | V       |         |
```

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   5+ 0       2.5089     13.65  |         |       Q |  V      |         |
   5+ 5       2.6064     14.17  |         |       Q |   V     |         |
   5+10       2.7093     14.93  |         |        Q|    V    |         |
   5+15       2.8202     16.10  |         |         |Q    V   |         |
   5+20       2.9418     17.66  |         |         |  Q   V  |         |
   5+25       3.0757     19.44  |         |         |    Q  V |         |
   5+30       3.2232     21.41  |         |         |       QV|         |
   5+35       3.3820     23.06  |         |         |         QV        |
   5+40       3.5420     23.23  |         |         |         Q V       |
   5+45       3.6877     21.16  |         |         |       Q |   V     |
   5+50       3.8056     17.12  |         |         | Q       |    V    |
   5+55       3.8962     13.15  |         |      Q  |         |    V    |
   6+ 0       3.9675     10.35  |         |  Q      |         |     V   |
   6+ 5       4.0256      8.43  |         |Q        |         |      V  |
   6+10       4.0734      6.95  |        Q|         |         |      V  |
   6+15       4.1127      5.70  |      Q  |         |         |      V  |
   6+20       4.1450      4.68  |     Q   |         |         |       V |
   6+25       4.1718      3.89  |    Q    |         |         |       V |
   6+30       4.1946      3.31  |   Q     |         |         |       V |
   6+35       4.2142      2.85  |  Q      |         |         |       V |
   6+40       4.2312      2.46  |  Q      |         |         |        V|
   6+45       4.2459      2.14  | Q       |         |         |        V|
   6+50       4.2588      1.87  | Q       |         |         |        V|
   6+55       4.2702      1.66  | Q       |         |         |        V|
   7+ 0       4.2802      1.45  |Q        |         |         |        V|
   7+ 5       4.2889      1.25  |Q        |         |         |        V|
   7+10       4.2964      1.09  |Q        |         |         |        V|
   7+15       4.3028      0.94  |Q        |         |         |        V|
   7+20       4.3084      0.81  |Q        |         |         |        V|
   7+25       4.3132      0.69  Q         |         |         |        V|
   7+30       4.3173      0.60  Q         |         |         |        V|
   7+35       4.3207      0.50  Q         |         |         |        V|
   7+40       4.3237      0.43  Q         |         |         |        V|
   7+45       4.3261      0.35  Q         |         |         |        V|
   7+50       4.3280      0.28  Q         |         |         |        V|
   7+55       4.3294      0.20  Q         |         |         |        V|
   8+ 0       4.3300      0.08  Q         |         |         |        V|
   8+ 5       4.3303      0.05  Q         |         |         |        V|
   8+10       4.3305      0.03  Q         |         |         |        V|
   8+15       4.3306      0.02  Q         |         |         |        V|
   8+20       4.3307      0.01  Q         |         |         |        V|
   8+25       4.3307      0.00  Q         |         |         |        V|
-----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


10 YEAR
6 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B10610.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =   101
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       23.233 (CFS)
                Total volume =       4.331 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
-------------------------------------------------------------------
Total number of inflow hydrograph intervals = 101
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
-------------------------------------------------------------------
-------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
-------------------------------------------------------------------
-------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
-------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
-------------------------------------------------------------------
                Hydrograph Detention Basin Routing
-------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 5.8 11.62 17.42 23.23	Depth (Ft.)
0.083	0.08	0.00	0.000	O | | | |	0.00
0.167	0.37	0.00	0.002	O | | | |	0.00
0.250	0.91	0.00	0.006	OI | | | |	0.01
0.333	1.60	0.00	0.015	O I | | | |	0.03
0.417	2.17	0.00	0.028	O I | | | |	0.05
0.500	2.55	0.00	0.044	O I | | | |	0.07
0.583	2.83	0.00	0.063	O I | | | |	0.11
0.667	3.09	0.00	0.083	O I | | | |	0.14
0.750	3.33	0.00	0.105	O I | | | |	0.18
0.833	3.52	0.00	0.129	O I | | | |	0.22
0.917	3.67	0.00	0.153	O I | | | |	0.26
1.000	3.79	0.00	0.179	O I | | | |	0.30
1.083	3.93	0.00	0.206	O I | | | |	0.34
1.167	4.10	0.00	0.233	O I | | | |	0.38
1.250	4.28	0.00	0.262	O I | | | |	0.43
1.333	4.43	0.00	0.292	O I | | | |	0.47
1.417	4.52	0.00	0.323	O I | | | |	0.52
1.500	4.60	0.00	0.354	O I | | | |	0.57
1.583	4.66	0.00	0.386	O I | | | |	0.62
1.667	4.72	0.00	0.419	O I | | | |	0.67
1.750	4.76	0.00	0.451	O I | | | |	0.72
1.833	4.80	0.00	0.484	O I | | | |	0.77
1.917	4.83	0.00	0.517	O I | | | |	0.82
2.000	4.88	0.00	0.551	O I | | | |	0.87
2.083	4.94	0.00	0.584	O I | | | |	0.92
2.167	5.02	0.00	0.619	O I | | | |	0.98
2.250	5.12	0.00	0.654	O I| | | |	1.03
2.333	5.21	0.00	0.689	O I| | | |	1.08
2.417	5.31	0.00	0.725	O I| | | |	1.14
2.500	5.40	0.00	0.762	O I| | | |	1.20
2.583	5.45	0.00	0.800	O I| | | |	1.25
2.667	5.48	0.00	0.837	O I| | | |	1.31
2.750	5.53	0.00	0.875	O I| | | |	1.36
2.833	5.60	0.00	0.913	O I| | | |	1.42
2.917	5.72	0.00	0.952	O I| | | |	1.47
3.000	5.85	0.00	0.992	O I | | |	1.53
3.083	5.96	0.00	1.033	O I | | |	1.58
3.167	6.04	0.00	1.074	O I | | |	1.64
3.250	6.13	0.00	1.116	O I | | |	1.70
3.333	6.26	0.00	1.159	O I | | |	1.76
3.417	6.43	0.00	1.203	O I | | |	1.82
3.500	6.61	0.00	1.247	O |I | | |	1.88
3.583	6.85	0.00	1.294	O |I | | |	1.95
3.667	7.17	0.00	1.342	O |I | | |	2.02
3.750	7.53	0.00	1.393	O | I | | |	2.08
3.833	7.88	0.01	1.446	O | I | | |	2.16
3.917	8.20	0.01	1.501	O | I | | |	2.23
4.000	8.51	0.01	1.558	O | I | | |	2.31
4.083	8.81	0.01	1.618	O | I | | |	2.39
4.167	9.14	0.01	1.680	O | I | | |	2.47
4.250	9.49	1.13	1.740	|O | I | | |	2.55
4.333	9.92	2.17	1.796	| O | I | | |	2.61
4.417	10.39	3.17	1.847	| O | I | | |	2.68
4.500	10.89	4.30	1.895	| O | I | | |	2.74
4.583	11.37	5.33	1.938	| O| I| | |	2.79
4.667	11.82	6.28	1.978	| O I | |	2.84
4.750	12.26	7.23	2.014	| |O I | |	2.89
4.833	12.73	8.22	2.047	| | O |I | |	2.93
4.917	13.20	9.11	2.077	| | O | I | |	2.97
5.000	13.65	9.92	2.104	| | O | I | |	3.00
5.083	14.17	10.66	2.129	| | O | I | |	3.03
5.167	14.93	11.39	2.153	| | O| I | |	3.06
5.250	16.10	12.21	2.179	| | O I | |	3.09
5.333	17.66	13.17	2.208	| | | O I |	3.13
5.417	19.44	14.26	2.241	| | | O | I |	3.17
5.500	21.41	15.52	2.279	| | | O | I |	3.21
5.583	23.06	16.89	2.320	| | | O| I|	3.26
5.667	23.23	18.27	2.359	| | | |O I |	3.30
5.750	21.16	19.16	2.383	| | | | O I |	3.33
5.833	17.12	19.15	2.383	| | | I| O |	3.33
5.917	13.15	18.24	2.358	| | | I |O |	3.30
6.000	10.35	16.82	2.318	| | I | O| |	3.26
6.083	8.43	15.30	2.272	| | I | O | |	3.20
6.167	6.95	13.75	2.225	| |I | O | |	3.15
6.250	5.70	12.24	2.179	| I| O | |	3.09

6.333	4.68	10.87	2.136	| I | O |				3.04
6.417	3.89	9.64	2.095	| I | O |				2.99
6.500	3.31	8.51	2.057	| I | O |				2.94
6.583	2.85	7.49	2.023	| I | O |				2.90
6.667	2.46	6.63	1.993	| I | O |				2.86
6.750	2.14	5.97	1.965	| I O |				2.83
6.833	1.87	5.37	1.940	| I O |				2.79
6.917	1.66	4.83	1.917	| I O |				2.77
7.000	1.45	4.33	1.896	| I O |				2.74
7.083	1.25	3.88	1.877	|I O |				2.72
7.167	1.09	3.47	1.860	|I O |				2.69
7.250	0.94	3.10	1.844	|I O |				2.68
7.333	0.81	2.81	1.830	|I O |				2.66
7.417	0.69	2.56	1.817	I O |				2.64
7.500	0.60	2.33	1.804	I O |				2.63
7.583	0.50	2.11	1.793	I O |				2.61
7.667	0.43	1.92	1.782	I O |				2.60
7.750	0.35	1.73	1.772	I O |				2.59
7.833	0.28	1.56	1.763	I O |				2.57
7.917	0.20	1.40	1.754	IO |				2.56
8.000	0.08	1.25	1.746	IO |				2.55
8.083	0.05	1.10	1.739	IO |				2.54
8.167	0.03	0.98	1.732	IO |				2.53
8.250	0.02	0.86	1.726	IO |				2.53
8.333	0.01	0.76	1.720	IO |				2.52
8.417	0.00	0.67	1.715	O |				2.51
8.500	0.00	0.59	1.711	O |				2.51
8.583	0.00	0.52	1.707	O |				2.50
8.667	0.00	0.45	1.704	O |				2.50
8.750	0.00	0.40	1.701	O |				2.50
8.833	0.00	0.35	1.698	O |				2.49
8.917	0.00	0.31	1.696	O |				2.49
9.000	0.00	0.27	1.694	O |				2.49
9.083	0.00	0.24	1.692	O |				2.49
9.167	0.00	0.21	1.691	O |				2.48
9.250	0.00	0.18	1.689	O |				2.48
9.333	0.00	0.16	1.688	O |				2.48
9.417	0.00	0.14	1.687	O |				2.48
9.500	0.00	0.13	1.686	O |				2.48
9.583	0.00	0.11	1.685	O |				2.48
9.667	0.00	0.10	1.685	O |				2.48
9.750	0.00	0.08	1.684	O |				2.48
9.833	0.00	0.07	1.683	O |				2.47
9.917	0.00	0.07	1.683	O |				2.47
10.000	0.00	0.06	1.683	O |				2.47
10.083	0.00	0.05	1.682	O |				2.47
10.167	0.00	0.04	1.682	O |				2.47
10.250	0.00	0.04	1.682	O |				2.47
10.333	0.00	0.03	1.681	O |				2.47
10.417	0.00	0.03	1.681	O |				2.47
10.500	0.00	0.03	1.681	O |				2.47
10.583	0.00	0.02	1.681	O |				2.47
10.667	0.00	0.02	1.681	O |				2.47
10.750	0.00	0.02	1.680	O |				2.47
10.833	0.00	0.02	1.680	O |				2.47
10.917	0.00	0.01	1.680	O |				2.47
11.000	0.00	0.01	1.680	O |				2.47
11.083	0.00	0.01	1.680	O |				2.47
11.167	0.00	0.01	1.680	O |				2.47
11.250	0.00	0.01	1.680	O |				2.47
11.333	0.00	0.01	1.680	O |				2.47
11.417	0.00	0.01	1.680	O |				2.47
11.500	0.00	0.01	1.680	O |				2.47
11.583	0.00	0.01	1.680	O |				2.47
11.667	0.00	0.01	1.680	O |				2.47
11.750	0.00	0.01	1.679	O |				2.47
11.833	0.00	0.01	1.679	O |				2.47
11.917	0.00	0.01	1.679	O |				2.47
12.000	0.00	0.01	1.679	O |				2.47
12.083	0.00	0.01	1.679	O |				2.47
12.167	0.00	0.01	1.679	O |				2.47
12.250	0.00	0.01	1.679	O |				2.47
12.333	0.00	0.01	1.679	O |				2.47
12.417	0.00	0.01	1.679	O |				2.47
12.500	0.00	0.01	1.679	O |				2.47
12.583	0.00	0.01	1.679	O |				2.47
12.667	0.00	0.01	1.679	O |				2.47
12.750	0.00	0.01	1.679	O |				2.47
12.833	0.00	0.01	1.679	O |				2.47

407.917	0.00	0.00	1.408	O	|	|	|	|	2.10
408.000	0.00	0.00	1.408	O	|	|	|	|	2.10
408.083	0.00	0.00	1.408	O	|	|	|	|	2.10
408.167	0.00	0.00	1.407	O	|	|	|	|	2.10
408.250	0.00	0.00	1.407	O	|	|	|	|	2.10
408.333	0.00	0.00	1.407	O	|	|	|	|	2.10
408.417	0.00	0.00	1.407	O	|	|	|	|	2.10
408.500	0.00	0.00	1.407	O	|	|	|	|	2.10
408.583	0.00	0.00	1.407	O	|	|	|	|	2.10
408.667	0.00	0.00	1.407	O	|	|	|	|	2.10
408.750	0.00	0.00	1.407	O	|	|	|	|	2.10
408.833	0.00	0.00	1.407	O	|	|	|	|	2.10
408.917	0.00	0.00	1.407	O	|	|	|	|	2.10
409.000	0.00	0.00	1.407	O	|	|	|	|	2.10
409.083	0.00	0.00	1.407	O	|	|	|	|	2.10
409.167	0.00	0.00	1.407	O	|	|	|	|	2.10
409.250	0.00	0.00	1.407	O	|	|	|	|	2.10
409.333	0.00	0.00	1.407	O	|	|	|	|	2.10
409.417	0.00	0.00	1.407	O	|	|	|	|	2.10
409.500	0.00	0.00	1.407	O	|	|	|	|	2.10
409.583	0.00	0.00	1.407	O	|	|	|	|	2.10
409.667	0.00	0.00	1.407	O	|	|	|	|	2.10
409.750	0.00	0.00	1.407	O	|	|	|	|	2.10
409.833	0.00	0.00	1.407	O	|	|	|	|	2.10
409.917	0.00	0.00	1.407	O	|	|	|	|	2.10
410.000	0.00	0.00	1.407	O	|	|	|	|	2.10
410.083	0.00	0.00	1.407	O	|	|	|	|	2.10
410.167	0.00	0.00	1.407	O	|	|	|	|	2.10
410.250	0.00	0.00	1.407	O	|	|	|	|	2.10
410.333	0.00	0.00	1.407	O	|	|	|	|	2.10
410.417	0.00	0.00	1.407	O	|	|	|	|	2.10
410.500	0.00	0.00	1.407	O	|	|	|	|	2.10
410.583	0.00	0.00	1.407	O	|	|	|	|	2.10
410.667	0.00	0.00	1.407	O	|	|	|	|	2.10
410.750	0.00	0.00	1.407	O	|	|	|	|	2.10
410.833	0.00	0.00	1.406	O	|	|	|	|	2.10
410.917	0.00	0.00	1.406	O	|	|	|	|	2.10
411.000	0.00	0.00	1.406	O	|	|	|	|	2.10
411.083	0.00	0.00	1.406	O	|	|	|	|	2.10
411.167	0.00	0.00	1.406	O	|	|	|	|	2.10
411.250	0.00	0.00	1.406	O	|	|	|	|	2.10
411.333	0.00	0.00	1.406	O	|	|	|	|	2.10
411.417	0.00	0.00	1.406	O	|	|	|	|	2.10
411.500	0.00	0.00	1.406	O	|	|	|	|	2.10
411.583	0.00	0.00	1.406	O	|	|	|	|	2.10
411.667	0.00	0.00	1.406	O	|	|	|	|	2.10
411.750	0.00	0.00	1.406	O	|	|	|	|	2.10
411.833	0.00	0.00	1.406	O	|	|	|	|	2.10
411.917	0.00	0.00	1.406	O	|	|	|	|	2.10
412.000	0.00	0.00	1.406	O	|	|	|	|	2.10
412.083	0.00	0.00	1.406	O	|	|	|	|	2.10
412.167	0.00	0.00	1.406	O	|	|	|	|	2.10
412.250	0.00	0.00	1.406	O	|	|	|	|	2.10
412.333	0.00	0.00	1.406	O	|	|	|	|	2.10
412.417	0.00	0.00	1.406	O	|	|	|	|	2.10
412.500	0.00	0.00	1.406	O	|	|	|	|	2.10
412.583	0.00	0.00	1.406	O	|	|	|	|	2.10
412.667	0.00	0.00	1.406	O	|	|	|	|	2.10
412.750	0.00	0.00	1.406	O	|	|	|	|	2.10
412.833	0.00	0.00	1.406	O	|	|	|	|	2.10
412.917	0.00	0.00	1.406	O	|	|	|	|	2.10
413.000	0.00	0.00	1.406	O	|	|	|	|	2.10
413.083	0.00	0.00	1.406	O	|	|	|	|	2.10
413.167	0.00	0.00	1.406	O	|	|	|	|	2.10
413.250	0.00	0.00	1.406	O	|	|	|	|	2.10
413.333	0.00	0.00	1.406	O	|	|	|	|	2.10
413.417	0.00	0.00	1.406	O	|	|	|	|	2.10
413.500	0.00	0.00	1.406	O	|	|	|	|	2.10
413.583	0.00	0.00	1.405	O	|	|	|	|	2.10
413.667	0.00	0.00	1.405	O	|	|	|	|	2.10
413.750	0.00	0.00	1.405	O	|	|	|	|	2.10
413.833	0.00	0.00	1.405	O	|	|	|	|	2.10
413.917	0.00	0.00	1.405	O	|	|	|	|	2.10
414.000	0.00	0.00	1.405	O	|	|	|	|	2.10
414.083	0.00	0.00	1.405	O	|	|	|	|	2.10
414.167	0.00	0.00	1.405	O	|	|	|	|	2.10
414.250	0.00	0.00	1.405	O	|	|	|	|	2.10
414.333	0.00	0.00	1.405	O	|	|	|	|	2.10
414.417	0.00	0.00	1.405	O	|	|	|	|	2.10

```
414.500    0.00    0.00      1.405  O       |       |       |       |     2.10
414.583    0.00    0.00      1.405  O       |       |       |       |     2.10
414.667    0.00    0.00      1.405  O       |       |       |       |     2.10
414.750    0.00    0.00      1.405  O       |       |       |       |     2.10
414.833    0.00    0.00      1.405  O       |       |       |       |     2.10
414.917    0.00    0.00      1.405  O       |       |       |       |     2.10
415.000    0.00    0.00      1.405  O       |       |       |       |     2.10
415.083    0.00    0.00      1.405  O       |       |       |       |     2.10
415.167    0.00    0.00      1.405  O       |       |       |       |     2.10
415.250    0.00    0.00      1.405  O       |       |       |       |     2.10
415.333    0.00    0.00      1.405  O       |       |       |       |     2.10
415.417    0.00    0.00      1.405  O       |       |       |       |     2.10
415.500    0.00    0.00      1.405  O       |       |       |       |     2.10
415.583    0.00    0.00      1.405  O       |       |       |       |     2.10
415.667    0.00    0.00      1.405  O       |       |       |       |     2.10
415.750    0.00    0.00      1.405  O       |       |       |       |     2.10
415.833    0.00    0.00      1.405  O       |       |       |       |     2.10
415.917    0.00    0.00      1.405  O       |       |       |       |     2.10
416.000    0.00    0.00      1.405  O       |       |       |       |     2.10
416.083    0.00    0.00      1.405  O       |       |       |       |     2.10
416.167    0.00    0.00      1.405  O       |       |       |       |     2.10
416.250    0.00    0.00      1.405  O       |       |       |       |     2.10
416.333    0.00    0.00      1.404  O       |       |       |       |     2.10
416.417    0.00    0.00      1.404  O       |       |       |       |     2.10
416.500    0.00    0.00      1.404  O       |       |       |       |     2.10
416.583    0.00    0.00      1.404  O       |       |       |       |     2.10
416.667    0.00    0.00      1.404  O       |       |       |       |     2.10

        Remaining water in basin =    1.40 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       19.157 (CFS)
                        Total volume =       2.926 (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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        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  08/31/21 File: 3384B102410.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



---------------------------------------------------------------------
10 YEAR
24 HR


--------------------------------------------------------------------
Drainage Area =      32.15(Ac.)  =      0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      32.15(Ac.)  =      0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time =    0.310 Hr.
Lag time =    18.60 Min.
25% of lag time =     4.65 Min.
40% of lag time =     7.44 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]
       32.15            2.00                  64.30

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       32.15            5.50                 176.82

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 =   99.99 %
Adjusted average point rain =    3.440(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    32.150           56.00         0.900
 Total Area Entered =     32.15(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

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56.0  56.0      0.511     0.900        0.097       1.000      0.097
                                                 Sum (F) =   0.097
Area averaged mean soil loss (F) (In/Hr) =  0.097
Minimum soil loss rate ((In/Hr)) =  0.049
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.100
-------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-------------------------------------------------------------------
                Unit Hydrograph Data
-------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-------------------------------------------------------------------
    1   0.083         26.882          2.513              0.814
    2   0.167         53.763          8.704              2.820
    3   0.250         80.645         15.495              5.020
    4   0.333        107.527         18.827              6.100
    5   0.417        134.409         14.539              4.711
    6   0.500        161.290          8.663              2.807
    7   0.583        188.172          5.434              1.761
    8   0.667        215.054          3.947              1.279
    9   0.750        241.935          3.192              1.034
   10   0.833        268.817          2.646              0.857
   11   0.917        295.699          2.253              0.730
   12   1.000        322.581          1.833              0.594
   13   1.083        349.462          1.617              0.524
   14   1.167        376.344          1.406              0.456
   15   1.250        403.226          1.181              0.383
   16   1.333        430.108          0.985              0.319
   17   1.417        456.989          0.858              0.278
   18   1.500        483.871          0.821              0.266
   19   1.583        510.753          0.789              0.256
   20   1.667        537.634          0.630              0.204
   21   1.750        564.516          0.576              0.187
   22   1.833        591.398          0.495              0.160
   23   1.917        618.280          0.459              0.149
   24   2.000        645.161          0.382              0.124
   25   2.083        672.043          0.340              0.110
   26   2.167        698.925          0.271              0.088
   27   2.250        725.806          0.269              0.087
   28   2.333        752.688          0.269              0.087
   29   2.417        779.570          0.269              0.087
   30   2.500        806.452          0.339              0.110
                                 Sum = 100.000   Sum=      32.401
-------------------------------------------------------------------

 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   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     0.07      0.028       (  0.172)       0.003        0.025
   2   0.17     0.07      0.028       (  0.171)       0.003        0.025
   3   0.25     0.07      0.028       (  0.171)       0.003        0.025
   4   0.33     0.10      0.041       (  0.170)       0.004        0.037
   5   0.42     0.10      0.041       (  0.169)       0.004        0.037
   6   0.50     0.10      0.041       (  0.169)       0.004        0.037
   7   0.58     0.10      0.041       (  0.168)       0.004        0.037
   8   0.67     0.10      0.041       (  0.167)       0.004        0.037
   9   0.75     0.10      0.041       (  0.167)       0.004        0.037
  10   0.83     0.13      0.055       (  0.166)       0.006        0.050
  11   0.92     0.13      0.055       (  0.165)       0.006        0.050
  12   1.00     0.13      0.055       (  0.165)       0.006        0.050
  13   1.08     0.10      0.041       (  0.164)       0.004        0.037
  14   1.17     0.10      0.041       (  0.163)       0.004        0.037
```

15	1.25	0.10	0.041	(	0.163)	0.004	0.037
16	1.33	0.10	0.041	(	0.162)	0.004	0.037
17	1.42	0.10	0.041	(	0.162)	0.004	0.037
18	1.50	0.10	0.041	(	0.161)	0.004	0.037
19	1.58	0.10	0.041	(	0.160)	0.004	0.037
20	1.67	0.10	0.041	(	0.160)	0.004	0.037
21	1.75	0.10	0.041	(	0.159)	0.004	0.037
22	1.83	0.13	0.055	(	0.158)	0.006	0.050
23	1.92	0.13	0.055	(	0.158)	0.006	0.050
24	2.00	0.13	0.055	(	0.157)	0.006	0.050
25	2.08	0.13	0.055	(	0.156)	0.006	0.050
26	2.17	0.13	0.055	(	0.156)	0.006	0.050
27	2.25	0.13	0.055	(	0.155)	0.006	0.050
28	2.33	0.13	0.055	(	0.155)	0.006	0.050
29	2.42	0.13	0.055	(	0.154)	0.006	0.050
30	2.50	0.13	0.055	(	0.153)	0.006	0.050
31	2.58	0.17	0.069	(	0.153)	0.007	0.062
32	2.67	0.17	0.069	(	0.152)	0.007	0.062
33	2.75	0.17	0.069	(	0.151)	0.007	0.062
34	2.83	0.17	0.069	(	0.151)	0.007	0.062
35	2.92	0.17	0.069	(	0.150)	0.007	0.062
36	3.00	0.17	0.069	(	0.150)	0.007	0.062
37	3.08	0.17	0.069	(	0.149)	0.007	0.062
38	3.17	0.17	0.069	(	0.148)	0.007	0.062
39	3.25	0.17	0.069	(	0.148)	0.007	0.062
40	3.33	0.17	0.069	(	0.147)	0.007	0.062
41	3.42	0.17	0.069	(	0.146)	0.007	0.062
42	3.50	0.17	0.069	(	0.146)	0.007	0.062
43	3.58	0.17	0.069	(	0.145)	0.007	0.062
44	3.67	0.17	0.069	(	0.145)	0.007	0.062
45	3.75	0.17	0.069	(	0.144)	0.007	0.062
46	3.83	0.20	0.083	(	0.143)	0.008	0.074
47	3.92	0.20	0.083	(	0.143)	0.008	0.074
48	4.00	0.20	0.083	(	0.142)	0.008	0.074
49	4.08	0.20	0.083	(	0.142)	0.008	0.074
50	4.17	0.20	0.083	(	0.141)	0.008	0.074
51	4.25	0.20	0.083	(	0.140)	0.008	0.074
52	4.33	0.23	0.096	(	0.140)	0.010	0.087
53	4.42	0.23	0.096	(	0.139)	0.010	0.087
54	4.50	0.23	0.096	(	0.139)	0.010	0.087
55	4.58	0.23	0.096	(	0.138)	0.010	0.087
56	4.67	0.23	0.096	(	0.137)	0.010	0.087
57	4.75	0.23	0.096	(	0.137)	0.010	0.087
58	4.83	0.27	0.110	(	0.136)	0.011	0.099
59	4.92	0.27	0.110	(	0.136)	0.011	0.099
60	5.00	0.27	0.110	(	0.135)	0.011	0.099
61	5.08	0.20	0.083	(	0.134)	0.008	0.074
62	5.17	0.20	0.083	(	0.134)	0.008	0.074
63	5.25	0.20	0.083	(	0.133)	0.008	0.074
64	5.33	0.23	0.096	(	0.133)	0.010	0.087
65	5.42	0.23	0.096	(	0.132)	0.010	0.087
66	5.50	0.23	0.096	(	0.132)	0.010	0.087
67	5.58	0.27	0.110	(	0.131)	0.011	0.099
68	5.67	0.27	0.110	(	0.130)	0.011	0.099
69	5.75	0.27	0.110	(	0.130)	0.011	0.099
70	5.83	0.27	0.110	(	0.129)	0.011	0.099
71	5.92	0.27	0.110	(	0.129)	0.011	0.099
72	6.00	0.27	0.110	(	0.128)	0.011	0.099
73	6.08	0.30	0.124	(	0.128)	0.012	0.111
74	6.17	0.30	0.124	(	0.127)	0.012	0.111
75	6.25	0.30	0.124	(	0.126)	0.012	0.111
76	6.33	0.30	0.124	(	0.126)	0.012	0.111
77	6.42	0.30	0.124	(	0.125)	0.012	0.111
78	6.50	0.30	0.124	(	0.125)	0.012	0.111
79	6.58	0.33	0.138	(	0.124)	0.014	0.124
80	6.67	0.33	0.138	(	0.124)	0.014	0.124
81	6.75	0.33	0.138	(	0.123)	0.014	0.124
82	6.83	0.33	0.138	(	0.122)	0.014	0.124
83	6.92	0.33	0.138	(	0.122)	0.014	0.124

84	7.00	0.33	0.138	(0.121)	0.014	0.124
85	7.08	0.33	0.138	(0.121)	0.014	0.124
86	7.17	0.33	0.138	(0.120)	0.014	0.124
87	7.25	0.33	0.138	(0.120)	0.014	0.124
88	7.33	0.37	0.151	(0.119)	0.015	0.136
89	7.42	0.37	0.151	(0.119)	0.015	0.136
90	7.50	0.37	0.151	(0.118)	0.015	0.136
91	7.58	0.40	0.165	(0.118)	0.017	0.149
92	7.67	0.40	0.165	(0.117)	0.017	0.149
93	7.75	0.40	0.165	(0.116)	0.017	0.149
94	7.83	0.43	0.179	(0.116)	0.018	0.161
95	7.92	0.43	0.179	(0.115)	0.018	0.161
96	8.00	0.43	0.179	(0.115)	0.018	0.161
97	8.08	0.50	0.206	(0.114)	0.021	0.186
98	8.17	0.50	0.206	(0.114)	0.021	0.186
99	8.25	0.50	0.206	(0.113)	0.021	0.186
100	8.33	0.50	0.206	(0.113)	0.021	0.186
101	8.42	0.50	0.206	(0.112)	0.021	0.186
102	8.50	0.50	0.206	(0.112)	0.021	0.186
103	8.58	0.53	0.220	(0.111)	0.022	0.198
104	8.67	0.53	0.220	(0.111)	0.022	0.198
105	8.75	0.53	0.220	(0.110)	0.022	0.198
106	8.83	0.57	0.234	(0.110)	0.023	0.211
107	8.92	0.57	0.234	(0.109)	0.023	0.211
108	9.00	0.57	0.234	(0.109)	0.023	0.211
109	9.08	0.63	0.261	(0.108)	0.026	0.235
110	9.17	0.63	0.261	(0.108)	0.026	0.235
111	9.25	0.63	0.261	(0.107)	0.026	0.235
112	9.33	0.67	0.275	(0.107)	0.028	0.248
113	9.42	0.67	0.275	(0.106)	0.028	0.248
114	9.50	0.67	0.275	(0.105)	0.028	0.248
115	9.58	0.70	0.289	(0.105)	0.029	0.260
116	9.67	0.70	0.289	(0.104)	0.029	0.260
117	9.75	0.70	0.289	(0.104)	0.029	0.260
118	9.83	0.73	0.303	(0.103)	0.030	0.272
119	9.92	0.73	0.303	(0.103)	0.030	0.272
120	10.00	0.73	0.303	(0.102)	0.030	0.272
121	10.08	0.50	0.206	(0.102)	0.021	0.186
122	10.17	0.50	0.206	(0.101)	0.021	0.186
123	10.25	0.50	0.206	(0.101)	0.021	0.186
124	10.33	0.50	0.206	(0.101)	0.021	0.186
125	10.42	0.50	0.206	(0.100)	0.021	0.186
126	10.50	0.50	0.206	(0.100)	0.021	0.186
127	10.58	0.67	0.275	(0.099)	0.028	0.248
128	10.67	0.67	0.275	(0.099)	0.028	0.248
129	10.75	0.67	0.275	(0.098)	0.028	0.248
130	10.83	0.67	0.275	(0.098)	0.028	0.248
131	10.92	0.67	0.275	(0.097)	0.028	0.248
132	11.00	0.67	0.275	(0.097)	0.028	0.248
133	11.08	0.63	0.261	(0.096)	0.026	0.235
134	11.17	0.63	0.261	(0.096)	0.026	0.235
135	11.25	0.63	0.261	(0.095)	0.026	0.235
136	11.33	0.63	0.261	(0.095)	0.026	0.235
137	11.42	0.63	0.261	(0.094)	0.026	0.235
138	11.50	0.63	0.261	(0.094)	0.026	0.235
139	11.58	0.57	0.234	(0.093)	0.023	0.211
140	11.67	0.57	0.234	(0.093)	0.023	0.211
141	11.75	0.57	0.234	(0.092)	0.023	0.211
142	11.83	0.60	0.248	(0.092)	0.025	0.223
143	11.92	0.60	0.248	(0.092)	0.025	0.223
144	12.00	0.60	0.248	(0.091)	0.025	0.223
145	12.08	0.83	0.344	(0.091)	0.034	0.310
146	12.17	0.83	0.344	(0.090)	0.034	0.310
147	12.25	0.83	0.344	(0.090)	0.034	0.310
148	12.33	0.87	0.358	(0.089)	0.036	0.322
149	12.42	0.87	0.358	(0.089)	0.036	0.322
150	12.50	0.87	0.358	(0.088)	0.036	0.322
151	12.58	0.93	0.385	(0.088)	0.039	0.347
152	12.67	0.93	0.385	(0.087)	0.039	0.347

153	12.75	0.93	0.385	(0.087)	0.039	0.347
154	12.83	0.97	0.399	(0.087)	0.040	0.359
155	12.92	0.97	0.399	(0.086)	0.040	0.359
156	13.00	0.97	0.399	(0.086)	0.040	0.359
157	13.08	1.13	0.468	(0.085)	0.047	0.421
158	13.17	1.13	0.468	(0.085)	0.047	0.421
159	13.25	1.13	0.468	(0.084)	0.047	0.421
160	13.33	1.13	0.468	(0.084)	0.047	0.421
161	13.42	1.13	0.468	(0.084)	0.047	0.421
162	13.50	1.13	0.468	(0.083)	0.047	0.421
163	13.58	0.77	0.316	(0.083)	0.032	0.285
164	13.67	0.77	0.316	(0.082)	0.032	0.285
165	13.75	0.77	0.316	(0.082)	0.032	0.285
166	13.83	0.77	0.316	(0.081)	0.032	0.285
167	13.92	0.77	0.316	(0.081)	0.032	0.285
168	14.00	0.77	0.316	(0.081)	0.032	0.285
169	14.08	0.90	0.371	(0.080)	0.037	0.334
170	14.17	0.90	0.371	(0.080)	0.037	0.334
171	14.25	0.90	0.371	(0.079)	0.037	0.334
172	14.33	0.87	0.358	(0.079)	0.036	0.322
173	14.42	0.87	0.358	(0.079)	0.036	0.322
174	14.50	0.87	0.358	(0.078)	0.036	0.322
175	14.58	0.87	0.358	(0.078)	0.036	0.322
176	14.67	0.87	0.358	(0.077)	0.036	0.322
177	14.75	0.87	0.358	(0.077)	0.036	0.322
178	14.83	0.83	0.344	(0.077)	0.034	0.310
179	14.92	0.83	0.344	(0.076)	0.034	0.310
180	15.00	0.83	0.344	(0.076)	0.034	0.310
181	15.08	0.80	0.330	(0.075)	0.033	0.297
182	15.17	0.80	0.330	(0.075)	0.033	0.297
183	15.25	0.80	0.330	(0.075)	0.033	0.297
184	15.33	0.77	0.316	(0.074)	0.032	0.285
185	15.42	0.77	0.316	(0.074)	0.032	0.285
186	15.50	0.77	0.316	(0.073)	0.032	0.285
187	15.58	0.63	0.261	(0.073)	0.026	0.235
188	15.67	0.63	0.261	(0.073)	0.026	0.235
189	15.75	0.63	0.261	(0.072)	0.026	0.235
190	15.83	0.63	0.261	(0.072)	0.026	0.235
191	15.92	0.63	0.261	(0.072)	0.026	0.235
192	16.00	0.63	0.261	(0.071)	0.026	0.235
193	16.08	0.13	0.055	(0.071)	0.006	0.050
194	16.17	0.13	0.055	(0.071)	0.006	0.050
195	16.25	0.13	0.055	(0.070)	0.006	0.050
196	16.33	0.13	0.055	(0.070)	0.006	0.050
197	16.42	0.13	0.055	(0.069)	0.006	0.050
198	16.50	0.13	0.055	(0.069)	0.006	0.050
199	16.58	0.10	0.041	(0.069)	0.004	0.037
200	16.67	0.10	0.041	(0.068)	0.004	0.037
201	16.75	0.10	0.041	(0.068)	0.004	0.037
202	16.83	0.10	0.041	(0.068)	0.004	0.037
203	16.92	0.10	0.041	(0.067)	0.004	0.037
204	17.00	0.10	0.041	(0.067)	0.004	0.037
205	17.08	0.17	0.069	(0.067)	0.007	0.062
206	17.17	0.17	0.069	(0.066)	0.007	0.062
207	17.25	0.17	0.069	(0.066)	0.007	0.062
208	17.33	0.17	0.069	(0.066)	0.007	0.062
209	17.42	0.17	0.069	(0.065)	0.007	0.062
210	17.50	0.17	0.069	(0.065)	0.007	0.062
211	17.58	0.17	0.069	(0.065)	0.007	0.062
212	17.67	0.17	0.069	(0.064)	0.007	0.062
213	17.75	0.17	0.069	(0.064)	0.007	0.062
214	17.83	0.13	0.055	(0.064)	0.006	0.050
215	17.92	0.13	0.055	(0.063)	0.006	0.050
216	18.00	0.13	0.055	(0.063)	0.006	0.050
217	18.08	0.13	0.055	(0.063)	0.006	0.050
218	18.17	0.13	0.055	(0.063)	0.006	0.050
219	18.25	0.13	0.055	(0.062)	0.006	0.050
220	18.33	0.13	0.055	(0.062)	0.006	0.050
221	18.42	0.13	0.055	(0.062)	0.006	0.050

222	18.50	0.13	0.055	(0.061)	0.006	0.050
223	18.58	0.10	0.041	(0.061)	0.004	0.037
224	18.67	0.10	0.041	(0.061)	0.004	0.037
225	18.75	0.10	0.041	(0.060)	0.004	0.037
226	18.83	0.07	0.028	(0.060)	0.003	0.025
227	18.92	0.07	0.028	(0.060)	0.003	0.025
228	19.00	0.07	0.028	(0.060)	0.003	0.025
229	19.08	0.10	0.041	(0.059)	0.004	0.037
230	19.17	0.10	0.041	(0.059)	0.004	0.037
231	19.25	0.10	0.041	(0.059)	0.004	0.037
232	19.33	0.13	0.055	(0.058)	0.006	0.050
233	19.42	0.13	0.055	(0.058)	0.006	0.050
234	19.50	0.13	0.055	(0.058)	0.006	0.050
235	19.58	0.10	0.041	(0.058)	0.004	0.037
236	19.67	0.10	0.041	(0.057)	0.004	0.037
237	19.75	0.10	0.041	(0.057)	0.004	0.037
238	19.83	0.07	0.028	(0.057)	0.003	0.025
239	19.92	0.07	0.028	(0.057)	0.003	0.025
240	20.00	0.07	0.028	(0.056)	0.003	0.025
241	20.08	0.10	0.041	(0.056)	0.004	0.037
242	20.17	0.10	0.041	(0.056)	0.004	0.037
243	20.25	0.10	0.041	(0.056)	0.004	0.037
244	20.33	0.10	0.041	(0.055)	0.004	0.037
245	20.42	0.10	0.041	(0.055)	0.004	0.037
246	20.50	0.10	0.041	(0.055)	0.004	0.037
247	20.58	0.10	0.041	(0.055)	0.004	0.037
248	20.67	0.10	0.041	(0.054)	0.004	0.037
249	20.75	0.10	0.041	(0.054)	0.004	0.037
250	20.83	0.07	0.028	(0.054)	0.003	0.025
251	20.92	0.07	0.028	(0.054)	0.003	0.025
252	21.00	0.07	0.028	(0.054)	0.003	0.025
253	21.08	0.10	0.041	(0.053)	0.004	0.037
254	21.17	0.10	0.041	(0.053)	0.004	0.037
255	21.25	0.10	0.041	(0.053)	0.004	0.037
256	21.33	0.07	0.028	(0.053)	0.003	0.025
257	21.42	0.07	0.028	(0.053)	0.003	0.025
258	21.50	0.07	0.028	(0.052)	0.003	0.025
259	21.58	0.10	0.041	(0.052)	0.004	0.037
260	21.67	0.10	0.041	(0.052)	0.004	0.037
261	21.75	0.10	0.041	(0.052)	0.004	0.037
262	21.83	0.07	0.028	(0.052)	0.003	0.025
263	21.92	0.07	0.028	(0.051)	0.003	0.025
264	22.00	0.07	0.028	(0.051)	0.003	0.025
265	22.08	0.10	0.041	(0.051)	0.004	0.037
266	22.17	0.10	0.041	(0.051)	0.004	0.037
267	22.25	0.10	0.041	(0.051)	0.004	0.037
268	22.33	0.07	0.028	(0.051)	0.003	0.025
269	22.42	0.07	0.028	(0.050)	0.003	0.025
270	22.50	0.07	0.028	(0.050)	0.003	0.025
271	22.58	0.07	0.028	(0.050)	0.003	0.025
272	22.67	0.07	0.028	(0.050)	0.003	0.025
273	22.75	0.07	0.028	(0.050)	0.003	0.025
274	22.83	0.07	0.028	(0.050)	0.003	0.025
275	22.92	0.07	0.028	(0.050)	0.003	0.025
276	23.00	0.07	0.028	(0.049)	0.003	0.025
277	23.08	0.07	0.028	(0.049)	0.003	0.025
278	23.17	0.07	0.028	(0.049)	0.003	0.025
279	23.25	0.07	0.028	(0.049)	0.003	0.025
280	23.33	0.07	0.028	(0.049)	0.003	0.025
281	23.42	0.07	0.028	(0.049)	0.003	0.025
282	23.50	0.07	0.028	(0.049)	0.003	0.025
283	23.58	0.07	0.028	(0.049)	0.003	0.025
284	23.67	0.07	0.028	(0.049)	0.003	0.025
285	23.75	0.07	0.028	(0.049)	0.003	0.025
286	23.83	0.07	0.028	(0.049)	0.003	0.025
287	23.92	0.07	0.028	(0.049)	0.003	0.025
288	24.00	0.07	0.028	(0.049)	0.003	0.025
		(Loss Rate Not Used)				
	Sum =	100.0			Sum =	37.1

```
Flood volume = Effective rainfall      3.10(In)
 times area      32.1(Ac.)/[(In)/(Ft.)] =       8.3(Ac.Ft)
Total soil loss =      0.34(In)
Total soil loss =     0.922(Ac.Ft)
Total rainfall =      3.44(In)
Flood volume =      361286.9 Cubic Feet
Total soil loss =       40143.0 Cubic Feet
--------------------------------------------------------------------
 Peak flow rate of this hydrograph =     12.725(CFS)
--------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                     24 - H O U R    S T O R M
                R u n o f f      H y d r o g r a p h
--------------------------------------------------------------------
            Hydrograph in   5   Minute intervals ((CFS))

--------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-----------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q         |         |         |         |
  0+10       0.0008      0.09  Q         |         |         |         |
  0+15       0.0022      0.21  Q         |         |         |         |
  0+20       0.0048      0.38  Q         |         |         |         |
  0+25       0.0085      0.53  VQ        |         |         |         |
  0+30       0.0130      0.66  VQ        |         |         |         |
  0+35       0.0184      0.78  VQ        |         |         |         |
  0+40       0.0243      0.87  VQ        |         |         |         |
  0+45       0.0307      0.93  VQ        |         |         |         |
  0+50       0.0375      0.98  VQ        |         |         |         |
  0+55       0.0447      1.05  V Q       |         |         |         |
  1+ 0       0.0526      1.14  V Q       |         |         |         |
  1+ 5       0.0611      1.23  V Q       |         |         |         |
  1+10       0.0698      1.27  V Q       |         |         |         |
  1+15       0.0785      1.26  V Q       |         |         |         |
  1+20       0.0869      1.22  V Q       |         |         |         |
  1+25       0.0952      1.19  V Q       |         |         |         |
  1+30       0.1033      1.18  V Q       |         |         |         |
  1+35       0.1115      1.18  V Q       |         |         |         |
  1+40       0.1196      1.18  V Q       |         |         |         |
  1+45       0.1278      1.19  V Q       |         |         |         |
  1+50       0.1360      1.20  V Q       |         |         |         |
  1+55       0.1445      1.24  V Q       |         |         |         |
  2+ 0       0.1535      1.30  V Q       |         |         |         |
  2+ 5       0.1630      1.38  V Q       |         |         |         |
  2+10       0.1729      1.44  V Q       |         |         |         |
  2+15       0.1831      1.48  V Q       |         |         |         |
  2+20       0.1934      1.50  V  Q      |         |         |         |
  2+25       0.2039      1.52  V  Q      |         |         |         |
  2+30       0.2145      1.54  |V Q      |         |         |         |
  2+35       0.2252      1.56  |V Q      |         |         |         |
  2+40       0.2362      1.60  |V Q      |         |         |         |
  2+45       0.2477      1.67  |V Q      |         |         |         |
  2+50       0.2598      1.75  |V Q      |         |         |         |
  2+55       0.2723      1.82  |V Q      |         |         |         |
  3+ 0       0.2851      1.85  |V Q      |         |         |         |
  3+ 5       0.2980      1.88  |V Q      |         |         |         |
  3+10       0.3111      1.90  |V Q      |         |         |         |
  3+15       0.3243      1.92  |V Q      |         |         |         |
  3+20       0.3375      1.93  |V Q      |         |         |         |
  3+25       0.3509      1.94  |V Q      |         |         |         |
  3+30       0.3643      1.95  |V Q      |         |         |         |
  3+35       0.3778      1.96  |V Q      |         |         |         |
  3+40       0.3913      1.96  |V Q      |         |         |         |
  3+45       0.4048      1.97  |V Q      |         |         |         |
  3+50       0.4185      1.98  | VQ      |         |         |         |
  3+55       0.4325      2.02  | V Q     |         |         |         |
  4+ 0       0.4468      2.09  | V Q     |         |         |         |
  4+ 5       0.4618      2.17  | V Q     |         |         |         |
  4+10       0.4772      2.23  | V Q     |         |         |         |
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4+15       0.4928      2.27  | V Q     |         |         |         |
4+20       0.5087      2.30  | V Q     |         |         |         |
4+25       0.5249      2.36  | V Q     |         |         |         |
4+30       0.5417      2.43  | V Q     |         |         |         |
4+35       0.5590      2.52  | V  Q    |         |         |         |
4+40       0.5769      2.59  | V  Q    |         |         |         |
4+45       0.5950      2.63  | V  Q    |         |         |         |
4+50       0.6134      2.67  | V  Q    |         |         |         |
4+55       0.6322      2.73  |  V Q    |         |         |         |
5+ 0       0.6516      2.81  |  V Q    |         |         |         |
5+ 5       0.6714      2.88  |  V Q    |         |         |         |
5+10       0.6913      2.88  |  V Q    |         |         |         |
5+15       0.7106      2.80  |  V Q    |         |         |         |
5+20       0.7291      2.69  |  V Q    |         |         |         |
5+25       0.7473      2.64  |  V Q    |         |         |         |
5+30       0.7655      2.65  |  V Q    |         |         |         |
5+35       0.7842      2.71  |  V Q    |         |         |         |
5+40       0.8033      2.78  |  V Q    |         |         |         |
5+45       0.8231      2.87  |  V Q    |         |         |         |
5+50       0.8434      2.95  |   VQ    |         |         |         |
5+55       0.8642      3.02  |   V Q   |         |         |         |
6+ 0       0.8853      3.06  |   V Q   |         |         |         |
6+ 5       0.9066      3.10  |   V Q   |         |         |         |
6+10       0.9283      3.15  |   V Q   |         |         |         |
6+15       0.9505      3.23  |   V Q   |         |         |         |
6+20       0.9734      3.32  |   V Q   |         |         |         |
6+25       0.9967      3.39  |   V Q   |         |         |         |
6+30       1.0204      3.43  |   V Q   |         |         |         |
6+35       1.0443      3.47  |    VQ   |         |         |         |
6+40       1.0686      3.53  |    V Q  |         |         |         |
6+45       1.0935      3.61  |    V Q  |         |         |         |
6+50       1.1190      3.70  |    V Q  |         |         |         |
6+55       1.1450      3.77  |    V Q  |         |         |         |
7+ 0       1.1713      3.82  |    V Q  |         |         |         |
7+ 5       1.1978      3.85  |    V Q  |         |         |         |
7+10       1.2245      3.88  |    V Q  |         |         |         |
7+15       1.2513      3.90  |     VQ  |         |         |         |
7+20       1.2783      3.92  |     VQ  |         |         |         |
7+25       1.3057      3.97  |     VQ  |         |         |         |
7+30       1.3335      4.04  |     V Q |         |         |         |
7+35       1.3620      4.14  |     V Q |         |         |         |
7+40       1.3912      4.24  |     V Q |         |         |         |
7+45       1.4212      4.35  |     V Q |         |         |         |
7+50       1.4519      4.46  |      VQ |         |         |         |
7+55       1.4835      4.58  |      V Q|         |         |         |
8+ 0       1.5158      4.70  |      V Q|         |         |         |
8+ 5       1.5491      4.83  |      V Q|         |         |         |
8+10       1.5834      4.99  |      V Q|         |         |         |
8+15       1.6190      5.17  |      V  Q         |         |         |
8+20       1.6560      5.36  |      V  Q         |         |         |
8+25       1.6939      5.51  |       V |Q        |         |         |
8+30       1.7326      5.61  |       V |Q        |         |         |
8+35       1.7717      5.69  |       V |Q        |         |         |
8+40       1.8115      5.77  |       V |Q        |         |         |
8+45       1.8519      5.88  |       V |Q        |         |         |
8+50       1.8932      6.00  |        V|Q        |         |         |
8+55       1.9354      6.12  |        V| Q       |         |         |
9+ 0       1.9784      6.24  |        V| Q       |         |         |
9+ 5       2.0224      6.38  |        V| Q       |         |         |
9+10       2.0675      6.55  |        V|  Q      |         |         |
9+15       2.1138      6.74  |         V  Q      |         |         |
9+20       2.1617      6.94  |         V  Q      |         |         |
9+25       2.2108      7.13  |         V   Q     |         |         |
9+30       2.2610      7.30  |         V   Q     |         |         |
9+35       2.3124      7.45  |         |V  Q     |         |         |
9+40       2.3647      7.60  |         |V   Q    |         |         |
9+45       2.4181      7.75  |         |V   Q    |         |         |
9+50       2.4724      7.89  |         |V   Q    |         |         |
9+55       2.5278      8.03  |         | V   Q   |         |         |
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10+ 0       2.5840      8.17  |          | V   Q    |          |          |
10+ 5       2.6407      8.23  |          | V   Q    |          |          |
10+10       2.6965      8.09  |          |  V  Q    |          |          |
10+15       2.7497      7.73  |          |  V Q     |          |          |
10+20       2.7997      7.26  |          |  VQ      |          |          |
10+25       2.8471      6.89  |          |  Q       |          |          |
10+30       2.8932      6.69  |          |  Q       |          |          |
10+35       2.9387      6.61  |          |  QV      |          |          |
10+40       2.9849      6.70  |          |  QV      |          |          |
10+45       3.0327      6.95  |          |  QV      |          |          |
10+50       3.0828      7.27  |          |   Q      |          |          |
10+55       3.1346      7.52  |          |    Q     |          |          |
11+ 0       3.1873      7.66  |          |    Q     |          |          |
11+ 5       3.2405      7.72  |          |    Q     |          |          |
11+10       3.2938      7.74  |          |    Q     |          |          |
11+15       3.3469      7.72  |          |    QV    |          |          |
11+20       3.3998      7.68  |          |    QV    |          |          |
11+25       3.4525      7.65  |          |    QV    |          |          |
11+30       3.5050      7.63  |          |    QV    |          |          |
11+35       3.5574      7.61  |          |    Q V   |          |          |
11+40       3.6093      7.53  |          |    Q V   |          |          |
11+45       3.6603      7.41  |          |   Q  V   |          |          |
11+50       3.7104      7.27  |          |   Q  V   |          |          |
11+55       3.7598      7.18  |          |   Q   V  |          |          |
12+ 0       3.8092      7.17  |          |   Q   V  |          |          |
12+ 5       3.8593      7.28  |          |   Q   V  |          |          |
12+10       3.9113      7.55  |          |    Q  V  |          |          |
12+15       3.9664      7.99  |          |    Q   V|          |          |
12+20       4.0252      8.53  |          |      Q V|          |          |
12+25       4.0870      8.97  |          |      Q V|          |          |
12+30       4.1508      9.27  |          |       Q V          |          |
12+35       4.2164      9.52  |          |        QV          |          |
12+40       4.2836      9.76  |          |        QV          |          |
12+45       4.3525     10.01  |          |         Q          |          |
12+50       4.4233     10.27  |          |         QV         |          |
12+55       4.4956     10.50  |          |         |Q         |          |
13+ 0       4.5693     10.70  |          |         |QV        |          |
13+ 5       4.6445     10.92  |          |         |QV        |          |
13+10       4.7219     11.23  |          |         | Q        |          |
13+15       4.8021     11.64  |          |         |  Q       |          |
13+20       4.8854     12.10  |          |         |  VQ      |          |
13+25       4.9712     12.45  |          |         |  VQ      |          |
13+30       5.0585     12.68  |          |         |   VQ     |          |
13+35       5.1461     12.72  |          |         |   VQ     |          |
13+40       5.2319     12.46  |          |         |   QV     |          |
13+45       5.3137     11.88  |          |         |  Q V     |          |
13+50       5.3904     11.13  |          |         | Q  V     |          |
13+55       5.4631     10.56  |          |         |Q    V    |          |
14+ 0       5.5336     10.24  |          |         Q     V    |          |
14+ 5       5.6031     10.09  |          |         Q      V   |          |
14+10       5.6727     10.10  |          |         Q      V   |          |
14+15       5.7433     10.25  |          |         Q      V   |          |
14+20       5.8154     10.47  |          |         Q       V  |          |
14+25       5.8884     10.60  |          |         |Q      V  |          |
14+30       5.9615     10.63  |          |         |Q      V  |          |
14+35       6.0344     10.59  |          |         |Q       V|          |
14+40       6.1071     10.55  |          |         |Q       V|          |
14+45       6.1796     10.53  |          |         |Q       V|          |
14+50       6.2520     10.51  |          |         |Q        V          |
14+55       6.3241     10.47  |          |         Q         V          |
15+ 0       6.3957     10.40  |          |         Q         V          |
15+ 5       6.4666     10.30  |          |         Q         |V         |
15+10       6.5369     10.20  |          |         Q         |V         |
15+15       6.6064     10.10  |          |         Q         |V         |
15+20       6.6752      9.98  |          |        Q|         | V        |
15+25       6.7431      9.87  |          |        Q|         | V        |
15+30       6.8103      9.75  |          |        Q|         | V        |
15+35       6.8764      9.60  |          |        Q|         |  V       |
15+40       6.9410      9.37  |          |       Q |         |  V       |
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15+45       7.0034      9.06  |         |       Q |         |  V      |
15+50       7.0634      8.71  |         |      Q  |         |   V     |
15+55       7.1215      8.44  |         |     Q   |         |   V     |
16+ 0       7.1785      8.27  |         |     Q   |         |   V     |
16+ 5       7.2336      8.01  |         |     Q   |         |   V     |
16+10       7.2847      7.41  |         |   Q     |         |    V    |
16+15       7.3288      6.41  |         | Q       |         |    V    |
16+20       7.3648      5.22  |         Q         |         |    V    |
16+25       7.3944      4.30  |       Q |         |         |    V    |
16+30       7.4203      3.75  |      Q  |         |         |    V    |
16+35       7.4435      3.37  |     Q   |         |         |    V    |
16+40       7.4646      3.07  |     Q   |         |         |     V   |
16+45       7.4838      2.79  |    Q    |         |         |     V   |
16+50       7.5013      2.53  |    Q    |         |         |     V   |
16+55       7.5172      2.32  |   Q     |         |         |     V   |
17+ 0       7.5321      2.15  |   Q     |         |         |     V   |
17+ 5       7.5461      2.04  |   Q     |         |         |     V   |
17+10       7.5598      1.99  |  Q      |         |         |     V   |
17+15       7.5738      2.02  |   Q     |         |         |     V   |
17+20       7.5882      2.09  |   Q     |         |         |     V   |
17+25       7.6029      2.14  |   Q     |         |         |     V   |
17+30       7.6176      2.14  |   Q     |         |         |     V   |
17+35       7.6323      2.13  |   Q     |         |         |     V   |
17+40       7.6468      2.11  |   Q     |         |         |     V   |
17+45       7.6612      2.09  |   Q     |         |         |     V   |
17+50       7.6754      2.06  |   Q     |         |         |      V  |
17+55       7.6892      2.01  |   Q     |         |         |      V  |
18+ 0       7.7025      1.93  |  Q      |         |         |      V  |
18+ 5       7.7152      1.84  |  Q      |         |         |      V  |
18+10       7.7274      1.78  |  Q      |         |         |      V  |
18+15       7.7394      1.73  |  Q      |         |         |      V  |
18+20       7.7511      1.70  |  Q      |         |         |      V  |
18+25       7.7626      1.68  |  Q      |         |         |      V  |
18+30       7.7740      1.65  |  Q      |         |         |      V  |
18+35       7.7852      1.63  |  Q      |         |         |      V  |
18+40       7.7962      1.59  |  Q      |         |         |      V  |
18+45       7.8067      1.53  |  Q      |         |         |      V  |
18+50       7.8166      1.44  | Q       |         |         |      V  |
18+55       7.8258      1.34  | Q       |         |         |      V  |
19+ 0       7.8343      1.24  | Q       |         |         |      V  |
19+ 5       7.8423      1.15  | Q       |         |         |      V  |
19+10       7.8499      1.11  | Q       |         |         |      V  |
19+15       7.8577      1.12  | Q       |         |         |      V  |
19+20       7.8658      1.18  | Q       |         |         |      V  |
19+25       7.8743      1.24  | Q       |         |         |      V  |
19+30       7.8834      1.32  | Q       |         |         |       V |
19+35       7.8930      1.39  | Q       |         |         |       V |
19+40       7.9027      1.41  | Q       |         |         |       V |
19+45       7.9123      1.38  | Q       |         |         |       V |
19+50       7.9213      1.32  | Q       |         |         |       V |
19+55       7.9299      1.24  | Q       |         |         |       V |
20+ 0       7.9378      1.15  | Q       |         |         |       V |
20+ 5       7.9452      1.08  | Q       |         |         |       V |
20+10       7.9524      1.04  | Q       |         |         |       V |
20+15       7.9598      1.06  | Q       |         |         |       V |
20+20       7.9674      1.11  | Q       |         |         |       V |
20+25       7.9754      1.15  | Q       |         |         |       V |
20+30       7.9834      1.17  | Q       |         |         |       V |
20+35       7.9915      1.18  | Q       |         |         |       V |
20+40       7.9997      1.18  | Q       |         |         |       V |
20+45       8.0078      1.19  | Q       |         |         |       V |
20+50       8.0160      1.18  | Q       |         |         |       V |
20+55       8.0239      1.15  | Q       |         |         |       V |
21+ 0       8.0313      1.08  | Q       |         |         |       V |
21+ 5       8.0384      1.02  | Q       |         |         |       V |
21+10       8.0452      1.00  |Q        |         |         |       V |
21+15       8.0523      1.03  | Q       |         |         |       V |
21+20       8.0597      1.07  | Q       |         |         |       V |
21+25       8.0671      1.08  | Q       |         |         |       V |
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  21+30       8.0743      1.04  | Q       |         |         |       V |
  21+35       8.0811      0.99  |Q        |         |         |       V |
  21+40       8.0878      0.97  |Q        |         |         |        V|
  21+45       8.0947      1.01  | Q       |         |         |        V|
  21+50       8.1020      1.05  | Q       |         |         |        V|
  21+55       8.1093      1.06  | Q       |         |         |        V|
  22+ 0       8.1164      1.03  | Q       |         |         |        V|
  22+ 5       8.1231      0.97  |Q        |         |         |        V|
  22+10       8.1297      0.96  |Q        |         |         |        V|
  22+15       8.1366      0.99  |Q        |         |         |        V|
  22+20       8.1438      1.04  | Q       |         |         |        V|
  22+25       8.1511      1.06  | Q       |         |         |        V|
  22+30       8.1581      1.02  | Q       |         |         |        V|
  22+35       8.1647      0.96  |Q        |         |         |        V|
  22+40       8.1710      0.91  |Q        |         |         |        V|
  22+45       8.1771      0.89  |Q        |         |         |        V|
  22+50       8.1831      0.87  |Q        |         |         |        V|
  22+55       8.1890      0.86  |Q        |         |         |        V|
  23+ 0       8.1948      0.85  |Q        |         |         |        V|
  23+ 5       8.2006      0.84  |Q        |         |         |        V|
  23+10       8.2064      0.84  |Q        |         |         |        V|
  23+15       8.2121      0.83  |Q        |         |         |        V|
  23+20       8.2178      0.83  |Q        |         |         |        V|
  23+25       8.2235      0.82  |Q        |         |         |        V|
  23+30       8.2292      0.82  |Q        |         |         |        V|
  23+35       8.2348      0.82  |Q        |         |         |        V|
  23+40       8.2404      0.82  |Q        |         |         |        V|
  23+45       8.2460      0.81  |Q        |         |         |        V|
  23+50       8.2516      0.81  |Q        |         |         |        V|
  23+55       8.2572      0.81  |Q        |         |         |        V|
  24+ 0       8.2628      0.81  |Q        |         |         |        V|
  24+ 5       8.2683      0.79  |Q        |         |         |        V|
  24+10       8.2732      0.72  |Q        |         |         |        V|
  24+15       8.2773      0.59  |Q        |         |         |        V|
  24+20       8.2803      0.44  Q         |         |         |        V|
  24+25       8.2826      0.32  Q         |         |         |        V|
  24+30       8.2843      0.25  Q         |         |         |        V|
  24+35       8.2858      0.21  Q         |         |         |        V|
  24+40       8.2870      0.18  Q         |         |         |        V|
  24+45       8.2880      0.15  Q         |         |         |        V|
  24+50       8.2889      0.13  Q         |         |         |        V|
  24+55       8.2897      0.11  Q         |         |         |        V|
  25+ 0       8.2903      0.10  Q         |         |         |        V|
  25+ 5       8.2909      0.08  Q         |         |         |        V|
  25+10       8.2914      0.07  Q         |         |         |        V|
  25+15       8.2918      0.06  Q         |         |         |        V|
  25+20       8.2922      0.05  Q         |         |         |        V|
  25+25       8.2925      0.05  Q         |         |         |        V|
  25+30       8.2928      0.04  Q         |         |         |        V|
  25+35       8.2930      0.03  Q         |         |         |        V|
  25+40       8.2932      0.03  Q         |         |         |        V|
  25+45       8.2934      0.02  Q         |         |         |        V|
  25+50       8.2935      0.02  Q         |         |         |        V|
  25+55       8.2937      0.02  Q         |         |         |        V|
  26+ 0       8.2938      0.01  Q         |         |         |        V|
  26+ 5       8.2938      0.01  Q         |         |         |        V|
  26+10       8.2939      0.01  Q         |         |         |        V|
  26+15       8.2940      0.01  Q         |         |         |        V|
  26+20       8.2940      0.00  Q         |         |         |        V|
  26+25       8.2940      0.00  Q         |         |         |        V|
----------------------------------------------------------------------
```

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/19/21

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


10 YEAR
24 HR


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


Program License Serial Number 6400

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

                From study/file name: 3384B102410.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =   317
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       12.725 (CFS)
                Total volume =       8.294 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
-------------------------------------------------------------------
Total number of inflow hydrograph intervals = 317
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
-------------------------------------------------------------------
-------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
-------------------------------------------------------------------
-------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
-------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
-------------------------------------------------------------------
                Hydrograph Detention Basin Routing
-------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 3.2 6.36 9.54 12.72	Depth (Ft.)
0.083	0.02	0.00	0.000	O	0.00
0.167	0.09	0.00	0.000	O	0.00
0.250	0.21	0.00	0.001	O	0.00
0.333	0.38	0.00	0.004	O	0.01
0.417	0.53	0.00	0.007	OI	0.01
0.500	0.66	0.00	0.011	OI	0.02
0.583	0.78	0.00	0.016	OI	0.03
0.667	0.87	0.00	0.021	O I	0.04
0.750	0.93	0.00	0.028	O I	0.05
0.833	0.98	0.00	0.034	O I	0.06
0.917	1.05	0.00	0.041	O I	0.07
1.000	1.14	0.00	0.049	O I	0.08
1.083	1.23	0.00	0.057	O I	0.10
1.167	1.27	0.00	0.065	O I	0.11
1.250	1.26	0.00	0.074	O I	0.13
1.333	1.22	0.00	0.083	O I	0.14
1.417	1.19	0.00	0.091	O I	0.15
1.500	1.18	0.00	0.099	O I	0.17
1.583	1.18	0.00	0.107	O I	0.18
1.667	1.18	0.00	0.115	O I	0.19
1.750	1.19	0.00	0.124	O I	0.21
1.833	1.20	0.00	0.132	O I	0.22
1.917	1.24	0.00	0.140	O I	0.24
2.000	1.30	0.00	0.149	O I	0.25
2.083	1.38	0.00	0.158	O I	0.27
2.167	1.44	0.00	0.168	O I	0.28
2.250	1.48	0.00	0.178	O I	0.30
2.333	1.50	0.00	0.188	O I	0.31
2.417	1.52	0.00	0.199	O I	0.33
2.500	1.54	0.00	0.209	O I	0.35
2.583	1.56	0.00	0.220	O I	0.36
2.667	1.60	0.00	0.231	O I	0.38
2.750	1.67	0.00	0.242	O I	0.40
2.833	1.75	0.00	0.254	O I	0.41
2.917	1.82	0.00	0.266	O I	0.43
3.000	1.85	0.00	0.279	O I	0.45
3.083	1.88	0.00	0.291	O I	0.47
3.167	1.90	0.00	0.304	O I	0.49
3.250	1.92	0.00	0.318	O I	0.51
3.333	1.93	0.00	0.331	O I	0.53
3.417	1.94	0.00	0.344	O I	0.55
3.500	1.95	0.00	0.357	O I	0.57
3.583	1.96	0.00	0.371	O I	0.59
3.667	1.96	0.00	0.384	O I	0.62
3.750	1.97	0.00	0.398	O I	0.64
3.833	1.98	0.00	0.411	O I	0.66
3.917	2.02	0.00	0.425	O I	0.68
4.000	2.09	0.00	0.439	O I	0.70
4.083	2.17	0.00	0.454	O I	0.72
4.167	2.23	0.00	0.469	O I	0.75
4.250	2.27	0.00	0.485	O I	0.77
4.333	2.30	0.00	0.500	O I	0.79
4.417	2.36	0.00	0.517	O I	0.82
4.500	2.43	0.00	0.533	O I	0.84
4.583	2.52	0.00	0.550	O I	0.87
4.667	2.59	0.00	0.568	O I	0.90
4.750	2.63	0.00	0.586	O I	0.92
4.833	2.67	0.00	0.604	O I	0.95
4.917	2.73	0.00	0.623	O I	0.98
5.000	2.81	0.00	0.642	O I	1.01
5.083	2.88	0.00	0.661	O I	1.04
5.167	2.88	0.00	0.681	O I	1.07
5.250	2.80	0.00	0.701	O I	1.10
5.333	2.69	0.00	0.720	O I	1.13
5.417	2.64	0.00	0.738	O I	1.16
5.500	2.65	0.00	0.756	O I	1.19
5.583	2.71	0.00	0.774	O I	1.22
5.667	2.78	0.00	0.793	O I	1.24
5.750	2.87	0.00	0.813	O I	1.27
5.833	2.95	0.00	0.833	O I	1.30
5.917	3.02	0.00	0.853	O I	1.33
6.000	3.06	0.00	0.874	O I	1.36
6.083	3.10	0.00	0.896	O I	1.39
6.167	3.15	0.00	0.917	O I	1.42
6.250	3.23	0.00	0.939	O I	1.45

```
 6.333    3.32    0.00      0.962  O       I       |       |       |     1.48
 6.417    3.39    0.00      0.985  O       I       |       |       |     1.52
 6.500    3.43    0.00      1.008  O       I       |       |       |     1.55
 6.583    3.47    0.00      1.032  O       I       |       |       |     1.58
 6.667    3.53    0.00      1.056  O       I       |       |       |     1.62
 6.750    3.61    0.00      1.081  O       |I      |       |       |     1.65
 6.833    3.70    0.00      1.106  O       |I      |       |       |     1.69
 6.917    3.77    0.00      1.132  O       |I      |       |       |     1.72
 7.000    3.82    0.00      1.158  O       |I      |       |       |     1.76
 7.083    3.85    0.00      1.184  O       |I      |       |       |     1.80
 7.167    3.88    0.00      1.211  O       |I      |       |       |     1.83
 7.250    3.90    0.00      1.237  O       |I      |       |       |     1.87
 7.333    3.92    0.00      1.264  O       |I      |       |       |     1.91
 7.417    3.97    0.00      1.291  O       |I      |       |       |     1.95
 7.500    4.04    0.00      1.319  O       | I     |       |       |     1.98
 7.583    4.14    0.00      1.347  O       | I     |       |       |     2.02
 7.667    4.24    0.00      1.376  O       | I     |       |       |     2.06
 7.750    4.35    0.00      1.406  O       | I     |       |       |     2.10
 7.833    4.46    0.01      1.436  O       |  I    |       |       |     2.14
 7.917    4.58    0.01      1.467  O       |  I    |       |       |     2.19
 8.000    4.70    0.01      1.499  O       |  I    |       |       |     2.23
 8.083    4.83    0.01      1.532  O       |   I   |       |       |     2.27
 8.167    4.99    0.01      1.565  O       |   I   |       |       |     2.32
 8.250    5.17    0.01      1.600  O       |   I   |       |       |     2.36
 8.333    5.36    0.01      1.637  O       |    I  |       |       |     2.41
 8.417    5.51    0.01      1.674  O       |    I  |       |       |     2.46
 8.500    5.61    0.57      1.710  |O      |     I |       |       |     2.51
 8.583    5.69    1.19      1.743  | O     |     I |       |       |     2.55
 8.667    5.77    1.74      1.772  |   O   |     I |       |       |     2.59
 8.750    5.88    2.23      1.799  |    O  |     I |       |       |     2.62
 8.833    6.00    2.68      1.823  |     O |      I|       |       |     2.65
 8.917    6.12    3.11      1.845  |      O|      I|       |       |     2.68
 9.000    6.24    3.57      1.864  |       O      I|       |       |     2.70
 9.083    6.38    3.99      1.882  |       | O     I       |       |     2.72
 9.167    6.55    4.36      1.897  |       | O     I       |       |     2.74
 9.250    6.74    4.71      1.912  |       |  O    I       |       |     2.76
 9.333    6.94    5.03      1.925  |       |   O   |I      |       |     2.78
 9.417    7.13    5.33      1.938  |       |    O  |I      |       |     2.79
 9.500    7.30    5.62      1.950  |       |     O | I     |       |     2.81
 9.583    7.45    5.88      1.961  |       |     O | I     |       |     2.82
 9.667    7.60    6.13      1.972  |       |      O|  I    |       |     2.83
 9.750    7.75    6.37      1.982  |       |       O  I    |       |     2.85
 9.833    7.89    6.59      1.991  |       |       O  I    |       |     2.86
 9.917    8.03    6.79      2.000  |       |       |O  I   |       |     2.87
10.000    8.17    7.04      2.008  |       |       |O  I   |       |     2.88
10.083    8.23    7.26      2.015  |       |       | O I   |       |     2.89
10.167    8.09    7.43      2.021  |       |       | O I   |       |     2.90
10.250    7.73    7.52      2.024  |       |       | OI    |       |     2.90
10.333    7.26    7.51      2.024  |       |       | O     |       |     2.90
10.417    6.89    7.43      2.021  |       |       |IO     |       |     2.90
10.500    6.69    7.31      2.017  |       |       I O     |       |     2.89
10.583    6.61    7.19      2.013  |       |       I O     |       |     2.89
10.667    6.70    7.09      2.010  |       |       IO      |       |     2.88
10.750    6.95    7.04      2.008  |       |       |O      |       |     2.88
10.833    7.27    7.05      2.008  |       |       |OI     |       |     2.88
10.917    7.52    7.12      2.011  |       |       |OI     |       |     2.88
11.000    7.66    7.20      2.013  |       |       | OI    |       |     2.89
11.083    7.72    7.29      2.016  |       |       | OI    |       |     2.89
11.167    7.74    7.38      2.019  |       |       | OI    |       |     2.89
11.250    7.72    7.44      2.021  |       |       | OI    |       |     2.90
11.333    7.68    7.49      2.023  |       |       | OI    |       |     2.90
11.417    7.65    7.52      2.024  |       |       | OI    |       |     2.90
11.500    7.63    7.54      2.025  |       |       | OI    |       |     2.90
11.583    7.61    7.56      2.025  |       |       |  O    |       |     2.90
11.667    7.53    7.56      2.025  |       |       | IO    |       |     2.90
11.750    7.41    7.54      2.025  |       |       | O     |       |     2.90
11.833    7.27    7.50      2.023  |       |       | O     |       |     2.90
11.917    7.18    7.45      2.022  |       |       | O     |       |     2.90
12.000    7.17    7.40      2.020  |       |       | O     |       |     2.90
12.083    7.28    7.37      2.019  |       |       | O     |       |     2.89
12.167    7.55    7.38      2.019  |       |       | O     |       |     2.89
12.250    7.99    7.45      2.022  |       |       | O I   |       |     2.90
12.333    8.53    7.60      2.027  |       |       |  O I  |       |     2.90
12.417    8.97    7.82      2.034  |       |       |  O  I |       |     2.91
12.500    9.27    8.06      2.042  |       |       |   O  I|       |     2.92
12.583    9.52    8.31      2.050  |       |       |   O  I|       |     2.93
12.667    9.76    8.56      2.059  |       |       |    O  I       |     2.94
12.750   10.01    8.81      2.067  |       |       |     O |I      |     2.95
12.833   10.27    9.06      2.075  |       |       |     O |I      |     2.96
```

12.917	10.50	9.31	2.084			O	I	2.97
13.000	10.70	9.55	2.092			O	I	2.98
13.083	10.92	9.79	2.100			O	I	2.99
13.167	11.23	10.03	2.108			O	I	3.00
13.250	11.64	10.29	2.116			O	I	3.02
13.333	12.10	10.59	2.126			O	I	3.03
13.417	12.45	10.90	2.137			O	I	3.04
13.500	12.68	11.21	2.147			O	I	3.05
13.583	12.72	11.49	2.156			O	I	3.07
13.667	12.46	11.71	2.163			O	I	3.07
13.750	11.88	11.80	2.166			O		3.08
13.833	11.13	11.74	2.164			I	O	3.08
13.917	10.56	11.56	2.159			I	O	3.07
14.000	10.24	11.34	2.151			I	O	3.06
14.083	10.09	11.12	2.144			I	O	3.05
14.167	10.10	10.93	2.138			I	O	3.04
14.250	10.25	10.79	2.133			I	O	3.04
14.333	10.47	10.71	2.130				O	3.03
14.417	10.60	10.68	2.129				O	3.03
14.500	10.63	10.66	2.129				O	3.03
14.583	10.59	10.65	2.128				O	3.03
14.667	10.55	10.64	2.128				O	3.03
14.750	10.53	10.62	2.127				O	3.03
14.833	10.51	10.60	2.127				O	3.03
14.917	10.47	10.58	2.126				O	3.03
15.000	10.40	10.55	2.125				O	3.03
15.083	10.30	10.51	2.124				IO	3.02
15.167	10.20	10.46	2.122				IO	3.02
15.250	10.10	10.41	2.120				IO	3.02
15.333	9.98	10.34	2.118				O	3.02
15.417	9.87	10.26	2.115				IO	3.01
15.500	9.75	10.18	2.113				IO	3.01
15.583	9.60	10.08	2.109				IO	3.01
15.667	9.37	9.97	2.106				IO	3.00
15.750	9.06	9.83	2.101				I O	3.00
15.833	8.71	9.65	2.095				I O	2.99
15.917	8.44	9.45	2.088				I O	2.98
16.000	8.27	9.25	2.082				I O	2.97
16.083	8.01	9.04	2.075				I O	2.96
16.167	7.41	8.79	2.066				I O	2.95
16.250	6.41	8.44	2.055				I O	2.94
16.333	5.22	7.95	2.038			I	O	2.92
16.417	4.30	7.35	2.018		I		O	2.89
16.500	3.75	6.74	1.998		I	O		2.87
16.583	3.37	6.26	1.977		I	O		2.84
16.667	3.07	5.80	1.958		I	O		2.82
16.750	2.79	5.37	1.940		I	O		2.79
16.833	2.53	4.96	1.922		I	O		2.77
16.917	2.32	4.57	1.906	I		O		2.75
17.000	2.15	4.22	1.891	I	O			2.73
17.083	2.04	3.90	1.878	I	O			2.72
17.167	1.99	3.62	1.866	I	O			2.70
17.250	2.02	3.37	1.856	I	O			2.69
17.333	2.09	3.17	1.847	I	O			2.68
17.417	2.14	3.01	1.841	I	O			2.67
17.500	2.14	2.90	1.835	I	O			2.66
17.583	2.13	2.81	1.830	I	O			2.66
17.667	2.11	2.73	1.825	I	O			2.65
17.750	2.09	2.65	1.821	I	O			2.65
17.833	2.06	2.58	1.818	I	O			2.64
17.917	2.01	2.52	1.814	I	O			2.64
18.000	1.93	2.45	1.811	I	O			2.63
18.083	1.84	2.38	1.807	I	O			2.63
18.167	1.78	2.31	1.803	I	O			2.62
18.250	1.73	2.25	1.800	I	O			2.62
18.333	1.70	2.18	1.796	I	O			2.62
18.417	1.68	2.12	1.793	I	O			2.61
18.500	1.65	2.07	1.790	I	O			2.61
18.583	1.63	2.01	1.787	I	O			2.60
18.667	1.59	1.97	1.785		O			2.60
18.750	1.53	1.92	1.782	I	O			2.60
18.833	1.44	1.86	1.779	I	O			2.59
18.917	1.34	1.81	1.776	I	O			2.59
19.000	1.24	1.74	1.773	I	O			2.59
19.083	1.15	1.68	1.769	I	O			2.58
19.167	1.11	1.61	1.766	I	O			2.58
19.250	1.12	1.55	1.762	I	O			2.57
19.333	1.18	1.50	1.760	I	O			2.57
19.417	1.24	1.47	1.758		O			2.57

```
414.500    0.00    0.00      1.411  O       |       |       |       |     2.11
414.583    0.00    0.00      1.411  O       |       |       |       |     2.11
414.667    0.00    0.00      1.411  O       |       |       |       |     2.11
414.750    0.00    0.00      1.411  O       |       |       |       |     2.11
414.833    0.00    0.00      1.411  O       |       |       |       |     2.11
414.917    0.00    0.00      1.411  O       |       |       |       |     2.11
415.000    0.00    0.00      1.411  O       |       |       |       |     2.11
415.083    0.00    0.00      1.411  O       |       |       |       |     2.11
415.167    0.00    0.00      1.411  O       |       |       |       |     2.11
415.250    0.00    0.00      1.411  O       |       |       |       |     2.11
415.333    0.00    0.00      1.411  O       |       |       |       |     2.11
415.417    0.00    0.00      1.411  O       |       |       |       |     2.11
415.500    0.00    0.00      1.411  O       |       |       |       |     2.11
415.583    0.00    0.00      1.411  O       |       |       |       |     2.11
415.667    0.00    0.00      1.411  O       |       |       |       |     2.11
415.750    0.00    0.00      1.411  O       |       |       |       |     2.11
415.833    0.00    0.00      1.411  O       |       |       |       |     2.11
415.917    0.00    0.00      1.411  O       |       |       |       |     2.11
416.000    0.00    0.00      1.411  O       |       |       |       |     2.11
416.083    0.00    0.00      1.411  O       |       |       |       |     2.11
416.167    0.00    0.00      1.411  O       |       |       |       |     2.11
416.250    0.00    0.00      1.411  O       |       |       |       |     2.11
416.333    0.00    0.00      1.411  O       |       |       |       |     2.11
416.417    0.00    0.00      1.411  O       |       |       |       |     2.11
416.500    0.00    0.00      1.411  O       |       |       |       |     2.11
416.583    0.00    0.00      1.411  O       |       |       |       |     2.11
416.667    0.00    0.00      1.410  O       |       |       |       |     2.11

        Remaining water in basin =    1.41 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       11.802 (CFS)
                        Total volume =       6.884 (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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100-YEAR FREQUENCY

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

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Study date 08/02/19 File: 3384B1100.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

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "B"
100-YEAR 1 Hour

Drainage Area = 32.15(Ac.) = 0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 32.15(Ac.) = 0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.310 Hr.
Lag time = 18.60 Min.
25% of lag time = 4.65 Min.
40% of lag time = 7.44 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]
32.15	0.52	16.72

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
32.15	1.15	36.97

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.520(In)
Area Averaged 100-Year Rainfall = 1.150(In)

Point rain (area averaged) = 1.150(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 1.150(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
32.150	56.00	0.900

Total Area Entered = 32.15(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	74.8	0.305	0.900	0.058	1.000	0.058
					Sum (F) =	0.058

Area averaged mean soil loss (F) (In/Hr) = 0.058
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

Slope of intensity-duration curve for a 1 hour storm =0.5500

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

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	26.882	2.513	0.814
2	0.167	53.763	8.704	2.820
3	0.250	80.645	15.495	5.020
4	0.333	107.527	18.827	6.100
5	0.417	134.409	14.539	4.711
6	0.500	161.290	8.663	2.807
7	0.583	188.172	5.434	1.761
8	0.667	215.054	3.947	1.279
9	0.750	241.935	3.192	1.034
10	0.833	268.817	2.646	0.857
11	0.917	295.699	2.253	0.730
12	1.000	322.581	1.833	0.594

13	1.083	349.462	1.617	0.524
14	1.167	376.344	1.406	0.456
15	1.250	403.226	1.181	0.383
16	1.333	430.108	0.985	0.319
17	1.417	456.989	0.858	0.278
18	1.500	483.871	0.821	0.266
19	1.583	510.753	0.789	0.256
20	1.667	537.634	0.630	0.204
21	1.750	564.516	0.576	0.187
22	1.833	591.398	0.495	0.160
23	1.917	618.280	0.459	0.149
24	2.000	645.161	0.382	0.124
25	2.083	672.043	0.340	0.110
26	2.167	698.925	0.271	0.088
27	2.250	725.806	0.269	0.087
28	2.333	752.688	0.269	0.087
29	2.417	779.570	0.269	0.087
30	2.500	806.452	0.339	0.110
			Sum = 100.000	Sum= 32.401

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	3.30	0.455	(0.058)	0.046	0.410
2	0.17	4.20	0.579	(0.058)	0.058	0.521
3	0.25	4.40	0.607	0.058	(0.061)	0.549
4	0.33	4.80	0.662	0.058	(0.066)	0.604
5	0.42	5.20	0.717	0.058	(0.072)	0.659
6	0.50	6.20	0.855	0.058	(0.086)	0.797
7	0.58	6.80	0.938	0.058	(0.094)	0.880
8	0.67	8.80	1.214	0.058	(0.121)	1.156
9	0.75	13.90	1.918	0.058	(0.192)	1.860
10	0.83	31.40	4.332	0.058	(0.433)	4.274
11	0.92	7.20	0.993	0.058	(0.099)	0.935
12	1.00	3.80	0.524	(0.058)	0.052	0.472
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	13.1

Flood volume = Effective rainfall 1.09(In)
times area 32.1(Ac.)/[(In)/(Ft.)] = 2.9(Ac.Ft)
Total soil loss = 0.06(In)
Total soil loss = 0.151(Ac.Ft)
Total rainfall = 1.15(In)
Flood volume = 127576.7 Cubic Feet
Total soil loss = 6594.4 Cubic Feet

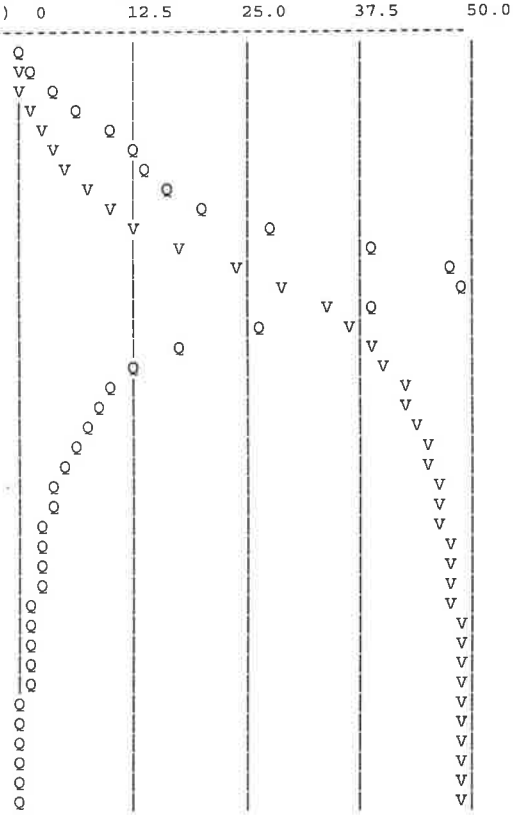
Peak flow rate of this hydrograph = 48.822(CFS)

++

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))

Time(h+m)	Volume Ac.Ft	Q(CFS)
0+ 5	0.0023	0.33
0+10	0.0132	1.58
0+15	0.0406	3.98
0+20	0.0899	7.16
0+25	0.1595	10.11
0+30	0.2457	12.50
0+35	0.3472	14.74
0+40	0.4662	17.29
0+45	0.6104	20.93
0+50	0.8044	28.17
0+55	1.0720	38.85
1+ 0	1.4007	47.73
1+ 5	1.7370	48.82
1+10	2.0071	39.23
1+15	2.1942	27.16
1+20	2.3221	18.58
1+25	2.4157	13.59
1+30	2.4900	10.79
1+35	2.5517	8.95
1+40	2.6038	7.57
1+45	2.6478	6.39
1+50	2.6859	5.54
1+55	2.7190	4.80
2+ 0	2.7474	4.13
2+ 5	2.7719	3.56
2+10	2.7936	3.15
2+15	2.8134	2.87
2+20	2.8313	2.61
2+25	2.8468	2.25
2+30	2.8608	2.03
2+35	2.8729	1.76
2+40	2.8836	1.55
2+45	2.8927	1.32
2+50	2.9005	1.14
2+55	2.9072	0.96
3+ 0	2.9131	0.87
3+ 5	2.9185	0.78
3+10	2.9233	0.70
3+15	2.9274	0.59



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3+20        2.9284       0.14  Q          |          |          |          V|
3+25        2.9288       0.05  Q          |          |          |           V
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FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
Study date: 08/06/19

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "B"
100-YEAR 1-HOUR DETENTION

Program License Serial Number 6400

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

From study/file name: 3384B1100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 41
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 48.822 (CFS)
Total volume = 2.929 (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 253.000 to Point/Station 253.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 41
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
0.270	0.160	0.001	0.160	0.160
1.270	0.810	0.001	0.810	0.810
2.000	1.330	0.001	1.330	1.330
2.270	1.530	0.010	1.530	1.530
2.470	1.680	0.010	1.680	1.680
2.670	1.840	3.000	1.830	1.850
2.870	2.000	6.800	1.977	2.023
3.070	2.160	11.600	2.120	2.200
3.270	2.330	17.200	2.271	2.389
3.470	2.500	23.500	2.419	2.581
3.670	2.670	30.400	2.565	2.775
3.870	2.840	37.800	2.710	2.970
4.070	3.020	45.800	2.862	3.178
4.270	3.200	52.400	3.020	3.380
4.470	3.390	55.100	3.200	3.580
4.670	3.580	57.700	3.381	3.779
4.870	3.770	60.200	3.563	3.977
5.000	3.890	62.600	3.674	4.106

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	12.2	24.41	36.62	48.82	Depth (Ft.)
0.083	0.33	0.00	0.001	O					0.00
0.167	1.58	0.00	0.008	OI					0.01
0.250	3.98	0.00	0.027	O I					0.05
0.333	7.16	0.00	0.065	O I					0.11
0.417	10.11	0.00	0.125	O I					0.21
0.500	12.50	0.00	0.203	O I					0.34
0.583	14.74	0.00	0.296	O I					0.48
0.667	17.29	0.00	0.407	O I					0.65
0.750	20.93	0.00	0.538	O I					0.85
0.833	28.17	0.00	0.707	O I					1.11
0.917	38.85	0.00	0.938	O I					1.45
1.000	47.73	0.00	1.236	O I					1.87
1.083	48.82	0.01	1.569	O I					2.32
1.167	39.23	3.47	1.860	O I					2.69
1.250	27.16	8.25	2.048	O I					2.93
1.333	18.58	10.98	2.139	O I					3.04

1.417	13.59	11.97	2.171	OI				3.08
1.500	10.79	12.01	2.173	O				3.08
1.583	8.95	11.58	2.159	I O				3.07
1.667	7.57	10.96	2.139	I O				3.04
1.750	6.39	10.21	2.114	I O				3.01
1.833	5.54	9.42	2.087	I O				2.98
1.917	4.80	8.62	2.061	I O				2.95
2.000	4.13	7.84	2.035	I O				2.91
2.083	3.56	7.09	2.010	I O				2.88
2.167	3.15	6.47	1.986	I O				2.85
2.250	2.87	5.95	1.964	I O				2.83
2.333	2.61	5.46	1.944	I O				2.80
2.417	2.25	5.00	1.924	I O				2.78
2.500	2.03	4.57	1.906	IO				2.75
2.583	1.76	4.17	1.889	IO				2.73
2.667	1.55	3.79	1.873	IO				2.71
2.750	1.32	3.43	1.858	I O				2.69
2.833	1.14	3.10	1.844	I O				2.68
2.917	0.96	2.83	1.831	IO				2.66
3.000	0.87	2.60	1.819	IO				2.64
3.083	0.78	2.38	1.807	IO				2.63
3.167	0.70	2.19	1.796	IO				2.62
3.250	0.59	2.00	1.786	IO				2.60
3.333	0.14	1.80	1.776	IO				2.59
3.417	0.05	1.60	1.765	IO				2.58
3.500	0.00	1.41	1.755	O				2.56
3.583	0.00	1.24	1.746	O				2.55
3.667	0.00	1.09	1.738	O				2.54
3.750	0.00	0.96	1.731	O				2.53
3.833	0.00	0.84	1.724	O				2.53
3.917	0.00	0.74	1.719	O				2.52
4.000	0.00	0.65	1.714	O				2.51
4.083	0.00	0.57	1.710	O				2.51
4.167	0.00	0.50	1.706	O				2.50
4.250	0.00	0.44	1.703	O				2.50
4.333	0.00	0.39	1.700	O				2.50
4.417	0.00	0.34	1.698	O				2.49
4.500	0.00	0.30	1.695	O				2.49
4.583	0.00	0.26	1.694	O				2.49
4.667	0.00	0.23	1.692	O				2.48
4.750	0.00	0.20	1.690	O				2.48
4.833	0.00	0.18	1.689	O				2.48
4.917	0.00	0.16	1.688	O				2.48
5.000	0.00	0.14	1.687	O				2.48
5.083	0.00	0.12	1.686	O				2.48
5.167	0.00	0.11	1.685	O				2.48
5.250	0.00	0.09	1.684	O				2.48
5.333	0.00	0.08	1.684	O				2.47
5.417	0.00	0.07	1.683	O				2.47
5.500	0.00	0.06	1.683	O				2.47
5.583	0.00	0.06	1.682	O				2.47
5.667	0.00	0.05	1.682	O				2.47
5.750	0.00	0.04	1.682	O				2.47
5.833	0.00	0.04	1.682	O				2.47
5.917	0.00	0.03	1.681	O				2.47
6.000	0.00	0.03	1.681	O				2.47
6.083	0.00	0.03	1.681	O				2.47
6.167	0.00	0.02	1.681	O				2.47
6.250	0.00	0.02	1.681	O				2.47
6.333	0.00	0.02	1.680	O				2.47
6.417	0.00	0.02	1.680	O				2.47
6.500	0.00	0.01	1.680	O				2.47
6.583	0.00	0.01	1.680	O				2.47
6.667	0.00	0.01	1.680	O				2.47
6.750	0.00	0.01	1.680	O				2.47
6.833	0.00	0.01	1.680	O				2.47
6.917	0.00	0.01	1.680	O				2.47
7.000	0.00	0.01	1.680	O				2.47
7.083	0.00	0.01	1.680	O				2.47
7.167	0.00	0.01	1.680	O				2.47
7.250	0.00	0.01	1.680	O				2.47
7.333	0.00	0.01	1.679	O				2.47
7.417	0.00	0.01	1.679	O				2.47
7.500	0.00	0.01	1.679	O				2.47
7.583	0.00	0.01	1.679	O				2.47
7.667	0.00	0.01	1.679	O				2.47
7.750	0.00	0.01	1.679	O				2.47
7.833	0.00	0.01	1.679	O				2.47
7.917	0.00	0.01	1.679	O				2.47
8.000	0.00	0.01	1.679	O				2.47
8.083	0.00	0.01	1.679	O				2.47
8.167	0.00	0.01	1.679	O				2.47
8.250	0.00	0.01	1.679	O				2.47
8.333	0.00	0.01	1.679	O				2.47
8.417	0.00	0.01	1.679	O				2.47
8.500	0.00	0.01	1.679	O				2.47
8.583	0.00	0.01	1.678	O				2.47
8.667	0.00	0.01	1.678	O				2.47
8.750	0.00	0.01	1.678	O				2.47
8.833	0.00	0.01	1.678	O				2.47
8.917	0.00	0.01	1.678	O				2.47
9.000	0.00	0.01	1.678	O				2.47

Remaining water in basin = 1.40 (Ac.Ft)

**********HYDROGRAPH DATA**********

```
            Number of intervals =  5001
            Time interval =    5.0 (Min.)
            Maximum/Peak flow rate =       12.014 (CFS)
            Total volume =       1.526 (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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Unit Hydrograph Analysis

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Study date 08/02/19 File: 3384B3100.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

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "B"
100-YEAR 3HOUR

Drainage Area = 32.15(Ac.) = 0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 32.15(Ac.) = 0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.310 Hr.
Lag time = 18.60 Min.
25% of lag time = 4.65 Min.
40% of lag time = 7.44 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]
32.15	0.95	30.54

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
32.15	1.90	61.08

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 1.900(In)

Point rain (area averaged) = 1.900(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.900(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
32.150	56.00	0.900

Total Area Entered = 32.15(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	74.8	0.305	0.900	0.058	1.000	0.058
					Sum (F) =	0.058

Area averaged mean soil loss (F) (In/Hr) = 0.058
Minimum soil loss rate ((In/Hr)) = 0.029
(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	26.882	2.513	0.814
2	0.167	53.763	8.704	2.820
3	0.250	80.645	15.495	5.020
4	0.333	107.527	18.827	6.100
5	0.417	134.409	14.539	4.711
6	0.500	161.290	8.663	2.807
7	0.583	188.172	5.434	1.761
8	0.667	215.054	3.947	1.279
9	0.750	241.935	3.192	1.034
10	0.833	268.817	2.646	0.857
11	0.917	295.699	2.253	0.730
12	1.000	322.581	1.833	0.594
13	1.083	349.462	1.617	0.524
14	1.167	376.344	1.406	0.456

15	1.250	403.226	1.181	0.383
16	1.333	430.108	0.985	0.319
17	1.417	456.989	0.858	0.278
18	1.500	483.871	0.821	0.266
19	1.583	510.753	0.789	0.256
20	1.667	537.634	0.630	0.204
21	1.750	564.516	0.576	0.187
22	1.833	591.398	0.495	0.160
23	1.917	618.280	0.459	0.149
24	2.000	645.161	0.382	0.124
25	2.083	672.043	0.340	0.110
26	2.167	698.925	0.271	0.088
27	2.250	725.806	0.269	0.087
28	2.333	752.688	0.269	0.087
29	2.417	779.570	0.269	0.087
30	2.500	806.452	0.339	0.110
		Sum = 100.000	Sum=	32.401

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	0.296	(0.058)	0.030	0.267
2	0.17	1.30	0.296	(0.058)	0.030	0.267
3	0.25	1.10	0.251	(0.058)	0.025	0.226
4	0.33	1.50	0.342	(0.058)	0.034	0.308
5	0.42	1.50	0.342	(0.058)	0.034	0.308
6	0.50	1.80	0.410	(0.058)	0.041	0.369
7	0.58	1.50	0.342	(0.058)	0.034	0.308
8	0.67	1.80	0.410	(0.058)	0.041	0.369
9	0.75	1.80	0.410	(0.058)	0.041	0.369
10	0.83	1.50	0.342	(0.058)	0.034	0.308
11	0.92	1.60	0.365	(0.058)	0.036	0.328
12	1.00	1.80	0.410	(0.058)	0.041	0.369
13	1.08	2.20	0.502	(0.058)	0.050	0.451
14	1.17	2.20	0.502	(0.058)	0.050	0.451
15	1.25	2.20	0.502	(0.058)	0.050	0.451
16	1.33	2.00	0.456	(0.058)	0.046	0.410
17	1.42	2.60	0.593	0.058	(0.059)	0.535
18	1.50	2.70	0.616	0.058	(0.062)	0.557
19	1.58	2.40	0.547	(0.058)	0.055	0.492
20	1.67	2.70	0.616	0.058	(0.062)	0.557
21	1.75	3.30	0.752	0.058	(0.075)	0.694
22	1.83	3.10	0.707	0.058	(0.071)	0.649
23	1.92	2.90	0.661	0.058	(0.066)	0.603
24	2.00	3.00	0.684	0.058	(0.068)	0.626
25	2.08	3.10	0.707	0.058	(0.071)	0.649
26	2.17	4.20	0.957	0.058	(0.096)	0.899
27	2.25	5.00	1.140	0.058	(0.114)	1.082
28	2.33	3.50	0.798	0.058	(0.080)	0.740
29	2.42	6.80	1.550	0.058	(0.155)	1.492
30	2.50	7.30	1.664	0.058	(0.166)	1.606
31	2.58	8.20	1.869	0.058	(0.187)	1.811
32	2.67	5.90	1.345	0.058	(0.135)	1.287
33	2.75	2.00	0.456	(0.058)	0.046	0.410
34	2.83	1.80	0.410	(0.058)	0.041	0.369
35	2.92	1.80	0.410	(0.058)	0.041	0.369
36	3.00	0.60	0.137	(0.058)	0.014	0.123

(Loss Rate Not Used)

Sum = 100.0 Sum = 21.1

Flood volume = Effective rainfall 1.76(In)
times area 32.1(Ac.)/[(In)/(Ft.)] = 4.7(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.376(Ac.Ft)
Total rainfall = 1.90(In)
Flood volume = 205328.6 Cubic Feet
Total soil loss = 16378.7 Cubic Feet

Peak flow rate of this hydrograph = 38.942(CFS)

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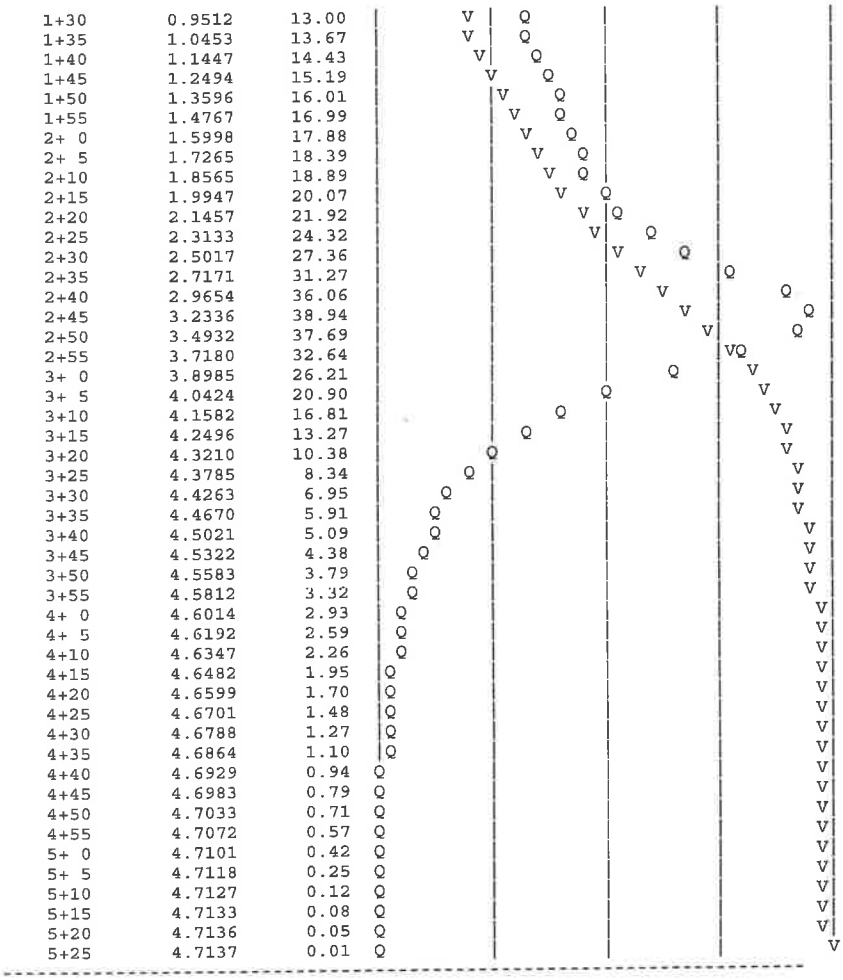
3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 10.0 20.0 30.0 40.0
0+ 5	0.0015	0.22	Q
0+10	0.0082	0.97	Q
0+15	0.0239	2.28	V Q
0+20	0.0504	3.86	V Q
0+25	0.0858	5.14	V Q
0+30	0.1278	6.10	V Q
0+35	0.1760	7.00	V Q
0+40	0.2297	7.80	V Q
0+45	0.2880	8.47	V Q
0+50	0.3498	8.97	V Q
0+55	0.4140	9.33	V Q
1+ 0	0.4797	9.54	V Q
1+ 5	0.5471	9.77	V Q
1+10	0.6180	10.30	V Q
1+15	0.6943	11.08	V Q
1+20	0.7760	11.86	V Q
1+25	0.8617	12.44	V Q

1+30	0.9512	13.00
1+35	1.0453	13.67
1+40	1.1447	14.43
1+45	1.2494	15.19
1+50	1.3596	16.01
1+55	1.4767	16.99
2+ 0	1.5998	17.88
2+ 5	1.7265	18.39
2+10	1.8565	18.89
2+15	1.9947	20.07
2+20	2.1457	21.92
2+25	2.3133	24.32
2+30	2.5017	27.36
2+35	2.7171	31.27
2+40	2.9654	36.06
2+45	3.2336	38.94
2+50	3.4932	37.69
2+55	3.7180	32.64
3+ 0	3.8985	26.21
3+ 5	4.0424	20.90
3+10	4.1582	16.81
3+15	4.2496	13.27
3+20	4.3210	10.38
3+25	4.3785	8.34
3+30	4.4263	6.95
3+35	4.4670	5.91
3+40	4.5021	5.09
3+45	4.5322	4.38
3+50	4.5583	3.79
3+55	4.5812	3.32
4+ 0	4.6014	2.93
4+ 5	4.6192	2.59
4+10	4.6347	2.26
4+15	4.6482	1.95
4+20	4.6599	1.70
4+25	4.6701	1.48
4+30	4.6788	1.27
4+35	4.6864	1.10
4+40	4.6929	0.94
4+45	4.6983	0.79
4+50	4.7033	0.71
4+55	4.7072	0.57
5+ 0	4.7101	0.42
5+ 5	4.7118	0.25
5+10	4.7127	0.12
5+15	4.7133	0.08
5+20	4.7136	0.05
5+25	4.7137	0.01



FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
Study date: 08/06/19

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "B"
100-YEAR 3-HOUR DETENTION

Program License Serial Number 6400

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

From study/file name: 3384B3100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 65
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 38.942 (CFS)
Total volume = 4.714 (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 253.000 to Point/Station 253.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 65
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
0.270	0.160	0.001	0.160	0.160
1.270	0.810	0.001	0.810	0.810
2.000	1.330	0.001	1.330	1.330
2.270	1.530	0.010	1.530	1.530
2.470	1.680	0.010	1.680	1.680
2.670	1.840	3.000	1.830	1.850
2.870	2.000	6.800	1.977	2.023
3.070	2.160	11.600	2.120	2.200
3.270	2.330	17.200	2.271	2.389
3.470	2.500	23.500	2.419	2.581
3.670	2.670	30.400	2.565	2.775
3.870	2.840	37.800	2.710	2.970
4.070	3.020	45.800	2.862	3.178
4.270	3.200	52.400	3.020	3.380
4.470	3.390	55.100	3.200	3.580
4.670	3.580	57.700	3.381	3.779
4.870	3.770	60.200	3.563	3.977
5.000	3.890	62.600	3.674	4.106

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 9.7 19.47 29.21 38.94	Depth (Ft.)
0.083	0.22	0.00	0.001	O	0.00
0.167	0.97	0.00	0.005	O	0.01
0.250	2.28	0.00	0.016	OI	0.03
0.333	3.86	0.00	0.037	O I	0.06
0.417	5.14	0.00	0.068	O I	0.11
0.500	6.10	0.00	0.107	O I	0.18
0.583	7.00	0.00	0.152	O I	0.26
0.667	7.80	0.00	0.203	O I	0.34
0.750	8.47	0.00	0.259	O I	0.42
0.833	8.97	0.00	0.319	O I	0.51
0.917	9.33	0.00	0.382	O I	0.61
1.000	9.54	0.00	0.447	O I	0.71
1.083	9.77	0.00	0.513	O I	0.81
1.167	10.30	0.00	0.582	O I	0.92
1.250	11.08	0.00	0.656	O I	1.03
1.333	11.86	0.00	0.735	O I	1.15

1.417	12.44	0.00	0.819		1.28
1.500	13.00	0.00	0.906		1.41
1.583	13.67	0.00	0.998		1.53
1.667	14.43	0.00	1.095		1.67
1.750	15.19	0.00	1.197		1.81
1.833	16.01	0.00	1.304		1.96
1.917	16.99	0.00	1.418		2.12
2.000	17.88	0.01	1.538		2.28
2.083	18.39	0.01	1.663		2.45
2.167	18.89	1.96	1.784		2.60
2.250	20.07	4.35	1.897		2.74
2.333	21.92	6.88	2.003		2.87
2.417	24.32	9.92	2.104		3.00
2.500	27.36	13.02	2.203		3.12
2.583	31.27	16.34	2.304		3.24
2.667	36.06	20.17	2.410		3.36
2.750	38.94	24.14	2.516		3.49
2.833	37.69	27.62	2.601		3.59
2.917	32.64	29.47	2.647		3.64
3.000	26.21	29.46	2.647		3.64
3.083	20.90	28.01	2.611		3.60
3.167	16.81	25.76	2.556		3.54
3.250	13.27	23.16	2.491		3.46
3.333	10.38	20.60	2.422		3.38
3.417	8.34	18.05	2.353		3.30
3.500	6.95	15.85	2.289		3.22
3.583	5.91	13.93	2.231		3.15
3.667	5.09	12.21	2.179		3.09
3.750	4.38	10.76	2.132		3.04
3.833	3.79	9.51	2.090		2.98
3.917	3.32	8.39	2.053		2.94
4.000	2.93	7.41	2.020		2.90
4.083	2.59	6.59	1.991		2.86
4.167	2.26	5.96	1.965		2.83
4.250	1.95	5.38	1.940		2.80
4.333	1.70	4.84	1.917		2.77
4.417	1.48	4.35	1.897		2.74
4.500	1.27	3.90	1.878		2.72
4.583	1.10	3.49	1.861		2.70
4.667	0.94	3.12	1.845		2.68
4.750	0.79	2.82	1.830		2.66
4.833	0.71	2.57	1.817		2.64
4.917	0.57	2.34	1.805		2.63
5.000	0.42	2.11	1.793		2.61
5.083	0.25	1.90	1.781		2.60
5.167	0.12	1.69	1.770		2.58
5.250	0.08	1.50	1.760		2.57
5.333	0.05	1.33	1.750		2.56
5.417	0.01	1.17	1.742		2.55
5.500	0.00	1.03	1.735		2.54
5.583	0.00	0.91	1.728		2.53
5.667	0.00	0.80	1.722		2.52
5.750	0.00	0.70	1.717		2.52
5.833	0.00	0.61	1.712		2.51
5.917	0.00	0.54	1.708		2.51
6.000	0.00	0.48	1.705		2.50
6.083	0.00	0.42	1.702		2.50
6.167	0.00	0.37	1.699		2.49
6.250	0.00	0.32	1.697		2.49
6.333	0.00	0.28	1.695		2.49
6.417	0.00	0.25	1.693		2.49
6.500	0.00	0.22	1.691		2.48
6.583	0.00	0.19	1.690		2.48
6.667	0.00	0.17	1.689		2.48
6.750	0.00	0.15	1.687		2.48
6.833	0.00	0.13	1.686		2.48
6.917	0.00	0.12	1.686		2.48
7.000	0.00	0.10	1.685		2.48
7.083	0.00	0.09	1.684		2.48
7.167	0.00	0.08	1.684		2.47
7.250	0.00	0.07	1.683		2.47
7.333	0.00	0.06	1.683		2.47
7.417	0.00	0.05	1.682		2.47
7.500	0.00	0.05	1.682		2.47
7.583	0.00	0.04	1.682		2.47
7.667	0.00	0.04	1.681		2.47
7.750	0.00	0.03	1.681		2.47
7.833	0.00	0.03	1.681		2.47
7.917	0.00	0.02	1.681		2.47
8.000	0.00	0.02	1.681		2.47
8.083	0.00	0.02	1.680		2.47
8.167	0.00	0.02	1.680		2.47
8.250	0.00	0.01	1.680		2.47
8.333	0.00	0.01	1.680		2.47
8.417	0.00	0.01	1.680		2.47
8.500	0.00	0.01	1.680		2.47
8.583	0.00	0.01	1.680		2.47
8.667	0.00	0.01	1.680		2.47
8.750	0.00	0.01	1.680		2.47
8.833	0.00	0.01	1.680		2.47
8.917	0.00	0.01	1.680		2.47
9.000	0.00	0.01	1.680		2.47
9.083	0.00	0.01	1.680		2.47
9.167	0.00	0.01	1.679		2.47
9.250	0.00	0.01	1.679		2.47
9.333	0.00	0.01	1.679		2.47
9.417	0.00	0.01	1.679		2.47
9.500	0.00	0.01	1.679		2.47
9.583	0.00	0.01	1.679		2.47

```
9.667    0.00    0.01      1.679  O        |        |        |        |      2.47
9.750    0.00    0.01      1.679  O        |        |        |        |      2.47
9.833    0.00    0.01      1.679  O        |        |        |        |      2.47
9.917    0.00    0.01      1.679  O        |        |        |        |      2.47

      Remaining water in basin =    1.40 (Ac.Ft)


      ****************************HYDROGRAPH DATA****************************
                     Number of intervals =  5001
                     Time interval =    5.0 (Min.)
                     Maximum/Peak flow rate =       29.469 (CFS)
                     Total volume =       3.310 (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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Unit Hydrograph Analysis

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Study date 08/02/19 File: 3384B6100.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

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "B"
100-YEAR 6 HOUR

Drainage Area = 32.15(Ac.) = 0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 32.15(Ac.) = 0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.310 Hr.
Lag time = 18.60 Min.
25% of lag time = 4.65 Min.
40% of lag time = 7.44 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]
32.15	1.30	41.80

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
32.15	2.50	80.38

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 2.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
32.150	56.00	0.900

Total Area Entered = 32.15(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	74.8	0.305	0.900	0.058	1.000	0.058
					Sum (F) =	0.058

Area averaged mean soil loss (F) (In/Hr) = 0.058
Minimum soil loss rate ((In/Hr)) = 0.029
(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	26.882	2.513	0.814
2	0.167	53.763	8.704	2.820
3	0.250	80.645	15.495	5.020
4	0.333	107.527	18.827	6.100
5	0.417	134.409	14.539	4.711
6	0.500	161.290	8.663	2.807
7	0.583	188.172	5.434	1.761
8	0.667	215.054	3.947	1.279
9	0.750	241.935	3.192	1.034
10	0.833	268.817	2.646	0.857
11	0.917	295.699	2.253	0.730
12	1.000	322.581	1.833	0.594
13	1.083	349.462	1.617	0.524
14	1.167	376.344	1.406	0.456

15	1.250	403.226	1.181	0.383
16	1.333	430.108	0.985	0.319
17	1.417	456.989	0.858	0.278
18	1.500	483.871	0.821	0.266
19	1.583	510.753	0.789	0.256
20	1.667	537.634	0.630	0.204
21	1.750	564.516	0.576	0.187
22	1.833	591.398	0.495	0.160
23	1.917	618.280	0.459	0.149
24	2.000	645.161	0.382	0.124
25	2.083	672.043	0.340	0.110
26	2.167	698.925	0.271	0.088
27	2.250	725.806	0.269	0.087
28	2.333	752.688	0.269	0.087
29	2.417	779.570	0.269	0.087
30	2.500	806.452	0.339	0.110
			Sum = 100.000	Sum= 32.401

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	0.150	(0.058)	0.015	0.135
2	0.17	0.60	0.180	(0.058)	0.018	0.162
3	0.25	0.60	0.180	(0.058)	0.018	0.162
4	0.33	0.60	0.180	(0.058)	0.018	0.162
5	0.42	0.60	0.180	(0.058)	0.018	0.162
6	0.50	0.70	0.210	(0.058)	0.021	0.189
7	0.58	0.70	0.210	(0.058)	0.021	0.189
8	0.67	0.70	0.210	(0.058)	0.021	0.189
9	0.75	0.70	0.210	(0.058)	0.021	0.189
10	0.83	0.70	0.210	(0.058)	0.021	0.189
11	0.92	0.70	0.210	(0.058)	0.021	0.189
12	1.00	0.80	0.240	(0.058)	0.024	0.216
13	1.08	0.80	0.240	(0.058)	0.024	0.216
14	1.17	0.80	0.240	(0.058)	0.024	0.216
15	1.25	0.80	0.240	(0.058)	0.024	0.216
16	1.33	0.80	0.240	(0.058)	0.024	0.216
17	1.42	0.80	0.240	(0.058)	0.024	0.216
18	1.50	0.80	0.240	(0.058)	0.024	0.216
19	1.58	0.80	0.240	(0.058)	0.024	0.216
20	1.67	0.80	0.240	(0.058)	0.024	0.216
21	1.75	0.80	0.240	(0.058)	0.024	0.216
22	1.83	0.80	0.240	(0.058)	0.024	0.216
23	1.92	0.80	0.240	(0.058)	0.024	0.216
24	2.00	0.90	0.270	(0.058)	0.027	0.243
25	2.08	0.80	0.240	(0.058)	0.024	0.216
26	2.17	0.90	0.270	(0.058)	0.027	0.243
27	2.25	0.90	0.270	(0.058)	0.027	0.243
28	2.33	0.90	0.270	(0.058)	0.027	0.243
29	2.42	0.90	0.270	(0.058)	0.027	0.243
30	2.50	0.90	0.270	(0.058)	0.027	0.243
31	2.58	0.90	0.270	(0.058)	0.027	0.243
32	2.67	0.90	0.270	(0.058)	0.027	0.243
33	2.75	1.00	0.300	(0.058)	0.030	0.270
34	2.83	1.00	0.300	(0.058)	0.030	0.270
35	2.92	1.00	0.300	(0.058)	0.030	0.270
36	3.00	1.00	0.300	(0.058)	0.030	0.270
37	3.08	1.00	0.300	(0.058)	0.030	0.270
38	3.17	1.10	0.330	(0.058)	0.033	0.297
39	3.25	1.10	0.330	(0.058)	0.033	0.297
40	3.33	1.10	0.330	(0.058)	0.033	0.297
41	3.42	1.20	0.360	(0.058)	0.036	0.324
42	3.50	1.30	0.390	(0.058)	0.039	0.351
43	3.58	1.40	0.420	(0.058)	0.042	0.378
44	3.67	1.40	0.420	(0.058)	0.042	0.378
45	3.75	1.50	0.450	(0.058)	0.045	0.405
46	3.83	1.50	0.450	(0.058)	0.045	0.405
47	3.92	1.60	0.480	(0.058)	0.048	0.432
48	4.00	1.60	0.480	(0.058)	0.048	0.432
49	4.08	1.70	0.510	(0.058)	0.051	0.459
50	4.17	1.80	0.540	(0.058)	0.054	0.486
51	4.25	1.90	0.570	(0.058)	0.057	0.513
52	4.33	2.00	0.600	0.058	(0.060)	0.542
53	4.42	2.10	0.630	0.058	(0.063)	0.572
54	4.50	2.10	0.630	0.058	(0.063)	0.572
55	4.58	2.20	0.660	0.058	(0.066)	0.602
56	4.67	2.30	0.690	0.058	(0.069)	0.632
57	4.75	2.40	0.720	0.058	(0.072)	0.662
58	4.83	2.40	0.720	0.058	(0.072)	0.662
59	4.92	2.50	0.750	0.058	(0.075)	0.692
60	5.00	2.60	0.780	0.058	(0.078)	0.722
61	5.08	3.10	0.930	0.058	(0.093)	0.872
62	5.17	3.60	1.080	0.058	(0.108)	1.022
63	5.25	3.90	1.170	0.058	(0.117)	1.112
64	5.33	4.20	1.260	0.058	(0.126)	1.202
65	5.42	4.70	1.410	0.058	(0.141)	1.352
66	5.50	5.60	1.680	0.058	(0.168)	1.622
67	5.58	1.90	0.570	(0.058)	0.057	0.513
68	5.67	0.90	0.270	(0.058)	0.027	0.243
69	5.75	0.60	0.180	(0.058)	0.018	0.162
70	5.83	0.50	0.150	(0.058)	0.015	0.135
71	5.92	0.30	0.090	(0.058)	0.009	0.081
72	6.00	0.20	0.060	(0.058)	0.006	0.054
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	27.5

```
Flood volume = Effective rainfall      2.29(In)
 times area      32.1(Ac.)/[(In)/(Ft.)] =       6.1(Ac.Ft)
Total soil loss =       0.21(In)
Total soil loss =      0.558(Ac.Ft)
Total rainfall =       2.50(In)
Flood volume =       267424.4 Cubic Feet
Total soil loss =        24304.6 Cubic Feet
--------------------------------------------------------------------
 Peak flow rate of this hydrograph =     33.927(CFS)
--------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    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        10.0      20.0      30.0      40.0
--------------------------------------------------------------------
  0+ 5       0.0008       0.11  Q         |         |         |         |
  0+10       0.0043       0.51  Q         |         |         |         |
  0+15       0.0130       1.27  VQ        |         |         |         |
  0+20       0.0283       2.23  V Q       |         |         |         |
  0+25       0.0492       3.03  V  Q      |         |         |         |
  0+30       0.0737       3.56  V  Q      |         |         |         |
  0+35       0.1009       3.95  V  Q      |         |         |         |
  0+40       0.1305       4.30  V   Q     |         |         |         |
  0+45       0.1624       4.64  |V  Q     |         |         |         |
  0+50       0.1963       4.91  |V  Q     |         |         |         |
  0+55       0.2315       5.11  |V   Q    |         |         |         |
  1+ 0       0.2678       5.28  |V   Q    |         |         |         |
  1+ 5       0.3055       5.48  |V   Q    |         |         |         |
  1+10       0.3449       5.72  | V  Q    |         |         |         |
  1+15       0.3860       5.97  | V  Q    |         |         |         |
  1+20       0.4285       6.17  | V   Q   |         |         |         |
  1+25       0.4719       6.31  |  V  Q   |         |         |         |
  1+30       0.5160       6.41  |  V  Q   |         |         |         |
  1+35       0.5608       6.50  |  V  Q   |         |         |         |
  1+40       0.6061       6.57  |  V  Q   |         |         |         |
  1+45       0.6517       6.63  |   V Q   |         |         |         |
  1+50       0.6978       6.69  |   V Q   |         |         |         |
  1+55       0.7442       6.74  |   V Q   |         |         |         |
  2+ 0       0.7910       6.80  |    VQ   |         |         |         |
  2+ 5       0.8385       6.89  |    VQ   |         |         |         |
  2+10       0.8867       7.00  |    V Q  |         |         |         |
  2+15       0.9358       7.13  |     VQ  |         |         |         |
  2+20       0.9858       7.26  |     VQ  |         |         |         |
  2+25       1.0368       7.40  |     VQ  |         |         |         |
  2+30       1.0886       7.52  |      Q  |         |         |         |
  2+35       1.1409       7.60  |      Q  |         |         |         |
  2+40       1.1935       7.64  |      Q  |         |         |         |
  2+45       1.2466       7.70  |      QV |         |         |         |
  2+50       1.3003       7.81  |      QV |         |         |         |
  2+55       1.3552       7.97  |      QV |         |         |         |
  3+ 0       1.4114       8.16  |       QV|         |         |         |
  3+ 5       1.4686       8.30  |       QV|         |         |         |
  3+10       1.5265       8.41  |       QV|         |         |         |
  3+15       1.5854       8.55  |       Q V         |         |         |
  3+20       1.6455       8.73  |       Q V         |         |         |
  3+25       1.7072       8.96  |       Q |V        |         |         |
  3+30       1.7707       9.21  |        Q|V        |         |         |
  3+35       1.8364       9.55  |        Q|V        |         |         |
  3+40       1.9052       9.99  |        Q| V       |         |         |
  3+45       1.9775      10.50  |         Q V       |         |         |
  3+50       2.0532      10.99  |         Q  V      |         |         |
  3+55       2.1319      11.43  |         |Q V      |         |         |
  4+ 0       2.2136      11.86  |         |Q  V     |         |         |
  4+ 5       2.2982      12.28  |         | Q V     |         |         |
  4+10       2.3859      12.73  |         | Q  V    |         |         |
  4+15       2.4771      13.23  |         |  Q  V   |         |         |
  4+20       2.5722      13.82  |         |  Q  V   |         |         |
  4+25       2.6721      14.50  |         |   Q  V  |         |         |
  4+30       2.7768      15.21  |         |    Q  V |         |         |
  4+35       2.8864      15.91  |         |    Q  V |         |         |
  4+40       3.0005      16.57  |         |     Q  V|         |         |
  4+45       3.1192      17.24  |         |      Q  V         |         |
  4+50       3.2427      17.93  |         |      Q  |V        |         |
  4+55       3.3712      18.65  |         |       Q |V        |         |
  5+ 0       3.5044      19.34  |         |        Q| V       |         |
  5+ 5       3.6429      20.12  |         |         Q  V      |         |
  5+10       3.7897      21.30  |         |         |Q  V     |         |
  5+15       3.9488      23.11  |         |         |  Q V    |         |
  5+20       4.1245      25.51  |         |         |    QV   |         |
  5+25       4.3191      28.26  |         |         |       Q |         |
  5+30       4.5344      31.26  |         |         |        V|Q        |
  5+35       4.7666      33.72  |         |         |         | V Q     |
  5+40       5.0003      33.93  |         |         |         | VQ      |
  5+45       5.2122      30.78  |         |         |         Q  V      |
  5+50       5.3828      24.77  |         |         |  Q      |    V    |
  5+55       5.5133      18.94  |         |       Q |         |    V    |
  6+ 0       5.6157      14.87  |         |   Q     |         |     V   |
  6+ 5       5.6991      12.11  |         | Q       |         |      V  |
  6+10       5.7679       9.98  |        Q|         |         |      V  |
  6+15       5.8244       8.21  |       Q |         |         |      V  |
  6+20       5.8709       6.74  |     Q   |         |         |       V |
  6+25       5.9095       5.61  |    Q    |         |         |       V |
  6+30       5.9424       4.78  |   Q     |         |         |       V |
  6+35       5.9708       4.12  |   Q     |         |         |       V |
  6+40       5.9952       3.56  |  Q      |         |         |        V|
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6+45      6.0165      3.09  |  Q      |         |         |        V|
6+50      6.0352      2.71  | Q       |         |         |        V|
6+55      6.0517      2.39  | Q       |         |         |        V|
7+ 0      6.0662      2.10  | Q       |         |         |        V|
7+ 5      6.0786      1.81  |Q        |         |         |        V|
7+10      6.0895      1.57  |Q        |         |         |        V|
7+15      6.0988      1.36  |Q        |         |         |        V|
7+20      6.1069      1.17  |Q        |         |         |        V|
7+25      6.1138      1.00  |Q        |         |         |        V|
7+30      6.1198      0.87  Q         |         |         |        V|
7+35      6.1248      0.73  Q         |         |         |        V|
7+40      6.1291      0.62  Q         |         |         |        V|
7+45      6.1326      0.51  Q         |         |         |        V|
7+50      6.1354      0.40  Q         |         |         |        V|
7+55      6.1374      0.29  Q         |         |         |        V|
8+ 0      6.1382      0.12  Q         |         |         |        V|
8+ 5      6.1386      0.06  Q         |         |         |        V|
8+10      6.1389      0.04  Q         |         |         |        V|
8+15      6.1391      0.03  Q         |         |         |        V|
8+20      6.1392      0.01  Q         |         |         |        V|
8+25      6.1392      0.01  Q         |         |         |         V
-------------------------------------------------------------------
```

FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 08/06/19

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "B"
100-YEAR 6-HOUR DETENTION

Program License Serial Number 6400

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

From study/file name: 3384B6100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 101
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 33.927 (CFS)
Total volume = 6.139 (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 253.000 to Point/Station 253.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 101
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
0.270	0.160	0.001	0.160	0.160
1.270	0.810	0.001	0.810	0.810
2.000	1.330	0.001	1.330	1.330
2.270	1.530	0.010	1.530	1.530
2.470	1.680	0.010	1.680	1.680
2.670	1.840	3.000	1.830	1.850
2.870	2.000	6.800	1.977	2.023
3.070	2.160	11.600	2.120	2.200
3.270	2.330	17.200	2.271	2.389
3.470	2.500	23.500	2.419	2.581
3.670	2.670	30.400	2.565	2.775
3.870	2.840	37.800	2.710	2.970
4.070	3.020	45.800	2.862	3.178
4.270	3.200	52.400	3.020	3.380
4.470	3.390	55.100	3.200	3.580
4.670	3.580	57.700	3.381	3.779
4.870	3.770	60.200	3.563	3.977
5.000	3.890	62.600	3.674	4.106

Hydrograph Detention Basin Routing

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	8.5	16.96	25.45	33.93	Depth (Ft.)
0.083	0.11	0.00	0.000	O	|	|	|	|	0.00
0.167	0.51	0.00	0.003	O	|	|	|	|	0.00
0.250	1.27	0.00	0.009	OI	|	|	|	|	0.01
0.333	2.23	0.00	0.021	O I	|	|	|	|	0.03
0.417	3.03	0.00	0.039	O I	|	|	|	|	0.07
0.500	3.56	0.00	0.061	O I	|	|	|	|	0.10
0.583	3.95	0.00	0.087	O I	|	|	|	|	0.15
0.667	4.30	0.00	0.116	O I	|	|	|	|	0.20
0.750	4.64	0.00	0.146	O I	|	|	|	|	0.25
0.833	4.91	0.00	0.179	O I	|	|	|	|	0.30
0.917	5.11	0.00	0.214	O I	|	|	|	|	0.35
1.000	5.28	0.00	0.250	O I	|	|	|	|	0.41
1.083	5.48	0.00	0.287	O I	|	|	|	|	0.46
1.167	5.72	0.00	0.325	O I	|	|	|	|	0.52
1.250	5.97	0.00	0.365	O I	|	|	|	|	0.59
1.333	6.17	0.00	0.407	O I	|	|	|	|	0.65

1.417	6.31	0.00	0.450	0.72
1.500	6.41	0.00	0.494	0.78
1.583	6.50	0.00	0.538	0.85
1.667	6.57	0.00	0.583	0.92
1.750	6.63	0.00	0.629	0.99
1.833	6.69	0.00	0.675	1.06
1.917	6.74	0.00	0.721	1.13
2.000	6.80	0.00	0.767	1.20
2.083	6.89	0.00	0.815	1.28
2.167	7.00	0.00	0.862	1.34
2.250	7.13	0.00	0.911	1.41
2.333	7.26	0.00	0.961	1.48
2.417	7.40	0.00	1.011	1.55
2.500	7.52	0.00	1.062	1.62
2.583	7.60	0.00	1.115	1.70
2.667	7.64	0.00	1.167	1.77
2.750	7.70	0.00	1.220	1.85
2.833	7.81	0.00	1.273	1.92
2.917	7.97	0.00	1.328	2.00
3.000	8.16	0.00	1.383	2.07
3.083	8.30	0.01	1.440	2.15
3.167	8.41	0.01	1.497	2.23
3.250	8.55	0.01	1.556	2.30
3.333	8.73	0.01	1.615	2.38
3.417	8.96	0.01	1.676	2.46
3.500	9.21	1.03	1.735	2.54
3.583	9.55	2.04	1.789	2.61
3.667	9.99	2.98	1.839	2.67
3.750	10.50	4.07	1.885	2.73
3.833	10.99	5.08	1.928	2.78
3.917	11.43	6.01	1.967	2.83
4.000	11.86	6.87	2.002	2.87
4.083	12.28	7.85	2.035	2.91
4.167	12.73	8.72	2.064	2.95
4.250	13.23	9.52	2.091	2.98
4.333	13.82	10.27	2.116	3.01
4.417	14.50	11.00	2.140	3.04
4.500	15.21	11.73	2.164	3.07
4.583	15.91	12.51	2.188	3.10
4.667	16.57	13.27	2.211	3.13
4.750	17.24	14.01	2.233	3.16
4.833	17.93	14.74	2.255	3.18
4.917	18.65	15.46	2.277	3.21
5.000	19.34	16.18	2.299	3.23
5.083	20.12	16.91	2.321	3.26
5.167	21.30	17.73	2.344	3.29
5.250	23.11	18.75	2.372	3.32
5.333	25.51	20.01	2.406	3.36
5.417	28.26	21.56	2.448	3.41
5.500	31.26	23.42	2.498	3.47
5.583	33.72	25.64	2.553	3.53
5.667	33.93	27.64	2.602	3.59
5.750	30.78	28.80	2.631	3.62
5.833	24.77	28.55	2.624	3.62
5.917	18.94	26.91	2.584	3.57
6.000	14.87	24.45	2.524	3.50
6.083	12.11	21.90	2.457	3.42
6.167	9.98	19.44	2.391	3.34
6.250	8.21	17.11	2.327	3.27
6.333	6.74	15.15	2.268	3.20
6.417	5.61	13.32	2.212	3.13
6.500	4.78	11.66	2.162	3.07
6.583	4.12	10.31	2.117	3.02
6.667	3.56	9.10	2.077	2.97
6.750	3.09	8.01	2.040	2.92
6.833	2.71	7.06	2.009	2.88
6.917	2.39	6.33	1.980	2.85
7.000	2.10	5.71	1.954	2.81
7.083	1.81	5.14	1.930	2.78
7.167	1.57	4.62	1.908	2.76
7.250	1.36	4.14	1.888	2.73
7.333	1.17	3.71	1.870	2.71
7.417	1.00	3.31	1.853	2.69
7.500	0.87	2.96	1.838	2.67
7.583	0.73	2.70	1.824	2.65
7.667	0.62	2.46	1.811	2.63
7.750	0.51	2.23	1.799	2.62
7.833	0.40	2.01	1.787	2.60
7.917	0.29	1.81	1.776	2.59
8.000	0.12	1.62	1.766	2.58
8.083	0.06	1.43	1.756	2.57
8.167	0.04	1.27	1.747	2.55
8.250	0.03	1.12	1.739	2.54
8.333	0.01	0.98	1.732	2.54
8.417	0.01	0.87	1.726	2.53
8.500	0.00	0.76	1.720	2.52
8.583	0.00	0.67	1.715	2.51
8.667	0.00	0.59	1.711	2.51
8.750	0.00	0.52	1.707	2.50
8.833	0.00	0.45	1.704	2.50
8.917	0.00	0.40	1.701	2.50
9.000	0.00	0.35	1.698	2.49
9.083	0.00	0.31	1.696	2.49
9.167	0.00	0.27	1.694	2.49
9.250	0.00	0.24	1.692	2.49
9.333	0.00	0.21	1.691	2.48
9.417	0.00	0.18	1.689	2.48
9.500	0.00	0.16	1.688	2.48
9.583	0.00	0.14	1.687	2.48

9.667	0.00	0.13	1.686	O	|	|	|	|	2.48
9.750	0.00	0.11	1.685	O	|	|	|	|	2.48
9.833	0.00	0.10	1.685	O	|	|	|	|	2.48
9.917	0.00	0.09	1.684	O	|	|	|	|	2.48
10.000	0.00	0.07	1.683	O	|	|	|	|	2.47
10.083	0.00	0.07	1.683	O	|	|	|	|	2.47
10.167	0.00	0.06	1.683	O	|	|	|	|	2.47
10.250	0.00	0.05	1.682	O	|	|	|	|	2.47
10.333	0.00	0.04	1.682	O	|	|	|	|	2.47
10.417	0.00	0.04	1.682	O	|	|	|	|	2.47
10.500	0.00	0.03	1.681	O	|	|	|	|	2.47
10.583	0.00	0.03	1.681	O	|	|	|	|	2.47
10.667	0.00	0.03	1.681	O	|	|	|	|	2.47
10.750	0.00	0.02	1.681	O	|	|	|	|	2.47
10.833	0.00	0.02	1.681	O	|	|	|	|	2.47
10.917	0.00	0.02	1.680	O	|	|	|	|	2.47
11.000	0.00	0.02	1.680	O	|	|	|	|	2.47

Remaining water in basin = 1.40 (Ac.Ft)

```
****************************HYDROGRAPH DATA****************************
                Number of intervals =  5001
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       28.798 (CFS)
                Total volume =       4.735 (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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U n i t H y d r o g r a p h A n a l y s i s

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Study date 08/02/19 File: 3384B24100.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

JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "B"
100-YEAR 24 HOUR

Drainage Area = 32.15(Ac.) = 0.050 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 32.15(Ac.) = 0.050 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.310 Hr.
Lag time = 18.60 Min.
25% of lag time = 4.65 Min.
40% of lag time = 7.44 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]
32.15	2.00	64.30

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
32.15	5.50	176.82

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.500(In)

Point rain (area averaged) = 5.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 5.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
32.150	56.00	0.900

Total Area Entered = 32.15(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
56.0	74.8	0.305	0.900	0.058	1.000	0.058
					Sum (F) =	0.058

Area averaged mean soil loss (F) (In/Hr) = 0.058
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

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

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	26.882	2.513	0.814
2	0.167	53.763	8.704	2.820
3	0.250	80.645	15.495	5.020
4	0.333	107.527	18.827	6.100
5	0.417	134.409	14.539	4.711
6	0.500	161.290	8.663	2.807
7	0.583	188.172	5.434	1.761
8	0.667	215.054	3.947	1.279
9	0.750	241.935	3.192	1.034
10	0.833	268.817	2.646	0.857
11	0.917	295.699	2.253	0.730
12	1.000	322.581	1.833	0.594
13	1.083	349.462	1.617	0.524
14	1.167	376.344	1.406	0.456

15	1.250	403.226	1.181	0.383
16	1.333	430.108	0.985	0.319
17	1.417	456.989	0.858	0.278
18	1.500	483.871	0.821	0.266
19	1.583	510.753	0.789	0.256
20	1.667	537.634	0.630	0.204
21	1.750	564.516	0.576	0.187
22	1.833	591.398	0.495	0.160
23	1.917	618.280	0.459	0.149
24	2.000	645.161	0.382	0.124
25	2.083	672.043	0.340	0.110
26	2.167	698.925	0.271	0.088
27	2.250	725.806	0.269	0.087
28	2.333	752.688	0.269	0.087
29	2.417	779.570	0.269	0.087
30	2.500	806.452	0.339	0.110
			Sum = 100.000	Sum= 32.401

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	0.044	(0.103)	0.004	0.040
2	0.17	0.07	0.044	(0.102)	0.004	0.040
3	0.25	0.07	0.044	(0.102)	0.004	0.040
4	0.33	0.10	0.066	(0.102)	0.007	0.059
5	0.42	0.10	0.066	(0.101)	0.007	0.059
6	0.50	0.10	0.066	(0.101)	0.007	0.059
7	0.58	0.10	0.066	(0.100)	0.007	0.059
8	0.67	0.10	0.066	(0.100)	0.007	0.059
9	0.75	0.10	0.066	(0.100)	0.007	0.059
10	0.83	0.13	0.088	(0.099)	0.009	0.079
11	0.92	0.13	0.088	(0.099)	0.009	0.079
12	1.00	0.13	0.088	(0.099)	0.009	0.079
13	1.08	0.10	0.066	(0.098)	0.007	0.059
14	1.17	0.10	0.066	(0.098)	0.007	0.059
15	1.25	0.10	0.066	(0.097)	0.007	0.059
16	1.33	0.10	0.066	(0.097)	0.007	0.059
17	1.42	0.10	0.066	(0.097)	0.007	0.059
18	1.50	0.10	0.066	(0.096)	0.007	0.059
19	1.58	0.10	0.066	(0.096)	0.007	0.059
20	1.67	0.10	0.066	(0.095)	0.007	0.059
21	1.75	0.10	0.066	(0.095)	0.007	0.059
22	1.83	0.13	0.088	(0.095)	0.009	0.079
23	1.92	0.13	0.088	(0.094)	0.009	0.079
24	2.00	0.13	0.088	(0.094)	0.009	0.079
25	2.08	0.13	0.088	(0.094)	0.009	0.079
26	2.17	0.13	0.088	(0.093)	0.009	0.079
27	2.25	0.13	0.088	(0.093)	0.009	0.079
28	2.33	0.13	0.088	(0.092)	0.009	0.079
29	2.42	0.13	0.088	(0.092)	0.009	0.079
30	2.50	0.13	0.088	(0.092)	0.009	0.079
31	2.58	0.17	0.110	(0.091)	0.011	0.099
32	2.67	0.17	0.110	(0.091)	0.011	0.099
33	2.75	0.17	0.110	(0.091)	0.011	0.099
34	2.83	0.17	0.110	(0.090)	0.011	0.099
35	2.92	0.17	0.110	(0.090)	0.011	0.099
36	3.00	0.17	0.110	(0.089)	0.011	0.099
37	3.08	0.17	0.110	(0.089)	0.011	0.099
38	3.17	0.17	0.110	(0.089)	0.011	0.099
39	3.25	0.17	0.110	(0.088)	0.011	0.099
40	3.33	0.17	0.110	(0.088)	0.011	0.099
41	3.42	0.17	0.110	(0.088)	0.011	0.099
42	3.50	0.17	0.110	(0.087)	0.011	0.099
43	3.58	0.17	0.110	(0.087)	0.011	0.099
44	3.67	0.17	0.110	(0.086)	0.011	0.099
45	3.75	0.17	0.110	(0.086)	0.011	0.099
46	3.83	0.20	0.132	(0.086)	0.013	0.119
47	3.92	0.20	0.132	(0.085)	0.013	0.119
48	4.00	0.20	0.132	(0.085)	0.013	0.119
49	4.08	0.20	0.132	(0.085)	0.013	0.119
50	4.17	0.20	0.132	(0.084)	0.013	0.119
51	4.25	0.20	0.132	(0.084)	0.013	0.119
52	4.33	0.23	0.154	(0.084)	0.015	0.139
53	4.42	0.23	0.154	(0.083)	0.015	0.139
54	4.50	0.23	0.154	(0.083)	0.015	0.139
55	4.58	0.23	0.154	(0.082)	0.015	0.139
56	4.67	0.23	0.154	(0.082)	0.015	0.139
57	4.75	0.23	0.154	(0.082)	0.015	0.139
58	4.83	0.27	0.176	(0.081)	0.018	0.158
59	4.92	0.27	0.176	(0.081)	0.018	0.158
60	5.00	0.27	0.176	(0.081)	0.018	0.158
61	5.08	0.20	0.132	(0.080)	0.013	0.119
62	5.17	0.20	0.132	(0.080)	0.013	0.119
63	5.25	0.20	0.132	(0.080)	0.013	0.119
64	5.33	0.23	0.154	(0.079)	0.015	0.139
65	5.42	0.23	0.154	(0.079)	0.015	0.139
66	5.50	0.23	0.154	(0.079)	0.015	0.139
67	5.58	0.27	0.176	(0.078)	0.018	0.158
68	5.67	0.27	0.176	(0.078)	0.018	0.158
69	5.75	0.27	0.176	(0.078)	0.018	0.158
70	5.83	0.27	0.176	(0.077)	0.018	0.158
71	5.92	0.27	0.176	(0.077)	0.018	0.158
72	6.00	0.27	0.176	(0.077)	0.018	0.158
73	6.08	0.30	0.198	(0.076)	0.020	0.178
74	6.17	0.30	0.198	(0.076)	0.020	0.178

75	6.25	0.30	0.198	(0.076)	0.020	0.178
76	6.33	0.30	0.198	(0.075)	0.020	0.178
77	6.42	0.30	0.198	(0.075)	0.020	0.178
78	6.50	0.30	0.198	(0.075)	0.020	0.178
79	6.58	0.33	0.220	(0.074)	0.022	0.198
80	6.67	0.33	0.220	(0.074)	0.022	0.198
81	6.75	0.33	0.220	(0.074)	0.022	0.198
82	6.83	0.33	0.220	(0.073)	0.022	0.198
83	6.92	0.33	0.220	(0.073)	0.022	0.198
84	7.00	0.33	0.220	(0.073)	0.022	0.198
85	7.08	0.33	0.220	(0.072)	0.022	0.198
86	7.17	0.33	0.220	(0.072)	0.022	0.198
87	7.25	0.33	0.220	(0.072)	0.022	0.198
88	7.33	0.37	0.242	(0.071)	0.024	0.218
89	7.42	0.37	0.242	(0.071)	0.024	0.218
90	7.50	0.37	0.242	(0.071)	0.024	0.218
91	7.58	0.40	0.264	(0.070)	0.026	0.238
92	7.67	0.40	0.264	(0.070)	0.026	0.238
93	7.75	0.40	0.264	(0.070)	0.026	0.238
94	7.83	0.43	0.286	(0.069)	0.029	0.257
95	7.92	0.43	0.286	(0.069)	0.029	0.257
96	8.00	0.43	0.286	(0.069)	0.029	0.257
97	8.08	0.50	0.330	(0.068)	0.033	0.297
98	8.17	0.50	0.330	(0.068)	0.033	0.297
99	8.25	0.50	0.330	(0.068)	0.033	0.297
100	8.33	0.50	0.330	(0.067)	0.033	0.297
101	8.42	0.50	0.330	(0.067)	0.033	0.297
102	8.50	0.50	0.330	(0.067)	0.033	0.297
103	8.58	0.53	0.352	(0.066)	0.035	0.317
104	8.67	0.53	0.352	(0.066)	0.035	0.317
105	8.75	0.53	0.352	(0.066)	0.035	0.317
106	8.83	0.57	0.374	(0.066)	0.037	0.337
107	8.92	0.57	0.374	(0.065)	0.037	0.337
108	9.00	0.57	0.374	(0.065)	0.037	0.337
109	9.08	0.63	0.418	(0.065)	0.042	0.376
110	9.17	0.63	0.418	(0.064)	0.042	0.376
111	9.25	0.63	0.418	(0.064)	0.042	0.376
112	9.33	0.67	0.440	(0.064)	0.044	0.396
113	9.42	0.67	0.440	(0.063)	0.044	0.396
114	9.50	0.67	0.440	(0.063)	0.044	0.396
115	9.58	0.70	0.462	(0.063)	0.046	0.416
116	9.67	0.70	0.462	(0.062)	0.046	0.416
117	9.75	0.70	0.462	(0.062)	0.046	0.416
118	9.83	0.73	0.484	(0.062)	0.048	0.436
119	9.92	0.73	0.484	(0.062)	0.048	0.436
120	10.00	0.73	0.484	(0.061)	0.048	0.436
121	10.08	0.50	0.330	(0.061)	0.033	0.297
122	10.17	0.50	0.330	(0.061)	0.033	0.297
123	10.25	0.50	0.330	(0.060)	0.033	0.297
124	10.33	0.50	0.330	(0.060)	0.033	0.297
125	10.42	0.50	0.330	(0.060)	0.033	0.297
126	10.50	0.50	0.330	(0.060)	0.033	0.297
127	10.58	0.67	0.440	(0.059)	0.044	0.396
128	10.67	0.67	0.440	(0.059)	0.044	0.396
129	10.75	0.67	0.440	(0.059)	0.044	0.396
130	10.83	0.67	0.440	(0.058)	0.044	0.396
131	10.92	0.67	0.440	(0.058)	0.044	0.396
132	11.00	0.67	0.440	(0.058)	0.044	0.396
133	11.08	0.63	0.418	(0.057)	0.042	0.376
134	11.17	0.63	0.418	(0.057)	0.042	0.376
135	11.25	0.63	0.418	(0.057)	0.042	0.376
136	11.33	0.63	0.418	(0.057)	0.042	0.376
137	11.42	0.63	0.418	(0.056)	0.042	0.376
138	11.50	0.63	0.418	(0.056)	0.042	0.376
139	11.58	0.57	0.374	(0.056)	0.037	0.337
140	11.67	0.57	0.374	(0.056)	0.037	0.337
141	11.75	0.57	0.374	(0.055)	0.037	0.337
142	11.83	0.60	0.396	(0.055)	0.040	0.356
143	11.92	0.60	0.396	(0.055)	0.040	0.356
144	12.00	0.60	0.396	(0.054)	0.040	0.356
145	12.08	0.83	0.550	0.054	(0.055)	0.496
146	12.17	0.83	0.550	0.054	(0.055)	0.496
147	12.25	0.83	0.550	0.054	(0.055)	0.496
148	12.33	0.87	0.572	0.053	(0.057)	0.519
149	12.42	0.87	0.572	0.053	(0.057)	0.519
150	12.50	0.87	0.572	0.053	(0.057)	0.519
151	12.58	0.93	0.616	0.053	(0.062)	0.563
152	12.67	0.93	0.616	0.052	(0.062)	0.564
153	12.75	0.93	0.616	0.052	(0.062)	0.564
154	12.83	0.97	0.638	0.052	(0.064)	0.586
155	12.92	0.97	0.638	0.051	(0.064)	0.586
156	13.00	0.97	0.638	0.051	(0.064)	0.587
157	13.08	1.13	0.748	0.051	(0.075)	0.697
158	13.17	1.13	0.748	0.051	(0.075)	0.697
159	13.25	1.13	0.748	0.050	(0.075)	0.697
160	13.33	1.13	0.748	0.050	(0.075)	0.698
161	13.42	1.13	0.748	0.050	(0.075)	0.698
162	13.50	1.13	0.748	0.050	(0.075)	0.698
163	13.58	0.77	0.506	0.049	(0.051)	0.457
164	13.67	0.77	0.506	0.049	(0.051)	0.457
165	13.75	0.77	0.506	0.049	(0.051)	0.457
166	13.83	0.77	0.506	0.049	(0.051)	0.457
167	13.92	0.77	0.506	0.048	(0.051)	0.458
168	14.00	0.77	0.506	0.048	(0.051)	0.458
169	14.08	0.90	0.594	0.048	(0.059)	0.546
170	14.17	0.90	0.594	0.048	(0.059)	0.546
171	14.25	0.90	0.594	0.047	(0.059)	0.547
172	14.33	0.87	0.572	0.047	(0.057)	0.525
173	14.42	0.87	0.572	0.047	(0.057)	0.525

174	14.50	0.87	0.572	0.047	(0.057)	0.525
175	14.58	0.87	0.572	0.046	(0.057)	0.525
176	14.67	0.87	0.572	0.046	(0.057)	0.526
177	14.75	0.87	0.572	0.046	(0.057)	0.526
178	14.83	0.83	0.550	0.046	(0.055)	0.504
179	14.92	0.83	0.550	0.046	(0.055)	0.504
180	15.00	0.83	0.550	0.045	(0.055)	0.505
181	15.08	0.80	0.528	0.045	(0.053)	0.483
182	15.17	0.80	0.528	0.045	(0.053)	0.483
183	15.25	0.80	0.528	0.045	(0.053)	0.483
184	15.33	0.77	0.506	0.044	(0.051)	0.462
185	15.42	0.77	0.506	0.044	(0.051)	0.462
186	15.50	0.77	0.506	0.044	(0.051)	0.462
187	15.58	0.63	0.418	(0.044)	0.042	0.376
188	15.67	0.63	0.418	(0.043)	0.042	0.376
189	15.75	0.63	0.418	(0.043)	0.042	0.376
190	15.83	0.63	0.418	(0.043)	0.042	0.376
191	15.92	0.63	0.418	(0.043)	0.042	0.376
192	16.00	0.63	0.418	(0.043)	0.042	0.376
193	16.08	0.13	0.088	(0.042)	0.009	0.079
194	16.17	0.13	0.088	(0.042)	0.009	0.079
195	16.25	0.13	0.088	(0.042)	0.009	0.079
196	16.33	0.13	0.088	(0.042)	0.009	0.079
197	16.42	0.13	0.088	(0.042)	0.009	0.079
198	16.50	0.13	0.088	(0.041)	0.009	0.079
199	16.58	0.10	0.066	(0.041)	0.007	0.059
200	16.67	0.10	0.066	(0.041)	0.007	0.059
201	16.75	0.10	0.066	(0.041)	0.007	0.059
202	16.83	0.10	0.066	(0.040)	0.007	0.059
203	16.92	0.10	0.066	(0.040)	0.007	0.059
204	17.00	0.10	0.066	(0.040)	0.007	0.059
205	17.08	0.17	0.110	(0.040)	0.011	0.099
206	17.17	0.17	0.110	(0.040)	0.011	0.099
207	17.25	0.17	0.110	(0.039)	0.011	0.099
208	17.33	0.17	0.110	(0.039)	0.011	0.099
209	17.42	0.17	0.110	(0.039)	0.011	0.099
210	17.50	0.17	0.110	(0.039)	0.011	0.099
211	17.58	0.17	0.110	(0.039)	0.011	0.099
212	17.67	0.17	0.110	(0.038)	0.011	0.099
213	17.75	0.17	0.110	(0.038)	0.011	0.099
214	17.83	0.13	0.088	(0.038)	0.009	0.079
215	17.92	0.13	0.088	(0.038)	0.009	0.079
216	18.00	0.13	0.088	(0.038)	0.009	0.079
217	18.08	0.13	0.088	(0.038)	0.009	0.079
218	18.17	0.13	0.088	(0.037)	0.009	0.079
219	18.25	0.13	0.088	(0.037)	0.009	0.079
220	18.33	0.13	0.088	(0.037)	0.009	0.079
221	18.42	0.13	0.088	(0.037)	0.009	0.079
222	18.50	0.13	0.088	(0.037)	0.009	0.079
223	18.58	0.10	0.066	(0.036)	0.007	0.059
224	18.67	0.10	0.066	(0.036)	0.007	0.059
225	18.75	0.10	0.066	(0.036)	0.007	0.059
226	18.83	0.07	0.044	(0.036)	0.004	0.040
227	18.92	0.07	0.044	(0.036)	0.004	0.040
228	19.00	0.07	0.044	(0.036)	0.004	0.040
229	19.08	0.10	0.066	(0.035)	0.007	0.059
230	19.17	0.10	0.066	(0.035)	0.007	0.059
231	19.25	0.10	0.066	(0.035)	0.007	0.059
232	19.33	0.13	0.088	(0.035)	0.009	0.079
233	19.42	0.13	0.088	(0.035)	0.009	0.079
234	19.50	0.13	0.088	(0.035)	0.009	0.079
235	19.58	0.10	0.066	(0.034)	0.007	0.059
236	19.67	0.10	0.066	(0.034)	0.007	0.059
237	19.75	0.10	0.066	(0.034)	0.007	0.059
238	19.83	0.07	0.044	(0.034)	0.004	0.040
239	19.92	0.07	0.044	(0.034)	0.004	0.040
240	20.00	0.07	0.044	(0.034)	0.004	0.040
241	20.08	0.10	0.066	(0.034)	0.007	0.059
242	20.17	0.10	0.066	(0.033)	0.007	0.059
243	20.25	0.10	0.066	(0.033)	0.007	0.059
244	20.33	0.10	0.066	(0.033)	0.007	0.059
245	20.42	0.10	0.066	(0.033)	0.007	0.059
246	20.50	0.10	0.066	(0.033)	0.007	0.059
247	20.58	0.10	0.066	(0.033)	0.007	0.059
248	20.67	0.10	0.066	(0.033)	0.007	0.059
249	20.75	0.10	0.066	(0.032)	0.007	0.059
250	20.83	0.07	0.044	(0.032)	0.004	0.040
251	20.92	0.07	0.044	(0.032)	0.004	0.040
252	21.00	0.07	0.044	(0.032)	0.004	0.040
253	21.08	0.10	0.066	(0.032)	0.007	0.059
254	21.17	0.10	0.066	(0.032)	0.007	0.059
255	21.25	0.10	0.066	(0.032)	0.007	0.059
256	21.33	0.07	0.044	(0.032)	0.004	0.040
257	21.42	0.07	0.044	(0.031)	0.004	0.040
258	21.50	0.07	0.044	(0.031)	0.004	0.040
259	21.58	0.10	0.066	(0.031)	0.007	0.059
260	21.67	0.10	0.066	(0.031)	0.007	0.059
261	21.75	0.10	0.066	(0.031)	0.007	0.059
262	21.83	0.07	0.044	(0.031)	0.004	0.040
263	21.92	0.07	0.044	(0.031)	0.004	0.040
264	22.00	0.07	0.044	(0.031)	0.004	0.040
265	22.08	0.10	0.066	(0.031)	0.007	0.059
266	22.17	0.10	0.066	(0.030)	0.007	0.059
267	22.25	0.10	0.066	(0.030)	0.007	0.059
268	22.33	0.07	0.044	(0.030)	0.004	0.040
269	22.42	0.07	0.044	(0.030)	0.004	0.040
270	22.50	0.07	0.044	(0.030)	0.004	0.040
271	22.58	0.07	0.044	(0.030)	0.004	0.040
272	22.67	0.07	0.044	(0.030)	0.004	0.040

273	22.75	0.07	0.044	(0.030)	0.004	0.040
274	22.83	0.07	0.044	(0.030)	0.004	0.040
275	22.92	0.07	0.044	(0.030)	0.004	0.040
276	23.00	0.07	0.044	(0.030)	0.004	0.040
277	23.08	0.07	0.044	(0.030)	0.004	0.040
278	23.17	0.07	0.044	(0.029)	0.004	0.040
279	23.25	0.07	0.044	(0.029)	0.004	0.040
280	23.33	0.07	0.044	(0.029)	0.004	0.040
281	23.42	0.07	0.044	(0.029)	0.004	0.040
282	23.50	0.07	0.044	(0.029)	0.004	0.040
283	23.58	0.07	0.044	(0.029)	0.004	0.040
284	23.67	0.07	0.044	(0.029)	0.004	0.040
285	23.75	0.07	0.044	(0.029)	0.004	0.040
286	23.83	0.07	0.044	(0.029)	0.004	0.040
287	23.92	0.07	0.044	(0.029)	0.004	0.040
288	24.00	0.07	0.044	(0.029)	0.004	0.040

(Loss Rate Not Used)

Sum = 100.0 Sum = 59.8

Flood volume = Effective rainfall 4.98(In)
times area 32.1(Ac.)/[(In)/(Ft.)] = 13.4(Ac.Ft)
Total soil loss = 0.52(In)
Total soil loss = 1.382(Ac.Ft)
Total rainfall = 5.50(In)
Flood volume = 581619.2 Cubic Feet
Total soil loss = 60215.3 Cubic Feet

Peak flow rate of this hydrograph = 20.979(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 7.5 15.0 22.5 30.0
0+ 5	0.0002	0.03	Q
0+10	0.0012	0.14	Q
0+15	0.0036	0.34	Q
0+20	0.0077	0.60	Q
0+25	0.0135	0.84	VQ
0+30	0.0208	1.05	VQ
0+35	0.0293	1.24	VQ
0+40	0.0389	1.39	VQ
0+45	0.0491	1.48	VQ
0+50	0.0599	1.57	V Q
0+55	0.0715	1.68	V Q
1+ 0	0.0841	1.82	V Q
1+ 5	0.0976	1.97	V Q
1+10	0.1116	2.04	V Q
1+15	0.1255	2.02	V Q
1+20	0.1390	1.96	V Q
1+25	0.1522	1.91	V Q
1+30	0.1652	1.89	V Q
1+35	0.1782	1.89	V Q
1+40	0.1912	1.89	V Q
1+45	0.2043	1.90	V Q
1+50	0.2175	1.92	V Q
1+55	0.2311	1.98	V Q
2+ 0	0.2455	2.08	V Q
2+ 5	0.2606	2.21	V Q
2+10	0.2765	2.30	V Q
2+15	0.2928	2.36	V Q
2+20	0.3093	2.40	V Q
2+25	0.3260	2.43	V Q
2+30	0.3429	2.45	V Q
2+35	0.3601	2.49	V Q
2+40	0.3777	2.56	V Q
2+45	0.3961	2.67	V Q
2+50	0.4154	2.80	V Q
2+55	0.4354	2.90	V Q
3+ 0	0.4558	2.96	V Q
3+ 5	0.4765	3.01	V Q
3+10	0.4974	3.04	V Q
3+15	0.5185	3.06	V Q
3+20	0.5397	3.08	V Q
3+25	0.5610	3.10	V Q
3+30	0.5825	3.11	V Q
3+35	0.6040	3.13	V Q
3+40	0.6256	3.14	V Q
3+45	0.6473	3.15	V Q
3+50	0.6691	3.17	V Q
3+55	0.6914	3.24	V Q
4+ 0	0.7145	3.34	V Q
4+ 5	0.7384	3.47	V Q
4+10	0.7629	3.57	V Q
4+15	0.7879	3.63	V Q
4+20	0.8133	3.68	V Q
4+25	0.8393	3.77	V Q
4+30	0.8661	3.89	V Q
4+35	0.8938	4.03	V Q
4+40	0.9223	4.14	V Q
4+45	0.9513	4.21	V Q
4+50	0.9808	4.27	V Q
4+55	1.0108	4.36	V Q
5+ 0	1.0418	4.49	V Q
5+ 5	1.0735	4.61	V Q
5+10	1.1052	4.61	V Q

5+15	1.1361	4.48	V Q			
5+20	1.1658	4.31	V Q			
5+25	1.1948	4.21	V Q			
5+30	1.2240	4.23	V Q			
5+35	1.2538	4.33	V Q			
5+40	1.2844	4.45	V Q			
5+45	1.3160	4.58	V Q			
5+50	1.3485	4.72	V Q			
5+55	1.3817	4.83	V Q			
6+ 0	1.4154	4.89	V Q			
6+ 5	1.4495	4.95	V Q			
6+10	1.4842	5.04	V Q			
6+15	1.5198	5.17	V Q			
6+20	1.5564	5.31	V Q			
6+25	1.5937	5.42	V Q			
6+30	1.6315	5.49	V Q			
6+35	1.6697	5.55	V Q			
6+40	1.7086	5.64	V Q			
6+45	1.7483	5.77	V Q			
6+50	1.7891	5.92	V Q			
6+55	1.8307	6.03	V Q			
7+ 0	1.8727	6.11	V Q			
7+ 5	1.9151	6.16	V Q			
7+10	1.9578	6.20	V Q			
7+15	2.0007	6.23	V Q			
7+20	2.0439	6.27	V Q			
7+25	2.0876	6.35	V Q			
7+30	2.1321	6.46	V Q			
7+35	2.1777	6.62	V Q			
7+40	2.2244	6.79	V Q			
7+45	2.2723	6.96	V Q			
7+50	2.3215	7.14	V Q			
7+55	2.3719	7.32	V Q			
8+ 0	2.4236	7.51	V Q			
8+ 5	2.4768	7.72	V Q			
8+10	2.5317	7.97	V Q			
8+15	2.5886	8.26	V Q			
8+20	2.6477	8.57	V Q			
8+25	2.7084	8.81	V Q			
8+30	2.7701	8.97	V Q			
8+35	2.8327	9.09	V Q			
8+40	2.8963	9.23	V Q			
8+45	2.9610	9.39	V Q			
8+50	3.0270	9.59	V Q			
8+55	3.0944	9.79	V Q			
9+ 0	3.1632	9.98	V Q			
9+ 5	3.2335	10.21	V Q			
9+10	3.3056	10.47	V Q			
9+15	3.3798	10.77	V Q			
9+20	3.4562	11.10	V Q			
9+25	3.5348	11.40	V Q			
9+30	3.6151	11.67	V Q			
9+35	3.6972	11.92	V Q			
9+40	3.7809	12.16	V Q			
9+45	3.8662	12.38	V Q			
9+50	3.9531	12.62	V Q			
9+55	4.0416	12.84	V Q			
10+ 0	4.1315	13.07	V Q			
10+ 5	4.2222	13.16	V Q			
10+10	4.3113	12.94	V Q			
10+15	4.3964	12.36	V Q			
10+20	4.4763	11.60	V Q			
10+25	4.5522	11.02	VQ			
10+30	4.6258	10.69	VQ			
10+35	4.6986	10.57	Q			
10+40	4.7725	10.72	Q			
10+45	4.8490	11.11	Q			
10+50	4.9290	11.63	VQ			
10+55	5.0118	12.02	VQ			
11+ 0	5.0961	12.24	VQ			
11+ 5	5.1811	12.35	VQ			
11+10	5.2664	12.37	VQ			
11+15	5.3513	12.34	Q			
11+20	5.4359	12.27	Q			
11+25	5.5200	12.23	Q			
11+30	5.6041	12.20	Q			
11+35	5.6878	12.16	QV			
11+40	5.7708	12.05	QV			
11+45	5.8524	11.85	Q V			
11+50	5.9324	11.62	Q V			
11+55	6.0115	11.48	Q V			
12+ 0	6.0905	11.47	Q V			
12+ 5	6.1706	11.64	Q V			
12+10	6.2537	12.07	Q V			
12+15	6.3418	12.79	QV			
12+20	6.4359	13.66	QV			
12+25	6.5349	14.38	Q			
12+30	6.6374	14.87	Q			
12+35	6.7427	15.30	Q			
12+40	6.8509	15.71	Q			
12+45	6.9621	16.15	VQ			
12+50	7.0764	16.60	VQ			
12+55	7.1936	17.01	VQ			
13+ 0	7.3132	17.36	V Q			
13+ 5	7.4355	17.76	VQ			
13+10	7.5616	18.31	V Q			
13+15	7.6928	19.04	V Q			
13+20	7.8295	19.85	V Q			
13+25	7.9705	20.48	V Q			

13+30	8.1144	20.89	
13+35	8.2589	20.98	
13+40	8.4002	20.51	
13+45	8.5343	19.48	
13+50	8.6594	18.16	
13+55	8.7775	17.15	
14+ 0	8.8918	16.59	
14+ 5	9.0043	16.34	
14+10	9.1170	16.37	
14+15	9.2316	16.64	
14+20	9.3488	17.02	
14+25	9.4677	17.26	
14+30	9.5869	17.32	
14+35	9.7058	17.26	
14+40	9.8242	17.19	
14+45	9.9424	17.17	
14+50	10.0605	17.14	
14+55	10.1781	17.08	
15+ 0	10.2949	16.96	
15+ 5	10.4106	16.80	
15+10	10.5251	16.62	
15+15	10.6384	16.45	
15+20	10.7503	16.25	
15+25	10.8608	16.05	
15+30	10.9701	15.86	
15+35	11.0775	15.60	
15+40	11.1822	15.20	
15+45	11.2833	14.67	
15+50	11.3801	14.07	
15+55	11.4738	13.60	
16+ 0	11.5654	13.30	
16+ 5	11.6541	12.88	
16+10	11.7360	11.90	
16+15	11.8070	10.30	
16+20	11.8648	8.40	
16+25	11.9124	6.92	
16+30	11.9539	6.02	
16+35	11.9913	5.42	
16+40	12.0252	4.93	
16+45	12.0561	4.48	
16+50	12.0841	4.06	
16+55	12.1097	3.72	
17+ 0	12.1335	3.46	
17+ 5	12.1560	3.27	
17+10	12.1781	3.20	
17+15	12.2004	3.24	
17+20	12.2234	3.35	
17+25	12.2470	3.42	
17+30	12.2706	3.43	
17+35	12.2941	3.40	
17+40	12.3173	3.37	
17+45	12.3403	3.34	
17+50	12.3630	3.30	
17+55	12.3851	3.21	
18+ 0	12.4064	3.09	
18+ 5	12.4267	2.95	
18+10	12.4463	2.84	
18+15	12.4654	2.77	
18+20	12.4841	2.72	
18+25	12.5026	2.68	
18+30	12.5207	2.63	
18+35	12.5387	2.61	
18+40	12.5562	2.54	
18+45	12.5730	2.44	
18+50	12.5888	2.30	
18+55	12.6035	2.14	
19+ 0	12.6172	1.98	
19+ 5	12.6299	1.84	
19+10	12.6421	1.78	
19+15	12.6545	1.80	
19+20	12.6674	1.88	
19+25	12.6811	1.99	
19+30	12.6957	2.11	
19+35	12.7110	2.22	
19+40	12.7265	2.26	
19+45	12.7418	2.21	
19+50	12.7563	2.11	
19+55	12.7700	1.98	
20+ 0	12.7827	1.85	
20+ 5	12.7945	1.72	
20+10	12.8060	1.67	
20+15	12.8177	1.70	
20+20	12.8300	1.78	
20+25	12.8427	1.84	
20+30	12.8555	1.87	
20+35	12.8685	1.88	
20+40	12.8815	1.89	
20+45	12.8946	1.90	
20+50	12.9076	1.88	
20+55	12.9202	1.83	
21+ 0	12.9321	1.73	
21+ 5	12.9434	1.63	
21+10	12.9544	1.60	
21+15	12.9657	1.64	
21+20	12.9775	1.71	
21+25	12.9894	1.73	
21+30	13.0009	1.67	
21+35	13.0118	1.58	
21+40	13.0225	1.56	

21+45	13.0336	1.61	Q				V
21+50	13.0452	1.69	Q				V
21+55	13.0569	1.70	Q				V
22+ 0	13.0682	1.64	Q				V
22+ 5	13.0789	1.56	Q				V
22+10	13.0895	1.54	Q				V
22+15	13.1004	1.59	Q				V
22+20	13.1119	1.67	Q				V
22+25	13.1236	1.69	Q				V
22+30	13.1348	1.63	Q				V
22+35	13.1454	1.54	Q				V
22+40	13.1555	1.46	Q				V
22+45	13.1652	1.42	Q				V
22+50	13.1748	1.39	Q				V
22+55	13.1842	1.37	Q				V
23+ 0	13.1936	1.36	Q				V
23+ 5	13.2029	1.35	Q				V
23+10	13.2121	1.34	Q				V
23+15	13.2212	1.33	Q				V
23+20	13.2303	1.32	Q				V
23+25	13.2394	1.32	Q				V
23+30	13.2485	1.31	Q				V
23+35	13.2575	1.31	Q				V
23+40	13.2665	1.31	Q				V
23+45	13.2755	1.30	Q				V
23+50	13.2844	1.30	Q				V
23+55	13.2934	1.30	Q				V
24+ 0	13.3023	1.30	Q				V
24+ 5	13.3110	1.26	Q				V
24+10	13.3189	1.15	Q				V
24+15	13.3254	0.95	Q				V
24+20	13.3303	0.70	Q				V
24+25	13.3338	0.52	Q				V
24+30	13.3366	0.41	Q				V
24+35	13.3389	0.34	Q				V
24+40	13.3409	0.28	Q				V
24+45	13.3425	0.24	Q				V
24+50	13.3440	0.21	Q				V
24+55	13.3452	0.18	Q				V
25+ 0	13.3462	0.15	Q				V
25+ 5	13.3472	0.13	Q				V
25+10	13.3479	0.11	Q				V
25+15	13.3486	0.10	Q				V
25+20	13.3492	0.09	Q				V
25+25	13.3498	0.08	Q				V
25+30	13.3502	0.07	Q				V
25+35	13.3506	0.06	Q				V
25+40	13.3509	0.05	Q				V
25+45	13.3512	0.04	Q				V
25+50	13.3514	0.03	Q				V
25+55	13.3516	0.03	Q				V
26+ 0	13.3518	0.02	Q				V
26+ 5	13.3519	0.02	Q				V
26+10	13.3520	0.01	Q				V
26+15	13.3521	0.01	Q				V
26+20	13.3521	0.01	Q				V
26+25	13.3521	0.00	Q				V

```
                    FLOOD HYDROGRAPH ROUTING PROGRAM
             Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014
                         Study date: 08/06/19


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


JOB NO. 3384 RUBIDOUX COMMERCE CENTER, JURUPA VALLEY
AREAS TRIBUTARY TO W.Q. BASIN "B"
100-YEAR 24-HOUR

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


Program License Serial Number 6400

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

                From study/file name: 3384B24100.rte
****************************HYDROGRAPH DATA***************************
                Number of intervals =   317
                Time interval =    5.0 (Min.)
                Maximum/Peak flow rate =       20.979 (CFS)
                Total volume =      13.352 (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      253.000 to Point/Station      253.000
**** RETARDING BASIN ROUTING ****
______________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------
Total number of inflow hydrograph intervals = 317
Hydrograph time unit =  5.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
------------------------------------------------------------------
------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
------------------------------------------------------------------
------------------------------------------------------------------
Depth vs. Storage and Depth vs. Discharge data:
 Basin Depth  Storage    Outflow   (S-O*dt/2)   (S+O*dt/2)
     (Ft.)    (Ac.Ft)    (CFS)     (Ac.Ft)    (Ac.Ft)
------------------------------------------------------------------
  0.000      0.000      0.000      0.000        0.000
  0.270      0.160      0.001      0.160        0.160
  1.270      0.810      0.001      0.810        0.810
  2.000      1.330      0.001      1.330        1.330
  2.270      1.530      0.010      1.530        1.530
  2.470      1.680      0.010      1.680        1.680
  2.670      1.840      3.000      1.830        1.850
  2.870      2.000      6.800      1.977        2.023
  3.070      2.160     11.600      2.120        2.200
  3.270      2.330     17.200      2.271        2.389
  3.470      2.500     23.500      2.419        2.581
  3.670      2.670     30.400      2.565        2.775
  3.870      2.840     37.800      2.710        2.970
  4.070      3.020     45.800      2.862        3.178
  4.270      3.200     52.400      3.020        3.380
  4.470      3.390     55.100      3.200        3.580
  4.670      3.580     57.700      3.381        3.779
  4.870      3.770     60.200      3.563        3.977
  5.000      3.890     62.600      3.674        4.106
------------------------------------------------------------------
                Hydrograph Detention Basin Routing
------------------------------------------------------------------
```

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

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	5.2	10.49	15.73	20.98	Depth (Ft.)
0.083	0.03	0.00	0.000	O					0.00
0.167	0.14	0.00	0.001	O					0.00
0.250	0.34	0.00	0.002	O					0.00
0.333	0.60	0.00	0.006	O					0.01
0.417	0.84	0.00	0.011	OI					0.02
0.500	1.05	0.00	0.017	OI					0.03
0.583	1.24	0.00	0.025	OI					0.04
0.667	1.39	0.00	0.034	O I					0.06
0.750	1.48	0.00	0.044	O I					0.07
0.833	1.57	0.00	0.055	O I					0.09
0.917	1.68	0.00	0.066	O I					0.11
1.000	1.82	0.00	0.078	O I					0.13
1.083	1.97	0.00	0.091	O I					0.15
1.167	2.04	0.00	0.105	O I					0.18
1.250	2.02	0.00	0.119	O I					0.20
1.333	1.96	0.00	0.132	O I					0.22
1.417	1.91	0.00	0.146	O I					0.25
1.500	1.89	0.00	0.159	O I					0.27
1.583	1.89	0.00	0.172	O I					0.29
1.667	1.89	0.00	0.185	O I					0.31
1.750	1.90	0.00	0.198	O I					0.33
1.833	1.92	0.00	0.211	O I					0.35
1.917	1.98	0.00	0.224	O I					0.37
2.000	2.08	0.00	0.238	O I					0.39
2.083	2.21	0.00	0.253	O I					0.41
2.167	2.30	0.00	0.268	O I					0.44
2.250	2.36	0.00	0.285	O I					0.46
2.333	2.40	0.00	0.301	O I					0.49
2.417	2.43	0.00	0.318	O I					0.51
2.500	2.45	0.00	0.334	O I					0.54
2.583	2.49	0.00	0.351	O I					0.56
2.667	2.56	0.00	0.369	O I					0.59
2.750	2.67	0.00	0.387	O I					0.62
2.833	2.80	0.00	0.406	O I					0.65
2.917	2.90	0.00	0.425	O I					0.68
3.000	2.96	0.00	0.445	O I					0.71
3.083	3.01	0.00	0.466	O I					0.74
3.167	3.04	0.00	0.487	O I					0.77
3.250	3.06	0.00	0.508	O I					0.80
3.333	3.08	0.00	0.529	O I					0.84
3.417	3.10	0.00	0.550	O I					0.87
3.500	3.11	0.00	0.572	O I					0.90
3.583	3.13	0.00	0.593	O I					0.94
3.667	3.14	0.00	0.615	O I					0.97
3.750	3.15	0.00	0.636	O I					1.00
3.833	3.17	0.00	0.658	O I					1.04
3.917	3.24	0.00	0.680	O I					1.07
4.000	3.34	0.00	0.703	O I					1.10
4.083	3.47	0.00	0.726	O I					1.14
4.167	3.57	0.00	0.750	O I					1.18
4.250	3.63	0.00	0.775	O I					1.22
4.333	3.68	0.00	0.800	O I					1.26
4.417	3.77	0.00	0.826	O I					1.29
4.500	3.89	0.00	0.852	O I					1.33
4.583	4.03	0.00	0.880	O I					1.37
4.667	4.14	0.00	0.908	O I					1.41
4.750	4.21	0.00	0.937	O I					1.45
4.833	4.27	0.00	0.966	O I					1.49
4.917	4.36	0.00	0.995	O I					1.53
5.000	4.49	0.00	1.026	O I					1.57
5.083	4.61	0.00	1.057	O I					1.62
5.167	4.61	0.00	1.089	O I					1.66
5.250	4.48	0.00	1.120	O I					1.71
5.333	4.31	0.00	1.151	O I					1.75
5.417	4.21	0.00	1.180	O I					1.79
5.500	4.23	0.00	1.209	O I					1.83
5.583	4.33	0.00	1.238	O I					1.87
5.667	4.45	0.00	1.269	O I					1.91
5.750	4.58	0.00	1.300	O I					1.96
5.833	4.72	0.00	1.332	O I					2.00
5.917	4.83	0.00	1.365	O I					2.05
6.000	4.89	0.00	1.398	O I					2.09
6.083	4.95	0.01	1.432	O I					2.14
6.167	5.04	0.01	1.466	O I					2.18
6.250	5.17	0.01	1.501	O I					2.23

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 6.333    5.31    0.01      1.537  O       I       |       |       |     2.28
 6.417    5.42    0.01      1.574  O       I       |       |       |     2.33
 6.500    5.49    0.01      1.612  O       I       |       |       |     2.38
 6.583    5.55    0.01      1.650  O       I       |       |       |     2.43
 6.667    5.64    0.15      1.688  O       I       |       |       |     2.48
 6.750    5.77    0.83      1.724  |O      I       |       |       |     2.52
 6.833    5.92    1.43      1.756  | O     |I      |       |       |     2.57
 6.917    6.03    1.98      1.786  |  O    |I      |       |       |     2.60
 7.000    6.11    2.48      1.812  |  O    |I      |       |       |     2.63
 7.083    6.16    2.92      1.836  |   O   |I      |       |       |     2.66
 7.167    6.20    3.39      1.856  |    O  |I      |       |       |     2.69
 7.250    6.23    3.82      1.874  |    O  |I      |       |       |     2.71
 7.333    6.27    4.19      1.890  |     O |I      |       |       |     2.73
 7.417    6.35    4.51      1.903  |     O |I      |       |       |     2.75
 7.500    6.46    4.79      1.916  |      O|I      |       |       |     2.76
 7.583    6.62    5.06      1.927  |      O| I     |       |       |     2.78
 7.667    6.79    5.31      1.937  |       O I     |       |       |     2.79
 7.750    6.96    5.54      1.947  |       O I     |       |       |     2.80
 7.833    7.14    5.77      1.957  |       O I     |       |       |     2.82
 7.917    7.32    5.99      1.966  |       |O I    |       |       |     2.83
 8.000    7.51    6.21      1.975  |       |O I    |       |       |     2.84
 8.083    7.72    6.42      1.984  |       |O I    |       |       |     2.85
 8.167    7.97    6.64      1.993  |       | O I   |       |       |     2.86
 8.250    8.26    6.87      2.002  |       | O I   |       |       |     2.87
 8.333    8.57    7.16      2.012  |       | O  I  |       |       |     2.89
 8.417    8.81    7.45      2.022  |       |  O I  |       |       |     2.90
 8.500    8.97    7.72      2.031  |       |  O I  |       |       |     2.91
 8.583    9.09    7.96      2.039  |       |   OI  |       |       |     2.92
 8.667    9.23    8.19      2.046  |       |   O I |       |       |     2.93
 8.750    9.39    8.40      2.053  |       |   O I |       |       |     2.94
 8.833    9.59    8.60      2.060  |       |    OI |       |       |     2.95
 8.917    9.79    8.81      2.067  |       |    OI |       |       |     2.95
 9.000    9.98    9.01      2.074  |       |    O I|       |       |     2.96
 9.083   10.21    9.21      2.080  |       |     OI|       |       |     2.97
 9.167   10.47    9.42      2.087  |       |     OI|       |       |     2.98
 9.250   10.77    9.65      2.095  |       |     O I       |       |     2.99
 9.333   11.10    9.89      2.103  |       |      OI       |       |     3.00
 9.417   11.40   10.14      2.111  |       |      O|I      |       |     3.01
 9.500   11.67   10.40      2.120  |       |      O|I      |       |     3.02
 9.583   11.92   10.66      2.129  |       |       O I     |       |     3.03
 9.667   12.16   10.92      2.137  |       |       O I     |       |     3.04
 9.750   12.38   11.17      2.146  |       |       |OI     |       |     3.05
 9.833   12.62   11.42      2.154  |       |       |O I    |       |     3.06
 9.917   12.84   11.67      2.162  |       |       |O I    |       |     3.07
10.000   13.07   11.93      2.170  |       |       | OI    |       |     3.08
10.083   13.16   12.17      2.177  |       |       | O I   |       |     3.09
10.167   12.94   12.35      2.183  |       |       | OI    |       |     3.10
10.250   12.36   12.41      2.185  |       |       | O     |       |     3.10
10.333   11.60   12.33      2.182  |       |       |IO     |       |     3.10
10.417   11.02   12.12      2.176  |       |       I O     |       |     3.09
10.500   10.69   11.86      2.168  |       |       I O     |       |     3.08
10.583   10.57   11.61      2.160  |       |       IO      |       |     3.07
10.667   10.72   11.43      2.154  |       |       IO      |       |     3.06
10.750   11.11   11.33      2.151  |       |       IO      |       |     3.06
10.833   11.63   11.34      2.151  |       |       |O      |       |     3.06
10.917   12.02   11.43      2.154  |       |       |OI     |       |     3.06
11.000   12.24   11.56      2.159  |       |       |OI     |       |     3.07
11.083   12.35   11.71      2.163  |       |       |OI     |       |     3.07
11.167   12.37   11.84      2.167  |       |       | O     |       |     3.08
11.250   12.34   11.94      2.170  |       |       | O     |       |     3.08
11.333   12.27   12.02      2.173  |       |       | O     |       |     3.08
11.417   12.23   12.07      2.174  |       |       | O     |       |     3.09
11.500   12.20   12.10      2.175  |       |       | O     |       |     3.09
11.583   12.16   12.11      2.176  |       |       | O     |       |     3.09
11.667   12.05   12.11      2.176  |       |       | O     |       |     3.09
11.750   11.85   12.08      2.174  |       |       | O     |       |     3.09
11.833   11.62   12.01      2.172  |       |       |IO     |       |     3.08
11.917   11.48   11.91      2.170  |       |       |IO     |       |     3.08
12.000   11.47   11.82      2.167  |       |       |IO     |       |     3.08
12.083   11.64   11.77      2.165  |       |       |O      |       |     3.08
12.167   12.07   11.79      2.166  |       |       |OI     |       |     3.08
12.250   12.79   11.92      2.170  |       |       | OI    |       |     3.08
12.333   13.66   12.18      2.178  |       |       | O I   |       |     3.09
12.417   14.38   12.56      2.189  |       |       |  O I  |       |     3.10
12.500   14.87   12.98      2.202  |       |       |  O  I |       |     3.12
12.583   15.30   13.41      2.215  |       |       |   O  I|       |     3.13
12.667   15.71   13.84      2.228  |       |       |    O I|       |     3.15
12.750   16.15   14.26      2.241  |       |       |    O  I       |     3.17
12.833   16.60   14.69      2.254  |       |       |     O |I      |     3.18
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12.917	17.01	15.12	2.267	|	|	|	O|I |	3.20
13.000	17.36	15.54	2.280	|	|	|	O| I |	3.21
13.083	17.76	15.95	2.292	|	|	|	O I |	3.23
13.167	18.31	16.38	2.305	|	|	|	O I |	3.24
13.250	19.04	16.85	2.319	|	|	|	|O I |	3.26
13.333	19.85	17.40	2.335	|	|	|	| O I |	3.28
13.417	20.48	18.02	2.352	|	|	|	| O I|	3.30
13.500	20.89	18.63	2.368	|	|	|	| O I|	3.32
13.583	20.98	19.15	2.383	|	|	|	| O I	3.33
13.667	20.51	19.51	2.392	|	|	|	| O I|	3.34
13.750	19.48	19.62	2.395	|	|	|	| O |	3.35
13.833	18.16	19.44	2.390	|	|	|	| I O |	3.34
13.917	17.15	19.04	2.380	|	|	|	| I O |	3.33
14.000	16.59	18.55	2.366	|	|	|	|I O |	3.31
14.083	16.34	18.07	2.354	|	|	|	I O |	3.30
14.167	16.37	17.68	2.343	|	|	|	I O |	3.29
14.250	16.64	17.42	2.336	|	|	|	|IO |	3.28
14.333	17.02	17.28	2.332	|	|	|	|IO |	3.27
14.417	17.26	17.25	2.331	|	|	|	| O |	3.27
14.500	17.32	17.26	2.332	|	|	|	| O |	3.27
14.583	17.26	17.27	2.332	|	|	|	| O |	3.27
14.667	17.19	17.26	2.332	|	|	|	| O |	3.27
14.750	17.17	17.24	2.331	|	|	|	| O |	3.27
14.833	17.14	17.22	2.331	|	|	|	| O |	3.27
14.917	17.08	17.20	2.330	|	|	|	| O |	3.27
15.000	16.96	17.16	2.329	|	|	|	|IO |	3.27
15.083	16.80	17.10	2.327	|	|	|	|IO |	3.27
15.167	16.62	17.02	2.325	|	|	|	|O |	3.26
15.250	16.45	16.92	2.322	|	|	|	|O |	3.26
15.333	16.25	16.81	2.318	|	|	|	IO |	3.26
15.417	16.05	16.67	2.314	|	|	|	IO |	3.25
15.500	15.86	16.53	2.310	|	|	|	IO |	3.25
15.583	15.60	16.36	2.305	|	|	|	IO |	3.24
15.667	15.20	16.17	2.299	|	|	|	IO |	3.23
15.750	14.67	15.92	2.291	|	|	|	I O |	3.22
15.833	14.07	15.60	2.281	|	|	|	I O|	3.21
15.917	13.60	15.24	2.271	|	|	|	I O|	3.20
16.000	13.30	14.88	2.259	|	|	|	I O |	3.19
16.083	12.88	14.51	2.248	|	|	|	I O |	3.17
16.167	11.90	14.08	2.235	|	|	|	I O |	3.16
16.250	10.30	13.47	2.217	|	|	|	I O |	3.14
16.333	8.40	12.63	2.191	|	|	|	I O |	3.11
16.417	6.92	11.62	2.161	|	|	|	I |O |	3.07
16.500	6.02	10.65	2.128	|	|	|	I O |	3.03
16.583	5.42	9.73	2.098	|	|	|	I O |	2.99
16.667	4.93	8.88	2.069	|	|	|	I| O |	2.96
16.750	4.48	8.10	2.043	|	|	|	I | O |	2.92
16.833	4.06	7.38	2.019	|	|	|	I | O |	2.89
16.917	3.72	6.74	1.998	|	|	|	I | O |	2.87
17.000	3.46	6.26	1.977	|	|	|	I |O |	2.84
17.083	3.27	5.83	1.959	|	|	|	I O |	2.82
17.167	3.20	5.43	1.942	|	|	|	I O |	2.80
17.250	3.24	5.10	1.928	|	|	|	I O| |	2.78
17.333	3.35	4.83	1.917	|	|	|	I O| |	2.77
17.417	3.42	4.61	1.908	|	|	|	I O| |	2.75
17.500	3.43	4.43	1.900	|	|	|	IO | |	2.75
17.583	3.40	4.28	1.894	|	|	|	IO | |	2.74
17.667	3.37	4.14	1.888	|	|	|	IO | |	2.73
17.750	3.34	4.02	1.883	|	|	|	IO | |	2.72
17.833	3.30	3.92	1.879	|	|	|	O | |	2.72
17.917	3.21	3.82	1.874	|	|	|	IO | |	2.71
18.000	3.09	3.72	1.870	|	|	|	IO | |	2.71
18.083	2.95	3.61	1.866	|	|	|	IO | |	2.70
18.167	2.84	3.50	1.861	|	|	|	IO | |	2.70
18.250	2.77	3.40	1.857	|	|	|	IO | |	2.69
18.333	2.72	3.30	1.853	|	|	|	IO | |	2.69
18.417	2.68	3.21	1.849	|	|	|	O | |	2.68
18.500	2.63	3.12	1.845	|	|	|	O | |	2.68
18.583	2.61	3.05	1.842	|	|	|	IO | |	2.67
18.667	2.54	2.98	1.839	|	|	|	IO | |	2.67
18.750	2.44	2.92	1.836	|	|	|	IO | |	2.66
18.833	2.30	2.86	1.832	|	|	|	IO | |	2.66
18.917	2.14	2.78	1.828	|	|	|	IO | |	2.66
19.000	1.98	2.69	1.824	|	|	|	IO | |	2.65
19.083	1.84	2.60	1.818	|	|	|	IO | |	2.64
19.167	1.78	2.50	1.813	|	|	|	IO | |	2.64
19.250	1.80	2.42	1.809	|	|	|	IO | |	2.63
19.333	1.88	2.35	1.805	|	|	|	IO | |	2.63
19.417	1.99	2.30	1.802	|	|	|	O | |	2.62

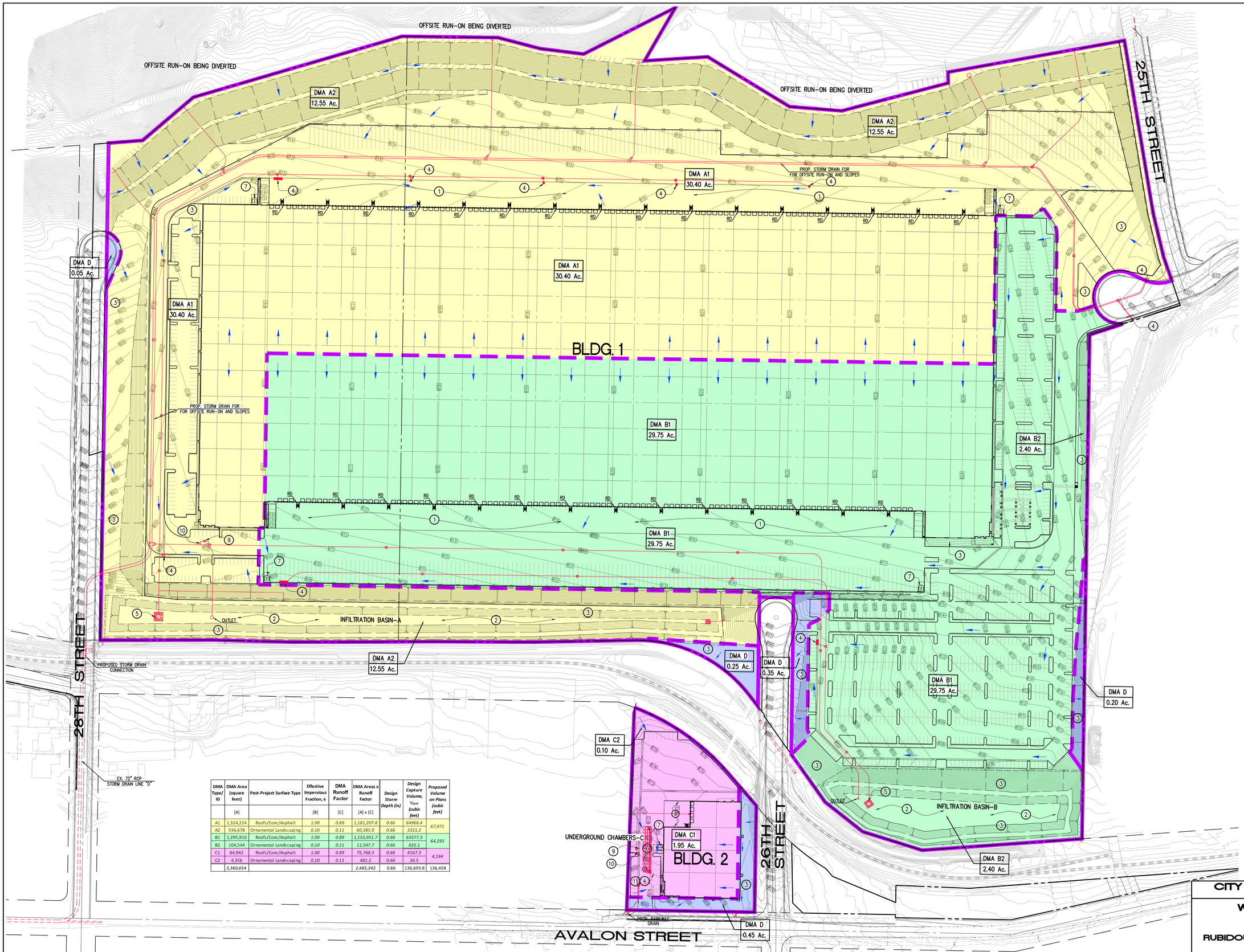
```
19.500    2.11    2.27      1.801  |  O    |       |       |       |     2.62
19.583    2.22    2.25      1.800  |  O    |       |       |       |     2.62
19.667    2.26    2.25      1.800  |  O    |       |       |       |     2.62
19.750    2.21    2.25      1.800  |  O    |       |       |       |     2.62
19.833    2.11    2.24      1.799  |  O    |       |       |       |     2.62
19.917    1.98    2.22      1.798  |  O    |       |       |       |     2.62
20.000    1.85    2.18      1.796  | IO    |       |       |       |     2.62
20.083    1.72    2.13      1.794  | IO    |       |       |       |     2.61
20.167    1.67    2.08      1.791  | IO    |       |       |       |     2.61
20.250    1.70    2.03      1.788  | IO    |       |       |       |     2.61
20.333    1.78    2.00      1.786  | IO    |       |       |       |     2.60
20.417    1.84    1.97      1.785  | IO    |       |       |       |     2.60
20.500    1.87    1.96      1.784  | O     |       |       |       |     2.60
20.583    1.88    1.95      1.784  | O     |       |       |       |     2.60
20.667    1.89    1.94      1.783  | O     |       |       |       |     2.60
20.750    1.90    1.94      1.783  | O     |       |       |       |     2.60
20.833    1.88    1.93      1.783  | O     |       |       |       |     2.60
20.917    1.83    1.92      1.782  | O     |       |       |       |     2.60
21.000    1.73    1.91      1.781  | O     |       |       |       |     2.60
21.083    1.63    1.88      1.780  | O     |       |       |       |     2.59
21.167    1.60    1.85      1.778  | O     |       |       |       |     2.59
21.250    1.64    1.82      1.777  | O     |       |       |       |     2.59
21.333    1.71    1.80      1.776  | O     |       |       |       |     2.59
21.417    1.73    1.79      1.775  | O     |       |       |       |     2.59
21.500    1.67    1.78      1.775  | O     |       |       |       |     2.59
21.583    1.58    1.76      1.774  | O     |       |       |       |     2.59
21.667    1.56    1.74      1.772  | O     |       |       |       |     2.59
21.750    1.61    1.72      1.771  | O     |       |       |       |     2.58

        Remaining water in basin =    1.41 (Ac.Ft)


        ****************************HYDROGRAPH DATA****************************
                        Number of intervals =  5001
                        Time interval =    5.0 (Min.)
                        Maximum/Peak flow rate =       19.621 (CFS)
                        Total volume =      11.942 (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
        ***********************************************************************

        ---------------------------------------------------------------------
```

WATER QUALITY UNDERGROUND RETENTION SYSTEM CALCULATIONS



DMA Type/ ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_a	DMA Runoff Factor	DMA Areas x Runoff Factor	Design Storm Depth (in)	Design Capture Volume, V_{BMP} (cubic feet)	Proposed Volume on Plans (cubic feet)
	[A]		[B]	[C]	[A] x [C]			
A1	1,324,224	Roofs/Conc/Asphalt	1.00	0.89	1,181,207.8	0.66	64966.4	67,971
A2	546,678	Ornamental Landscaping	0.10	0.11	60,385.0	0.66	3321.2	
B1	1,295,910	Roofs/Conc/Asphalt	1.00	0.89	1,155,951.7	0.66	63577.3	64,293
B2	104,544	Ornamental Landscaping	0.10	0.11	11,547.7	0.66	635.1	
C1	84,942	Roofs/Conc/Asphalt	1.00	0.89	75,768.3	0.66	4167.3	4,194
C2	4,356	Ornamental Landscaping	0.10	0.11	481.2	0.66	26.5	
	3,360,654				2,485,342	0.66	136,693.8	136,458

DMA Name or ID	Surface Type(s)[1]	Area (Sq. Ft.)	Area (Acres)	DMA Type
A1	Roofs/Conc/Asphalt	1,324,224	30.40	Type D
A2	Ornamental Landscaping	546,678	12.55	Type D
B1	Roofs/Conc/Asphalt	1,295,910	29.75	Type D
B2	Ornamental Landscaping	104,544	2.40	Type D
C1	Roofs/Conc/Asphalt	84,942	1.95	Type D
C2	Ornamental Landscaping	4,356	0.10	Type D
D	Ornamental Landscaping	56,628	1.30	Type A

Last Update:2/1/21
O:\3300-3399\3384\3384BMPSITEMAP.dwg

CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

WQMP SITE MAP

RUBIDOUX COMMERCE CENTER
26TH STREET

PREPARED FOR:
PROFICIENCY RUBIDOUX, LLC
5020 CAMPUS DRIVE
NEWPORT BEACH, CA 92660
PHONE: (949) 296-7006

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

Designed by
Date
Checked by
Date
Designed by
Date
Checked by
Date

Approved by Date
Public Works Director R.C.E.
Sheet 1 of 2 Sheets

3384/1 OF 2 SHEET

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Thienes Engineering Inc.	Date	8/7/2019
Designed by	Luis Prado	Case No	
Company Project Number/Name	3384		

BMP Identification

BMP NAME / ID: Underground Chambers (STC-C)

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.66 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
C1	*84942*	*Roofs*	*1*	*0.89*	*75768.3*			
C2	*4356*	*Ornamental Landscaping*	*0.1*	*0.11*	*481.2*			
	89298	***Total***			**76249.5**	**0.66**	***4193.7***	***4194.4***

Notes:

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID STC-C	Legend:	Required Entries / Calculated Cells

Company Name:	Thienes Engineering, Inc.	Date:	7-Aug
Designed by:	Vicky Li	County/City Case No.:	

Design Volume

a) Tributary area (BMP subarea)	A_T =	2.05	acres
b) Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	4,194	ft^3

Maximum Depth

a) Infiltration rate	I =	1.5	in/hr
b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook)	FS =	3	
c) Calculate D_1 $D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times FS}$	D_1 =	3.0	ft
d) Enter the depth of freeboard (at least 1 ft)		1	ft
e) Enter depth to historic high ground water (measured from **top** of basin)		50	ft
f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin)		50	ft
g) D_2 is the smaller of: Depth to groundwater - (10 ft + freeboard) and Depth to impermeable layer - (5 ft + freeboard)	D_2 =	39.0	ft
h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet	D_{MAX} =	3.0	ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1)	z =	4	:1
b) Proposed basin depth (excluding freeboard)	d_B =	2.9	ft
c) Minimum bottom surface area of basin ($A_S = V_{BMP}/d_B$)	A_S =	1446	ft^2
d) Proposed Design Surface Area	A_D =	2117	ft^2

Forebay

a) Forebay volume (minimum 0.5% V_{BMP})	Volume =	21	ft^3
b) Forebay depth (height of berm/splashwall. 1 foot min.)	Depth =		ft
c) Forebay surface area (minimum)	Area =		ft^2
d) Full height notch-type weir	Width (W) =		in

Notes: Ponding Depth = 2.9 feet = ((0.5' +0.5') x 0.40) + 2.5' (chamber)

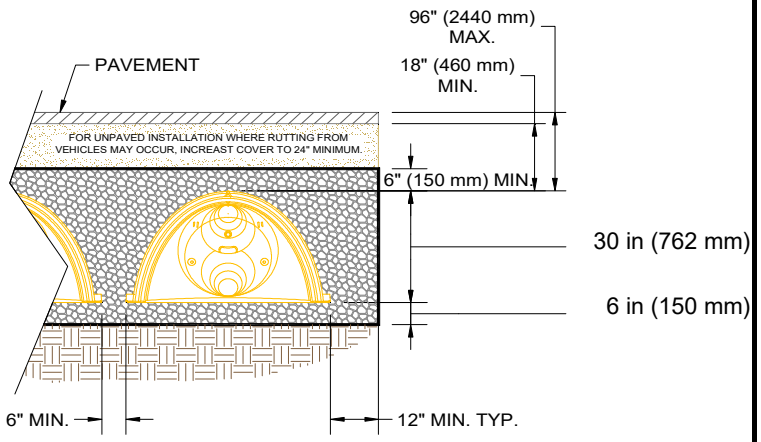
StormTech
Detention • Retention • Recharge
Subsurface Stormwater Management℠

Units: **Imperial**

Project: Rubidoux Commerce Center
By: Thienes Engineering
Point of Contact
Date: 8/7/2019

System Requirements

Required Storage Volume	**4,194**	CF
Select Stormtech Chamber System	SC-740	
Stone Porosity (Industry Standard = 40%)	**40%**	
Stone Foundation Depth	6	Inches
Storage Volume Per Chamber	74.90	CF
Avg Cover over Chambers (18 in min. & 96 in max.)	18	Inches
Number of Chambers Required	56	Each
Required Bed Size	2,117	SF
Tons of Stone Required	251	Tons
Volume of Excavation	353	CY
Area of Filter Fabric	652	SY
# of End Caps Required	**8**	Each
Length of ISOLATOR ROW	**99.68**	FT
ISOLATOR FABRIC	**55**	SY



Is the limiting dimension for the bed the width or length? **width**

Controlled by Width (Rows)			Controlled by Length		
Width	**25**	FT	Length	**100**	FT
# of Chambers Long	14	EA	# of Chambers Long	-	EA
# of Rows	4	EA	# of Rows	-	EA
Actual Length	103.28	FT	Actual Length	-	FT
Actual Width	20.50	FT	Actual Width	-	FT

Material Estimate

To use this sheet: Please enter data into the blue and green cells. If switching between Imperial and Metric units please check the correct units and data is input in the green cells.

Please call StormTech @ 888-892-2694 for conceptual cost estimates.

APPENDIX D

HYDRAULICS CALCULATIONS

DATE: 8/ 5/2020
TIME: 14: 2

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	12	4			1.00														
CD	18	4			1.50														
CD	24	4			2.00														
CD	30	4			2.50														
CD	36	4			3.00														
CD	42	4			3.50														
CD	48	4			4.00														
CD	54	4			4.50														
CD	60	4			5.00														
CD	66	4			5.50														
CD	72	4			6.00														

F 0 5 1 5 P PAGE NO 3

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY

HEADING LINE NO 2 IS -

S.D. LINE "A"

HEADING LINE NO 3 IS -

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
                                 3462.00  869.71   72                                      875.00

 ELEMENT NO   2 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 3609.65  870.45   72             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO   3 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 3668.47  870.74   72             0.013                                45.00  75.00    0.00      0

 ELEMENT NO   4 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 3752.27  871.16   72             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO   5 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 3811.18  871.46   72             0.013                                45.00  75.00    0.00      0

 ELEMENT NO   6 IS A JUNCTION          *         *     *     *                 *                 *               *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                                 3818.34  872.68   60    60     0  0.013    136.6      0.0   872.68     0.00  90.00    0.00

 ELEMENT NO   7 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 4279.95  894.80   60             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO   8 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 4284.70  895.02   60             0.013                                 0.00   0.00    0.00      1

 ELEMENT NO   9 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 4554.77  896.17   60             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  10 IS A JUNCTION          *         *     *     *                 *                 *               *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                                 4554.77  896.17   60    18     0  0.010      0.8      0.0   897.92     0.00  45.00    0.00
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

 ELEMENT NO  11 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 4558.77  896.19   60             0.013                                 0.00   0.00    0.00      0
```

F 0 5 1 5 P PAGE NO 3

WATER SURFACE PROFILE - ELEMENT CARD LISTING

```
 ELEMENT NO  12 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 4607.74  896.46   60             0.013                                45.00  62.00    0.00      0

 ELEMENT NO  13 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 4747.60  897.14   60             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  14 IS A JUNCTION          *         *     *     *                 *                 *               *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                                 4756.20  898.18   48    42     0  0.013     61.0      0.0   898.64     0.00  45.00    0.00

 ELEMENT NO  15 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 4830.66  898.55   48             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  16 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 4852.36  898.66   48             0.013                                45.00  27.00    0.00      0

 ELEMENT NO  17 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 5040.62  899.60   48             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  18 IS A REACH             *         *     *
                    U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                                 5045.29  899.63   48             0.013                                 0.00   0.00    0.00      1
```

```
 ELEMENT NO  19 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             5360.29  901.20   48             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  20 IS A JUNCTION         *         *     *     *                *                 *              *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                             5365.85  901.23   48    24     0  0.013      9.0      0.0   903.20     0.00  45.00    0.00

 ELEMENT NO  21 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             5688.57  902.84   48             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  22 IS A JUNCTION         *         *     *     *                *                 *              *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                             5695.11  903.38   42    24     0  0.013     24.5      0.0   904.34     0.00  45.00    0.00♀
                                                     F 0 5 1 5 P                                                   PAGE NO   4

                         WATER SURFACE PROFILE - ELEMENT CARD LISTING

 ELEMENT NO  23 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6093.92  905.37   42             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  24 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6098.59  905.39   42             0.013                                 0.00   0.00    0.00      1

 ELEMENT NO  25 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6497.39  907.39   42             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  26 IS A JUNCTION         *         *     *     *                *                 *              *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                             6504.76  908.42   30    30     0  0.013     43.7      0.0   908.39     0.00  45.00    0.00
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

 ELEMENT NO  27 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6611.96  909.74   24             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  28 IS A JUNCTION         *         *     *     *                *                 *              *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                             6616.63  910.33   24    18     0  0.013      6.9      0.0   910.74     0.00  45.00    0.00

 ELEMENT NO  29 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6637.75  910.66   24             0.013                                22.50  53.00    0.00      0

 ELEMENT NO  30 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6762.09  912.62   24             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  31 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6776.31  912.85   24             0.013                                22.50  36.00    0.00      0

 ELEMENT NO  32 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6852.78  914.05   24             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  33 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6857.44  914.16   24             0.013                                 0.00   0.00    0.00      1♀
                                                     F 0 5 1 5 P                                                   PAGE NO   5

                         WATER SURFACE PROFILE - ELEMENT CARD LISTING

 ELEMENT NO  34 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             6959.17  916.64   24             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  35 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             7001.86  917.69   24             0.013                                22.50 108.00    0.00      0

 ELEMENT NO  36 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             7076.56  919.53   24             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  37 IS A JUNCTION         *         *     *     *                *                 *              *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3       Q4    INVERT-3 INVERT-4  PHI 3   PHI 4
                             7081.22  919.62   24    18     0  0.013      0.7      0.0   919.62     0.00  70.00    0.00

 ELEMENT NO  38 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             7123.94  921.76   24             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  39 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             7143.87  922.75   24             0.013                                22.50  50.70    0.00      0

 ELEMENT NO  40 IS A REACH            *         *     *
                U/S DATA   STATION    INVERT  SECT              N                                RADIUS  ANGLE  ANG PT  MAN H
                             7153.47  923.23   24             0.013                                 0.00   0.00    0.00      0

 ELEMENT NO  41 IS A SYSTEM HEADWORKS                 *                     *
                U/S DATA   STATION    INVERT  SECT                                     W S ELEV
                             7153.47  923.23   24                                          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
                         JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY
                         S.D. LINE "A"

 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL     ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
             ELEV   OF FLOW    ELEV                        HEAD   GRD.EL.   ELEV    DEPTH              DIA    ID NO.        PIER

 L/ELEM      SO                                          SF AVE     HF                    NORM DEPTH                  ZR
*****************************************************************************************************************************

  3462.00   869.71    5.290   875.000     289.5   10.97    1.869   876.869   0.00    4.655             6.00    0.00  0.00   0   0.00
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  147.65  0.00501                                    .004348     0.64                    4.742                 0.00
 3609.65   870.45   5.027   875.477     289.5   11.44    2.034   877.511   0.00    4.655            6.00    0.00  0.00   0   0.00
   58.82  0.00493                                    .004564     0.27                    4.780                 0.00
 3668.47   870.74   4.944   875.684     289.5   11.61    2.095   877.779   0.00    4.655            6.00    0.00  0.00   0   0.00
   83.80  0.00501                                    .004738     0.40                    4.741                 0.00
 3752.27   871.16   4.822   875.982     289.5   11.89    2.194   878.176   0.00    4.655            6.00    0.00  0.00   0   0.00
   58.91  0.00509                                    .004936     0.29                    4.705                 0.00
 3811.18   871.46   4.735   876.195     289.5   12.09    2.271   878.466   0.00    4.655            6.00    0.00  0.00   0   0.00
JUNCT STR  0.17039                                    .004236     0.03                                          0.00
 3818.34   872.68   6.840   879.520     152.9    7.79    0.942   880.462   0.00    3.545            5.00    0.00  0.00   0   0.00
    2.10  0.04792                                    .003447     0.01                    1.768                 0.00
 3820.44   872.78   6.748   879.529     152.9    7.79    0.942   880.471   0.00    3.545            5.00    0.00  0.00   0   0.00
HYDRAULIC JUMP                                                                                                    0.00
 3820.44   872.78   1.781   874.562     152.9   24.37    9.225   883.787   0.00    3.545            5.00    0.00  0.00   0   0.00
   122.87  0.04792                                    .045549     5.60                    1.768                 0.00
 3943.31   878.67   1.804   880.473     152.9   23.95    8.904   889.377   0.00    3.545            5.00    0.00  0.00   0   0.00
   119.77  0.04792                                    .041694     4.99                    1.768                 0.00
 4063.08   884.41   1.868   886.276     152.9   22.83    8.097   894.373   0.00    3.545            5.00    0.00  0.00   0   0.00
    58.84  0.04792                                    .036566     2.15                    1.768                 0.00
 4121.92   887.23   1.936   889.163     152.9   21.77    7.360   896.523   0.00    3.545            5.00    0.00  0.00   0   0.00
    37.83  0.04792                                    .032085     1.21                    1.768                 0.00
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 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL     ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
             ELEV   OF FLOW    ELEV                         HEAD   GRD.EL.   ELEV   DEPTH             DIA    ID NO.        PIER

 L/ELEM      SO                                          SF AVE     HF                    NORM DEPTH                ZR
*****************************************************************************************************************************
 4159.75   889.04   2.006   891.046     152.9   20.76    6.691   897.737   0.00    3.545            5.00    0.00  0.00   0   0.00
   27.09  0.04792                                    .028159     0.76                    1.768                 0.00
 4186.84   890.34   2.079   892.417     152.9   19.79    6.083   898.500   0.00    3.545            5.00    0.00  0.00   0   0.00
   20.56  0.04792                                    .024724     0.51                    1.768                 0.00
 4207.40   891.32   2.155   893.479     152.9   18.87    5.530   899.009   0.00    3.545            5.00    0.00  0.00   0   0.00
   16.14  0.04792                                    .021719     0.35                    1.768                 0.00
 4223.54   892.10   2.235   894.332     152.9   17.99    5.027   899.359   0.00    3.545            5.00    0.00  0.00   0   0.00
   12.97  0.04792                                    .019090     0.25                    1.768                 0.00
 4236.51   892.72   2.318   895.036     152.9   17.15    4.570   899.606   0.00    3.545            5.00    0.00  0.00   0   0.00
   10.52  0.04792                                    .016790     0.18                    1.768                 0.00
 4247.03   893.22   2.406   895.628     152.9   16.36    4.154   899.782   0.00    3.545            5.00    0.00  0.00   0   0.00
    8.65  0.04792                                    .014777     0.13                    1.768                 0.00
 4255.68   893.64   2.497   896.134     152.9   15.60    3.777   899.911   0.00    3.545            5.00    0.00  0.00   0   0.00
    7.09  0.04792                                    .013014     0.09                    1.768                 0.00
 4262.77   893.98   2.593   896.570     152.9   14.87    3.434   900.004   0.00    3.545            5.00    0.00  0.00   0   0.00
    5.82  0.04792                                    .011469     0.07                    1.768                 0.00
 4268.59   894.25   2.693   896.948     152.9   14.18    3.122   900.070   0.00    3.545            5.00    0.00  0.00   0   0.00
    4.70  0.04792                                    .010117     0.05                    1.768                 0.00
 4273.29   894.48   2.799   897.280     152.9   13.52    2.837   900.117   0.00    3.545            5.00    0.00  0.00   0   0.00
    3.77  0.04792                                    .008933     0.03                    1.768                 0.00
 4277.06   894.66   2.910   897.571     152.9   12.89    2.580   900.151   0.00    3.545            5.00    0.00  0.00   0   0.00
    2.89  0.04792                                    .007898     0.02                    1.768                 0.00
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 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL     ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
             ELEV   OF FLOW    ELEV                         HEAD   GRD.EL.   ELEV   DEPTH             DIA    ID NO.        PIER

 L/ELEM      SO                                          SF AVE     HF                    NORM DEPTH                ZR
*****************************************************************************************************************************
 4279.95   894.80   3.029   897.829     152.9   12.29    2.345   900.174   0.00    3.545            5.00    0.00  0.00   0   0.00
    1.76  0.04632                                    .007090     0.01                    1.784                 0.00
 4281.71   894.88   3.122   898.003     152.9   11.85    2.182   900.185   0.00    3.545            5.00    0.00  0.00   0   0.00
    1.68  0.04632                                    .006384     0.01                    1.784                 0.00
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  4283.39   894.96    3.253   898.212     152.9   11.30    1.983   900.195   0.00    3.545            5.00    0.00  0.00   0   0.00
     0.99  0.04632                                        .005670     0.01                    1.784                  0.00
  4284.38   895.00    3.393   898.398     152.9   10.78    1.803   900.201   0.00    3.545            5.00    0.00  0.00   0   0.00
     0.32  0.04632                                        .005047     0.00                    1.784                  0.00
  4284.70   895.02    3.545   898.565     152.9   10.27    1.638   900.203   0.00    3.545            5.00    0.00  0.00   0   0.00
    55.18  0.00426                                        .004507     0.25                    3.707                  0.00
  4339.88   895.25    3.707   898.962     152.9    9.80    1.490   900.452   0.00    3.545            5.00    0.00  0.00   0   0.00
   214.89  0.00426                                        .004258     0.92                    3.707                  0.00
  4554.77   896.17    3.707   899.877     152.9    9.80    1.490   901.367   0.00    3.545            5.00    0.00  0.00   0   0.00
JUNCT STR  0.00000                                        .002412     0.00                                           0.00
  4554.77   896.17    3.838   900.008     152.1    9.41    1.374   901.382   0.00    3.536            5.00    0.00  0.00   0   0.00
     4.00  0.00500                                        .003909     0.02                    3.464                  0.00
  4558.77   896.19    3.822   900.012     152.1    9.44    1.385   901.397   0.00    3.536            5.00    0.00  0.00   0   0.00
    23.56  0.00551                                        .004152     0.10                    3.341                  0.00
  4582.33   896.32    3.649   899.969     152.1    9.91    1.524   901.493   0.00    3.536            5.00    0.00  0.00   0   0.00
HYDRAULIC JUMP                                                                                                        0.00
  4582.33   896.32    3.416   899.736     152.1   10.64    1.758   901.494   0.00    3.536            5.00    0.00  0.00   0   0.00
    25.41  0.00551                                        .005025     0.13                    3.341                  0.00
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 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL    ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
             ELEV   OF FLOW    ELEV                         HEAD   GRD.EL.   ELEV    DEPTH             DIA    ID NO.        PIER
 L/ELEM      SO                                          SF AVE     HF                    NORM DEPTH                ZR
*****************************************************************************************************************************
  4607.74   896.46    3.501   899.961     152.1   10.36    1.666   901.627   0.00    3.536            5.00    0.00  0.00   0   0.00
   128.70  0.00486                                        .004862     0.63                    3.501                  0.00
  4736.44   897.09    3.501   900.587     152.1   10.36    1.666   902.253   0.00    3.536            5.00    0.00  0.00   0   0.00
    11.16  0.00486                                        .004800     0.05                    3.501                  0.00
  4747.60   897.14    3.536   900.676     152.1   10.25    1.630   902.306   0.00    3.536            5.00    0.00  0.00   0   0.00
JUNCT STR  0.12093                                        .004110     0.04                                           0.00
  4756.20   898.18    3.795   901.975      91.1    7.39    0.849   902.824   0.00    2.894            4.00    0.00  0.00   0   0.00
    74.46  0.00497                                        .003497     0.26                    2.965                  0.00
  4830.66   898.55    3.641   902.191      91.1    7.59    0.894   903.085   0.00    2.894            4.00    0.00  0.00   0   0.00
    21.70  0.00507                                        .003531     0.08                    2.941                  0.00
  4852.36   898.66    3.589   902.249      91.1    7.67    0.912   903.161   0.00    2.894            4.00    0.00  0.00   0   0.00
    88.98  0.00499                                        .003684     0.33                    2.960                  0.00
  4941.34   899.10    3.381   902.485      91.1    8.04    1.004   903.489   0.00    2.894            4.00    0.00  0.00   0   0.00
    73.33  0.00499                                        .004002     0.29                    2.960                  0.00
  5014.67   899.47    3.208   902.678      91.1    8.43    1.104   903.782   0.00    2.894            4.00    0.00  0.00   0   0.00
    25.95  0.00499                                        .004266     0.11                    2.960                  0.00
  5040.62   899.60    3.150   902.750      91.1    8.58    1.144   903.894   0.00    2.894            4.00    0.00  0.00   0   0.00
     4.67  0.00642                                        .004396     0.02                    2.684                  0.00
  5045.29   899.63    3.116   902.746      91.1    8.67    1.168   903.914   0.00    2.894            4.00    0.00  0.00   0   0.00
    92.61  0.00498                                        .004694     0.43                    2.961                  0.00
  5137.90   900.09    2.972   903.064      91.1    9.10    1.285   904.349   0.00    2.894            4.00    0.00  0.00   0   0.00
    38.16  0.00498                                        .004965     0.19                    2.961                  0.00
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 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL    ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
             ELEV   OF FLOW    ELEV                         HEAD   GRD.EL.   ELEV    DEPTH             DIA    ID NO.        PIER
 L/ELEM      SO                                          SF AVE     HF                    NORM DEPTH                ZR
*****************************************************************************************************************************
  5176.06   900.28    2.961   903.243      91.1    9.13    1.295   904.538   0.00    2.894            4.00    0.00  0.00   0   0.00
   184.23  0.00498                                        .004987     0.92                    2.961                  0.00
  5360.29   901.20    2.961   904.161      91.1    9.13    1.295   905.456   0.00    2.894            4.00    0.00  0.00   0   0.00
JUNCT STR  0.00540                                        .003920     0.02                                           0.00
  5365.85   901.23    3.645   904.875      82.1    6.83    0.725   905.600   0.00    2.746            4.00    0.00  0.00   0   0.00
    71.80  0.00499                                        .002946     0.21                    2.730                  0.00
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  5437.65   901.59    3.426   905.014      82.1    7.16    0.797   905.811   0.00    2.746            4.00    0.00  0.00   0   0.00
    55.53  0.00499                                        .003183     0.18                    2.730                  0.00
  5493.18   901.87    3.246   905.111      82.1    7.51    0.877   905.988   0.00    2.746            4.00    0.00  0.00   0   0.00
    45.88  0.00499                                        .003500     0.16                    2.730                  0.00
  5539.06   902.09    3.090   905.184      82.1    7.88    0.965   906.149   0.00    2.746            4.00    0.00  0.00   0   0.00
    40.27  0.00499                                        .003882     0.16                    2.730                  0.00
  5579.33   902.29    2.949   905.244      82.1    8.27    1.061   906.305   0.00    2.746            4.00    0.00  0.00   0   0.00
    34.84  0.00499                                        .004332     0.15                    2.730                  0.00
  5614.17   902.47    2.820   905.289      82.1    8.67    1.167   906.456   0.00    2.746            4.00    0.00  0.00   0   0.00
    13.67  0.00499                                        .004740     0.06                    2.730                  0.00
  5627.84   902.54    2.746   905.283      82.1    8.93    1.238   906.521   0.00    2.746            4.00    0.00  0.00   0   0.00
HYDRAULIC JUMP                                                                                                        0.00
  5627.84   902.54    2.730   905.267      82.1    8.99    1.254   906.521   0.00    2.746            4.00    0.00  0.00   0   0.00
    56.64  0.00499                                        .004985     0.28                    2.730                  0.00
  5684.48   902.82    2.730   905.550      82.1    8.99    1.254   906.804   0.00    2.746            4.00    0.00  0.00   0   0.00
     4.09  0.00499                                        .004946     0.02                    2.730                  0.00
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WATER SURFACE PROFILE LISTING
JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY
S.D. LINE "A"

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 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL     ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
            ELEV   OF FLOW    ELEV                         HEAD   GRD.EL.   ELEV    DEPTH              DIA    ID NO.       PIER
 L/ELEM      SO                                          SF AVE     HF                    NORM DEPTH                  ZR
*****************************************************************************************************************************
  5688.57   902.84    2.746   905.586      82.1    8.93    1.238   906.824   0.00    2.746            4.00    0.00  0.00   0   0.00
JUNCT STR  0.08257                                        .004096     0.03                                           0.00
  5695.11   903.38    2.866   906.246      57.6    6.83    0.725   906.971   0.00    2.377            3.50    0.00  0.00   0   0.00
    44.23  0.00499                                        .003454     0.15                    2.390                  0.00
  5739.34   903.60    2.725   906.326      57.6    7.17    0.797   907.123   0.00    2.377            3.50    0.00  0.00   0   0.00
    38.94  0.00499                                        .003827     0.15                    2.390                  0.00
  5778.28   903.79    2.600   906.395      57.6    7.51    0.877   907.272   0.00    2.377            3.50    0.00  0.00   0   0.00
    37.71  0.00499                                        .004266     0.16                    2.390                  0.00
  5815.99   903.98    2.485   906.468      57.6    7.88    0.965   907.433   0.00    2.377            3.50    0.00  0.00   0   0.00
    33.63  0.00499                                        .004747     0.16                    2.390                  0.00
  5849.62   904.15    2.390   906.541      57.6    8.23    1.051   907.592   0.00    2.377            3.50    0.00  0.00   0   0.00
   244.30  0.00499                                        .004992     1.22                    2.390                  0.00
  6093.92   905.37    2.390   907.760      57.6    8.23    1.051   908.811   0.00    2.377            3.50    0.00  0.00   0   0.00
     4.67  0.00428                                        .004868     0.02                    2.535                  0.00
  6098.59   905.39    2.437   907.827      57.6    8.05    1.007   908.834   0.00    2.377            3.50    0.00  0.00   0   0.00
    20.50  0.00502                                        .004877     0.10                    2.386                  0.00
  6119.09   905.49    2.386   907.879      57.6    8.24    1.055   908.934   0.00    2.377            3.50    0.00  0.00   0   0.00
   378.30  0.00502                                        .005015     1.90                    2.386                  0.00
  6497.39   907.39    2.386   909.776      57.6    8.24    1.055   910.831   0.00    2.377            3.50    0.00  0.00   0   0.00
JUNCT STR  0.13976                                                                                                    0.00
  6504.76   908.42    1.060   909.480      13.9    8.22    1.049   910.529   0.00    1.343            2.00    0.00  0.00   0   0.00
    16.58  0.01231                                        .012423     0.21                    1.060                  0.00
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WATER SURFACE PROFILE LISTING
JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY
S.D. LINE "A"

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 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL     ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
            ELEV   OF FLOW    ELEV                         HEAD   GRD.EL.   ELEV    DEPTH              DIA    ID NO.       PIER
 L/ELEM      SO                                          SF AVE     HF                    NORM DEPTH                  ZR
*****************************************************************************************************************************
  6521.34   908.62    1.060   909.684      13.9    8.22    1.049   910.733   0.00    1.343            2.00    0.00  0.00   0   0.00
    90.62  0.01231                                        .011813     1.07                    1.060                  0.00
  6611.96   909.74    1.094   910.834      13.9    7.90    0.970   911.804   0.00    1.343            2.00    0.00  0.00   0   0.00
JUNCT STR  0.12634                                        .013327     0.06                                           0.00
  6616.63   910.33    0.680   911.010       7.0    7.43    0.857   911.867   0.00    0.939            2.00    0.00  0.00   0   0.00
     2.05  0.01562                                        .015453     0.03                    0.680                  0.00
  6618.68   910.36    0.680   911.042       7.0    7.43    0.857   911.899   0.00    0.939            2.00    0.00  0.00   0   0.00
    19.07  0.01562                                        .015496     0.30                    0.680                  0.00
  6637.75   910.66    0.679   911.339       7.0    7.45    0.861   912.200   0.00    0.939            2.00    0.00  0.00   0   0.00
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  124.34  0.01576                                    .015943     1.98                    0.680                 0.00
 6762.09   912.62    0.670   913.290       7.0    7.58    0.893   914.183   0.00    0.939            2.00    0.00  0.00   0   0.00
   14.22  0.01617                                    .016309     0.23                    0.670                 0.00
 6776.31   912.85    0.671   913.521       7.0    7.57    0.889   914.410   0.00    0.939            2.00    0.00  0.00   0   0.00
   15.49  0.01569                                    .016442     0.25                    0.680                 0.00
 6791.80   913.09    0.666   913.759       7.0    7.63    0.905   914.664   0.00    0.939            2.00    0.00  0.00   0   0.00
   32.48  0.01569                                    .017799     0.58                    0.680                 0.00
 6824.28   913.60    0.644   914.247       7.0    8.00    0.994   915.241   0.00    0.939            2.00    0.00  0.00   0   0.00
   16.72  0.01569                                    .020327     0.34                    0.680                 0.00
 6841.00   913.87    0.622   914.487       7.0    8.39    1.094   915.581   0.00    0.939            2.00    0.00  0.00   0   0.00
   11.78  0.01569                                    .023214     0.27                    0.680                 0.00
 6852.78   914.05    0.601   914.651       7.0    8.81    1.204   915.855   0.00    0.939            2.00    0.00  0.00   0   0.00
    4.66  0.02361                                    .024862     0.12                    0.610                 0.00
```



```
 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL    ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
             ELEV   OF FLOW    ELEV                        HEAD   GRD.EL.   ELEV   DEPTH             DIA    ID NO.       PIER
 L/ELEM      SO                                          SF AVE     HF                    NORM DEPTH                ZR
*****************************************************************************************************************************
 6857.44   914.16    0.600   914.760       7.0    8.83    1.210   915.970   0.00    0.939            2.00    0.00  0.00   0   0.00
  101.73  0.02438                                    .024966     2.54                    0.600                 0.00
 6959.17   916.64    0.600   917.240       7.0    8.83    1.210   918.450   0.00    0.939            2.00    0.00  0.00   0   0.00
   42.69  0.02460                                    .024966     1.07                    0.600                 0.00
 7001.86   917.69    0.600   918.290       7.0    8.83    1.210   919.500   0.00    0.939            2.00    0.00  0.00   0   0.00
   27.97  0.02463                                    .024966     0.70                    0.600                 0.00
 7029.83   918.38    0.600   918.979       7.0    8.83    1.210   920.189   0.00    0.939            2.00    0.00  0.00   0   0.00
   46.73  0.02463                                    .026517     1.24                    0.600                 0.00
 7076.56   919.53    0.582   920.112       7.0    9.21    1.317   921.429   0.00    0.939            2.00    0.00  0.00   0   0.00
JUNCT STR 0.01931                                    .038012     0.18                                          0.00
 7081.22   919.62    0.482   920.102       6.3   10.81    1.813   921.915   0.00    0.889            2.00    0.00  0.00   0   0.00
    9.04  0.05009                                    .047294     0.43                    0.480                 0.00
 7090.26   920.07    0.484   920.557       6.3   10.71    1.783   922.340   0.00    0.889            2.00    0.00  0.00   0   0.00
   22.74  0.05009                                    .043719     0.99                    0.480                 0.00
 7113.00   921.21    0.501   921.713       6.3   10.21    1.619   923.332   0.00    0.889            2.00    0.00  0.00   0   0.00
   10.94  0.05009                                    .038259     0.42                    0.480                 0.00
 7123.94   921.76    0.519   922.279       6.3    9.74    1.472   923.751   0.00    0.889            2.00    0.00  0.00   0   0.00
    2.68  0.04967                                    .034996     0.09                    0.480                 0.00
 7126.62   921.89    0.524   922.417       6.3    9.60    1.432   923.849   0.00    0.889            2.00    0.00  0.00   0   0.00
    6.39  0.04967                                    .032133     0.21                    0.480                 0.00
 7133.01   922.21    0.542   922.752       6.3    9.16    1.302   924.054   0.00    0.889            2.00    0.00  0.00   0   0.00
    4.60  0.04967                                    .028116     0.13                    0.480                 0.00
```



```
 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL    ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
             ELEV   OF FLOW    ELEV                        HEAD   GRD.EL.   ELEV   DEPTH             DIA    ID NO.       PIER
 L/ELEM      SO                                          SF AVE     HF                    NORM DEPTH                ZR
*****************************************************************************************************************************
 7137.61   922.44    0.561   923.000       6.3    8.73    1.182   924.182   0.00    0.889            2.00    0.00  0.00   0   0.00
    3.53  0.04967                                    .024601     0.09                    0.480                 0.00
 7141.14   922.61    0.580   923.194       6.3    8.32    1.075   924.269   0.00    0.889            2.00    0.00  0.00   0   0.00
    2.73  0.04967                                    .021532     0.06                    0.480                 0.00
 7143.87   922.75    0.601   923.351       6.3    7.93    0.978   924.329   0.00    0.889            2.00    0.00  0.00   0   0.00
    0.14  0.05000                                    .019984     0.00                    0.480                 0.00
 7144.01   922.76    0.602   923.359       6.3    7.89    0.968   924.327   0.00    0.889            2.00    0.00  0.00   0   0.00
    2.14  0.05000                                    .018624     0.04                    0.480                 0.00
 7146.15   922.86    0.623   923.487       6.3    7.53    0.880   924.367   0.00    0.889            2.00    0.00  0.00   0   0.00
    1.72  0.05000                                    .016309     0.03                    0.480                 0.00
 7147.87   922.95    0.645   923.595       6.3    7.18    0.801   924.396   0.00    0.889            2.00    0.00  0.00   0   0.00
```

```
   1.40  0.05000                                        .014288     0.02                    0.480                  0.00

 7149.27   923.02    0.668   923.688       6.3    6.85    0.728   924.416   0.00    0.889            2.00    0.00  0.00   0   0.00

   1.12  0.05000                                        .012522     0.01                    0.480                  0.00

 7150.39   923.08    0.692   923.768       6.3    6.53    0.662   924.430   0.00    0.889            2.00    0.00  0.00   0   0.00

   0.93  0.05000                                        .010972     0.01                    0.480                  0.00

 7151.32   923.12    0.716   923.839       6.3    6.23    0.602   924.441   0.00    0.889            2.00    0.00  0.00   0   0.00

   0.71  0.05000                                        .009617     0.01                    0.480                  0.00

 7152.03   923.16    0.742   923.900       6.3    5.93    0.546   924.446   0.00    0.889            2.00    0.00  0.00   0   0.00

   0.55  0.05000                                        .008437     0.00                    0.480                  0.00

 7152.58   923.18    0.769   923.954       6.3    5.66    0.498   924.452   0.00    0.889            2.00    0.00  0.00   0   0.00

   0.40  0.05000                                        .007404     0.00                    0.480                  0.00
```


WATER SURFACE PROFILE LISTING

JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY
S.D. LINE "A"

```
 STATION    INVERT   DEPTH     W.S.        Q       VEL     VEL     ENERGY   SUPER  CRITICAL           HGT/   BASE/    ZL   NO  AVBPR
             ELEV   OF FLOW    ELEV                        HEAD   GRD.EL.   ELEV    DEPTH             DIA    ID NO.       PIER

 L/ELEM      SO                                          SF AVE     HF                     NORM DEPTH                    ZR
*****************************************************************************************************************************************

 7152.98   923.21    0.797   924.003       6.3    5.39    0.452   924.455   0.00    0.889            2.00    0.00  0.00   0   0.00

   0.28  0.05000                                        .006498     0.00                    0.480                  0.00

 7153.26   923.22    0.826   924.045       6.3    5.14    0.411   924.456   0.00    0.889            2.00    0.00  0.00   0   0.00

   0.16  0.05000                                        .005704     0.00                    0.480                  0.00

 7153.42   923.23    0.856   924.084       6.3    4.90    0.373   924.457   0.00    0.889            2.00    0.00  0.00   0   0.00

   0.05  0.05000                                        .005002     0.00                    0.480                  0.00

 7153.47   923.23    0.889   924.119       6.3    4.67    0.339   924.458   0.00    0.889            2.00    0.00  0.00   0   0.00
```

JOB #3384 RUBIDOUX COMMERCE PARK, JURUPA VALLEY
S.D. LINE "A"

```
                .         .         .         .         .         .         .         .         .         .         .
  3462.00       .I       CWH E                                                                                .    R
  3480.01       .                                                                                             .
  3498.01       .                                                                                             .
  3516.02       .                                                                                             .
  3534.03       .                                                                                             .
  3552.04       .                                                                                             .
  3570.04       .                                                                                             .
  3588.05       .                                                                                             .
  3606.06       .                                                                                             .
  3624.06       . I       CW H E                                                                              .    R
  3642.07       .                                                                                             .
  3660.08       .                                                                                             .
  3678.09       . I        X H E                                                                              .    R
  3696.09       .                                                                                             .
  3714.10       .                                                                                             .
  3732.11       .                                                                                             .
  3750.11       .                                                                                             .
  3768.12       .  I       CW H E                                                                              .    R
  3786.13       .                                                                                             .
  3804.14       .                                                                                             .
  3822.14       .   I       X H E                                                                              .    JX
  3840.15       .     I     C  H  W E                                                                          .    R
  3858.16       .     I     C  H  W E                                                                          .    R
  3876.16       .     I  W  C  H         E                                                                     .    R
  3894.17       .                                                                                             .
  3912.18       .                                                                                             .
  3930.19       .                                                                                             .
  3948.19       .                I  W  C  H         E                                                           .    R
  3966.20       .                                                                                             .
  3984.21       .                                                                                             .
  4002.22       .                                                                                             .
  4020.22       .                                                                                             .
  4038.23       .                                                                                             .
  4056.24       .                                                                                             .
  4074.24       .                        I  W  C  H        E                                                  .    R
  4092.25       .                                                                                             .
  4110.26       .                                                                                             .
  4128.27       .                             I   W C  H       E                                              .    R
  4146.27       .                                                                                             .
  4164.28       .                                I   W  C H      E                                            .    R
  4182.29       .                                                                                             .
  4200.29       .                                   I  W  C  H    E                                           .    R
  4218.30       .                                    I   W  C H    E                                          .    R
  4236.31       .                                      I   W C  H   E                                          .    R
  4254.32       .                                       I   W C  H  E                                          .    R
  4272.32       .                                        I   W C  H  E                                         .    R
  4290.33       .                                         I   W C  H E                                         .    R
  4308.34       .                                         I    W C H E                                         .    R
  4326.34       .                                          I    WC  HE                                         .    R
  4344.35       .                                          I    W C HE                                         .    R
  4362.36       .                                          I     WC HE                                         .    R
  4380.37       .                                           I    WC  X                                          .    R
  4398.37       .                                           I    WC  X                                          .    R
  4416.38       .                                           I     X  X                                          .    R
  4434.39       .                                           I     X  X                                          .    R
  4452.39       .                                           I     X  X                                          .    R
  4470.40       .                                            I     X  X                                         .    R
  4488.41       .                                                                                             .
  4506.42       .                                                                                             .
  4524.42       .                                                                                             .
  4542.43       .                                                                                             .
  4560.44       .                                               I      X HE                                    .    JX
```

```
4578.44    .  I      X HE                                  .    R
4596.45    .  I      X HE                                  .    R
4614.46    .  I      X HE                                  .    R
4632.47    .  I      X HE                                  .    R
4650.47    .   I     X  X                                  .    R
4668.48    .                                               .
4686.49    .                                               .
4704.49    .                                               .
4722.50    .                                               .
4740.51    .    I     X  X                                 .    R
4758.52    .    I     X  X                                 .    JX
4776.52    .      I    C XE                                .    R
4794.53    .                                               .
4812.54    .                                               .
4830.54    .                                               .
4848.55    .      I     CWHE                               .    R
4866.56    .       I    CWHE                               .    R
4884.57    .                                               .
4902.57    .                                               .
4920.58    .                                               .
4938.59    .                                               .
4956.60    .         I     CWX                              .    R
4974.60    .                                               .
4992.61    .                                               .
5010.62    .                                               .
5028.62    .           I    CWHE                            .    R
5046.63    .           I     X X                            .    R
5064.64    .           I     X X                            .    R
5082.65    .                                               .
5100.65    .                                               .
5118.66    .                                               .
5136.67    .                                               .
5154.67    .             I    CWHE                          .    R
5172.68    .                                               .
5190.69    .              I    X X                          .    R
5208.70    .                                               .
5226.70    .                                               .
5244.71    .                                               .
5262.72    .                                               .
5280.72    .                                               .
5298.73    .                                               .
5316.74    .                                               .
5334.75    .                                               .
5352.75    .                                               .
5370.76    .                I    CWHE                      .    JX
5388.77    .                I    C XE                      .    R
5406.77    .                                               .
5424.78    .                                               .
5442.79    .                 I    CWHE                     .    R
5460.80    .                                               .
5478.80    .                                               .
5496.81    .                 I    CW X                     .    R
5514.82    .                                               .
5532.82    .                                               .
5550.83    .                  I    X X                     .    R
5568.84    .                                               .
5586.85    .                  I    CWX                     .    R
5604.85    .                                               .
5622.86    .                   I   CW X                     .    R
5640.87    .                   I    X X                     .    R
5658.87    .                   I    X X                     .    R
5676.88    .                                               .
5694.89    .                   I    X X                     .    R
5712.90    .                   I    X X                     .    JX
5730.90    .                    I   CWHE                    .    R
5748.91    .                     I   X X                    .    R
5766.92    .                                               .
5784.93    .                     I   CWX                    .    R
5802.93    .                                               .
5820.94    .                     I    XEH                   .    R
5838.95    .                                               .
5856.95    .                      I   X X                   .    R
5874.96    .                                               .
5892.97    .                                               .
5910.98    .                                               .
5928.98    .                                               .
5946.99    .                                               .
5965.00    .                                               .
5983.00    .                                               .
6001.01    .                                               .
6019.02    .                                               .
6037.03    .                                               .
6055.03    .                                               .
6073.04    .                                               .
6091.05    .                                               .
6109.05    .                       I   X X                  .    R
6127.06    .                       I   X X                  .    R
6145.07    .                       I   X X                  .    R
6163.08    .                                               .
6181.08    .                                               .
6199.09    .                                               .
6217.10    .                                               .
6235.10    .                                               .
6253.11    .                                               .
6271.12    .                                               .
6289.13    .                                               .
6307.13    .                                               .
6325.14    .                                               .
6343.15    .                                               .
6361.15    .                                               .
6379.16    .                                               .
6397.17    .                                               .
6415.18    .                                               .
6433.18    .                                               .
6451.19    .                                               .
6469.20    .                                               .
6487.20    .                                               .
6505.21    .                          I    X X             .    JX
6523.22    .                            I WCX               .    R
6541.23    .                             IWCX               .    R
6559.23    .                                               .
6577.24    .                                               .
6595.25    .                                               .
6613.25    .                               I XX            .    JX
6631.26    .                                IXEH           .    R
```

```
6649.27    .                                                                  IXEH                        .    R
6667.28    .                                                                  IWCEH                       .    R
6685.28    .                                                                                              .
6703.29    .                                                                                              .
6721.30    .                                                                                              .
6739.31    .                                                                                              .
6757.31    .                                                                                              .
6775.32    .                                                                      IX X                    .    R
6793.33    .                                                                      IWCEH                   .    R
6811.33    .                                                                       IXEH                   .    R
6829.34    .                                                                        IX X                  .    R
6847.35    .                                                                        IWCEH                 .    R
6865.36    .                                                                        IWC X                 .    R
6883.36    .                                                                         IX X                 .    R
6901.37    .                                                                                              .
6919.38    .                                                                                              .
6937.38    .                                                                                              .
6955.39    .                                                                                              .
6973.40    .                                                                              IWCEH           .    R
6991.41    .                                                                                              .
7009.41    .                                                                                IWCEH         .    R
7027.42    .                                                                                              .
7045.43    .                                                                                 IWCEH        .    R
7063.43    .                                                                                              .
7081.44    .                                                                                   IWC X      .    JX
7099.45    .                                                                                   IWC HE     .    R
7117.46    .                                                                                    IWC X     .    R
7135.46    .                                                                                      IWC X   .    R
7153.47    .                                                                                       IWC X  .    R
            .         .         .         .         .         .         .         .         .         .         .

           869.71    875.26    880.81    886.37    891.92    897.47    903.02    908.57    914.13    919.68    925.23
```

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♀

APPENDIX E

CATCH BASIN CALCULATIONS

TEI JOB
NO. 3384

CURB OPENING BASIN CALCULATION SHEET

Basin Located At 101

h = height of catch basin opening 0.67'

H = Maximum depth of ponding at catch basin 0.50'

H/h = 0.50 /0.67 = 0.74

Capacity of catch basin is approximately 2.2cfs per lineal foot

Use Table "L" to yield 1.1 cfs/l.f.

Q 100 at 101 = 7.0 cfs

(Q 100/(Table "L" result) = 7.0 /1.1 = 6.36 = minimum length of opening required to intercept Q.

Length of Catch Basin Recommended = 7 '

Basin Located At

h = height of catch basin opening ____'

H = Maximum depth of ponding at catch basin ____'

H/h = ____'/____' = ____'

Use Table "L" to yield _____ cfs/l.f.

Q___ at ___ = ____ cfs

(Q___)/(Table "L" result) = _____/_____ = _____ = minimum length of opening required to intercept Q.

Length of Catch Basin Recommended = _____'

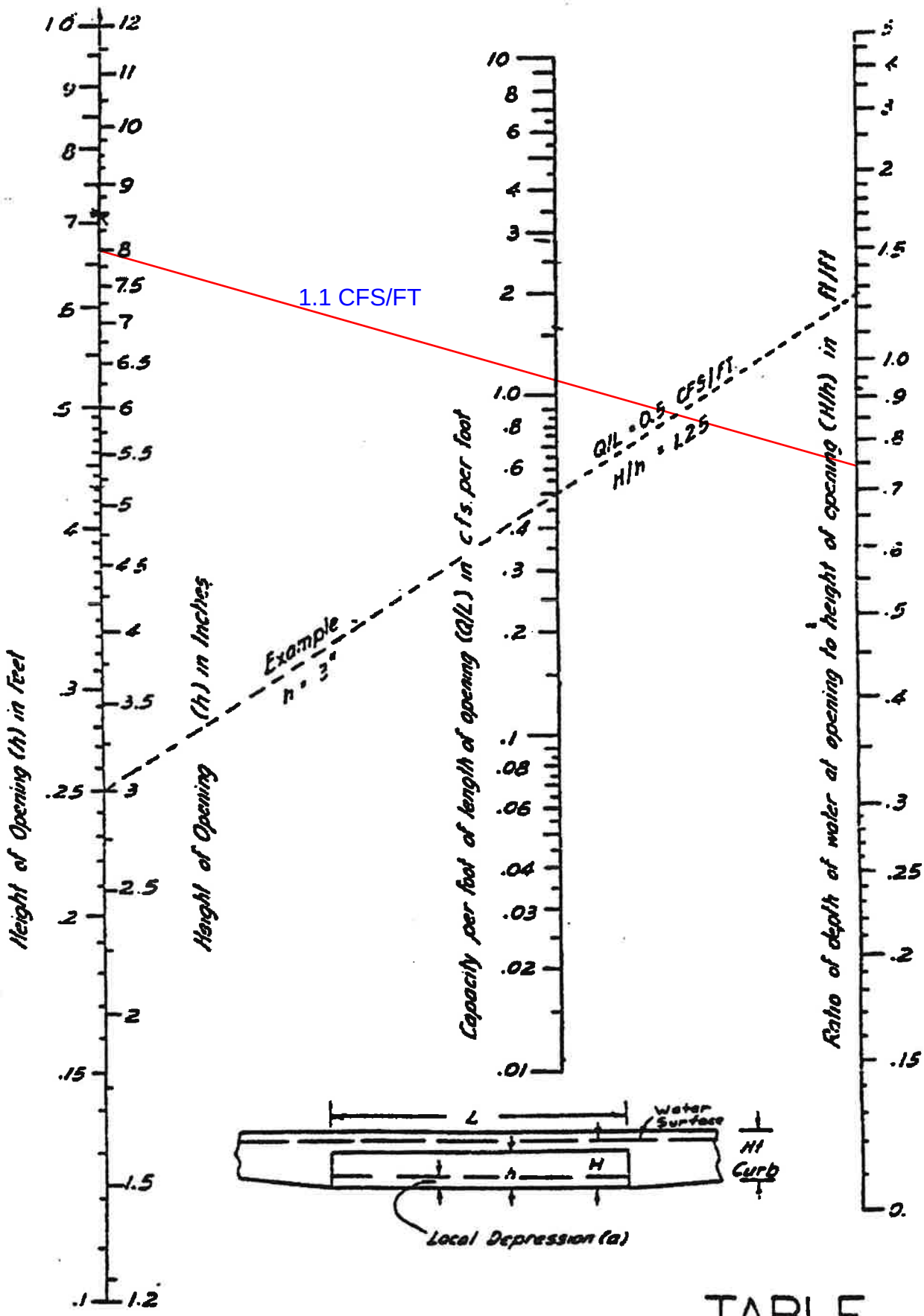


TABLE L

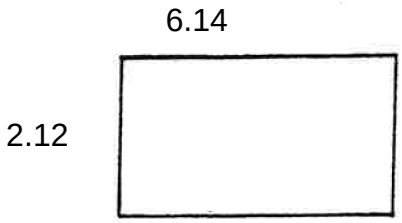
Bureau of Public Roads

Nomograph for capacity of curb

GRATE INLET CALCULATION SHEET

Grate at 113

Use SPPWC Standard Plan No. 303-3



$Q/P = 3.0(H)^{3/2}$

P = Perimeter = 16.52

H = Maximum depth of ponding at grate = 0.5 ,

$Q_{max} = 3.0(P)(H)^{3/2} = 3.0(16.52)(0.5)^{3/2} = 17.52$ cfs

Assume 50% clogging implies 8.76 cfs

Q_{100} at 113 = 6.3 cfs < 8.76 cfs

3 grate O.K.

SPPWC

0.0

0.0

0.00

0.00

0.00

1

APPENDIX F

HYDROLOGY MAP