APPENDIX 7

HYDROLOGY STUDY

For:

Nutmeg Apartments

Project Site Location/Address:
NWC of Washington Ave. & Nutmeg St.
Murrieta, CA 92562

Prepared For:
Nutmeg/Washington Development, LP
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Project No. 18-946

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Section I Introduction

The following hydrology study has been prepared for the development of the Nutmeg Apartments property at the north west corner of Nutmeg Street and Washington Avenue within the unincorporated area of Riverside County, California. The subject site is approximately 14.68 acres. The general location of the site is illustrated on the Vicinity Map, (see Figure 1 in Appendix A of this report).

Section II Methodology

For both, the existing and proposed conditions, the peak storm discharge for the drainage sub-areas was calculated using the Riverside County Hydrology Manual. Rational Method Equation (1978 April), using AES Software (Ratscx), was used to calculate the 2-year, 5-year, 10-year &100-year storm events (see calculations in Appendix C). A soil type of D was assigned to the project site based on the Riverside County Flood Control and Water Conservation District Hydrology Manual Hydrologic Soils Group Map Plate C-1.16 (see portion of map in Appendix A). For calculation purposes, a soil type of D was used for the project site. Soil group D is defined as soils having slow infiltration rates when thoroughly wetted and consisting chiefly of silty-loam soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have a slow rate of water transmission. Data for the 2-year 1-hour, 3-hour, 6-hour, and 24-hour storm events and data for the 100-year 1-hour, 3-hour, 6-hour, and 24-hour storm events were taken from the maps in the Riverside County Hydrology Manual.

First, the rational method was used to find the time of concentration for each area in both the existing and proposed site conditions. The Tc was calculated for the 2-year, 5-year, 10-year & 100-year storm events. Next, these Tc's were used as the lag time in CILVD to calculate hydrographs for the existing and proposed 2-year, 5-year, 10-year & 100-year storms. CIVLD was used to create unit hydrographs for each sub area in both the existing and proposed condition on of site. The purpose of the unit hydrograph method is to calculate the flood volume of each storm event. Per the riverside county hydrology manual our project is required to study the 1-hr, 3-hr, 6-hr, & 24-hr intensities for the 2-yr, 5-yr, 10-yr & 100-yr storm events. CIVLD creates a hydrograph for each of these storm events which provides us with a peak flow and flood volume of the storm. The hydrographs created for the existing site condition are held as a bench mark for the allowable discharge in the proposed condition.

Finally, the proposed site hydrographs for the 2-year, 5-year, 10-year & 100-year storms were imported into Civil 3D's basin analysis program. These hydrographs were then routed through our proposed basin's and outlet structure to mitigate flows back down to existing condition.

For the rational method we used AES's standard apartment input for the impervious %, which is set at 80% impervious. Based on our hydrology maps, our site is approximately 70% impervious, thus the AES apartment standard is a conservative design for the

rational method. For the hydrograph method we used the impervious ratio as shown on our hydrology maps. We chose to match the impervious ratio for the hydrograph method as we were trying to model the most accurate flood volume for each storm event.

For the hydrograph method our run off index numbers were taken from the riverside county hydrology manual plate E-6.1. For the existing condition we used a run off index number of 89, this reflects our undeveloped site with a soil type of D and a cover type of grass (poor quality of cover). This run off index is based on the riverside county hydrology soil map, Geotech report and site observation for site cover. For the proposed developed condition our run off index number was 75. 75 was chosen from the riverside county hydrology manual plate E-6.1 as it reflects urban landscaping over soil type D. This is the typical run off index number for both residential and commercial developments. See Appendix F for County Hydrology Manual Plate E-6.1 with run off index highlighted.

For our basin routing calculations, we used AutoCAD's Hyrdaflow Hydrograph's program. This program uses a stage storage relationship to calculate the discharge of storm water after being routed through our proposed underground detention systems. Hydraflow Hydrograph's describes this as reservoir routing. Reservoir routing is the process of passing a flood hydrograph through a storage reservoir or detention pond. This process changes the pattern of flow with respect to time but conserves volume. The purpose of reservoir routing is usually to reduce the peak flow to a predetermined level or to delay the peak. The routing procedure used by Hydraflow is known as the Storage Indication Method and begins with a stage/storage/discharge relationship, an inflow hydrograph and the following relationship: inflow minus outflow equals change in storage.

Section III Project Description

Existing Site Conditions

The existing site is approximately 14.68 acres of land, 100% pervious. In the existing condition, the majority of the site drains to the south side of the property which ultimately discharges to the existing 84" public storm drain along Washington Avenue. Our site currently experiences off-site run on from both the north and west property lines. Along both property lines there is a slope that runs up to the adjacent residential developments.

The rational method was used to assess peak flow rates for each sub area in both the existing and proposed condition. Also, for the proposed condition AES used the rational method to route the peak flow rates through a model of our proposed storm drain system, providing us with the design criteria to adequately design our storm drain pipe as flows confluence together from different sub areas. The proposed storm drain pipe is size to carry the 100-year storm event to our above ground detention basins without the risk of flooding at surface level.

Proposed Site Conditions

The proposed development will consist of the construction of seventeen (17) apartment buildings, common & recreational areas, and accompanying parking, drive aisles, and landscape. In the existing condition, the entire site drains to south and discharges via storm drain to the public main along Washington Avenue. Similarly, in the proposed condition, the site discharges via storm drain to the main along Washington Avenue. Areas A, B, & C each discharge via connection to existing catch basins along Washington Avenue. This maintains the existing drainage conditions. Detention system "A" will provide 15,997 cubic feet, Detention system "B" will provide 22,253 cubic feet, and detention system "C" will provide 41,421 cubic. Refer to the "Proposed Hydrology Map" in Appendix B for illustration of the proposed drainage zones.

Our site currently experiences off-site run on from both the north and west property lines. Along both property lines there is a slope that runs up to the adjacent residential developments. Based on field visit and site topography, the slope along the western property line drains directly towards an existing screen wall at property line. There were not visible drainage improvements at this location. Any nuisance water going through the existing screen wall currently flows on to our site and ultimately out into the 84" public storm drain along Washington Blvd. As part of our proposed development we will include a retaining wall underdrain along the western property line in order to allow any water that migrates across the existing screen wall a method of travel to the public storm drain system along our development. This off-site run off will not comingle with the storm water run-off from our site, and will bypass our treatment and detention systems. It will be routed directly to the 84" public storm drain along Washington Blvd. Therefore, the project should not adversely impact the existing home owners adjacent to the west side of the property. Run on coming from the slope along the north property line adjacent to the residential developments currently collects along the existing screen wall bordering our property. There is a storm drain outlet along the existing screen wall that discharges this run on through the wall and on to our site where it ultimately drains out to the 84" public storm drain along Washington Blvd. In the proposed condition, this run on will be picked up by a series of drop inlets and ribbon gutters. Due to the distance from the norther property line to the public storm drain, running a dedicated storm drain line to intercept the run on was not feasible. This water will comingle with on on-site water and will be routed to our water quality basins and detention systems prior to discharging into the 84" public storm drain along Washington Blvd. Therefore, the project should not adversely impact the existing home owners adjacent to the north side of the property.

AUTOCAD's Hydraflow Hydrographs was used to model underground detention basins to mitigate our proposed site's discharge down to existing levels. The outlet weir and orifice structure will be refined in order to accomplish the flow rate mitigation.

The basin analysis accounts for the .003 slope in our subsurface drainage system. In appendix D we provide a pond report for each subsurface basin. At the top of each pond report the system being analyzed is describe with a barrel length and slope. Our barrel length and slope are entered to model the lowest and highest inv along that system. This

elevation difference is representative of the proposed 0.003 slope in our underground system.

The below tables and discussions summarize the results of the existing, proposed, and post detention runoff characteristics.

Area A – Existing, Proposed, & Post-Detention Runoff Results:

Area A – Existing Hydrograph, Proposed Hydrograph, Post-Detention Hydrograph Results

Storm Event	Existing Peak Flow	Proposed Peak flow	Post-Detention Peak Flow
2-YEAR 1-HR	1.874 CFS	3.428 CFS	0.123 CFS
2-YEAR 3-HR	1.163 CFS	1.856 CFS	0.137 CFS
2-YEAR 6-HR	1.055 CFS	1.727 CFS	0.151 CFS
2-YEAR 24-HR	0.167 CFS	0.649 CFS	0.165 CFS
5-YEAR 1-HR	2.733 CFS	4.736 CFS	0.137 CFS
5-YEAR 3-HR	1.882 CFS	2.723 CFS	0.156 CFS
5-YEAR 6-HR	1.660 CFS	2.431 CFS	0.294 CFS
5-YEAR 24-HR	0.440 CFS	0.852 CFS	0.438 CFS
10-YEAR 1-HR	3.837 CFS	6.002 CFS	0.152 CFS
10-YEAR 3-HR	2.925 CFS	3.651 CFS	0.385 CFS
10-YEAR 6-HR	2.615 CFS	3.221 CFS	1.713 CFS
10-YEAR 24-HR	1.091 CFS	1.229 CFS	0.898 CFS
100-YEAR 1-HR	6.290 CFS	9.593 CFS	1.304 CFS
100-YEAR 3-HR	5.067 CFS	6.088 CFS	4.723 CFS
100-YEAR 6-HR	4.446 CFS	5.245 CFS	4.408 CFS
100-YEAR 24-HR	2.104 CFS	2.207 CFS	2.086 CFS

Area A – Post Developed Discussion:

The table above shows peak flow data based on the Hydraflow Hydrographs program mentioned in the “Methodology” section for Area/Pond A. The above table shows that the post-detention peak flows have been knocked down to below the existing peak flow. This was done by modeling the effects of our underground detention basin and restrictor plate at the outlet structure of the system. See conceptual utility plans in Appendix B for reference to the underground detention basin and characteristics of the restrictor plate used in order to knock down the proposed peak flow. In summary, the volume required to mitigate the peak flow was a total of 15,997 cu. ft. in conjunction with a restrictor plate located in the manhole near the outlet structure. See appendix D for detailed storage volume calculations and detention report analysis.

Area B – Existing, Proposed, & Post-Detention Runoff Results:

Area B – Existing Hydrograph, Proposed Hydrograph, Post-Detention Hydrograph Results

Storm Event	Existing Peak Flow	Proposed Peak flow	Post-Detention Peak Flow
2-YEAR 1-HR	1.769 CFS	3.830 CFS	0.126 CFS
2-YEAR 3-HR	1.120 CFS	2.098 CFS	0.140 CFS
2-YEAR 6-HR	1.062 CFS	1.955 CFS	0.155 CFS
2-YEAR 24-HR	0.175 CFS	0.744 CFS	0.169 CFS
5-YEAR 1-HR	2.592 CFS	5.279 CFS	0.140 CFS
5-YEAR 3-HR	1.835 CFS	3.057 CFS	0.159 CFS
5-YEAR 6-HR	1.680 CFS	2.733 CFS	0.203 CFS
5-YEAR 24-HR	0.461 CFS	0.977 CFS	0.432 CFS
10-YEAR 1-HR	3.694 CFS	6.652 CFS	0.154 CFS
10-YEAR 3-HR	2.929 CFS	4.061 CFS	0.296 CFS
10-YEAR 6-HR	2.689 CFS	3.587 CFS	0.731 CFS
10-YEAR 24-HR	1.169 CFS	1.384 CFS	0.991 CFS
100-YEAR 1-HR	6.094 CFS	10.587 CFS	0.424 CFS
100-YEAR 3-HR	5.130 CFS	6.735 CFS	3.217 CFS
100-YEAR 6-HR	4.613 CFS	5.807 CFS	3.740 CFS
100-YEAR 24-HR	2.273 CFS	2.450 CFS	2.192 CFS

Area B – Post Developed Discussion:

The table above shows peak flow data based on the Hydraflow Hydrographs program mentioned in the “Methodology” section for Area/Pond B. The above table shows that the post-detention peak flows have been knocked down to below the existing peak flow. This was done by modeling the effects of our underground detention basin and restrictor plate at the outlet structure of the system. See conceptual utility plans in Appendix B for reference to the underground detention basin and characteristics of the restrictor plate used in order to knock down the proposed peak flow. In summary, the volume required to mitigate the peak flow was a total of 22,253 cu. ft. in conjunction with a restrictor plate located in the manhole near the outlet structure. See appendix D for detailed storage volume calculations and detention report analysis.

Area C – Existing, Proposed, & Post-Detention Runoff Results:

Area C – Existing Hydrograph, Proposed Hydrograph, Post-Detention Hydrograph Results

Storm Event	Existing Peak Flow	Proposed Peak flow	Post-Detention Peak Flow
2-YEAR 1-HR	3.568 CFS	7.752 CFS	0.289 CFS
2-YEAR 3-HR	2.285 CFS	4.218 CFS	0.312 CFS
2-YEAR 6-HR	2.159 CFS	3.928 CFS	0.335 CFS
2-YEAR 24-HR	0.358 CFS	1.477 CFS	0.357 CFS
5-YEAR 1-HR	5.236 CFS	10.726 CFS	0.313 CFS
5-YEAR 3-HR	3.723 CFS	6.189 CFS	0.345 CFS
5-YEAR 6-HR	3.423 CFS	5.531 CFS	0.437 CFS
5-YEAR 24-HR	0.943 CFS	1.940 CFS	0.943 CFS
10-YEAR 1-HR	7.481 CFS	13.593 CFS	0.338 CFS
10-YEAR 3-HR	5.948 CFS	8.298 CFS	0.496 CFS
10-YEAR 6-HR	5.494 CFS	7.330 CFS	2.088 CFS
10-YEAR 24-HR	2.400 CFS	2.799 CFS	1.951 CFS
100-YEAR 1-HR	12.354 CFS	21.785 CFS	1.333 CFS
100-YEAR 3-HR	10.437 CFS	13.852 CFS	8.168 CFS
100-YEAR 6-HR	9.436 CFS	11.941 CFS	9.391 CFS
100-YEAR 24-HR	4.673 CFS	5.025 CFS	4.506 CFS

Area C – Post Developed Discussion:

The table above shows peak flow data based on the Hydraflow Hydrographs program mentioned in the “Methodology” section for Area/Pond B. The above table shows that the post-detention peak flows have been knocked down to below the existing peak flow. This was done by modeling the effects of our underground detention basin and restrictor plate at the outlet structure of the system. See conceptual utility plans in Appendix B for reference to the underground detention basin and characteristics of the restrictor plate used in order to knock down the proposed peak flow. In summary, the volume required to mitigate the peak flow was a total of 41,421 cu. ft. in conjunction with a restrictor plate located in the manhole near the outlet structure. See appendix D for detailed storage volume calculations and detention report analysis.

Proposed Site Conditions – Rational Method Results:

Area A

Sub-Area	Size (Acres)	100 Year Peak Flow (Cfs) (confluence included)	Computer Estimated Pipe Diameter (In.)	Depth of Flow (In.)	Pipe Size Provided (In.)
A-1	0.12	0.54	12	3.3	12
A-2	0.14	1.14	12	5.9	12
A-3	0.14	1.73	12	7.6	12
A-4	0.14	2.31	12	9.7	12
A-5	0.48	4.12	15	10.6	18
A-6	0.68	4.68	18	10.9	18
A-7	0.23	5.50	18	11.1	18
A-8	0.20	6.21	21	12.6	24
A-9	0.47	2.12	12	9.2	12
A-10	0.30	3.38	12	7.7	12
A-11	0.16	4.05	15	10.6	18
A-12	0.11	4.50	18	13	18
A-13	0.18	5.21	18	13.6	18
A-14	0.55	12.39	21	14.5	24

Area B

Sub-Area	Size (Acres)	100 Year Peak Flow (Cfs) (confluence included)	Computer Estimated Pipe Diameter (In.)	Depth of Flow (In.)	Pipe Size Provided (In.)
B-1	0.47	2.12	12	7.5	12
B-2	0.26	3.26	12	8.9	12
B-3	0.25	4.32	15	11.1	18
B-4	0.19	5.11	15	12	18
B-5	0.32	1.39	12	4.4	12
B-6	0.17	2.10	12	6.9	12
B-7	0.18	2.84	12	9.3	12
B-8	0.33	1.42	12	6.8	12
B-9	0.42	3.15	15	10.6	18
B-10	0.29	6.89	21	15.5	24
B-11	0.83	14.98	27	18.2	30

Area C

Sub-Area	Size (Acres)	100 Year Peak Flow (Cfs) (confluence included)	Computer Estimated Pipe Diameter (In.)	Depth of Flow (In.)	Pipe Size Provided (In.)
C-1	0.62	2.76	15	10.2	18
C-2	0.11	0.50	12	3.9	12
C-3	0.14	3.27	15	10.6	18
C-4	0.35	4.49	18	11.1	18
C-5	0.30	5.52	18	12.1	18
C-6	0.23	6.29	21	13.2	24
C-7	1.5	11.08	24	15.9	24
C-9	0.36	12.21	24	18.1	24
C-10	0.69	3.11	15	8.9	18
C-11	0.56	5.43	15	9.5	18
C-12	0.17	6.15	15	10.5	18
C-13	0.18	6.87	18	10.3	18
C-14	0.24	1.08	12	5.3	12
C-15	0.32	2.40	12	7.7	12
C-16	0.42	4.25	18	10.3	18
C-17	0.30	5.54	18	12.3	18
C-18	1.10	16.33	30	19.5	30

Proposed Site Conditions – Rational Method Discussion:

The results shown above in the tables analyze the 100 Year Storm event since this storm will consider the highest peak flows for the system. AES software was used analyze flow through each drainage area. Please refer to Appendix C for AES Report of the 100 – Year Storm routing calculations where values shown in the table above have been highlighted. The program confluences flow from one drainage area to the next based on the time of concentration for each area. The table above shows the total confluence flow going through the pipe following each “Sub-Area”. This means the 100 Year Peak Flow shown in the table includes the peak flows coming from the “Sub-Area’s” joining each other. The program estimates the pipe size to handle the flow as well as the depth of flow in the pipe. Finally, the last column in the table above, shows pipe size provided for the system and shows each pipe in the system is adequately sized.

Proposed Site Conditions – Max Ponded Elevation Table:

Maximum Ponded Elevation

Storm Event	Pond A (1149.2 Top of Pond)	Pond B (1148.3 Top of Pond)	Pond C (1149.0 Top of Pond)
2-YEAR 1-HR	1144.96	1144.50	1145.69
2-YEAR 3-HR	1145.45	1144.92	1146.05
2-YEAR 6-HR	1146.02	1145.39	1146.45
2-YEAR 24-HR	1146.59	1145.91	1146.84
5-YEAR 1-HR	1145.47	1144.91	1146.07
5-YEAR 3-HR	1146.25	1145.55	1146.62
5-YEAR 6-HR	1146.94	1146.14	1147.12
5-YEAR 24-HR	1147.42	1146.63	1147.55
10-YEAR 1-HR	1146.07	1145.36	1146.51
10-YEAR 3-HR	1147.19	1146.27	1147.31
10-YEAR 6-HR	1147.81	1146.88	1147.84
10-YEAR 24-HR	1147.54	1146.88	1147.82
100-YEAR 1-HR	1147.64	1146.63	1147.69
100-YEAR 3-HR	1149.16	1147.94	1148.87
100-YEAR 6-HR	1149.13	1148.24	1149.00
100-YEAR 24-HR	1147.96	1147.23	1148.15

Proposed Site Conditions – Max Ponded Elevation Discussion:

The results above in the tables show the maximum depth or ponded elevation for each storm frequency and duration in relation to the top (or riser pipe) of each pond. As shown in the table, each storm frequency and duration will pond to at or below the top of the riser pipe. Therefore, each pond is protected from flooding and no downstream facilities will be damaged.

Proposed Site Conditions – Drive Aisle Inlet Capacity:

Sub-Area	Size (Acres)	100 Year Peak Flow (Cfs)	Inlet Size	Depth of Ponding (Ft.)	Depth to Adjacent Finish Floor (Ft.)
A-1	0.12	0.54	2'x2'	0.13	0.5
A-2	0.14	0.63	2'x2'	0.14	0.5
A-3	0.14	0.63	2'x2'	0.14	0.5
A-4	0.14	0.63	2'x2'	0.14	0.5
A-5	0.48	1.90	2'x2'	0.29	0.7
A-6	0.68	0.68	2'x2'	0.15	0.7
A-7	0.23	1.04	2'x2'	0.20	0.7
A-8	0.20	0.90	2'x2'	0.18	0.7
A-9	0.47	2.12	1'x1'	0.50	1.7
A-10	0.30	1.35	1'x1'	0.37	1.7
A-11	0.16	0.72	1'x1'	0.24	1.6
A-12	0.11	0.50	1'x1'	0.19	1.6
A-13	0.18	0.81	2'x2'	0.17	0.6
A-14	0.55	2.48	3'x3'	0.27	1.8
B-1	0.47	2.12	2'x2'	0.31	0.7
B-2	0.26	1.17	2'x2'	0.21	0.7
B-3	0.25	1.13	2'x2'	0.21	0.7
B-4	0.19	0.86	2'x2'	0.17	0.7
B-5	0.32	1.39	2'x2'	0.38	1.5
B-6	0.17	0.77	2'x2'	0.16	0.6
B-7	0.18	0.81	2'x2'	0.17	0.7
B-8	0.33	1.42	3.5'x3'	0.17	2.0
B-9	0.42	1.89	2'x2'	0.29	0.9
B-10	0.29	1.31	2'x2'	0.23	0.7
B-11	0.83	3.66	3'x3'	0.35	1.3
C-1	0.62	2.33	2'x2'	0.33	0.7
C-2	0.11	0.50	3.5x3'	0.09	1.5
C-3	0.14	0.63	2'x2'	0.14	0.7
C-4	0.35	1.51	2'x2'	0.25	1.3
C-5	0.30	1.35	2'x2'	0.23	0.7
C-6	0.23	1.04	3'x3'	0.15	0.7
C-7	1.50	4.96	3'x3'	0.49	0.9
C-9	0.36	1.62	3'x3'	0.20	0.6
C-10	0.69	3.11	2'x2'	0.41	3.3
C-11	0.56	2.53	2'x2'	0.35	1.2
C-12	0.17	0.77	2'x2'	0.16	0.6
C-13	0.18	0.81	2'x2'	0.17	0.7
C-14	0.24	1.08	2'x2'	0.20	1.7
C-15	0.32	1.44	3.5x3'	0.18	2.0
C-16	0.42	1.88	2'x2'	0.29	0.7
C-17	0.30	1.35	2'x2'	0.23	0.6
C-18	1.10	4.53	2'x2'	0.52	0.9

Proposed Site Conditions – Drive Aisle Inlet Capacity Discussion:

The drop inlet capacity for our site was analyzed by our excel spread sheet provided in Appendix F. Each drop inlet is analyzed as a rectangular weir and with the Q from our 100-year storm as calculated by the rational method being run over the inlet. Our

calculation then provides the head required to produce this flow across our drop inlet. The head is representative of the water surface level in the drive aisle during this rain event. The water surface level has been held below the adjacent finish floor and garage finish floor for each drop inlet. This shows that the number of drop inlets provided is adequate to provide flood protection to all structures on our site.

Section IV Conclusion

Riverside County Unit Hydrographs were utilized to generate hydrographs and Hydraflow Hydrographs was used to model the detention basins and outlet structures. For the 2-year, 5-year, 10-year & 100 year-storms, results show that discharge from the site in the developed condition is at or below the predeveloped condition. Therefore, the existing 84” storm drain along Washington Blvd. will not be impacted nor will the project adversely change the existing flooding condition. Since peak-flows leaving the site are mitigated to match the existing condition, the project will not worsen the existing flooding condition at the intersection of Washington and Nutmeg.

In addition to providing hydromodification in accordance to Riverside County Hydrology requirements, the project is also providing water quality measures in accordance to Riverside County Water Quality requirements per separate water quality report. In summary, before flow enters the detention system below ground, it is collected and discharged into above ground biofiltration ponds with subsurface filter media sized to treat the first 0.75 inches of rainfall in accordance with riverside county water quality requirements. As water percolates through the filter media, it is treated and then stored onsite before discharging into the public system at or below the predeveloped flow rate. Since flows discharging into the public system will be mitigated to at or below the predeveloped condition, and all mitigated flows are being directed to the existing public storm drain along Washington Blvd., the project will not worsen the existing flooding condition at the intersection of Washington and Nutmeg.

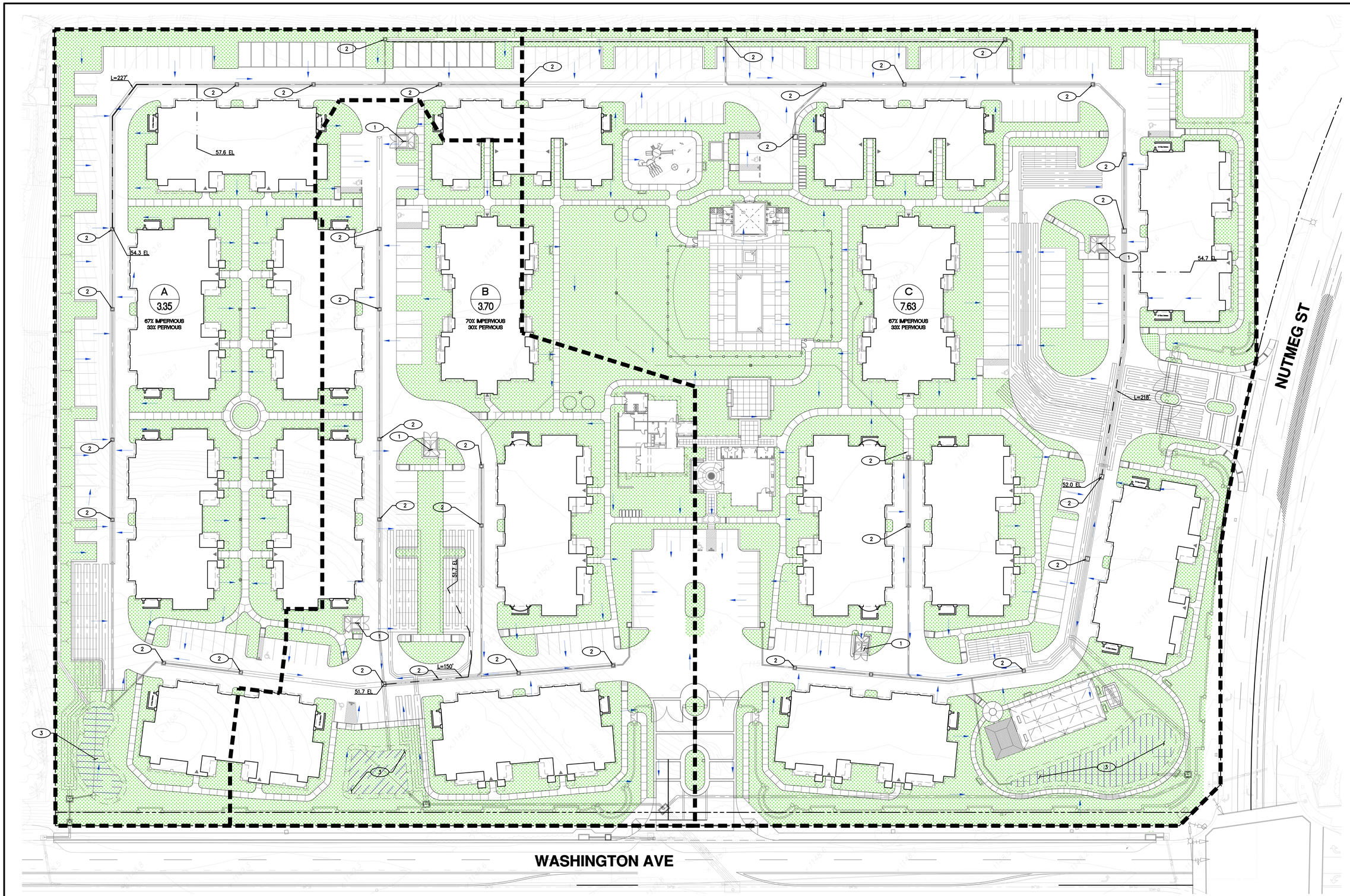
Each catch basin/drop inlet on-site was analyzed for capacity to handle the 100-year storm event. The inlets have been adequately sized to hold the flood level of the 100-year storm event below the FF on the adjacent buildings.

APPENDIX A

VICINITY MAP

APPENDIX B

Existing Hydrology Map
Proposed Hydrology Map
Conceptual Utility Plans (for Reference)
WSPG – Civil Design Calculations (for HGL)



LEGEND

- SURFACE FLOW
- DIRECTION OF FLOW
- X / XXX AC — DRAINAGE AREA NODE / AREA
- LANDSCAPE AREA

SUB AREA	AREA (AC)	IMPERVIOUS (%)	PERVIOUS (%)
A	3.35	67	33
B	3.70	70	30
C	7.63	67	33

30' 0' 30' 60' 90'

GRAPHIC SCALE: 1"=30'

NOT FOR CONSTRUCTION

160 S. Old Springs Road
Suite 210
Anaheim Hills, CA 92808
714-685-6860

DRC Engineering, Inc.
Civil Engineering/Land Surveying/Land Planning

NO.: REVISION: DATE:

PROJECT: **NUTMEG APARTMENTS**
NWC OF WASHINGTON AVE & NUTMEG ST
MURRIETA, CA 92562

DRAWING NAME: **PROPOSED HYDROLOGY MAP**

ISSUE:	HM
DATE:	2/28/20
CHECKED: RJV	DRAWN: MAB
DRAWING FILE:	18946 HM MAP
PROJECT NO.:	18-946
SHEET NUMBER:	1
OF	1 SHEETS
SCALE:	AS SHOWN

EXTERNAL REFERENCES: 8946ctn01 8946ctn02 8946ctn03 8946ctn04 8946ctn05 8946ctn06 8946ctn07 8946 Alt Site 8946 ITE Sh 8946ctn01 8946 All rights 8946 Sht-WA Connections 8-946 BUBA 8946 LS Site ENT 8946 LS Trees ENT 200212 8946 LS Trees ENT 200212 8946 Nutmeg Apartments Murrieta WQMP 8946 Nutmeg Apartments Murrieta WQMP 8946 Nutmeg Apartments Murrieta WQMP

NOT FOR CONSTRUCTION

DRC Engineering, Inc.
Civil Engineering/Land Surveying/Land Planning
160 S. Old Springs Road
Suite 210
Anaheim Hills, CA 92808
714-685-6860

NUTMEG ST

WASHINGTON AVE

A-5 0.48 AC — 65% IMPERVIOUS 35% PERVIOUS
A-4 0.14 AC — 80% IMPERVIOUS 20% PERVIOUS
A-3 0.14 AC — 76% IMPERVIOUS 24% PERVIOUS
A-2 0.14 AC — 80% IMPERVIOUS 20% PERVIOUS
A-1 0.12 AC — 94% IMPERVIOUS 6% PERVIOUS
C-1 0.62 AC — 75% IMPERVIOUS 25% PERVIOUS
C-3 0.14 AC — 88% IMPERVIOUS 12% PERVIOUS
C-4 0.35 AC — 74% IMPERVIOUS 26% PERVIOUS
B-1 0.47 AC — 73% IMPERVIOUS 27% PERVIOUS
C-2 0.11 AC — 65% IMPERVIOUS 35% PERVIOUS
C-5 0.30 AC — 65% IMPERVIOUS 35% PERVIOUS
A-9 0.47 AC — 68% IMPERVIOUS 32% PERVIOUS
C-10 0.69 AC — 43% IMPERVIOUS 57% PERVIOUS
C-11 0.56 AC — 69% IMPERVIOUS 31% PERVIOUS
C-6 0.23 AC — 79% IMPERVIOUS 21% PERVIOUS
A-6 0.15 AC — 80% IMPERVIOUS 20% PERVIOUS
B-2 0.26 AC — 86% IMPERVIOUS 14% PERVIOUS
C-7 1.50 AC — 70% IMPERVIOUS 30% PERVIOUS
A-7 0.23 AC — 71% IMPERVIOUS 29% PERVIOUS
A-10 0.30 AC — 46 IMPERVIOUS 54% PERVIOUS
B-3 0.25 AC — 80% IMPERVIOUS 20% PERVIOUS
B-6 0.17 AC — 77% IMPERVIOUS 23% PERVIOUS
B-5 0.32 AC — 68% IMPERVIOUS 32% PERVIOUS
C-14 0.24 AC — 62% IMPERVIOUS 38% PERVIOUS
C-12 0.17 AC — 78% IMPERVIOUS 22% PERVIOUS
A-8 0.20 AC — 80% IMPERVIOUS 20% PERVIOUS
A-11 0.16 AC — 62% IMPERVIOUS 38% PERVIOUS
B-4 0.19 AC — 88% IMPERVIOUS 12% PERVIOUS
B-7 0.18 AC — 86% IMPERVIOUS 14% PERVIOUS
B-8 0.33 AC — 62% IMPERVIOUS 38% PERVIOUS
C-15 0.32 AC — 69% IMPERVIOUS 31% PERVIOUS
C-13 0.18 AC — 88% IMPERVIOUS 12% PERVIOUS
C-9 0.36 AC — 77% IMPERVIOUS 23% PERVIOUS
A-12 0.11 AC — 62% IMPERVIOUS 38% PERVIOUS
A-14 0.55 AC — 42% IMPERVIOUS 58% PERVIOUS
A-13 0.18 AC — 78% IMPERVIOUS 22% PERVIOUS
B-11 0.83 AC — 60% IMPERVIOUS 40% PERVIOUS
B-9 0.42 AC — 73% IMPERVIOUS 27% PERVIOUS
C-16 0.42 AC — 73% IMPERVIOUS 27% PERVIOUS
C-18 1.10 AC — 45% IMPERVIOUS 55% PERVIOUS
B-10 0.29 AC — 73% IMPERVIOUS 27% PERVIOUS
C-17 0.30 AC — 75% IMPERVIOUS 25% PERVIOUS

LEGEND

- SURFACE FLOW
- PIPE FLOW
- X / XXX AC — DRAINAGE AREA NODE / AREA
- LANDSCAPE AREA

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

REVISION:	DATE:
NO.:	

PROJECT: **NUTMEG APARTMENTS**
NWC OF WASHINGTON AVE & NUTMEG ST
MURRIETA, CA 92562

DRAWING NAME: **RATIONAL METHOD HYDROLOGY MAP**

ISSUE:	HM
DATE:	2/28/20
CHECKED: RJV	DRAWN: MAB
DRAWING FILE: 18946 HM MAP	
PROJECT NO.: 18-946	
SHEET NUMBER:	1
OF 1	SHEETS
SCALE: AS SHOWN	

EXTERNAL REFERENCES - 8946ecn01 8946ecn01 8946ecn01 8946ecn01 8946ecn01 8946ecn01 8946 AR Site 8946 TE SS 8946TCH 8946 AR Lights 8946 SM-MA Connections 18-946 DWA 8946 LS Site ENT 8946 LS Trees ENT 200212 8946ecn01 LOWERED

CITY OF MURRIETA
CONCEPTUAL UTILITY PLAN
PARCEL MAP 5730

DISPOSITION NOTES

1 — PROTECT IN PLACE AS NOTED
2 — REMOVE/RELOCATE EX. CATCH BASIN
3 — PROTECT EXISTING OVERHEAD UTILITES ON POWER POLES AND UNDERGROUND 33KV OR LESS

STORM DRAIN CONSTRUCTION NOTES

30 — CONNECT TO EXISTING CATCH BASIN (INVERT ELEVATION TO BE FIELD VERIFIED)
31 — CONNECT TO EXISTING STORM DRAIN LINE (INVERT ELEVATION TO BE FIELD VERIFIED)
32 — INSTALL 6" PVC STORM DRAIN LINE
33 — INSTALL 12" HDPE STORM DRAIN LINE
34 — INSTALL 18" HDPE STORM DRAIN LINE
35 — INSTALL 24" HDPE STORM DRAIN LINE
36 — INSTALL 36" HDPE STORM DRAIN LINE
37 — INSTALL 42" HDPE STORM DRAIN LINE
38 — CONSTRUCT BROOKS 12"X12" DROP INLET WITH KRISTAR FILTER INSERT
39 — CONSTRUCT BROOKS 24"X24" DROP INLET WITH KRISTAR FILTER INSERT
40 — CONSTRUCT 3.5' CATCH BASIN PER SPPWC 300-3 ALONG WITH KRISTAR FILTER INSERT
41 — INSTALL 48" STORM DRAIN MANHOLE
42 — INSTALL 18" ATRIUM GRATE
43 — INSTALL 18" RCP STORM DRAIN LINE
44 — CONSTRUCT JUNCTION STRUCTURE
45 — INSTALL 4'X8' MODULAR WETLAND BIOFILTER W/ IRR PRECAST HOLE
46 — CONSTRUCT CONCRETE COLLAR
47 — INSTALL 60" HDPE STORM DRAIN LINE
48 — CONSTRUCT BROOKS 36"X36" DROP INLET WITH KRISTAR FILTER INSERT
49 — INSTALL 48" HDPE STORM DRAIN LINE
50 — INSTALL 6" PVC PERFORATED STORM DRAIN LINE

FIRE WATER CONSTRUCTION NOTES

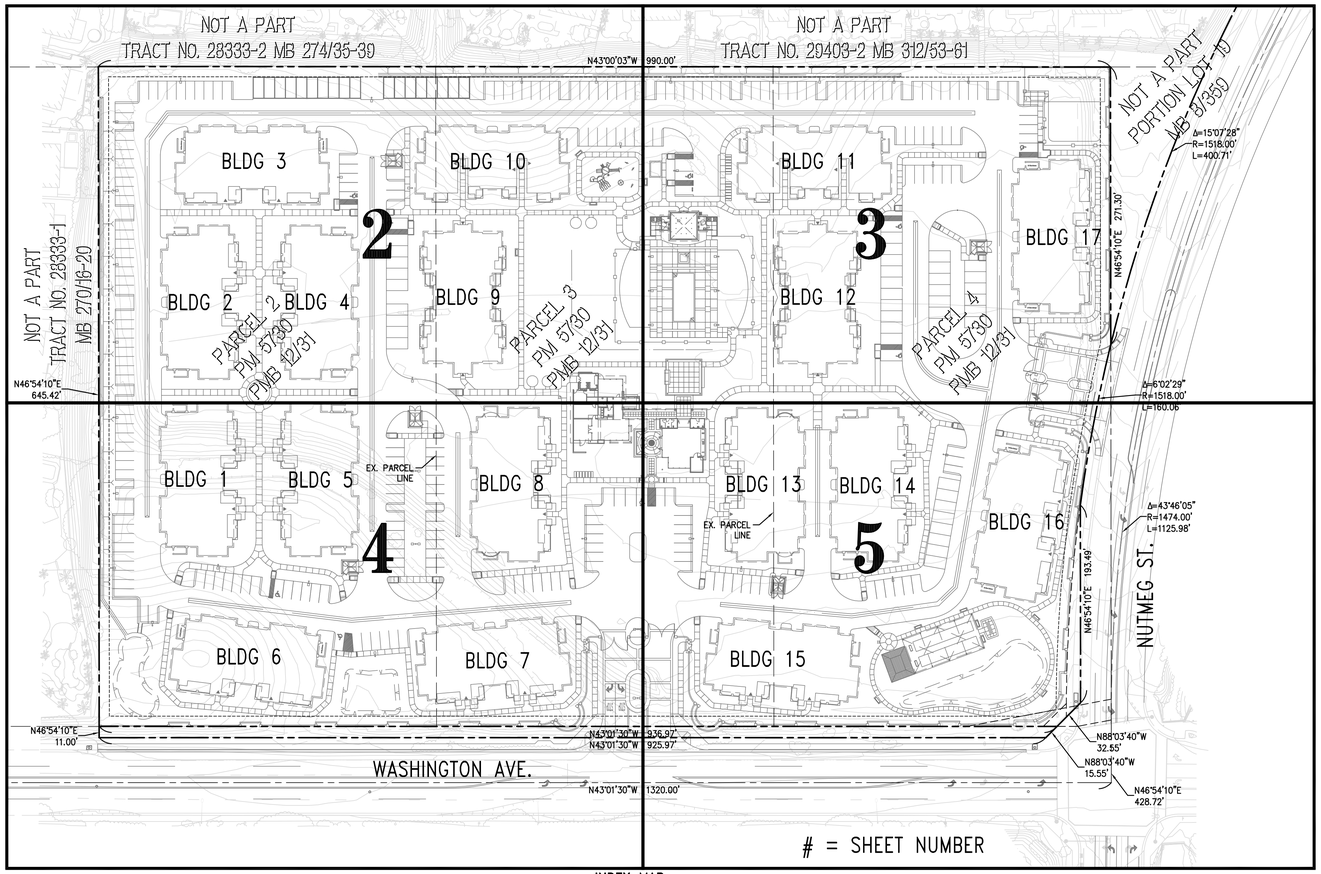
60 — CONNECT TO EXISTING WATER LINE
61 — INSTALL 6" PVC C-900 PIPE CLASS 200 WITH BEDDING
62 — INSTALL 12" PVC C-900 PIPE CLASS 200 WITH BEDDING
63 — INSTALL 6" FIRE HYDRANT ASSEMBLY WITH GATE VALVE
64 — INSTALL 10" DOUBLE CHECK DETECTOR ASSEMBLY
65 — INSTALL FDC
66 — INSTALL PIV

WATER CONSTRUCTION NOTES

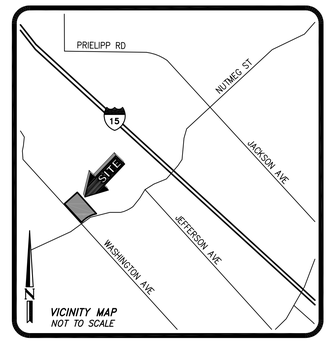
80 — CONNECT TO EXISTING WATER LINE
81 — INSTALL 2" PVC C-900 PIPE CLASS 200
82 — INSTALL 2" DOMESTIC WATER METER & SERVICE
83 — INSTALL 2" BACKFLOW PREVENTER

SEWER CONSTRUCTION NOTES

90 — CONNECT TO EXISTING SEWER LINE (INVERT ELEVATION TO BE FIELD VERIFIED)
91 — INSTALL 6" PVC SDR 35 SEWER LINE WITH BEDDING
92 — INSTALL 8" PVC SDR 35 SEWER LINE WITH BEDDING
93 — CONSTRUCT SEWER MANHOLE
94 — CONSTRUCT SEWER CLEAN OUT



INDEX MAP
1"=60



SHEET INDEX

TITLE SHEET	CU-1
CONCEPTUAL UTILITY PLAN	CU-2 TO CU-5
STORM DRAIN PROFILES	CU-6 TO CU-7

SYMBOL LEGEND:

1305 EXISTING CONTOUR
PROPERTY LINE
RIGHT OF WAY LINE
FLOW DIRECTION INDICATOR
HYDRAULIC GRADE LINE (HGL)

ABBREVIATIONS

BLDG = BUILDING
EX = EXISTING
FL = FLOW LINE
G = GAS
GB = GRADE BREAK
HDPE = HIGH DENSITY POLYETHYLENE
INV = INVERT
J.S. = JUNCTION STRUCTURE
MB = MAP BOOK
N.T.S. = NOT TO SCALE
℄ = PROPERTY LINE
PM = PARCEL MAP
PMB = PARCEL MAP BOOK
R/W = RIGHT-OF-WAY
S = SEWER
SD = STORM DRAIN
TG = TOP OF GRATE
TYP = TYPICAL
W = WATER

LANDSCAPE COVERAGE PERCENTAGE

LANDSCAPE AREA
230,192 SF (5.28 ACRES) = 36% LANDSCAPE

RECREATIONAL/OPEN SPACE AREA (INCLUDED IN LANDSCAPE AREA %)
61,991 SF (1.42 ACERS)

TOTAL PARKING & PAVED AREAS

ASPHALT PAVEMENT
170,085 SF (3.90 ACRES)

CONCRETE PAVEMENT
33,305 SF (0.76 ACRES)

UTILITIES:

WATER & SEWER — WESTERN MUNICIPAL WATER DISTRICT, 14205 MERIDIAN PKWY. RIVERSIDE, CA 92518, (951) 571-7100

GAS — SO CAL GAS COMPANY, 1981 W. LUGONIA, REDLANDS, CA 92374, (213) 244-1200

TELEPHONE — FRONTIER COMMUNICATIONS, 9 S. 4TH ST. REDLANDS, CA 92373, (855) 295-7926

ELECTRIC — SOUTHERN CALIFORNIA EDISON, 24487 PRIELIPP DR. WILDOMAR, CA 92595, (951) 249-8301

CABLE TV — SPECTRUM, 7337 CENTRAL AVE. RIVERSIDE, CA 92504, (833) 267-6097

SCHOOL DISTRICT — MURRIETA VALLEY UNIFIED SCHOOL DISTRICT, 41870 MCALBY CT. MURRIETA, CA 92563, (951) 696-1600

EASEMENTS AND DEDICATION NOTES

(A) *AN EASEMENT FOR ELECTRICAL SYSTEMS, COMMUNICATION SYSTEMS AND INCIDENTAL PURPOSES, RECORDED ON OCTOBER 18, 1989 AS INSTRUMENT NO. 361398 OF OFFICIAL RECORDS. (#15)*

(B) *THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "JOINT USE AGREEMENT" RECORDED JULY 29, 2002 AS INSTRUMENT NO. 2002-413824 OF OFFICIAL RECORDS. (#18)*

(C) *AN OFFER OF DEDICATION FOR PUBLIC IMPROVEMENTS AND INCIDENTAL PURPOSES, RECORDED MAY 9, 2002 AS INSTRUMENT NO. 2002-243192 OF OFFICIAL RECORDS. (#17)*

BASIS OF BEARINGS

THE BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE OF WASHINGTON AVENUE AS SHOWN ON PM 5730, FILED IN BOOK 12, PAGE 31, OF PARCEL MAPS RECORDS OF RIVERSIDE COUNTY BEING NORTH 43°01'30" WEST

SOIL ENGINEER

EEI ENGINEERING SOLUTIONS
2195 FARADAY AVE., SUITE K
CARLSBAD, CA 92008
CONTACT: JERRY L. MICHAL, RGE #2515
(760) 431-3747
REPORTS DATE: MAY 31, 2019
REPORT NO.: 72987.4
LIQUEFACTION NOT LIKELY

TOPOGRAPHY

CONTOURS AND ELEVATIONS PROVIDED FROM PHOTOGRAMMETRIC METHODS IN CONFORMANCE WITH THE U.S. MAP ACCURACY STANDARD AND SUPPLIED BY INLAND AERIAL SURVEYS, INC., 7117 ARLINGTON AVE. SUITE A, RIVERSIDE, CALIFORNIA 92503, PHONE: (951) 687-4252 DATED: 2-19-19

PROJECT DESCRIPTION

PROPOSED APARTMENT COMPLEX WITH LANDSCAPING AREAS, PARKING STALLS AND ASSOCIATED GARAGE SPACES

PARKING STALL COUNT

APARTMENT GARAGE PARKING: 150
GARAGE/CARPORT PARKING: 69
OPEN PARKING: 228
TOTAL GARAGE PARKING: 219
TOTAL SITE PARKING: 447

ZONING

MULTI-FAMILY 1,
RESIDENTIAL (MF-1)

LAND USE

EXISTING: VACANT LAND
PROPOSED: MULTI-FAMILY 1, RESIDENTIAL (MF-1)

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF MURRIETA, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A:

PARCELS 2 AND 3 OF PARCEL MAP NO. 5730, AS SHOWN BY MAP ON FILE IN BOOK 12 PAGE 31 OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

PARCEL B:

PARCEL 4 OF PARCEL MAP NO. 5730 AS SHOWN BY MAP ON FILE IN BOOK 12 PAGE(S) 31 OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

TOGETHER WITH THAT PORTION OF NUTMEG STREET, VACATED, WHICH WOULD PASS BY OPERATION OF LAW, PURSUANT TO THAT CERTAIN RESOLUTION – STREET VACATION RECORDED JANUARY 28, 2002, AS INSTRUMENT NO. 02-046667 OF OFFICIAL RECORDS.

ASSESORS PARCEL NUMBER (APN)

906-020-012-4, 906-020-013-5,
906-020-092-6

OWNER/APPLICANT

NUTMEG/WASHINGTON DEVELOPMENT, L.P.
32823 TEMECULA PKWY., SUITE A
TEMECULA, CA 92592
CONTACT: ANDREW DIXON
(951) 240-5261
ANDREW@PWDEVELOPMENT.COM

FLOOD ZONE

THE LAND SHOWN ON THIS SURVEY LIES ENTIRELY WITHIN FLOOD ZONE "X" (UNSHADED), BEING DESCRIBED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD" PER FLOOD INSURANCE RATE MAP (FIRM) – COMMUNITY PANEL NUMBER 06065C2705G, DATED AUGUST 28, 2008.

PROJECT AREA
NET AREA: 14.38 AC
GROSS AREA: 14.45 AC
DISTURBED AREA: 14.45 AC

EARTHWORK QUANTITIES	
CUT: 12,348 CY	FILL: 52,185 CY
TOTAL EARTHWORK: 39,838 CY FILL	

160 S. Old Springs Road
Suite 210
Anaheim Hills, CA 92808
714-685-6860
DRC Engineering, Inc.
Civil Engineering/Land Surveying/Land Planning

NOT FOR CONSTRUCTION

NO.:	REVISION:	DATE:

PROJECT: A 210 UNIT COMMUNITY FOR NUTMEG/WASHINGTON DEVELOPMENT, L.P. NWC OF WASHINGTON AVE & NUTMEG ST MURRIETA, CA 92562 - DP-2019-1997

DRAWING NAME: CONCEPTUAL UTILITY PLAN

ISSUE:	CONCEPTUAL
DATE:	3/9/20
CHECKED: RJV	DRAWN: MAB
DRAWING FILE:	8946cu101
PROJECT NO.:	18-946
SHEET NUMBER:	CU-1
OF 7	SHEETS
SCALE:	AS SHOWN

EXTERNAL REFERENCES: 8946ttm01 8946str01 8946str02 8946str03 8946str04 8946str05 8946str06 8946str07 8946str08 8946 SW-WA Connections 18-946 DUMA 8946 LS Site ENT 8946 AR Lots

NOT A PART
EXISTING ZONING: RESIDENTIAL
APN 906-422-(002 - 005)
TRACT 28333-2 MB 274/35-39

NOT A PART
EXISTING ZONING: RESIDENTIAL
APN 906-601-(007 - 016,019)
TRACT 29403 MB 312/53-61

NOT A PART
EXISTING ZONING: RESIDENTIAL
APN 906-413-(001, 003 - 010, 018)
TRACT 28333-1 MB 270/16-20

N43°00'03"W 990.00'

10' BUILDING SETBACK LINE

Garage 1

Garage 2

Bldg 3
Type A1

Bldg 10
Type A3

Bldg 9
Type B

Bldg 2
Type A2

Bldg 4
Type A2

Garage 3

Garage 4

PARCEL 2
PM NO. 5730
PMB 12/31

PARCEL 3
PM NO. 5730
PMB 12/31

Pool Equip

"Open Play"

Leasing

EX. PARCEL LINE

10' BUILDING SETBACK

N46°54'10"E
645.42'

1157.8 TG
1154.8 INV

1155.8 TG
1151.4 INV IN
1151.3 INV OUT

1155.8 TG
1151.8 INV IN
1151.7 INV OUT

1152.0
INV

1155.8 TG
1152.3 INV IN
1152.2 INV OUT

1155.8 TG
1152.8 INV

1154.3 TG
1150.5 INV IN
1150.4 INV OUT

1151.7
INV

1154.3 TG
1151.3 INV

1153.6 TG
1151.0 INV

1149.7
INV

1148.8
INV

1150.2
INV

1154.3 TG
1150.1 INV IN
1150.0 INV OUT

1150.7 BOT SD
1149.7 TOP S

1154.3 TG
1150.9 INV IN
1150.8 INV OUT

1151.4
INV

1153.0 TG
1151.5 INV

1151.3 BOT SD
1146.9 TOP S

1153.5 TG
1149.6 INV IN
1149.5 INV OUT

1153.5 TG
1150.2 INV IN
1150.1 INV OUT

S=0.004 S=0.024 S=0.006 S=0.003 S=0.032 S=0.031 S=0.005 S=0.008

SEE SHEET CU-4

SEE SHEET CU-3

DISPOSITION NOTES

1 PROTECT IN PLACE AS NOTED
2 REMOVE/RELOCATE EX. CATCH BASIN
3 PROTECT EXISTING OVERHEAD UTILITES ON POWER POLES AND UNDERGROUND 33KV OR LESS

STORM DRAIN CONSTRUCTION NOTES

30 CONNECT TO EXISTING CATCH BASIN (INVERT ELEVATION TO BE FIELD VERIFIED)
31 CONNECT TO EXISTING STORM DRAIN LINE (INVERT ELEVATION TO BE FIELD VERIFIED)
32 INSTALL 6" PVC STORM DRAIN LINE
33 INSTALL 12" HDPE STORM DRAIN LINE
34 INSTALL 18" HDPE STORM DRAIN LINE
35 INSTALL 24" HDPE STORM DRAIN LINE
36 INSTALL 36" HDPE STORM DRAIN LINE
37 INSTALL 42" HDPE STORM DRAIN LINE
38 CONSTRUCT BROOKS 12"X12" DROP INLET WITH KRISTAR FILTER INSERT
39 CONSTRUCT BROOKS 24"X24" DROP INLET WITH KRISTAR FILTER INSERT
40 CONSTRUCT 3.5' CATCH BASIN PER SPPWC 300-3 ALONG WITH KRISTAR FILTER INSERT
41 INSTALL 48" STORM DRAIN MANHOLE
42 INSTALL 18" ATRIUM GRATE
43 INSTALL 18" RCP STORM DRAIN LINE
44 CONSTRUCT JUNCTION STRUCTURE
45 INSTALL 4'X8' MODULAR WETLAND BIOFILTER W/ IRR PRECAST HOLE
46 CONSTRUCT CONCRETE COLLAR
47 INSTALL 60" HDPE STORM DRAIN LINE
48 CONSTRUCT BROOKS 36"X36" DROP INLET WITH KRISTAR FILTER INSERT
49 INSTALL 48" HDPE STORM DRAIN LINE
50 INSTALL 6" PVC PERFORATED STORM DRAIN LINE

FIRE WATER CONSTRUCTION NOTES

60 CONNECT TO EXISTING WATER LINE
61 INSTALL 6" PVC C-900 PIPE CLASS 200 WITH BEDDING
62 INSTALL 12" PVC C-900 PIPE CLASS 200 WITH BEDDING
63 INSTALL 6" FIRE HYDRANT ASSEMBLY WITH GATE VALVE
64 INSTALL 10" DOUBLE CHECK DETECTOR ASSEMBLY
65 INSTALL FDC
66 INSTALL PIV

WATER CONSTRUCTION NOTES

80 CONNECT TO EXISTING WATER LINE
81 INSTALL 2" PVC C-900 PIPE CLASS 200
82 INSTALL 2" DOMESTIC WATER METER & SERVICE
83 INSTALL 2" BACKFLOW PREVENTER

SEWER CONSTRUCTION NOTES

90 CONNECT TO EXISTING SEWER LINE (INVERT ELEVATION TO BE FIELD VERIFIED)
91 INSTALL 6" PVC SDR 35 SEWER LINE WITH BEDDING
92 INSTALL 8" PVC SDR 35 SEWER LINE WITH BEDDING
93 CONSTRUCT SEWER MANHOLE
94 CONSTRUCT SEWER CLEAN OUT

20' 0' 20' 40' 60'
GRAPHIC SCALE: 1"=20'

NOT FOR CONSTRUCTION

160 S. Old Springs Road
Suite 210
Anaheim Hills, CA 92808
714-685-6860

DRC Engineering, Inc.
Civil Engineering/Land Surveying/Land Planning

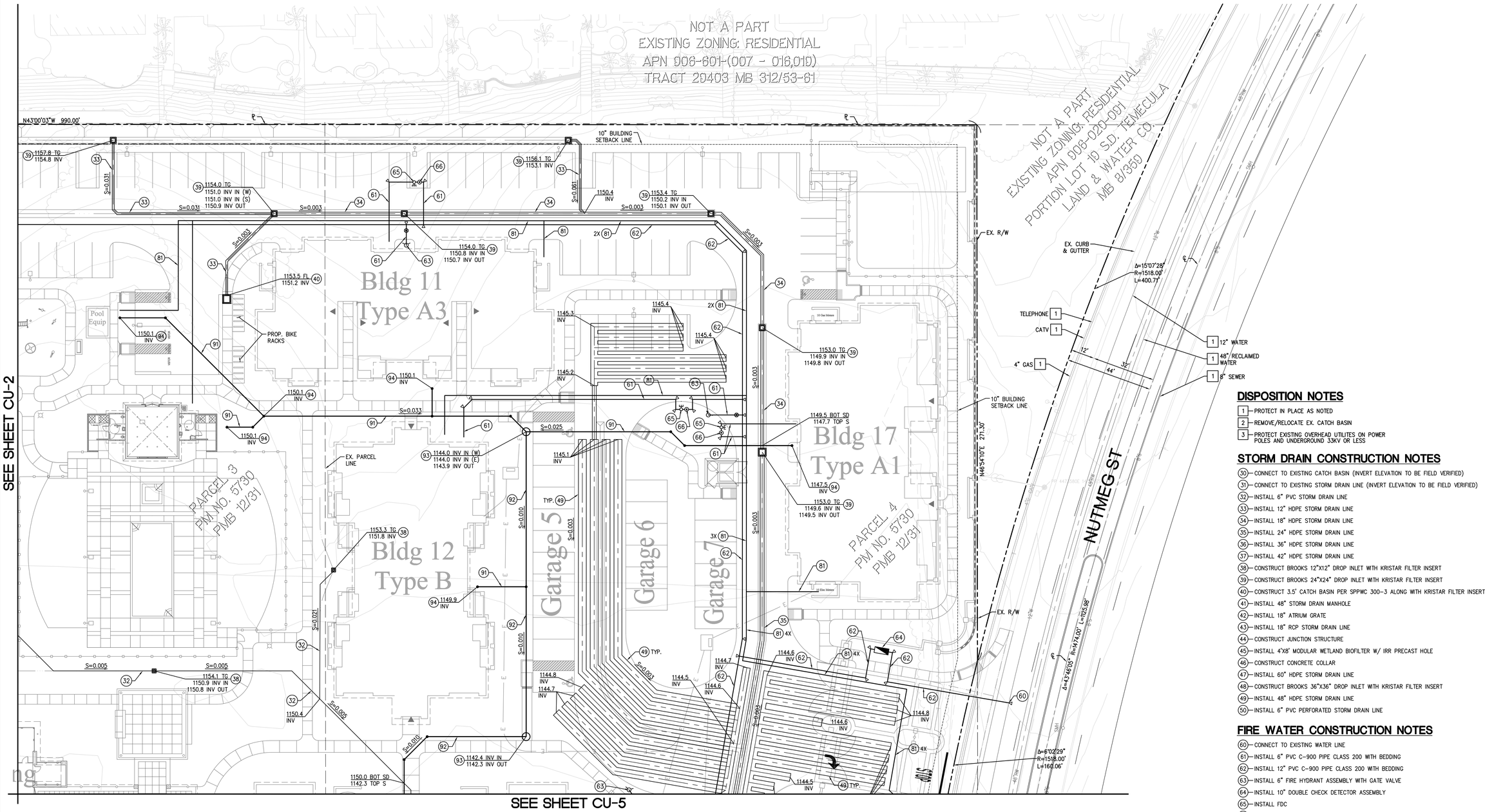
NO.:	REVISION:	DATE:

PROJECT:
A 210 UNIT COMMUNITY FOR
NUTMEG/WASHINGTON DEVELOPMENT, L.P.
NWC OF WASHINGTON AVE & NUTMEG ST
MURRIETA, CA 92562 - DP-2019-1997

DRAWING NAME: CONCEPTUAL UTILITY PLAN

ISSUE:	CONCEPTUAL
DATE:	3/9/20
CHECKED: RJV	DRAWN: MAB
DRAWING FILE:	8946cu101
PROJECT NO.:	18-946
SHEET NUMBER:	CU-2
OF 7	SHEETS
SCALE:	AS SHOWN

EXTERNAL REFERENCES: 8946en01 8946en101 8946en100 8946cu100 8946 AR Site 8946 TS 8946cg01 LOWERED 8946ft01 8946 RP light3 8946 SW-WA Connections 18-946 DUMA 8946 LS Site ENT 8946 LS Trees ENT 20012 8946cg100
PLOTTED: Mar 9, 2020 @ 7:56am BY: DAN
DRAWING: J:\projects\8946\cad\cu\8946cu101.dwg LAYOUT: 8946cu101 USER: dan



DISPOSITION NOTES

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92 — INSTALL 8" PVC SDR 35 SEWER LINE WITH BEDDING
93 — CONSTRUCT SEWER MANHOLE
94 — CONSTRUCT SEWER CLEAN OUT

20' 0' 20' 40' 60'
GRAPHIC SCALE: 1"=20'

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160 S. Old Springs Road
Suite 210
Anaheim Hills, CA 92808
714-685-6860

NOT FOR CONSTRUCTION

DATE:
NO.: REVISION:

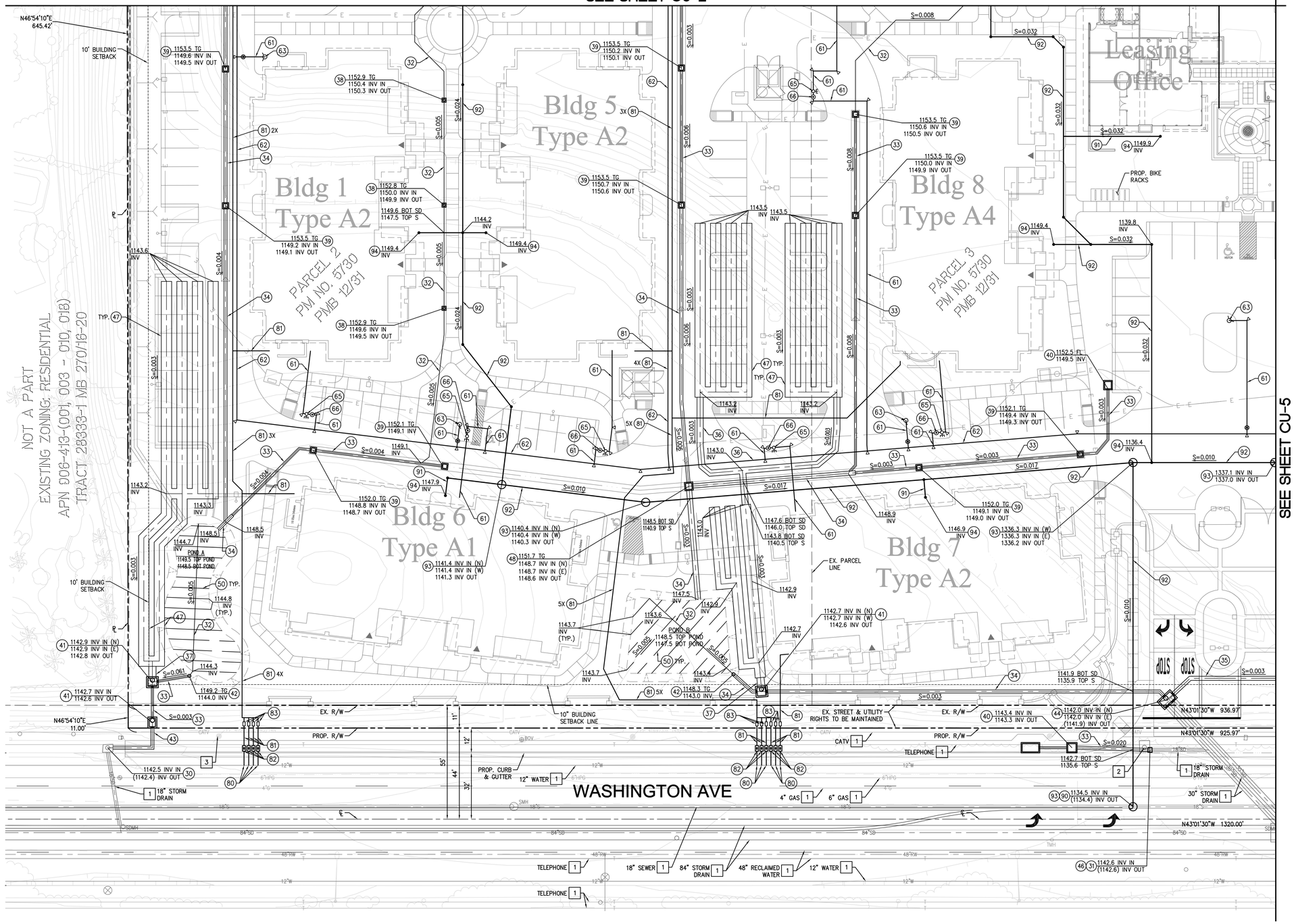
PROJECT:
A 210 UNIT COMMUNITY FOR
NUTMEG/WASHINGTON DEVELOPMENT, L.P.
NWC OF WASHINGTON AVE & NUTMEG ST
MURRIETA, CA 92562 - DP-2019-1997

DRAWING NAME: CONCEPTUAL UTILITY PLAN

ISSUE:	CONCEPTUAL
DATE:	3/9/20
CHECKED: RJV	DRAWN: MAB
DRAWING FILE:	8946cu101
PROJECT NO.:	18-946
SHEET NUMBER:	CU-3
OF	7 SHEETS
SCALE:	AS SHOWN

EXTERNAL REFERENCES: 8946ntn01 8946ntn02 8946ntn03 8946ntn04 8946ntn05 8946ntn06 8946ntn07 8946ntn08 8946ntn09 8946ntn10 8946ntn11 8946ntn12 8946ntn13 8946ntn14 8946ntn15 8946ntn16 8946ntn17 8946ntn18 8946ntn19 8946ntn20 8946ntn21 8946ntn22 8946ntn23 8946ntn24 8946ntn25 8946ntn26 8946ntn27 8946ntn28 8946ntn29 8946ntn30 8946ntn31 8946ntn32 8946ntn33 8946ntn34 8946ntn35 8946ntn36 8946ntn37 8946ntn38 8946ntn39 8946ntn40 8946ntn41 8946ntn42 8946ntn43 8946ntn44 8946ntn45 8946ntn46 8946ntn47 8946ntn48 8946ntn49 8946ntn50 8946ntn51 8946ntn52 8946ntn53 8946ntn54 8946ntn55 8946ntn56 8946ntn57 8946ntn58 8946ntn59 8946ntn60 8946ntn61 8946ntn62 8946ntn63 8946ntn64 8946ntn65 8946ntn66 8946ntn67 8946ntn68 8946ntn69 8946ntn70 8946ntn71 8946ntn72 8946ntn73 8946ntn74 8946ntn75 8946ntn76 8946ntn77 8946ntn78 8946ntn79 8946ntn80 8946ntn81 8946ntn82 8946ntn83 8946ntn84 8946ntn85 8946ntn86 8946ntn87 8946ntn88 8946ntn89 8946ntn90 8946ntn91 8946ntn92 8946ntn93 8946ntn94 8946ntn95 8946ntn96 8946ntn97 8946ntn98 8946ntn99 8946ntn100

SEE SHEET CU-2



DISPOSITION NOTES

1. PROTECT IN PLACE AS NOTED
2. REMOVE/RELOCATE EX. CATCH BASIN
3. PROTECT EXISTING OVERHEAD UTILITES ON POWER POLES AND UNDERGROUND 33KV OR LESS

STORM DRAIN CONSTRUCTION NOTES

30. CONNECT TO EXISTING CATCH BASIN (INVERT ELEVATION TO BE FIELD VERIFIED)
31. CONNECT TO EXISTING STORM DRAIN LINE (INVERT ELEVATION TO BE FIELD VERIFIED)
32. INSTALL 6" PVC STORM DRAIN LINE
33. INSTALL 12" HDPE STORM DRAIN LINE
34. INSTALL 18" HDPE STORM DRAIN LINE
35. INSTALL 24" HDPE STORM DRAIN LINE
36. INSTALL 36" HDPE STORM DRAIN LINE
37. INSTALL 42" HDPE STORM DRAIN LINE
38. CONSTRUCT BROOKS 12"X12" DROP INLET WITH KRISTAR FILTER INSERT
39. CONSTRUCT BROOKS 24"X24" DROP INLET WITH KRISTAR FILTER INSERT
40. CONSTRUCT 3.5' CATCH BASIN PER SPPWC 300-3 ALONG WITH KRISTAR FILTER INSERT
41. INSTALL 48" STORM DRAIN MANHOLE
42. INSTALL 18" ATRIUM GRATE
43. INSTALL 18" RCP STORM DRAIN LINE
44. CONSTRUCT JUNCTION STRUCTURE
45. INSTALL 4'X8' MODULAR WETLAND BIOFILTER W/ IRR PRECAST HOLE
46. CONSTRUCT CONCRETE COLLAR
47. INSTALL 60" HDPE STORM DRAIN LINE
48. CONSTRUCT BROOKS 36"X36" DROP INLET WITH KRISTAR FILTER INSERT
49. INSTALL 48" HDPE STORM DRAIN LINE
50. INSTALL 6" PVC PERFORATED STORM DRAIN LINE

FIRE WATER CONSTRUCTION NOTES

60. CONNECT TO EXISTING WATER LINE
61. INSTALL 6" PVC C-900 PIPE CLASS 200 WITH BEDDING
62. INSTALL 12" PVC C-900 PIPE CLASS 200 WITH BEDDING
63. INSTALL 6" FIRE HYDRANT ASSEMBLY WITH GATE VALVE
64. INSTALL 10" DOUBLE CHECK DETECTOR ASSEMBLY
65. INSTALL FDC
66. INSTALL PIV

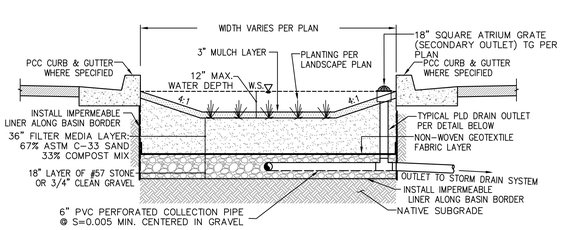
WATER CONSTRUCTION NOTES

80. CONNECT TO EXISTING WATER LINE
81. INSTALL 2" PVC C-900 PIPE CLASS 200
82. INSTALL 2" DOMESTIC WATER METER & SERVICE
83. INSTALL 2" BACKFLOW PREVENTER

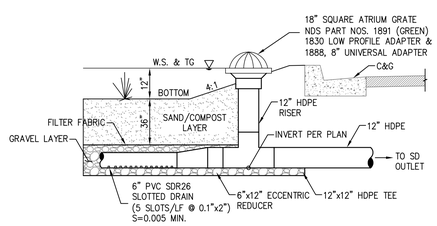
SEWER CONSTRUCTION NOTES

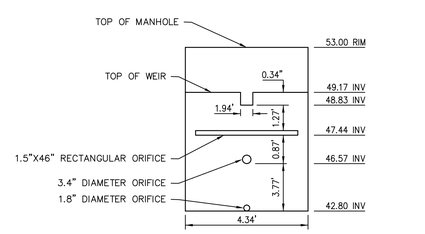
90. CONNECT TO EXISTING SEWER LINE (INVERT ELEVATION TO BE FIELD VERIFIED)
91. INSTALL 6" PVC SDR 35 SEWER LINE WITH BEDDING
92. INSTALL 8" PVC SDR 35 SEWER LINE WITH BEDDING
93. CONSTRUCT SEWER MANHOLE
94. CONSTRUCT SEWER CLEAN OUT

SEE SHEET CU-5



BIOFILTRATION POND DETAIL
N.T.S.





OUTLET STRUCTURE DETAIL (POND A)
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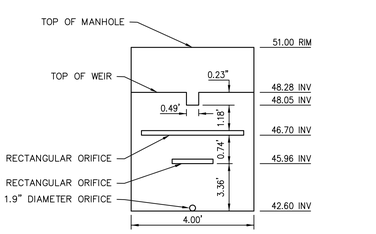

OUTLET STRUCTURE DETAIL (POND B)
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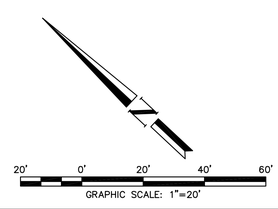

DRC Engineering, Inc.
Civil Engineering/Land Surveying/Land Planning
160 S. Old Springs Road
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Anaheim Hills, CA 92808
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ISSUE:	CONCEPTUAL
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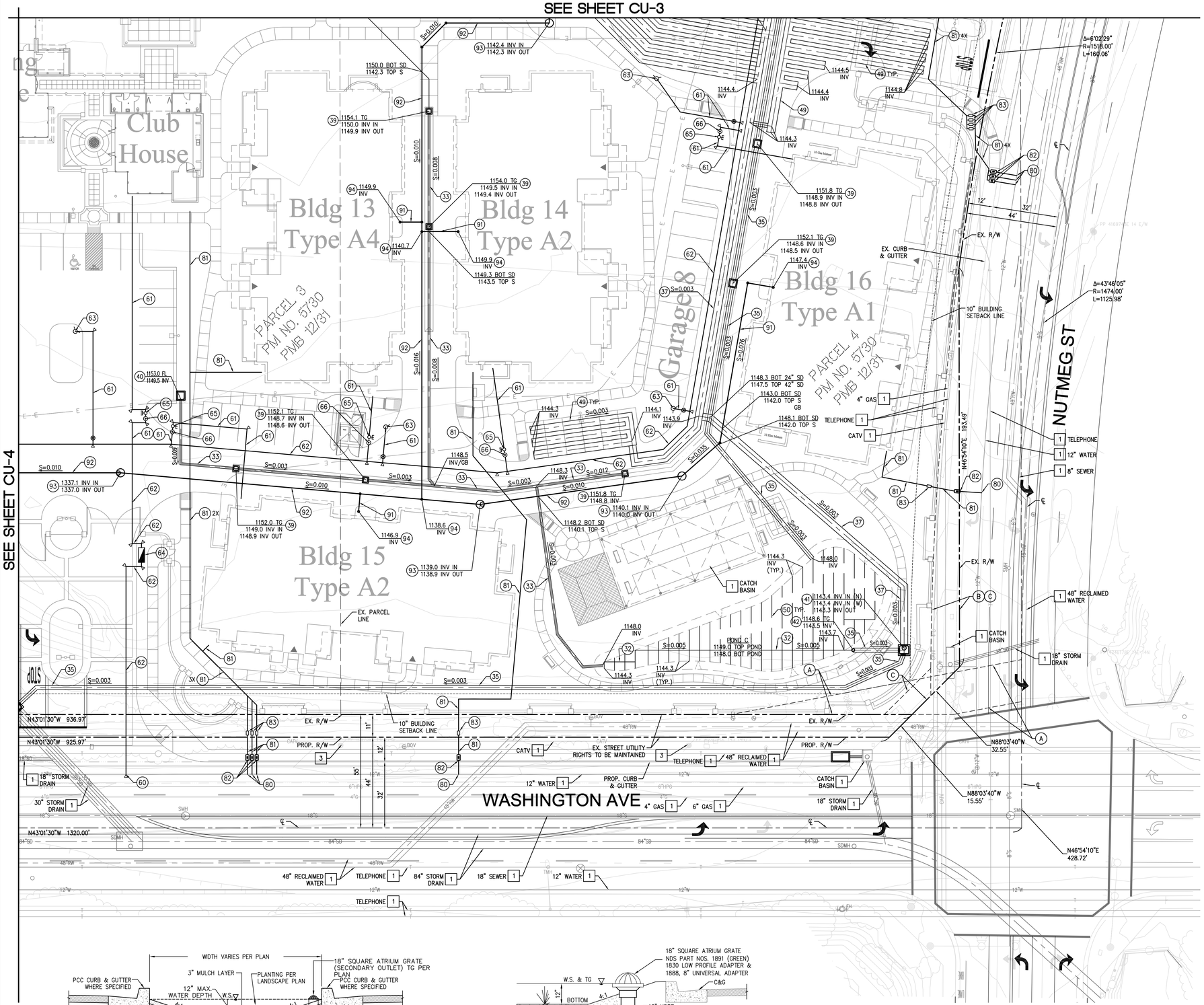
DRAWING FILE:	8946cu101
PROJECT NO.:	18-946
SHEET NUMBER:	CU-4
OF	7 SHEETS
SCALE:	AS SHOWN

SEE SHEET CU-3

SEE SHEET CU-4



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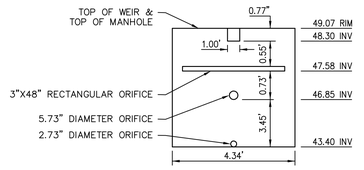
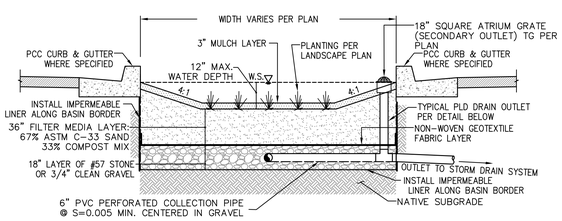
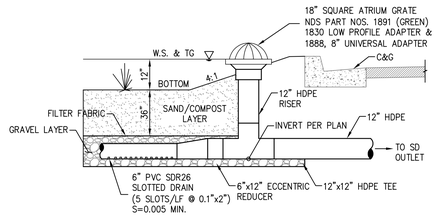


OUTLET STRUCTURE DETAIL (POND C)

N.T.S.





BIOFILTRATION POND DETAIL

N.T.S.

EASEMENTS AND DEDICATION NOTES

(A) *AN EASEMENT FOR ELECTRICAL SYSTEMS, COMMUNICATION SYSTEMS AND INCIDENTAL PURPOSES, RECORDED ON OCTOBER 18, 1989 AS INSTRUMENT NO. 361398 OF OFFICIAL RECORDS. (#15)*

(B) *THE TERMS, PROVISIONS AND EASEMENT(S) CONTAINED IN THE DOCUMENT ENTITLED "JOINT USE AGREEMENT" RECORDED JULY 29, 2002 AS INSTRUMENT NO. 2002-413824 OF OFFICIAL RECORDS. (#18)*

(C) *AN OFFER OF DEDICATION FOR PUBLIC IMPROVEMENTS AND INCIDENTAL PURPOSES, RECORDED MAY 9, 2002 AS INSTRUMENT NO. 2002-243192 OF OFFICIAL RECORDS. (#17)*

20' 0' 20' 40' 60'

GRAPHIC SCALE: 1"=20'

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EXTERNAL REFERENCES: 8946ltm01 8946ltm02 8946ltm03 8946ltm04 8946ltm05 8946cu100 8946 AR Site 8946 TE Site 8946cgt01 (LOWERED) 8946ltm01 8946 AR Lights 8946 SD-mh Connections 18-946 DJMA 8946 LS Trees ENT 200212 8946cg100 8946cu101 8946cu102 8946cu103 8946cu104 8946cu105 8946cu106 8946cu107 8946cu108 8946cu109 8946cu110 8946cu111 8946cu112 8946cu113 8946cu114 8946cu115 8946cu116 8946cu117 8946cu118 8946cu119 8946cu120 8946cu121 8946cu122 8946cu123 8946cu124 8946cu125 8946cu126 8946cu127 8946cu128 8946cu129 8946cu130 8946cu131 8946cu132 8946cu133 8946cu134 8946cu135 8946cu136 8946cu137 8946cu138 8946cu139 8946cu140 8946cu141 8946cu142 8946cu143 8946cu144 8946cu145 8946cu146 8946cu147 8946cu148 8946cu149 8946cu150 8946cu151 8946cu152 8946cu153 8946cu154 8946cu155 8946cu156 8946cu157 8946cu158 8946cu159 8946cu160 8946cu161 8946cu162 8946cu163 8946cu164 8946cu165 8946cu166 8946cu167 8946cu168 8946cu169 8946cu170 8946cu171 8946cu172 8946cu173 8946cu174 8946cu175 8946cu176 8946cu177 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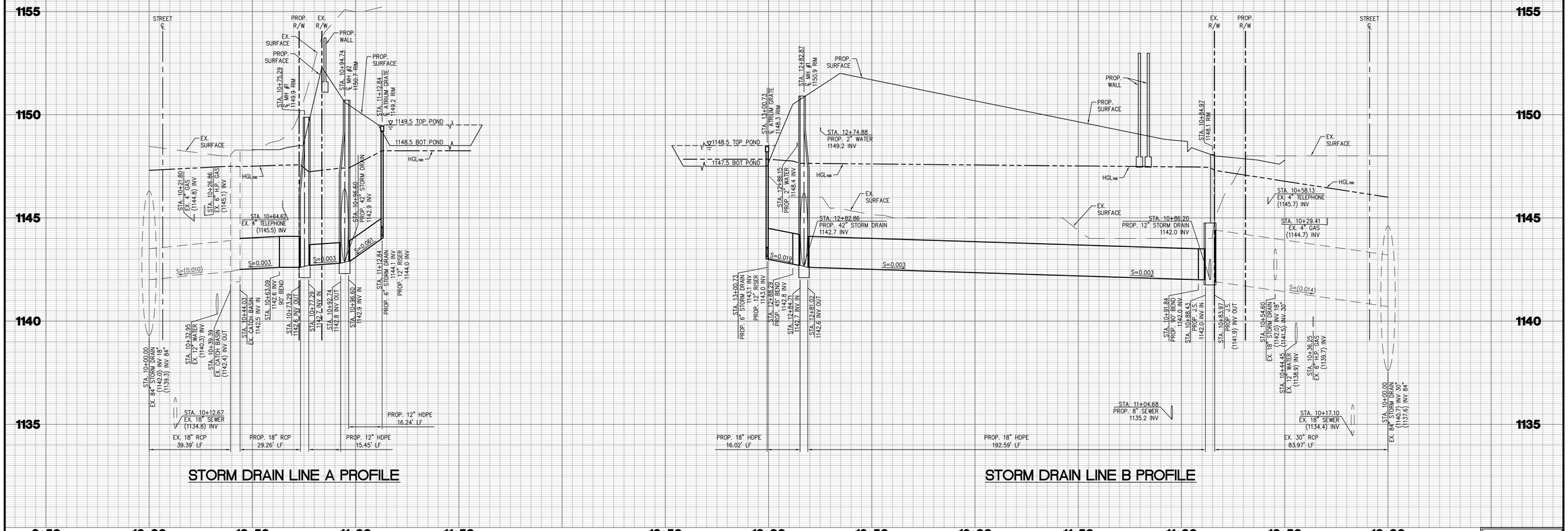
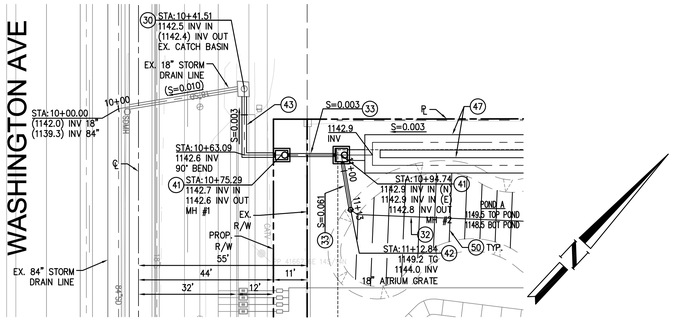
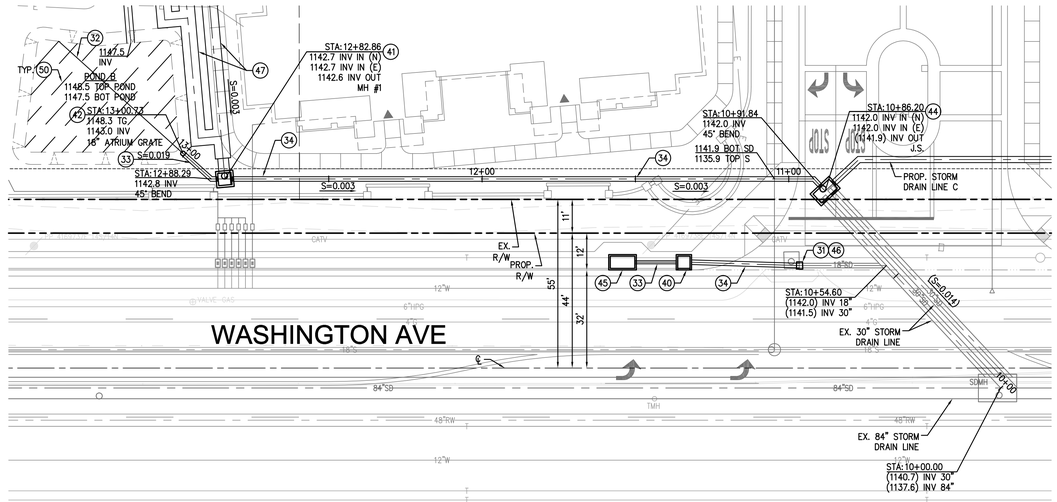


PROFILE SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'



STORM DRAIN LINE A PLAN



STORM DRAIN LINE B PLAN

20' 0' 20' 40' 60'
GRAPHIC SCALE: 1"=20'

STORM DRAIN CONSTRUCTION NOTES

(30) CONNECT TO EXISTING CATCH BASIN (INVERT ELEVATION TO BE FIELD VERIFIED)
(31) CONNECT TO EXISTING STORM DRAIN LINE (INVERT ELEVATION TO BE FIELD VERIFIED)
(32) INSTALL 6" PVC STORM DRAIN LINE
(33) INSTALL 12" HDPE STORM DRAIN LINE
(34) INSTALL 18" HDPE STORM DRAIN LINE
(35) INSTALL 24" HDPE STORM DRAIN LINE
(36) INSTALL 36" HDPE STORM DRAIN LINE
(37) INSTALL 42" HDPE STORM DRAIN LINE
(38) CONSTRUCT BROOKS 12"X12" DROP INLET WITH KRISTAR FILTER INSERT
(39) CONSTRUCT BROOKS 24"X24" DROP INLET WITH KRISTAR FILTER INSERT
(40) CONSTRUCT 3.5' CATCH BASIN PER SPPWC 300-3 ALONG WITH KRISTAR FILTER INSERT
(41) INSTALL 48" STORM DRAIN MANHOLE
(42) INSTALL 18" ATRIUM GRATE
(43) INSTALL 18" RCP STORM DRAIN LINE
(44) CONSTRUCT JUNCTION STRUCTURE
(45) INSTALL 4'X8' MODULAR WETLAND BIOFILTER W/ IRR PRECAST HOLE
(46) CONSTRUCT CONCRETE COLLAR
(47) INSTALL 60" HDPE STORM DRAIN LINE
(48) CONSTRUCT BROOKS 36"X36" DROP INLET WITH KRISTAR FILTER INSERT
(49) INSTALL 48" HDPE STORM DRAIN LINE
(50) INSTALL 6" PVC PERFORATED STORM DRAIN LINE

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Civil Engineering/Land Surveying/Land Planning

NOT FOR CONSTRUCTION

NO.:	REVISION:	DATE:

PROJECT:
A 210 UNIT COMMUNITY FOR
NUTMEG/WASHINGTON DEVELOPMENT, L.P.
NWC OF WASHINGTON AVE & NUTMEG ST
MURRIETA, CA 92562 - DP-2019-1997

DRAWING NAME:
STORM DRAIN PLAN & PROFILE

ISSUE:	CONCEPTUAL
DATE:	3/9/20
CHECKED: RJV	DRAWN: MAB
DRAWING FILE:	8946cu101
PROJECT NO.:	18-946
SHEET NUMBER:	CU-6
OF	7 SHEETS
SCALE:	AS SHOWN

EXTERNAL REFERENCES: 8946cmp01 8946cu01 8946cu02 8946cu03 8946cu04 8946cu05 8946cu06 8946cu07 8946cu08 8946cu09 8946cu10 8946cu11 8946cu12 8946cu13 8946cu14 8946cu15 8946cu16 8946cu17 8946cu18 8946cu19 8946cu20 8946cu21 8946cu22 8946cu23 8946cu24 8946cu25 8946cu26 8946cu27 8946cu28 8946cu29 8946cu30 8946cu31 8946cu32 8946cu33 8946cu34 8946cu35 8946cu36 8946cu37 8946cu38 8946cu39 8946cu40 8946cu41 8946cu42 8946cu43 8946cu44 8946cu45 8946cu46 8946cu47 8946cu48 8946cu49 8946cu50 8946cu51 8946cu52 8946cu53 8946cu54 8946cu55 8946cu56 8946cu57 8946cu58 8946cu59 8946cu60 8946cu61 8946cu62 8946cu63 8946cu64 8946cu65 8946cu66 8946cu67 8946cu68 8946cu69 8946cu70 8946cu71 8946cu72 8946cu73 8946cu74 8946cu75 8946cu76 8946cu77 8946cu78 8946cu79 8946cu80 8946cu81 8946cu82 8946cu83 8946cu84 8946cu85 8946cu86 8946cu87 8946cu88 8946cu89 8946cu90 8946cu91 8946cu92 8946cu93 8946cu94 8946cu95 8946cu96 8946cu97 8946cu98 8946cu99 8946cu100 8946cu101 8946cu102 8946cu103 8946cu104 8946cu105 8946cu106 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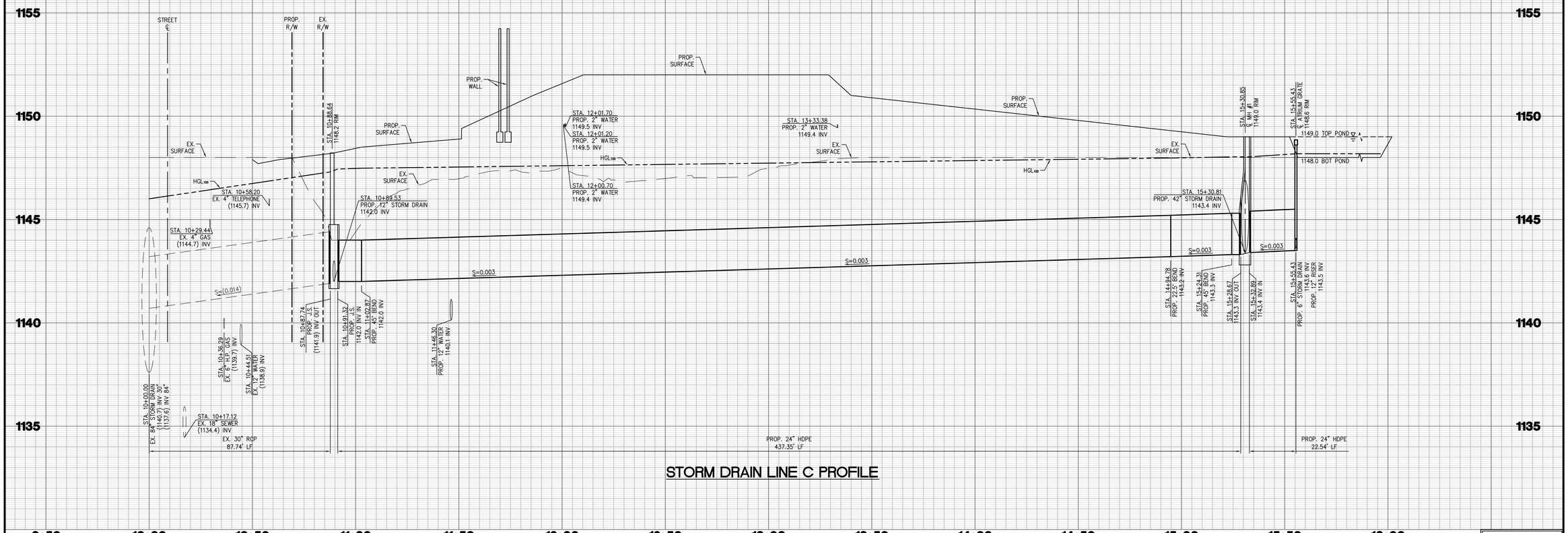
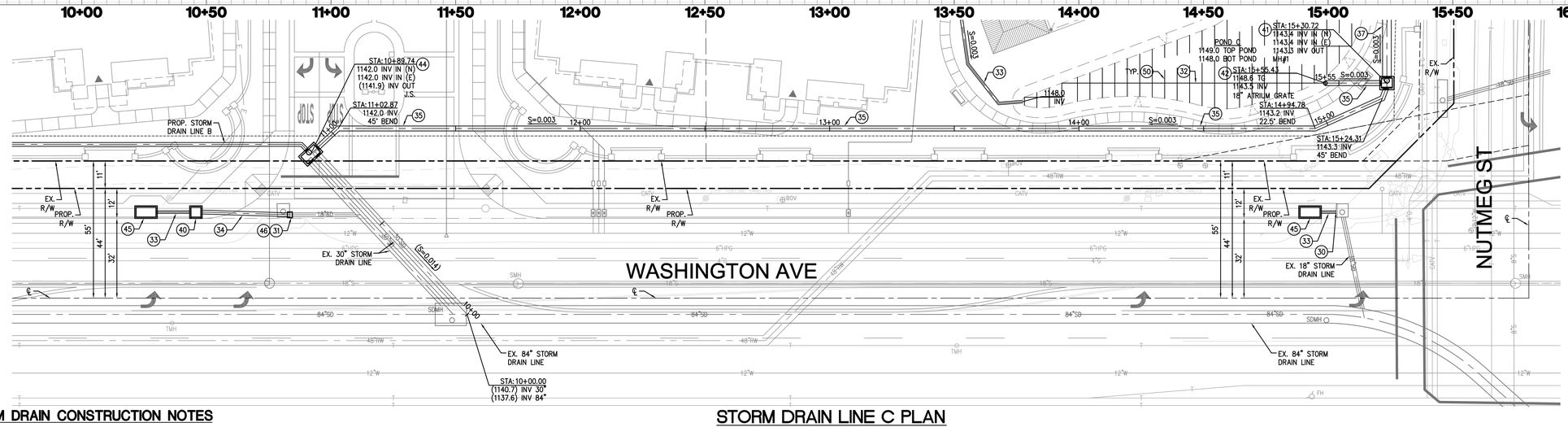


STORM DRAIN LINE C PROFILE

PROFILE SCALE
HORIZONTAL: 1"=20'
VERTICAL: 1"=2'



STORM DRAIN LINE C PLAN

STORM DRAIN CONSTRUCTION NOTES

(30)—CONNECT TO EXISTING CATCH BASIN (INVERT ELEVATION TO BE FIELD VERIFIED)
(31)—CONNECT TO EXISTING STORM DRAIN LINE (INVERT ELEVATION TO BE FIELD VERIFIED)
(32)—INSTALL 6" PVC STORM DRAIN LINE
(33)—INSTALL 12" HDPE STORM DRAIN LINE
(34)—INSTALL 18" HDPE STORM DRAIN LINE
(35)—INSTALL 24" HDPE STORM DRAIN LINE
(36)—INSTALL 36" HDPE STORM DRAIN LINE
(37)—INSTALL 42" HDPE STORM DRAIN LINE
(38)—CONSTRUCT BROOKS 12"X12" DROP INLET WITH KRISTAR FILTER INSERT
(39)—CONSTRUCT BROOKS 24"X24" DROP INLET WITH KRISTAR FILTER INSERT
(40)—CONSTRUCT 3.5' CATCH BASIN PER SPPWC 300-3 ALONG WITH KRISTAR FILTER INSERT
(41)—INSTALL 48" STORM DRAIN MANHOLE
(42)—INSTALL 18" ATRIUM GRATE
(43)—INSTALL 18" RCP STORM DRAIN LINE
(44)—CONSTRUCT JUNCTION STRUCTURE
(45)—INSTALL 4'X8' MODULAR WETLAND BIOFILTER W/ IRR PRECAST HOLE
(46)—CONSTRUCT CONCRETE COLLAR
(47)—INSTALL 60" HDPE STORM DRAIN LINE
(48)—CONSTRUCT BROOKS 36"X36" DROP INLET WITH KRISTAR FILTER INSERT
(49)—INSTALL 48" HDPE STORM DRAIN LINE
(50)—INSTALL 6" PVC PERFORATED STORM DRAIN LINE

20' 0' 20' 40' 60'
GRAPHIC SCALE: 1"=20'

NOT FOR CONSTRUCTION

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714-685-6860
DRC Engineering, Inc.
Civil Engineering/Land Surveying/Land Planning

NO.: REVISION: DATE:

PROJECT:
A 210 UNIT COMMUNITY FOR
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NWC OF WASHINGTON AVE & NUTMEG ST
MURRIETA, CA 92562 - DP-2019-1997

DRAWING NAME:
STORM DRAIN PLAN & PROFILE

ISSUE:	CONCEPTUAL
DATE:	3/9/20
CHECKED: RJV	DRAWN: MAB
DRAWING FILE: 8946cu101	
PROJECT NO.: 18-946	
SHEET NUMBER:	CU-7
OF 7 SHEETS	
SCALE: AS SHOWN	

EXTERNAL REFERENCES: 8946mod01 8946ts01 8946ts101 8946ts102 8946ts103 8946ts104 8946ts105 8946ts106 8946ts107 8946ts108 8946ts109 8946ts110 8946ts111 8946ts112 8946ts113 8946ts114 8946ts115 8946ts116 8946ts117 8946ts118 8946ts119 8946ts120 8946ts121 8946ts122 8946ts123 8946ts124 8946ts125 8946ts126 8946ts127 8946ts128 8946ts129 8946ts130 8946ts131 8946ts132 8946ts133 8946ts134 8946ts135 8946ts136 8946ts137 8946ts138 8946ts139 8946ts140 8946ts141 8946ts142 8946ts143 8946ts144 8946ts145 8946ts146 8946ts147 8946ts148 8946ts149 8946ts150 8946ts151 8946ts152 8946ts153 8946ts154 8946ts155 8946ts156 8946ts157 8946ts158 8946ts159 8946ts160 8946ts161 8946ts162 8946ts163 8946ts164 8946ts165 8946ts166 8946ts167 8946ts168 8946ts169 8946ts170 8946ts171 8946ts172 8946ts173 8946ts174 8946ts175 8946ts176 8946ts177 8946ts178 8946ts179 8946ts180 8946ts181 8946ts182 8946ts183 8946ts184 8946ts185 8946ts186 8946ts187 8946ts188 8946ts189 8946ts190 8946ts191 8946ts192 8946ts193 8946ts194 8946ts195 8946ts196 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8946ts997 8946ts998 8946ts999 8946ts1000

WATER SURFACE PROFILE - STORM DRAIN LINE A Date: 3- 4-2020 Time: 8:44:43

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
1044.030	1142.600	4.880	1147.480	4.72	2.67	.11	1147.59	.00	.83	.00	1.500	.000	.00	1 .0
19.060	-.0026					.0020	.04	4.88	.00	.00	.013	.00	.00	PIPE
1063.090	1142.550	5.001	1147.551	4.72	2.67	.11	1147.66	.00	.83	.00	1.500	.000	.00	1 .0
10.200	.0029					.0020	.02	5.00	.00	1.04	.013	.00	.00	PIPE
1073.290	1142.580	4.992	1147.572	4.72	2.67	.11	1147.68	.00	.83	.00	1.500	.000	.00	1 .0
JUNCT STR	.0300					.0070	.03	4.99	.00		.011	.00	.00	PIPE
1077.290	1142.700	4.517	1147.217	4.72	6.01	.56	1147.78	.00	.90	.00	1.000	.000	.00	1 .0
15.450	.0032					.0126	.19	4.52	.00	1.00	.011	.00	.00	PIPE
1092.740	1142.750	4.661	1147.411	4.72	6.01	.56	1147.97	.00	.90	.00	1.000	.000	.00	1 .0
1096.600	1142.900	4.510	1147.410	9.59	12.21	2.32	1149.73	.00	.99	.00	1.000	.000	.00	1 .0
16.240	.0677					.0519	.84	4.51	.00	.72	.011	.00	.00	PIPE
1112.840	1144.000	4.252	1148.252	9.59	12.21	2.32	1150.57	.00	.99	.00	1.000	.000	.00	1 .0

WATER SURFACE PROFILE - STORM DRAIN LINE B Date: 3- 4-2020 Time: 8:44:43

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
1086.200	1142.000	5.440	1147.440	3.82	2.16	.07	1147.51	.00	.75	.00	1.500	.000	.00	1 .0
5.640	.0035					.0009	.01	5.44	.00	.76	.011	.00	.00	PIPE
1091.840	1142.020	5.436	1147.456	3.82	2.16	.07	1147.53	.00	.75	.00	1.500	.000	.00	1 .0
189.180	.0031					.0009	.18	5.44	.00	.80	.011	.00	.00	PIPE
1281.020	1142.600	5.035	1147.635	3.82	2.16	.07	1147.71	.00	.75	.00	1.500	.000	.00	1 .0
1284.710	1142.700	4.940	1147.640	10.59	5.99	.56	1148.20	.00	1.25	.00	1.500	.000	.00	1 .0
3.580	.0280					.0073	.03	4.94	.00	.76	.011	.00	.00	PIPE
1288.290	1142.800	4.949	1147.749	10.59	5.99	.56	1148.31	.00	1.25	.00	1.500	.000	.00	1 .0
12.440	.0161					.0073	.09	4.95	.00	.90	.011	.00	.00	PIPE
1300.730	1143.000	4.839	1147.839	10.59	5.99	.56	1148.40	.00	1.25	.00	1.500	.000	.00	1 .0

WATER SURFACE PROFILE - STORM DRAIN LINE C

Date: 3- 4-2020 Time: 8:44:43

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1091.320	1142.000	5.440	1147.440	9.39	2.99	.14	1147.58	.00	1.09	.00	2.000	.000	.00	1 .0
11.550	.0035					.0012	.01	5.44	.00	1.11	.011	.00	.00	PIPE
1102.870	1142.040	5.435	1147.475	9.39	2.99	.14	1147.61	.00	1.09	.00	2.000	.000	.00	1 .0
391.910	.0030					.0012	.48	5.43	.00	1.17	.011	.00	.00	PIPE
1494.780	1143.200	4.769	1147.969	9.39	2.99	.14	1148.11	.00	1.09	.00	2.000	.000	.00	1 .0
29.530	.0034					.0012	.04	4.77	.00	1.12	.011	.00	.00	PIPE
1524.310	1143.300	4.726	1148.026	9.39	2.99	.14	1148.16	.00	1.09	.00	2.000	.000	.00	1 .0
4.360	.0000					.0012	.01	4.73	.00	.00	.011	.00	.00	PIPE
1528.670	1143.300	4.731	1148.031	9.39	2.99	.14	1148.17	.00	1.09	.00	2.000	.000	.00	1 .0
1532.890	1143.400	4.630	1148.030	21.78	6.93	.75	1148.78	.00	1.67	.00	2.000	.000	.00	1 .0
22.540	.0044					.0066	.15	4.63	.00	2.00	.011	.00	.00	PIPE
1555.430	1143.500	4.680	1148.180	21.78	6.93	.75	1148.93	.00	1.67	.00	2.000	.000	.00	1 .0

APPENDIX C

Existing Condition 2-year Routing Calculations
Existing Condition 5-year Routing Calculations
Existing Condition 10-year Routing Calculations
Existing Condition 100-year Routing Calculations
Proposed Condition 2-year Routing Calculations
Proposed Condition 5-year Routing Calculations
Proposed Condition 10-year Routing Calculations
Rational Method (AES) – 100 Year Storm 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 1982-2015 Advanced Engineering Software (aes)
                    (Rational Tabling Version 22.0)
                Release Date: 07/01/2015  License ID 1510

                        Analysis prepared by:

                        DRC Engineering, Inc.
                  160 South Old Springs Road, Suite 210
                           Anaheim, CA 92808
                              714-685-6860

 ************************* DESCRIPTION OF STUDY *************************
* NUTMEG APARTMENTS                                                     *
* EXISTING 2 YEAR RATIONAL METHOD                                       *
* 18-946                                                                *
 ************************************************************************

  FILE NAME: 8946E2.DAT
  TIME/DATE OF STUDY: 10:41 11/02/2019
------------------------------------------------------------------------
  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 = 0.90
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    2.00   1-HOUR INTENSITY(INCH/HOUR) =   0.586
  SLOPE OF INTENSITY DURATION CURVE = 0.5506
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+----------------------------------------------------------------------+
| AREA A                                                               |
| EXISTING SITE CONDITION                                              |
| NUTMEG APARTMENTS                                                    |
+----------------------------------------------------------------------+

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  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   420.00
  UPSTREAM ELEVATION(FEET) =   1156.00
  DOWNSTREAM ELEVATION(FEET) =   1144.00
  ELEVATION DIFFERENCE(FEET) =     12.00
  TC = 0.709*[(  420.00**3)/(    12.00)]**.2 =   16.181
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.207
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6577
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.66
  TOTAL AREA(ACRES) =      3.35   TOTAL RUNOFF(CFS) =      2.66

+--------------------------------------------------------------------------+
| AREA B                                                                   |
| EXISTING CONDITION                                                       |
|                                                                          |
+--------------------------------------------------------------------------+

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  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 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) =   660.00
  UPSTREAM ELEVATION(FEET) =   1158.00
  DOWNSTREAM ELEVATION(FEET) =   1144.00
  ELEVATION DIFFERENCE(FEET) =     14.00
  TC = 0.709*[(  660.00**3)/(    14.00)]**.2 =   20.577
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.057
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6336
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.48
  TOTAL AREA(ACRES) =      3.70   TOTAL RUNOFF(CFS) =      2.48

+--------------------------------------------------------------------------+
| AREA C                                                                   |
| EXISTING CONDITION                                                       |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 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) =   640.00
  UPSTREAM ELEVATION(FEET) =   1159.00
  DOWNSTREAM ELEVATION(FEET) =   1148.00
  ELEVATION DIFFERENCE(FEET) =     11.00
  TC = 0.709*[(  640.00**3)/(    11.00)]**.2 =   21.199
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.040
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  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6305
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      5.00
  TOTAL AREA(ACRES) =      7.63   TOTAL RUNOFF(CFS) =      5.00
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        7.6  TC(MIN.) =     21.20
  PEAK FLOW RATE(CFS)   =       5.00
================================================================================
================================================================================
  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 1982-2015 Advanced Engineering Software (aes)
                    (Rational Tabling Version 22.0)
                Release Date: 07/01/2015  License ID 1510

                        Analysis prepared by:

                        DRC Engineering, Inc.
                  160 South Old Springs Road, Suite 210
                           Anaheim, CA 92808
                              714-685-6860

 ************************* DESCRIPTION OF STUDY *************************
* NUTMEG APARTMENTS                                                     *
* EXISTING 5 YEAR RATIONAL METHOD                                       *
* 18-946                                                                *
 ************************************************************************

  FILE NAME: 8946E2.DAT
  TIME/DATE OF STUDY: 10:42 11/02/2019
------------------------------------------------------------------------
  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 = 0.90
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    5.00   1-HOUR INTENSITY(INCH/HOUR) =   0.773
  SLOPE OF INTENSITY DURATION CURVE = 0.5506
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (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.*

+----------------------------------------------------------------------+
| AREA A                                                               |
| EXISTING SITE CONDITION                                              |
| NUTMEG APARTMENTS                                                    |
+----------------------------------------------------------------------+

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

```
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   420.00
  UPSTREAM ELEVATION(FEET) =   1156.00
  DOWNSTREAM ELEVATION(FEET) =   1144.00
  ELEVATION DIFFERENCE(FEET) =     12.00
  TC = 0.709*[(  420.00**3)/(    12.00)]**.2 =   16.181
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.590
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7034
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      3.75
  TOTAL AREA(ACRES) =      3.35   TOTAL RUNOFF(CFS) =      3.75

+----------------------------------------------------------------------------+
| AREA B                                                                     |
| EXISTING CONDITION                                                         |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 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) =   660.00
  UPSTREAM ELEVATION(FEET) =   1158.00
  DOWNSTREAM ELEVATION(FEET) =   1144.00
  ELEVATION DIFFERENCE(FEET) =     14.00
  TC = 0.709*[(  660.00**3)/(    14.00)]**.2 =   20.577
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.393
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6823
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      3.52
  TOTAL AREA(ACRES) =      3.70   TOTAL RUNOFF(CFS) =      3.52

+----------------------------------------------------------------------------+
| AREA C                                                                     |
| EXISTING CONDITION                                                         |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 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) =   640.00
  UPSTREAM ELEVATION(FEET) =   1159.00
  DOWNSTREAM ELEVATION(FEET) =   1148.00
  ELEVATION DIFFERENCE(FEET) =     11.00
  TC = 0.709*[(  640.00**3)/(    11.00)]**.2 =   21.199
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.370
```

```
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6796
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      7.10
  TOTAL AREA(ACRES) =      7.63   TOTAL RUNOFF(CFS) =      7.10
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        7.6  TC(MIN.) =     21.20
  PEAK FLOW RATE(CFS)   =       7.10
================================================================================
================================================================================
  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 1982-2015 Advanced Engineering Software (aes)
                    (Rational Tabling Version 22.0)
                Release Date: 07/01/2015  License ID 1510

                        Analysis prepared by:

                        DRC Engineering, Inc.
                  160 South Old Springs Road, Suite 210
                           Anaheim, CA 92808
                              714-685-6860

 ************************* DESCRIPTION OF STUDY *************************
* NUTMEG APARTMENTS                                                     *
* EXISTING 10 YEAR RATIONAL METHOD                                      *
* 18-946                                                                *
 ************************************************************************

  FILE NAME: 8946E2.DAT
  TIME/DATE OF STUDY: 10:43 11/02/2019
------------------------------------------------------------------------
  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 = 0.90
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =   10.00   1-HOUR INTENSITY(INCH/HOUR) =   0.889
  SLOPE OF INTENSITY DURATION CURVE = 0.5506
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (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.*

+----------------------------------------------------------------------+
| AREA A                                                               |
| EXISTING SITE CONDITION                                              |
| NUTMEG APARTMENTS                                                    |
+----------------------------------------------------------------------+

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

```
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   420.00
  UPSTREAM ELEVATION(FEET) =   1156.00
  DOWNSTREAM ELEVATION(FEET) =   1144.00
  ELEVATION DIFFERENCE(FEET) =     12.00
  TC = 0.709*[(  420.00**3)/(    12.00)]**.2 =   16.181
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.829
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7240
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      4.44
  TOTAL AREA(ACRES) =      3.35   TOTAL RUNOFF(CFS) =      4.44

+----------------------------------------------------------------------------+
| AREA B                                                                     |
| EXISTING CONDITION                                                         |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 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) =   660.00
  UPSTREAM ELEVATION(FEET) =   1158.00
  DOWNSTREAM ELEVATION(FEET) =   1144.00
  ELEVATION DIFFERENCE(FEET) =     14.00
  TC = 0.709*[(  660.00**3)/(    14.00)]**.2 =   20.577
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.602
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7045
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      4.18
  TOTAL AREA(ACRES) =      3.70   TOTAL RUNOFF(CFS) =      4.18

+----------------------------------------------------------------------------+
| AREA C                                                                     |
| EXISTING CONDITION                                                         |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 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) =   640.00
  UPSTREAM ELEVATION(FEET) =   1159.00
  DOWNSTREAM ELEVATION(FEET) =   1148.00
  ELEVATION DIFFERENCE(FEET) =     11.00
  TC = 0.709*[(  640.00**3)/(    11.00)]**.2 =   21.199
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.576
```

```
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7020
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      8.44
  TOTAL AREA(ACRES) =      7.63   TOTAL RUNOFF(CFS) =      8.44
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        7.6  TC(MIN.) =     21.20
  PEAK FLOW RATE(CFS)   =       8.44
================================================================================
================================================================================
  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 1982-2015 Advanced Engineering Software (aes)
                    (Rational Tabling Version 22.0)
                Release Date: 07/01/2015  License ID 1510

                        Analysis prepared by:

                        DRC Engineering, Inc.
                  160 South Old Springs Road, Suite 210
                           Anaheim, CA 92808
                              714-685-6860

 ************************* DESCRIPTION OF STUDY *************************
* NUTMEG APARTMENTS                                                     *
* EXISTING 100 YEAR RATIONAL METHOD                                     *
* 18-946                                                                *
 ************************************************************************

  FILE NAME: 8946E2.DAT
  TIME/DATE OF STUDY: 10:43 11/02/2019
------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =  100.00   1-HOUR INTENSITY(INCH/HOUR) =   1.300
  SLOPE OF INTENSITY DURATION CURVE = 0.5496
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (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.*

+------------------------------------------------------------------------+
| AREA A                                                                 |
| EXISTING SITE CONDITION                                                |
| NUTMEG APARTMENTS                                                      |
+------------------------------------------------------------------------+

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

```
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   420.00
  UPSTREAM ELEVATION(FEET) =   1156.00
  DOWNSTREAM ELEVATION(FEET) =   1144.00
  ELEVATION DIFFERENCE(FEET) =     12.00
  TC = 0.709*[(  420.00**3)/(    12.00)]**.2 =   16.181
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.671
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7716
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      6.91
  TOTAL AREA(ACRES) =      3.35   TOTAL RUNOFF(CFS) =      6.91

+----------------------------------------------------------------------------+
| AREA B                                                                     |
| EXISTING CONDITION                                                         |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 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) =   660.00
  UPSTREAM ELEVATION(FEET) =   1158.00
  DOWNSTREAM ELEVATION(FEET) =   1144.00
  ELEVATION DIFFERENCE(FEET) =     14.00
  TC = 0.709*[(  660.00**3)/(    14.00)]**.2 =   20.577
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.341
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7564
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      6.55
  TOTAL AREA(ACRES) =      3.70   TOTAL RUNOFF(CFS) =      6.55

+----------------------------------------------------------------------------+
| AREA C                                                                     |
| EXISTING CONDITION                                                         |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 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) =   640.00
  UPSTREAM ELEVATION(FEET) =   1159.00
  DOWNSTREAM ELEVATION(FEET) =   1148.00
  ELEVATION DIFFERENCE(FEET) =     11.00
  TC = 0.709*[(  640.00**3)/(    11.00)]**.2 =   21.199
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
```

```
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7544
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =     13.25
  TOTAL AREA(ACRES) =      7.63   TOTAL RUNOFF(CFS) =     13.25
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        7.6  TC(MIN.) =     21.20
  PEAK FLOW RATE(CFS)   =      13.25
================================================================================
================================================================================
  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 1982-2015 Advanced Engineering Software (aes)
                    (Rational Tabling Version 22.0)
                Release Date: 07/01/2015  License ID 1510

                         Analysis prepared by:

                         DRC Engineering, Inc.
                  160 South Old Springs Road, Suite 210
                            Anaheim, CA 92808
                               714-685-6860

 ************************* DESCRIPTION OF STUDY *************************
* NUTMEG APARTMENTS                                                     *
* RATIONAL METHOD                                                       *
* 18-946 2 YEAR STORM ROUTING                                           *
 ************************************************************************

  FILE NAME: 8946P2.DAT
  TIME/DATE OF STUDY: 16:57 11/01/2019
------------------------------------------------------------------------
  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 = 0.90
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    2.00   1-HOUR INTENSITY(INCH/HOUR) =   0.586
  SLOPE OF INTENSITY DURATION CURVE = 0.5506
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (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.*

+----------------------------------------------------------------------+
| AREA A-1                                                             |
| NUTMEG APARTMENTS                                                    |
| 18-946                                                               |
+----------------------------------------------------------------------+

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

```
 FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
 UPSTREAM ELEVATION(FEET) =     57.20
 DOWNSTREAM ELEVATION(FEET) =     55.80
 ELEVATION DIFFERENCE(FEET) =      1.40
 TC = 0.323*[(   64.00**3)/(     1.40)]**.2 =    3.658
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.24
 TOTAL AREA(ACRES) =      0.12   TOTAL RUNOFF(CFS) =      0.24

****************************************************************************
 FLOW PROCESS FROM NODE    101.00 TO NODE    201.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    52.80  DOWNSTREAM(FEET) =    52.20
 FLOW LENGTH(FEET) =    66.00   MANNING'S N =  0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   2.44
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       0.24
 PIPE TRAVEL TIME(MIN.) =   0.45    Tc(MIN.) =    5.45
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    201.00 =     130.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    201.00 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.) =    5.45
 RAINFALL INTENSITY(INCH/HR) =   2.20
 TOTAL STREAM AREA(ACRES) =     0.12
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.24

+----------------------------------------------------------------------------+
| AREA A-2                                                                   |
| NUTMEG APARTMENTS                                                          |
| 18-946                                                                     |
+----------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
 UPSTREAM ELEVATION(FEET) =     56.80
```

```
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   80.00**3)/(     1.00)]**.2 =    4.474
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.28
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    201.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.28

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.24     5.45        2.197          0.12
      2        0.28     5.00        2.303          0.14

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.50     5.00       2.303
      2        0.51     5.45       2.197

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       0.50   Tc(MIN.) =    5.00
  TOTAL AREA(ACRES) =        0.3
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    201.00 =     130.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    52.20  DOWNSTREAM(FEET) =    51.70
  FLOW LENGTH(FEET) =   102.00   MANNING'S N =  0.013
  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.) =   2.40
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.50
  PIPE TRAVEL TIME(MIN.) =   0.71    Tc(MIN.) =    5.71
```

```
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    301.00 =     232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    301.00 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.) =    5.71
  RAINFALL INTENSITY(INCH/HR) =   2.14
  TOTAL STREAM AREA(ACRES) =     0.26
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.50

+--------------------------------------------------------------------------+
| AREA A-3                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    85.00
  UPSTREAM ELEVATION(FEET) =     56.80
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   85.00**3)/(     1.00)]**.2 =    4.639
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.28
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.28

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.50     5.71        2.141          0.26
      2        0.28     5.00        2.303          0.14

 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
```

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

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.72     5.00       2.303
      2        0.76     5.71       2.141

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       0.76   Tc(MIN.) =    5.71
  TOTAL AREA(ACRES) =        0.4
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    301.00 =     232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.70  DOWNSTREAM(FEET) =    51.40
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.69
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.76
  PIPE TRAVEL TIME(MIN.) =   0.38    Tc(MIN.) =    6.09
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    401.00 =     293.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    401.00 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.) =    6.09
  RAINFALL INTENSITY(INCH/HR) =   2.07
  TOTAL STREAM AREA(ACRES) =     0.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.76

+----------------------------------------------------------------------------+
| AREA A-4                                                                   |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    65.00
  UPSTREAM ELEVATION(FEET) =     56.80
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   65.00**3)/(     1.00)]**.2 =    3.950
```

```
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.28
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.28

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.76     6.09        2.067          0.40
      2        0.28     5.00        2.303          0.14

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.91     5.00       2.303
      2        1.01     6.09       2.067

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.01   Tc(MIN.) =    6.09
  TOTAL AREA(ACRES) =        0.5
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    401.00 =     293.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.40  DOWNSTREAM(FEET) =    50.40
  FLOW LENGTH(FEET) =   207.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.88
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.01
  PIPE TRAVEL TIME(MIN.) =   1.20    Tc(MIN.) =    7.29
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    501.00 =     500.00 FEET.

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

```
 FLOW PROCESS FROM NODE    501.00 TO NODE    501.00 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.) =    7.29
 RAINFALL INTENSITY(INCH/HR) =   1.87
 TOTAL STREAM AREA(ACRES) =     0.54
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.01

+--------------------------------------------------------------------------+
| AREA A-5                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   207.00
 UPSTREAM ELEVATION(FEET) =     57.40
 DOWNSTREAM ELEVATION(FEET) =     54.30
 ELEVATION DIFFERENCE(FEET) =      3.10
 TC = 0.323*[(  207.00**3)/(     3.10)]**.2 =    6.311
    2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.026
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8676
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.84
 TOTAL AREA(ACRES) =      0.48   TOTAL RUNOFF(CFS) =      0.84

****************************************************************************
 FLOW PROCESS FROM NODE    501.00 TO NODE    501.00 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.) =    6.31
 RAINFALL INTENSITY(INCH/HR) =   2.03
 TOTAL STREAM AREA(ACRES) =     0.48
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.84

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        1.01     7.29        1.872          0.54
     2        0.84     6.31        2.026          0.48

 **********************************WARNING***********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.
```

```
  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.72     6.31       2.026
      2        1.79     7.29       1.872

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.79   Tc(MIN.) =    7.29
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    501.00 =     500.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.40  DOWNSTREAM(FEET) =    50.00
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.64
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.79
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =    7.58
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    601.00 =     564.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    601.00 TO NODE    601.00 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.) =    7.58
  RAINFALL INTENSITY(INCH/HR) =   1.83
  TOTAL STREAM AREA(ACRES) =     1.02
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.79

+--------------------------------------------------------------------------+
| AREA A-6                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    66.00
  UPSTREAM ELEVATION(FEET) =     55.80
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      1.50
  TC = 0.323*[(   66.00**3)/(     1.50)]**.2 =    3.675
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.30
```

```
 TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.30

****************************************************************************
 FLOW PROCESS FROM NODE    601.00 TO NODE    601.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   2.30
 TOTAL STREAM AREA(ACRES) =     0.15
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.30

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        1.79     7.58        1.832          1.02
     2        0.30     5.00        2.303          0.15

 *********************************WARNING**********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        1.48     5.00       2.303
     2        2.03     7.58       1.832

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       2.03   Tc(MIN.) =    7.58
 TOTAL AREA(ACRES) =        1.2
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    601.00 =     564.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    601.00 TO NODE    701.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    50.00  DOWNSTREAM(FEET) =    49.50
 FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   3.33
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       2.03
 PIPE TRAVEL TIME(MIN.) =   0.53    Tc(MIN.) =    8.11
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    701.00 =     670.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    701.00 TO NODE    701.00 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.) =    8.11
  RAINFALL INTENSITY(INCH/HR) =   1.77
  TOTAL STREAM AREA(ACRES) =     1.17
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.03

+---------------------------------------------------------------------------+
| AREA A-7                                                                  |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    700.00 TO NODE    701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   106.00
  UPSTREAM ELEVATION(FEET) =     55.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(  106.00**3)/(     2.00)]**.2 =    4.611
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.46
  TOTAL AREA(ACRES) =      0.23   TOTAL RUNOFF(CFS) =      0.46

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.46

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.03     8.11        1.765          1.17
      2        0.46     5.00        2.303          0.23

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.72     5.00       2.303
```

```
      2        2.39     8.11       1.765

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.39   Tc(MIN.) =    8.11
  TOTAL AREA(ACRES) =        1.4
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    701.00 =     670.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    801.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.10
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.85
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.39
  PIPE TRAVEL TIME(MIN.) =   0.28    Tc(MIN.) =    8.39
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    801.00 =     734.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE    801.00 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.) =    8.39
  RAINFALL INTENSITY(INCH/HR) =   1.73
  TOTAL STREAM AREA(ACRES) =     1.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.39

+--------------------------------------------------------------------------+
| AREA A-8                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    800.00 TO NODE    801.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    83.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.50
  TC = 0.323*[(   83.00**3)/(     1.50)]**.2 =    4.217
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.40
  TOTAL AREA(ACRES) =      0.20   TOTAL RUNOFF(CFS) =      0.40

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE    801.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.20
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.40

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.39     8.39        1.733          1.40
      2        0.40     5.00        2.303          0.20

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.82     5.00       2.303
      2        2.69     8.39       1.733

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.69   Tc(MIN.) =    8.39
  TOTAL AREA(ACRES) =        1.6
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    801.00 =     734.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE   1402.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.10  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =   157.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.35
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.69
  PIPE TRAVEL TIME(MIN.) =   0.78    Tc(MIN.) =    9.17
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1402.00 =     891.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1402.00 TO NODE   1402.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA A-9                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    900.00 TO NODE    901.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   125.00
  UPSTREAM ELEVATION(FEET) =     57.50
  DOWNSTREAM ELEVATION(FEET) =     53.60
  ELEVATION DIFFERENCE(FEET) =      3.90
  TC = 0.323*[(  125.00**3)/(     3.90)]**.2 =    4.454
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.94
  TOTAL AREA(ACRES) =      0.47   TOTAL RUNOFF(CFS) =      0.94

****************************************************************************
  FLOW PROCESS FROM NODE    901.00 TO NODE   1001.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.00  DOWNSTREAM(FEET) =    50.40
  FLOW LENGTH(FEET) =   133.00   MANNING'S N =  0.013
  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.) =   2.76
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.94
  PIPE TRAVEL TIME(MIN.) =   0.80    Tc(MIN.) =    5.80
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     258.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 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.) =    5.80
  RAINFALL INTENSITY(INCH/HR) =   2.12
  TOTAL STREAM AREA(ACRES) =     0.47
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.94

+--------------------------------------------------------------------------+
| AREA A-10                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1000.00 TO NODE   1001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   120.00
```

```
  UPSTREAM ELEVATION(FEET) =     55.60
  DOWNSTREAM ELEVATION(FEET) =     52.90
  ELEVATION DIFFERENCE(FEET) =      2.70
  TC = 0.323*[(  120.00**3)/(     2.70)]**.2 =    4.678
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.60
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.60

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.60

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.94     5.80        2.122          0.47
      2        0.60     5.00        2.303          0.30

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.41     5.00       2.303
      2        1.50     5.80       2.122

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.50   Tc(MIN.) =    5.80
  TOTAL AREA(ACRES) =        0.8
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     258.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.40  DOWNSTREAM(FEET) =    49.50
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.18
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.50
```

```
  PIPE TRAVEL TIME(MIN.) =   0.16    Tc(MIN.) =    5.96
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1101.00 =     308.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1101.00 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.) =    5.96
  RAINFALL INTENSITY(INCH/HR) =   2.09
  TOTAL STREAM AREA(ACRES) =     0.77
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.50

+--------------------------------------------------------------------------+
| AREA A-11                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1100.00 TO NODE   1101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    55.00
  UPSTREAM ELEVATION(FEET) =     54.80
  DOWNSTREAM ELEVATION(FEET) =     52.80
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(   55.00**3)/(     2.00)]**.2 =    3.110
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.32
  TOTAL AREA(ACRES) =      0.16   TOTAL RUNOFF(CFS) =      0.32

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1001.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.16
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.32

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.50     5.96        2.090          0.77
      2        0.32     5.00        2.303          0.16

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
```

```
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.58     5.00       2.303
      2        1.79     5.96       2.090

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.79   Tc(MIN.) =    5.96
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     308.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1201.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.20
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.58
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.79
  PIPE TRAVEL TIME(MIN.) =   0.23    Tc(MIN.) =    6.20
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1201.00 =     358.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1201.00 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.) =    6.20
  RAINFALL INTENSITY(INCH/HR) =   2.05
  TOTAL STREAM AREA(ACRES) =     0.93
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.79

+--------------------------------------------------------------------------+
| AREA A-12                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1200.00 TO NODE   1201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    55.00
  UPSTREAM ELEVATION(FEET) =     54.80
  DOWNSTREAM ELEVATION(FEET) =     52.90
  ELEVATION DIFFERENCE(FEET) =      1.90
  TC = 0.323*[(   55.00**3)/(     1.90)]**.2 =    3.142
```

```
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.22
  TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.22

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1201.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.22

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.79     6.20        2.047          0.93
      2        0.22     5.00        2.303          0.11

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.66     5.00       2.303
      2        1.98     6.20       2.047

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.98   Tc(MIN.) =    6.20
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1201.00 =     358.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.20  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =    75.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.72
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.98
  PIPE TRAVEL TIME(MIN.) =   0.46    Tc(MIN.) =    6.66
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1301.00 =     433.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1301.00 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.) =    6.66
  RAINFALL INTENSITY(INCH/HR) =   1.97
  TOTAL STREAM AREA(ACRES) =     1.04
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.98

+------------------------------------------------------------------------------+
| AREA A-13                                                                    |
|                                                                              |
|                                                                              |
+------------------------------------------------------------------------------+

********************************************************************************
  FLOW PROCESS FROM NODE   1300.00 TO NODE   1301.00 IS CODE =  21
--------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
  UPSTREAM ELEVATION(FEET) =     54.50
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      2.40
  TC = 0.323*[(   77.00**3)/(     2.40)]**.2 =    3.670
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.36
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.36

********************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.36

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.98     6.66        1.968          1.04
      2        0.36     5.00        2.303          0.18

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.
```

```
  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.85     5.00       2.303
      2        2.29     6.66       1.968

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.29   Tc(MIN.) =    6.66
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1301.00 =     433.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.80
  FLOW LENGTH(FEET) =    62.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.03
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.29
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    7.00
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1401.00 =     495.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1401.00 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.) =    7.00
  RAINFALL INTENSITY(INCH/HR) =   1.91
  TOTAL STREAM AREA(ACRES) =     1.22
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.29

+--------------------------------------------------------------------------+
| AREA A-14                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1400.00 TO NODE   1401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   103.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(  103.00**3)/(     3.00)]**.2 =    4.179
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.10
```

```
  TOTAL AREA(ACRES) =      0.55   TOTAL RUNOFF(CFS) =      1.10

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.55
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.10

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.29     7.00        1.914          1.22
      2        1.10     5.00        2.303          0.55

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.74     5.00       2.303
      2        3.21     7.00       1.914

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.21   Tc(MIN.) =    7.00
  TOTAL AREA(ACRES) =        1.8
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1401.00 =     495.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1402.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.80  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =    57.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.94
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.21
  PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =    7.24
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1402.00 =     552.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1402.00 TO NODE   1402.00 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        3.21     7.24       1.879        1.77
 LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1402.00 =     552.00 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        2.69     9.17       1.650        1.60
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1402.00 =     891.00 FEET.

****************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
************************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc      INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1       5.33       7.24       1.879
     2       5.51       9.17       1.650

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       5.33   Tc(MIN.) =    7.24
 TOTAL AREA(ACRES) =        3.4

************************************************************************
 FLOW PROCESS FROM NODE   1402.00 TO NODE   1403.00 IS CODE =  31
------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    48.50  DOWNSTREAM(FEET) =    48.40
 FLOW LENGTH(FEET) =    10.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   5.63
 ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       5.33
 PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =     7.27
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1403.00 =     901.00 FEET.

+------------------------------------------------------------------------+
| AREA B-1                                                               |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+

************************************************************************
 FLOW PROCESS FROM NODE   2100.00 TO NODE   2101.00 IS CODE =  21
------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
========================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   129.00
 UPSTREAM ELEVATION(FEET) =     57.50
 DOWNSTREAM ELEVATION(FEET) =     54.30
 ELEVATION DIFFERENCE(FEET) =      3.20
 TC = 0.323*[(  129.00**3)/(     3.20)]**.2 =    4.722
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
```

```
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.94
  TOTAL AREA(ACRES) =      0.47   TOTAL RUNOFF(CFS) =      0.94

****************************************************************************
  FLOW PROCESS FROM NODE   2101.00 TO NODE   2101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.30  DOWNSTREAM(FEET) =    50.80
  FLOW LENGTH(FEET) =    65.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.35
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.94
  PIPE TRAVEL TIME(MIN.) =   0.32    Tc(MIN.) =    5.32
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2101.00 =     194.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2201.00 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.) =    5.32
  RAINFALL INTENSITY(INCH/HR) =   2.23
  TOTAL STREAM AREA(ACRES) =     0.47
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.94

+--------------------------------------------------------------------------+
| AREA B-2                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2200.00 TO NODE   2201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   103.00
  UPSTREAM ELEVATION(FEET) =     57.30
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(  103.00**3)/(     3.00)]**.2 =    4.179
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.52
  TOTAL AREA(ACRES) =      0.26   TOTAL RUNOFF(CFS) =      0.52

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2201.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.26
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.52

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.94     5.32        2.225          0.47
      2        0.52     5.00        2.303          0.26

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ********************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.41     5.00       2.303
      2        1.45     5.32       2.225

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.45   Tc(MIN.) =    5.32
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2201.00 =     194.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.30  DOWNSTREAM(FEET) =    50.10
  FLOW LENGTH(FEET) =   105.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.35
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.45
  PIPE TRAVEL TIME(MIN.) =   0.40    Tc(MIN.) =    5.73
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2301.00 =     299.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2301.00 TO NODE   2301.00 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.) =    5.73
  RAINFALL INTENSITY(INCH/HR) =   2.14
  TOTAL STREAM AREA(ACRES) =     0.73
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.45
```

```
+----------------------------------------------------------------------+
| AREA B-3                                                             |
|                                                                      |
|                                                                      |
+----------------------------------------------------------------------+

**********************************************************************
  FLOW PROCESS FROM NODE   2300.00 TO NODE   2301.00 IS CODE =  21
----------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
======================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   110.00
  UPSTREAM ELEVATION(FEET) =     56.70
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  110.00**3)/(     3.20)]**.2 =    4.291
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.50
  TOTAL AREA(ACRES) =      0.25   TOTAL RUNOFF(CFS) =      0.50

**********************************************************************
  FLOW PROCESS FROM NODE   2301.00 TO NODE   2301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.50

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.45     5.73        2.138          0.73
      2        0.50     5.00        2.303          0.25

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.76     5.00       2.303
      2        1.91     5.73       2.138

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.91   Tc(MIN.) =    5.73
  TOTAL AREA(ACRES) =        1.0
```

```
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2301.00 =     299.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2301.00 TO NODE   2401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.10  DOWNSTREAM(FEET) =    49.70
  FLOW LENGTH(FEET) =    65.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.68
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.91
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =    6.02
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2401.00 =     364.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE   2401.00 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.) =    6.02
  RAINFALL INTENSITY(INCH/HR) =   2.08
  TOTAL STREAM AREA(ACRES) =     0.98
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.91

+--------------------------------------------------------------------------+
| AREA B-4                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2400.00 TO NODE   2401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    75.00
  UPSTREAM ELEVATION(FEET) =     54.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   75.00**3)/(     1.00)]**.2 =    4.304
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.38
  TOTAL AREA(ACRES) =      0.19   TOTAL RUNOFF(CFS) =      0.38

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE   2401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.19
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.38

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.91     6.02        2.080          0.98
      2        0.38     5.00        2.303          0.19

 ***********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.97     5.00       2.303
      2        2.26     6.02       2.080

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.26   Tc(MIN.) =    6.02
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2401.00 =     364.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE  21101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.70  DOWNSTREAM(FEET) =    48.70
  FLOW LENGTH(FEET) =   138.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.06
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.26
  PIPE TRAVEL TIME(MIN.) =   0.57    Tc(MIN.) =    6.59
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA B-5                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2500.00 TO NODE   2501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
```

```
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     54.20
  ELEVATION DIFFERENCE(FEET) =      0.80
  TC = 0.323*[(  100.00**3)/(     0.80)]**.2 =    5.348
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.220
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8700
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.62
  TOTAL AREA(ACRES) =      0.32   TOTAL RUNOFF(CFS) =      0.62

****************************************************************************
  FLOW PROCESS FROM NODE   2501.00 TO NODE   2601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    52.70  DOWNSTREAM(FEET) =    50.50
  FLOW LENGTH(FEET) =   112.00   MANNING'S N =  0.013
  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.) =   4.15
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.62
  PIPE TRAVEL TIME(MIN.) =   0.45    Tc(MIN.) =    5.80
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2601.00 =     212.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2601.00 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.) =    5.80
  RAINFALL INTENSITY(INCH/HR) =   2.12
  TOTAL STREAM AREA(ACRES) =     0.32
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.62

+--------------------------------------------------------------------------+
| AREA B-6                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2600.00 TO NODE   2601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =     56.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(   80.00**3)/(     3.00)]**.2 =    3.591
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
```

```
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.34
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.34

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2601.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.17
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.34

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.62     5.80        2.123          0.32
      2        0.34     5.00        2.303          0.17

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.87     5.00       2.303
      2        0.93     5.80       2.123

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       0.93   Tc(MIN.) =    5.80
  TOTAL AREA(ACRES) =        0.5
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2601.00 =     212.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.50  DOWNSTREAM(FEET) =    49.90
  FLOW LENGTH(FEET) =    60.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.66
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.93
  PIPE TRAVEL TIME(MIN.) =   0.27    Tc(MIN.) =    6.07
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2701.00 =     272.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE   2701.00 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.) =    6.07
  RAINFALL INTENSITY(INCH/HR) =   2.07
  TOTAL STREAM AREA(ACRES) =     0.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.93

+----------------------------------------------------------------------------+
| AREA A-7                                                                   |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

******************************************************************************
  FLOW PROCESS FROM NODE   2700.00 TO NODE   2701.00 IS CODE =  21
------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    69.00
  UPSTREAM ELEVATION(FEET) =     54.60
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.10
  TC = 0.323*[(   69.00**3)/(     1.10)]**.2 =    4.016
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.36
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.36

******************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE   2701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.36

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.93     6.07        2.070          0.49
      2        0.36     5.00        2.303          0.18

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.
```

```
  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.13     5.00       2.303
      2        1.26     6.07       2.070

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.26   Tc(MIN.) =    6.07
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2701.00 =     272.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE  21001.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.90  DOWNSTREAM(FEET) =    48.90
  FLOW LENGTH(FEET) =   128.00   MANNING'S N =  0.013
  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.) =   3.63
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.26
  PIPE TRAVEL TIME(MIN.) =   0.59    Tc(MIN.) =    6.66
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 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.) =    6.66
  RAINFALL INTENSITY(INCH/HR) =   1.97
  TOTAL STREAM AREA(ACRES) =     0.67
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.26

+--------------------------------------------------------------------------+
| AREA B-10                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  21000.00 TO NODE  21001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    92.00
  UPSTREAM ELEVATION(FEET) =     53.90
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      1.90
  TC = 0.323*[(   92.00**3)/(     1.90)]**.2 =    4.279
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.58
```

```
  TOTAL AREA(ACRES) =      0.29   TOTAL RUNOFF(CFS) =      0.58

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.29
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.58

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.26     6.66        1.967          0.67
      2        0.58     5.00        2.303          0.29

 *********************************WARNING************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.53     5.00       2.303
      2        1.75     6.66       1.967

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.75   Tc(MIN.) =    6.66
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA B-8                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2800.00 TO NODE   2801.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   150.00
  UPSTREAM ELEVATION(FEET) =     55.00
```

```
  DOWNSTREAM ELEVATION(FEET) =     52.50
  ELEVATION DIFFERENCE(FEET) =      2.50
  TC = 0.323*[(  150.00**3)/(     2.50)]**.2 =    5.431
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.201
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8698
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.63
  TOTAL AREA(ACRES) =      0.33   TOTAL RUNOFF(CFS) =      0.63

****************************************************************************
  FLOW PROCESS FROM NODE   2801.00 TO NODE   2901.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.30
  FLOW LENGTH(FEET) =    43.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.50
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.63
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =    5.72
  LONGEST FLOWPATH FROM NODE   2800.00 TO NODE   2901.00 =     193.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE   2901.00 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.) =    5.72
  RAINFALL INTENSITY(INCH/HR) =   2.14
  TOTAL STREAM AREA(ACRES) =     0.33
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.63

+--------------------------------------------------------------------------+
| AREA B-9                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2900.00 TO NODE   2901.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   112.00
  UPSTREAM ELEVATION(FEET) =     54.40
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  112.00**3)/(     2.30)]**.2 =    4.634
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.84
  TOTAL AREA(ACRES) =      0.42   TOTAL RUNOFF(CFS) =      0.84
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE   2901.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.84

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.63     5.72        2.140          0.33
      2        0.84     5.00        2.303          0.42

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.40     5.00       2.303
      2        1.41     5.72       2.140

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.40   Tc(MIN.) =    5.00
  TOTAL AREA(ACRES) =        0.8
  LONGEST FLOWPATH FROM NODE   2800.00 TO NODE   2901.00 =     193.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE  21001.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.30  DOWNSTREAM(FEET) =    48.90
  FLOW LENGTH(FEET) =   110.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.80
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.40
  PIPE TRAVEL TIME(MIN.) =   0.66    Tc(MIN.) =    5.66
  LONGEST FLOWPATH FROM NODE   2800.00 TO NODE  21001.00 =     303.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

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

```
    1        1.40     5.66       2.152        0.75
 LONGEST FLOWPATH FROM NODE   2800.00 TO NODE  21001.00 =     303.00 FEET.

 ** MEMORY BANK #  3 CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
    1        1.75     6.66       1.967        0.96
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************WARNING**********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
*********************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc      INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
    1       2.88       5.66        2.152
    2       3.03       6.66        1.967

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       3.03   Tc(MIN.) =    6.66
 TOTAL AREA(ACRES) =        1.7

*********************************************************************
 FLOW PROCESS FROM NODE  21001.00 TO NODE  21101.00 IS CODE =  31
---------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    48.90  DOWNSTREAM(FEET) =    48.70
 FLOW LENGTH(FEET) =    76.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   2.92
 ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       3.03
 PIPE TRAVEL TIME(MIN.) =   0.43    Tc(MIN.) =    7.09
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21101.00 =     476.00 FEET.

*********************************************************************
 FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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        3.03     7.09       1.900        1.71
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21101.00 =     476.00 FEET.

 ** MEMORY BANK #  2 CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
    1        2.26     6.59       1.979        1.17
 LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

****************************WARNING**********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
*********************************************************************
```

```
  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1       5.07       6.59        1.979
      2       5.20       7.09        1.900

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.20   Tc(MIN.) =    7.09
  TOTAL AREA(ACRES) =        2.9

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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.) =    7.09
  RAINFALL INTENSITY(INCH/HR) =   1.90
  TOTAL STREAM AREA(ACRES) =     2.88
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.20

+--------------------------------------------------------------------------+
| AREA B-11                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  21100.00 TO NODE  21101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   136.00
  UPSTREAM ELEVATION(FEET) =     54.00
  DOWNSTREAM ELEVATION(FEET) =     51.70
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  136.00**3)/(     2.30)]**.2 =    5.207
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.253
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8703
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.63
  TOTAL AREA(ACRES) =      0.83   TOTAL RUNOFF(CFS) =      1.63

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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.) =    5.21
  RAINFALL INTENSITY(INCH/HR) =   2.25
  TOTAL STREAM AREA(ACRES) =     0.83
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.63

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

```
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        5.20     7.09        1.900          2.88
      2        1.63     5.21        2.253          0.83

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        5.44     5.21       2.253
      2        6.57     7.09       1.900

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       6.57   Tc(MIN.) =    7.09
  TOTAL AREA(ACRES) =        3.7
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

 ************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21102.00 IS CODE =  31
 ------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 ========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.70  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =    49.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.30
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.57
  PIPE TRAVEL TIME(MIN.) =   0.19    Tc(MIN.) =     7.28
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21102.00 =     551.00 FEET.

+------------------------------------------------------------------------+
 | C-1                                                                    |
 | NUTMEG APARTMENTS                                                      |
 | 18-946                                                                 |
 +------------------------------------------------------------------------+

 ************************************************************************
  FLOW PROCESS FROM NODE   3100.00 TO NODE   3101.00 IS CODE =  21
 ------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 ========================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   245.00
  UPSTREAM ELEVATION(FEET) =     57.20
  DOWNSTREAM ELEVATION(FEET) =     54.00
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  245.00**3)/(     3.20)]**.2 =    6.939
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.923
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8662
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.03
  TOTAL AREA(ACRES) =      0.62   TOTAL RUNOFF(CFS) =      1.03
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3101.00 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) =   1.92
  TOTAL STREAM AREA(ACRES) =     0.62
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.03

+--------------------------------------------------------------------------+
| C-2                                                                      |
| NUTMEG APARTMENTS                                                        |
| 18-946                                                                   |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3200.00 TO NODE   3201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.80
  TC = 0.323*[(  100.00**3)/(     1.80)]**.2 =    4.547
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.22
  TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.22

****************************************************************************
  FLOW PROCESS FROM NODE   3201.00 TO NODE   3101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.20  DOWNSTREAM(FEET) =    51.00
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  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.) =   1.74
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.22
  PIPE TRAVEL TIME(MIN.) =   0.48    Tc(MIN.) =    5.48
  LONGEST FLOWPATH FROM NODE   3200.00 TO NODE   3101.00 =     150.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3101.00 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.) =    5.48
 RAINFALL INTENSITY(INCH/HR) =   2.19
 TOTAL STREAM AREA(ACRES) =     0.11
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.22

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        1.03     6.94        1.923          0.62
     2        0.22     5.48        2.190          0.11

 ********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        1.04     5.48       2.190
     2        1.23     6.94       1.923

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       1.23   Tc(MIN.) =    6.94
 TOTAL AREA(ACRES) =        0.7
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3101.00 =     245.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   3101.00 TO NODE   3301.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    51.00  DOWNSTREAM(FEET) =    50.80
 FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   2.57
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.23
 PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =    7.35
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3301.00 =     309.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   3301.00 TO NODE   3301.00 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.) =    7.35
 RAINFALL INTENSITY(INCH/HR) =   1.86
 TOTAL STREAM AREA(ACRES) =     0.73
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.23
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   3300.00 TO NODE   3301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
  UPSTREAM ELEVATION(FEET) =     56.10
  DOWNSTREAM ELEVATION(FEET) =     54.00
  ELEVATION DIFFERENCE(FEET) =      2.10
  TC = 0.323*[(   64.00**3)/(     2.10)]**.2 =    3.373
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.28
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE   3301.00 TO NODE   3301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.28

  ** CONFLUENCE DATA **
  STREAM     RUNOFF        Tc       INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.23     7.35        1.863          0.73
      2        0.28     5.00        2.303          0.14

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.11     5.00       2.303
      2        1.45     7.35       1.863

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.45   Tc(MIN.) =    7.35
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3301.00 =     309.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3301.00 TO NODE   3401.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.80  DOWNSTREAM(FEET) =    50.20
  FLOW LENGTH(FEET) =   153.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.90
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.45
  PIPE TRAVEL TIME(MIN.) =   0.88    Tc(MIN.) =    8.23
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3401.00 =     462.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3401.00 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.) =    8.23
  RAINFALL INTENSITY(INCH/HR) =   1.75
  TOTAL STREAM AREA(ACRES) =     0.87
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.45

+--------------------------------------------------------------------------+
| C-4                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3400.00 TO NODE   3401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   152.00
  UPSTREAM ELEVATION(FEET) =     56.00
  DOWNSTREAM ELEVATION(FEET) =     53.40
  ELEVATION DIFFERENCE(FEET) =      2.60
  TC = 0.323*[(  152.00**3)/(     2.60)]**.2 =    5.431
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.201
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8698
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.67
  TOTAL AREA(ACRES) =      0.35   TOTAL RUNOFF(CFS) =      0.67

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3401.00 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.) =    5.43
  RAINFALL INTENSITY(INCH/HR) =   2.20
  TOTAL STREAM AREA(ACRES) =     0.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.67

  ** CONFLUENCE DATA **
```

```
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.45     8.23        1.750          0.87
      2        0.67     5.43        2.201          0.35

 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.63     5.43       2.201
      2        1.99     8.23       1.750

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.99   Tc(MIN.) =    8.23
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3401.00 =     462.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.20  DOWNSTREAM(FEET) =    49.90
  FLOW LENGTH(FEET) =    72.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.15
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.99
  PIPE TRAVEL TIME(MIN.) =   0.38    Tc(MIN.) =    8.61
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3501.00 =     534.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3501.00 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.) =    8.61
  RAINFALL INTENSITY(INCH/HR) =   1.71
  TOTAL STREAM AREA(ACRES) =     1.22
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.99

+----------------------------------------------------------------------------+
| C-5                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3500.00 TO NODE   3501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
```

```
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   125.00
  UPSTREAM ELEVATION(FEET) =     61.00
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      8.00
  TC = 0.323*[(  125.00**3)/(     8.00)]**.2 =    3.858
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.60
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.60

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3501.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.60

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.99     8.61        1.707          1.22
      2        0.60     5.00        2.303          0.30

 *********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.75     5.00       2.303
      2        2.43     8.61       1.707

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.43   Tc(MIN.) =    8.61
  TOTAL AREA(ACRES) =        1.5
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3501.00 =     534.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.90  DOWNSTREAM(FEET) =    49.60
  FLOW LENGTH(FEET) =    62.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.1 INCHES
```

```
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.59
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.43
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =    8.90
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3601.00 =     596.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3601.00 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.) =    8.90
  RAINFALL INTENSITY(INCH/HR) =   1.68
  TOTAL STREAM AREA(ACRES) =     1.52
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.43

+--------------------------------------------------------------------------+
| C-6                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3600.00 TO NODE   3601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(   90.00**3)/(     2.00)]**.2 =    4.180
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.46
  TOTAL AREA(ACRES) =      0.23   TOTAL RUNOFF(CFS) =      0.46

****************************************************************************
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3601.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.46

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.43     8.90        1.677          1.52
      2        0.46     5.00        2.303          0.23
```

```
 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.83     5.00       2.303
      2        2.77     8.90       1.677

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.77   Tc(MIN.) =    8.90
  TOTAL AREA(ACRES) =        1.8
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3601.00 =     596.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.60  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =   176.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.22
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.77
  PIPE TRAVEL TIME(MIN.) =   0.91    Tc(MIN.) =    9.81
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3701.00 =     772.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3701.00 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.) =    9.81
  RAINFALL INTENSITY(INCH/HR) =   1.59
  TOTAL STREAM AREA(ACRES) =     1.75
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.77

+----------------------------------------------------------------------------+
| C-7                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3700.00 TO NODE   3701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   362.40
  UPSTREAM ELEVATION(FEET) =     55.30
```

```
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      3.30
  TC = 0.323*[(  362.40**3)/(     3.30)]**.2 =    8.722
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.696
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8626
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.19
  TOTAL AREA(ACRES) =      1.50   TOTAL RUNOFF(CFS) =      2.19

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3701.00 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.) =    8.72
  RAINFALL INTENSITY(INCH/HR) =   1.70
  TOTAL STREAM AREA(ACRES) =     1.50
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.19

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.77     9.81        1.589          1.75
      2        2.19     8.72        1.696          1.50

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.65     8.72       1.696
      2        4.82     9.81       1.589

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.82   Tc(MIN.) =    9.81
  TOTAL AREA(ACRES) =        3.2
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3701.00 =     772.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3901.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.60
  FLOW LENGTH(FEET) =    90.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.10
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.82
  PIPE TRAVEL TIME(MIN.) =   0.37    Tc(MIN.) =   10.18
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3901.00 =     862.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3901.00 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.) =   10.18
  RAINFALL INTENSITY(INCH/HR) =   1.56
  TOTAL STREAM AREA(ACRES) =     3.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.82

+--------------------------------------------------------------------------+
| C-9                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3900.00 TO NODE   3901.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   130.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  130.00**3)/(     3.20)]**.2 =    4.744
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.72
  TOTAL AREA(ACRES) =      0.36   TOTAL RUNOFF(CFS) =      0.72

****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3901.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.36
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.72

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        4.82    10.18        1.557          3.25
      2        0.72     5.00        2.303          0.36

 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.09     5.00       2.303
      2        5.31    10.18       1.557

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.31   Tc(MIN.) =   10.18
  TOTAL AREA(ACRES) =        3.6
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3901.00 =     862.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3902.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.60  DOWNSTREAM(FEET) =    48.00
  FLOW LENGTH(FEET) =   156.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.93
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.31
  PIPE TRAVEL TIME(MIN.) =   0.66    Tc(MIN.) =   10.84
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3902.00 =    1018.00 FEET.

+--------------------------------------------------------------------------+
| C-14                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE      0.00 TO NODE      0.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   3902.00 TO NODE  31804.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  31400.00 TO NODE  31401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   119.00
  UPSTREAM ELEVATION(FEET) =     55.60
  DOWNSTREAM ELEVATION(FEET) =     53.30
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  119.00**3)/(     2.30)]**.2 =    4.806
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
```

```
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.48
  TOTAL AREA(ACRES) =      0.24   TOTAL RUNOFF(CFS) =      0.48

****************************************************************************
  FLOW PROCESS FROM NODE  31401.00 TO NODE  31501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.30  DOWNSTREAM(FEET) =    49.50
  FLOW LENGTH(FEET) =   130.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.58
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.48
  PIPE TRAVEL TIME(MIN.) =   0.84    Tc(MIN.) =    5.84
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31501.00 =     249.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31501.00 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.) =    5.84
  RAINFALL INTENSITY(INCH/HR) =   2.11
  TOTAL STREAM AREA(ACRES) =     0.24
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.48

+----------------------------------------------------------------------------+
| C-15                                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31500.00 TO NODE  31501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  100.00**3)/(     2.30)]**.2 =    4.330
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.64
  TOTAL AREA(ACRES) =      0.32   TOTAL RUNOFF(CFS) =      0.64

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31501.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.32
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.64

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.48     5.84        2.114          0.24
      2        0.64     5.00        2.303          0.32

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.05     5.00       2.303
      2        1.07     5.84       2.114

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.05   Tc(MIN.) =    5.00
  TOTAL AREA(ACRES) =        0.6
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31501.00 =     249.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =    55.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.66
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.05
  PIPE TRAVEL TIME(MIN.) =   0.25    Tc(MIN.) =    5.25
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31601.00 =     304.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31601.00 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.) =    5.25
  RAINFALL INTENSITY(INCH/HR) =   2.24
  TOTAL STREAM AREA(ACRES) =     0.56
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.05

+--------------------------------------------------------------------------+
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  31600.00 TO NODE  31601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   120.00
  UPSTREAM ELEVATION(FEET) =     53.80
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      1.80
  TC = 0.323*[(  120.00**3)/(     1.80)]**.2 =    5.073
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.285
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8707
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.84
  TOTAL AREA(ACRES) =      0.42   TOTAL RUNOFF(CFS) =      0.84

****************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31601.00 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.) =    5.07
  RAINFALL INTENSITY(INCH/HR) =   2.29
  TOTAL STREAM AREA(ACRES) =     0.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.84

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.05     5.25        2.242          0.56
      2        0.84     5.07        2.285          0.42

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.85     5.07        2.285
      2        1.87     5.25        2.242

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.87   Tc(MIN.) =    5.25
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31601.00 =     304.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.70
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.28
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.87
  PIPE TRAVEL TIME(MIN.) =   0.33    Tc(MIN.) =    5.58
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31701.00 =     368.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31701.00 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.) =    5.58
  RAINFALL INTENSITY(INCH/HR) =   2.17
  TOTAL STREAM AREA(ACRES) =     0.98
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.87

+--------------------------------------------------------------------------+
| C-17                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31700.00 TO NODE  31701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
  UPSTREAM ELEVATION(FEET) =     53.80
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      1.70
  TC = 0.323*[(   90.00**3)/(     1.70)]**.2 =    4.318
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.60
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.60

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
```

```
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.60

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.87     5.58        2.169          0.98
      2        0.60     5.00        2.303          0.30

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.28     5.00       2.303
      2        2.44     5.58       2.169

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.44   Tc(MIN.) =    5.58
  TOTAL AREA(ACRES) =        1.3
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31701.00 =     368.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31802.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.70  DOWNSTREAM(FEET) =    48.40
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.54
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.44
  PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =    5.88
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31802.00 =     432.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| C-10                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

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

```
 FLOW PROCESS FROM NODE  31000.00 TO NODE  31001.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   102.00
 UPSTREAM ELEVATION(FEET) =     57.50
 DOWNSTREAM ELEVATION(FEET) =     53.00
 ELEVATION DIFFERENCE(FEET) =      4.50
 TC = 0.323*[(  102.00**3)/(     4.50)]**.2 =    3.831
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      1.38
 TOTAL AREA(ACRES) =      0.69   TOTAL RUNOFF(CFS) =      1.38

****************************************************************************
 FLOW PROCESS FROM NODE  31001.00 TO NODE  31101.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    51.50  DOWNSTREAM(FEET) =    50.30
 FLOW LENGTH(FEET) =   205.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   3.34
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.38
 PIPE TRAVEL TIME(MIN.) =   1.02    Tc(MIN.) =    6.02
 LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31101.00 =     307.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  31102.00 TO NODE  31102.00 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.) =    6.02
 RAINFALL INTENSITY(INCH/HR) =   2.08
 TOTAL STREAM AREA(ACRES) =     0.69
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.38

+----------------------------------------------------------------------------+
| C-11                                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE  31100.00 TO NODE  31101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   109.00
 UPSTREAM ELEVATION(FEET) =     55.50
 DOWNSTREAM ELEVATION(FEET) =     53.30
```

```
  ELEVATION DIFFERENCE(FEET) =      2.20
  TC = 0.323*[(  109.00**3)/(     2.20)]**.2 =    4.600
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.12
  TOTAL AREA(ACRES) =      0.56   TOTAL RUNOFF(CFS) =      1.12

****************************************************************************
  FLOW PROCESS FROM NODE  31101.00 TO NODE  31101.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.56
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.12

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.38     6.02        2.079          0.69
      2        1.12     5.00        2.303          0.56

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.27     5.00       2.303
      2        2.40     6.02       2.079

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.40   Tc(MIN.) =    6.02
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31101.00 =     307.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31101.00 TO NODE  31201.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.80  DOWNSTREAM(FEET) =    50.30
  FLOW LENGTH(FEET) =   100.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.47
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.40
  PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =    6.33
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31201.00 =     407.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  31201.00 TO NODE  31201.00 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.) =    6.33
  RAINFALL INTENSITY(INCH/HR) =   2.02
  TOTAL STREAM AREA(ACRES) =     1.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.40

+--------------------------------------------------------------------------+
| C-12                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31200.00 TO NODE  31201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   102.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     54.10
  ELEVATION DIFFERENCE(FEET) =      1.20
  TC = 0.323*[(  102.00**3)/(     1.20)]**.2 =    4.990
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.34
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.34

****************************************************************************
  FLOW PROCESS FROM NODE  31201.00 TO NODE  31301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.30  DOWNSTREAM(FEET) =    50.00
  FLOW LENGTH(FEET) =    54.00   MANNING'S N =  0.013
  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.) =   2.24
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.34
  PIPE TRAVEL TIME(MIN.) =   0.40    Tc(MIN.) =    5.40
  LONGEST FLOWPATH FROM NODE  31200.00 TO NODE  31301.00 =     156.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    5.40
```

```
 RAINFALL INTENSITY(INCH/HR) =   2.21
 TOTAL STREAM AREA(ACRES) =     0.17
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.34

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        2.40     6.33        2.023          1.25
     2        0.34     5.40        2.208          0.17

 ********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        2.39     5.40       2.208
     2        2.71     6.33       2.023

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       2.71   Tc(MIN.) =    6.33
 TOTAL AREA(ACRES) =        1.4
 LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31301.00 =     407.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    6.33
 RAINFALL INTENSITY(INCH/HR) =   2.02
 TOTAL STREAM AREA(ACRES) =     1.42
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.71

+----------------------------------------------------------------------------+
| C-13                                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE  31300.00 TO NODE  31301.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
 UPSTREAM ELEVATION(FEET) =     55.30
 DOWNSTREAM ELEVATION(FEET) =     54.00
 ELEVATION DIFFERENCE(FEET) =      1.30
 TC = 0.323*[(   77.00**3)/(     1.30)]**.2 =    4.149
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.303
```

```
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8709
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.36
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.36

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   2.30
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.36

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.71     6.33        2.023          1.42
      2        0.36     5.00        2.303          0.18

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.50     5.00       2.303
      2        3.03     6.33       2.023

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.03   Tc(MIN.) =    6.33
  TOTAL AREA(ACRES) =        1.6
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31301.00 =     407.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31802.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.00  DOWNSTREAM(FEET) =    48.40
  FLOW LENGTH(FEET) =   130.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.31
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.03
  PIPE TRAVEL TIME(MIN.) =   0.41    Tc(MIN.) =    6.74
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31802.00 =     537.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 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        3.03     6.74       1.955        1.60
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31802.00 =     537.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        2.44     5.88       2.107        1.28
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31802.00 =     432.00 FEET.

 ****************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ********************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1       5.08       5.88        2.107
      2       5.29       6.74        1.955

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.29   Tc(MIN.) =    6.74
  TOTAL AREA(ACRES) =        2.9

******************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31803.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.40  DOWNSTREAM(FEET) =    48.30
  FLOW LENGTH(FEET) =    42.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  13.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.32
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.29
  PIPE TRAVEL TIME(MIN.) =   0.21    Tc(MIN.) =    6.95
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31803.00 =     579.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE  31803.00 TO NODE  31803.00 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) =   1.92
  TOTAL STREAM AREA(ACRES) =     2.88
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.29

+------------------------------------------------------------------------------+
| C-18                                                                         |
|                                                                              |
|                                                                              |
+------------------------------------------------------------------------------+
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  31800.00 TO NODE  31801.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   164.00
  UPSTREAM ELEVATION(FEET) =     54.00
  DOWNSTREAM ELEVATION(FEET) =     51.80
  ELEVATION DIFFERENCE(FEET) =      2.20
  TC = 0.323*[(  164.00**3)/(     2.20)]**.2 =    5.878
     2 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.107
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8686
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.01
  TOTAL AREA(ACRES) =      1.10   TOTAL RUNOFF(CFS) =      2.01

****************************************************************************
  FLOW PROCESS FROM NODE  31801.00 TO NODE  31803.00 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.) =    5.88
  RAINFALL INTENSITY(INCH/HR) =   2.11
  TOTAL STREAM AREA(ACRES) =     1.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.01

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        5.29     6.95        1.922          2.88
      2        2.01     5.88        2.107          1.10

 *********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        6.49     5.88       2.107
      2        7.13     6.95       1.922

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       7.13   Tc(MIN.) =    6.95
  TOTAL AREA(ACRES) =        4.0
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31803.00 =     579.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31803.00 TO NODE  31804.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
```

```
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.30  DOWNSTREAM(FEET) =    48.00
  FLOW LENGTH(FEET) =    98.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  15.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.89
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.13
  PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =    7.37
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31804.00 =     677.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31804.00 TO NODE   3902.00 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        7.13     7.37       1.861        3.98
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE   3902.00 =     677.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        5.31    10.84       1.504        3.61
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3902.00 =    1018.00 FEET.

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      10.74       7.37        1.861
      2      11.08      10.84        1.504

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      10.74   Tc(MIN.) =    7.37
  TOTAL AREA(ACRES) =        7.6
==============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        7.6  TC(MIN.) =       7.37
  PEAK FLOW RATE(CFS)   =      10.74
==============================================================================
==============================================================================
  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 1982-2015 Advanced Engineering Software (aes)
                    (Rational Tabling Version 22.0)
                Release Date: 07/01/2015  License ID 1510

                         Analysis prepared by:

                         DRC Engineering, Inc.
                  160 South Old Springs Road, Suite 210
                            Anaheim, CA 92808
                               714-685-6860

 ************************* DESCRIPTION OF STUDY *************************
* NUTMEG APARTMENTS                                                     *
* RATIONAL METHOD                                                       *
* 18-946 5 YEAR STORM ROUTING                                           *
 ************************************************************************

  FILE NAME: 8946P2.DAT
  TIME/DATE OF STUDY: 17:00 11/01/2019
------------------------------------------------------------------------
  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 = 0.90
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =    5.00   1-HOUR INTENSITY(INCH/HOUR) =   0.773
  SLOPE OF INTENSITY DURATION CURVE = 0.5506
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (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.*

+------------------------------------------------------------------------+
| AREA A-1                                                               |
| NUTMEG APARTMENTS                                                      |
| 18-946                                                                 |
+------------------------------------------------------------------------+

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

```
 FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
 UPSTREAM ELEVATION(FEET) =     57.20
 DOWNSTREAM ELEVATION(FEET) =     55.80
 ELEVATION DIFFERENCE(FEET) =      1.40
 TC = 0.323*[(   64.00**3)/(     1.40)]**.2 =    3.658
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.32
 TOTAL AREA(ACRES) =      0.12   TOTAL RUNOFF(CFS) =      0.32

****************************************************************************
 FLOW PROCESS FROM NODE    101.00 TO NODE    201.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    52.80  DOWNSTREAM(FEET) =    52.20
 FLOW LENGTH(FEET) =    66.00   MANNING'S N =  0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   2.64
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       0.32
 PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =    5.42
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    201.00 =     130.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    201.00 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.) =    5.42
 RAINFALL INTENSITY(INCH/HR) =   2.90
 TOTAL STREAM AREA(ACRES) =     0.12
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.32

+--------------------------------------------------------------------------+
| AREA A-2                                                                 |
| NUTMEG APARTMENTS                                                        |
| 18-946                                                                   |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
 UPSTREAM ELEVATION(FEET) =     56.80
```

```
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   80.00**3)/(     1.00)]**.2 =    4.474
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.37
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.37

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    201.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.37

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.32     5.42        2.904          0.12
      2        0.37     5.00        3.035          0.14

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.67     5.00       3.035
      2        0.68     5.42       2.904

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       0.67   Tc(MIN.) =    5.00
  TOTAL AREA(ACRES) =        0.3
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    201.00 =     130.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    52.20  DOWNSTREAM(FEET) =    51.70
  FLOW LENGTH(FEET) =   102.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.60
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.67
  PIPE TRAVEL TIME(MIN.) =   0.65    Tc(MIN.) =    5.65
```

```
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    301.00 =     232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    301.00 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.) =    5.65
  RAINFALL INTENSITY(INCH/HR) =   2.84
  TOTAL STREAM AREA(ACRES) =     0.26
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.67

+--------------------------------------------------------------------------+
| AREA A-3                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    85.00
  UPSTREAM ELEVATION(FEET) =     56.80
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   85.00**3)/(     1.00)]**.2 =    4.639
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.37
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.37

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.37

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.67     5.65        2.837          0.26
      2        0.37     5.00        3.035          0.14

 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
```

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

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.96     5.00       3.035
      2        1.02     5.65       2.837

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.02   Tc(MIN.) =    5.65
  TOTAL AREA(ACRES) =        0.4
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    301.00 =     232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.70  DOWNSTREAM(FEET) =    51.40
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.90
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.02
  PIPE TRAVEL TIME(MIN.) =   0.35    Tc(MIN.) =    6.00
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    401.00 =     293.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    401.00 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.) =    6.00
  RAINFALL INTENSITY(INCH/HR) =   2.74
  TOTAL STREAM AREA(ACRES) =     0.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.02

+--------------------------------------------------------------------------+
| AREA A-4                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    65.00
  UPSTREAM ELEVATION(FEET) =     56.80
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   65.00**3)/(     1.00)]**.2 =    3.950
```

```
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.37
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.37

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.37

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.02     6.00        2.744          0.40
      2        0.37     5.00        3.035          0.14

 *********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.22     5.00       3.035
      2        1.35     6.00       2.744

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.35   Tc(MIN.) =    6.00
  TOTAL AREA(ACRES) =        0.5
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    401.00 =     293.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.40  DOWNSTREAM(FEET) =    50.40
  FLOW LENGTH(FEET) =   207.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.10
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.35
  PIPE TRAVEL TIME(MIN.) =   1.11    Tc(MIN.) =    7.12
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    501.00 =     500.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    501.00 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.) =    7.12
  RAINFALL INTENSITY(INCH/HR) =   2.50
  TOTAL STREAM AREA(ACRES) =     0.54
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.35

+--------------------------------------------------------------------------+
| AREA A-5                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   207.00
  UPSTREAM ELEVATION(FEET) =     57.40
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      3.10
  TC = 0.323*[(  207.00**3)/(     3.10)]**.2 =    6.311
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.670
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8743
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.12
  TOTAL AREA(ACRES) =      0.48   TOTAL RUNOFF(CFS) =      1.12

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    501.00 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.) =    6.31
  RAINFALL INTENSITY(INCH/HR) =   2.67
  TOTAL STREAM AREA(ACRES) =     0.48
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.12

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.35     7.12        2.499          0.54
      2        1.12     6.31        2.670          0.48

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.
```

```
  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.32     6.31       2.670
      2        2.40     7.12       2.499

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.40   Tc(MIN.) =    7.12
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    501.00 =     500.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.40  DOWNSTREAM(FEET) =    50.00
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.85
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.40
  PIPE TRAVEL TIME(MIN.) =   0.28    Tc(MIN.) =    7.39
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    601.00 =     564.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    601.00 TO NODE    601.00 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.) =    7.39
  RAINFALL INTENSITY(INCH/HR) =   2.45
  TOTAL STREAM AREA(ACRES) =     1.02
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.40

+--------------------------------------------------------------------------+
| AREA A-6                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    66.00
  UPSTREAM ELEVATION(FEET) =     55.80
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      1.50
  TC = 0.323*[(   66.00**3)/(     1.50)]**.2 =    3.675
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.40
  TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.40
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    601.00 TO NODE    601.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.15
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.40

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.40     7.39        2.447          1.02
      2        0.40     5.00        3.035          0.15

 *********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.02     5.00       3.035
      2        2.72     7.39       2.447

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.72   Tc(MIN.) =    7.39
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    601.00 =     564.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    601.00 TO NODE    701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.00  DOWNSTREAM(FEET) =    49.50
  FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.65
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.72
  PIPE TRAVEL TIME(MIN.) =   0.48    Tc(MIN.) =    7.88
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    701.00 =     670.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    701.00 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.) =    7.88
```

```
  RAINFALL INTENSITY(INCH/HR) =   2.36
  TOTAL STREAM AREA(ACRES) =     1.17
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.72

+---------------------------------------------------------------------------+
| AREA A-7                                                                  |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    700.00 TO NODE    701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   106.00
  UPSTREAM ELEVATION(FEET) =     55.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(  106.00**3)/(     2.00)]**.2 =    4.611
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.61
  TOTAL AREA(ACRES) =      0.23   TOTAL RUNOFF(CFS) =      0.61

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.61

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.72     7.88        2.363          1.17
      2        0.61     5.00        3.035          0.23

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.34     5.00       3.035
      2        3.20     7.88       2.363
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.20   Tc(MIN.) =    7.88
  TOTAL AREA(ACRES) =        1.4
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    701.00 =     670.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    801.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.10
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.22
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.20
  PIPE TRAVEL TIME(MIN.) =   0.25    Tc(MIN.) =    8.13
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    801.00 =     734.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE    801.00 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.) =    8.13
  RAINFALL INTENSITY(INCH/HR) =   2.32
  TOTAL STREAM AREA(ACRES) =     1.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.20

+--------------------------------------------------------------------------+
| AREA A-8                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    800.00 TO NODE    801.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    83.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.50
  TC = 0.323*[(   83.00**3)/(     1.50)]**.2 =    4.217
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.53
  TOTAL AREA(ACRES) =      0.20   TOTAL RUNOFF(CFS) =      0.53

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE    801.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.20
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.53

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.20     8.13        2.322          1.40
      2        0.53     5.00        3.035          0.20

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ********************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.50     5.00       3.035
      2        3.61     8.13       2.322

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.61   Tc(MIN.) =    8.13
  TOTAL AREA(ACRES) =        1.6
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    801.00 =     734.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE   1402.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.10  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =   157.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.51
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.61
  PIPE TRAVEL TIME(MIN.) =   0.75    Tc(MIN.) =    8.88
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1402.00 =     891.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1402.00 TO NODE   1402.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA A-9                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

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

```
 FLOW PROCESS FROM NODE    900.00 TO NODE    901.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   125.00
 UPSTREAM ELEVATION(FEET) =     57.50
 DOWNSTREAM ELEVATION(FEET) =     53.60
 ELEVATION DIFFERENCE(FEET) =      3.90
 TC = 0.323*[(  125.00**3)/(     3.90)]**.2 =    4.454
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      1.25
 TOTAL AREA(ACRES) =      0.47   TOTAL RUNOFF(CFS) =      1.25

****************************************************************************
 FLOW PROCESS FROM NODE    901.00 TO NODE   1001.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    51.00  DOWNSTREAM(FEET) =    50.40
 FLOW LENGTH(FEET) =   133.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   2.96
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.25
 PIPE TRAVEL TIME(MIN.) =   0.75    Tc(MIN.) =    5.75
 LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     258.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 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.) =    5.75
 RAINFALL INTENSITY(INCH/HR) =   2.81
 TOTAL STREAM AREA(ACRES) =     0.47
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.25

+--------------------------------------------------------------------------+
| AREA A-10                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE   1000.00 TO NODE   1001.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   120.00
 UPSTREAM ELEVATION(FEET) =     55.60
 DOWNSTREAM ELEVATION(FEET) =     52.90
```

```
 ELEVATION DIFFERENCE(FEET) =      2.70
 TC = 0.323*[(  120.00**3)/(     2.70)]**.2 =    4.678
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.80
 TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.80

****************************************************************************
 FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   3.04
 TOTAL STREAM AREA(ACRES) =     0.30
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.80

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        1.25     5.75        2.810          0.47
     2        0.80     5.00        3.035          0.30

 **********************************WARNING***********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        1.89     5.00       3.035
     2        1.99     5.75       2.810

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       1.99   Tc(MIN.) =    5.75
 TOTAL AREA(ACRES) =        0.8
 LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     258.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   1001.00 TO NODE   1101.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    50.40  DOWNSTREAM(FEET) =    49.50
 FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
 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.) =   5.58
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.99
 PIPE TRAVEL TIME(MIN.) =   0.15    Tc(MIN.) =    5.90
 LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1101.00 =     308.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1101.00 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.) =    5.90
  RAINFALL INTENSITY(INCH/HR) =   2.77
  TOTAL STREAM AREA(ACRES) =     0.77
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.99

+--------------------------------------------------------------------------+
| AREA A-11                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1100.00 TO NODE   1101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    55.00
  UPSTREAM ELEVATION(FEET) =     54.80
  DOWNSTREAM ELEVATION(FEET) =     52.80
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(   55.00**3)/(     2.00)]**.2 =    3.110
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.43
  TOTAL AREA(ACRES) =      0.16   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1001.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.16
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.43

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.99     5.90        2.771          0.77
      2        0.43     5.00        3.035          0.16

 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.11     5.00       3.035
      2        2.38     5.90       2.771

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.38   Tc(MIN.) =    5.90
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     308.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1201.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.20
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.78
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.38
  PIPE TRAVEL TIME(MIN.) =   0.22    Tc(MIN.) =    6.12
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1201.00 =     358.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1201.00 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.) =    6.12
  RAINFALL INTENSITY(INCH/HR) =   2.72
  TOTAL STREAM AREA(ACRES) =     0.93
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.38

+--------------------------------------------------------------------------+
| AREA A-12                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1200.00 TO NODE   1201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    55.00
  UPSTREAM ELEVATION(FEET) =     54.80
  DOWNSTREAM ELEVATION(FEET) =     52.90
  ELEVATION DIFFERENCE(FEET) =      1.90
  TC = 0.323*[(   55.00**3)/(     1.90)]**.2 =    3.142
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
```

```
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.29
  TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.29

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1201.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.29

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.38     6.12        2.716          0.93
      2        0.29     5.00        3.035          0.11

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.24     5.00       3.035
      2        2.64     6.12       2.716

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.64   Tc(MIN.) =    6.12
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1201.00 =     358.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.20  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =    75.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.89
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.64
  PIPE TRAVEL TIME(MIN.) =   0.43    Tc(MIN.) =    6.55
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1301.00 =     433.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1301.00 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.) =    6.55
  RAINFALL INTENSITY(INCH/HR) =   2.62
  TOTAL STREAM AREA(ACRES) =     1.04
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.64

+------------------------------------------------------------------------------+
| AREA A-13                                                                    |
|                                                                              |
|                                                                              |
+------------------------------------------------------------------------------+

********************************************************************************
  FLOW PROCESS FROM NODE   1300.00 TO NODE   1301.00 IS CODE =  21
--------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
  UPSTREAM ELEVATION(FEET) =     54.50
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      2.40
  TC = 0.323*[(   77.00**3)/(     2.40)]**.2 =    3.670
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.48
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.48

********************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.48

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.64     6.55        2.615          1.04
      2        0.48     5.00        3.035          0.18

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
```

```
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.49     5.00       3.035
      2        3.05     6.55       2.615

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.05   Tc(MIN.) =    6.55
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1301.00 =     433.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.80
  FLOW LENGTH(FEET) =    62.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.20
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.05
  PIPE TRAVEL TIME(MIN.) =   0.32    Tc(MIN.) =    6.87
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1401.00 =     495.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1401.00 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.) =    6.87
  RAINFALL INTENSITY(INCH/HR) =   2.55
  TOTAL STREAM AREA(ACRES) =     1.22
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.05

+--------------------------------------------------------------------------+
| AREA A-14                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1400.00 TO NODE   1401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   103.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(  103.00**3)/(     3.00)]**.2 =    4.179
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.46
  TOTAL AREA(ACRES) =      0.55   TOTAL RUNOFF(CFS) =      1.46
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.55
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.46

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.05     6.87        2.547          1.22
      2        1.46     5.00        3.035          0.55

 *********************************WARNING************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.69     5.00       3.035
      2        4.28     6.87       2.547

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.28   Tc(MIN.) =    6.87
  TOTAL AREA(ACRES) =        1.8
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1401.00 =     495.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1402.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.80  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =    57.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.13
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.28
  PIPE TRAVEL TIME(MIN.) =   0.23    Tc(MIN.) =    7.11
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1402.00 =     552.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1402.00 TO NODE   1402.00 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        4.28     7.11       2.501        1.77
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1402.00 =     552.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        3.61     8.88       2.213        1.60
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1402.00 =     891.00 FEET.

 ****************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1       7.17       7.11        2.501
     2       7.40       8.88        2.213

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       7.17   Tc(MIN.) =    7.11
  TOTAL AREA(ACRES) =        3.4

************************************************************************
  FLOW PROCESS FROM NODE   1402.00 TO NODE   1403.00 IS CODE =  31
------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.50  DOWNSTREAM(FEET) =    48.40
  FLOW LENGTH(FEET) =    10.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.14
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.17
  PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =     7.13
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1403.00 =     901.00 FEET.

+------------------------------------------------------------------------+
| AREA B-1                                                               |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+

************************************************************************
  FLOW PROCESS FROM NODE   2100.00 TO NODE   2101.00 IS CODE =  21
------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
========================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   129.00
  UPSTREAM ELEVATION(FEET) =     57.50
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  129.00**3)/(     3.20)]**.2 =    4.722
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
```

```
  SUBAREA RUNOFF(CFS) =      1.25
  TOTAL AREA(ACRES) =      0.47   TOTAL RUNOFF(CFS) =      1.25

****************************************************************************
  FLOW PROCESS FROM NODE   2101.00 TO NODE   2101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.30  DOWNSTREAM(FEET) =    50.80
  FLOW LENGTH(FEET) =    65.00   MANNING'S N =  0.013
  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.) =   3.62
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.25
  PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =    5.30
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2101.00 =     194.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2201.00 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.) =    5.30
  RAINFALL INTENSITY(INCH/HR) =   2.94
  TOTAL STREAM AREA(ACRES) =     0.47
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.25

+----------------------------------------------------------------------------+
| AREA B-2                                                                   |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2200.00 TO NODE   2201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   103.00
  UPSTREAM ELEVATION(FEET) =     57.30
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(  103.00**3)/(     3.00)]**.2 =    4.179
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.26   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2201.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   3.04
 TOTAL STREAM AREA(ACRES) =     0.26
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.69

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        1.25     5.30        2.939          0.47
     2        0.69     5.00        3.035          0.26

 ********************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        1.87     5.00       3.035
     2        1.92     5.30       2.939

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       1.92   Tc(MIN.) =    5.30
 TOTAL AREA(ACRES) =        0.7
 LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2201.00 =     194.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   2201.00 TO NODE   2301.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    51.30  DOWNSTREAM(FEET) =    50.10
 FLOW LENGTH(FEET) =   105.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.67
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.92
 PIPE TRAVEL TIME(MIN.) =   0.37    Tc(MIN.) =    5.67
 LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2301.00 =     299.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   2301.00 TO NODE   2301.00 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.) =    5.67
 RAINFALL INTENSITY(INCH/HR) =   2.83
 TOTAL STREAM AREA(ACRES) =     0.73
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.92

+----------------------------------------------------------------------------+
| AREA B-3                                                                   |
|                                                                            |
```

```
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2300.00 TO NODE   2301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   110.00
  UPSTREAM ELEVATION(FEET) =     56.70
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  110.00**3)/(     3.20)]**.2 =    4.291
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.67
  TOTAL AREA(ACRES) =      0.25   TOTAL RUNOFF(CFS) =      0.67

****************************************************************************
  FLOW PROCESS FROM NODE   2301.00 TO NODE   2301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.67

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.92     5.67        2.831          0.73
      2        0.67     5.00        3.035          0.25

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.36     5.00       3.035
      2        2.54     5.67       2.831

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.54   Tc(MIN.) =    5.67
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2301.00 =     299.00 FEET.

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

```
  FLOW PROCESS FROM NODE   2301.00 TO NODE   2401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.10  DOWNSTREAM(FEET) =    49.70
  FLOW LENGTH(FEET) =    65.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.85
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.54
  PIPE TRAVEL TIME(MIN.) =   0.28    Tc(MIN.) =    5.96
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2401.00 =     364.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE   2401.00 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.) =    5.96
  RAINFALL INTENSITY(INCH/HR) =   2.76
  TOTAL STREAM AREA(ACRES) =     0.98
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.54

+--------------------------------------------------------------------------+
| AREA B-4                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2400.00 TO NODE   2401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    75.00
  UPSTREAM ELEVATION(FEET) =     54.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   75.00**3)/(     1.00)]**.2 =    4.304
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.51
  TOTAL AREA(ACRES) =      0.19   TOTAL RUNOFF(CFS) =      0.51

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE   2401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.19
```

```
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.51

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.54     5.96        2.757          0.98
      2        0.51     5.00        3.035          0.19

 ********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 **************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.64     5.00       3.035
      2        3.00     5.96       2.757

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.00   Tc(MIN.) =    5.96
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2401.00 =     364.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE  21101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.70  DOWNSTREAM(FEET) =    48.70
  FLOW LENGTH(FEET) =   138.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.40
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.00
  PIPE TRAVEL TIME(MIN.) =   0.52    Tc(MIN.) =    6.48
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA B-5                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2500.00 TO NODE   2501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
```

```
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     54.20
  ELEVATION DIFFERENCE(FEET) =      0.80
  TC = 0.323*[(  100.00**3)/(     0.80)]**.2 =    5.348
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.925
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8763
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.82
  TOTAL AREA(ACRES) =      0.32   TOTAL RUNOFF(CFS) =      0.82

****************************************************************************
  FLOW PROCESS FROM NODE   2501.00 TO NODE   2601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    52.70  DOWNSTREAM(FEET) =    50.50
  FLOW LENGTH(FEET) =   112.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.52
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.82
  PIPE TRAVEL TIME(MIN.) =   0.41    Tc(MIN.) =    5.76
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2601.00 =     212.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2601.00 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.) =    5.76
  RAINFALL INTENSITY(INCH/HR) =   2.81
  TOTAL STREAM AREA(ACRES) =     0.32
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.82

+--------------------------------------------------------------------------+
| AREA B-6                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2600.00 TO NODE   2601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =     56.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(   80.00**3)/(     3.00)]**.2 =    3.591
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.45
```

```
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.45

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2601.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.17
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.45

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.82     5.76        2.807          0.32
      2        0.45     5.00        3.035          0.17

 *********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.16     5.00       3.035
      2        1.24     5.76       2.807

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.24   Tc(MIN.) =    5.76
  TOTAL AREA(ACRES) =        0.5
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2601.00 =     212.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.50  DOWNSTREAM(FEET) =    49.90
  FLOW LENGTH(FEET) =    60.00   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.) =   3.98
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.24
  PIPE TRAVEL TIME(MIN.) =   0.25    Tc(MIN.) =    6.01
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2701.00 =     272.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE   2701.00 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.) =    6.01
  RAINFALL INTENSITY(INCH/HR) =   2.74
  TOTAL STREAM AREA(ACRES) =     0.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.24

+---------------------------------------------------------------------------+
| AREA A-7                                                                  |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2700.00 TO NODE   2701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    69.00
  UPSTREAM ELEVATION(FEET) =     54.60
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.10
  TC = 0.323*[(   69.00**3)/(     1.10)]**.2 =    4.016
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.48
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.48

****************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE   2701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.48

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.24     6.01        2.742          0.49
      2        0.48     5.00        3.035          0.18

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
```

```
      1        1.51     5.00       3.035
      2        1.67     6.01       2.742

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.67   Tc(MIN.) =    6.01
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2701.00 =     272.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE  21001.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.90  DOWNSTREAM(FEET) =    48.90
  FLOW LENGTH(FEET) =   128.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.91
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.67
  PIPE TRAVEL TIME(MIN.) =   0.55    Tc(MIN.) =    6.56
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 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.) =    6.56
  RAINFALL INTENSITY(INCH/HR) =   2.61
  TOTAL STREAM AREA(ACRES) =     0.67
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.67

+--------------------------------------------------------------------------+
| AREA B-10                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  21000.00 TO NODE  21001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    92.00
  UPSTREAM ELEVATION(FEET) =     53.90
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      1.90
  TC = 0.323*[(   92.00**3)/(     1.90)]**.2 =    4.279
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.77
  TOTAL AREA(ACRES) =      0.29   TOTAL RUNOFF(CFS) =      0.77

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.29
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.77

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.67     6.56        2.614          0.67
      2        0.77     5.00        3.035          0.29

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.05     5.00       3.035
      2        2.34     6.56       2.614

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.34   Tc(MIN.) =    6.56
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA B-8                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2800.00 TO NODE   2801.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   150.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     52.50
  ELEVATION DIFFERENCE(FEET) =      2.50
  TC = 0.323*[(  150.00**3)/(     2.50)]**.2 =    5.431
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.900
```

```
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8761
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.84
  TOTAL AREA(ACRES) =      0.33   TOTAL RUNOFF(CFS) =      0.84

****************************************************************************
  FLOW PROCESS FROM NODE   2801.00 TO NODE   2901.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.30
  FLOW LENGTH(FEET) =    43.00   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.) =   2.69
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.84
  PIPE TRAVEL TIME(MIN.) =   0.27    Tc(MIN.) =    5.70
  LONGEST FLOWPATH FROM NODE   2800.00 TO NODE   2901.00 =     193.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE   2901.00 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.) =    5.70
  RAINFALL INTENSITY(INCH/HR) =   2.82
  TOTAL STREAM AREA(ACRES) =     0.33
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.84

+--------------------------------------------------------------------------+
| AREA B-9                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2900.00 TO NODE   2901.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   112.00
  UPSTREAM ELEVATION(FEET) =     54.40
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  112.00**3)/(     2.30)]**.2 =    4.634
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.12
  TOTAL AREA(ACRES) =      0.42   TOTAL RUNOFF(CFS) =      1.12

****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE   2901.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.12

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.84     5.70        2.825          0.33
      2        1.12     5.00        3.035          0.42

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.85     5.00       3.035
      2        1.88     5.70       2.825

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.85   Tc(MIN.) =    5.00
  TOTAL AREA(ACRES) =        0.8
  LONGEST FLOWPATH FROM NODE   2800.00 TO NODE   2901.00 =     193.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE  21001.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.30  DOWNSTREAM(FEET) =    48.90
  FLOW LENGTH(FEET) =   110.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.95
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.85
  PIPE TRAVEL TIME(MIN.) =   0.62    Tc(MIN.) =    5.62
  LONGEST FLOWPATH FROM NODE   2800.00 TO NODE  21001.00 =     303.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        1.85     5.62       2.845        0.75
  LONGEST FLOWPATH FROM NODE   2800.00 TO NODE  21001.00 =     303.00 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
```

```
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        2.34     6.56       2.614        0.96
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************************WARNING****************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
****************************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc      INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1       3.86       5.62        2.845
     2       4.04       6.56        2.614

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       4.04   Tc(MIN.) =    6.56
 TOTAL AREA(ACRES) =        1.7

****************************************************************************
 FLOW PROCESS FROM NODE  21001.00 TO NODE  21101.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    48.90  DOWNSTREAM(FEET) =    48.70
 FLOW LENGTH(FEET) =    76.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   3.21
 ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       4.04
 PIPE TRAVEL TIME(MIN.) =   0.40    Tc(MIN.) =    6.95
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21101.00 =     476.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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        4.04     6.95       2.531        1.71
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21101.00 =     476.00 FEET.

 ** MEMORY BANK #  2 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        3.00     6.48       2.632        1.17
 LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

****************************************WARNING****************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
****************************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc      INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
```

```
      1       6.77       6.48        2.632
      2       6.93       6.95        2.531

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       6.93   Tc(MIN.) =    6.95
  TOTAL AREA(ACRES) =        2.9

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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) =   2.53
  TOTAL STREAM AREA(ACRES) =     2.88
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      6.93

+--------------------------------------------------------------------------+
| AREA B-11                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  21100.00 TO NODE  21101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   136.00
  UPSTREAM ELEVATION(FEET) =     54.00
  DOWNSTREAM ELEVATION(FEET) =     51.70
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  136.00**3)/(     2.30)]**.2 =    5.207
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.968
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8766
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.16
  TOTAL AREA(ACRES) =      0.83   TOTAL RUNOFF(CFS) =      2.16

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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.) =    5.21
  RAINFALL INTENSITY(INCH/HR) =   2.97
  TOTAL STREAM AREA(ACRES) =     0.83
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.16

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        6.93     6.95        2.531          2.88
      2        2.16     5.21        2.968          0.83
```

```
 ***********************************WARNING************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ******************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        7.35     5.21       2.968
      2        8.77     6.95       2.531

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       8.77   Tc(MIN.) =    6.95
  TOTAL AREA(ACRES) =        3.7
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

 ****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21102.00 IS CODE =  31
 ----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 ============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.70  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =    49.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  15.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.53
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       8.77
  PIPE TRAVEL TIME(MIN.) =   0.18    Tc(MIN.) =     7.13
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21102.00 =     551.00 FEET.

+----------------------------------------------------------------------------+
 | C-1                                                                        |
 | NUTMEG APARTMENTS                                                          |
 | 18-946                                                                     |
 +----------------------------------------------------------------------------+

 ****************************************************************************
  FLOW PROCESS FROM NODE   3100.00 TO NODE   3101.00 IS CODE =  21
 ----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 ============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   245.00
  UPSTREAM ELEVATION(FEET) =     57.20
  DOWNSTREAM ELEVATION(FEET) =     54.00
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  245.00**3)/(     3.20)]**.2 =    6.939
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.534
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8731
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.37
  TOTAL AREA(ACRES) =      0.62   TOTAL RUNOFF(CFS) =      1.37

 ****************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3101.00 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) =   2.53
  TOTAL STREAM AREA(ACRES) =     0.62
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.37

+----------------------------------------------------------------------------+
| C-2                                                                        |
| NUTMEG APARTMENTS                                                          |
| 18-946                                                                     |
+----------------------------------------------------------------------------+

******************************************************************************
  FLOW PROCESS FROM NODE   3200.00 TO NODE   3201.00 IS CODE =  21
------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.80
  TC = 0.323*[(  100.00**3)/(     1.80)]**.2 =    4.547
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.29
  TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.29

******************************************************************************
  FLOW PROCESS FROM NODE   3201.00 TO NODE   3101.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.20  DOWNSTREAM(FEET) =    51.00
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  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.) =   1.92
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.29
  PIPE TRAVEL TIME(MIN.) =   0.43    Tc(MIN.) =    5.43
  LONGEST FLOWPATH FROM NODE   3200.00 TO NODE   3101.00 =     150.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3101.00 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.) =    5.43
  RAINFALL INTENSITY(INCH/HR) =   2.90
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.29
```

```
 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        1.37     6.94        2.534          0.62
     2        0.29     5.43        2.899          0.11

 ********************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        1.37     5.43       2.899
     2        1.63     6.94       2.534

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       1.63   Tc(MIN.) =    6.94
 TOTAL AREA(ACRES) =        0.7
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3101.00 =     245.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   3101.00 TO NODE   3301.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    51.00  DOWNSTREAM(FEET) =    50.80
 FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   2.71
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.63
 PIPE TRAVEL TIME(MIN.) =   0.39    Tc(MIN.) =    7.33
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3301.00 =     309.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   3301.00 TO NODE   3301.00 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.) =    7.33
 RAINFALL INTENSITY(INCH/HR) =   2.46
 TOTAL STREAM AREA(ACRES) =     0.73
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.63

+--------------------------------------------------------------------------+
| C-3                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE   3300.00 TO NODE   3301.00 IS CODE =  21
----------------------------------------------------------------------------
```

```
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
  UPSTREAM ELEVATION(FEET) =     56.10
  DOWNSTREAM ELEVATION(FEET) =     54.00
  ELEVATION DIFFERENCE(FEET) =      2.10
  TC = 0.323*[(   64.00**3)/(     2.10)]**.2 =    3.373
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.37
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.37

********************************************************************************
  FLOW PROCESS FROM NODE   3301.00 TO NODE   3301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.37

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.63     7.33        2.458          0.73
      2        0.37     5.00        3.035          0.14

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.48     5.00       3.035
      2        1.93     7.33       2.458

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.93   Tc(MIN.) =    7.33
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3301.00 =     309.00 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE   3301.00 TO NODE   3401.00 IS CODE =  31
--------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.80  DOWNSTREAM(FEET) =    50.20
```

```
  FLOW LENGTH(FEET) =   153.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.05
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.93
  PIPE TRAVEL TIME(MIN.) =   0.84    Tc(MIN.) =    8.17
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3401.00 =     462.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3401.00 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.) =    8.17
  RAINFALL INTENSITY(INCH/HR) =   2.32
  TOTAL STREAM AREA(ACRES) =     0.87
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.93

+--------------------------------------------------------------------------+
| C-4                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3400.00 TO NODE   3401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   152.00
  UPSTREAM ELEVATION(FEET) =     56.00
  DOWNSTREAM ELEVATION(FEET) =     53.40
  ELEVATION DIFFERENCE(FEET) =      2.60
  TC = 0.323*[(  152.00**3)/(     2.60)]**.2 =    5.431
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.900
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8761
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.89
  TOTAL AREA(ACRES) =      0.35   TOTAL RUNOFF(CFS) =      0.89

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3401.00 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.) =    5.43
  RAINFALL INTENSITY(INCH/HR) =   2.90
  TOTAL STREAM AREA(ACRES) =     0.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.89

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.93     8.17        2.316          0.87
      2        0.89     5.43        2.900          0.35
```

```
 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.17     5.43       2.900
      2        2.64     8.17       2.316

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.64   Tc(MIN.) =    8.17
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3401.00 =     462.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.20  DOWNSTREAM(FEET) =    49.90
  FLOW LENGTH(FEET) =    72.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.45
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.64
  PIPE TRAVEL TIME(MIN.) =   0.35    Tc(MIN.) =    8.52
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3501.00 =     534.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3501.00 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.) =    8.52
  RAINFALL INTENSITY(INCH/HR) =   2.26
  TOTAL STREAM AREA(ACRES) =     1.22
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.64

+----------------------------------------------------------------------------+
| C-5                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3500.00 TO NODE   3501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   125.00
```

```
  UPSTREAM ELEVATION(FEET) =     61.00
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      8.00
  TC = 0.323*[(  125.00**3)/(     8.00)]**.2 =    3.858
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.80
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.80

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3501.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.80

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.64     8.52        2.264          1.22
      2        0.80     5.00        3.035          0.30

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.35     5.00       3.035
      2        3.24     8.52       2.264

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.24   Tc(MIN.) =    8.52
  TOTAL AREA(ACRES) =        1.5
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3501.00 =     534.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.90  DOWNSTREAM(FEET) =    49.60
  FLOW LENGTH(FEET) =    62.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.82
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.24
  PIPE TRAVEL TIME(MIN.) =   0.27    Tc(MIN.) =    8.79
```

```
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3601.00 =     596.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   3601.00 TO NODE   3601.00 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.) =    8.79
 RAINFALL INTENSITY(INCH/HR) =   2.23
 TOTAL STREAM AREA(ACRES) =     1.52
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.24

+--------------------------------------------------------------------------+
| C-6                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE   3600.00 TO NODE   3601.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
 UPSTREAM ELEVATION(FEET) =     55.00
 DOWNSTREAM ELEVATION(FEET) =     53.00
 ELEVATION DIFFERENCE(FEET) =      2.00
 TC = 0.323*[(   90.00**3)/(     2.00)]**.2 =    4.180
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.61
 TOTAL AREA(ACRES) =      0.23   TOTAL RUNOFF(CFS) =      0.61

****************************************************************************
 FLOW PROCESS FROM NODE   3601.00 TO NODE   3601.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   3.04
 TOTAL STREAM AREA(ACRES) =     0.23
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.61

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        3.24     8.79        2.225          1.52
     2        0.61     5.00        3.035          0.23

 ********************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
```

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

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.45     5.00       3.035
      2        3.68     8.79       2.225

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.68   Tc(MIN.) =    8.79
  TOTAL AREA(ACRES) =        1.8
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3601.00 =     596.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.60  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =   176.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.48
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.68
  PIPE TRAVEL TIME(MIN.) =   0.84    Tc(MIN.) =    9.63
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3701.00 =     772.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3701.00 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.) =    9.63
  RAINFALL INTENSITY(INCH/HR) =   2.12
  TOTAL STREAM AREA(ACRES) =     1.75
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.68

+----------------------------------------------------------------------------+
| C-7                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3700.00 TO NODE   3701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   362.40
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      3.30
  TC = 0.323*[(  362.40**3)/(     3.30)]**.2 =    8.722
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.234
```

```
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8701
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.92
  TOTAL AREA(ACRES) =      1.50   TOTAL RUNOFF(CFS) =      2.92

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3701.00 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.) =    8.72
  RAINFALL INTENSITY(INCH/HR) =   2.23
  TOTAL STREAM AREA(ACRES) =     1.50
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.92

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.68     9.63        2.116          1.75
      2        2.92     8.72        2.234          1.50

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        6.25     8.72       2.234
      2        6.45     9.63       2.116

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       6.45   Tc(MIN.) =    9.63
  TOTAL AREA(ACRES) =        3.2
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3701.00 =     772.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3901.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.60
  FLOW LENGTH(FEET) =    90.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  14.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.28
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.45
  PIPE TRAVEL TIME(MIN.) =   0.35    Tc(MIN.) =    9.98
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3901.00 =     862.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3901.00 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.) =    9.98
  RAINFALL INTENSITY(INCH/HR) =   2.07
  TOTAL STREAM AREA(ACRES) =     3.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      6.45

+------------------------------------------------------------------------------+
| C-9                                                                          |
|                                                                              |
|                                                                              |
+------------------------------------------------------------------------------+

********************************************************************************
  FLOW PROCESS FROM NODE   3900.00 TO NODE   3901.00 IS CODE =  21
--------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   130.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  130.00**3)/(     3.20)]**.2 =    4.744
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.96
  TOTAL AREA(ACRES) =      0.36   TOTAL RUNOFF(CFS) =      0.96

********************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3901.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.36
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.96

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        6.45     9.98        2.075          3.25
      2        0.96     5.00        3.035          0.36

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ********************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
```

```
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.19     5.00       3.035
      2        7.10     9.98       2.075

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       7.10   Tc(MIN.) =    9.98
  TOTAL AREA(ACRES) =        3.6
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3901.00 =     862.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3902.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.60  DOWNSTREAM(FEET) =    48.00
  FLOW LENGTH(FEET) =   156.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  13.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.27
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.10
  PIPE TRAVEL TIME(MIN.) =   0.61    Tc(MIN.) =   10.59
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3902.00 =    1018.00 FEET.

+----------------------------------------------------------------------------+
| C-14                                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE      0.00 TO NODE      0.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   3902.00 TO NODE  31804.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  31400.00 TO NODE  31401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   119.00
  UPSTREAM ELEVATION(FEET) =     55.60
  DOWNSTREAM ELEVATION(FEET) =     53.30
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  119.00**3)/(     2.30)]**.2 =    4.806
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.64
  TOTAL AREA(ACRES) =      0.24   TOTAL RUNOFF(CFS) =      0.64
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  31401.00 TO NODE  31501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.30  DOWNSTREAM(FEET) =    49.50
  FLOW LENGTH(FEET) =   130.00   MANNING'S N =  0.013
  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.) =   2.77
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.64
  PIPE TRAVEL TIME(MIN.) =   0.78    Tc(MIN.) =    5.78
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31501.00 =     249.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31501.00 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.) =    5.78
  RAINFALL INTENSITY(INCH/HR) =   2.80
  TOTAL STREAM AREA(ACRES) =     0.24
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.64

+--------------------------------------------------------------------------+
| C-15                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31500.00 TO NODE  31501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  100.00**3)/(     2.30)]**.2 =    4.330
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.85
  TOTAL AREA(ACRES) =      0.32   TOTAL RUNOFF(CFS) =      0.85

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31501.00 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.) =    5.00
```

```
 RAINFALL INTENSITY(INCH/HR) =   3.04
 TOTAL STREAM AREA(ACRES) =     0.32
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.85

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        0.64     5.78        2.802          0.24
     2        0.85     5.00        3.035          0.32

 ********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        1.40     5.00       3.035
     2        1.43     5.78       2.802

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       1.40   Tc(MIN.) =    5.00
 TOTAL AREA(ACRES) =        0.6
 LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31501.00 =     249.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  31501.00 TO NODE  31601.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.00
 FLOW LENGTH(FEET) =    55.00   MANNING'S N =  0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   3.96
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.40
 PIPE TRAVEL TIME(MIN.) =   0.23    Tc(MIN.) =    5.23
 LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31601.00 =     304.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  31601.00 TO NODE  31601.00 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.) =    5.23
 RAINFALL INTENSITY(INCH/HR) =   2.96
 TOTAL STREAM AREA(ACRES) =     0.56
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.40
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  31600.00 TO NODE  31601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   120.00
  UPSTREAM ELEVATION(FEET) =     53.80
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      1.80
  TC = 0.323*[(  120.00**3)/(     1.80)]**.2 =    5.073
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.011
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8768
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.11
  TOTAL AREA(ACRES) =      0.42   TOTAL RUNOFF(CFS) =      1.11

****************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31601.00 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.) =    5.07
  RAINFALL INTENSITY(INCH/HR) =   3.01
  TOTAL STREAM AREA(ACRES) =     0.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.11

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.40     5.23        2.960          0.56
      2        1.11     5.07        3.011          0.42

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.47     5.07       3.011
      2        2.49     5.23       2.960

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.49   Tc(MIN.) =    5.23
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31601.00 =     304.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.70
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.57
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.49
  PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =    5.53
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31701.00 =     368.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31701.00 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.) =    5.53
  RAINFALL INTENSITY(INCH/HR) =   2.87
  TOTAL STREAM AREA(ACRES) =     0.98
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.49

+--------------------------------------------------------------------------+
| C-17                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31700.00 TO NODE  31701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
  UPSTREAM ELEVATION(FEET) =     53.80
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      1.70
  TC = 0.323*[(   90.00**3)/(     1.70)]**.2 =    4.318
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.80
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.80

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.80

  ** CONFLUENCE DATA **
```

```
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.49     5.53        2.871          0.98
      2        0.80     5.00        3.035          0.30

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.05     5.00       3.035
      2        3.25     5.53       2.871

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.25   Tc(MIN.) =    5.53
  TOTAL AREA(ACRES) =        1.3
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31701.00 =     368.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31802.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.70  DOWNSTREAM(FEET) =    48.40
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.78
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.25
  PIPE TRAVEL TIME(MIN.) =   0.28    Tc(MIN.) =    5.81
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31802.00 =     432.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| C-10                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31000.00 TO NODE  31001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
```

```
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   102.00
  UPSTREAM ELEVATION(FEET) =     57.50
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      4.50
  TC = 0.323*[(  102.00**3)/(     4.50)]**.2 =    3.831
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.84
  TOTAL AREA(ACRES) =      0.69   TOTAL RUNOFF(CFS) =      1.84

****************************************************************************
  FLOW PROCESS FROM NODE  31001.00 TO NODE  31101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.50  DOWNSTREAM(FEET) =    50.30
  FLOW LENGTH(FEET) =   205.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.58
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.84
  PIPE TRAVEL TIME(MIN.) =   0.96    Tc(MIN.) =    5.96
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31101.00 =     307.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31102.00 TO NODE  31102.00 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.) =    5.96
  RAINFALL INTENSITY(INCH/HR) =   2.76
  TOTAL STREAM AREA(ACRES) =     0.69
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.84

+----------------------------------------------------------------------------+
| C-11                                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31100.00 TO NODE  31101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   109.00
  UPSTREAM ELEVATION(FEET) =     55.50
  DOWNSTREAM ELEVATION(FEET) =     53.30
  ELEVATION DIFFERENCE(FEET) =      2.20
  TC = 0.323*[(  109.00**3)/(     2.20)]**.2 =    4.600
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
```

```
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.49
  TOTAL AREA(ACRES) =      0.56   TOTAL RUNOFF(CFS) =      1.49

****************************************************************************
  FLOW PROCESS FROM NODE  31101.00 TO NODE  31101.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.56
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.49

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.84     5.96        2.757          0.69
      2        1.49     5.00        3.035          0.56

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.03     5.00       3.035
      2        3.19     5.96       2.757

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.19   Tc(MIN.) =    5.96
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31101.00 =     307.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31101.00 TO NODE  31201.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.80  DOWNSTREAM(FEET) =    50.30
  FLOW LENGTH(FEET) =   100.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.82
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.19
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =    6.24
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31201.00 =     407.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31201.00 TO NODE  31201.00 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.) =    6.24
  RAINFALL INTENSITY(INCH/HR) =   2.69
  TOTAL STREAM AREA(ACRES) =     1.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.19

+----------------------------------------------------------------------------+
| C-12                                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31200.00 TO NODE  31201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   102.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     54.10
  ELEVATION DIFFERENCE(FEET) =      1.20
  TC = 0.323*[(  102.00**3)/(     1.20)]**.2 =    4.990
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.45
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.45

****************************************************************************
  FLOW PROCESS FROM NODE  31201.00 TO NODE  31301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.30  DOWNSTREAM(FEET) =    50.00
  FLOW LENGTH(FEET) =    54.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   3.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.42
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.45
  PIPE TRAVEL TIME(MIN.) =   0.37    Tc(MIN.) =    5.37
  LONGEST FLOWPATH FROM NODE  31200.00 TO NODE  31301.00 =     156.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    5.37
  RAINFALL INTENSITY(INCH/HR) =   2.92
  TOTAL STREAM AREA(ACRES) =     0.17
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.45
```

```
 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        3.19     6.24        2.686          1.25
     2        0.45     5.37        2.918          0.17

 ********************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        3.20     5.37       2.918
     2        3.61     6.24       2.686

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       3.61   Tc(MIN.) =    6.24
 TOTAL AREA(ACRES) =        1.4
 LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31301.00 =     407.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    6.24
 RAINFALL INTENSITY(INCH/HR) =   2.69
 TOTAL STREAM AREA(ACRES) =     1.42
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.61

+----------------------------------------------------------------------------+
| C-13                                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE  31300.00 TO NODE  31301.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
 UPSTREAM ELEVATION(FEET) =     55.30
 DOWNSTREAM ELEVATION(FEET) =     54.00
 ELEVATION DIFFERENCE(FEET) =      1.30
 TC = 0.323*[(   77.00**3)/(     1.30)]**.2 =    4.149
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.035
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8770
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.48
 TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.48
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.04
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.48

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.61     6.24        2.686          1.42
      2        0.48     5.00        3.035          0.18

 *********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 **************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.37     5.00       3.035
      2        4.03     6.24       2.686

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.03   Tc(MIN.) =    6.24
  TOTAL AREA(ACRES) =        1.6
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31301.00 =     407.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31802.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.00  DOWNSTREAM(FEET) =    48.40
  FLOW LENGTH(FEET) =   130.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.77
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.03
  PIPE TRAVEL TIME(MIN.) =   0.38    Tc(MIN.) =    6.62
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31802.00 =     537.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 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        4.03     6.62       2.601        1.60
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31802.00 =     537.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        3.25     5.81       2.794        1.28
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31802.00 =     432.00 FEET.

 ****************************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1       6.79       5.81        2.794
      2       7.06       6.62        2.601

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       7.06   Tc(MIN.) =    6.62
  TOTAL AREA(ACRES) =        2.9

************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31803.00 IS CODE =  31
------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.40  DOWNSTREAM(FEET) =    48.30
  FLOW LENGTH(FEET) =    42.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  16.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.47
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.06
  PIPE TRAVEL TIME(MIN.) =   0.20    Tc(MIN.) =    6.82
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31803.00 =     579.00 FEET.

************************************************************************
  FLOW PROCESS FROM NODE  31803.00 TO NODE  31803.00 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.) =    6.82
  RAINFALL INTENSITY(INCH/HR) =   2.56
  TOTAL STREAM AREA(ACRES) =     2.88
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.06

+----------------------------------------------------------------------+
| C-18                                                                 |
|                                                                      |
|                                                                      |
+----------------------------------------------------------------------+

************************************************************************
  FLOW PROCESS FROM NODE  31800.00 TO NODE  31801.00 IS CODE =  21
------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
```

```
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   164.00
  UPSTREAM ELEVATION(FEET) =     54.00
  DOWNSTREAM ELEVATION(FEET) =     51.80
  ELEVATION DIFFERENCE(FEET) =      2.20
  TC = 0.323*[(  164.00**3)/(     2.20)]**.2 =    5.878
     5 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.777
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8752
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.67
  TOTAL AREA(ACRES) =      1.10   TOTAL RUNOFF(CFS) =      2.67

****************************************************************************
  FLOW PROCESS FROM NODE  31801.00 TO NODE  31803.00 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.) =    5.88
  RAINFALL INTENSITY(INCH/HR) =   2.78
  TOTAL STREAM AREA(ACRES) =     1.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.67

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        7.06     6.82        2.559          2.88
      2        2.67     5.88        2.777          1.10

 *********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        8.76     5.88       2.777
      2        9.52     6.82       2.559

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       9.52   Tc(MIN.) =    6.82
  TOTAL AREA(ACRES) =        4.0
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31803.00 =     579.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31803.00 TO NODE  31804.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.30  DOWNSTREAM(FEET) =    48.00
  FLOW LENGTH(FEET) =    98.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  16.3 INCHES
```

```
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.20
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       9.52
  PIPE TRAVEL TIME(MIN.) =   0.39    Tc(MIN.) =    7.21
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31804.00 =     677.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31804.00 TO NODE   3902.00 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        9.52     7.21        2.482        3.98
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE   3902.00 =     677.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        7.10    10.59        2.008        3.61
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3902.00 =    1018.00 FEET.

 ****************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ********************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      14.35       7.21        2.482
      2      14.80      10.59        2.008

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      14.35   Tc(MIN.) =    7.21
  TOTAL AREA(ACRES) =        7.6
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        7.6  TC(MIN.) =      7.21
  PEAK FLOW RATE(CFS)   =      14.35
============================================================================
============================================================================
  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 1982-2015 Advanced Engineering Software (aes)
                    (Rational Tabling Version 22.0)
                 Release Date: 07/01/2015  License ID 1510

                          Analysis prepared by:

                          DRC Engineering, Inc.
                    160 South Old Springs Road, Suite 210
                             Anaheim, CA 92808
                                714-685-6860

 ************************* DESCRIPTION OF STUDY *************************
* NUTMEG APARTMENTS                                                      *
* RATIONAL METHOD                                                        *
* 18-946 10 YEAR STORM ROUTING                                           *
 ************************************************************************

  FILE NAME: 8946P2.DAT
  TIME/DATE OF STUDY: 17:01 11/01/2019
------------------------------------------------------------------------
  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 = 0.90
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =   10.00   1-HOUR INTENSITY(INCH/HOUR) =   0.889
  SLOPE OF INTENSITY DURATION CURVE = 0.5506
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (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.*

+------------------------------------------------------------------------+
| AREA A-1                                                               |
| NUTMEG APARTMENTS                                                      |
| 18-946                                                                 |
+------------------------------------------------------------------------+

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

```
 FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
 UPSTREAM ELEVATION(FEET) =     57.20
 DOWNSTREAM ELEVATION(FEET) =     55.80
 ELEVATION DIFFERENCE(FEET) =      1.40
 TC = 0.323*[(   64.00**3)/(     1.40)]**.2 =    3.658
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.37
 TOTAL AREA(ACRES) =      0.12   TOTAL RUNOFF(CFS) =      0.37

****************************************************************************
 FLOW PROCESS FROM NODE    101.00 TO NODE    201.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    52.80  DOWNSTREAM(FEET) =    52.20
 FLOW LENGTH(FEET) =    66.00   MANNING'S N =  0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   2.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   2.71
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       0.37
 PIPE TRAVEL TIME(MIN.) =   0.41    Tc(MIN.) =    5.41
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    201.00 =     130.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    201.00 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.) =    5.41
 RAINFALL INTENSITY(INCH/HR) =   3.34
 TOTAL STREAM AREA(ACRES) =     0.12
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.37

+--------------------------------------------------------------------------+
| AREA A-2                                                                 |
| NUTMEG APARTMENTS                                                        |
| 18-946                                                                   |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
 UPSTREAM ELEVATION(FEET) =     56.80
```

```
 DOWNSTREAM ELEVATION(FEET) =     55.80
 ELEVATION DIFFERENCE(FEET) =      1.00
 TC = 0.323*[(   80.00**3)/(     1.00)]**.2 =    4.474
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.43
 TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    201.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   3.49
 TOTAL STREAM AREA(ACRES) =     0.14
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.43

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        0.37     5.41        3.344          0.12
     2        0.43     5.00        3.491          0.14

 **********************************WARNING***********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        0.77     5.00       3.491
     2        0.78     5.41       3.344

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       0.77   Tc(MIN.) =    5.00
 TOTAL AREA(ACRES) =        0.3
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    201.00 =     130.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    301.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    52.20  DOWNSTREAM(FEET) =    51.70
 FLOW LENGTH(FEET) =   102.00   MANNING'S N =  0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   2.70
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       0.77
 PIPE TRAVEL TIME(MIN.) =   0.63    Tc(MIN.) =    5.63
```

```
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    301.00 =     232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    301.00 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.) =    5.63
  RAINFALL INTENSITY(INCH/HR) =   3.27
  TOTAL STREAM AREA(ACRES) =     0.26
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.77

+--------------------------------------------------------------------------+
| AREA A-3                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    85.00
  UPSTREAM ELEVATION(FEET) =     56.80
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   85.00**3)/(     1.00)]**.2 =    4.639
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.43
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.43

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.77     5.63        3.270          0.26
      2        0.43     5.00        3.491          0.14

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
```

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

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.11     5.00       3.491
      2        1.17     5.63       3.270

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.17   Tc(MIN.) =    5.63
  TOTAL AREA(ACRES) =        0.4
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    301.00 =     232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.70  DOWNSTREAM(FEET) =    51.40
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.01
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.17
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    5.97
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    401.00 =     293.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    401.00 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.) =    5.97
  RAINFALL INTENSITY(INCH/HR) =   3.17
  TOTAL STREAM AREA(ACRES) =     0.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.17

+--------------------------------------------------------------------------+
| AREA A-4                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    65.00
  UPSTREAM ELEVATION(FEET) =     56.80
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   65.00**3)/(     1.00)]**.2 =    3.950
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
```

```
   10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.43
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.43

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.17     5.97        3.167          0.40
      2        0.43     5.00        3.491          0.14

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.41     5.00       3.491
      2        1.56     5.97       3.167

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.56   Tc(MIN.) =    5.97
  TOTAL AREA(ACRES) =        0.5
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    401.00 =     293.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.40  DOWNSTREAM(FEET) =    50.40
  FLOW LENGTH(FEET) =   207.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.20
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.56
  PIPE TRAVEL TIME(MIN.) =   1.08    Tc(MIN.) =    7.05
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    501.00 =     500.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    501.00 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.) =    7.05
  RAINFALL INTENSITY(INCH/HR) =   2.89
  TOTAL STREAM AREA(ACRES) =     0.54
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.56

+----------------------------------------------------------------------------+
| AREA A-5                                                                   |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

******************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   207.00
  UPSTREAM ELEVATION(FEET) =     57.40
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      3.10
  TC = 0.323*[(  207.00**3)/(     3.10)]**.2 =    6.311
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.071
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8772
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.29
  TOTAL AREA(ACRES) =      0.48   TOTAL RUNOFF(CFS) =      1.29

******************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    501.00 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.) =    6.31
  RAINFALL INTENSITY(INCH/HR) =   3.07
  TOTAL STREAM AREA(ACRES) =     0.48
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.29

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.56     7.05        2.890          0.54
      2        1.29     6.31        3.071          0.48

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ******************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
```

```
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.69     6.31       3.071
      2        2.78     7.05       2.890

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.78   Tc(MIN.) =    7.05
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    501.00 =     500.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.40  DOWNSTREAM(FEET) =    50.00
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.09
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.78
  PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =    7.31
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    601.00 =     564.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    601.00 TO NODE    601.00 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.) =    7.31
  RAINFALL INTENSITY(INCH/HR) =   2.83
  TOTAL STREAM AREA(ACRES) =     1.02
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.78

+--------------------------------------------------------------------------+
| AREA A-6                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    66.00
  UPSTREAM ELEVATION(FEET) =     55.80
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      1.50
  TC = 0.323*[(   66.00**3)/(     1.50)]**.2 =    3.675
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.46
  TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.46
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    601.00 TO NODE    601.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.15
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.46

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.78     7.31        2.833          1.02
      2        0.46     5.00        3.491          0.15

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.36     5.00       3.491
      2        3.15     7.31       2.833

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.15   Tc(MIN.) =    7.31
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    601.00 =     564.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    601.00 TO NODE    701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.00  DOWNSTREAM(FEET) =    49.50
  FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.76
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.15
  PIPE TRAVEL TIME(MIN.) =   0.47    Tc(MIN.) =    7.78
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    701.00 =     670.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    701.00 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.) =    7.78
  RAINFALL INTENSITY(INCH/HR) =   2.74
```

```
  TOTAL STREAM AREA(ACRES) =     1.17
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.15

+---------------------------------------------------------------------------+
| AREA A-7                                                                  |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    700.00 TO NODE    701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   106.00
  UPSTREAM ELEVATION(FEET) =     55.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(  106.00**3)/(     2.00)]**.2 =    4.611
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.71
  TOTAL AREA(ACRES) =      0.23   TOTAL RUNOFF(CFS) =      0.71

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.71

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.15     7.78        2.738          1.17
      2        0.71     5.00        3.491          0.23

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.73     5.00       3.491
      2        3.71     7.78       2.738
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.71   Tc(MIN.) =    7.78
  TOTAL AREA(ACRES) =        1.4
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    701.00 =     670.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    801.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.10
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.35
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.71
  PIPE TRAVEL TIME(MIN.) =   0.25    Tc(MIN.) =    8.02
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    801.00 =     734.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE    801.00 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.) =    8.02
  RAINFALL INTENSITY(INCH/HR) =   2.69
  TOTAL STREAM AREA(ACRES) =     1.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.71

+--------------------------------------------------------------------------+
| AREA A-8                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    800.00 TO NODE    801.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    83.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.50
  TC = 0.323*[(   83.00**3)/(     1.50)]**.2 =    4.217
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.61
  TOTAL AREA(ACRES) =      0.20   TOTAL RUNOFF(CFS) =      0.61

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE    801.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.20
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.61

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.71     8.02        2.691          1.40
      2        0.61     5.00        3.491          0.20

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.93     5.00       3.491
      2        4.18     8.02       2.691

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.18   Tc(MIN.) =    8.02
  TOTAL AREA(ACRES) =        1.6
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    801.00 =     734.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE   1402.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.10  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =   157.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.75
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.18
  PIPE TRAVEL TIME(MIN.) =   0.70    Tc(MIN.) =    8.72
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1402.00 =     891.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1402.00 TO NODE   1402.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA A-9                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    900.00 TO NODE    901.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   125.00
  UPSTREAM ELEVATION(FEET) =     57.50
  DOWNSTREAM ELEVATION(FEET) =     53.60
  ELEVATION DIFFERENCE(FEET) =      3.90
  TC = 0.323*[(  125.00**3)/(     3.90)]**.2 =    4.454
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.44
  TOTAL AREA(ACRES) =      0.47   TOTAL RUNOFF(CFS) =      1.44

****************************************************************************
  FLOW PROCESS FROM NODE    901.00 TO NODE   1001.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.00  DOWNSTREAM(FEET) =    50.40
  FLOW LENGTH(FEET) =   133.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.06
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.44
  PIPE TRAVEL TIME(MIN.) =   0.72    Tc(MIN.) =    5.72
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     258.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 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.) =    5.72
  RAINFALL INTENSITY(INCH/HR) =   3.24
  TOTAL STREAM AREA(ACRES) =     0.47
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.44

+--------------------------------------------------------------------------+
| AREA A-10                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1000.00 TO NODE   1001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   120.00
  UPSTREAM ELEVATION(FEET) =     55.60
  DOWNSTREAM ELEVATION(FEET) =     52.90
  ELEVATION DIFFERENCE(FEET) =      2.70
```

```
  TC = 0.323*[(  120.00**3)/(     2.70)]**.2 =    4.678
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.92
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.92

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.92

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.44     5.72        3.241          0.47
      2        0.92     5.00        3.491          0.30

 *********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.18     5.00       3.491
      2        2.30     5.72       3.241

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.30   Tc(MIN.) =    5.72
  TOTAL AREA(ACRES) =        0.8
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     258.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.40  DOWNSTREAM(FEET) =    49.50
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.79
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.30
  PIPE TRAVEL TIME(MIN.) =   0.14    Tc(MIN.) =    5.87
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1101.00 =     308.00 FEET.

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

```
 FLOW PROCESS FROM NODE   1101.00 TO NODE   1101.00 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.) =    5.87
 RAINFALL INTENSITY(INCH/HR) =   3.20
 TOTAL STREAM AREA(ACRES) =     0.77
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.30

+--------------------------------------------------------------------------+
| AREA A-11                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE   1100.00 TO NODE   1101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    55.00
 UPSTREAM ELEVATION(FEET) =     54.80
 DOWNSTREAM ELEVATION(FEET) =     52.80
 ELEVATION DIFFERENCE(FEET) =      2.00
 TC = 0.323*[(   55.00**3)/(     2.00)]**.2 =    3.110
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.49
 TOTAL AREA(ACRES) =      0.16   TOTAL RUNOFF(CFS) =      0.49

****************************************************************************
 FLOW PROCESS FROM NODE   1101.00 TO NODE   1001.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   3.49
 TOTAL STREAM AREA(ACRES) =     0.16
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.49

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        2.30     5.87        3.197          0.77
     2        0.49     5.00        3.491          0.16

 ********************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
```

```
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.45     5.00       3.491
      2        2.75     5.87       3.197

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.75   Tc(MIN.) =    5.87
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     308.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1201.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.20
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.01
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.75
  PIPE TRAVEL TIME(MIN.) =   0.21    Tc(MIN.) =    6.08
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1201.00 =     358.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1201.00 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.) =    6.08
  RAINFALL INTENSITY(INCH/HR) =   3.14
  TOTAL STREAM AREA(ACRES) =     0.93
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.75

+--------------------------------------------------------------------------+
| AREA A-12                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1200.00 TO NODE   1201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    55.00
  UPSTREAM ELEVATION(FEET) =     54.80
  DOWNSTREAM ELEVATION(FEET) =     52.90
  ELEVATION DIFFERENCE(FEET) =      1.90
  TC = 0.323*[(   55.00**3)/(     1.90)]**.2 =    3.142
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
```

```
  SUBAREA RUNOFF(CFS) =      0.34
  TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.34

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1201.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.34

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.75     6.08        3.136          0.93
      2        0.34     5.00        3.491          0.11

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.60     5.00       3.491
      2        3.05     6.08       3.136

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.05   Tc(MIN.) =    6.08
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1201.00 =     358.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.20  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =    75.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.94
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.05
  PIPE TRAVEL TIME(MIN.) =   0.43    Tc(MIN.) =    6.50
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1301.00 =     433.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1301.00 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.) =    6.50
  RAINFALL INTENSITY(INCH/HR) =   3.02
  TOTAL STREAM AREA(ACRES) =     1.04
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.05

+---------------------------------------------------------------------------+
| AREA A-13                                                                 |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1300.00 TO NODE   1301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
  UPSTREAM ELEVATION(FEET) =     54.50
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      2.40
  TC = 0.323*[(   77.00**3)/(     2.40)]**.2 =    3.670
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.55
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.55

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.55

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.05     6.50        3.021          1.04
      2        0.55     5.00        3.491          0.18

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
```

```
      1        2.90     5.00       3.491
      2        3.53     6.50       3.021

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.53   Tc(MIN.) =    6.50
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1301.00 =     433.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.80
  FLOW LENGTH(FEET) =    62.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.38
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.53
  PIPE TRAVEL TIME(MIN.) =   0.31    Tc(MIN.) =    6.81
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1401.00 =     495.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1401.00 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.) =    6.81
  RAINFALL INTENSITY(INCH/HR) =   2.95
  TOTAL STREAM AREA(ACRES) =     1.22
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.53

+--------------------------------------------------------------------------+
| AREA A-14                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1400.00 TO NODE   1401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   103.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(  103.00**3)/(     3.00)]**.2 =    4.179
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.69
  TOTAL AREA(ACRES) =      0.55   TOTAL RUNOFF(CFS) =      1.69

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.55
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.69

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.53     6.81        2.946          1.22
      2        1.69     5.00        3.491          0.55

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.28     5.00       3.491
      2        4.96     6.81       2.946

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.96   Tc(MIN.) =    6.81
  TOTAL AREA(ACRES) =        1.8
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1401.00 =     495.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1402.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.80  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =    57.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.40
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.96
  PIPE TRAVEL TIME(MIN.) =   0.22    Tc(MIN.) =    7.02
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1402.00 =     552.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1402.00 TO NODE   1402.00 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        4.96     7.02       2.896        1.77
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1402.00 =     552.00 FEET.
```

```
 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY     AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)   (ACRE)
     1        4.18      8.72       2.570        1.60
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1402.00 =     891.00 FEET.

****************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
************************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc      INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1       8.32       7.02        2.896
     2       8.58       8.72        2.570

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       8.32   Tc(MIN.) =    7.02
 TOTAL AREA(ACRES) =        3.4

************************************************************************
 FLOW PROCESS FROM NODE   1402.00 TO NODE   1403.00 IS CODE =  31
------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    48.50  DOWNSTREAM(FEET) =    48.40
 FLOW LENGTH(FEET) =    10.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   6.31
 ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       8.32
 PIPE TRAVEL TIME(MIN.) =   0.03    Tc(MIN.) =    7.05
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1403.00 =     901.00 FEET.

+------------------------------------------------------------------------+
| AREA B-1                                                               |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+

************************************************************************
 FLOW PROCESS FROM NODE   2100.00 TO NODE   2101.00 IS CODE =  21
------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
========================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   129.00
 UPSTREAM ELEVATION(FEET) =     57.50
 DOWNSTREAM ELEVATION(FEET) =     54.30
 ELEVATION DIFFERENCE(FEET) =      3.20
 TC = 0.323*[(  129.00**3)/(     3.20)]**.2 =    4.722
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      1.44
 TOTAL AREA(ACRES) =      0.47   TOTAL RUNOFF(CFS) =      1.44
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   2101.00 TO NODE   2101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.30  DOWNSTREAM(FEET) =    50.80
  FLOW LENGTH(FEET) =    65.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.74
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.44
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =    5.29
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2101.00 =     194.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2201.00 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.) =    5.29
  RAINFALL INTENSITY(INCH/HR) =   3.38
  TOTAL STREAM AREA(ACRES) =     0.47
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.44

+--------------------------------------------------------------------------+
| AREA B-2                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2200.00 TO NODE   2201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   103.00
  UPSTREAM ELEVATION(FEET) =     57.30
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(  103.00**3)/(     3.00)]**.2 =    4.179
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.80
  TOTAL AREA(ACRES) =      0.26   TOTAL RUNOFF(CFS) =      0.80

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2201.00 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.) =    5.00
```

```
 RAINFALL INTENSITY(INCH/HR) =   3.49
 TOTAL STREAM AREA(ACRES) =     0.26
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.80

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        1.44     5.29        3.385          0.47
     2        0.80     5.00        3.491          0.26

 ********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        2.16     5.00       3.491
     2        2.22     5.29       3.385

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       2.22   Tc(MIN.) =    5.29
 TOTAL AREA(ACRES) =        0.7
 LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2201.00 =     194.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   2201.00 TO NODE   2301.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    51.30  DOWNSTREAM(FEET) =    50.10
 FLOW LENGTH(FEET) =   105.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.84
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       2.22
 PIPE TRAVEL TIME(MIN.) =   0.36    Tc(MIN.) =    5.65
 LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2301.00 =     299.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   2301.00 TO NODE   2301.00 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.) =    5.65
 RAINFALL INTENSITY(INCH/HR) =   3.26
 TOTAL STREAM AREA(ACRES) =     0.73
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.22
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   2300.00 TO NODE   2301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   110.00
  UPSTREAM ELEVATION(FEET) =     56.70
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  110.00**3)/(     3.20)]**.2 =    4.291
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.77
  TOTAL AREA(ACRES) =      0.25   TOTAL RUNOFF(CFS) =      0.77

****************************************************************************
  FLOW PROCESS FROM NODE   2301.00 TO NODE   2301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.77

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.22     5.65        3.264          0.73
      2        0.77     5.00        3.491          0.25

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.73     5.00       3.491
      2        2.94     5.65       3.264

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.94   Tc(MIN.) =    5.65
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2301.00 =     299.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2301.00 TO NODE   2401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.10  DOWNSTREAM(FEET) =    49.70
  FLOW LENGTH(FEET) =    65.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.11
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.94
  PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =    5.91
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2401.00 =     364.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE   2401.00 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.) =    5.91
  RAINFALL INTENSITY(INCH/HR) =   3.18
  TOTAL STREAM AREA(ACRES) =     0.98
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.94

+--------------------------------------------------------------------------+
| AREA B-4                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2400.00 TO NODE   2401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    75.00
  UPSTREAM ELEVATION(FEET) =     54.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   75.00**3)/(     1.00)]**.2 =    4.304
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.58
  TOTAL AREA(ACRES) =      0.19   TOTAL RUNOFF(CFS) =      0.58

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE   2401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.19
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.58

  ** CONFLUENCE DATA **
```

```
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.94     5.91        3.183          0.98
      2        0.58     5.00        3.491          0.19

 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.06     5.00       3.491
      2        3.47     5.91       3.183

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.47   Tc(MIN.) =    5.91
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2401.00 =     364.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE  21101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.70  DOWNSTREAM(FEET) =    48.70
  FLOW LENGTH(FEET) =   138.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.54
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.47
  PIPE TRAVEL TIME(MIN.) =   0.51    Tc(MIN.) =    6.42
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA B-5                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2500.00 TO NODE   2501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     54.20
```

```
  ELEVATION DIFFERENCE(FEET) =      0.80
  TC = 0.323*[(  100.00**3)/(     0.80)]**.2 =    5.348
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.364
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8790
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.95
  TOTAL AREA(ACRES) =      0.32   TOTAL RUNOFF(CFS) =      0.95

****************************************************************************
  FLOW PROCESS FROM NODE   2501.00 TO NODE   2601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    52.70  DOWNSTREAM(FEET) =    50.50
  FLOW LENGTH(FEET) =   112.00   MANNING'S N =  0.013
  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.) =   4.69
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.95
  PIPE TRAVEL TIME(MIN.) =   0.40    Tc(MIN.) =    5.75
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2601.00 =     212.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2601.00 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.) =    5.75
  RAINFALL INTENSITY(INCH/HR) =   3.23
  TOTAL STREAM AREA(ACRES) =     0.32
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.95

+----------------------------------------------------------------------------+
| AREA B-6                                                                   |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2600.00 TO NODE   2601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =     56.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(   80.00**3)/(     3.00)]**.2 =    3.591
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.52
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.52

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

```
 FLOW PROCESS FROM NODE   2601.00 TO NODE   2601.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   3.49
 TOTAL STREAM AREA(ACRES) =     0.17
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.52

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        0.95     5.75        3.234          0.32
     2        0.52     5.00        3.491          0.17

 **********************************WARNING***********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        1.35     5.00       3.491
     2        1.43     5.75       3.234

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       1.43   Tc(MIN.) =    5.75
 TOTAL AREA(ACRES) =        0.5
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2601.00 =     212.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   2601.00 TO NODE   2701.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    50.50  DOWNSTREAM(FEET) =    49.90
 FLOW LENGTH(FEET) =    60.00   MANNING'S N =  0.013
 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.) =   4.13
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.43
 PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =    5.99
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2701.00 =     272.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   2701.00 TO NODE   2701.00 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.) =    5.99
 RAINFALL INTENSITY(INCH/HR) =   3.16
```

```
  TOTAL STREAM AREA(ACRES) =     0.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.43

+---------------------------------------------------------------------------+
| AREA A-7                                                                  |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2700.00 TO NODE   2701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    69.00
  UPSTREAM ELEVATION(FEET) =     54.60
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.10
  TC = 0.323*[(   69.00**3)/(     1.10)]**.2 =    4.016
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.55
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.55

****************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE   2701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.55

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.43     5.99        3.161          0.49
      2        0.55     5.00        3.491          0.18

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.75     5.00       3.491
      2        1.93     5.99       3.161
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.93   Tc(MIN.) =    5.99
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2701.00 =     272.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE  21001.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.90  DOWNSTREAM(FEET) =    48.90
  FLOW LENGTH(FEET) =   128.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.04
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.93
  PIPE TRAVEL TIME(MIN.) =   0.53    Tc(MIN.) =    6.52
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 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.) =    6.52
  RAINFALL INTENSITY(INCH/HR) =   3.02
  TOTAL STREAM AREA(ACRES) =     0.67
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.93

+--------------------------------------------------------------------------+
| AREA B-10                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  21000.00 TO NODE  21001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    92.00
  UPSTREAM ELEVATION(FEET) =     53.90
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      1.90
  TC = 0.323*[(   92.00**3)/(     1.90)]**.2 =    4.279
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.89
  TOTAL AREA(ACRES) =      0.29   TOTAL RUNOFF(CFS) =      0.89

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.29
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.89

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.93     6.52        3.018          0.67
      2        0.89     5.00        3.491          0.29

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.37     5.00       3.491
      2        2.70     6.52       3.018

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.70   Tc(MIN.) =    6.52
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA B-8                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2800.00 TO NODE   2801.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   150.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     52.50
  ELEVATION DIFFERENCE(FEET) =      2.50
  TC = 0.323*[(  150.00**3)/(     2.50)]**.2 =    5.431
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.336
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8788
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.97
```

```
  TOTAL AREA(ACRES) =      0.33   TOTAL RUNOFF(CFS) =      0.97

****************************************************************************
  FLOW PROCESS FROM NODE   2801.00 TO NODE   2901.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.30
  FLOW LENGTH(FEET) =    43.00   MANNING'S N =  0.013
  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.) =   2.80
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.97
  PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =    5.69
  LONGEST FLOWPATH FROM NODE   2800.00 TO NODE   2901.00 =     193.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE   2901.00 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.) =    5.69
  RAINFALL INTENSITY(INCH/HR) =   3.25
  TOTAL STREAM AREA(ACRES) =     0.33
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.97

+--------------------------------------------------------------------------+
| AREA B-9                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2900.00 TO NODE   2901.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   112.00
  UPSTREAM ELEVATION(FEET) =     54.40
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  112.00**3)/(     2.30)]**.2 =    4.634
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.29
  TOTAL AREA(ACRES) =      0.42   TOTAL RUNOFF(CFS) =      1.29

****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE   2901.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   3.49
 TOTAL STREAM AREA(ACRES) =     0.42
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.29

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        0.97     5.69        3.252          0.33
     2        1.29     5.00        3.491          0.42

 ********************************WARNING***********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        2.14     5.00       3.491
     2        2.17     5.69       3.252

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       2.14   Tc(MIN.) =    5.00
 TOTAL AREA(ACRES) =        0.8
 LONGEST FLOWPATH FROM NODE   2800.00 TO NODE   2901.00 =     193.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   2901.00 TO NODE  21001.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    49.30  DOWNSTREAM(FEET) =    48.90
 FLOW LENGTH(FEET) =   110.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   3.12
 ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       2.14
 PIPE TRAVEL TIME(MIN.) =   0.59    Tc(MIN.) =    5.59
 LONGEST FLOWPATH FROM NODE   2800.00 TO NODE  21001.00 =     303.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        2.14     5.59       3.284        0.75
 LONGEST FLOWPATH FROM NODE   2800.00 TO NODE  21001.00 =     303.00 FEET.

 ** MEMORY BANK #  3 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        2.70     6.52       3.018        0.96
```

```
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

 ****************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc      INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1       4.46       5.59        3.284
     2       4.67       6.52        3.018

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       4.67   Tc(MIN.) =    6.52
 TOTAL AREA(ACRES) =        1.7

************************************************************************
 FLOW PROCESS FROM NODE  21001.00 TO NODE  21101.00 IS CODE =  31
------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    48.90  DOWNSTREAM(FEET) =    48.70
 FLOW LENGTH(FEET) =    76.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  13.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   3.28
 ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       4.67
 PIPE TRAVEL TIME(MIN.) =   0.39    Tc(MIN.) =    6.90
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21101.00 =     476.00 FEET.

************************************************************************
 FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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        4.67     6.90       2.923        1.71
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21101.00 =     476.00 FEET.

 ** MEMORY BANK #  2 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        3.47     6.42       3.042        1.17
 LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

 ****************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc      INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1       7.81       6.42        3.042
     2       8.00       6.90        2.923
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       8.00   Tc(MIN.) =    6.90
  TOTAL AREA(ACRES) =        2.9

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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.) =    6.90
  RAINFALL INTENSITY(INCH/HR) =   2.92
  TOTAL STREAM AREA(ACRES) =     2.88
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      8.00

+--------------------------------------------------------------------------+
| AREA B-11                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  21100.00 TO NODE  21101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   136.00
  UPSTREAM ELEVATION(FEET) =     54.00
  DOWNSTREAM ELEVATION(FEET) =     51.70
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  136.00**3)/(     2.30)]**.2 =    5.207
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.414
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8793
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.49
  TOTAL AREA(ACRES) =      0.83   TOTAL RUNOFF(CFS) =      2.49

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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.) =    5.21
  RAINFALL INTENSITY(INCH/HR) =   3.41
  TOTAL STREAM AREA(ACRES) =     0.83
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.49

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        8.00     6.90        2.923          2.88
      2        2.49     5.21        3.414          0.83

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
```

```
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        8.53     5.21       3.414
      2       10.13     6.90       2.923

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      10.13   Tc(MIN.) =    6.90
  TOTAL AREA(ACRES) =        3.7
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

 ****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21102.00 IS CODE =  31
 ----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 ============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.70  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =    49.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  15.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.78
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      10.13
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    7.07
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21102.00 =     551.00 FEET.

+----------------------------------------------------------------------------+
 | C-1                                                                        |
 | NUTMEG APARTMENTS                                                          |
 | 18-946                                                                     |
 +----------------------------------------------------------------------------+

 ****************************************************************************
  FLOW PROCESS FROM NODE   3100.00 TO NODE   3101.00 IS CODE =  21
 ----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 ============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   245.00
  UPSTREAM ELEVATION(FEET) =     57.20
  DOWNSTREAM ELEVATION(FEET) =     54.00
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  245.00**3)/(     3.20)]**.2 =    6.939
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.915
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8762
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.58
  TOTAL AREA(ACRES) =      0.62   TOTAL RUNOFF(CFS) =      1.58

 ****************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3101.00 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) =   2.91
  TOTAL STREAM AREA(ACRES) =     0.62
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.58

+---------------------------------------------------------------------------+
| C-2                                                                       |
| NUTMEG APARTMENTS                                                         |
| 18-946                                                                    |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3200.00 TO NODE   3201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.80
  TC = 0.323*[(  100.00**3)/(     1.80)]**.2 =    4.547
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.34
  TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.34

****************************************************************************
  FLOW PROCESS FROM NODE   3201.00 TO NODE   3101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.20  DOWNSTREAM(FEET) =    51.00
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  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.) =   2.00
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.34
  PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =    5.42
  LONGEST FLOWPATH FROM NODE   3200.00 TO NODE   3101.00 =     150.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3101.00 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.) =    5.42
  RAINFALL INTENSITY(INCH/HR) =   3.34
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.34

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

```
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.58     6.94        2.915          0.62
      2        0.34     5.42        3.340          0.11

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.57     5.42       3.340
      2        1.88     6.94       2.915

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.88   Tc(MIN.) =    6.94
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3101.00 =     245.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.00  DOWNSTREAM(FEET) =    50.80
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.75
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.88
  PIPE TRAVEL TIME(MIN.) =   0.39    Tc(MIN.) =    7.33
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3301.00 =     309.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3301.00 TO NODE   3301.00 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.) =    7.33
  RAINFALL INTENSITY(INCH/HR) =   2.83
  TOTAL STREAM AREA(ACRES) =     0.73
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.88

+--------------------------------------------------------------------------+
| C-3                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3300.00 TO NODE   3301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
```

```
        DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
  UPSTREAM ELEVATION(FEET) =     56.10
  DOWNSTREAM ELEVATION(FEET) =     54.00
  ELEVATION DIFFERENCE(FEET) =      2.10
  TC = 0.323*[(   64.00**3)/(     2.10)]**.2 =    3.373
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.43
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
  FLOW PROCESS FROM NODE   3301.00 TO NODE   3301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.43

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.88     7.33        2.829          0.73
      2        0.43     5.00        3.491          0.14

 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.71     5.00       3.491
      2        2.23     7.33       2.829

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.23   Tc(MIN.) =    7.33
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3301.00 =     309.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3301.00 TO NODE   3401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.80  DOWNSTREAM(FEET) =    50.20
  FLOW LENGTH(FEET) =   153.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.24
```

```
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.23
  PIPE TRAVEL TIME(MIN.) =   0.79    Tc(MIN.) =    8.11
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3401.00 =     462.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3401.00 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.) =    8.11
  RAINFALL INTENSITY(INCH/HR) =   2.67
  TOTAL STREAM AREA(ACRES) =     0.87
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.23

+--------------------------------------------------------------------------+
| C-4                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3400.00 TO NODE   3401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   152.00
  UPSTREAM ELEVATION(FEET) =     56.00
  DOWNSTREAM ELEVATION(FEET) =     53.40
  ELEVATION DIFFERENCE(FEET) =      2.60
  TC = 0.323*[(  152.00**3)/(     2.60)]**.2 =    5.431
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.336
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8788
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.03
  TOTAL AREA(ACRES) =      0.35   TOTAL RUNOFF(CFS) =      1.03

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3401.00 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.) =    5.43
  RAINFALL INTENSITY(INCH/HR) =   3.34
  TOTAL STREAM AREA(ACRES) =     0.35
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.03

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.23     8.11        2.674          0.87
      2        1.03     5.43        3.336          0.35

 ********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
```

```
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.52     5.43       3.336
      2        3.05     8.11       2.674

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.05   Tc(MIN.) =    8.11
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3401.00 =     462.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.20  DOWNSTREAM(FEET) =    49.90
  FLOW LENGTH(FEET) =    72.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.56
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.05
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    8.45
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3501.00 =     534.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3501.00 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.) =    8.45
  RAINFALL INTENSITY(INCH/HR) =   2.62
  TOTAL STREAM AREA(ACRES) =     1.22
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.05

+--------------------------------------------------------------------------+
| C-5                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3500.00 TO NODE   3501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   125.00
  UPSTREAM ELEVATION(FEET) =     61.00
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      8.00
```

```
  TC = 0.323*[(  125.00**3)/(     8.00)]**.2 =    3.858
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.92
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.92

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3501.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.92

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.05     8.45        2.615          1.22
      2        0.92     5.00        3.491          0.30

 *********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.73     5.00       3.491
      2        3.74     8.45       2.615

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.74   Tc(MIN.) =    8.45
  TOTAL AREA(ACRES) =        1.5
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3501.00 =     534.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.90  DOWNSTREAM(FEET) =    49.60
  FLOW LENGTH(FEET) =    62.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.92
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.74
  PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =    8.71
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3601.00 =     596.00 FEET.

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

```
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3601.00 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.) =    8.71
  RAINFALL INTENSITY(INCH/HR) =   2.57
  TOTAL STREAM AREA(ACRES) =     1.52
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.74

+--------------------------------------------------------------------------+
| C-6                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3600.00 TO NODE   3601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(   90.00**3)/(     2.00)]**.2 =    4.180
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.71
  TOTAL AREA(ACRES) =      0.23   TOTAL RUNOFF(CFS) =      0.71

****************************************************************************
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3601.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.71

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.74     8.71        2.571          1.52
      2        0.71     5.00        3.491          0.23

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
```

```
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.85     5.00       3.491
      2        4.26     8.71       2.571

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.26   Tc(MIN.) =    8.71
  TOTAL AREA(ACRES) =        1.8
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3601.00 =     596.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.60  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =   176.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.60
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.26
  PIPE TRAVEL TIME(MIN.) =   0.82    Tc(MIN.) =    9.53
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3701.00 =     772.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3701.00 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.) =    9.53
  RAINFALL INTENSITY(INCH/HR) =   2.45
  TOTAL STREAM AREA(ACRES) =     1.75
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.26

+----------------------------------------------------------------------------+
| C-7                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3700.00 TO NODE   3701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   362.40
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      3.30
  TC = 0.323*[(  362.40**3)/(     3.30)]**.2 =    8.722
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.570
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8735
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      3.37
```

```
  TOTAL AREA(ACRES) =      1.50   TOTAL RUNOFF(CFS) =      3.37

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3701.00 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.) =    8.72
  RAINFALL INTENSITY(INCH/HR) =   2.57
  TOTAL STREAM AREA(ACRES) =     1.50
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.37

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        4.26     9.53        2.448          1.75
      2        3.37     8.72        2.570          1.50

 *********************************WARNING************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        7.27     8.72       2.570
      2        7.47     9.53       2.448

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       7.47   Tc(MIN.) =    9.53
  TOTAL AREA(ACRES) =        3.2
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3701.00 =     772.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3901.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.60
  FLOW LENGTH(FEET) =    90.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  13.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.57
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.47
  PIPE TRAVEL TIME(MIN.) =   0.33    Tc(MIN.) =    9.86
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3901.00 =     862.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3901.00 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.) =    9.86
  RAINFALL INTENSITY(INCH/HR) =   2.40
  TOTAL STREAM AREA(ACRES) =     3.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.47

+----------------------------------------------------------------------------+
| C-9                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3900.00 TO NODE   3901.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   130.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  130.00**3)/(     3.20)]**.2 =    4.744
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.11
  TOTAL AREA(ACRES) =      0.36   TOTAL RUNOFF(CFS) =      1.11

****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3901.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.36
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.11

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        7.47     9.86        2.402          3.25
      2        1.11     5.00        3.491          0.36

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.89     5.00       3.491
```

```
      2        8.23     9.86       2.402

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       8.23   Tc(MIN.) =    9.86
  TOTAL AREA(ACRES) =        3.6
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3901.00 =     862.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3902.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.60  DOWNSTREAM(FEET) =    48.00
  FLOW LENGTH(FEET) =   156.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  15.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.38
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       8.23
  PIPE TRAVEL TIME(MIN.) =   0.59    Tc(MIN.) =   10.45
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3902.00 =    1018.00 FEET.

+--------------------------------------------------------------------------+
| C-14                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE      0.00 TO NODE      0.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   3902.00 TO NODE  31804.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  31400.00 TO NODE  31401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   119.00
  UPSTREAM ELEVATION(FEET) =     55.60
  DOWNSTREAM ELEVATION(FEET) =     53.30
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  119.00**3)/(     2.30)]**.2 =    4.806
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.74
  TOTAL AREA(ACRES) =      0.24   TOTAL RUNOFF(CFS) =      0.74

****************************************************************************
  FLOW PROCESS FROM NODE  31401.00 TO NODE  31501.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.30  DOWNSTREAM(FEET) =    49.50
  FLOW LENGTH(FEET) =   130.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.90
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.74
  PIPE TRAVEL TIME(MIN.) =   0.75    Tc(MIN.) =    5.75
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31501.00 =     249.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31501.00 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.) =    5.75
  RAINFALL INTENSITY(INCH/HR) =   3.23
  TOTAL STREAM AREA(ACRES) =     0.24
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.74

+--------------------------------------------------------------------------+
| C-15                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31500.00 TO NODE  31501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  100.00**3)/(     2.30)]**.2 =    4.330
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.98
  TOTAL AREA(ACRES) =      0.32   TOTAL RUNOFF(CFS) =      0.98

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31501.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.32
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.98
```

```
  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.74     5.75        3.233          0.24
      2        0.98     5.00        3.491          0.32

 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.62     5.00       3.491
      2        1.65     5.75       3.233

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.62   Tc(MIN.) =    5.00
  TOTAL AREA(ACRES) =        0.6
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31501.00 =     249.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =    55.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.12
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.62
  PIPE TRAVEL TIME(MIN.) =   0.22    Tc(MIN.) =    5.22
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31601.00 =     304.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31601.00 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.) =    5.22
  RAINFALL INTENSITY(INCH/HR) =   3.41
  TOTAL STREAM AREA(ACRES) =     0.56
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.62

+--------------------------------------------------------------------------+
| C-16                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31600.00 TO NODE  31601.00 IS CODE =  21
----------------------------------------------------------------------------
```

```
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   120.00
  UPSTREAM ELEVATION(FEET) =     53.80
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      1.80
  TC = 0.323*[(  120.00**3)/(     1.80)]**.2 =    5.073
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.463
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8795
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.28
  TOTAL AREA(ACRES) =      0.42   TOTAL RUNOFF(CFS) =      1.28

********************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31601.00 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.) =    5.07
  RAINFALL INTENSITY(INCH/HR) =   3.46
  TOTAL STREAM AREA(ACRES) =     0.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.28

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.62     5.22        3.408          0.56
      2        1.28     5.07        3.463          0.42

 ***********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.86     5.07       3.463
      2        2.88     5.22       3.408

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.88   Tc(MIN.) =    5.22
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31601.00 =     304.00 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31701.00 IS CODE =  31
--------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.70
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
```

```
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.68
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.88
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =    5.51
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31701.00 =     368.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31701.00 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.) =    5.51
  RAINFALL INTENSITY(INCH/HR) =   3.31
  TOTAL STREAM AREA(ACRES) =     0.98
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.88

+--------------------------------------------------------------------------+
| C-17                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31700.00 TO NODE  31701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
  UPSTREAM ELEVATION(FEET) =     53.80
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      1.70
  TC = 0.323*[(   90.00**3)/(     1.70)]**.2 =    4.318
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.92
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      0.92

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.92

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.88     5.51        3.309          0.98
      2        0.92     5.00        3.491          0.30
```

```
 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.54     5.00       3.491
      2        3.76     5.51       3.309

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.76   Tc(MIN.) =    5.51
  TOTAL AREA(ACRES) =        1.3
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31701.00 =     368.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31802.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.70  DOWNSTREAM(FEET) =    48.40
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.87
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.76
  PIPE TRAVEL TIME(MIN.) =   0.28    Tc(MIN.) =    5.79
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31802.00 =     432.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| C-10                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31000.00 TO NODE  31001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   102.00
```

```
  UPSTREAM ELEVATION(FEET) =     57.50
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      4.50
  TC = 0.323*[(  102.00**3)/(     4.50)]**.2 =    3.831
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.12
  TOTAL AREA(ACRES) =      0.69   TOTAL RUNOFF(CFS) =      2.12

****************************************************************************
  FLOW PROCESS FROM NODE  31001.00 TO NODE  31101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.50  DOWNSTREAM(FEET) =    50.30
  FLOW LENGTH(FEET) =   205.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.67
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.12
  PIPE TRAVEL TIME(MIN.) =   0.93    Tc(MIN.) =    5.93
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31101.00 =     307.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31102.00 TO NODE  31102.00 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.) =    5.93
  RAINFALL INTENSITY(INCH/HR) =   3.18
  TOTAL STREAM AREA(ACRES) =     0.69
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.12

+----------------------------------------------------------------------------+
| C-11                                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31100.00 TO NODE  31101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   109.00
  UPSTREAM ELEVATION(FEET) =     55.50
  DOWNSTREAM ELEVATION(FEET) =     53.30
  ELEVATION DIFFERENCE(FEET) =      2.20
  TC = 0.323*[(  109.00**3)/(     2.20)]**.2 =    4.600
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.72
  TOTAL AREA(ACRES) =      0.56   TOTAL RUNOFF(CFS) =      1.72
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  31101.00 TO NODE  31101.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.56
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.72

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.12     5.93        3.178          0.69
      2        1.72     5.00        3.491          0.56

 *********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.51     5.00       3.491
      2        3.68     5.93       3.178

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.68   Tc(MIN.) =    5.93
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31101.00 =     307.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31101.00 TO NODE  31201.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.80  DOWNSTREAM(FEET) =    50.30
  FLOW LENGTH(FEET) =   100.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.95
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.68
  PIPE TRAVEL TIME(MIN.) =   0.28    Tc(MIN.) =    6.21
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31201.00 =     407.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31201.00 TO NODE  31201.00 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.) =    6.21
```

```
  RAINFALL INTENSITY(INCH/HR) =   3.10
  TOTAL STREAM AREA(ACRES) =     1.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.68

+---------------------------------------------------------------------------+
| C-12                                                                      |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31200.00 TO NODE  31201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   102.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     54.10
  ELEVATION DIFFERENCE(FEET) =      1.20
  TC = 0.323*[(  102.00**3)/(     1.20)]**.2 =    4.990
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.52
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.52

****************************************************************************
  FLOW PROCESS FROM NODE  31201.00 TO NODE  31301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.30  DOWNSTREAM(FEET) =    50.00
  FLOW LENGTH(FEET) =    54.00   MANNING'S N =  0.013
  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.) =   2.54
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.52
  PIPE TRAVEL TIME(MIN.) =   0.35    Tc(MIN.) =    5.35
  LONGEST FLOWPATH FROM NODE  31200.00 TO NODE  31301.00 =     156.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    5.35
  RAINFALL INTENSITY(INCH/HR) =   3.36
  TOTAL STREAM AREA(ACRES) =     0.17
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.52

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.68     6.21        3.098          1.25
```

```
      2        0.52     5.35        3.362          0.17

 ***********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *******************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.70     5.35       3.362
      2        4.17     6.21       3.098

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.17   Tc(MIN.) =    6.21
  TOTAL AREA(ACRES) =        1.4
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31301.00 =     407.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    6.21
  RAINFALL INTENSITY(INCH/HR) =   3.10
  TOTAL STREAM AREA(ACRES) =     1.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.17

+--------------------------------------------------------------------------+
| C-13                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31300.00 TO NODE  31301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     54.00
  ELEVATION DIFFERENCE(FEET) =      1.30
  TC = 0.323*[(   77.00**3)/(     1.30)]**.2 =    4.149
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.491
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8797
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.55
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.55

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   3.49
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.55

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        4.17     6.21        3.098          1.42
      2        0.55     5.00        3.491          0.18

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.91     5.00       3.491
      2        4.66     6.21       3.098

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.66   Tc(MIN.) =    6.21
  TOTAL AREA(ACRES) =        1.6
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31301.00 =     407.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31802.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.00  DOWNSTREAM(FEET) =    48.40
  FLOW LENGTH(FEET) =   130.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.97
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.66
  PIPE TRAVEL TIME(MIN.) =   0.36    Tc(MIN.) =    6.57
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31802.00 =     537.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 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        4.66     6.57       3.003        1.60
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31802.00 =     537.00 FEET.
```

```
  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        3.76     5.79       3.221        1.28
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31802.00 =     432.00 FEET.

 ****************************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1       7.86       5.79        3.221
      2       8.16       6.57        3.003

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       8.16   Tc(MIN.) =    6.57
  TOTAL AREA(ACRES) =        2.9

************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31803.00 IS CODE =  31
------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.40  DOWNSTREAM(FEET) =    48.30
  FLOW LENGTH(FEET) =    42.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  15.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.69
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       8.16
  PIPE TRAVEL TIME(MIN.) =   0.19    Tc(MIN.) =    6.76
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31803.00 =     579.00 FEET.

************************************************************************
  FLOW PROCESS FROM NODE  31803.00 TO NODE  31803.00 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.) =    6.76
  RAINFALL INTENSITY(INCH/HR) =   2.96
  TOTAL STREAM AREA(ACRES) =     2.88
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      8.16

+------------------------------------------------------------------------+
| C-18                                                                   |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+

************************************************************************
  FLOW PROCESS FROM NODE  31800.00 TO NODE  31801.00 IS CODE =  21
------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
========================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
```

```
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   164.00
 UPSTREAM ELEVATION(FEET) =     54.00
 DOWNSTREAM ELEVATION(FEET) =     51.80
 ELEVATION DIFFERENCE(FEET) =      2.20
 TC = 0.323*[(  164.00**3)/(     2.20)]**.2 =    5.878
   10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.194
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8780
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      3.08
 TOTAL AREA(ACRES) =      1.10   TOTAL RUNOFF(CFS) =      3.08

****************************************************************************
 FLOW PROCESS FROM NODE  31801.00 TO NODE  31803.00 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.) =    5.88
 RAINFALL INTENSITY(INCH/HR) =   3.19
 TOTAL STREAM AREA(ACRES) =     1.10
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.08

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        8.16     6.76        2.956          2.88
     2        3.08     5.88        3.194          1.10

 *********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1       10.17     5.88       3.194
     2       11.01     6.76       2.956

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      11.01   Tc(MIN.) =    6.76
 TOTAL AREA(ACRES) =        4.0
 LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31803.00 =     579.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  31803.00 TO NODE  31804.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    48.30  DOWNSTREAM(FEET) =    48.00
 FLOW LENGTH(FEET) =    98.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS  18.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.29
 ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      11.01
 PIPE TRAVEL TIME(MIN.) =   0.38    Tc(MIN.) =    7.14
```

```
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31804.00 =     677.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31804.00 TO NODE   3902.00 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       11.01     7.14       2.868        3.98
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE   3902.00 =     677.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        8.23    10.45       2.326        3.61
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3902.00 =    1018.00 FEET.

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      16.64       7.14        2.868
      2      17.16      10.45        2.326

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      16.64   Tc(MIN.) =    7.14
  TOTAL AREA(ACRES) =        7.6
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        7.6  TC(MIN.) =      7.14
  PEAK FLOW RATE(CFS)   =      16.64
============================================================================
============================================================================
  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 1982-2015 Advanced Engineering Software (aes)
                  (Rational Tabling Version 22.0)
               Release Date: 07/01/2015  License ID 1510

                        Analysis prepared by:

                        DRC Engineering, Inc.
                  160 South Old Springs Road, Suite 210
                           Anaheim, CA 92808
                              714-685-6860

 ************************* DESCRIPTION OF STUDY *************************
* NUTMEG APARTMENTS                                                     *
* RATIONAL METHOD                                                       *
* 18-946 100 YEAR STORM ROUTING                                         *
 ************************************************************************

  FILE NAME: 8946P2.DAT
  TIME/DATE OF STUDY: 17:01 11/01/2019
------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =  100.00   1-HOUR INTENSITY(INCH/HOUR) =   1.300
  SLOPE OF INTENSITY DURATION CURVE = 0.5496
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (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.*

+----------------------------------------------------------------------+
| AREA A-1                                                             |
| NUTMEG APARTMENTS                                                    |
| 18-946                                                               |
+----------------------------------------------------------------------+

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

```
 FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
 UPSTREAM ELEVATION(FEET) =     57.20
 DOWNSTREAM ELEVATION(FEET) =     55.80
 ELEVATION DIFFERENCE(FEET) =      1.40
 TC = 0.323*[(   64.00**3)/(     1.40)]**.2 =    3.658
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.54
 TOTAL AREA(ACRES) =      0.12   TOTAL RUNOFF(CFS) =      0.54

****************************************************************************
 FLOW PROCESS FROM NODE    101.00 TO NODE    201.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    52.80  DOWNSTREAM(FEET) =    52.20
 FLOW LENGTH(FEET) =    66.00   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.) =   3.04
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       0.54
 PIPE TRAVEL TIME(MIN.) =   0.36    Tc(MIN.) =    5.36
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    201.00 =     130.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    201.00 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.) =    5.36
 RAINFALL INTENSITY(INCH/HR) =   4.90
 TOTAL STREAM AREA(ACRES) =     0.12
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.54

+--------------------------------------------------------------------------+
| AREA A-2                                                                 |
| NUTMEG APARTMENTS                                                        |
| 18-946                                                                   |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
 UPSTREAM ELEVATION(FEET) =     56.80
```

```
 DOWNSTREAM ELEVATION(FEET) =     55.80
 ELEVATION DIFFERENCE(FEET) =      1.00
 TC = 0.323*[(   80.00**3)/(     1.00)]**.2 =    4.474
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.63
 TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.63

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    201.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   5.09
 TOTAL STREAM AREA(ACRES) =     0.14
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.63

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        0.54     5.36        4.902          0.12
     2        0.63     5.00        5.093          0.14

 **********************************WARNING***********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        1.14     5.00       5.093
     2        1.15     5.36       4.902

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       1.14   Tc(MIN.) =    5.00
 TOTAL AREA(ACRES) =        0.3
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    201.00 =     130.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    301.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    52.20  DOWNSTREAM(FEET) =    51.70
 FLOW LENGTH(FEET) =   102.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   2.98
 ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.14
 PIPE TRAVEL TIME(MIN.) =   0.57    Tc(MIN.) =    5.57
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    301.00 =     232.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    301.00 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.) =    5.57
  RAINFALL INTENSITY(INCH/HR) =   4.80
  TOTAL STREAM AREA(ACRES) =     0.26
  PEAK FLOW RATE(CFS) AT CONFLUENCE =       1.14

+--------------------------------------------------------------------------+
| AREA A-3                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    85.00
  UPSTREAM ELEVATION(FEET) =     56.80
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   85.00**3)/(     1.00)]**.2 =    4.639
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.63
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.63

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.63

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.14     5.57        4.800          0.26
      2        0.63     5.00        5.093          0.14

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.65     5.00       5.093
      2        1.73     5.57       4.800

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.73   Tc(MIN.) =    5.57
  TOTAL AREA(ACRES) =        0.4
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    301.00 =     232.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.70  DOWNSTREAM(FEET) =    51.40
  FLOW LENGTH(FEET) =    61.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.29
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.73
  PIPE TRAVEL TIME(MIN.) =   0.31    Tc(MIN.) =    5.88
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    401.00 =     293.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    401.00 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.) =    5.88
  RAINFALL INTENSITY(INCH/HR) =   4.66
  TOTAL STREAM AREA(ACRES) =     0.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.73

+--------------------------------------------------------------------------+
| AREA A-4                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    65.00
  UPSTREAM ELEVATION(FEET) =     56.80
  DOWNSTREAM ELEVATION(FEET) =     55.80
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   65.00**3)/(     1.00)]**.2 =    3.950
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
```

```
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.63
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.63

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.63

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.73     5.88        4.660          0.40
      2        0.63     5.00        5.093          0.14

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.10     5.00       5.093
      2        2.31     5.88       4.660

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.31   Tc(MIN.) =    5.88
  TOTAL AREA(ACRES) =        0.5
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    401.00 =     293.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.40  DOWNSTREAM(FEET) =    50.40
  FLOW LENGTH(FEET) =   207.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.40
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.31
  PIPE TRAVEL TIME(MIN.) =   1.01    Tc(MIN.) =    6.89
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    501.00 =     500.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    501.00 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.) =    6.89
  RAINFALL INTENSITY(INCH/HR) =   4.27
  TOTAL STREAM AREA(ACRES) =     0.54
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.31

+----------------------------------------------------------------------------+
| AREA A-5                                                                   |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   207.00
  UPSTREAM ELEVATION(FEET) =     57.40
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      3.10
  TC = 0.323*[(  207.00**3)/(     3.10)]**.2 =    6.311
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.482
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8838
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.90
  TOTAL AREA(ACRES) =      0.48   TOTAL RUNOFF(CFS) =      1.90

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    501.00 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.) =    6.31
  RAINFALL INTENSITY(INCH/HR) =   4.48
  TOTAL STREAM AREA(ACRES) =     0.48
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.90

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.31     6.89        4.270          0.54
      2        1.90     6.31        4.482          0.48

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
```

```
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.02     6.31       4.482
      2        4.12     6.89       4.270

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.12   Tc(MIN.) =    6.89
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    501.00 =     500.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.40  DOWNSTREAM(FEET) =    50.00
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.43
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.12
  PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =    7.13
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    601.00 =     564.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    601.00 TO NODE    601.00 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.) =    7.13
  RAINFALL INTENSITY(INCH/HR) =   4.19
  TOTAL STREAM AREA(ACRES) =     1.02
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.12

+----------------------------------------------------------------------------+
| AREA A-6                                                                   |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    66.00
  UPSTREAM ELEVATION(FEET) =     55.80
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      1.50
  TC = 0.323*[(   66.00**3)/(     1.50)]**.2 =    3.675
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.68
  TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.68

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

```
 FLOW PROCESS FROM NODE    601.00 TO NODE    601.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   5.09
 TOTAL STREAM AREA(ACRES) =     0.15
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.68

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        4.12     7.13        4.190          1.02
     2        0.68     5.00        5.093          0.15

 **********************************WARNING***********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        3.56     5.00       5.093
     2        4.68     7.13       4.190

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       4.68   Tc(MIN.) =    7.13
 TOTAL AREA(ACRES) =        1.2
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    601.00 =     564.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    601.00 TO NODE    701.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    50.00  DOWNSTREAM(FEET) =    49.50
 FLOW LENGTH(FEET) =   106.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.17
 ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       4.68
 PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =    7.56
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    701.00 =     670.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    701.00 TO NODE    701.00 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.) =    7.56
 RAINFALL INTENSITY(INCH/HR) =   4.06
 TOTAL STREAM AREA(ACRES) =     1.17
```

```
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.68

+---------------------------------------------------------------------------+
| AREA A-7                                                                  |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    700.00 TO NODE    701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   106.00
  UPSTREAM ELEVATION(FEET) =     55.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(  106.00**3)/(     2.00)]**.2 =    4.611
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.04
 TOTAL AREA(ACRES) =      0.23   TOTAL RUNOFF(CFS) =      1.04

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.04

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        4.68     7.56        4.059          1.17
      2        1.04     5.00        5.093          0.23

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.13     5.00       5.093
      2        5.50     7.56       4.059

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
```

```
  PEAK FLOW RATE(CFS) =       5.50   Tc(MIN.) =    7.56
  TOTAL AREA(ACRES) =        1.4
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    701.00 =     670.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    701.00 TO NODE    801.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.10
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.82
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.50
  PIPE TRAVEL TIME(MIN.) =   0.22    Tc(MIN.) =    7.78
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    801.00 =     734.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE    801.00 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.) =    7.78
  RAINFALL INTENSITY(INCH/HR) =   4.00
  TOTAL STREAM AREA(ACRES) =     1.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.50

+--------------------------------------------------------------------------+
| AREA A-8                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    800.00 TO NODE    801.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    83.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.50
  TC = 0.323*[(   83.00**3)/(     1.50)]**.2 =    4.217
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.90
  TOTAL AREA(ACRES) =      0.20   TOTAL RUNOFF(CFS) =      0.90

****************************************************************************
  FLOW PROCESS FROM NODE    801.00 TO NODE    801.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   5.09
 TOTAL STREAM AREA(ACRES) =     0.20
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.90

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        5.50     7.78        3.995          1.40
     2        0.90     5.00        5.093          0.20

 ********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        4.44     5.00       5.093
     2        6.21     7.78       3.995

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       6.21   Tc(MIN.) =    7.78
 TOTAL AREA(ACRES) =        1.6
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    801.00 =     734.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    801.00 TO NODE   1402.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    49.10  DOWNSTREAM(FEET) =    48.50
 FLOW LENGTH(FEET) =   157.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.14
 ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       6.21
 PIPE TRAVEL TIME(MIN.) =   0.63    Tc(MIN.) =    8.41
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1402.00 =     891.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   1402.00 TO NODE   1402.00 IS CODE =  10
----------------------------------------------------------------------------
 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA A-9                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE    900.00 TO NODE    901.00 IS CODE =  21
----------------------------------------------------------------------------
```

```
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   125.00
  UPSTREAM ELEVATION(FEET) =     57.50
  DOWNSTREAM ELEVATION(FEET) =     53.60
  ELEVATION DIFFERENCE(FEET) =      3.90
  TC = 0.323*[(  125.00**3)/(     3.90)]**.2 =    4.454
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.12
  TOTAL AREA(ACRES) =      0.47   TOTAL RUNOFF(CFS) =      2.12

****************************************************************************
  FLOW PROCESS FROM NODE    901.00 TO NODE   1001.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.00  DOWNSTREAM(FEET) =    50.40
  FLOW LENGTH(FEET) =   133.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.28
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.12
  PIPE TRAVEL TIME(MIN.) =   0.67    Tc(MIN.) =    5.67
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     258.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 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.) =    5.67
  RAINFALL INTENSITY(INCH/HR) =   4.75
  TOTAL STREAM AREA(ACRES) =     0.47
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.12

+--------------------------------------------------------------------------+
| AREA A-10                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1000.00 TO NODE   1001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   120.00
  UPSTREAM ELEVATION(FEET) =     55.60
  DOWNSTREAM ELEVATION(FEET) =     52.90
  ELEVATION DIFFERENCE(FEET) =      2.70
  TC = 0.323*[(  120.00**3)/(     2.70)]**.2 =    4.678
```

```
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.35
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      1.35

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1001.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.35

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.12     5.67        4.751          0.47
      2        1.35     5.00        5.093          0.30

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.22     5.00       5.093
      2        3.38     5.67       4.751

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.38   Tc(MIN.) =    5.67
  TOTAL AREA(ACRES) =        0.8
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     258.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1001.00 TO NODE   1101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.40  DOWNSTREAM(FEET) =    49.50
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.33
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.38
  PIPE TRAVEL TIME(MIN.) =   0.13    Tc(MIN.) =    5.81
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1101.00 =     308.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1101.00 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.) =    5.81
  RAINFALL INTENSITY(INCH/HR) =   4.69
  TOTAL STREAM AREA(ACRES) =     0.77
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.38

+------------------------------------------------------------------------------+
| AREA A-11                                                                    |
|                                                                              |
|                                                                              |
+------------------------------------------------------------------------------+

********************************************************************************
  FLOW PROCESS FROM NODE   1100.00 TO NODE   1101.00 IS CODE =  21
--------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    55.00
  UPSTREAM ELEVATION(FEET) =     54.80
  DOWNSTREAM ELEVATION(FEET) =     52.80
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(   55.00**3)/(     2.00)]**.2 =    3.110
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.72
  TOTAL AREA(ACRES) =      0.16   TOTAL RUNOFF(CFS) =      0.72

********************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1001.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.16
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.72

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.38     5.81        4.692          0.77
      2        0.72     5.00        5.093          0.16

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.
```

```
  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.63     5.00       5.093
      2        4.05     5.81       4.692

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.05   Tc(MIN.) =    5.81
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1001.00 =     308.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1101.00 TO NODE   1201.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.20
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.35
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.05
  PIPE TRAVEL TIME(MIN.) =   0.19    Tc(MIN.) =    6.00
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1201.00 =     358.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1201.00 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.) =    6.00
  RAINFALL INTENSITY(INCH/HR) =   4.61
  TOTAL STREAM AREA(ACRES) =     0.93
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.05

+--------------------------------------------------------------------------+
| AREA A-12                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1200.00 TO NODE   1201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    55.00
  UPSTREAM ELEVATION(FEET) =     54.80
  DOWNSTREAM ELEVATION(FEET) =     52.90
  ELEVATION DIFFERENCE(FEET) =      1.90
  TC = 0.323*[(   55.00**3)/(     1.90)]**.2 =    3.142
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.50
```

```
 TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.50

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1201.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.50

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        4.05     6.00        4.609          0.93
      2        0.50     5.00        5.093          0.11

 *********************************WARNING************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.87     5.00       5.093
      2        4.50     6.00       4.609

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.50   Tc(MIN.) =    6.00
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1201.00 =     358.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1201.00 TO NODE   1301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.20  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =    75.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  13.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.28
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.50
  PIPE TRAVEL TIME(MIN.) =   0.38    Tc(MIN.) =    6.38
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1301.00 =     433.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1301.00 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.) =    6.38
  RAINFALL INTENSITY(INCH/HR) =   4.46
  TOTAL STREAM AREA(ACRES) =     1.04
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.50

+---------------------------------------------------------------------------+
| AREA A-13                                                                 |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1300.00 TO NODE   1301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
  UPSTREAM ELEVATION(FEET) =     54.50
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      2.40
  TC = 0.323*[(   77.00**3)/(     2.40)]**.2 =    3.670
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.81
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.81

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1301.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.81

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        4.50     6.38        4.455          1.04
      2        0.81     5.00        5.093          0.18

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.34     5.00       5.093
```

```
      2        5.21     6.38       4.455

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.21   Tc(MIN.) =    6.38
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1301.00 =     433.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1301.00 TO NODE   1401.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.80
  FLOW LENGTH(FEET) =    62.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  13.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.63
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.21
  PIPE TRAVEL TIME(MIN.) =   0.28    Tc(MIN.) =    6.66
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1401.00 =     495.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1401.00 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.) =    6.66
  RAINFALL INTENSITY(INCH/HR) =   4.35
  TOTAL STREAM AREA(ACRES) =     1.22
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.21

+----------------------------------------------------------------------------+
| AREA A-14                                                                  |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   1400.00 TO NODE   1401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   103.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(  103.00**3)/(     3.00)]**.2 =    4.179
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.48
  TOTAL AREA(ACRES) =      0.55   TOTAL RUNOFF(CFS) =      2.48

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.55
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.48

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        5.21     6.66        4.350          1.22
      2        2.48     5.00        5.093          0.55

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        6.39     5.00       5.093
      2        7.32     6.66       4.350

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       7.32   Tc(MIN.) =    6.66
  TOTAL AREA(ACRES) =        1.8
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1401.00 =     495.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1401.00 TO NODE   1402.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.80  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =    57.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.86
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.32
  PIPE TRAVEL TIME(MIN.) =   0.20    Tc(MIN.) =    6.86
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1402.00 =     552.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   1402.00 TO NODE   1402.00 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        7.32     6.86       4.281        1.77
  LONGEST FLOWPATH FROM NODE    900.00 TO NODE   1402.00 =     552.00 FEET.
```

```
 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        6.21     8.41       3.827        1.60
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1402.00 =     891.00 FEET.

****************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
************************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc      INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1      12.39       6.86        4.281
     2      12.76       8.41        3.827

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      12.39   Tc(MIN.) =    6.86
 TOTAL AREA(ACRES) =        3.4

************************************************************************
 FLOW PROCESS FROM NODE   1402.00 TO NODE   1403.00 IS CODE =  31
------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    48.50  DOWNSTREAM(FEET) =    48.40
 FLOW LENGTH(FEET) =    10.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  21.0 INCH PIPE IS  14.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   6.98
 ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      12.39
 PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =    6.88
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE   1403.00 =     901.00 FEET.

+------------------------------------------------------------------------+
| AREA B-1                                                               |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+

************************************************************************
 FLOW PROCESS FROM NODE   2100.00 TO NODE   2101.00 IS CODE =  21
------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
========================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   129.00
 UPSTREAM ELEVATION(FEET) =     57.50
 DOWNSTREAM ELEVATION(FEET) =     54.30
 ELEVATION DIFFERENCE(FEET) =      3.20
 TC = 0.323*[(  129.00**3)/(     3.20)]**.2 =    4.722
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      2.12
 TOTAL AREA(ACRES) =      0.47   TOTAL RUNOFF(CFS) =      2.12
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   2101.00 TO NODE   2101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.30  DOWNSTREAM(FEET) =    50.80
  FLOW LENGTH(FEET) =    65.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.10
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.12
  PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =    5.26
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2101.00 =     194.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2201.00 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.) =    5.26
  RAINFALL INTENSITY(INCH/HR) =   4.95
  TOTAL STREAM AREA(ACRES) =     0.47
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.12

+--------------------------------------------------------------------------+
| AREA B-2                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2200.00 TO NODE   2201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   103.00
  UPSTREAM ELEVATION(FEET) =     57.30
  DOWNSTREAM ELEVATION(FEET) =     54.30
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(  103.00**3)/(     3.00)]**.2 =    4.179
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.17
  TOTAL AREA(ACRES) =      0.26   TOTAL RUNOFF(CFS) =      1.17

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2201.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
```

```
  TOTAL STREAM AREA(ACRES) =     0.26
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.17

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.12     5.26        4.951          0.47
      2        1.17     5.00        5.093          0.26

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.19     5.00       5.093
      2        3.26     5.26       4.951

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.26   Tc(MIN.) =    5.26
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2201.00 =     194.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2201.00 TO NODE   2301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.30  DOWNSTREAM(FEET) =    50.10
  FLOW LENGTH(FEET) =   105.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.21
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.26
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    5.60
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2301.00 =     299.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2301.00 TO NODE   2301.00 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.) =    5.60
  RAINFALL INTENSITY(INCH/HR) =   4.79
  TOTAL STREAM AREA(ACRES) =     0.73
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.26

+----------------------------------------------------------------------------+
| AREA B-3                                                                   |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

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

```
 FLOW PROCESS FROM NODE   2300.00 TO NODE   2301.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   110.00
 UPSTREAM ELEVATION(FEET) =     56.70
 DOWNSTREAM ELEVATION(FEET) =     53.50
 ELEVATION DIFFERENCE(FEET) =      3.20
 TC = 0.323*[(  110.00**3)/(     3.20)]**.2 =    4.291
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      1.13
 TOTAL AREA(ACRES) =      0.25   TOTAL RUNOFF(CFS) =      1.13

****************************************************************************
 FLOW PROCESS FROM NODE   2301.00 TO NODE   2301.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   5.09
 TOTAL STREAM AREA(ACRES) =     0.25
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.13

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        3.26     5.60        4.786          0.73
     2        1.13     5.00        5.093          0.25

 *********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        4.04     5.00       5.093
     2        4.32     5.60       4.786

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       4.32   Tc(MIN.) =    5.60
 TOTAL AREA(ACRES) =        1.0
 LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2301.00 =     299.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   2301.00 TO NODE   2401.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
```

```
==========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.10  DOWNSTREAM(FEET) =    49.70
  FLOW LENGTH(FEET) =    65.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.43
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.32
  PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =    5.84
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2401.00 =     364.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE   2401.00 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.) =    5.84
  RAINFALL INTENSITY(INCH/HR) =   4.67
  TOTAL STREAM AREA(ACRES) =     0.98
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.32

+--------------------------------------------------------------------------+
| AREA B-4                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2400.00 TO NODE   2401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    75.00
  UPSTREAM ELEVATION(FEET) =     54.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.00
  TC = 0.323*[(   75.00**3)/(     1.00)]**.2 =    4.304
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.86
 TOTAL AREA(ACRES) =      0.19   TOTAL RUNOFF(CFS) =      0.86

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE   2401.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.19
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.86

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

```
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        4.32     5.84        4.675          0.98
     2        0.86     5.00        5.093          0.19

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.55     5.00       5.093
      2        5.11     5.84       4.675

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.11   Tc(MIN.) =    5.84
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE   2401.00 =     364.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2401.00 TO NODE  21101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.70  DOWNSTREAM(FEET) =    48.70
  FLOW LENGTH(FEET) =   138.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  12.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.85
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.11
  PIPE TRAVEL TIME(MIN.) =   0.47    Tc(MIN.) =    6.32
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA B-5                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2500.00 TO NODE   2501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     54.20
  ELEVATION DIFFERENCE(FEET) =      0.80
```

```
  TC = 0.323*[(  100.00**3)/(     0.80)]**.2 =    5.348
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.909
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8851
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.39
  TOTAL AREA(ACRES) =      0.32   TOTAL RUNOFF(CFS) =      1.39

****************************************************************************
  FLOW PROCESS FROM NODE   2501.00 TO NODE   2601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    52.70  DOWNSTREAM(FEET) =    50.50
  FLOW LENGTH(FEET) =   112.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.25
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.39
  PIPE TRAVEL TIME(MIN.) =   0.36    Tc(MIN.) =    5.70
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2601.00 =     212.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2601.00 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.) =    5.70
  RAINFALL INTENSITY(INCH/HR) =   4.74
  TOTAL STREAM AREA(ACRES) =     0.32
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.39

+--------------------------------------------------------------------------+
| AREA B-6                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2600.00 TO NODE   2601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =     56.50
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      3.00
  TC = 0.323*[(   80.00**3)/(     3.00)]**.2 =    3.591
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.77
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.77

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2601.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.17
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.77

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.39     5.70        4.738          0.32
      2        0.77     5.00        5.093          0.17

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ********************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.99     5.00       5.093
      2        2.10     5.70       4.738

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.10   Tc(MIN.) =    5.70
  TOTAL AREA(ACRES) =        0.5
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2601.00 =     212.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2601.00 TO NODE   2701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.50  DOWNSTREAM(FEET) =    49.90
  FLOW LENGTH(FEET) =    60.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.54
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.10
  PIPE TRAVEL TIME(MIN.) =   0.22    Tc(MIN.) =    5.92
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2701.00 =     272.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE   2701.00 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.) =    5.92
  RAINFALL INTENSITY(INCH/HR) =   4.64
  TOTAL STREAM AREA(ACRES) =     0.49
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.10
```

```
+----------------------------------------------------------------------+
| AREA A-7                                                             |
|                                                                      |
|                                                                      |
+----------------------------------------------------------------------+

**********************************************************************
  FLOW PROCESS FROM NODE   2700.00 TO NODE   2701.00 IS CODE =  21
----------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
======================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    69.00
  UPSTREAM ELEVATION(FEET) =     54.60
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.10
  TC = 0.323*[(   69.00**3)/(     1.10)]**.2 =    4.016
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.81
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.81

**********************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE   2701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.81

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.10     5.92        4.640          0.49
      2        0.81     5.00        5.093          0.18

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.59     5.00       5.093
      2        2.84     5.92       4.640

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.84   Tc(MIN.) =    5.92
```

```
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE   2701.00 =     272.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2701.00 TO NODE  21001.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.90  DOWNSTREAM(FEET) =    48.90
  FLOW LENGTH(FEET) =   128.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.33
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.84
  PIPE TRAVEL TIME(MIN.) =   0.49    Tc(MIN.) =    6.42
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 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.) =    6.42
  RAINFALL INTENSITY(INCH/HR) =   4.44
  TOTAL STREAM AREA(ACRES) =     0.67
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.84

+----------------------------------------------------------------------------+
| AREA B-10                                                                  |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  21000.00 TO NODE  21001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    92.00
  UPSTREAM ELEVATION(FEET) =     53.90
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      1.90
  TC = 0.323*[(   92.00**3)/(     1.90)]**.2 =    4.279
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.31
  TOTAL AREA(ACRES) =      0.29   TOTAL RUNOFF(CFS) =      1.31

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   5.09
 TOTAL STREAM AREA(ACRES) =     0.29
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.31

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        2.84     6.42        4.441          0.67
     2        1.31     5.00        5.093          0.29

 ********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        3.52     5.00       5.093
     2        3.98     6.42       4.441

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       3.98   Tc(MIN.) =    6.42
 TOTAL AREA(ACRES) =        1.0
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 IS CODE =  10
----------------------------------------------------------------------------
 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| AREA B-8                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE   2800.00 TO NODE   2801.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   150.00
 UPSTREAM ELEVATION(FEET) =     55.00
 DOWNSTREAM ELEVATION(FEET) =     52.50
 ELEVATION DIFFERENCE(FEET) =      2.50
 TC = 0.323*[(  150.00**3)/(     2.50)]**.2 =    5.431
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.867
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8849
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      1.42
 TOTAL AREA(ACRES) =      0.33   TOTAL RUNOFF(CFS) =      1.42
```

```
****************************************************************************
  FLOW PROCESS FROM NODE   2801.00 TO NODE   2901.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.30
  FLOW LENGTH(FEET) =    43.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.09
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.42
  PIPE TRAVEL TIME(MIN.) =   0.23    Tc(MIN.) =    5.66
  LONGEST FLOWPATH FROM NODE   2800.00 TO NODE   2901.00 =     193.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE   2901.00 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.) =    5.66
  RAINFALL INTENSITY(INCH/HR) =   4.76
  TOTAL STREAM AREA(ACRES) =     0.33
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.42

+--------------------------------------------------------------------------+
| AREA B-9                                                                 |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   2900.00 TO NODE   2901.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   112.00
  UPSTREAM ELEVATION(FEET) =     54.40
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  112.00**3)/(     2.30)]**.2 =    4.634
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.89
  TOTAL AREA(ACRES) =      0.42   TOTAL RUNOFF(CFS) =      1.89

****************************************************************************
  FLOW PROCESS FROM NODE   2901.00 TO NODE   2901.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
```

```
 TOTAL STREAM AREA(ACRES) =     0.42
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.89

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        1.42     5.66        4.757          0.33
     2        1.89     5.00        5.093          0.42

 ********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        3.15     5.00       5.093
     2        3.19     5.66       4.757

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       3.15   Tc(MIN.) =    5.00
 TOTAL AREA(ACRES) =        0.8
 LONGEST FLOWPATH FROM NODE   2800.00 TO NODE   2901.00 =     193.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   2901.00 TO NODE  21001.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    49.30  DOWNSTREAM(FEET) =    48.90
 FLOW LENGTH(FEET) =   110.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   3.38
 ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       3.15
 PIPE TRAVEL TIME(MIN.) =   0.54    Tc(MIN.) =    5.54
 LONGEST FLOWPATH FROM NODE   2800.00 TO NODE  21001.00 =     303.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  21001.00 TO NODE  21001.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        3.15     5.54       4.813        0.75
 LONGEST FLOWPATH FROM NODE   2800.00 TO NODE  21001.00 =     303.00 FEET.

 ** MEMORY BANK #  3 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1        3.98     6.42       4.441        0.96
 LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21001.00 =     400.00 FEET.

 ********************************WARNING*********************************
```

```
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1       6.59       5.54        4.813
      2       6.89       6.42        4.441

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       6.89   Tc(MIN.) =    6.42
  TOTAL AREA(ACRES) =        1.7

****************************************************************************
  FLOW PROCESS FROM NODE  21001.00 TO NODE  21101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.90  DOWNSTREAM(FEET) =    48.70
  FLOW LENGTH(FEET) =    76.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  15.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.62
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.89
  PIPE TRAVEL TIME(MIN.) =   0.35    Tc(MIN.) =    6.77
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21101.00 =     476.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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        6.89     6.77       4.313        1.71
  LONGEST FLOWPATH FROM NODE   2500.00 TO NODE  21101.00 =     476.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        5.11     6.32       4.478        1.17
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

 ****************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      11.54       6.32        4.478
      2      11.81       6.77        4.313

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      11.81   Tc(MIN.) =    6.77
  TOTAL AREA(ACRES) =        2.9
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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.) =    6.77
  RAINFALL INTENSITY(INCH/HR) =   4.31
  TOTAL STREAM AREA(ACRES) =     2.88
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     11.81

+--------------------------------------------------------------------------+
| AREA B-11                                                                |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  21100.00 TO NODE  21101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   136.00
  UPSTREAM ELEVATION(FEET) =     54.00
  DOWNSTREAM ELEVATION(FEET) =     51.70
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  136.00**3)/(     2.30)]**.2 =    5.207
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.981
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8853
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      3.66
  TOTAL AREA(ACRES) =      0.83   TOTAL RUNOFF(CFS) =      3.66

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21101.00 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.) =    5.21
  RAINFALL INTENSITY(INCH/HR) =   4.98
  TOTAL STREAM AREA(ACRES) =     0.83
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.66

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       11.81     6.77        4.313          2.88
      2        3.66     5.21        4.981          0.83

 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       12.75     5.21       4.981
      2       14.98     6.77       4.313

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      14.98   Tc(MIN.) =    6.77
  TOTAL AREA(ACRES) =        3.7
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21101.00 =     502.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  21101.00 TO NODE  21102.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.70  DOWNSTREAM(FEET) =    48.50
  FLOW LENGTH(FEET) =    49.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  18.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.24
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      14.98
  PIPE TRAVEL TIME(MIN.) =   0.16    Tc(MIN.) =    6.92
  LONGEST FLOWPATH FROM NODE   2100.00 TO NODE  21102.00 =     551.00 FEET.

+----------------------------------------------------------------------------+
 | C-1                                                                        |
 | NUTMEG APARTMENTS                                                          |
 | 18-946                                                                     |
 +----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3100.00 TO NODE   3101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   245.00
  UPSTREAM ELEVATION(FEET) =     57.20
  DOWNSTREAM ELEVATION(FEET) =     54.00
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  245.00**3)/(     3.20)]**.2 =    6.939
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.254
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8830
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.33
  TOTAL AREA(ACRES) =      0.62   TOTAL RUNOFF(CFS) =      2.33

****************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3101.00 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) =   4.25
```

```
  TOTAL STREAM AREA(ACRES) =     0.62
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.33

+---------------------------------------------------------------------------+
| C-2                                                                       |
| NUTMEG APARTMENTS                                                         |
| 18-946                                                                    |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3200.00 TO NODE   3201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     53.50
  ELEVATION DIFFERENCE(FEET) =      1.80
  TC = 0.323*[(  100.00**3)/(     1.80)]**.2 =    4.547
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.50
 TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.50

****************************************************************************
  FLOW PROCESS FROM NODE   3201.00 TO NODE   3101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.20  DOWNSTREAM(FEET) =    51.00
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  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.) =   2.21
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.50
  PIPE TRAVEL TIME(MIN.) =   0.38    Tc(MIN.) =    5.38
  LONGEST FLOWPATH FROM NODE   3200.00 TO NODE   3101.00 =     150.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3101.00 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.) =    5.38
  RAINFALL INTENSITY(INCH/HR) =   4.89
  TOTAL STREAM AREA(ACRES) =     0.11
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.50

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.33     6.94        4.254          0.62
      2        0.50     5.38        4.894          0.11
```

```
 ********************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.30     5.38       4.894
      2        2.76     6.94       4.254

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.76   Tc(MIN.) =    6.94
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3101.00 =     245.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3101.00 TO NODE   3301.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.00  DOWNSTREAM(FEET) =    50.80
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.11
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.76
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    7.28
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3301.00 =     309.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3301.00 TO NODE   3301.00 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.) =    7.28
  RAINFALL INTENSITY(INCH/HR) =   4.14
  TOTAL STREAM AREA(ACRES) =     0.73
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.76

+----------------------------------------------------------------------------+
| C-3                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3300.00 TO NODE   3301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
```

```
 UPSTREAM ELEVATION(FEET) =     56.10
 DOWNSTREAM ELEVATION(FEET) =     54.00
 ELEVATION DIFFERENCE(FEET) =      2.10
 TC = 0.323*[(   64.00**3)/(     2.10)]**.2 =    3.373
 COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      0.63
 TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.63

****************************************************************************
 FLOW PROCESS FROM NODE   3301.00 TO NODE   3301.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   5.09
 TOTAL STREAM AREA(ACRES) =     0.14
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.63

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        2.76     7.28        4.143          0.73
     2        0.63     5.00        5.093          0.14

 **********************************WARNING***********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        2.53     5.00       5.093
     2        3.27     7.28       4.143

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       3.27   Tc(MIN.) =    7.28
 TOTAL AREA(ACRES) =        0.9
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3301.00 =     309.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   3301.00 TO NODE   3401.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    50.80  DOWNSTREAM(FEET) =    50.20
 FLOW LENGTH(FEET) =   153.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   3.52
 ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       3.27
 PIPE TRAVEL TIME(MIN.) =   0.73    Tc(MIN.) =    8.01
```

```
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3401.00 =     462.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   3401.00 TO NODE   3401.00 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.) =    8.01
 RAINFALL INTENSITY(INCH/HR) =   3.93
 TOTAL STREAM AREA(ACRES) =     0.87
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.27

+--------------------------------------------------------------------------+
| C-4                                                                      |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
 FLOW PROCESS FROM NODE   3400.00 TO NODE   3401.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   152.00
 UPSTREAM ELEVATION(FEET) =     56.00
 DOWNSTREAM ELEVATION(FEET) =     53.40
 ELEVATION DIFFERENCE(FEET) =      2.60
 TC = 0.323*[(  152.00**3)/(     2.60)]**.2 =    5.431
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.867
 APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8849
 SOIL CLASSIFICATION IS "D"
 SUBAREA RUNOFF(CFS) =      1.51
 TOTAL AREA(ACRES) =      0.35   TOTAL RUNOFF(CFS) =      1.51

****************************************************************************
 FLOW PROCESS FROM NODE   3401.00 TO NODE   3401.00 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.) =    5.43
 RAINFALL INTENSITY(INCH/HR) =   4.87
 TOTAL STREAM AREA(ACRES) =     0.35
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.51

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        3.27     8.01        3.932          0.87
     2        1.51     5.43        4.867          0.35

 ********************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.73     5.43       4.867
      2        4.49     8.01       3.932

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.49   Tc(MIN.) =    8.01
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3401.00 =     462.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3401.00 TO NODE   3501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.20  DOWNSTREAM(FEET) =    49.90
  FLOW LENGTH(FEET) =    72.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.93
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.49
  PIPE TRAVEL TIME(MIN.) =   0.31    Tc(MIN.) =    8.31
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3501.00 =     534.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3501.00 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.) =    8.31
  RAINFALL INTENSITY(INCH/HR) =   3.85
  TOTAL STREAM AREA(ACRES) =     1.22
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.49

+----------------------------------------------------------------------------+
| C-5                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3500.00 TO NODE   3501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   125.00
  UPSTREAM ELEVATION(FEET) =     61.00
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      8.00
  TC = 0.323*[(  125.00**3)/(     8.00)]**.2 =    3.858
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
```

```
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.35
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      1.35

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3501.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.35

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        4.49     8.31        3.852          1.22
      2        1.35     5.00        5.093          0.30

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.05     5.00       5.093
      2        5.52     8.31       3.852

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.52   Tc(MIN.) =    8.31
  TOTAL AREA(ACRES) =        1.5
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3501.00 =     534.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3501.00 TO NODE   3601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.90  DOWNSTREAM(FEET) =    49.60
  FLOW LENGTH(FEET) =    62.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.35
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.52
  PIPE TRAVEL TIME(MIN.) =   0.24    Tc(MIN.) =    8.55
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3601.00 =     596.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3601.00 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.) =    8.55
  RAINFALL INTENSITY(INCH/HR) =   3.79
  TOTAL STREAM AREA(ACRES) =     1.52
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.52

+----------------------------------------------------------------------------+
| C-6                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3600.00 TO NODE   3601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
  UPSTREAM ELEVATION(FEET) =     55.00
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.323*[(   90.00**3)/(     2.00)]**.2 =    4.180
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.04
  TOTAL AREA(ACRES) =      0.23   TOTAL RUNOFF(CFS) =      1.04

****************************************************************************
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3601.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.04

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        5.52     8.55        3.793          1.52
      2        1.04     5.00        5.093          0.23

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
```

```
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.26     5.00       5.093
      2        6.29     8.55       3.793

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       6.29   Tc(MIN.) =    8.55
  TOTAL AREA(ACRES) =        1.8
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3601.00 =     596.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3601.00 TO NODE   3701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.60  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =   176.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  13.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.96
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       6.29
  PIPE TRAVEL TIME(MIN.) =   0.74    Tc(MIN.) =    9.29
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3701.00 =     772.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3701.00 TO NODE   3701.00 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.) =    9.29
  RAINFALL INTENSITY(INCH/HR) =   3.62
  TOTAL STREAM AREA(ACRES) =     1.75
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      6.29

+----------------------------------------------------------------------------+
| C-7                                                                        |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3700.00 TO NODE   3701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   362.40
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      3.30
  TC = 0.323*[(  362.40**3)/(     3.30)]**.2 =    8.722
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.752
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8809
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      4.96
  TOTAL AREA(ACRES) =      1.50   TOTAL RUNOFF(CFS) =      4.96

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

```
 FLOW PROCESS FROM NODE   3701.00 TO NODE   3701.00 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.) =    8.72
 RAINFALL INTENSITY(INCH/HR) =   3.75
 TOTAL STREAM AREA(ACRES) =     1.50
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.96

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        6.29     9.29        3.624          1.75
     2        4.96     8.72        3.752          1.50

 **********************************WARNING***********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1       10.86     8.72       3.752
     2       11.08     9.29       3.624

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      11.08   Tc(MIN.) =    9.29
 TOTAL AREA(ACRES) =        3.2
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3701.00 =     772.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   3701.00 TO NODE   3901.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.60
 FLOW LENGTH(FEET) =    90.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS  15.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   5.03
 ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      11.08
 PIPE TRAVEL TIME(MIN.) =   0.30    Tc(MIN.) =    9.59
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3901.00 =     862.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE   3901.00 TO NODE   3901.00 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.) =    9.59
 RAINFALL INTENSITY(INCH/HR) =   3.56
 TOTAL STREAM AREA(ACRES) =     3.25
```

```
 PEAK FLOW RATE(CFS) AT CONFLUENCE =     11.08

+---------------------------------------------------------------------------+
| C-9                                                                       |
|                                                                           |
|                                                                           |
+---------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE   3900.00 TO NODE   3901.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   130.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.323*[(  130.00**3)/(     3.20)]**.2 =    4.744
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.62
 TOTAL AREA(ACRES) =      0.36   TOTAL RUNOFF(CFS) =      1.62

****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3901.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.36
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.62

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       11.08     9.59        3.561          3.25
      2        1.62     5.00        5.093          0.36

 *********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 *************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        7.40     5.00       5.093
      2       12.21     9.59       3.561

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
```

```
  PEAK FLOW RATE(CFS) =      12.21   Tc(MIN.) =    9.59
  TOTAL AREA(ACRES) =        3.6
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3901.00 =     862.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE   3901.00 TO NODE   3902.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.60  DOWNSTREAM(FEET) =    48.00
  FLOW LENGTH(FEET) =   156.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  18.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.80
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      12.21
  PIPE TRAVEL TIME(MIN.) =   0.54    Tc(MIN.) =   10.13
  LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3902.00 =    1018.00 FEET.

+--------------------------------------------------------------------------+
| C-14                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE      0.00 TO NODE      0.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE   3902.00 TO NODE  31804.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  31400.00 TO NODE  31401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   119.00
  UPSTREAM ELEVATION(FEET) =     55.60
  DOWNSTREAM ELEVATION(FEET) =     53.30
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  119.00**3)/(     2.30)]**.2 =    4.806
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.08
  TOTAL AREA(ACRES) =      0.24   TOTAL RUNOFF(CFS) =      1.08

****************************************************************************
  FLOW PROCESS FROM NODE  31401.00 TO NODE  31501.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
```

```
  ELEVATION DATA: UPSTREAM(FEET) =    50.30  DOWNSTREAM(FEET) =    49.50
  FLOW LENGTH(FEET) =   130.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
 DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.21
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.08
  PIPE TRAVEL TIME(MIN.) =   0.68    Tc(MIN.) =    5.68
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31501.00 =     249.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31501.00 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.) =    5.68
  RAINFALL INTENSITY(INCH/HR) =   4.75
  TOTAL STREAM AREA(ACRES) =     0.24
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.08

+--------------------------------------------------------------------------+
| C-15                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31500.00 TO NODE  31501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      2.30
  TC = 0.323*[(  100.00**3)/(     2.30)]**.2 =    4.330
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.44
 TOTAL AREA(ACRES) =      0.32   TOTAL RUNOFF(CFS) =      1.44

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31501.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.32
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.44

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

```
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.08     5.68        4.751          0.24
      2        1.44     5.00        5.093          0.32

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        2.40     5.00       5.093
      2        2.43     5.68       4.751

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       2.40   Tc(MIN.) =    5.00
  TOTAL AREA(ACRES) =        0.6
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31501.00 =     249.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31501.00 TO NODE  31601.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.50  DOWNSTREAM(FEET) =    49.00
  FLOW LENGTH(FEET) =    55.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   7.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.50
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.40
  PIPE TRAVEL TIME(MIN.) =   0.20    Tc(MIN.) =    5.20
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31601.00 =     304.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31601.00 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.) =    5.20
  RAINFALL INTENSITY(INCH/HR) =   4.98
  TOTAL STREAM AREA(ACRES) =     0.56
  PEAK FLOW RATE(CFS) AT CONFLUENCE =       2.40

+--------------------------------------------------------------------------+
| C-16                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31600.00 TO NODE  31601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
```

```
        DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   120.00
  UPSTREAM ELEVATION(FEET) =     53.80
  DOWNSTREAM ELEVATION(FEET) =     52.00
  ELEVATION DIFFERENCE(FEET) =      1.80
  TC = 0.323*[(  120.00**3)/(     1.80)]**.2 =    5.073
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.053
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8854
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.88
  TOTAL AREA(ACRES) =      0.42   TOTAL RUNOFF(CFS) =      1.88

****************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31601.00 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.) =    5.07
  RAINFALL INTENSITY(INCH/HR) =   5.05
  TOTAL STREAM AREA(ACRES) =     0.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.88

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.40     5.20        4.983          0.56
      2        1.88     5.07        5.053          0.42

 **********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        4.22     5.07       5.053
      2        4.25     5.20       4.983

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.25   Tc(MIN.) =    5.20
  TOTAL AREA(ACRES) =        1.0
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31601.00 =     304.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31601.00 TO NODE  31701.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    49.00  DOWNSTREAM(FEET) =    48.70
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.07
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
```

```
  PIPE-FLOW(CFS) =       4.25
  PIPE TRAVEL TIME(MIN.) =   0.26    Tc(MIN.) =    5.47
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31701.00 =     368.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31701.00 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.) =    5.47
  RAINFALL INTENSITY(INCH/HR) =   4.85
  TOTAL STREAM AREA(ACRES) =     0.98
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.25

+--------------------------------------------------------------------------+
| C-17                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31700.00 TO NODE  31701.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    90.00
  UPSTREAM ELEVATION(FEET) =     53.80
  DOWNSTREAM ELEVATION(FEET) =     52.10
  ELEVATION DIFFERENCE(FEET) =      1.70
  TC = 0.323*[(   90.00**3)/(     1.70)]**.2 =    4.318
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      1.35
  TOTAL AREA(ACRES) =      0.30   TOTAL RUNOFF(CFS) =      1.35

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31701.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.35

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        4.25     5.47        4.850          0.98
      2        1.35     5.00        5.093          0.30

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
```

```
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        5.24     5.00       5.093
      2        5.54     5.47       4.850

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.54   Tc(MIN.) =    5.47
  TOTAL AREA(ACRES) =        1.3
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31701.00 =     368.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31701.00 TO NODE  31802.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.70  DOWNSTREAM(FEET) =    48.40
  FLOW LENGTH(FEET) =    64.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.30
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.54
  PIPE TRAVEL TIME(MIN.) =   0.25    Tc(MIN.) =    5.71
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31802.00 =     432.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

+--------------------------------------------------------------------------+
| C-10                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31000.00 TO NODE  31001.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   102.00
  UPSTREAM ELEVATION(FEET) =     57.50
  DOWNSTREAM ELEVATION(FEET) =     53.00
  ELEVATION DIFFERENCE(FEET) =      4.50
```

```
  TC = 0.323*[(  102.00**3)/(     4.50)]**.2 =    3.831
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      3.11
  TOTAL AREA(ACRES) =      0.69   TOTAL RUNOFF(CFS) =      3.11

****************************************************************************
  FLOW PROCESS FROM NODE  31001.00 TO NODE  31101.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.50  DOWNSTREAM(FEET) =    50.30
  FLOW LENGTH(FEET) =   205.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.09
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.11
  PIPE TRAVEL TIME(MIN.) =   0.84    Tc(MIN.) =    5.84
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31101.00 =     307.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31102.00 TO NODE  31102.00 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.) =    5.84
  RAINFALL INTENSITY(INCH/HR) =   4.68
  TOTAL STREAM AREA(ACRES) =     0.69
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.11

+----------------------------------------------------------------------------+
| C-11                                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31100.00 TO NODE  31101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   109.00
  UPSTREAM ELEVATION(FEET) =     55.50
  DOWNSTREAM ELEVATION(FEET) =     53.30
  ELEVATION DIFFERENCE(FEET) =      2.20
  TC = 0.323*[(  109.00**3)/(     2.20)]**.2 =    4.600
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      2.53
  TOTAL AREA(ACRES) =      0.56   TOTAL RUNOFF(CFS) =      2.53

****************************************************************************
  FLOW PROCESS FROM NODE  31101.00 TO NODE  31101.00 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.) =    5.00
  RAINFALL INTENSITY(INCH/HR) =   5.09
  TOTAL STREAM AREA(ACRES) =     0.56
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.53

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.11     5.84        4.679          0.69
      2        2.53     5.00        5.093          0.56

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        5.19     5.00       5.093
      2        5.43     5.84       4.679

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.43   Tc(MIN.) =    5.84
  TOTAL AREA(ACRES) =        1.2
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31101.00 =     307.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31101.00 TO NODE  31201.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    51.80  DOWNSTREAM(FEET) =    50.30
  FLOW LENGTH(FEET) =   100.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.66
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.43
  PIPE TRAVEL TIME(MIN.) =   0.25    Tc(MIN.) =    6.09
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31201.00 =     407.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31201.00 TO NODE  31201.00 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.) =    6.09
  RAINFALL INTENSITY(INCH/HR) =   4.57
  TOTAL STREAM AREA(ACRES) =     1.25
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.43
```

```
+----------------------------------------------------------------------+
| C-12                                                                 |
|                                                                      |
|                                                                      |
+----------------------------------------------------------------------+

**********************************************************************
  FLOW PROCESS FROM NODE  31200.00 TO NODE  31201.00 IS CODE =  21
----------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
======================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   102.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     54.10
  ELEVATION DIFFERENCE(FEET) =      1.20
  TC = 0.323*[(  102.00**3)/(     1.20)]**.2 =    4.990
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.77
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.77

**********************************************************************
  FLOW PROCESS FROM NODE  31201.00 TO NODE  31301.00 IS CODE =  31
----------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
======================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    50.30  DOWNSTREAM(FEET) =    50.00
  FLOW LENGTH(FEET) =    54.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 12.000
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   4.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.81
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.77
  PIPE TRAVEL TIME(MIN.) =   0.32    Tc(MIN.) =    5.32
  LONGEST FLOWPATH FROM NODE  31200.00 TO NODE  31301.00 =     156.00 FEET.

**********************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    5.32
  RAINFALL INTENSITY(INCH/HR) =   4.92
  TOTAL STREAM AREA(ACRES) =     0.17
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.77

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        5.43     6.09        4.572          1.25
      2        0.77     5.32        4.922          0.17

 ********************************WARNING**********************************
```

```
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        5.52     5.32       4.922
      2        6.14     6.09       4.572

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       6.14   Tc(MIN.) =    6.09
  TOTAL AREA(ACRES) =        1.4
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31301.00 =     407.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    6.09
  RAINFALL INTENSITY(INCH/HR) =   4.57
  TOTAL STREAM AREA(ACRES) =     1.42
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      6.14

+--------------------------------------------------------------------------+
| C-13                                                                     |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE  31300.00 TO NODE  31301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    77.00
  UPSTREAM ELEVATION(FEET) =     55.30
  DOWNSTREAM ELEVATION(FEET) =     54.00
  ELEVATION DIFFERENCE(FEET) =      1.30
  TC = 0.323*[(   77.00**3)/(     1.30)]**.2 =    4.149
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8856
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      0.81
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.81

****************************************************************************
  FLOW PROCESS FROM NODE  31301.00 TO NODE  31301.00 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.) =    5.00
 RAINFALL INTENSITY(INCH/HR) =   5.09
 TOTAL STREAM AREA(ACRES) =     0.18
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.81

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        6.14     6.09        4.572          1.42
     2        0.81     5.00        5.093          0.18

 ********************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        5.86     5.00       5.093
     2        6.87     6.09       4.572

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       6.87   Tc(MIN.) =    6.09
 TOTAL AREA(ACRES) =        1.6
 LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31301.00 =     407.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  31301.00 TO NODE  31802.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    50.00  DOWNSTREAM(FEET) =    48.40
 FLOW LENGTH(FEET) =   130.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   6.60
 ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       6.87
 PIPE TRAVEL TIME(MIN.) =   0.33    Tc(MIN.) =    6.41
 LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31802.00 =     537.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  31802.00 TO NODE  31802.00 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        6.87     6.41       4.442        1.60
 LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31802.00 =     537.00 FEET.

 ** MEMORY BANK #  2 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
```

```
      1        5.54     5.71       4.733        1.28
  LONGEST FLOWPATH FROM NODE  31400.00 TO NODE  31802.00 =     432.00 FEET.

 ****************************WARNING*************************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      11.66       5.71        4.733
      2      12.07       6.41        4.442

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      12.07   Tc(MIN.) =    6.41
  TOTAL AREA(ACRES) =        2.9

************************************************************************
  FLOW PROCESS FROM NODE  31802.00 TO NODE  31803.00 IS CODE =  31
------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.40  DOWNSTREAM(FEET) =    48.30
  FLOW LENGTH(FEET) =    42.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  19.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.04
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      12.07
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    6.59
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31803.00 =     579.00 FEET.

************************************************************************
  FLOW PROCESS FROM NODE  31803.00 TO NODE  31803.00 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.) =    6.59
  RAINFALL INTENSITY(INCH/HR) =   4.38
  TOTAL STREAM AREA(ACRES) =     2.88
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     12.07

+------------------------------------------------------------------------+
| C-18                                                                   |
|                                                                        |
|                                                                        |
+------------------------------------------------------------------------+

************************************************************************
  FLOW PROCESS FROM NODE  31800.00 TO NODE  31801.00 IS CODE =  21
------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
========================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS APARTMENT
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   164.00
  UPSTREAM ELEVATION(FEET) =     54.00
  DOWNSTREAM ELEVATION(FEET) =     51.80
```

```
  ELEVATION DIFFERENCE(FEET) =      2.20
  TC = 0.323*[(  164.00**3)/(     2.20)]**.2 =    5.878
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.660
  APARTMENT DEVELOPMENT RUNOFF COEFFICIENT = .8843
  SOIL CLASSIFICATION IS "D"
  SUBAREA RUNOFF(CFS) =      4.53
  TOTAL AREA(ACRES) =      1.10   TOTAL RUNOFF(CFS) =      4.53

****************************************************************************
  FLOW PROCESS FROM NODE  31801.00 TO NODE  31803.00 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.) =    5.88
  RAINFALL INTENSITY(INCH/HR) =   4.66
  TOTAL STREAM AREA(ACRES) =     1.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.53

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       12.07     6.59        4.377          2.88
      2        4.53     5.88        4.660          1.10

 *********************************WARNING***********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       15.30     5.88       4.660
      2       16.33     6.59       4.377

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      16.33   Tc(MIN.) =    6.59
  TOTAL AREA(ACRES) =        4.0
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31803.00 =     579.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  31803.00 TO NODE  31804.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    48.30  DOWNSTREAM(FEET) =    48.00
  FLOW LENGTH(FEET) =    98.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  30.0 INCH PIPE IS  19.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.82
  ESTIMATED PIPE DIAMETER(INCH) =  30.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      16.33
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    6.93
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  31804.00 =     677.00 FEET.

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

```
 FLOW PROCESS FROM NODE  31804.00 TO NODE   3902.00 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       16.33     6.93       4.258        3.98
 LONGEST FLOWPATH FROM NODE  31000.00 TO NODE   3902.00 =     677.00 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc      INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
     1       12.21    10.13       3.456        3.61
 LONGEST FLOWPATH FROM NODE   3100.00 TO NODE   3902.00 =    1018.00 FEET.

 ****************************************WARNING*****************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc      INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1      24.68       6.93        4.258
     2      25.46      10.13        3.456

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      24.68   Tc(MIN.) =    6.93
 TOTAL AREA(ACRES) =        7.6
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)     =         7.6  TC(MIN.) =      6.93
 PEAK FLOW RATE(CFS)   =       24.68
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

APPENDIX D

Existing Condition 2-year Routing Hydrographs
Existing Condition 5-year Routing Hydrographs
Existing Condition 10-year Routing Hydrographs
Existing Condition 100-year Routing Hydrographs
Proposed Condition 2-year Routing Hydrographs
Proposed Condition 5-year Routing Hydrographs
Proposed Condition 10-year Routing Hydrographs
Proposed Condition 100-year Routing Hydrographs
Detention Analysis
Riverside County Hydromod Spreadsheet
Hydromod Draw Down Calculations

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 02/19/20 File: 8946E2A112.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
2 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	0.55	1.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	1.30	4.36

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.218	(0.286)		0.196	0.022
2	0.17	4.20	0.277	(0.286)		0.249	0.028
3	0.25	4.40	0.290	(0.286)		0.261	0.029
4	0.33	4.80	0.317	(0.286)		0.285	0.032
5	0.42	5.20	0.343	0.286	(	0.309)	0.057
6	0.50	6.20	0.409	0.286	(	0.368)	0.123
7	0.58	6.80	0.449	0.286	(	0.404)	0.162
8	0.67	8.80	0.581	0.286	(	0.523)	0.294
9	0.75	13.90	0.917	0.286	(	0.826)	0.631
10	0.83	31.40	2.072	0.286	(	1.865)	1.786
11	0.92	7.20	0.475	0.286	(	0.428)	0.189
12	1.00	3.80	0.251	(0.286)		0.226	0.025
	(Loss Rate Not Used)						
Sum =		100.0				Sum =	3.4

Flood volume = Effective rainfall 0.28(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.27(In)
Total soil loss = 0.075(Ac.Ft)

```
     Total rainfall =      0.55(In)
     Flood volume =        3421.9 Cubic Feet
     Total soil loss =        3266.1 Cubic Feet
     ---------------------------------------------------------------------
     Peak flow rate of this hydrograph =      1.874(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        2.5       5.0       7.5      10.0
  ---------------------------------------------------------------------
    0+ 5       0.0000      0.00  Q         |         |         |         |
    0+10       0.0001      0.01  Q         |         |         |         |
    0+15       0.0003      0.03  Q         |         |         |         |
    0+20       0.0006      0.05  Q         |         |         |         |
    0+25       0.0011      0.06  Q         |         |         |         |
    0+30       0.0017      0.09  Q         |         |         |         |
    0+35       0.0027      0.14  QV        |         |         |         |
    0+40       0.0043      0.24  Q V       |         |         |         |
    0+45       0.0071      0.41  |Q V      |         |         |         |
    0+50       0.0126      0.80  |  Q  V   |         |         |         |
    0+55       0.0225      1.43  |    Q    |V        |         |         |
    1+ 0       0.0354      1.87  |      Q  |       V |         |         |
    1+ 5       0.0474      1.74  |     Q   |         |   V     |         |
    1+10       0.0552      1.13  |   Q     |         |       V |         |
    1+15       0.0599      0.69  | Q       |         |         V         |
    1+20       0.0632      0.47  |Q        |         |         | V       |
    1+25       0.0657      0.37  |Q        |         |         |  V      |
    1+30       0.0678      0.30  |Q        |         |         |   V     |
    1+35       0.0694      0.24  Q         |         |         |    V    |
    1+40       0.0708      0.20  Q         |         |         |     V   |
    1+45       0.0720      0.17  Q         |         |         |     V   |
    1+50       0.0730      0.14  Q         |         |         |      V  |
    1+55       0.0738      0.12  Q         |         |         |      V  |
    2+ 0       0.0746      0.10  Q         |         |         |      V  |
    2+ 5       0.0752      0.10  Q         |         |         |       V |
    2+10       0.0758      0.09  Q         |         |         |       V |
    2+15       0.0763      0.07  Q         |         |         |       V |
    2+20       0.0767      0.06  Q         |         |         |        V|
    2+25       0.0771      0.05  Q         |         |         |        V|
    2+30       0.0774      0.05  Q         |         |         |        V|
    2+35       0.0777      0.04  Q         |         |         |        V|
    2+40       0.0779      0.03  Q         |         |         |        V|
    2+45       0.0781      0.03  Q         |         |         |        V|
    2+50       0.0783      0.03  Q         |         |         |        V|
    2+55       0.0785      0.03  Q         |         |         |        V|
    3+ 0       0.0786      0.00  Q         |         |         |        V|
    3+ 5       0.0786      0.00  Q         |         |         |        V|
  ---------------------------------------------------------------------
```

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

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Study date 02/19/20 File: 8946E2A132.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
2 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	0.90	3.02

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	2.25	7.54

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 0.900(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.900(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.140	(0.286)	0.126	0.014
2	0.17	1.30	0.140	(0.286)	0.126	0.014
3	0.25	1.10	0.119	(0.286)	0.107	0.012
4	0.33	1.50	0.162	(0.286)	0.146	0.016
5	0.42	1.50	0.162	(0.286)	0.146	0.016
6	0.50	1.80	0.194	(0.286)	0.175	0.019
7	0.58	1.50	0.162	(0.286)	0.146	0.016
8	0.67	1.80	0.194	(0.286)	0.175	0.019
9	0.75	1.80	0.194	(0.286)	0.175	0.019
10	0.83	1.50	0.162	(0.286)	0.146	0.016
11	0.92	1.60	0.173	(0.286)	0.156	0.017
12	1.00	1.80	0.194	(0.286)	0.175	0.019
13	1.08	2.20	0.238	(0.286)	0.214	0.024
14	1.17	2.20	0.238	(0.286)	0.214	0.024
15	1.25	2.20	0.238	(0.286)	0.214	0.024
16	1.33	2.00	0.216	(0.286)	0.194	0.022
17	1.42	2.60	0.281	(0.286)	0.253	0.028
18	1.50	2.70	0.292	(0.286)	0.262	0.029
19	1.58	2.40	0.259	(0.286)	0.233	0.026
20	1.67	2.70	0.292	(0.286)	0.262	0.029

```
21   1.75     3.30      0.356          0.286    (  0.321)        0.070
22   1.83     3.10      0.335          0.286    (  0.301)        0.048
23   1.92     2.90      0.313       (  0.286)       0.282        0.031
24   2.00     3.00      0.324          0.286    (  0.292)        0.038
25   2.08     3.10      0.335          0.286    (  0.301)        0.048
26   2.17     4.20      0.454          0.286    (  0.408)        0.167
27   2.25     5.00      0.540          0.286    (  0.486)        0.254
28   2.33     3.50      0.378          0.286    (  0.340)        0.092
29   2.42     6.80      0.734          0.286    (  0.661)        0.448
30   2.50     7.30      0.788          0.286    (  0.710)        0.502
31   2.58     8.20      0.886          0.286    (  0.797)        0.599
32   2.67     5.90      0.637          0.286    (  0.573)        0.351
33   2.75     2.00      0.216       (  0.286)       0.194        0.022
34   2.83     1.80      0.194       (  0.286)       0.175        0.019
35   2.92     1.80      0.194       (  0.286)       0.175        0.019
36   3.00     0.60      0.065       (  0.286)       0.058        0.006
            (Loss Rate Not Used)
   Sum =     100.0                                      Sum =     3.1
    Flood volume = Effective rainfall      0.26(In)
     times area       3.4(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
    Total soil loss =      0.64(In)
    Total soil loss =     0.179(Ac.Ft)
    Total rainfall =      0.90(In)
    Flood volume =        3160.8 Cubic Feet
    Total soil loss =        7783.5 Cubic Feet
    --------------------------------------------------------------------
    Peak flow rate of this hydrograph =      1.163(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        2.5       5.0       7.5      10.0
----------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0002      0.02  Q         |         |         |         |
  0+20       0.0003      0.02  Q         |         |         |         |
  0+25       0.0006      0.03  Q         |         |         |         |
  0+30       0.0008      0.04  Q         |         |         |         |
  0+35       0.0011      0.04  Q         |         |         |         |
  0+40       0.0014      0.05  Q         |         |         |         |
  0+45       0.0017      0.05  Q         |         |         |         |
  0+50       0.0021      0.05  QV        |         |         |         |
  0+55       0.0025      0.05  QV        |         |         |         |
  1+ 0       0.0028      0.05  QV        |         |         |         |
  1+ 5       0.0032      0.06  QV        |         |         |         |
  1+10       0.0036      0.06  QV        |         |         |         |
  1+15       0.0040      0.06  Q V       |         |         |         |
  1+20       0.0045      0.07  Q V       |         |         |         |
  1+25       0.0050      0.07  Q V       |         |         |         |
  1+30       0.0055      0.07  Q  V      |         |         |         |
  1+35       0.0060      0.08  Q  V      |         |         |         |
  1+40       0.0066      0.08  Q  V      |         |         |         |
  1+45       0.0072      0.09  Q  V      |         |         |         |
  1+50       0.0079      0.10  Q   V     |         |         |         |
  1+55       0.0088      0.12  Q   V     |         |         |         |
  2+ 0       0.0097      0.13  Q    V    |         |         |         |
  2+ 5       0.0106      0.13  Q    V    |         |         |         |
  2+10       0.0116      0.14  Q     V   |         |         |         |
  2+15       0.0129      0.20  Q      V  |         |         |         |
  2+20       0.0150      0.30  |Q      V |         |         |         |
  2+25       0.0179      0.42  |Q       V|         |         |         |
  2+30       0.0218      0.57  | Q       | V       |         |         |
  2+35       0.0272      0.79  |  Q      |    V    |         |         |
  2+40       0.0345      1.05  |   Q     |        V|         |         |
  2+45       0.0425      1.16  |   Q     |         |  V      |         |
```

```
    2+50       0.0497      1.05  |   Q     |         |      V  |         |
    2+55       0.0550      0.77  |  Q      |         |         V         |
    3+ 0       0.0585      0.51  | Q       |         |         | V       |
    3+ 5       0.0611      0.37  |Q        |         |         |  V      |
    3+10       0.0630      0.29  |Q        |         |         |   V     |
    3+15       0.0646      0.23  Q         |         |         |    V    |
    3+20       0.0659      0.18  Q         |         |         |     V   |
    3+25       0.0669      0.15  Q         |         |         |     V   |
    3+30       0.0678      0.13  Q         |         |         |      V  |
    3+35       0.0685      0.11  Q         |         |         |      V  |
    3+40       0.0691      0.09  Q         |         |         |       V |
    3+45       0.0697      0.08  Q         |         |         |       V |
    3+50       0.0702      0.07  Q         |         |         |       V |
    3+55       0.0706      0.06  Q         |         |         |       V |
    4+ 0       0.0710      0.05  Q         |         |         |        V|
    4+ 5       0.0713      0.04  Q         |         |         |        V|
    4+10       0.0715      0.04  Q         |         |         |        V|
    4+15       0.0718      0.03  Q         |         |         |        V|
    4+20       0.0720      0.03  Q         |         |         |        V|
    4+25       0.0721      0.02  Q         |         |         |        V|
    4+30       0.0723      0.02  Q         |         |         |        V|
    4+35       0.0724      0.02  Q         |         |         |        V|
    4+40       0.0725      0.01  Q         |         |         |        V|
    4+45       0.0726      0.01  Q         |         |         |        V|
    4+50       0.0726      0.00  Q         |         |         |        V|
    4+55       0.0726      0.00  Q         |         |         |        V|
    5+ 0       0.0726      0.00  Q         |         |         |        V|
    5+ 5       0.0726      0.00  Q         |         |         |        V|
---------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/19/20 File: 8946E2A162.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
2 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	1.30	4.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	3.00	10.05

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.078	(0.286)	0.070	0.008
2	0.17	0.60	0.094	(0.286)	0.084	0.009
3	0.25	0.60	0.094	(0.286)	0.084	0.009
4	0.33	0.60	0.094	(0.286)	0.084	0.009
5	0.42	0.60	0.094	(0.286)	0.084	0.009
6	0.50	0.70	0.109	(0.286)	0.098	0.011
7	0.58	0.70	0.109	(0.286)	0.098	0.011
8	0.67	0.70	0.109	(0.286)	0.098	0.011
9	0.75	0.70	0.109	(0.286)	0.098	0.011
10	0.83	0.70	0.109	(0.286)	0.098	0.011
11	0.92	0.70	0.109	(0.286)	0.098	0.011
12	1.00	0.80	0.125	(0.286)	0.112	0.012
13	1.08	0.80	0.125	(0.286)	0.112	0.012
14	1.17	0.80	0.125	(0.286)	0.112	0.012
15	1.25	0.80	0.125	(0.286)	0.112	0.012
16	1.33	0.80	0.125	(0.286)	0.112	0.012
17	1.42	0.80	0.125	(0.286)	0.112	0.012
18	1.50	0.80	0.125	(0.286)	0.112	0.012
19	1.58	0.80	0.125	(0.286)	0.112	0.012
20	1.67	0.80	0.125	(0.286)	0.112	0.012

21	1.75	0.80	0.125	(	0.286)	0.112		0.012
22	1.83	0.80	0.125	(	0.286)	0.112		0.012
23	1.92	0.80	0.125	(	0.286)	0.112		0.012
24	2.00	0.90	0.140	(	0.286)	0.126		0.014
25	2.08	0.80	0.125	(	0.286)	0.112		0.012
26	2.17	0.90	0.140	(	0.286)	0.126		0.014
27	2.25	0.90	0.140	(	0.286)	0.126		0.014
28	2.33	0.90	0.140	(	0.286)	0.126		0.014
29	2.42	0.90	0.140	(	0.286)	0.126		0.014
30	2.50	0.90	0.140	(	0.286)	0.126		0.014
31	2.58	0.90	0.140	(	0.286)	0.126		0.014
32	2.67	0.90	0.140	(	0.286)	0.126		0.014
33	2.75	1.00	0.156	(	0.286)	0.140		0.016
34	2.83	1.00	0.156	(	0.286)	0.140		0.016
35	2.92	1.00	0.156	(	0.286)	0.140		0.016
36	3.00	1.00	0.156	(	0.286)	0.140		0.016
37	3.08	1.00	0.156	(	0.286)	0.140		0.016
38	3.17	1.10	0.172	(	0.286)	0.154		0.017
39	3.25	1.10	0.172	(	0.286)	0.154		0.017
40	3.33	1.10	0.172	(	0.286)	0.154		0.017
41	3.42	1.20	0.187	(	0.286)	0.168		0.019
42	3.50	1.30	0.203	(	0.286)	0.183		0.020
43	3.58	1.40	0.218	(	0.286)	0.197		0.022
44	3.67	1.40	0.218	(	0.286)	0.197		0.022
45	3.75	1.50	0.234	(	0.286)	0.211		0.023
46	3.83	1.50	0.234	(	0.286)	0.211		0.023
47	3.92	1.60	0.250	(	0.286)	0.225		0.025
48	4.00	1.60	0.250	(	0.286)	0.225		0.025
49	4.08	1.70	0.265	(	0.286)	0.239		0.027
50	4.17	1.80	0.281	(	0.286)	0.253		0.028
51	4.25	1.90	0.296	(	0.286)	0.267		0.030
52	4.33	2.00	0.312	(	0.286)	0.281		0.031
53	4.42	2.10	0.328		0.286	(	0.295)	0.041
54	4.50	2.10	0.328		0.286	(	0.295)	0.041
55	4.58	2.20	0.343		0.286	(	0.309)	0.057
56	4.67	2.30	0.359		0.286	(	0.323)	0.072
57	4.75	2.40	0.374		0.286	(	0.337)	0.088
58	4.83	2.40	0.374		0.286	(	0.337)	0.088
59	4.92	2.50	0.390		0.286	(	0.351)	0.104
60	5.00	2.60	0.406		0.286	(	0.365)	0.119
61	5.08	3.10	0.484		0.286	(	0.435)	0.197
62	5.17	3.60	0.562		0.286	(	0.505)	0.275
63	5.25	3.90	0.608		0.286	(	0.548)	0.322
64	5.33	4.20	0.655		0.286	(	0.590)	0.369
65	5.42	4.70	0.733		0.286	(	0.660)	0.447
66	5.50	5.60	0.874		0.286	(	0.786)	0.587
67	5.58	1.90	0.296	(	0.286)	0.267		0.030
68	5.67	0.90	0.140	(	0.286)	0.126		0.014
69	5.75	0.60	0.094	(	0.286)	0.084		0.009
70	5.83	0.50	0.078	(	0.286)	0.070		0.008
71	5.92	0.30	0.047	(	0.286)	0.042		0.005
72	6.00	0.20	0.031	(	0.286)	0.028		0.003

(Loss Rate Not Used)

Sum = 100.0 Sum = 3.7

Flood volume = Effective rainfall 0.31(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.99(In)
Total soil loss = 0.277(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 3734.0 Cubic Feet
Total soil loss = 12074.5 Cubic Feet

Peak flow rate of this hydrograph = 1.055(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0001	0.01	Q	|	|	|	|
0+20	0.0002	0.02	Q	|	|	|	|
0+25	0.0003	0.02	Q	|	|	|	|
0+30	0.0005	0.02	Q	|	|	|	|
0+35	0.0007	0.03	Q	|	|	|	|
0+40	0.0009	0.03	Q	|	|	|	|
0+45	0.0011	0.03	Q	|	|	|	|
0+50	0.0013	0.03	Q	|	|	|	|
0+55	0.0015	0.03	Q	|	|	|	|
1+ 0	0.0017	0.03	Q	|	|	|	|
1+ 5	0.0020	0.03	Q	|	|	|	|
1+10	0.0022	0.04	QV	|	|	|	|
1+15	0.0025	0.04	QV	|	|	|	|
1+20	0.0027	0.04	QV	|	|	|	|
1+25	0.0030	0.04	QV	|	|	|	|
1+30	0.0033	0.04	QV	|	|	|	|
1+35	0.0035	0.04	QV	|	|	|	|
1+40	0.0038	0.04	QV	|	|	|	|
1+45	0.0041	0.04	QV	|	|	|	|
1+50	0.0044	0.04	Q V	|	|	|	|
1+55	0.0047	0.04	Q V	|	|	|	|
2+ 0	0.0050	0.04	Q V	|	|	|	|
2+ 5	0.0052	0.04	Q V	|	|	|	|
2+10	0.0055	0.04	Q V	|	|	|	|
2+15	0.0058	0.04	Q V	|	|	|	|
2+20	0.0061	0.04	Q V	|	|	|	|
2+25	0.0065	0.05	Q V	|	|	|	|
2+30	0.0068	0.05	Q V	|	|	|	|
2+35	0.0071	0.05	Q V	|	|	|	|
2+40	0.0074	0.05	Q V	|	|	|	|
2+45	0.0077	0.05	Q V	|	|	|	|
2+50	0.0081	0.05	Q V	|	|	|	|
2+55	0.0084	0.05	Q V	|	|	|	|
3+ 0	0.0087	0.05	Q V	|	|	|	|
3+ 5	0.0091	0.05	Q V	|	|	|	|
3+10	0.0094	0.05	Q V	|	|	|	|
3+15	0.0098	0.05	Q V	|	|	|	|
3+20	0.0102	0.05	Q V	|	|	|	|
3+25	0.0105	0.05	Q V	|	|	|	|
3+30	0.0109	0.06	Q V	|	|	|	|
3+35	0.0113	0.06	Q V	|	|	|	|
3+40	0.0117	0.06	Q V	|	|	|	|
3+45	0.0122	0.06	Q V	|	|	|	|
3+50	0.0127	0.07	Q V	|	|	|	|
3+55	0.0131	0.07	Q V	|	|	|	|
4+ 0	0.0136	0.07	Q V	|	|	|	|
4+ 5	0.0142	0.08	Q V	|	|	|	|
4+10	0.0147	0.08	Q V	|	|	|	|
4+15	0.0153	0.08	Q V	|	|	|	|
4+20	0.0159	0.09	Q V	|	|	|	|
4+25	0.0165	0.09	Q V	|	|	|	|
4+30	0.0171	0.10	Q V |	|	|	|
4+35	0.0179	0.11	Q V |	|	|	|
4+40	0.0188	0.12	Q V |	|	|	|
4+45	0.0198	0.15	Q V|	|	|	|
4+50	0.0210	0.18	Q V|	|	|	|
4+55	0.0225	0.21	Q V |	|	|	|
5+ 0	0.0241	0.24	Q |V |	|	|	|
5+ 5	0.0260	0.28	|Q | V |	|	|	|
5+10	0.0284	0.35	|Q | V |	|	|	|
5+15	0.0315	0.46	|Q | V |	|	|	|
5+20	0.0357	0.60	| Q | V |	|	|	|
5+25	0.0408	0.75	| Q | V|	|	|	|
5+30	0.0472	0.92	| Q | | V |	|	|	|
5+35	0.0544	1.05	| Q | | V |	|	|	|

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    5+40       0.0616      1.05  |   Q     |          |       V |          |
    5+45       0.0674      0.84  |  Q      |          |         |V         |
    5+50       0.0713      0.56  | Q       |          |         |  V       |
    5+55       0.0739      0.38  |Q        |          |         |   V      |
    6+ 0       0.0759      0.29  |Q        |          |         |    V     |
    6+ 5       0.0775      0.23  Q         |          |         |     V    |
    6+10       0.0788      0.19  Q         |          |         |     V    |
    6+15       0.0799      0.16  Q         |          |         |      V   |
    6+20       0.0808      0.13  Q         |          |         |      V   |
    6+25       0.0816      0.11  Q         |          |         |       V  |
    6+30       0.0823      0.09  Q         |          |         |       V  |
    6+35       0.0828      0.08  Q         |          |         |       V  |
    6+40       0.0833      0.07  Q         |          |         |       V  |
    6+45       0.0837      0.06  Q         |          |         |        V|
    6+50       0.0841      0.05  Q         |          |         |        V|
    6+55       0.0844      0.05  Q         |          |         |        V|
    7+ 0       0.0847      0.04  Q         |          |         |        V|
    7+ 5       0.0849      0.03  Q         |          |         |        V|
    7+10       0.0851      0.03  Q         |          |         |        V|
    7+15       0.0853      0.02  Q         |          |         |        V|
    7+20       0.0854      0.02  Q         |          |         |        V|
    7+25       0.0855      0.02  Q         |          |         |        V|
    7+30       0.0856      0.01  Q         |          |         |        V|
    7+35       0.0857      0.01  Q         |          |         |        V|
    7+40       0.0857      0.00  Q         |          |         |        V|
    7+45       0.0857      0.00  Q         |          |         |        V|
    7+50       0.0857      0.00  Q         |          |         |        V|
    7+55       0.0857      0.00  Q         |          |         |        V|
    8+ 0       0.0857      0.00  Q         |          |         |        V|
    8+ 5       0.0857      0.00  Q         |          |         |        V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 11/25/19 File: 8946E2A1242.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
2-YEAR 24HR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	2.25	7.54

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	5.25	17.59

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
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6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
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16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
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24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.018	(0.508)	0.016	0.002
2	0.17	0.07	0.018	(0.506)	0.016	0.002
3	0.25	0.07	0.018	(0.504)	0.016	0.002
4	0.33	0.10	0.027	(0.502)	0.024	0.003
5	0.42	0.10	0.027	(0.500)	0.024	0.003
6	0.50	0.10	0.027	(0.498)	0.024	0.003
7	0.58	0.10	0.027	(0.496)	0.024	0.003
8	0.67	0.10	0.027	(0.494)	0.024	0.003
9	0.75	0.10	0.027	(0.492)	0.024	0.003
10	0.83	0.13	0.036	(0.490)	0.032	0.004
11	0.92	0.13	0.036	(0.488)	0.032	0.004
12	1.00	0.13	0.036	(0.486)	0.032	0.004
13	1.08	0.10	0.027	(0.485)	0.024	0.003
14	1.17	0.10	0.027	(0.483)	0.024	0.003
15	1.25	0.10	0.027	(0.481)	0.024	0.003
16	1.33	0.10	0.027	(0.479)	0.024	0.003
17	1.42	0.10	0.027	(0.477)	0.024	0.003
18	1.50	0.10	0.027	(0.475)	0.024	0.003
19	1.58	0.10	0.027	(0.473)	0.024	0.003
20	1.67	0.10	0.027	(0.471)	0.024	0.003

21	1.75	0.10	0.027	(0.469)	0.024	0.003
22	1.83	0.13	0.036	(0.467)	0.032	0.004
23	1.92	0.13	0.036	(0.466)	0.032	0.004
24	2.00	0.13	0.036	(0.464)	0.032	0.004
25	2.08	0.13	0.036	(0.462)	0.032	0.004
26	2.17	0.13	0.036	(0.460)	0.032	0.004
27	2.25	0.13	0.036	(0.458)	0.032	0.004
28	2.33	0.13	0.036	(0.456)	0.032	0.004
29	2.42	0.13	0.036	(0.454)	0.032	0.004
30	2.50	0.13	0.036	(0.452)	0.032	0.004
31	2.58	0.17	0.045	(0.451)	0.040	0.004
32	2.67	0.17	0.045	(0.449)	0.040	0.004
33	2.75	0.17	0.045	(0.447)	0.040	0.004
34	2.83	0.17	0.045	(0.445)	0.040	0.004
35	2.92	0.17	0.045	(0.443)	0.040	0.004
36	3.00	0.17	0.045	(0.441)	0.040	0.004
37	3.08	0.17	0.045	(0.440)	0.040	0.004
38	3.17	0.17	0.045	(0.438)	0.040	0.004
39	3.25	0.17	0.045	(0.436)	0.040	0.004
40	3.33	0.17	0.045	(0.434)	0.040	0.004
41	3.42	0.17	0.045	(0.432)	0.040	0.004
42	3.50	0.17	0.045	(0.430)	0.040	0.004
43	3.58	0.17	0.045	(0.429)	0.040	0.004
44	3.67	0.17	0.045	(0.427)	0.040	0.004
45	3.75	0.17	0.045	(0.425)	0.040	0.004
46	3.83	0.20	0.054	(0.423)	0.049	0.005
47	3.92	0.20	0.054	(0.422)	0.049	0.005
48	4.00	0.20	0.054	(0.420)	0.049	0.005
49	4.08	0.20	0.054	(0.418)	0.049	0.005
50	4.17	0.20	0.054	(0.416)	0.049	0.005
51	4.25	0.20	0.054	(0.414)	0.049	0.005
52	4.33	0.23	0.063	(0.413)	0.057	0.006
53	4.42	0.23	0.063	(0.411)	0.057	0.006
54	4.50	0.23	0.063	(0.409)	0.057	0.006
55	4.58	0.23	0.063	(0.407)	0.057	0.006
56	4.67	0.23	0.063	(0.406)	0.057	0.006
57	4.75	0.23	0.063	(0.404)	0.057	0.006
58	4.83	0.27	0.072	(0.402)	0.065	0.007
59	4.92	0.27	0.072	(0.400)	0.065	0.007
60	5.00	0.27	0.072	(0.399)	0.065	0.007
61	5.08	0.20	0.054	(0.397)	0.049	0.005
62	5.17	0.20	0.054	(0.395)	0.049	0.005
63	5.25	0.20	0.054	(0.393)	0.049	0.005
64	5.33	0.23	0.063	(0.392)	0.057	0.006
65	5.42	0.23	0.063	(0.390)	0.057	0.006
66	5.50	0.23	0.063	(0.388)	0.057	0.006
67	5.58	0.27	0.072	(0.387)	0.065	0.007
68	5.67	0.27	0.072	(0.385)	0.065	0.007
69	5.75	0.27	0.072	(0.383)	0.065	0.007
70	5.83	0.27	0.072	(0.382)	0.065	0.007
71	5.92	0.27	0.072	(0.380)	0.065	0.007
72	6.00	0.27	0.072	(0.378)	0.065	0.007
73	6.08	0.30	0.081	(0.376)	0.073	0.008
74	6.17	0.30	0.081	(0.375)	0.073	0.008
75	6.25	0.30	0.081	(0.373)	0.073	0.008
76	6.33	0.30	0.081	(0.371)	0.073	0.008
77	6.42	0.30	0.081	(0.370)	0.073	0.008
78	6.50	0.30	0.081	(0.368)	0.073	0.008
79	6.58	0.33	0.090	(0.366)	0.081	0.009
80	6.67	0.33	0.090	(0.365)	0.081	0.009
81	6.75	0.33	0.090	(0.363)	0.081	0.009
82	6.83	0.33	0.090	(0.362)	0.081	0.009
83	6.92	0.33	0.090	(0.360)	0.081	0.009
84	7.00	0.33	0.090	(0.358)	0.081	0.009
85	7.08	0.33	0.090	(0.357)	0.081	0.009
86	7.17	0.33	0.090	(0.355)	0.081	0.009
87	7.25	0.33	0.090	(0.353)	0.081	0.009
88	7.33	0.37	0.099	(0.352)	0.089	0.010
89	7.42	0.37	0.099	(0.350)	0.089	0.010
90	7.50	0.37	0.099	(0.349)	0.089	0.010

91	7.58	0.40	0.108	(0.347)	0.097	0.011
92	7.67	0.40	0.108	(0.345)	0.097	0.011
93	7.75	0.40	0.108	(0.344)	0.097	0.011
94	7.83	0.43	0.117	(0.342)	0.105	0.012
95	7.92	0.43	0.117	(0.341)	0.105	0.012
96	8.00	0.43	0.117	(0.339)	0.105	0.012
97	8.08	0.50	0.135	(0.337)	0.121	0.013
98	8.17	0.50	0.135	(0.336)	0.121	0.013
99	8.25	0.50	0.135	(0.334)	0.121	0.013
100	8.33	0.50	0.135	(0.333)	0.121	0.013
101	8.42	0.50	0.135	(0.331)	0.121	0.013
102	8.50	0.50	0.135	(0.330)	0.121	0.013
103	8.58	0.53	0.144	(0.328)	0.130	0.014
104	8.67	0.53	0.144	(0.327)	0.130	0.014
105	8.75	0.53	0.144	(0.325)	0.130	0.014
106	8.83	0.57	0.153	(0.323)	0.138	0.015
107	8.92	0.57	0.153	(0.322)	0.138	0.015
108	9.00	0.57	0.153	(0.320)	0.138	0.015
109	9.08	0.63	0.171	(0.319)	0.154	0.017
110	9.17	0.63	0.171	(0.317)	0.154	0.017
111	9.25	0.63	0.171	(0.316)	0.154	0.017
112	9.33	0.67	0.180	(0.314)	0.162	0.018
113	9.42	0.67	0.180	(0.313)	0.162	0.018
114	9.50	0.67	0.180	(0.311)	0.162	0.018
115	9.58	0.70	0.189	(0.310)	0.170	0.019
116	9.67	0.70	0.189	(0.308)	0.170	0.019
117	9.75	0.70	0.189	(0.307)	0.170	0.019
118	9.83	0.73	0.198	(0.305)	0.178	0.020
119	9.92	0.73	0.198	(0.304)	0.178	0.020
120	10.00	0.73	0.198	(0.303)	0.178	0.020
121	10.08	0.50	0.135	(0.301)	0.121	0.013
122	10.17	0.50	0.135	(0.300)	0.121	0.013
123	10.25	0.50	0.135	(0.298)	0.121	0.013
124	10.33	0.50	0.135	(0.297)	0.121	0.013
125	10.42	0.50	0.135	(0.295)	0.121	0.013
126	10.50	0.50	0.135	(0.294)	0.121	0.013
127	10.58	0.67	0.180	(0.292)	0.162	0.018
128	10.67	0.67	0.180	(0.291)	0.162	0.018
129	10.75	0.67	0.180	(0.290)	0.162	0.018
130	10.83	0.67	0.180	(0.288)	0.162	0.018
131	10.92	0.67	0.180	(0.287)	0.162	0.018
132	11.00	0.67	0.180	(0.285)	0.162	0.018
133	11.08	0.63	0.171	(0.284)	0.154	0.017
134	11.17	0.63	0.171	(0.282)	0.154	0.017
135	11.25	0.63	0.171	(0.281)	0.154	0.017
136	11.33	0.63	0.171	(0.280)	0.154	0.017
137	11.42	0.63	0.171	(0.278)	0.154	0.017
138	11.50	0.63	0.171	(0.277)	0.154	0.017
139	11.58	0.57	0.153	(0.276)	0.138	0.015
140	11.67	0.57	0.153	(0.274)	0.138	0.015
141	11.75	0.57	0.153	(0.273)	0.138	0.015
142	11.83	0.60	0.162	(0.271)	0.146	0.016
143	11.92	0.60	0.162	(0.270)	0.146	0.016
144	12.00	0.60	0.162	(0.269)	0.146	0.016
145	12.08	0.83	0.225	(0.267)	0.202	0.022
146	12.17	0.83	0.225	(0.266)	0.202	0.022
147	12.25	0.83	0.225	(0.265)	0.202	0.022
148	12.33	0.87	0.234	(0.263)	0.211	0.023
149	12.42	0.87	0.234	(0.262)	0.211	0.023
150	12.50	0.87	0.234	(0.261)	0.211	0.023
151	12.58	0.93	0.252	(0.259)	0.227	0.025
152	12.67	0.93	0.252	(0.258)	0.227	0.025
153	12.75	0.93	0.252	(0.257)	0.227	0.025
154	12.83	0.97	0.261	(0.256)	0.235	0.026
155	12.92	0.97	0.261	(0.254)	0.235	0.026
156	13.00	0.97	0.261	(0.253)	0.235	0.026
157	13.08	1.13	0.306	0.252	(0.275)	0.054
158	13.17	1.13	0.306	0.250	(0.275)	0.056
159	13.25	1.13	0.306	0.249	(0.275)	0.057
160	13.33	1.13	0.306	0.248	(0.275)	0.058

161	13.42	1.13	0.306		0.247	(	0.275)	0.059
162	13.50	1.13	0.306		0.245	(	0.275)	0.061
163	13.58	0.77	0.207	(	0.244)		0.186	0.021
164	13.67	0.77	0.207	(	0.243)		0.186	0.021
165	13.75	0.77	0.207	(	0.242)		0.186	0.021
166	13.83	0.77	0.207	(	0.240)		0.186	0.021
167	13.92	0.77	0.207	(	0.239)		0.186	0.021
168	14.00	0.77	0.207	(	0.238)		0.186	0.021
169	14.08	0.90	0.243	(	0.237)		0.219	0.024
170	14.17	0.90	0.243	(	0.236)		0.219	0.024
171	14.25	0.90	0.243	(	0.234)		0.219	0.024
172	14.33	0.87	0.234	(	0.233)		0.211	0.023
173	14.42	0.87	0.234	(	0.232)		0.211	0.023
174	14.50	0.87	0.234	(	0.231)		0.211	0.023
175	14.58	0.87	0.234	(	0.230)		0.211	0.023
176	14.67	0.87	0.234	(	0.228)		0.211	0.023
177	14.75	0.87	0.234	(	0.227)		0.211	0.023
178	14.83	0.83	0.225	(	0.226)		0.202	0.022
179	14.92	0.83	0.225	(	0.225)		0.202	0.022
180	15.00	0.83	0.225	(	0.224)		0.202	0.022
181	15.08	0.80	0.216	(	0.223)		0.194	0.022
182	15.17	0.80	0.216	(	0.221)		0.194	0.022
183	15.25	0.80	0.216	(	0.220)		0.194	0.022
184	15.33	0.77	0.207	(	0.219)		0.186	0.021
185	15.42	0.77	0.207	(	0.218)		0.186	0.021
186	15.50	0.77	0.207	(	0.217)		0.186	0.021
187	15.58	0.63	0.171	(	0.216)		0.154	0.017
188	15.67	0.63	0.171	(	0.215)		0.154	0.017
189	15.75	0.63	0.171	(	0.214)		0.154	0.017
190	15.83	0.63	0.171	(	0.213)		0.154	0.017
191	15.92	0.63	0.171	(	0.211)		0.154	0.017
192	16.00	0.63	0.171	(	0.210)		0.154	0.017
193	16.08	0.13	0.036	(	0.209)		0.032	0.004
194	16.17	0.13	0.036	(	0.208)		0.032	0.004
195	16.25	0.13	0.036	(	0.207)		0.032	0.004
196	16.33	0.13	0.036	(	0.206)		0.032	0.004
197	16.42	0.13	0.036	(	0.205)		0.032	0.004
198	16.50	0.13	0.036	(	0.204)		0.032	0.004
199	16.58	0.10	0.027	(	0.203)		0.024	0.003
200	16.67	0.10	0.027	(	0.202)		0.024	0.003
201	16.75	0.10	0.027	(	0.201)		0.024	0.003
202	16.83	0.10	0.027	(	0.200)		0.024	0.003
203	16.92	0.10	0.027	(	0.199)		0.024	0.003
204	17.00	0.10	0.027	(	0.198)		0.024	0.003
205	17.08	0.17	0.045	(	0.197)		0.040	0.004
206	17.17	0.17	0.045	(	0.196)		0.040	0.004
207	17.25	0.17	0.045	(	0.195)		0.040	0.004
208	17.33	0.17	0.045	(	0.194)		0.040	0.004
209	17.42	0.17	0.045	(	0.193)		0.040	0.004
210	17.50	0.17	0.045	(	0.192)		0.040	0.004
211	17.58	0.17	0.045	(	0.191)		0.040	0.004
212	17.67	0.17	0.045	(	0.190)		0.040	0.004
213	17.75	0.17	0.045	(	0.189)		0.040	0.004
214	17.83	0.13	0.036	(	0.188)		0.032	0.004
215	17.92	0.13	0.036	(	0.187)		0.032	0.004
216	18.00	0.13	0.036	(	0.186)		0.032	0.004
217	18.08	0.13	0.036	(	0.185)		0.032	0.004
218	18.17	0.13	0.036	(	0.185)		0.032	0.004
219	18.25	0.13	0.036	(	0.184)		0.032	0.004
220	18.33	0.13	0.036	(	0.183)		0.032	0.004
221	18.42	0.13	0.036	(	0.182)		0.032	0.004
222	18.50	0.13	0.036	(	0.181)		0.032	0.004
223	18.58	0.10	0.027	(	0.180)		0.024	0.003
224	18.67	0.10	0.027	(	0.179)		0.024	0.003
225	18.75	0.10	0.027	(	0.178)		0.024	0.003
226	18.83	0.07	0.018	(	0.177)		0.016	0.002
227	18.92	0.07	0.018	(	0.177)		0.016	0.002
228	19.00	0.07	0.018	(	0.176)		0.016	0.002
229	19.08	0.10	0.027	(	0.175)		0.024	0.003
230	19.17	0.10	0.027	(	0.174)		0.024	0.003

231	19.25	0.10	0.027	(0.173)	0.024	0.003
232	19.33	0.13	0.036	(0.173)	0.032	0.004
233	19.42	0.13	0.036	(0.172)	0.032	0.004
234	19.50	0.13	0.036	(0.171)	0.032	0.004
235	19.58	0.10	0.027	(0.170)	0.024	0.003
236	19.67	0.10	0.027	(0.169)	0.024	0.003
237	19.75	0.10	0.027	(0.169)	0.024	0.003
238	19.83	0.07	0.018	(0.168)	0.016	0.002
239	19.92	0.07	0.018	(0.167)	0.016	0.002
240	20.00	0.07	0.018	(0.166)	0.016	0.002
241	20.08	0.10	0.027	(0.166)	0.024	0.003
242	20.17	0.10	0.027	(0.165)	0.024	0.003
243	20.25	0.10	0.027	(0.164)	0.024	0.003
244	20.33	0.10	0.027	(0.163)	0.024	0.003
245	20.42	0.10	0.027	(0.163)	0.024	0.003
246	20.50	0.10	0.027	(0.162)	0.024	0.003
247	20.58	0.10	0.027	(0.161)	0.024	0.003
248	20.67	0.10	0.027	(0.161)	0.024	0.003
249	20.75	0.10	0.027	(0.160)	0.024	0.003
250	20.83	0.07	0.018	(0.159)	0.016	0.002
251	20.92	0.07	0.018	(0.159)	0.016	0.002
252	21.00	0.07	0.018	(0.158)	0.016	0.002
253	21.08	0.10	0.027	(0.157)	0.024	0.003
254	21.17	0.10	0.027	(0.157)	0.024	0.003
255	21.25	0.10	0.027	(0.156)	0.024	0.003
256	21.33	0.07	0.018	(0.156)	0.016	0.002
257	21.42	0.07	0.018	(0.155)	0.016	0.002
258	21.50	0.07	0.018	(0.155)	0.016	0.002
259	21.58	0.10	0.027	(0.154)	0.024	0.003
260	21.67	0.10	0.027	(0.153)	0.024	0.003
261	21.75	0.10	0.027	(0.153)	0.024	0.003
262	21.83	0.07	0.018	(0.152)	0.016	0.002
263	21.92	0.07	0.018	(0.152)	0.016	0.002
264	22.00	0.07	0.018	(0.151)	0.016	0.002
265	22.08	0.10	0.027	(0.151)	0.024	0.003
266	22.17	0.10	0.027	(0.150)	0.024	0.003
267	22.25	0.10	0.027	(0.150)	0.024	0.003
268	22.33	0.07	0.018	(0.149)	0.016	0.002
269	22.42	0.07	0.018	(0.149)	0.016	0.002
270	22.50	0.07	0.018	(0.148)	0.016	0.002
271	22.58	0.07	0.018	(0.148)	0.016	0.002
272	22.67	0.07	0.018	(0.148)	0.016	0.002
273	22.75	0.07	0.018	(0.147)	0.016	0.002
274	22.83	0.07	0.018	(0.147)	0.016	0.002
275	22.92	0.07	0.018	(0.146)	0.016	0.002
276	23.00	0.07	0.018	(0.146)	0.016	0.002
277	23.08	0.07	0.018	(0.146)	0.016	0.002
278	23.17	0.07	0.018	(0.145)	0.016	0.002
279	23.25	0.07	0.018	(0.145)	0.016	0.002
280	23.33	0.07	0.018	(0.145)	0.016	0.002
281	23.42	0.07	0.018	(0.145)	0.016	0.002
282	23.50	0.07	0.018	(0.144)	0.016	0.002
283	23.58	0.07	0.018	(0.144)	0.016	0.002
284	23.67	0.07	0.018	(0.144)	0.016	0.002
285	23.75	0.07	0.018	(0.144)	0.016	0.002
286	23.83	0.07	0.018	(0.143)	0.016	0.002
287	23.92	0.07	0.018	(0.143)	0.016	0.002
288	24.00	0.07	0.018	(0.143)	0.016	0.002
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	2.9

Flood volume = Effective rainfall 0.24(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 2.01(In)
Total soil loss = 0.562(Ac.Ft)
Total rainfall = 2.25(In)
Flood volume = 2899.5 Cubic Feet
Total soil loss = 24461.5 Cubic Feet

Peak flow rate of this hydrograph = 0.167(CFS)

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24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0000	0.00	Q				
0+20	0.0000	0.00	Q				
0+25	0.0001	0.00	Q				
0+30	0.0001	0.01	Q				
0+35	0.0002	0.01	Q				
0+40	0.0002	0.01	Q				
0+45	0.0003	0.01	Q				
0+50	0.0003	0.01	Q				
0+55	0.0004	0.01	Q				
1+ 0	0.0004	0.01	Q				
1+ 5	0.0005	0.01	Q				
1+10	0.0006	0.01	Q				
1+15	0.0006	0.01	Q				
1+20	0.0007	0.01	Q				
1+25	0.0008	0.01	Q				
1+30	0.0008	0.01	Q				
1+35	0.0009	0.01	Q				
1+40	0.0009	0.01	Q				
1+45	0.0010	0.01	Q				
1+50	0.0011	0.01	Q				
1+55	0.0011	0.01	Q				
2+ 0	0.0012	0.01	Q				
2+ 5	0.0013	0.01	Q				
2+10	0.0014	0.01	Q				
2+15	0.0014	0.01	Q				
2+20	0.0015	0.01	Q				
2+25	0.0016	0.01	Q				
2+30	0.0017	0.01	QV				
2+35	0.0018	0.01	QV				
2+40	0.0018	0.01	QV				
2+45	0.0019	0.01	QV				
2+50	0.0020	0.01	QV				
2+55	0.0021	0.01	QV				
3+ 0	0.0022	0.01	QV				
3+ 5	0.0023	0.01	QV				
3+10	0.0024	0.01	QV				
3+15	0.0025	0.01	QV				
3+20	0.0026	0.01	QV				
3+25	0.0027	0.01	QV				
3+30	0.0028	0.01	QV				
3+35	0.0029	0.01	QV				
3+40	0.0030	0.01	QV				
3+45	0.0031	0.02	QV				
3+50	0.0032	0.02	QV				
3+55	0.0033	0.02	Q V				
4+ 0	0.0035	0.02	Q V				
4+ 5	0.0036	0.02	Q V				
4+10	0.0037	0.02	Q V				
4+15	0.0038	0.02	Q V				
4+20	0.0039	0.02	Q V				
4+25	0.0041	0.02	Q V				
4+30	0.0042	0.02	Q V				
4+35	0.0043	0.02	Q V				
4+40	0.0045	0.02	Q V				
4+45	0.0046	0.02	Q V				
4+50	0.0047	0.02	Q V				
4+55	0.0049	0.02	Q V				
5+ 0	0.0050	0.02	Q V				
5+ 5	0.0052	0.02	Q V				

5+10	0.0053	0.02	Q	V	|	|	|	|
5+15	0.0055	0.02	Q	V	|	|	|	|
5+20	0.0056	0.02	Q	V	|	|	|	|
5+25	0.0058	0.02	Q	V	|	|	|	|
5+30	0.0059	0.02	Q	V	|	|	|	|
5+35	0.0060	0.02	Q	V	|	|	|	|
5+40	0.0062	0.02	Q	V	|	|	|	|
5+45	0.0063	0.02	Q	V	|	|	|	|
5+50	0.0065	0.02	Q	V	|	|	|	|
5+55	0.0067	0.02	Q	V	|	|	|	|
6+ 0	0.0068	0.02	Q	V	|	|	|	|
6+ 5	0.0070	0.02	Q	V	|	|	|	|
6+10	0.0071	0.02	Q	V	|	|	|	|
6+15	0.0073	0.02	Q	V	|	|	|	|
6+20	0.0075	0.03	Q	V	|	|	|	|
6+25	0.0077	0.03	Q	V	|	|	|	|
6+30	0.0078	0.03	Q	V	|	|	|	|
6+35	0.0080	0.03	Q	V	|	|	|	|
6+40	0.0082	0.03	Q	V	|	|	|	|
6+45	0.0084	0.03	Q	V	|	|	|	|
6+50	0.0086	0.03	Q	V	|	|	|	|
6+55	0.0088	0.03	Q	V	|	|	|	|
7+ 0	0.0090	0.03	Q	V	|	|	|	|
7+ 5	0.0092	0.03	Q	V	|	|	|	|
7+10	0.0094	0.03	Q	V	|	|	|	|
7+15	0.0096	0.03	Q	V	|	|	|	|
7+20	0.0098	0.03	Q	V	|	|	|	|
7+25	0.0100	0.03	Q	V	|	|	|	|
7+30	0.0102	0.03	Q	V	|	|	|	|
7+35	0.0105	0.03	Q	V	|	|	|	|
7+40	0.0107	0.03	Q	V	|	|	|	|
7+45	0.0109	0.03	Q	V	|	|	|	|
7+50	0.0112	0.03	Q	V	|	|	|	|
7+55	0.0114	0.04	Q	V	|	|	|	|
8+ 0	0.0116	0.04	Q	V	|	|	|	|
8+ 5	0.0119	0.04	Q	V	|	|	|	|
8+10	0.0122	0.04	Q	V	|	|	|	|
8+15	0.0124	0.04	Q	V	|	|	|	|
8+20	0.0127	0.04	Q	V	|	|	|	|
8+25	0.0130	0.04	Q	V	|	|	|	|
8+30	0.0133	0.04	Q	V	|	|	|	|
8+35	0.0136	0.04	Q	V	|	|	|	|
8+40	0.0139	0.04	Q	V	|	|	|	|
8+45	0.0142	0.05	Q	V	|	|	|	|
8+50	0.0145	0.05	Q	V	|	|	|	|
8+55	0.0149	0.05	Q	V	|	|	|	|
9+ 0	0.0152	0.05	Q	V	|	|	|	|
9+ 5	0.0155	0.05	Q	V	|	|	|	|
9+10	0.0159	0.05	Q	V	|	|	|	|
9+15	0.0162	0.05	Q	V	|	|	|	|
9+20	0.0166	0.05	Q	V	|	|	|	|
9+25	0.0170	0.05	Q	V	|	|	|	|
9+30	0.0174	0.06	Q	V	|	|	|	|
9+35	0.0178	0.06	Q	V	|	|	|	|
9+40	0.0182	0.06	Q	V	|	|	|	|
9+45	0.0186	0.06	Q	V	|	|	|	|
9+50	0.0190	0.06	Q	V	|	|	|	|
9+55	0.0194	0.06	Q	V	|	|	|	|
10+ 0	0.0199	0.06	Q	V	|	|	|	|
10+ 5	0.0203	0.06	Q	V	|	|	|	|
10+10	0.0207	0.06	Q	V	|	|	|	|
10+15	0.0211	0.06	Q	V	|	|	|	|
10+20	0.0215	0.05	Q	V	|	|	|	|
10+25	0.0218	0.05	Q	V	|	|	|	|
10+30	0.0222	0.05	Q	V	|	|	|	|
10+35	0.0225	0.05	Q	V	|	|	|	|
10+40	0.0229	0.05	Q	V	|	|	|	|
10+45	0.0232	0.05	Q	V	|	|	|	|
10+50	0.0236	0.06	Q	V	|	|	|	|
10+55	0.0240	0.06	Q	V	|	|	|	|

11+ 0	0.0244	0.06	Q	V			
11+ 5	0.0248	0.06	Q	V			
11+10	0.0252	0.06	Q	V			
11+15	0.0256	0.06	Q	V			
11+20	0.0260	0.06	Q	V			
11+25	0.0264	0.06	Q	V			
11+30	0.0268	0.06	Q	V			
11+35	0.0272	0.06	Q	V			
11+40	0.0276	0.06	Q	V			
11+45	0.0280	0.06	Q	V			
11+50	0.0284	0.05	Q	V			
11+55	0.0288	0.05	Q	V			
12+ 0	0.0291	0.05	Q	V			
12+ 5	0.0295	0.06	Q	V			
12+10	0.0299	0.06	Q	V			
12+15	0.0303	0.06	Q	V			
12+20	0.0308	0.07	Q	V			
12+25	0.0313	0.07	Q	V			
12+30	0.0318	0.07	Q	V			
12+35	0.0323	0.07	Q	V			
12+40	0.0328	0.08	Q	V			
12+45	0.0333	0.08	Q	V			
12+50	0.0339	0.08	Q	V			
12+55	0.0344	0.08	Q	V			
13+ 0	0.0350	0.08	Q	V			
13+ 5	0.0356	0.09	Q	V			
13+10	0.0362	0.10	Q	V			
13+15	0.0371	0.12	Q	V			
13+20	0.0380	0.14	Q	V			
13+25	0.0391	0.15	Q	V			
13+30	0.0402	0.16	Q	V			
13+35	0.0413	0.17	Q	V			
13+40	0.0424	0.16	Q	V			
13+45	0.0434	0.14	Q	V			
13+50	0.0442	0.11	Q	V			
13+55	0.0449	0.10	Q	V			
14+ 0	0.0455	0.09	Q	V			
14+ 5	0.0461	0.09	Q	V			
14+10	0.0467	0.09	Q	V			
14+15	0.0473	0.09	Q	V			
14+20	0.0479	0.09	Q	V			
14+25	0.0485	0.09	Q	V			
14+30	0.0491	0.09	Q	V			
14+35	0.0497	0.08	Q	V			
14+40	0.0503	0.08	Q	V			
14+45	0.0508	0.08	Q	V			
14+50	0.0514	0.08	Q	V			
14+55	0.0520	0.08	Q	V			
15+ 0	0.0525	0.08	Q	V			
15+ 5	0.0531	0.08	Q	V			
15+10	0.0536	0.08	Q	V			
15+15	0.0541	0.08	Q	V			
15+20	0.0547	0.08	Q	V			
15+25	0.0552	0.08	Q	V			
15+30	0.0557	0.07	Q	V			
15+35	0.0562	0.07	Q	V			
15+40	0.0567	0.07	Q	V			
15+45	0.0571	0.07	Q	V			
15+50	0.0576	0.06	Q	V			
15+55	0.0580	0.06	Q	V			
16+ 0	0.0585	0.06	Q	V			
16+ 5	0.0589	0.06	Q	V			
16+10	0.0592	0.05	Q	V			
16+15	0.0595	0.04	Q	V			
16+20	0.0598	0.04	Q	V			
16+25	0.0600	0.03	Q	V			
16+30	0.0602	0.03	Q	V			
16+35	0.0603	0.02	Q	V			
16+40	0.0605	0.02	Q	V			
16+45	0.0606	0.02	Q	V			

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16+50       0.0607      0.02  Q         |         |         |     V   |
16+55       0.0608      0.02  Q         |         |         |     V   |
17+ 0       0.0609      0.01  Q         |         |         |     V   |
17+ 5       0.0610      0.01  Q         |         |         |     V   |
17+10       0.0611      0.01  Q         |         |         |     V   |
17+15       0.0612      0.01  Q         |         |         |     V   |
17+20       0.0613      0.02  Q         |         |         |     V   |
17+25       0.0614      0.02  Q         |         |         |     V   |
17+30       0.0615      0.02  Q         |         |         |     V   |
17+35       0.0616      0.02  Q         |         |         |      V  |
17+40       0.0618      0.02  Q         |         |         |      V  |
17+45       0.0619      0.02  Q         |         |         |      V  |
17+50       0.0620      0.02  Q         |         |         |      V  |
17+55       0.0621      0.01  Q         |         |         |      V  |
18+ 0       0.0622      0.01  Q         |         |         |      V  |
18+ 5       0.0623      0.01  Q         |         |         |      V  |
18+10       0.0623      0.01  Q         |         |         |      V  |
18+15       0.0624      0.01  Q         |         |         |      V  |
18+20       0.0625      0.01  Q         |         |         |      V  |
18+25       0.0626      0.01  Q         |         |         |      V  |
18+30       0.0627      0.01  Q         |         |         |      V  |
18+35       0.0628      0.01  Q         |         |         |      V  |
18+40       0.0629      0.01  Q         |         |         |      V  |
18+45       0.0629      0.01  Q         |         |         |      V  |
18+50       0.0630      0.01  Q         |         |         |      V  |
18+55       0.0631      0.01  Q         |         |         |      V  |
19+ 0       0.0631      0.01  Q         |         |         |      V  |
19+ 5       0.0632      0.01  Q         |         |         |      V  |
19+10       0.0632      0.01  Q         |         |         |       V |
19+15       0.0633      0.01  Q         |         |         |       V |
19+20       0.0634      0.01  Q         |         |         |       V |
19+25       0.0634      0.01  Q         |         |         |       V |
19+30       0.0635      0.01  Q         |         |         |       V |
19+35       0.0636      0.01  Q         |         |         |       V |
19+40       0.0637      0.01  Q         |         |         |       V |
19+45       0.0637      0.01  Q         |         |         |       V |
19+50       0.0638      0.01  Q         |         |         |       V |
19+55       0.0639      0.01  Q         |         |         |       V |
20+ 0       0.0639      0.01  Q         |         |         |       V |
20+ 5       0.0640      0.01  Q         |         |         |       V |
20+10       0.0640      0.01  Q         |         |         |       V |
20+15       0.0641      0.01  Q         |         |         |       V |
20+20       0.0641      0.01  Q         |         |         |       V |
20+25       0.0642      0.01  Q         |         |         |       V |
20+30       0.0643      0.01  Q         |         |         |       V |
20+35       0.0643      0.01  Q         |         |         |       V |
20+40       0.0644      0.01  Q         |         |         |       V |
20+45       0.0644      0.01  Q         |         |         |       V |
20+50       0.0645      0.01  Q         |         |         |       V |
20+55       0.0646      0.01  Q         |         |         |       V |
21+ 0       0.0646      0.01  Q         |         |         |       V |
21+ 5       0.0647      0.01  Q         |         |         |       V |
21+10       0.0647      0.01  Q         |         |         |       V |
21+15       0.0648      0.01  Q         |         |         |       V |
21+20       0.0648      0.01  Q         |         |         |       V |
21+25       0.0649      0.01  Q         |         |         |       V |
21+30       0.0649      0.01  Q         |         |         |        V|
21+35       0.0650      0.01  Q         |         |         |        V|
21+40       0.0650      0.01  Q         |         |         |        V|
21+45       0.0651      0.01  Q         |         |         |        V|
21+50       0.0651      0.01  Q         |         |         |        V|
21+55       0.0652      0.01  Q         |         |         |        V|
22+ 0       0.0653      0.01  Q         |         |         |        V|
22+ 5       0.0653      0.01  Q         |         |         |        V|
22+10       0.0654      0.01  Q         |         |         |        V|
22+15       0.0654      0.01  Q         |         |         |        V|
22+20       0.0655      0.01  Q         |         |         |        V|
22+25       0.0655      0.01  Q         |         |         |        V|
22+30       0.0656      0.01  Q         |         |         |        V|
22+35       0.0656      0.01  Q         |         |         |        V|
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22+40	0.0657	0.01	Q	|	|	|	V|
22+45	0.0657	0.01	Q	|	|	|	V|
22+50	0.0658	0.01	Q	|	|	|	V|
22+55	0.0658	0.01	Q	|	|	|	V|
23+ 0	0.0658	0.01	Q	|	|	|	V|
23+ 5	0.0659	0.01	Q	|	|	|	V|
23+10	0.0659	0.01	Q	|	|	|	V|
23+15	0.0660	0.01	Q	|	|	|	V|
23+20	0.0660	0.01	Q	|	|	|	V|
23+25	0.0661	0.01	Q	|	|	|	V|
23+30	0.0661	0.01	Q	|	|	|	V|
23+35	0.0661	0.01	Q	|	|	|	V|
23+40	0.0662	0.01	Q	|	|	|	V|
23+45	0.0662	0.01	Q	|	|	|	V|
23+50	0.0663	0.01	Q	|	|	|	V|
23+55	0.0663	0.01	Q	|	|	|	V|
24+ 0	0.0664	0.01	Q	|	|	|	V|
24+ 5	0.0664	0.01	Q	|	|	|	V|
24+10	0.0664	0.01	Q	|	|	|	V|
24+15	0.0665	0.00	Q	|	|	|	V|
24+20	0.0665	0.00	Q	|	|	|	V|
24+25	0.0665	0.00	Q	|	|	|	V|
24+30	0.0665	0.00	Q	|	|	|	V|
24+35	0.0665	0.00	Q	|	|	|	V|
24+40	0.0665	0.00	Q	|	|	|	V|
24+45	0.0665	0.00	Q	|	|	|	V|
24+50	0.0665	0.00	Q	|	|	|	V|
24+55	0.0665	0.00	Q	|	|	|	V|
25+ 0	0.0665	0.00	Q	|	|	|	V|
25+ 5	0.0665	0.00	Q	|	|	|	V|
25+10	0.0666	0.00	Q	|	|	|	V|
25+15	0.0666	0.00	Q	|	|	|	V|
25+20	0.0666	0.00	Q	|	|	|	V|
25+25	0.0666	0.00	Q	|	|	|	V|
25+30	0.0666	0.00	Q	|	|	|	V|
25+35	0.0666	0.00	Q	|	|	|	V|
25+40	0.0666	0.00	Q	|	|	|	V|
25+45	0.0666	0.00	Q	|	|	|	V|
25+50	0.0666	0.00	Q	|	|	|	V|
25+55	0.0666	0.00	Q	|	|	|	V|
26+ 0	0.0666	0.00	Q	|	|	|	V|
26+ 5	0.0666	0.00	Q	|	|	|	V|

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

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Study date 02/19/20 File: 8946E2A115.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
5 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	0.55	1.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	1.30	4.36

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.726(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.726(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.287	(0.286)		0.259	0.029
2	0.17	4.20	0.366	0.286	(	0.329)	0.079
3	0.25	4.40	0.383	0.286	(	0.345)	0.097
4	0.33	4.80	0.418	0.286	(	0.376)	0.131
5	0.42	5.20	0.453	0.286	(	0.408)	0.166
6	0.50	6.20	0.540	0.286	(	0.486)	0.253
7	0.58	6.80	0.592	0.286	(	0.533)	0.306
8	0.67	8.80	0.766	0.286	(	0.690)	0.480
9	0.75	13.90	1.210	0.286	(	1.089)	0.924
10	0.83	31.40	2.734	0.286	(	2.461)	2.448
11	0.92	7.20	0.627	0.286	(	0.564)	0.340
12	1.00	3.80	0.331	0.286	(	0.298)	0.044
		(Loss Rate Not Used)					
Sum =		100.0				Sum =	5.3

Flood volume = Effective rainfall 0.44(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.28(In)
Total soil loss = 0.079(Ac.Ft)

```
     Total rainfall =      0.73(In)
     Flood volume =        5368.7 Cubic Feet
     Total soil loss =        3455.5 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      2.733(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        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0002      0.02  Q         |         |         |         |
   0+15       0.0006      0.06  Q         |         |         |         |
   0+20       0.0014      0.12  Q         |         |         |         |
   0+25       0.0027      0.20  Q         |         |         |         |
   0+30       0.0047      0.28  |Q        |         |         |         |
   0+35       0.0074      0.39  |QV       |         |         |         |
   0+40       0.0111      0.54  | QV      |         |         |         |
   0+45       0.0164      0.78  |  Q V    |         |         |         |
   0+50       0.0255      1.31  |    Q  V |         |         |         |
   0+55       0.0402      2.14  |       Q |  V      |         |         |
   1+ 0       0.0590      2.73  |         Q        V|         |         |
   1+ 5       0.0765      2.54  |         Q          |   V     |         |
   1+10       0.0880      1.67  |     Q   |          |       V |         |
   1+15       0.0952      1.04  |   Q     |          |         V         |
   1+20       0.1001      0.71  | Q       |          |         | V       |
   1+25       0.1039      0.55  | Q       |          |         |  V      |
   1+30       0.1070      0.45  |Q        |          |         |   V     |
   1+35       0.1095      0.37  |Q        |          |         |    V    |
   1+40       0.1116      0.30  |Q        |          |         |     V   |
   1+45       0.1134      0.26  |Q        |          |         |     V   |
   1+50       0.1149      0.22  Q         |          |         |      V  |
   1+55       0.1162      0.18  Q         |          |         |      V  |
   2+ 0       0.1173      0.16  Q         |          |         |       V |
   2+ 5       0.1183      0.14  Q         |          |         |       V |
   2+10       0.1191      0.13  Q         |          |         |       V |
   2+15       0.1199      0.11  Q         |          |         |       V |
   2+20       0.1205      0.09  Q         |          |         |        V|
   2+25       0.1211      0.08  Q         |          |         |        V|
   2+30       0.1216      0.07  Q         |          |         |        V|
   2+35       0.1220      0.06  Q         |          |         |        V|
   2+40       0.1223      0.05  Q         |          |         |        V|
   2+45       0.1226      0.05  Q         |          |         |        V|
   2+50       0.1229      0.04  Q         |          |         |        V|
   2+55       0.1232      0.04  Q         |          |         |        V|
   3+ 0       0.1232      0.01  Q         |          |         |        V|
   3+ 5       0.1232      0.00  Q         |          |         |        V|
---------------------------------------------------------------------------
```

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

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Study date 02/19/20 File: 8946E2A135.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
5 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	0.90	3.02

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	2.25	7.54

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.216(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.216(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.190	(0.286)	0.171	0.019
2	0.17	1.30	0.190	(0.286)	0.171	0.019
3	0.25	1.10	0.161	(0.286)	0.144	0.016
4	0.33	1.50	0.219	(0.286)	0.197	0.022
5	0.42	1.50	0.219	(0.286)	0.197	0.022
6	0.50	1.80	0.263	(0.286)	0.236	0.026
7	0.58	1.50	0.219	(0.286)	0.197	0.022
8	0.67	1.80	0.263	(0.286)	0.236	0.026
9	0.75	1.80	0.263	(0.286)	0.236	0.026
10	0.83	1.50	0.219	(0.286)	0.197	0.022
11	0.92	1.60	0.234	(0.286)	0.210	0.023
12	1.00	1.80	0.263	(0.286)	0.236	0.026
13	1.08	2.20	0.321	0.286	(0.289)	0.035
14	1.17	2.20	0.321	0.286	(0.289)	0.035
15	1.25	2.20	0.321	0.286	(0.289)	0.035
16	1.33	2.00	0.292	(0.286)	0.263	0.029
17	1.42	2.60	0.379	0.286	(0.342)	0.093
18	1.50	2.70	0.394	0.286	(0.355)	0.108
19	1.58	2.40	0.350	0.286	(0.315)	0.064
20	1.67	2.70	0.394	0.286	(0.355)	0.108

```
21   1.75     3.30      0.482          0.286    (  0.433)        0.195
22   1.83     3.10      0.452          0.286    (  0.407)        0.166
23   1.92     2.90      0.423          0.286    (  0.381)        0.137
24   2.00     3.00      0.438          0.286    (  0.394)        0.151
25   2.08     3.10      0.452          0.286    (  0.407)        0.166
26   2.17     4.20      0.613          0.286    (  0.552)        0.326
27   2.25     5.00      0.730          0.286    (  0.657)        0.443
28   2.33     3.50      0.511          0.286    (  0.460)        0.224
29   2.42     6.80      0.992          0.286    (  0.893)        0.706
30   2.50     7.30      1.065          0.286    (  0.959)        0.779
31   2.58     8.20      1.197          0.286    (  1.077)        0.910
32   2.67     5.90      0.861          0.286    (  0.775)        0.575
33   2.75     2.00      0.292       (  0.286)       0.263        0.029
34   2.83     1.80      0.263       (  0.286)       0.236        0.026
35   2.92     1.80      0.263       (  0.286)       0.236        0.026
36   3.00     0.60      0.088       (  0.286)       0.079        0.009
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =     5.6
     Flood volume = Effective rainfall      0.47(In)
      times area       3.4(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
     Total soil loss =      0.75(In)
     Total soil loss =     0.208(Ac.Ft)
     Total rainfall =      1.22(In)
     Flood volume =        5719.6 Cubic Feet
     Total soil loss =        9069.8 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      1.882(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        2.5       5.0       7.5      10.0
----------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0002      0.02  Q         |         |         |         |
  0+20       0.0005      0.03  Q         |         |         |         |
  0+25       0.0007      0.04  Q         |         |         |         |
  0+30       0.0011      0.05  Q         |         |         |         |
  0+35       0.0015      0.06  Q         |         |         |         |
  0+40       0.0019      0.06  Q         |         |         |         |
  0+45       0.0023      0.07  Q         |         |         |         |
  0+50       0.0028      0.07  Q         |         |         |         |
  0+55       0.0033      0.07  QV        |         |         |         |
  1+ 0       0.0038      0.07  QV        |         |         |         |
  1+ 5       0.0043      0.07  QV        |         |         |         |
  1+10       0.0049      0.08  QV        |         |         |         |
  1+15       0.0055      0.09  QV        |         |         |         |
  1+20       0.0062      0.10  QV        |         |         |         |
  1+25       0.0069      0.11  Q V       |         |         |         |
  1+30       0.0078      0.13  Q V       |         |         |         |
  1+35       0.0090      0.17  Q V       |         |         |         |
  1+40       0.0104      0.21  Q  V      |         |         |         |
  1+45       0.0121      0.25  Q  V      |         |         |         |
  1+50       0.0142      0.30  |Q  V      |         |         |         |
  1+55       0.0167      0.37  |Q   V     |         |         |         |
  2+ 0       0.0195      0.42  |Q   V     |         |         |         |
  2+ 5       0.0225      0.43  |Q    V    |         |         |         |
  2+10       0.0257      0.46  |Q     V   |         |         |         |
  2+15       0.0295      0.55  | Q     V  |         |         |         |
  2+20       0.0343      0.70  | Q       V|         |         |         |
  2+25       0.0403      0.87  |  Q      | V       |         |         |
  2+30       0.0477      1.07  |   Q     |   V     |         |         |
  2+35       0.0571      1.37  |    Q    |      V  |         |         |
  2+40       0.0691      1.74  |     Q   |         |V        |         |
  2+45       0.0821      1.88  |      Q  |         |   V     |         |
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    2+50       0.0937      1.69  |     Q   |         |       V |         |
    2+55       0.1023      1.25  |    Q    |         |         |V        |
    3+ 0       0.1081      0.84  |  Q      |         |         | V       |
    3+ 5       0.1123      0.60  | Q       |         |         |   V     |
    3+10       0.1155      0.47  |Q        |         |         |    V    |
    3+15       0.1181      0.37  |Q        |         |         |    V    |
    3+20       0.1202      0.31  |Q        |         |         |     V   |
    3+25       0.1219      0.25  |Q        |         |         |      V  |
    3+30       0.1234      0.21  Q         |         |         |      V  |
    3+35       0.1246      0.18  Q         |         |         |      V  |
    3+40       0.1257      0.15  Q         |         |         |       V |
    3+45       0.1266      0.13  Q         |         |         |       V |
    3+50       0.1274      0.12  Q         |         |         |       V |
    3+55       0.1281      0.10  Q         |         |         |        V|
    4+ 0       0.1287      0.09  Q         |         |         |        V|
    4+ 5       0.1292      0.07  Q         |         |         |        V|
    4+10       0.1297      0.06  Q         |         |         |        V|
    4+15       0.1301      0.06  Q         |         |         |        V|
    4+20       0.1304      0.05  Q         |         |         |        V|
    4+25       0.1306      0.04  Q         |         |         |        V|
    4+30       0.1309      0.04  Q         |         |         |        V|
    4+35       0.1311      0.03  Q         |         |         |        V|
    4+40       0.1312      0.02  Q         |         |         |        V|
    4+45       0.1313      0.01  Q         |         |         |        V|
    4+50       0.1313      0.00  Q         |         |         |        V|
    4+55       0.1313      0.00  Q         |         |         |        V|
    5+ 0       0.1313      0.00  Q         |         |         |        V|
    5+ 5       0.1313      0.00  Q         |         |         |         V
---------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/19/20 File: 8946E2A165.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
5 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	1.30	4.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	3.00	10.05

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.698(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.698(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.102	(0.286)	0.092	0.010
2	0.17	0.60	0.122	(0.286)	0.110	0.012
3	0.25	0.60	0.122	(0.286)	0.110	0.012
4	0.33	0.60	0.122	(0.286)	0.110	0.012
5	0.42	0.60	0.122	(0.286)	0.110	0.012
6	0.50	0.70	0.143	(0.286)	0.128	0.014
7	0.58	0.70	0.143	(0.286)	0.128	0.014
8	0.67	0.70	0.143	(0.286)	0.128	0.014
9	0.75	0.70	0.143	(0.286)	0.128	0.014
10	0.83	0.70	0.143	(0.286)	0.128	0.014
11	0.92	0.70	0.143	(0.286)	0.128	0.014
12	1.00	0.80	0.163	(0.286)	0.147	0.016
13	1.08	0.80	0.163	(0.286)	0.147	0.016
14	1.17	0.80	0.163	(0.286)	0.147	0.016
15	1.25	0.80	0.163	(0.286)	0.147	0.016
16	1.33	0.80	0.163	(0.286)	0.147	0.016
17	1.42	0.80	0.163	(0.286)	0.147	0.016
18	1.50	0.80	0.163	(0.286)	0.147	0.016
19	1.58	0.80	0.163	(0.286)	0.147	0.016
20	1.67	0.80	0.163	(0.286)	0.147	0.016

21	1.75	0.80	0.163	(0.286)	0.147	0.016
22	1.83	0.80	0.163	(0.286)	0.147	0.016
23	1.92	0.80	0.163	(0.286)	0.147	0.016
24	2.00	0.90	0.183	(0.286)	0.165	0.018
25	2.08	0.80	0.163	(0.286)	0.147	0.016
26	2.17	0.90	0.183	(0.286)	0.165	0.018
27	2.25	0.90	0.183	(0.286)	0.165	0.018
28	2.33	0.90	0.183	(0.286)	0.165	0.018
29	2.42	0.90	0.183	(0.286)	0.165	0.018
30	2.50	0.90	0.183	(0.286)	0.165	0.018
31	2.58	0.90	0.183	(0.286)	0.165	0.018
32	2.67	0.90	0.183	(0.286)	0.165	0.018
33	2.75	1.00	0.204	(0.286)	0.183	0.020
34	2.83	1.00	0.204	(0.286)	0.183	0.020
35	2.92	1.00	0.204	(0.286)	0.183	0.020
36	3.00	1.00	0.204	(0.286)	0.183	0.020
37	3.08	1.00	0.204	(0.286)	0.183	0.020
38	3.17	1.10	0.224	(0.286)	0.202	0.022
39	3.25	1.10	0.224	(0.286)	0.202	0.022
40	3.33	1.10	0.224	(0.286)	0.202	0.022
41	3.42	1.20	0.245	(0.286)	0.220	0.024
42	3.50	1.30	0.265	(0.286)	0.238	0.026
43	3.58	1.40	0.285	(0.286)	0.257	0.029
44	3.67	1.40	0.285	(0.286)	0.257	0.029
45	3.75	1.50	0.306	(0.286)	0.275	0.031
46	3.83	1.50	0.306	(0.286)	0.275	0.031
47	3.92	1.60	0.326	0.286	(0.293)	0.040
48	4.00	1.60	0.326	0.286	(0.293)	0.040
49	4.08	1.70	0.346	0.286	(0.312)	0.060
50	4.17	1.80	0.367	0.286	(0.330)	0.080
51	4.25	1.90	0.387	0.286	(0.348)	0.101
52	4.33	2.00	0.408	0.286	(0.367)	0.121
53	4.42	2.10	0.428	0.286	(0.385)	0.141
54	4.50	2.10	0.428	0.286	(0.385)	0.141
55	4.58	2.20	0.448	0.286	(0.403)	0.162
56	4.67	2.30	0.469	0.286	(0.422)	0.182
57	4.75	2.40	0.489	0.286	(0.440)	0.203
58	4.83	2.40	0.489	0.286	(0.440)	0.203
59	4.92	2.50	0.509	0.286	(0.459)	0.223
60	5.00	2.60	0.530	0.286	(0.477)	0.243
61	5.08	3.10	0.632	0.286	(0.569)	0.345
62	5.17	3.60	0.734	0.286	(0.660)	0.447
63	5.25	3.90	0.795	0.286	(0.715)	0.508
64	5.33	4.20	0.856	0.286	(0.770)	0.569
65	5.42	4.70	0.958	0.286	(0.862)	0.671
66	5.50	5.60	1.141	0.286	(1.027)	0.855
67	5.58	1.90	0.387	0.286	(0.348)	0.101
68	5.67	0.90	0.183	(0.286)	0.165	0.018
69	5.75	0.60	0.122	(0.286)	0.110	0.012
70	5.83	0.50	0.102	(0.286)	0.092	0.010
71	5.92	0.30	0.061	(0.286)	0.055	0.006
72	6.00	0.20	0.041	(0.286)	0.037	0.004

(Loss Rate Not Used)

Sum = 100.0 Sum = 6.3

Flood volume = Effective rainfall 0.53(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 1.17(In)
Total soil loss = 0.327(Ac.Ft)
Total rainfall = 1.70(In)
Flood volume = 6413.5 Cubic Feet
Total soil loss = 14237.0 Cubic Feet

Peak flow rate of this hydrograph = 1.660(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.01	Q	|	|	|	|
0+15	0.0001	0.01	Q	|	|	|	|
0+20	0.0003	0.02	Q	|	|	|	|
0+25	0.0005	0.03	Q	|	|	|	|
0+30	0.0007	0.03	Q	|	|	|	|
0+35	0.0009	0.03	Q	|	|	|	|
0+40	0.0011	0.04	Q	|	|	|	|
0+45	0.0014	0.04	Q	|	|	|	|
0+50	0.0017	0.04	Q	|	|	|	|
0+55	0.0020	0.04	Q	|	|	|	|
1+ 0	0.0023	0.04	Q	|	|	|	|
1+ 5	0.0026	0.04	Q	|	|	|	|
1+10	0.0029	0.05	Q	|	|	|	|
1+15	0.0032	0.05	Q	|	|	|	|
1+20	0.0036	0.05	Q	|	|	|	|
1+25	0.0039	0.05	QV	|	|	|	|
1+30	0.0043	0.05	QV	|	|	|	|
1+35	0.0046	0.05	QV	|	|	|	|
1+40	0.0050	0.05	QV	|	|	|	|
1+45	0.0054	0.05	QV	|	|	|	|
1+50	0.0057	0.05	QV	|	|	|	|
1+55	0.0061	0.05	QV	|	|	|	|
2+ 0	0.0065	0.05	QV	|	|	|	|
2+ 5	0.0068	0.06	QV	|	|	|	|
2+10	0.0072	0.06	QV	|	|	|	|
2+15	0.0076	0.06	Q V	|	|	|	|
2+20	0.0080	0.06	Q V	|	|	|	|
2+25	0.0084	0.06	Q V	|	|	|	|
2+30	0.0088	0.06	Q V	|	|	|	|
2+35	0.0093	0.06	Q V	|	|	|	|
2+40	0.0097	0.06	Q V	|	|	|	|
2+45	0.0101	0.06	Q V	|	|	|	|
2+50	0.0105	0.06	Q V	|	|	|	|
2+55	0.0110	0.06	Q V	|	|	|	|
3+ 0	0.0114	0.06	Q V	|	|	|	|
3+ 5	0.0119	0.07	Q V	|	|	|	|
3+10	0.0123	0.07	Q V	|	|	|	|
3+15	0.0128	0.07	Q V	|	|	|	|
3+20	0.0133	0.07	Q V	|	|	|	|
3+25	0.0138	0.07	Q V	|	|	|	|
3+30	0.0143	0.07	Q V	|	|	|	|
3+35	0.0148	0.08	Q V	|	|	|	|
3+40	0.0153	0.08	Q V	|	|	|	|
3+45	0.0159	0.08	Q V	|	|	|	|
3+50	0.0165	0.09	Q V	|	|	|	|
3+55	0.0172	0.09	Q V	|	|	|	|
4+ 0	0.0179	0.10	Q V	|	|	|	|
4+ 5	0.0186	0.11	Q V	|	|	|	|
4+10	0.0195	0.13	Q V	|	|	|	|
4+15	0.0205	0.15	Q V	|	|	|	|
4+20	0.0219	0.19	Q V	|	|	|	|
4+25	0.0235	0.24	Q V	|	|	|	|
4+30	0.0255	0.29	|Q V	|	|	|	|
4+35	0.0279	0.34	|Q V	|	|	|	|
4+40	0.0305	0.38	|Q V	|	|	|	|
4+45	0.0334	0.43	|Q V|	|	|	|	|
4+50	0.0367	0.48	|Q V|	|	|	|	|
4+55	0.0404	0.53	| Q V	|	|	|	|
5+ 0	0.0443	0.57	| Q | V	|	|	|	|
5+ 5	0.0486	0.63	| Q | V	|	|	|	|
5+10	0.0536	0.72	| Q | V	|	|	|	|
5+15	0.0596	0.87	| Q | V	|	|	|	|
5+20	0.0669	1.06	| Q | V	|	|	|	|
5+25	0.0756	1.26	| Q | V	|	|	|	|
5+30	0.0858	1.48	| Q | V	|	|	|	|
5+35	0.0972	1.66	| Q | V	|	|	|	|

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    5+40       0.1085      1.63  |     Q   |         |        V|         |
    5+45       0.1177      1.33  |    Q    |         |         |V        |
    5+50       0.1239      0.90  |  Q      |         |         |  V      |
    5+55       0.1281      0.62  | Q       |         |         |   V     |
    6+ 0       0.1314      0.47  |Q        |         |         |    V    |
    6+ 5       0.1340      0.38  |Q        |         |         |     V   |
    6+10       0.1361      0.31  |Q        |         |         |     V   |
    6+15       0.1379      0.26  |Q        |         |         |      V  |
    6+20       0.1394      0.21  Q         |         |         |      V  |
    6+25       0.1406      0.18  Q         |         |         |       V |
    6+30       0.1417      0.15  Q         |         |         |       V |
    6+35       0.1426      0.13  Q         |         |         |       V |
    6+40       0.1434      0.11  Q         |         |         |       V |
    6+45       0.1441      0.10  Q         |         |         |        V|
    6+50       0.1447      0.09  Q         |         |         |        V|
    6+55       0.1452      0.07  Q         |         |         |        V|
    7+ 0       0.1456      0.06  Q         |         |         |        V|
    7+ 5       0.1460      0.05  Q         |         |         |        V|
    7+10       0.1463      0.05  Q         |         |         |        V|
    7+15       0.1466      0.04  Q         |         |         |        V|
    7+20       0.1468      0.03  Q         |         |         |        V|
    7+25       0.1470      0.03  Q         |         |         |        V|
    7+30       0.1471      0.02  Q         |         |         |        V|
    7+35       0.1472      0.01  Q         |         |         |        V|
    7+40       0.1472      0.00  Q         |         |         |        V|
    7+45       0.1472      0.00  Q         |         |         |        V|
    7+50       0.1472      0.00  Q         |         |         |        V|
    7+55       0.1472      0.00  Q         |         |         |        V|
    8+ 0       0.1472      0.00  Q         |         |         |        V|
    8+ 5       0.1472      0.00  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 11/26/19 File: 8946E2A1245.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
5-YEAR 24HR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	2.25	7.54

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	5.25	17.59

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.953(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.953(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.024	(0.508)	0.021	0.002
2	0.17	0.07	0.024	(0.506)	0.021	0.002
3	0.25	0.07	0.024	(0.504)	0.021	0.002
4	0.33	0.10	0.035	(0.502)	0.032	0.004
5	0.42	0.10	0.035	(0.500)	0.032	0.004
6	0.50	0.10	0.035	(0.498)	0.032	0.004
7	0.58	0.10	0.035	(0.496)	0.032	0.004
8	0.67	0.10	0.035	(0.494)	0.032	0.004
9	0.75	0.10	0.035	(0.492)	0.032	0.004
10	0.83	0.13	0.047	(0.490)	0.043	0.005
11	0.92	0.13	0.047	(0.488)	0.043	0.005
12	1.00	0.13	0.047	(0.486)	0.043	0.005
13	1.08	0.10	0.035	(0.485)	0.032	0.004
14	1.17	0.10	0.035	(0.483)	0.032	0.004
15	1.25	0.10	0.035	(0.481)	0.032	0.004
16	1.33	0.10	0.035	(0.479)	0.032	0.004
17	1.42	0.10	0.035	(0.477)	0.032	0.004
18	1.50	0.10	0.035	(0.475)	0.032	0.004
19	1.58	0.10	0.035	(0.473)	0.032	0.004
20	1.67	0.10	0.035	(0.471)	0.032	0.004

21	1.75	0.10	0.035	(0.469)	0.032	0.004
22	1.83	0.13	0.047	(0.467)	0.043	0.005
23	1.92	0.13	0.047	(0.466)	0.043	0.005
24	2.00	0.13	0.047	(0.464)	0.043	0.005
25	2.08	0.13	0.047	(0.462)	0.043	0.005
26	2.17	0.13	0.047	(0.460)	0.043	0.005
27	2.25	0.13	0.047	(0.458)	0.043	0.005
28	2.33	0.13	0.047	(0.456)	0.043	0.005
29	2.42	0.13	0.047	(0.454)	0.043	0.005
30	2.50	0.13	0.047	(0.452)	0.043	0.005
31	2.58	0.17	0.059	(0.451)	0.053	0.006
32	2.67	0.17	0.059	(0.449)	0.053	0.006
33	2.75	0.17	0.059	(0.447)	0.053	0.006
34	2.83	0.17	0.059	(0.445)	0.053	0.006
35	2.92	0.17	0.059	(0.443)	0.053	0.006
36	3.00	0.17	0.059	(0.441)	0.053	0.006
37	3.08	0.17	0.059	(0.440)	0.053	0.006
38	3.17	0.17	0.059	(0.438)	0.053	0.006
39	3.25	0.17	0.059	(0.436)	0.053	0.006
40	3.33	0.17	0.059	(0.434)	0.053	0.006
41	3.42	0.17	0.059	(0.432)	0.053	0.006
42	3.50	0.17	0.059	(0.430)	0.053	0.006
43	3.58	0.17	0.059	(0.429)	0.053	0.006
44	3.67	0.17	0.059	(0.427)	0.053	0.006
45	3.75	0.17	0.059	(0.425)	0.053	0.006
46	3.83	0.20	0.071	(0.423)	0.064	0.007
47	3.92	0.20	0.071	(0.422)	0.064	0.007
48	4.00	0.20	0.071	(0.420)	0.064	0.007
49	4.08	0.20	0.071	(0.418)	0.064	0.007
50	4.17	0.20	0.071	(0.416)	0.064	0.007
51	4.25	0.20	0.071	(0.414)	0.064	0.007
52	4.33	0.23	0.083	(0.413)	0.074	0.008
53	4.42	0.23	0.083	(0.411)	0.074	0.008
54	4.50	0.23	0.083	(0.409)	0.074	0.008
55	4.58	0.23	0.083	(0.407)	0.074	0.008
56	4.67	0.23	0.083	(0.406)	0.074	0.008
57	4.75	0.23	0.083	(0.404)	0.074	0.008
58	4.83	0.27	0.094	(0.402)	0.085	0.009
59	4.92	0.27	0.094	(0.400)	0.085	0.009
60	5.00	0.27	0.094	(0.399)	0.085	0.009
61	5.08	0.20	0.071	(0.397)	0.064	0.007
62	5.17	0.20	0.071	(0.395)	0.064	0.007
63	5.25	0.20	0.071	(0.393)	0.064	0.007
64	5.33	0.23	0.083	(0.392)	0.074	0.008
65	5.42	0.23	0.083	(0.390)	0.074	0.008
66	5.50	0.23	0.083	(0.388)	0.074	0.008
67	5.58	0.27	0.094	(0.387)	0.085	0.009
68	5.67	0.27	0.094	(0.385)	0.085	0.009
69	5.75	0.27	0.094	(0.383)	0.085	0.009
70	5.83	0.27	0.094	(0.382)	0.085	0.009
71	5.92	0.27	0.094	(0.380)	0.085	0.009
72	6.00	0.27	0.094	(0.378)	0.085	0.009
73	6.08	0.30	0.106	(0.376)	0.096	0.011
74	6.17	0.30	0.106	(0.375)	0.096	0.011
75	6.25	0.30	0.106	(0.373)	0.096	0.011
76	6.33	0.30	0.106	(0.371)	0.096	0.011
77	6.42	0.30	0.106	(0.370)	0.096	0.011
78	6.50	0.30	0.106	(0.368)	0.096	0.011
79	6.58	0.33	0.118	(0.366)	0.106	0.012
80	6.67	0.33	0.118	(0.365)	0.106	0.012
81	6.75	0.33	0.118	(0.363)	0.106	0.012
82	6.83	0.33	0.118	(0.362)	0.106	0.012
83	6.92	0.33	0.118	(0.360)	0.106	0.012
84	7.00	0.33	0.118	(0.358)	0.106	0.012
85	7.08	0.33	0.118	(0.357)	0.106	0.012
86	7.17	0.33	0.118	(0.355)	0.106	0.012
87	7.25	0.33	0.118	(0.353)	0.106	0.012
88	7.33	0.37	0.130	(0.352)	0.117	0.013
89	7.42	0.37	0.130	(0.350)	0.117	0.013
90	7.50	0.37	0.130	(0.349)	0.117	0.013

91	7.58	0.40	0.142	(	0.347)	0.128	0.014
92	7.67	0.40	0.142	(	0.345)	0.128	0.014
93	7.75	0.40	0.142	(	0.344)	0.128	0.014
94	7.83	0.43	0.154	(	0.342)	0.138	0.015
95	7.92	0.43	0.154	(	0.341)	0.138	0.015
96	8.00	0.43	0.154	(	0.339)	0.138	0.015
97	8.08	0.50	0.177	(	0.337)	0.159	0.018
98	8.17	0.50	0.177	(	0.336)	0.159	0.018
99	8.25	0.50	0.177	(	0.334)	0.159	0.018
100	8.33	0.50	0.177	(	0.333)	0.159	0.018
101	8.42	0.50	0.177	(	0.331)	0.159	0.018
102	8.50	0.50	0.177	(	0.330)	0.159	0.018
103	8.58	0.53	0.189	(	0.328)	0.170	0.019
104	8.67	0.53	0.189	(	0.327)	0.170	0.019
105	8.75	0.53	0.189	(	0.325)	0.170	0.019
106	8.83	0.57	0.201	(	0.323)	0.181	0.020
107	8.92	0.57	0.201	(	0.322)	0.181	0.020
108	9.00	0.57	0.201	(	0.320)	0.181	0.020
109	9.08	0.63	0.224	(	0.319)	0.202	0.022
110	9.17	0.63	0.224	(	0.317)	0.202	0.022
111	9.25	0.63	0.224	(	0.316)	0.202	0.022
112	9.33	0.67	0.236	(	0.314)	0.213	0.024
113	9.42	0.67	0.236	(	0.313)	0.213	0.024
114	9.50	0.67	0.236	(	0.311)	0.213	0.024
115	9.58	0.70	0.248	(	0.310)	0.223	0.025
116	9.67	0.70	0.248	(	0.308)	0.223	0.025
117	9.75	0.70	0.248	(	0.307)	0.223	0.025
118	9.83	0.73	0.260	(	0.305)	0.234	0.026
119	9.92	0.73	0.260	(	0.304)	0.234	0.026
120	10.00	0.73	0.260	(	0.303)	0.234	0.026
121	10.08	0.50	0.177	(	0.301)	0.159	0.018
122	10.17	0.50	0.177	(	0.300)	0.159	0.018
123	10.25	0.50	0.177	(	0.298)	0.159	0.018
124	10.33	0.50	0.177	(	0.297)	0.159	0.018
125	10.42	0.50	0.177	(	0.295)	0.159	0.018
126	10.50	0.50	0.177	(	0.294)	0.159	0.018
127	10.58	0.67	0.236	(	0.292)	0.213	0.024
128	10.67	0.67	0.236	(	0.291)	0.213	0.024
129	10.75	0.67	0.236	(	0.290)	0.213	0.024
130	10.83	0.67	0.236	(	0.288)	0.213	0.024
131	10.92	0.67	0.236	(	0.287)	0.213	0.024
132	11.00	0.67	0.236	(	0.285)	0.213	0.024
133	11.08	0.63	0.224	(	0.284)	0.202	0.022
134	11.17	0.63	0.224	(	0.282)	0.202	0.022
135	11.25	0.63	0.224	(	0.281)	0.202	0.022
136	11.33	0.63	0.224	(	0.280)	0.202	0.022
137	11.42	0.63	0.224	(	0.278)	0.202	0.022
138	11.50	0.63	0.224	(	0.277)	0.202	0.022
139	11.58	0.57	0.201	(	0.276)	0.181	0.020
140	11.67	0.57	0.201	(	0.274)	0.181	0.020
141	11.75	0.57	0.201	(	0.273)	0.181	0.020
142	11.83	0.60	0.213	(	0.271)	0.191	0.021
143	11.92	0.60	0.213	(	0.270)	0.191	0.021
144	12.00	0.60	0.213	(	0.269)	0.191	0.021
145	12.08	0.83	0.295	(	0.267)	0.266	0.030
146	12.17	0.83	0.295	(	0.266)	0.266	0.030
147	12.25	0.83	0.295		0.265	(0.266)	0.031
148	12.33	0.87	0.307		0.263	(0.276)	0.044
149	12.42	0.87	0.307		0.262	(0.276)	0.045
150	12.50	0.87	0.307		0.261	(0.276)	0.046
151	12.58	0.93	0.331		0.259	(0.298)	0.071
152	12.67	0.93	0.331		0.258	(0.298)	0.073
153	12.75	0.93	0.331		0.257	(0.298)	0.074
154	12.83	0.97	0.343		0.256	(0.308)	0.087
155	12.92	0.97	0.343		0.254	(0.308)	0.088
156	13.00	0.97	0.343		0.253	(0.308)	0.090
157	13.08	1.13	0.402		0.252	(0.361)	0.150
158	13.17	1.13	0.402		0.250	(0.361)	0.151
159	13.25	1.13	0.402		0.249	(0.361)	0.152
160	13.33	1.13	0.402		0.248	(0.361)	0.154

161	13.42	1.13	0.402		0.247	(	0.361)	0.155
162	13.50	1.13	0.402		0.245	(	0.361)	0.156
163	13.58	0.77	0.272		0.244	(	0.244)	0.028
164	13.67	0.77	0.272		0.243	(	0.244)	0.029
165	13.75	0.77	0.272		0.242	(	0.244)	0.030
166	13.83	0.77	0.272		0.240	(	0.244)	0.031
167	13.92	0.77	0.272		0.239	(	0.244)	0.032
168	14.00	0.77	0.272		0.238	(	0.244)	0.034
169	14.08	0.90	0.319		0.237	(	0.287)	0.082
170	14.17	0.90	0.319		0.236	(	0.287)	0.083
171	14.25	0.90	0.319		0.234	(	0.287)	0.085
172	14.33	0.87	0.307		0.233	(	0.276)	0.074
173	14.42	0.87	0.307		0.232	(	0.276)	0.075
174	14.50	0.87	0.307		0.231	(	0.276)	0.076
175	14.58	0.87	0.307		0.230	(	0.276)	0.078
176	14.67	0.87	0.307		0.228	(	0.276)	0.079
177	14.75	0.87	0.307		0.227	(	0.276)	0.080
178	14.83	0.83	0.295		0.226	(	0.266)	0.069
179	14.92	0.83	0.295		0.225	(	0.266)	0.070
180	15.00	0.83	0.295		0.224	(	0.266)	0.072
181	15.08	0.80	0.283		0.223	(	0.255)	0.061
182	15.17	0.80	0.283		0.221	(	0.255)	0.062
183	15.25	0.80	0.283		0.220	(	0.255)	0.063
184	15.33	0.77	0.272		0.219	(	0.244)	0.052
185	15.42	0.77	0.272		0.218	(	0.244)	0.054
186	15.50	0.77	0.272		0.217	(	0.244)	0.055
187	15.58	0.63	0.224	(	0.216)		0.202	0.022
188	15.67	0.63	0.224	(	0.215)		0.202	0.022
189	15.75	0.63	0.224	(	0.214)		0.202	0.022
190	15.83	0.63	0.224	(	0.213)		0.202	0.022
191	15.92	0.63	0.224	(	0.211)		0.202	0.022
192	16.00	0.63	0.224	(	0.210)		0.202	0.022
193	16.08	0.13	0.047	(	0.209)		0.043	0.005
194	16.17	0.13	0.047	(	0.208)		0.043	0.005
195	16.25	0.13	0.047	(	0.207)		0.043	0.005
196	16.33	0.13	0.047	(	0.206)		0.043	0.005
197	16.42	0.13	0.047	(	0.205)		0.043	0.005
198	16.50	0.13	0.047	(	0.204)		0.043	0.005
199	16.58	0.10	0.035	(	0.203)		0.032	0.004
200	16.67	0.10	0.035	(	0.202)		0.032	0.004
201	16.75	0.10	0.035	(	0.201)		0.032	0.004
202	16.83	0.10	0.035	(	0.200)		0.032	0.004
203	16.92	0.10	0.035	(	0.199)		0.032	0.004
204	17.00	0.10	0.035	(	0.198)		0.032	0.004
205	17.08	0.17	0.059	(	0.197)		0.053	0.006
206	17.17	0.17	0.059	(	0.196)		0.053	0.006
207	17.25	0.17	0.059	(	0.195)		0.053	0.006
208	17.33	0.17	0.059	(	0.194)		0.053	0.006
209	17.42	0.17	0.059	(	0.193)		0.053	0.006
210	17.50	0.17	0.059	(	0.192)		0.053	0.006
211	17.58	0.17	0.059	(	0.191)		0.053	0.006
212	17.67	0.17	0.059	(	0.190)		0.053	0.006
213	17.75	0.17	0.059	(	0.189)		0.053	0.006
214	17.83	0.13	0.047	(	0.188)		0.043	0.005
215	17.92	0.13	0.047	(	0.187)		0.043	0.005
216	18.00	0.13	0.047	(	0.186)		0.043	0.005
217	18.08	0.13	0.047	(	0.185)		0.043	0.005
218	18.17	0.13	0.047	(	0.185)		0.043	0.005
219	18.25	0.13	0.047	(	0.184)		0.043	0.005
220	18.33	0.13	0.047	(	0.183)		0.043	0.005
221	18.42	0.13	0.047	(	0.182)		0.043	0.005
222	18.50	0.13	0.047	(	0.181)		0.043	0.005
223	18.58	0.10	0.035	(	0.180)		0.032	0.004
224	18.67	0.10	0.035	(	0.179)		0.032	0.004
225	18.75	0.10	0.035	(	0.178)		0.032	0.004
226	18.83	0.07	0.024	(	0.177)		0.021	0.002
227	18.92	0.07	0.024	(	0.177)		0.021	0.002
228	19.00	0.07	0.024	(	0.176)		0.021	0.002
229	19.08	0.10	0.035	(	0.175)		0.032	0.004
230	19.17	0.10	0.035	(	0.174)		0.032	0.004

231	19.25	0.10	0.035	(0.173)	0.032	0.004
232	19.33	0.13	0.047	(0.173)	0.043	0.005
233	19.42	0.13	0.047	(0.172)	0.043	0.005
234	19.50	0.13	0.047	(0.171)	0.043	0.005
235	19.58	0.10	0.035	(0.170)	0.032	0.004
236	19.67	0.10	0.035	(0.169)	0.032	0.004
237	19.75	0.10	0.035	(0.169)	0.032	0.004
238	19.83	0.07	0.024	(0.168)	0.021	0.002
239	19.92	0.07	0.024	(0.167)	0.021	0.002
240	20.00	0.07	0.024	(0.166)	0.021	0.002
241	20.08	0.10	0.035	(0.166)	0.032	0.004
242	20.17	0.10	0.035	(0.165)	0.032	0.004
243	20.25	0.10	0.035	(0.164)	0.032	0.004
244	20.33	0.10	0.035	(0.163)	0.032	0.004
245	20.42	0.10	0.035	(0.163)	0.032	0.004
246	20.50	0.10	0.035	(0.162)	0.032	0.004
247	20.58	0.10	0.035	(0.161)	0.032	0.004
248	20.67	0.10	0.035	(0.161)	0.032	0.004
249	20.75	0.10	0.035	(0.160)	0.032	0.004
250	20.83	0.07	0.024	(0.159)	0.021	0.002
251	20.92	0.07	0.024	(0.159)	0.021	0.002
252	21.00	0.07	0.024	(0.158)	0.021	0.002
253	21.08	0.10	0.035	(0.157)	0.032	0.004
254	21.17	0.10	0.035	(0.157)	0.032	0.004
255	21.25	0.10	0.035	(0.156)	0.032	0.004
256	21.33	0.07	0.024	(0.156)	0.021	0.002
257	21.42	0.07	0.024	(0.155)	0.021	0.002
258	21.50	0.07	0.024	(0.155)	0.021	0.002
259	21.58	0.10	0.035	(0.154)	0.032	0.004
260	21.67	0.10	0.035	(0.153)	0.032	0.004
261	21.75	0.10	0.035	(0.153)	0.032	0.004
262	21.83	0.07	0.024	(0.152)	0.021	0.002
263	21.92	0.07	0.024	(0.152)	0.021	0.002
264	22.00	0.07	0.024	(0.151)	0.021	0.002
265	22.08	0.10	0.035	(0.151)	0.032	0.004
266	22.17	0.10	0.035	(0.150)	0.032	0.004
267	22.25	0.10	0.035	(0.150)	0.032	0.004
268	22.33	0.07	0.024	(0.149)	0.021	0.002
269	22.42	0.07	0.024	(0.149)	0.021	0.002
270	22.50	0.07	0.024	(0.148)	0.021	0.002
271	22.58	0.07	0.024	(0.148)	0.021	0.002
272	22.67	0.07	0.024	(0.148)	0.021	0.002
273	22.75	0.07	0.024	(0.147)	0.021	0.002
274	22.83	0.07	0.024	(0.147)	0.021	0.002
275	22.92	0.07	0.024	(0.146)	0.021	0.002
276	23.00	0.07	0.024	(0.146)	0.021	0.002
277	23.08	0.07	0.024	(0.146)	0.021	0.002
278	23.17	0.07	0.024	(0.145)	0.021	0.002
279	23.25	0.07	0.024	(0.145)	0.021	0.002
280	23.33	0.07	0.024	(0.145)	0.021	0.002
281	23.42	0.07	0.024	(0.145)	0.021	0.002
282	23.50	0.07	0.024	(0.144)	0.021	0.002
283	23.58	0.07	0.024	(0.144)	0.021	0.002
284	23.67	0.07	0.024	(0.144)	0.021	0.002
285	23.75	0.07	0.024	(0.144)	0.021	0.002
286	23.83	0.07	0.024	(0.143)	0.021	0.002
287	23.92	0.07	0.024	(0.143)	0.021	0.002
288	24.00	0.07	0.024	(0.143)	0.021	0.002
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	5.3

Flood volume = Effective rainfall 0.44(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 2.51(In)
Total soil loss = 0.701(Ac.Ft)
Total rainfall = 2.95(In)
Flood volume = 5370.3 Cubic Feet
Total soil loss = 30535.4 Cubic Feet

Peak flow rate of this hydrograph = 0.440(CFS)

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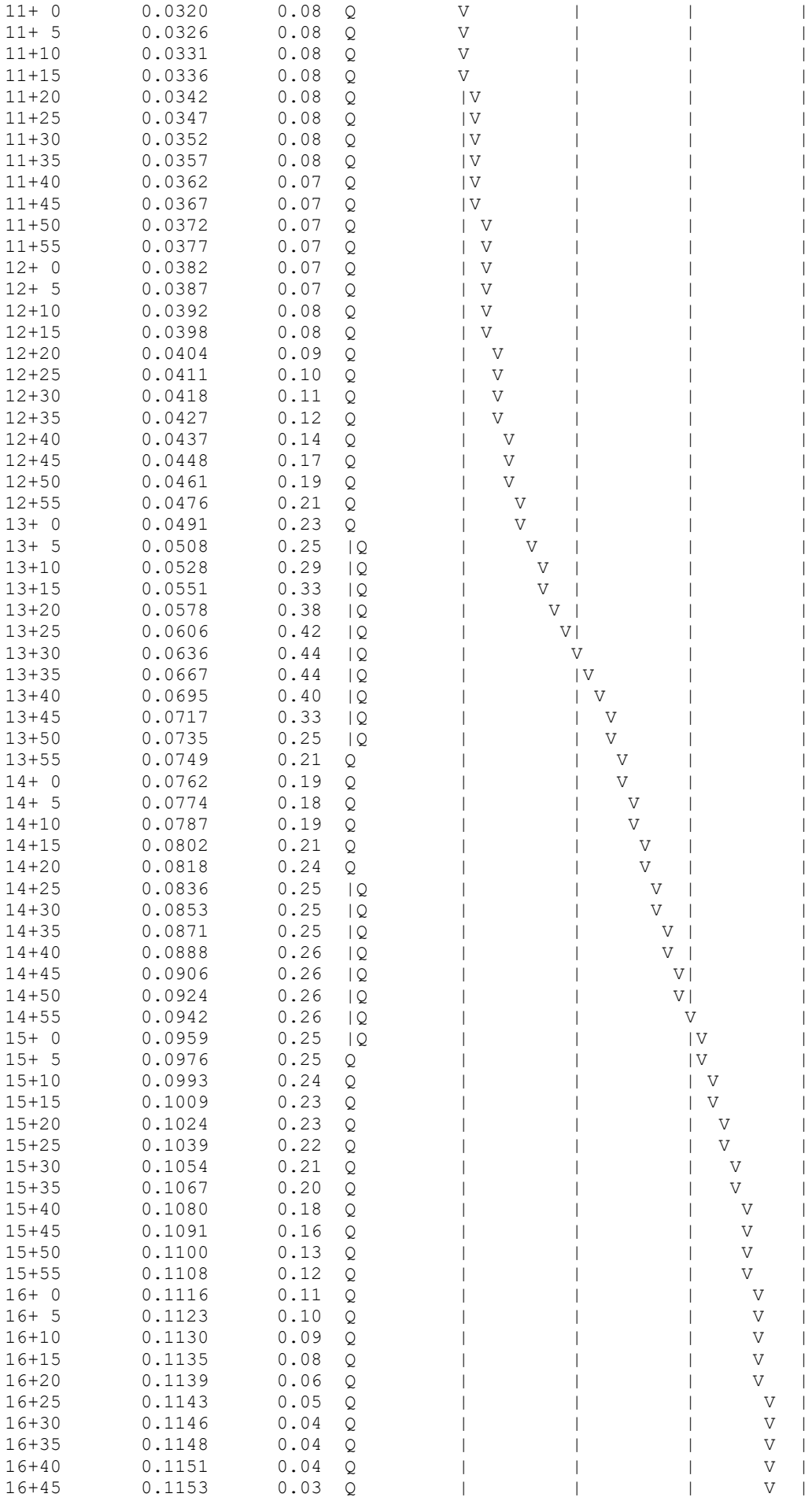
24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0000	0.00	Q				
0+20	0.0001	0.00	Q				
0+25	0.0001	0.01	Q				
0+30	0.0001	0.01	Q				
0+35	0.0002	0.01	Q				
0+40	0.0003	0.01	Q				
0+45	0.0003	0.01	Q				
0+50	0.0004	0.01	Q				
0+55	0.0005	0.01	Q				
1+ 0	0.0006	0.01	Q				
1+ 5	0.0007	0.01	Q				
1+10	0.0007	0.01	Q				
1+15	0.0008	0.01	Q				
1+20	0.0009	0.01	Q				
1+25	0.0010	0.01	Q				
1+30	0.0011	0.01	Q				
1+35	0.0012	0.01	Q				
1+40	0.0012	0.01	Q				
1+45	0.0013	0.01	Q				
1+50	0.0014	0.01	Q				
1+55	0.0015	0.01	Q				
2+ 0	0.0016	0.01	Q				
2+ 5	0.0017	0.01	Q				
2+10	0.0018	0.01	Q				
2+15	0.0019	0.01	Q				
2+20	0.0020	0.02	Q				
2+25	0.0021	0.02	Q				
2+30	0.0022	0.02	Q				
2+35	0.0023	0.02	Q				
2+40	0.0024	0.02	Q				
2+45	0.0025	0.02	Q				
2+50	0.0027	0.02	Q				
2+55	0.0028	0.02	Q				
3+ 0	0.0029	0.02	Q				
3+ 5	0.0030	0.02	Q				
3+10	0.0032	0.02	QV				
3+15	0.0033	0.02	QV				
3+20	0.0034	0.02	QV				
3+25	0.0036	0.02	QV				
3+30	0.0037	0.02	QV				
3+35	0.0038	0.02	QV				
3+40	0.0040	0.02	QV				
3+45	0.0041	0.02	QV				
3+50	0.0043	0.02	QV				
3+55	0.0044	0.02	QV				
4+ 0	0.0045	0.02	QV				
4+ 5	0.0047	0.02	QV				
4+10	0.0048	0.02	QV				
4+15	0.0050	0.02	QV				
4+20	0.0052	0.02	QV				
4+25	0.0053	0.02	QV				
4+30	0.0055	0.02	QV				
4+35	0.0057	0.03	QV				
4+40	0.0059	0.03	QV				
4+45	0.0060	0.03	QV				
4+50	0.0062	0.03	Q V				
4+55	0.0064	0.03	Q V				
5+ 0	0.0066	0.03	Q V				
5+ 5	0.0068	0.03	Q V				

5+10	0.0070	0.03	Q V	|	|	|	|
5+15	0.0072	0.03	Q V	|	|	|	|
5+20	0.0074	0.03	Q V	|	|	|	|
5+25	0.0076	0.03	Q V	|	|	|	|
5+30	0.0077	0.03	Q V	|	|	|	|
5+35	0.0079	0.03	Q V	|	|	|	|
5+40	0.0081	0.03	Q V	|	|	|	|
5+45	0.0083	0.03	Q V	|	|	|	|
5+50	0.0085	0.03	Q V	|	|	|	|
5+55	0.0087	0.03	Q V	|	|	|	|
6+ 0	0.0089	0.03	Q V	|	|	|	|
6+ 5	0.0092	0.03	Q V	|	|	|	|
6+10	0.0094	0.03	Q V	|	|	|	|
6+15	0.0096	0.03	Q V	|	|	|	|
6+20	0.0098	0.03	Q V	|	|	|	|
6+25	0.0101	0.03	Q V	|	|	|	|
6+30	0.0103	0.03	Q V	|	|	|	|
6+35	0.0105	0.03	Q V	|	|	|	|
6+40	0.0108	0.04	Q V	|	|	|	|
6+45	0.0110	0.04	Q V	|	|	|	|
6+50	0.0113	0.04	Q V	|	|	|	|
6+55	0.0116	0.04	Q V	|	|	|	|
7+ 0	0.0118	0.04	Q V	|	|	|	|
7+ 5	0.0121	0.04	Q V	|	|	|	|
7+10	0.0124	0.04	Q V	|	|	|	|
7+15	0.0126	0.04	Q V	|	|	|	|
7+20	0.0129	0.04	Q V	|	|	|	|
7+25	0.0132	0.04	Q V	|	|	|	|
7+30	0.0134	0.04	Q V	|	|	|	|
7+35	0.0137	0.04	Q V	|	|	|	|
7+40	0.0140	0.04	Q V	|	|	|	|
7+45	0.0143	0.04	Q V	|	|	|	|
7+50	0.0146	0.05	Q V	|	|	|	|
7+55	0.0150	0.05	Q V	|	|	|	|
8+ 0	0.0153	0.05	Q V	|	|	|	|
8+ 5	0.0156	0.05	Q V	|	|	|	|
8+10	0.0160	0.05	Q V	|	|	|	|
8+15	0.0163	0.05	Q V	|	|	|	|
8+20	0.0167	0.05	Q V	|	|	|	|
8+25	0.0171	0.06	Q V	|	|	|	|
8+30	0.0175	0.06	Q V	|	|	|	|
8+35	0.0179	0.06	Q V	|	|	|	|
8+40	0.0183	0.06	Q V	|	|	|	|
8+45	0.0187	0.06	Q V	|	|	|	|
8+50	0.0191	0.06	Q V	|	|	|	|
8+55	0.0195	0.06	Q V	|	|	|	|
9+ 0	0.0199	0.06	Q V	|	|	|	|
9+ 5	0.0204	0.06	Q V	|	|	|	|
9+10	0.0208	0.07	Q V	|	|	|	|
9+15	0.0213	0.07	Q V	|	|	|	|
9+20	0.0218	0.07	Q V	|	|	|	|
9+25	0.0223	0.07	Q V	|	|	|	|
9+30	0.0228	0.07	Q V	|	|	|	|
9+35	0.0233	0.08	Q V	|	|	|	|
9+40	0.0238	0.08	Q V	|	|	|	|
9+45	0.0244	0.08	Q V	|	|	|	|
9+50	0.0249	0.08	Q V	|	|	|	|
9+55	0.0255	0.08	Q V	|	|	|	|
10+ 0	0.0261	0.08	Q V	|	|	|	|
10+ 5	0.0266	0.08	Q V	|	|	|	|
10+10	0.0272	0.08	Q V	|	|	|	|
10+15	0.0277	0.08	Q V	|	|	|	|
10+20	0.0282	0.07	Q V	|	|	|	|
10+25	0.0287	0.07	Q V	|	|	|	|
10+30	0.0291	0.07	Q V	|	|	|	|
10+35	0.0296	0.07	Q V	|	|	|	|
10+40	0.0300	0.07	Q V	|	|	|	|
10+45	0.0305	0.07	Q V	|	|	|	|
10+50	0.0310	0.07	Q V	|	|	|	|
10+55	0.0315	0.08	Q V	|	|	|	|



16+50	0.1155	0.03	Q	|	|	|	V |
16+55	0.1157	0.03	Q	|	|	|	V |
17+ 0	0.1158	0.02	Q	|	|	|	V |
17+ 5	0.1160	0.02	Q	|	|	|	V |
17+10	0.1161	0.02	Q	|	|	|	V |
17+15	0.1163	0.02	Q	|	|	|	V |
17+20	0.1164	0.02	Q	|	|	|	V |
17+25	0.1166	0.02	Q	|	|	|	V |
17+30	0.1167	0.02	Q	|	|	|	V |
17+35	0.1168	0.02	Q	|	|	|	V |
17+40	0.1170	0.02	Q	|	|	|	V |
17+45	0.1171	0.02	Q	|	|	|	V |
17+50	0.1172	0.02	Q	|	|	|	V |
17+55	0.1174	0.02	Q	|	|	|	V |
18+ 0	0.1175	0.02	Q	|	|	|	V |
18+ 5	0.1176	0.02	Q	|	|	|	V |
18+10	0.1177	0.02	Q	|	|	|	V |
18+15	0.1179	0.02	Q	|	|	|	V |
18+20	0.1180	0.02	Q	|	|	|	V |
18+25	0.1181	0.02	Q	|	|	|	V |
18+30	0.1182	0.02	Q	|	|	|	V |
18+35	0.1183	0.02	Q	|	|	|	V |
18+40	0.1184	0.02	Q	|	|	|	V |
18+45	0.1185	0.01	Q	|	|	|	V |
18+50	0.1186	0.01	Q	|	|	|	V |
18+55	0.1187	0.01	Q	|	|	|	V |
19+ 0	0.1188	0.01	Q	|	|	|	V |
19+ 5	0.1189	0.01	Q	|	|	|	V |
19+10	0.1189	0.01	Q	|	|	|	V |
19+15	0.1190	0.01	Q	|	|	|	V |
19+20	0.1191	0.01	Q	|	|	|	V |
19+25	0.1192	0.01	Q	|	|	|	V |
19+30	0.1193	0.01	Q	|	|	|	V |
19+35	0.1194	0.01	Q	|	|	|	V |
19+40	0.1195	0.01	Q	|	|	|	V |
19+45	0.1196	0.01	Q	|	|	|	V |
19+50	0.1196	0.01	Q	|	|	|	V |
19+55	0.1197	0.01	Q	|	|	|	V |
20+ 0	0.1198	0.01	Q	|	|	|	V |
20+ 5	0.1199	0.01	Q	|	|	|	V |
20+10	0.1199	0.01	Q	|	|	|	V |
20+15	0.1200	0.01	Q	|	|	|	V |
20+20	0.1201	0.01	Q	|	|	|	V |
20+25	0.1202	0.01	Q	|	|	|	V |
20+30	0.1203	0.01	Q	|	|	|	V|
20+35	0.1203	0.01	Q	|	|	|	V|
20+40	0.1204	0.01	Q	|	|	|	V|
20+45	0.1205	0.01	Q	|	|	|	V|
20+50	0.1206	0.01	Q	|	|	|	V|
20+55	0.1207	0.01	Q	|	|	|	V|
21+ 0	0.1207	0.01	Q	|	|	|	V|
21+ 5	0.1208	0.01	Q	|	|	|	V|
21+10	0.1209	0.01	Q	|	|	|	V|
21+15	0.1209	0.01	Q	|	|	|	V|
21+20	0.1210	0.01	Q	|	|	|	V|
21+25	0.1211	0.01	Q	|	|	|	V|
21+30	0.1212	0.01	Q	|	|	|	V|
21+35	0.1212	0.01	Q	|	|	|	V|
21+40	0.1213	0.01	Q	|	|	|	V|
21+45	0.1214	0.01	Q	|	|	|	V|
21+50	0.1214	0.01	Q	|	|	|	V|
21+55	0.1215	0.01	Q	|	|	|	V|
22+ 0	0.1216	0.01	Q	|	|	|	V|
22+ 5	0.1216	0.01	Q	|	|	|	V|
22+10	0.1217	0.01	Q	|	|	|	V|
22+15	0.1218	0.01	Q	|	|	|	V|
22+20	0.1218	0.01	Q	|	|	|	V|
22+25	0.1219	0.01	Q	|	|	|	V|
22+30	0.1220	0.01	Q	|	|	|	V|
22+35	0.1220	0.01	Q	|	|	|	V|

```
   22+40       0.1221      0.01  Q         |         |         |        V|
   22+45       0.1222      0.01  Q         |         |         |        V|
   22+50       0.1222      0.01  Q         |         |         |        V|
   22+55       0.1223      0.01  Q         |         |         |        V|
   23+ 0       0.1223      0.01  Q         |         |         |        V|
   23+ 5       0.1224      0.01  Q         |         |         |        V|
   23+10       0.1225      0.01  Q         |         |         |        V|
   23+15       0.1225      0.01  Q         |         |         |        V|
   23+20       0.1226      0.01  Q         |         |         |        V|
   23+25       0.1226      0.01  Q         |         |         |        V|
   23+30       0.1227      0.01  Q         |         |         |        V|
   23+35       0.1227      0.01  Q         |         |         |        V|
   23+40       0.1228      0.01  Q         |         |         |        V|
   23+45       0.1229      0.01  Q         |         |         |        V|
   23+50       0.1229      0.01  Q         |         |         |        V|
   23+55       0.1230      0.01  Q         |         |         |        V|
   24+ 0       0.1230      0.01  Q         |         |         |        V|
   24+ 5       0.1231      0.01  Q         |         |         |        V|
   24+10       0.1231      0.01  Q         |         |         |        V|
   24+15       0.1232      0.01  Q         |         |         |        V|
   24+20       0.1232      0.00  Q         |         |         |        V|
   24+25       0.1232      0.00  Q         |         |         |        V|
   24+30       0.1232      0.00  Q         |         |         |        V|
   24+35       0.1232      0.00  Q         |         |         |        V|
   24+40       0.1232      0.00  Q         |         |         |        V|
   24+45       0.1232      0.00  Q         |         |         |        V|
   24+50       0.1233      0.00  Q         |         |         |        V|
   24+55       0.1233      0.00  Q         |         |         |        V|
   25+ 0       0.1233      0.00  Q         |         |         |        V|
   25+ 5       0.1233      0.00  Q         |         |         |        V|
   25+10       0.1233      0.00  Q         |         |         |        V|
   25+15       0.1233      0.00  Q         |         |         |        V|
   25+20       0.1233      0.00  Q         |         |         |        V|
   25+25       0.1233      0.00  Q         |         |         |        V|
   25+30       0.1233      0.00  Q         |         |         |        V|
   25+35       0.1233      0.00  Q         |         |         |        V|
   25+40       0.1233      0.00  Q         |         |         |        V|
   25+45       0.1233      0.00  Q         |         |         |        V|
   25+50       0.1233      0.00  Q         |         |         |        V|
   25+55       0.1233      0.00  Q         |         |         |        V|
   26+ 0       0.1233      0.00  Q         |         |         |        V|
   26+ 5       0.1233      0.00  Q         |         |         |         V
---------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/19/20 File: 8946E2A1110.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
10 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	0.55	1.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	1.30	4.36

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.859(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.859(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.340	0.141	(	0.306)	0.199
2	0.17	4.20	0.433	0.141	(	0.389)	0.291
3	0.25	4.40	0.453	0.141	(	0.408)	0.312
4	0.33	4.80	0.495	0.141	(	0.445)	0.353
5	0.42	5.20	0.536	0.141	(	0.482)	0.394
6	0.50	6.20	0.639	0.141	(	0.575)	0.497
7	0.58	6.80	0.701	0.141	(	0.631)	0.559
8	0.67	8.80	0.907	0.141	(	0.816)	0.765
9	0.75	13.90	1.432	0.141	(	1.289)	1.291
10	0.83	31.40	3.235	0.141	(	2.911)	3.094
11	0.92	7.20	0.742	0.141	(	0.668)	0.600
12	1.00	3.80	0.391	0.141	(	0.352)	0.250
		(Loss Rate Not Used)					
Sum =		100.0				Sum =	8.6

Flood volume = Effective rainfall 0.72(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.039(Ac.Ft)

```
     Total rainfall =      0.86(In)
     Flood volume =        8720.7 Cubic Feet
     Total soil loss =        1719.5 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      3.837(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        2.5       5.0       7.5      10.0
  ---------------------------------------------------------------------------
    0+ 5       0.0001      0.02  Q         |         |         |         |
    0+10       0.0009      0.10  Q         |         |         |         |
    0+15       0.0027      0.27  VQ        |         |         |         |
    0+20       0.0060      0.48  |Q        |         |         |         |
    0+25       0.0106      0.66  | Q       |         |         |         |
    0+30       0.0162      0.81  |  Q      |         |         |         |
    0+35       0.0229      0.98  |  QV     |         |         |         |
    0+40       0.0310      1.18  |   Q V   |         |         |         |
    0+45       0.0412      1.48  |    Q  V |         |         |         |
    0+50       0.0559      2.13  |       Q |V        |         |         |
    0+55       0.0774      3.13  |         | Q  V    |         |         |
    1+ 0       0.1039      3.84  |         |    Q    V         |         |
    1+ 5       0.1286      3.59  |         |   Q     |    V    |         |
    1+10       0.1459      2.51  |         Q         |         V|        |
    1+15       0.1571      1.63  |     Q   |         |          |V       |
    1+20       0.1648      1.12  |   Q     |         |          | V      |
    1+25       0.1707      0.85  |  Q      |         |          |   V    |
    1+30       0.1754      0.68  | Q       |         |          |    V   |
    1+35       0.1793      0.56  | Q       |         |          |    V   |
    1+40       0.1825      0.47  |Q        |         |          |     V  |
    1+45       0.1852      0.40  |Q        |         |          |      V |
    1+50       0.1875      0.33  |Q        |         |          |      V |
    1+55       0.1895      0.28  |Q        |         |          |      V |
    2+ 0       0.1912      0.24  Q         |         |          |       V|
    2+ 5       0.1927      0.22  Q         |         |          |       V|
    2+10       0.1940      0.20  Q         |         |          |       V|
    2+15       0.1952      0.17  Q         |         |          |       V|
    2+20       0.1962      0.14  Q         |         |          |        V
    2+25       0.1970      0.12  Q         |         |          |        V
    2+30       0.1977      0.10  Q         |         |          |        V
    2+35       0.1983      0.09  Q         |         |          |        V
    2+40       0.1988      0.07  Q         |         |          |        V
    2+45       0.1993      0.07  Q         |         |          |        V
    2+50       0.1997      0.06  Q         |         |          |        V
    2+55       0.2001      0.05  Q         |         |          |        V
    3+ 0       0.2002      0.01  Q         |         |          |        V
    3+ 5       0.2002      0.00  Q         |         |          |         V
  ---------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/19/20 File: 8946E2A1310.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
10 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	0.90	3.02

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	2.25	7.54

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.455(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.455(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.227	0.141	(0.204)	0.086
2	0.17	1.30	0.227	0.141	(0.204)	0.086
3	0.25	1.10	0.192	0.141	(0.173)	0.051
4	0.33	1.50	0.262	0.141	(0.236)	0.121
5	0.42	1.50	0.262	0.141	(0.236)	0.121
6	0.50	1.80	0.314	0.141	(0.283)	0.173
7	0.58	1.50	0.262	0.141	(0.236)	0.121
8	0.67	1.80	0.314	0.141	(0.283)	0.173
9	0.75	1.80	0.314	0.141	(0.283)	0.173
10	0.83	1.50	0.262	0.141	(0.236)	0.121
11	0.92	1.60	0.279	0.141	(0.251)	0.138
12	1.00	1.80	0.314	0.141	(0.283)	0.173
13	1.08	2.20	0.384	0.141	(0.346)	0.243
14	1.17	2.20	0.384	0.141	(0.346)	0.243
15	1.25	2.20	0.384	0.141	(0.346)	0.243
16	1.33	2.00	0.349	0.141	(0.314)	0.208
17	1.42	2.60	0.454	0.141	(0.409)	0.313
18	1.50	2.70	0.472	0.141	(0.424)	0.330
19	1.58	2.40	0.419	0.141	(0.377)	0.278
20	1.67	2.70	0.472	0.141	(0.424)	0.330

```
21   1.75     3.30      0.576          0.141    (  0.519)        0.435
22   1.83     3.10      0.541          0.141    (  0.487)        0.400
23   1.92     2.90      0.506          0.141    (  0.456)        0.365
24   2.00     3.00      0.524          0.141    (  0.472)        0.383
25   2.08     3.10      0.541          0.141    (  0.487)        0.400
26   2.17     4.20      0.734          0.141    (  0.660)        0.592
27   2.25     5.00      0.873          0.141    (  0.786)        0.732
28   2.33     3.50      0.611          0.141    (  0.550)        0.470
29   2.42     6.80      1.188          0.141    (  1.069)        1.046
30   2.50     7.30      1.275          0.141    (  1.147)        1.134
31   2.58     8.20      1.432          0.141    (  1.289)        1.291
32   2.67     5.90      1.030          0.141    (  0.927)        0.889
33   2.75     2.00      0.349          0.141    (  0.314)        0.208
34   2.83     1.80      0.314          0.141    (  0.283)        0.173
35   2.92     1.80      0.314          0.141    (  0.283)        0.173
36   3.00     0.60      0.105       (  0.141)       0.094        0.010
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    12.4
     Flood volume = Effective rainfall      1.04(In)
      times area       3.4(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
     Total soil loss =      0.42(In)
     Total soil loss =     0.117(Ac.Ft)
     Total rainfall =      1.46(In)
     Flood volume =       12587.4 Cubic Feet
     Total soil loss =        5110.8 Cubic Feet
     ---------------------------------------------------------------------
     Peak flow rate of this hydrograph =      2.925(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q         |         |         |         |
  0+10       0.0003      0.04  Q         |         |         |         |
  0+15       0.0010      0.09  Q         |         |         |         |
  0+20       0.0020      0.15  Q         |         |         |         |
  0+25       0.0033      0.19  Q         |         |         |         |
  0+30       0.0049      0.23  Q         |         |         |         |
  0+35       0.0069      0.29  VQ        |         |         |         |
  0+40       0.0093      0.35  |Q        |         |         |         |
  0+45       0.0120      0.39  |Q        |         |         |         |
  0+50       0.0148      0.42  |QV       |         |         |         |
  0+55       0.0178      0.43  |QV       |         |         |         |
  1+ 0       0.0208      0.44  |QV       |         |         |         |
  1+ 5       0.0239      0.45  |Q V      |         |         |         |
  1+10       0.0274      0.50  | QV      |         |         |         |
  1+15       0.0314      0.58  | Q V     |         |         |         |
  1+20       0.0358      0.64  | Q V     |         |         |         |
  1+25       0.0405      0.68  | Q  V    |         |         |         |
  1+30       0.0455      0.73  | Q   V   |         |         |         |
  1+35       0.0509      0.79  |  Q   V  |         |         |         |
  1+40       0.0569      0.86  |  Q   V  |         |         |         |
  1+45       0.0632      0.91  |  Q    V |         |         |         |
  1+50       0.0699      0.99  |  Q     V|         |         |         |
  1+55       0.0774      1.08  |   Q     V         |         |         |
  2+ 0       0.0852      1.14  |   Q     |V        |         |         |
  2+ 5       0.0933      1.17  |   Q     | V       |         |         |
  2+10       0.1016      1.21  |   Q     |   V     |         |         |
  2+15       0.1107      1.32  |    Q    |    V    |         |         |
  2+20       0.1211      1.50  |     Q   |     V   |         |         |
  2+25       0.1328      1.71  |     Q   |       V |         |         |
  2+30       0.1463      1.95  |      Q  |         V         |         |
  2+35       0.1622      2.32  |        Q|         | V       |         |
  2+40       0.1812      2.75  |         |Q        |    V    |         |
  2+45       0.2013      2.92  |         |Q        |      V  |         |
```

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    2+50       0.2198      2.68  |          Q         |          V         |
    2+55       0.2345      2.13  |        Q |         |          | V       |
    3+ 0       0.2453      1.58  |      Q   |         |          |  V      |
    3+ 5       0.2537      1.21  |    Q     |         |          |    V    |
    3+10       0.2601      0.94  |  Q       |         |          |     V   |
    3+15       0.2651      0.72  | Q        |         |          |     V   |
    3+20       0.2690      0.57  | Q        |         |          |      V  |
    3+25       0.2722      0.46  |Q         |         |          |      V  |
    3+30       0.2749      0.39  |Q         |         |          |       V |
    3+35       0.2772      0.33  |Q         |         |          |       V |
    3+40       0.2791      0.28  |Q         |         |          |       V |
    3+45       0.2807      0.24  Q          |         |          |       V |
    3+50       0.2822      0.21  Q          |         |          |        V|
    3+55       0.2834      0.18  Q          |         |          |        V|
    4+ 0       0.2845      0.15  Q          |         |          |        V|
    4+ 5       0.2854      0.13  Q          |         |          |        V|
    4+10       0.2861      0.11  Q          |         |          |        V|
    4+15       0.2868      0.10  Q          |         |          |        V|
    4+20       0.2873      0.08  Q          |         |          |        V|
    4+25       0.2878      0.06  Q          |         |          |        V|
    4+30       0.2882      0.06  Q          |         |          |        V|
    4+35       0.2885      0.05  Q          |         |          |        V|
    4+40       0.2887      0.03  Q          |         |          |        V|
    4+45       0.2889      0.02  Q          |         |          |        V|
    4+50       0.2889      0.01  Q          |         |          |        V|
    4+55       0.2889      0.00  Q          |         |          |        V|
    5+ 0       0.2890      0.00  Q          |         |          |        V|
    5+ 5       0.2890      0.00  Q          |         |          |         V
-------------------------------------------------------------------------
```

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

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Study date 02/19/20 File: 8946E2A1610.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
10 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	1.30	4.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	3.00	10.05

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.999(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.120	(0.141)	0.108	0.012
2	0.17	0.60	0.144	(0.141)	0.130	0.014
3	0.25	0.60	0.144	(0.141)	0.130	0.014
4	0.33	0.60	0.144	(0.141)	0.130	0.014
5	0.42	0.60	0.144	(0.141)	0.130	0.014
6	0.50	0.70	0.168	0.141	(0.151)	0.027
7	0.58	0.70	0.168	0.141	(0.151)	0.027
8	0.67	0.70	0.168	0.141	(0.151)	0.027
9	0.75	0.70	0.168	0.141	(0.151)	0.027
10	0.83	0.70	0.168	0.141	(0.151)	0.027
11	0.92	0.70	0.168	0.141	(0.151)	0.027
12	1.00	0.80	0.192	0.141	(0.173)	0.051
13	1.08	0.80	0.192	0.141	(0.173)	0.051
14	1.17	0.80	0.192	0.141	(0.173)	0.051
15	1.25	0.80	0.192	0.141	(0.173)	0.051
16	1.33	0.80	0.192	0.141	(0.173)	0.051
17	1.42	0.80	0.192	0.141	(0.173)	0.051
18	1.50	0.80	0.192	0.141	(0.173)	0.051
19	1.58	0.80	0.192	0.141	(0.173)	0.051
20	1.67	0.80	0.192	0.141	(0.173)	0.051

21	1.75	0.80	0.192	0.141	(	0.173)	0.051
22	1.83	0.80	0.192	0.141	(	0.173)	0.051
23	1.92	0.80	0.192	0.141	(	0.173)	0.051
24	2.00	0.90	0.216	0.141	(	0.194)	0.075
25	2.08	0.80	0.192	0.141	(	0.173)	0.051
26	2.17	0.90	0.216	0.141	(	0.194)	0.075
27	2.25	0.90	0.216	0.141	(	0.194)	0.075
28	2.33	0.90	0.216	0.141	(	0.194)	0.075
29	2.42	0.90	0.216	0.141	(	0.194)	0.075
30	2.50	0.90	0.216	0.141	(	0.194)	0.075
31	2.58	0.90	0.216	0.141	(	0.194)	0.075
32	2.67	0.90	0.216	0.141	(	0.194)	0.075
33	2.75	1.00	0.240	0.141	(	0.216)	0.099
34	2.83	1.00	0.240	0.141	(	0.216)	0.099
35	2.92	1.00	0.240	0.141	(	0.216)	0.099
36	3.00	1.00	0.240	0.141	(	0.216)	0.099
37	3.08	1.00	0.240	0.141	(	0.216)	0.099
38	3.17	1.10	0.264	0.141	(	0.238)	0.123
39	3.25	1.10	0.264	0.141	(	0.238)	0.123
40	3.33	1.10	0.264	0.141	(	0.238)	0.123
41	3.42	1.20	0.288	0.141	(	0.259)	0.147
42	3.50	1.30	0.312	0.141	(	0.281)	0.171
43	3.58	1.40	0.336	0.141	(	0.302)	0.194
44	3.67	1.40	0.336	0.141	(	0.302)	0.194
45	3.75	1.50	0.360	0.141	(	0.324)	0.218
46	3.83	1.50	0.360	0.141	(	0.324)	0.218
47	3.92	1.60	0.384	0.141	(	0.345)	0.242
48	4.00	1.60	0.384	0.141	(	0.345)	0.242
49	4.08	1.70	0.408	0.141	(	0.367)	0.266
50	4.17	1.80	0.432	0.141	(	0.389)	0.290
51	4.25	1.90	0.456	0.141	(	0.410)	0.314
52	4.33	2.00	0.480	0.141	(	0.432)	0.338
53	4.42	2.10	0.504	0.141	(	0.453)	0.362
54	4.50	2.10	0.504	0.141	(	0.453)	0.362
55	4.58	2.20	0.528	0.141	(	0.475)	0.386
56	4.67	2.30	0.552	0.141	(	0.497)	0.410
57	4.75	2.40	0.576	0.141	(	0.518)	0.434
58	4.83	2.40	0.576	0.141	(	0.518)	0.434
59	4.92	2.50	0.600	0.141	(	0.540)	0.458
60	5.00	2.60	0.624	0.141	(	0.561)	0.482
61	5.08	3.10	0.744	0.141	(	0.669)	0.602
62	5.17	3.60	0.864	0.141	(	0.777)	0.722
63	5.25	3.90	0.936	0.141	(	0.842)	0.794
64	5.33	4.20	1.008	0.141	(	0.907)	0.866
65	5.42	4.70	1.128	0.141	(	1.015)	0.986
66	5.50	5.60	1.344	0.141	(	1.209)	1.202
67	5.58	1.90	0.456	0.141	(	0.410)	0.314
68	5.67	0.90	0.216	0.141	(	0.194)	0.075
69	5.75	0.60	0.144	(0.141)		0.130	0.014
70	5.83	0.50	0.120	(0.141)		0.108	0.012
71	5.92	0.30	0.072	(0.141)		0.065	0.007
72	6.00	0.20	0.048	(0.141)		0.043	0.005

(Loss Rate Not Used)

Sum = 100.0 Sum = 14.1

Flood volume = Effective rainfall 1.18(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)
Total soil loss = 0.82(In)
Total soil loss = 0.230(Ac.Ft)
Total rainfall = 2.00(In)
Flood volume = 14301.3 Cubic Feet
Total soil loss = 10012.0 Cubic Feet

Peak flow rate of this hydrograph = 2.615(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.01	Q	|	|	|	|
0+15	0.0002	0.01	Q	|	|	|	|
0+20	0.0003	0.02	Q	|	|	|	|
0+25	0.0005	0.03	Q	|	|	|	|
0+30	0.0008	0.04	Q	|	|	|	|
0+35	0.0011	0.04	Q	|	|	|	|
0+40	0.0015	0.05	Q	|	|	|	|
0+45	0.0019	0.06	Q	|	|	|	|
0+50	0.0024	0.07	Q	|	|	|	|
0+55	0.0029	0.07	Q	|	|	|	|
1+ 0	0.0034	0.08	Q	|	|	|	|
1+ 5	0.0040	0.09	Q	|	|	|	|
1+10	0.0048	0.11	Q	|	|	|	|
1+15	0.0056	0.13	Q	|	|	|	|
1+20	0.0066	0.14	Q	|	|	|	|
1+25	0.0076	0.14	Q	|	|	|	|
1+30	0.0086	0.15	QV	|	|	|	|
1+35	0.0096	0.15	QV	|	|	|	|
1+40	0.0107	0.15	QV	|	|	|	|
1+45	0.0118	0.16	QV	|	|	|	|
1+50	0.0129	0.16	QV	|	|	|	|
1+55	0.0140	0.16	QV	|	|	|	|
2+ 0	0.0151	0.17	QV	|	|	|	|
2+ 5	0.0163	0.17	QV	|	|	|	|
2+10	0.0176	0.18	Q V	|	|	|	|
2+15	0.0189	0.19	Q V	|	|	|	|
2+20	0.0203	0.20	Q V	|	|	|	|
2+25	0.0218	0.22	Q V	|	|	|	|
2+30	0.0234	0.23	Q V	|	|	|	|
2+35	0.0250	0.23	Q V	|	|	|	|
2+40	0.0266	0.23	Q V	|	|	|	|
2+45	0.0282	0.24	Q V	|	|	|	|
2+50	0.0300	0.25	|Q V	|	|	|	|
2+55	0.0318	0.27	|Q V	|	|	|	|
3+ 0	0.0338	0.29	|Q V	|	|	|	|
3+ 5	0.0358	0.30	|Q V	|	|	|	|
3+10	0.0380	0.31	|Q V	|	|	|	|
3+15	0.0402	0.32	|Q V	|	|	|	|
3+20	0.0425	0.34	|Q V	|	|	|	|
3+25	0.0450	0.36	|Q V	|	|	|	|
3+30	0.0477	0.39	|Q V	|	|	|	|
3+35	0.0506	0.42	|Q V	|	|	|	|
3+40	0.0538	0.47	|Q V	|	|	|	|
3+45	0.0574	0.52	| Q V	|	|	|	|
3+50	0.0613	0.56	| Q V	|	|	|	|
3+55	0.0654	0.60	| Q V	|	|	|	|
4+ 0	0.0699	0.64	| Q V	|	|	|	|
4+ 5	0.0746	0.68	| Q V|	|	|	|	|
4+10	0.0796	0.73	| Q V|	|	|	|	|
4+15	0.0849	0.78	| Q V	|	|	|	|
4+20	0.0907	0.83	| Q |V	|	|	|	|
4+25	0.0969	0.90	| Q |V	|	|	|	|
4+30	0.1035	0.97	| Q | V	|	|	|	|
4+35	0.1106	1.03	| Q | V	|	|	|	|
4+40	0.1181	1.08	| Q | V	|	|	|	|
4+45	0.1259	1.14	| Q | V	|	|	|	|
4+50	0.1342	1.21	| Q | V	|	|	|	|
4+55	0.1429	1.27	| Q | V	|	|	|	|
5+ 0	0.1521	1.32	| Q | V |	|	|	|	|
5+ 5	0.1616	1.39	| Q | V|	|	|	|	|
5+10	0.1720	1.50	| Q | V	|	|	|	|
5+15	0.1836	1.68	| Q | | V	|	|	|	|
5+20	0.1967	1.90	| Q | | V	|	|	|	|
5+25	0.2114	2.14	| Q | | V	|	|	|	|
5+30	0.2280	2.40	| Q| | V	|	|	|	|
5+35	0.2460	2.61	| Q | V|	|	|	|	|

```
    5+40       0.2637      2.57  |          Q          |          | V       |
    5+45       0.2786      2.15  |        Q |          |          |  V      |
    5+50       0.2891      1.53  |      Q   |          |          |    V    |
    5+55       0.2965      1.07  |    Q     |          |          |     V   |
    6+ 0       0.3020      0.80  |  Q       |          |          |     V   |
    6+ 5       0.3063      0.64  | Q        |          |          |      V  |
    6+10       0.3099      0.52  | Q        |          |          |      V  |
    6+15       0.3129      0.43  |Q         |          |          |       V |
    6+20       0.3154      0.36  |Q         |          |          |       V |
    6+25       0.3175      0.31  |Q         |          |          |       V |
    6+30       0.3193      0.26  |Q         |          |          |       V |
    6+35       0.3208      0.22  Q          |          |          |        V|
    6+40       0.3221      0.19  Q          |          |          |        V|
    6+45       0.3232      0.17  Q          |          |          |        V|
    6+50       0.3242      0.14  Q          |          |          |        V|
    6+55       0.3251      0.12  Q          |          |          |        V|
    7+ 0       0.3258      0.10  Q          |          |          |        V|
    7+ 5       0.3263      0.09  Q          |          |          |        V|
    7+10       0.3268      0.07  Q          |          |          |        V|
    7+15       0.3273      0.06  Q          |          |          |        V|
    7+20       0.3276      0.05  Q          |          |          |        V|
    7+25       0.3279      0.04  Q          |          |          |        V|
    7+30       0.3281      0.03  Q          |          |          |        V|
    7+35       0.3283      0.02  Q          |          |          |        V|
    7+40       0.3283      0.01  Q          |          |          |        V|
    7+45       0.3283      0.00  Q          |          |          |        V|
    7+50       0.3283      0.00  Q          |          |          |        V|
    7+55       0.3283      0.00  Q          |          |          |        V|
    8+ 0       0.3283      0.00  Q          |          |          |        V|
    8+ 5       0.3283      0.00  Q          |          |          |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 11/02/19 File: 8946E2A12410.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
10-YEAR 24 HR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	2.25	7.54

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	5.25	17.59

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 3.484(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.484(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.028	(0.251)	0.025	0.003
2	0.17	0.07	0.028	(0.250)	0.025	0.003
3	0.25	0.07	0.028	(0.249)	0.025	0.003
4	0.33	0.10	0.042	(0.248)	0.038	0.004
5	0.42	0.10	0.042	(0.247)	0.038	0.004
6	0.50	0.10	0.042	(0.246)	0.038	0.004
7	0.58	0.10	0.042	(0.245)	0.038	0.004
8	0.67	0.10	0.042	(0.244)	0.038	0.004
9	0.75	0.10	0.042	(0.243)	0.038	0.004
10	0.83	0.13	0.056	(0.242)	0.050	0.006
11	0.92	0.13	0.056	(0.241)	0.050	0.006
12	1.00	0.13	0.056	(0.240)	0.050	0.006
13	1.08	0.10	0.042	(0.239)	0.038	0.004
14	1.17	0.10	0.042	(0.238)	0.038	0.004
15	1.25	0.10	0.042	(0.237)	0.038	0.004
16	1.33	0.10	0.042	(0.236)	0.038	0.004
17	1.42	0.10	0.042	(0.235)	0.038	0.004
18	1.50	0.10	0.042	(0.234)	0.038	0.004
19	1.58	0.10	0.042	(0.234)	0.038	0.004
20	1.67	0.10	0.042	(0.233)	0.038	0.004

21	1.75	0.10	0.042	(0.232)	0.038	0.004
22	1.83	0.13	0.056	(0.231)	0.050	0.006
23	1.92	0.13	0.056	(0.230)	0.050	0.006
24	2.00	0.13	0.056	(0.229)	0.050	0.006
25	2.08	0.13	0.056	(0.228)	0.050	0.006
26	2.17	0.13	0.056	(0.227)	0.050	0.006
27	2.25	0.13	0.056	(0.226)	0.050	0.006
28	2.33	0.13	0.056	(0.225)	0.050	0.006
29	2.42	0.13	0.056	(0.224)	0.050	0.006
30	2.50	0.13	0.056	(0.223)	0.050	0.006
31	2.58	0.17	0.070	(0.222)	0.063	0.007
32	2.67	0.17	0.070	(0.221)	0.063	0.007
33	2.75	0.17	0.070	(0.221)	0.063	0.007
34	2.83	0.17	0.070	(0.220)	0.063	0.007
35	2.92	0.17	0.070	(0.219)	0.063	0.007
36	3.00	0.17	0.070	(0.218)	0.063	0.007
37	3.08	0.17	0.070	(0.217)	0.063	0.007
38	3.17	0.17	0.070	(0.216)	0.063	0.007
39	3.25	0.17	0.070	(0.215)	0.063	0.007
40	3.33	0.17	0.070	(0.214)	0.063	0.007
41	3.42	0.17	0.070	(0.213)	0.063	0.007
42	3.50	0.17	0.070	(0.212)	0.063	0.007
43	3.58	0.17	0.070	(0.212)	0.063	0.007
44	3.67	0.17	0.070	(0.211)	0.063	0.007
45	3.75	0.17	0.070	(0.210)	0.063	0.007
46	3.83	0.20	0.084	(0.209)	0.075	0.008
47	3.92	0.20	0.084	(0.208)	0.075	0.008
48	4.00	0.20	0.084	(0.207)	0.075	0.008
49	4.08	0.20	0.084	(0.206)	0.075	0.008
50	4.17	0.20	0.084	(0.205)	0.075	0.008
51	4.25	0.20	0.084	(0.205)	0.075	0.008
52	4.33	0.23	0.098	(0.204)	0.088	0.010
53	4.42	0.23	0.098	(0.203)	0.088	0.010
54	4.50	0.23	0.098	(0.202)	0.088	0.010
55	4.58	0.23	0.098	(0.201)	0.088	0.010
56	4.67	0.23	0.098	(0.200)	0.088	0.010
57	4.75	0.23	0.098	(0.199)	0.088	0.010
58	4.83	0.27	0.111	(0.198)	0.100	0.011
59	4.92	0.27	0.111	(0.198)	0.100	0.011
60	5.00	0.27	0.111	(0.197)	0.100	0.011
61	5.08	0.20	0.084	(0.196)	0.075	0.008
62	5.17	0.20	0.084	(0.195)	0.075	0.008
63	5.25	0.20	0.084	(0.194)	0.075	0.008
64	5.33	0.23	0.098	(0.193)	0.088	0.010
65	5.42	0.23	0.098	(0.193)	0.088	0.010
66	5.50	0.23	0.098	(0.192)	0.088	0.010
67	5.58	0.27	0.111	(0.191)	0.100	0.011
68	5.67	0.27	0.111	(0.190)	0.100	0.011
69	5.75	0.27	0.111	(0.189)	0.100	0.011
70	5.83	0.27	0.111	(0.188)	0.100	0.011
71	5.92	0.27	0.111	(0.187)	0.100	0.011
72	6.00	0.27	0.111	(0.187)	0.100	0.011
73	6.08	0.30	0.125	(0.186)	0.113	0.013
74	6.17	0.30	0.125	(0.185)	0.113	0.013
75	6.25	0.30	0.125	(0.184)	0.113	0.013
76	6.33	0.30	0.125	(0.183)	0.113	0.013
77	6.42	0.30	0.125	(0.183)	0.113	0.013
78	6.50	0.30	0.125	(0.182)	0.113	0.013
79	6.58	0.33	0.139	(0.181)	0.125	0.014
80	6.67	0.33	0.139	(0.180)	0.125	0.014
81	6.75	0.33	0.139	(0.179)	0.125	0.014
82	6.83	0.33	0.139	(0.178)	0.125	0.014
83	6.92	0.33	0.139	(0.178)	0.125	0.014
84	7.00	0.33	0.139	(0.177)	0.125	0.014
85	7.08	0.33	0.139	(0.176)	0.125	0.014
86	7.17	0.33	0.139	(0.175)	0.125	0.014
87	7.25	0.33	0.139	(0.174)	0.125	0.014
88	7.33	0.37	0.153	(0.174)	0.138	0.015
89	7.42	0.37	0.153	(0.173)	0.138	0.015
90	7.50	0.37	0.153	(0.172)	0.138	0.015

91	7.58	0.40	0.167	(	0.171)	0.151	0.017
92	7.67	0.40	0.167	(	0.170)	0.151	0.017
93	7.75	0.40	0.167	(	0.170)	0.151	0.017
94	7.83	0.43	0.181	(	0.169)	0.163	0.018
95	7.92	0.43	0.181	(	0.168)	0.163	0.018
96	8.00	0.43	0.181	(	0.167)	0.163	0.018
97	8.08	0.50	0.209		0.167	(0.188)	0.042
98	8.17	0.50	0.209		0.166	(0.188)	0.043
99	8.25	0.50	0.209		0.165	(0.188)	0.044
100	8.33	0.50	0.209		0.164	(0.188)	0.045
101	8.42	0.50	0.209		0.163	(0.188)	0.046
102	8.50	0.50	0.209		0.163	(0.188)	0.046
103	8.58	0.53	0.223		0.162	(0.201)	0.061
104	8.67	0.53	0.223		0.161	(0.201)	0.062
105	8.75	0.53	0.223		0.160	(0.201)	0.063
106	8.83	0.57	0.237		0.160	(0.213)	0.077
107	8.92	0.57	0.237		0.159	(0.213)	0.078
108	9.00	0.57	0.237		0.158	(0.213)	0.079
109	9.08	0.63	0.265		0.157	(0.238)	0.107
110	9.17	0.63	0.265		0.157	(0.238)	0.108
111	9.25	0.63	0.265		0.156	(0.238)	0.109
112	9.33	0.67	0.279		0.155	(0.251)	0.124
113	9.42	0.67	0.279		0.154	(0.251)	0.124
114	9.50	0.67	0.279		0.154	(0.251)	0.125
115	9.58	0.70	0.293		0.153	(0.263)	0.140
116	9.67	0.70	0.293		0.152	(0.263)	0.140
117	9.75	0.70	0.293		0.151	(0.263)	0.141
118	9.83	0.73	0.307		0.151	(0.276)	0.156
119	9.92	0.73	0.307		0.150	(0.276)	0.157
120	10.00	0.73	0.307		0.149	(0.276)	0.157
121	10.08	0.50	0.209		0.149	(0.188)	0.060
122	10.17	0.50	0.209		0.148	(0.188)	0.061
123	10.25	0.50	0.209		0.147	(0.188)	0.062
124	10.33	0.50	0.209		0.146	(0.188)	0.063
125	10.42	0.50	0.209		0.146	(0.188)	0.063
126	10.50	0.50	0.209		0.145	(0.188)	0.064
127	10.58	0.67	0.279		0.144	(0.251)	0.134
128	10.67	0.67	0.279		0.144	(0.251)	0.135
129	10.75	0.67	0.279		0.143	(0.251)	0.136
130	10.83	0.67	0.279		0.142	(0.251)	0.137
131	10.92	0.67	0.279		0.142	(0.251)	0.137
132	11.00	0.67	0.279		0.141	(0.251)	0.138
133	11.08	0.63	0.265		0.140	(0.238)	0.125
134	11.17	0.63	0.265		0.139	(0.238)	0.125
135	11.25	0.63	0.265		0.139	(0.238)	0.126
136	11.33	0.63	0.265		0.138	(0.238)	0.127
137	11.42	0.63	0.265		0.137	(0.238)	0.127
138	11.50	0.63	0.265		0.137	(0.238)	0.128
139	11.58	0.57	0.237		0.136	(0.213)	0.101
140	11.67	0.57	0.237		0.135	(0.213)	0.102
141	11.75	0.57	0.237		0.135	(0.213)	0.102
142	11.83	0.60	0.251		0.134	(0.226)	0.117
143	11.92	0.60	0.251		0.133	(0.226)	0.118
144	12.00	0.60	0.251		0.133	(0.226)	0.118
145	12.08	0.83	0.348		0.132	(0.314)	0.216
146	12.17	0.83	0.348		0.131	(0.314)	0.217
147	12.25	0.83	0.348		0.131	(0.314)	0.218
148	12.33	0.87	0.362		0.130	(0.326)	0.232
149	12.42	0.87	0.362		0.129	(0.326)	0.233
150	12.50	0.87	0.362		0.129	(0.326)	0.234
151	12.58	0.93	0.390		0.128	(0.351)	0.262
152	12.67	0.93	0.390		0.127	(0.351)	0.263
153	12.75	0.93	0.390		0.127	(0.351)	0.263
154	12.83	0.97	0.404		0.126	(0.364)	0.278
155	12.92	0.97	0.404		0.126	(0.364)	0.279
156	13.00	0.97	0.404		0.125	(0.364)	0.279
157	13.08	1.13	0.474		0.124	(0.426)	0.350
158	13.17	1.13	0.474		0.124	(0.426)	0.350
159	13.25	1.13	0.474		0.123	(0.426)	0.351
160	13.33	1.13	0.474		0.122	(0.426)	0.351

161	13.42	1.13	0.474		0.122	(	0.426)	0.352
162	13.50	1.13	0.474		0.121	(	0.426)	0.353
163	13.58	0.77	0.321		0.120	(	0.288)	0.200
164	13.67	0.77	0.321		0.120	(	0.288)	0.201
165	13.75	0.77	0.321		0.119	(	0.288)	0.201
166	13.83	0.77	0.321		0.119	(	0.288)	0.202
167	13.92	0.77	0.321		0.118	(	0.288)	0.202
168	14.00	0.77	0.321		0.117	(	0.288)	0.203
169	14.08	0.90	0.376		0.117	(	0.339)	0.259
170	14.17	0.90	0.376		0.116	(	0.339)	0.260
171	14.25	0.90	0.376		0.116	(	0.339)	0.261
172	14.33	0.87	0.362		0.115	(	0.326)	0.247
173	14.42	0.87	0.362		0.114	(	0.326)	0.248
174	14.50	0.87	0.362		0.114	(	0.326)	0.248
175	14.58	0.87	0.362		0.113	(	0.326)	0.249
176	14.67	0.87	0.362		0.113	(	0.326)	0.250
177	14.75	0.87	0.362		0.112	(	0.326)	0.250
178	14.83	0.83	0.348		0.112	(	0.314)	0.237
179	14.92	0.83	0.348		0.111	(	0.314)	0.237
180	15.00	0.83	0.348		0.110	(	0.314)	0.238
181	15.08	0.80	0.334		0.110	(	0.301)	0.225
182	15.17	0.80	0.334		0.109	(	0.301)	0.225
183	15.25	0.80	0.334		0.109	(	0.301)	0.226
184	15.33	0.77	0.321		0.108	(	0.288)	0.212
185	15.42	0.77	0.321		0.108	(	0.288)	0.213
186	15.50	0.77	0.321		0.107	(	0.288)	0.213
187	15.58	0.63	0.265		0.107	(	0.238)	0.158
188	15.67	0.63	0.265		0.106	(	0.238)	0.159
189	15.75	0.63	0.265		0.105	(	0.238)	0.159
190	15.83	0.63	0.265		0.105	(	0.238)	0.160
191	15.92	0.63	0.265		0.104	(	0.238)	0.160
192	16.00	0.63	0.265		0.104	(	0.238)	0.161
193	16.08	0.13	0.056	(	0.103)		0.050	0.006
194	16.17	0.13	0.056	(	0.103)		0.050	0.006
195	16.25	0.13	0.056	(	0.102)		0.050	0.006
196	16.33	0.13	0.056	(	0.102)		0.050	0.006
197	16.42	0.13	0.056	(	0.101)		0.050	0.006
198	16.50	0.13	0.056	(	0.101)		0.050	0.006
199	16.58	0.10	0.042	(	0.100)		0.038	0.004
200	16.67	0.10	0.042	(	0.100)		0.038	0.004
201	16.75	0.10	0.042	(	0.099)		0.038	0.004
202	16.83	0.10	0.042	(	0.099)		0.038	0.004
203	16.92	0.10	0.042	(	0.098)		0.038	0.004
204	17.00	0.10	0.042	(	0.098)		0.038	0.004
205	17.08	0.17	0.070	(	0.097)		0.063	0.007
206	17.17	0.17	0.070	(	0.097)		0.063	0.007
207	17.25	0.17	0.070	(	0.096)		0.063	0.007
208	17.33	0.17	0.070	(	0.096)		0.063	0.007
209	17.42	0.17	0.070	(	0.095)		0.063	0.007
210	17.50	0.17	0.070	(	0.095)		0.063	0.007
211	17.58	0.17	0.070	(	0.094)		0.063	0.007
212	17.67	0.17	0.070	(	0.094)		0.063	0.007
213	17.75	0.17	0.070	(	0.093)		0.063	0.007
214	17.83	0.13	0.056	(	0.093)		0.050	0.006
215	17.92	0.13	0.056	(	0.092)		0.050	0.006
216	18.00	0.13	0.056	(	0.092)		0.050	0.006
217	18.08	0.13	0.056	(	0.092)		0.050	0.006
218	18.17	0.13	0.056	(	0.091)		0.050	0.006
219	18.25	0.13	0.056	(	0.091)		0.050	0.006
220	18.33	0.13	0.056	(	0.090)		0.050	0.006
221	18.42	0.13	0.056	(	0.090)		0.050	0.006
222	18.50	0.13	0.056	(	0.089)		0.050	0.006
223	18.58	0.10	0.042	(	0.089)		0.038	0.004
224	18.67	0.10	0.042	(	0.088)		0.038	0.004
225	18.75	0.10	0.042	(	0.088)		0.038	0.004
226	18.83	0.07	0.028	(	0.088)		0.025	0.003
227	18.92	0.07	0.028	(	0.087)		0.025	0.003
228	19.00	0.07	0.028	(	0.087)		0.025	0.003
229	19.08	0.10	0.042	(	0.086)		0.038	0.004
230	19.17	0.10	0.042	(	0.086)		0.038	0.004

231	19.25	0.10	0.042	(0.086)	0.038	0.004
232	19.33	0.13	0.056	(0.085)	0.050	0.006
233	19.42	0.13	0.056	(0.085)	0.050	0.006
234	19.50	0.13	0.056	(0.084)	0.050	0.006
235	19.58	0.10	0.042	(0.084)	0.038	0.004
236	19.67	0.10	0.042	(0.084)	0.038	0.004
237	19.75	0.10	0.042	(0.083)	0.038	0.004
238	19.83	0.07	0.028	(0.083)	0.025	0.003
239	19.92	0.07	0.028	(0.082)	0.025	0.003
240	20.00	0.07	0.028	(0.082)	0.025	0.003
241	20.08	0.10	0.042	(0.082)	0.038	0.004
242	20.17	0.10	0.042	(0.081)	0.038	0.004
243	20.25	0.10	0.042	(0.081)	0.038	0.004
244	20.33	0.10	0.042	(0.081)	0.038	0.004
245	20.42	0.10	0.042	(0.080)	0.038	0.004
246	20.50	0.10	0.042	(0.080)	0.038	0.004
247	20.58	0.10	0.042	(0.080)	0.038	0.004
248	20.67	0.10	0.042	(0.079)	0.038	0.004
249	20.75	0.10	0.042	(0.079)	0.038	0.004
250	20.83	0.07	0.028	(0.079)	0.025	0.003
251	20.92	0.07	0.028	(0.078)	0.025	0.003
252	21.00	0.07	0.028	(0.078)	0.025	0.003
253	21.08	0.10	0.042	(0.078)	0.038	0.004
254	21.17	0.10	0.042	(0.077)	0.038	0.004
255	21.25	0.10	0.042	(0.077)	0.038	0.004
256	21.33	0.07	0.028	(0.077)	0.025	0.003
257	21.42	0.07	0.028	(0.077)	0.025	0.003
258	21.50	0.07	0.028	(0.076)	0.025	0.003
259	21.58	0.10	0.042	(0.076)	0.038	0.004
260	21.67	0.10	0.042	(0.076)	0.038	0.004
261	21.75	0.10	0.042	(0.075)	0.038	0.004
262	21.83	0.07	0.028	(0.075)	0.025	0.003
263	21.92	0.07	0.028	(0.075)	0.025	0.003
264	22.00	0.07	0.028	(0.075)	0.025	0.003
265	22.08	0.10	0.042	(0.074)	0.038	0.004
266	22.17	0.10	0.042	(0.074)	0.038	0.004
267	22.25	0.10	0.042	(0.074)	0.038	0.004
268	22.33	0.07	0.028	(0.074)	0.025	0.003
269	22.42	0.07	0.028	(0.073)	0.025	0.003
270	22.50	0.07	0.028	(0.073)	0.025	0.003
271	22.58	0.07	0.028	(0.073)	0.025	0.003
272	22.67	0.07	0.028	(0.073)	0.025	0.003
273	22.75	0.07	0.028	(0.073)	0.025	0.003
274	22.83	0.07	0.028	(0.072)	0.025	0.003
275	22.92	0.07	0.028	(0.072)	0.025	0.003
276	23.00	0.07	0.028	(0.072)	0.025	0.003
277	23.08	0.07	0.028	(0.072)	0.025	0.003
278	23.17	0.07	0.028	(0.072)	0.025	0.003
279	23.25	0.07	0.028	(0.072)	0.025	0.003
280	23.33	0.07	0.028	(0.071)	0.025	0.003
281	23.42	0.07	0.028	(0.071)	0.025	0.003
282	23.50	0.07	0.028	(0.071)	0.025	0.003
283	23.58	0.07	0.028	(0.071)	0.025	0.003
284	23.67	0.07	0.028	(0.071)	0.025	0.003
285	23.75	0.07	0.028	(0.071)	0.025	0.003
286	23.83	0.07	0.028	(0.071)	0.025	0.003
287	23.92	0.07	0.028	(0.071)	0.025	0.003
288	24.00	0.07	0.028	(0.071)	0.025	0.003

(Loss Rate Not Used)

Sum = 100.0 Sum = 17.7

Flood volume = Effective rainfall 1.47(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)

Total soil loss = 2.01(In)

Total soil loss = 0.561(Ac.Ft)

Total rainfall = 3.48(In)

Flood volume = 17923.6 Cubic Feet

Total soil loss = 24446.0 Cubic Feet

Peak flow rate of this hydrograph = 1.091(CFS)

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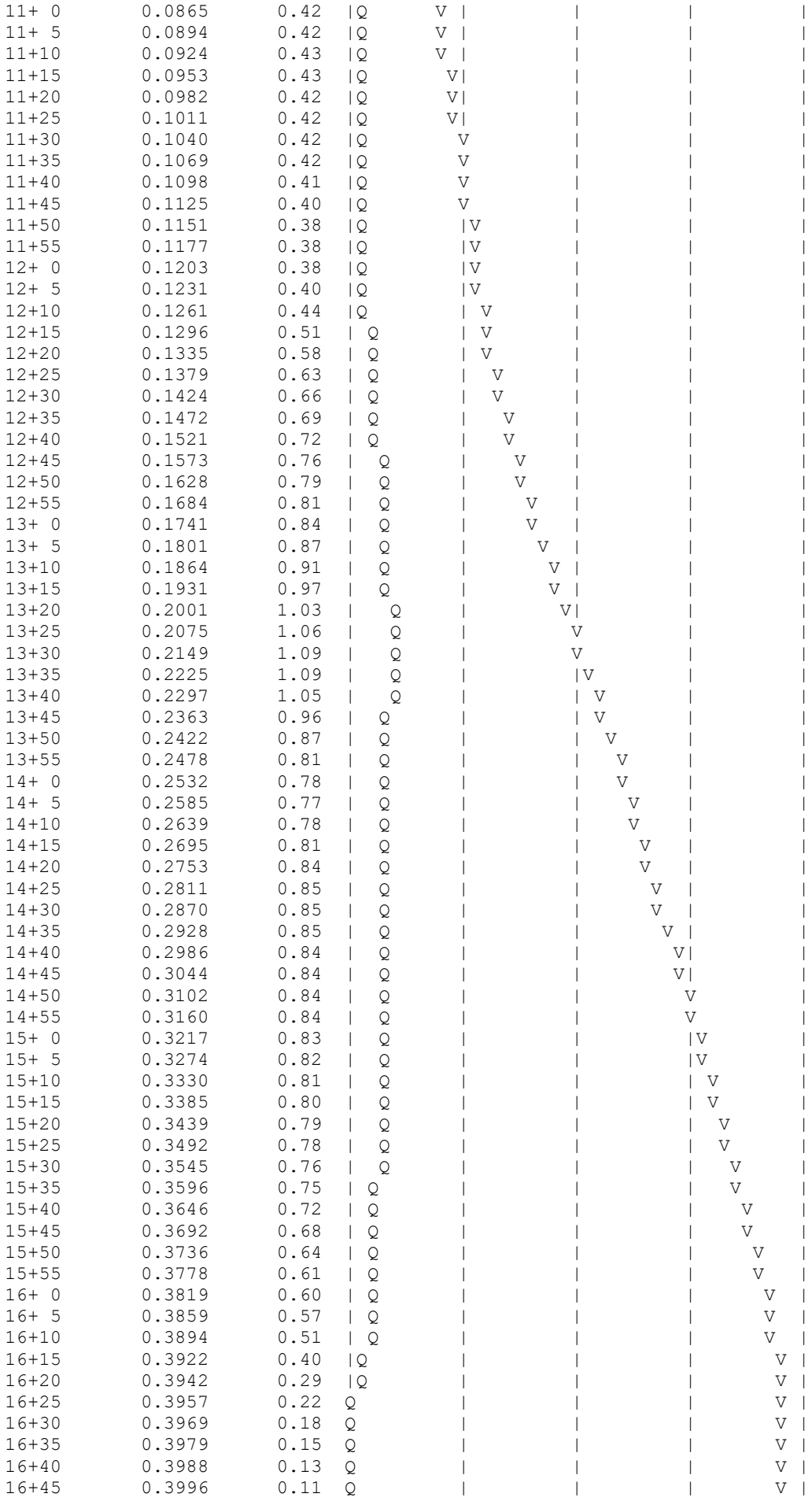
24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0001	0.01	Q	|	|	|	|
0+25	0.0001	0.01	Q	|	|	|	|
0+30	0.0002	0.01	Q	|	|	|	|
0+35	0.0002	0.01	Q	|	|	|	|
0+40	0.0003	0.01	Q	|	|	|	|
0+45	0.0004	0.01	Q	|	|	|	|
0+50	0.0005	0.01	Q	|	|	|	|
0+55	0.0006	0.01	Q	|	|	|	|
1+ 0	0.0007	0.01	Q	|	|	|	|
1+ 5	0.0008	0.02	Q	|	|	|	|
1+10	0.0009	0.02	Q	|	|	|	|
1+15	0.0010	0.02	Q	|	|	|	|
1+20	0.0011	0.01	Q	|	|	|	|
1+25	0.0012	0.01	Q	|	|	|	|
1+30	0.0013	0.01	Q	|	|	|	|
1+35	0.0014	0.01	Q	|	|	|	|
1+40	0.0015	0.01	Q	|	|	|	|
1+45	0.0016	0.01	Q	|	|	|	|
1+50	0.0017	0.01	Q	|	|	|	|
1+55	0.0018	0.01	Q	|	|	|	|
2+ 0	0.0019	0.02	Q	|	|	|	|
2+ 5	0.0020	0.02	Q	|	|	|	|
2+10	0.0021	0.02	Q	|	|	|	|
2+15	0.0022	0.02	Q	|	|	|	|
2+20	0.0024	0.02	Q	|	|	|	|
2+25	0.0025	0.02	Q	|	|	|	|
2+30	0.0026	0.02	Q	|	|	|	|
2+35	0.0027	0.02	Q	|	|	|	|
2+40	0.0029	0.02	Q	|	|	|	|
2+45	0.0030	0.02	Q	|	|	|	|
2+50	0.0031	0.02	Q	|	|	|	|
2+55	0.0033	0.02	Q	|	|	|	|
3+ 0	0.0034	0.02	Q	|	|	|	|
3+ 5	0.0036	0.02	Q	|	|	|	|
3+10	0.0038	0.02	Q	|	|	|	|
3+15	0.0039	0.02	Q	|	|	|	|
3+20	0.0041	0.02	Q	|	|	|	|
3+25	0.0042	0.02	Q	|	|	|	|
3+30	0.0044	0.02	Q	|	|	|	|
3+35	0.0045	0.02	Q	|	|	|	|
3+40	0.0047	0.02	Q	|	|	|	|
3+45	0.0049	0.02	Q	|	|	|	|
3+50	0.0050	0.02	Q	|	|	|	|
3+55	0.0052	0.02	Q	|	|	|	|
4+ 0	0.0054	0.02	Q	|	|	|	|
4+ 5	0.0055	0.03	Q	|	|	|	|
4+10	0.0057	0.03	Q	|	|	|	|
4+15	0.0059	0.03	Q	|	|	|	|
4+20	0.0061	0.03	Q	|	|	|	|
4+25	0.0063	0.03	Q	|	|	|	|
4+30	0.0065	0.03	Q	|	|	|	|
4+35	0.0067	0.03	Q	|	|	|	|
4+40	0.0069	0.03	Q	|	|	|	|
4+45	0.0071	0.03	Q	|	|	|	|
4+50	0.0073	0.03	Q	|	|	|	|
4+55	0.0076	0.03	Q	|	|	|	|
5+ 0	0.0078	0.03	Q	|	|	|	|
5+ 5	0.0080	0.03	Q	|	|	|	|

5+10	0.0083	0.03	Q	|	|	|	|
5+15	0.0085	0.03	Q	|	|	|	|
5+20	0.0087	0.03	Q	|	|	|	|
5+25	0.0089	0.03	Q	|	|	|	|
5+30	0.0091	0.03	Q	|	|	|	|
5+35	0.0094	0.03	Q	|	|	|	|
5+40	0.0096	0.03	Q	|	|	|	|
5+45	0.0098	0.03	Q	|	|	|	|
5+50	0.0101	0.04	Q	|	|	|	|
5+55	0.0103	0.04	QV	|	|	|	|
6+ 0	0.0106	0.04	QV	|	|	|	|
6+ 5	0.0108	0.04	QV	|	|	|	|
6+10	0.0111	0.04	QV	|	|	|	|
6+15	0.0113	0.04	QV	|	|	|	|
6+20	0.0116	0.04	QV	|	|	|	|
6+25	0.0119	0.04	QV	|	|	|	|
6+30	0.0122	0.04	QV	|	|	|	|
6+35	0.0124	0.04	QV	|	|	|	|
6+40	0.0127	0.04	QV	|	|	|	|
6+45	0.0130	0.04	QV	|	|	|	|
6+50	0.0133	0.04	QV	|	|	|	|
6+55	0.0136	0.04	QV	|	|	|	|
7+ 0	0.0139	0.05	QV	|	|	|	|
7+ 5	0.0143	0.05	QV	|	|	|	|
7+10	0.0146	0.05	QV	|	|	|	|
7+15	0.0149	0.05	QV	|	|	|	|
7+20	0.0152	0.05	QV	|	|	|	|
7+25	0.0155	0.05	QV	|	|	|	|
7+30	0.0159	0.05	QV	|	|	|	|
7+35	0.0162	0.05	QV	|	|	|	|
7+40	0.0165	0.05	QV	|	|	|	|
7+45	0.0169	0.05	QV	|	|	|	|
7+50	0.0173	0.05	QV	|	|	|	|
7+55	0.0176	0.05	QV	|	|	|	|
8+ 0	0.0180	0.06	QV	|	|	|	|
8+ 5	0.0184	0.06	QV	|	|	|	|
8+10	0.0189	0.07	QV	|	|	|	|
8+15	0.0195	0.09	QV	|	|	|	|
8+20	0.0202	0.10	QV	|	|	|	|
8+25	0.0210	0.12	Q V	|	|	|	|
8+30	0.0219	0.12	Q V	|	|	|	|
8+35	0.0228	0.13	Q V	|	|	|	|
8+40	0.0238	0.14	Q V	|	|	|	|
8+45	0.0249	0.16	Q V	|	|	|	|
8+50	0.0261	0.17	Q V	|	|	|	|
8+55	0.0273	0.19	Q V	|	|	|	|
9+ 0	0.0287	0.20	Q V	|	|	|	|
9+ 5	0.0303	0.22	Q V	|	|	|	|
9+10	0.0319	0.24	Q V	|	|	|	|
9+15	0.0338	0.27	|Q V	|	|	|	|
9+20	0.0358	0.30	|Q V	|	|	|	|
9+25	0.0380	0.32	|Q V	|	|	|	|
9+30	0.0403	0.34	|Q V	|	|	|	|
9+35	0.0428	0.36	|Q V	|	|	|	|
9+40	0.0454	0.38	|Q V	|	|	|	|
9+45	0.0482	0.40	|Q V	|	|	|	|
9+50	0.0510	0.42	|Q V	|	|	|	|
9+55	0.0540	0.44	|Q V	|	|	|	|
10+ 0	0.0572	0.45	|Q V	|	|	|	|
10+ 5	0.0604	0.46	|Q V	|	|	|	|
10+10	0.0634	0.44	|Q V	|	|	|	|
10+15	0.0660	0.38	|Q V	|	|	|	|
10+20	0.0683	0.32	|Q V	|	|	|	|
10+25	0.0703	0.29	|Q V	|	|	|	|
10+30	0.0721	0.27	|Q V	|	|	|	|
10+35	0.0740	0.27	|Q V	|	|	|	|
10+40	0.0760	0.29	|Q V	|	|	|	|
10+45	0.0783	0.33	|Q V	|	|	|	|
10+50	0.0809	0.38	|Q V	|	|	|	|
10+55	0.0836	0.40	|Q V	|	|	|	|



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16+50       0.4002      0.09  Q         |         |         |       V |
16+55       0.4008      0.08  Q         |         |         |       V |
17+ 0       0.4013      0.07  Q         |         |         |        V|
17+ 5       0.4017      0.06  Q         |         |         |        V|
17+10       0.4021      0.06  Q         |         |         |        V|
17+15       0.4025      0.05  Q         |         |         |        V|
17+20       0.4028      0.05  Q         |         |         |        V|
17+25       0.4031      0.04  Q         |         |         |        V|
17+30       0.4034      0.04  Q         |         |         |        V|
17+35       0.4036      0.04  Q         |         |         |        V|
17+40       0.4039      0.03  Q         |         |         |        V|
17+45       0.4041      0.03  Q         |         |         |        V|
17+50       0.4043      0.03  Q         |         |         |        V|
17+55       0.4045      0.03  Q         |         |         |        V|
18+ 0       0.4046      0.03  Q         |         |         |        V|
18+ 5       0.4048      0.02  Q         |         |         |        V|
18+10       0.4049      0.02  Q         |         |         |        V|
18+15       0.4051      0.02  Q         |         |         |        V|
18+20       0.4052      0.02  Q         |         |         |        V|
18+25       0.4053      0.02  Q         |         |         |        V|
18+30       0.4055      0.02  Q         |         |         |        V|
18+35       0.4056      0.02  Q         |         |         |        V|
18+40       0.4057      0.02  Q         |         |         |        V|
18+45       0.4058      0.02  Q         |         |         |        V|
18+50       0.4060      0.02  Q         |         |         |        V|
18+55       0.4061      0.02  Q         |         |         |        V|
19+ 0       0.4062      0.01  Q         |         |         |        V|
19+ 5       0.4063      0.01  Q         |         |         |        V|
19+10       0.4063      0.01  Q         |         |         |        V|
19+15       0.4064      0.01  Q         |         |         |        V|
19+20       0.4065      0.01  Q         |         |         |        V|
19+25       0.4066      0.01  Q         |         |         |        V|
19+30       0.4067      0.02  Q         |         |         |        V|
19+35       0.4068      0.02  Q         |         |         |        V|
19+40       0.4070      0.02  Q         |         |         |        V|
19+45       0.4071      0.02  Q         |         |         |        V|
19+50       0.4072      0.02  Q         |         |         |        V|
19+55       0.4073      0.01  Q         |         |         |        V|
20+ 0       0.4074      0.01  Q         |         |         |        V|
20+ 5       0.4074      0.01  Q         |         |         |        V|
20+10       0.4075      0.01  Q         |         |         |        V|
20+15       0.4076      0.01  Q         |         |         |        V|
20+20       0.4077      0.01  Q         |         |         |        V|
20+25       0.4078      0.01  Q         |         |         |        V|
20+30       0.4079      0.01  Q         |         |         |        V|
20+35       0.4080      0.01  Q         |         |         |        V|
20+40       0.4081      0.01  Q         |         |         |        V|
20+45       0.4082      0.01  Q         |         |         |        V|
20+50       0.4083      0.01  Q         |         |         |        V|
20+55       0.4084      0.01  Q         |         |         |        V|
21+ 0       0.4085      0.01  Q         |         |         |        V|
21+ 5       0.4085      0.01  Q         |         |         |        V|
21+10       0.4086      0.01  Q         |         |         |        V|
21+15       0.4087      0.01  Q         |         |         |        V|
21+20       0.4088      0.01  Q         |         |         |        V|
21+25       0.4089      0.01  Q         |         |         |        V|
21+30       0.4090      0.01  Q         |         |         |        V|
21+35       0.4090      0.01  Q         |         |         |        V|
21+40       0.4091      0.01  Q         |         |         |        V|
21+45       0.4092      0.01  Q         |         |         |        V|
21+50       0.4093      0.01  Q         |         |         |        V|
21+55       0.4094      0.01  Q         |         |         |        V|
22+ 0       0.4094      0.01  Q         |         |         |        V|
22+ 5       0.4095      0.01  Q         |         |         |        V|
22+10       0.4096      0.01  Q         |         |         |        V|
22+15       0.4097      0.01  Q         |         |         |        V|
22+20       0.4098      0.01  Q         |         |         |        V|
22+25       0.4099      0.01  Q         |         |         |        V|
22+30       0.4099      0.01  Q         |         |         |        V|
22+35       0.4100      0.01  Q         |         |         |        V|
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22+40	0.4101	0.01	Q	|	|	|	V|
22+45	0.4102	0.01	Q	|	|	|	V|
22+50	0.4102	0.01	Q	|	|	|	V|
22+55	0.4103	0.01	Q	|	|	|	V|
23+ 0	0.4104	0.01	Q	|	|	|	V|
23+ 5	0.4104	0.01	Q	|	|	|	V|
23+10	0.4105	0.01	Q	|	|	|	V|
23+15	0.4106	0.01	Q	|	|	|	V|
23+20	0.4106	0.01	Q	|	|	|	V|
23+25	0.4107	0.01	Q	|	|	|	V|
23+30	0.4108	0.01	Q	|	|	|	V|
23+35	0.4108	0.01	Q	|	|	|	V|
23+40	0.4109	0.01	Q	|	|	|	V|
23+45	0.4110	0.01	Q	|	|	|	V|
23+50	0.4110	0.01	Q	|	|	|	V|
23+55	0.4111	0.01	Q	|	|	|	V|
24+ 0	0.4112	0.01	Q	|	|	|	V|
24+ 5	0.4112	0.01	Q	|	|	|	V|
24+10	0.4113	0.01	Q	|	|	|	V|
24+15	0.4113	0.01	Q	|	|	|	V|
24+20	0.4113	0.00	Q	|	|	|	V|
24+25	0.4114	0.00	Q	|	|	|	V|
24+30	0.4114	0.00	Q	|	|	|	V|
24+35	0.4114	0.00	Q	|	|	|	V|
24+40	0.4114	0.00	Q	|	|	|	V|
24+45	0.4114	0.00	Q	|	|	|	V|
24+50	0.4114	0.00	Q	|	|	|	V|
24+55	0.4114	0.00	Q	|	|	|	V|
25+ 0	0.4114	0.00	Q	|	|	|	V|
25+ 5	0.4114	0.00	Q	|	|	|	V|
25+10	0.4115	0.00	Q	|	|	|	V|
25+15	0.4115	0.00	Q	|	|	|	V|
25+20	0.4115	0.00	Q	|	|	|	V|
25+25	0.4115	0.00	Q	|	|	|	V|
25+30	0.4115	0.00	Q	|	|	|	V|
25+35	0.4115	0.00	Q	|	|	|	V|
25+40	0.4115	0.00	Q	|	|	|	V|
25+45	0.4115	0.00	Q	|	|	|	V|
25+50	0.4115	0.00	Q	|	|	|	V|
25+55	0.4115	0.00	Q	|	|	|	V|
26+ 0	0.4115	0.00	Q	|	|	|	V|
26+ 5	0.4115	0.00	Q	|	|	|	V|

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

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Study date 02/20/20 File: 8946E2A11100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
100 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	0.55	1.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	1.30	4.36

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.515	0.057	(	0.463)	0.458
2	0.17	4.20	0.655	0.057	(	0.590)	0.598
3	0.25	4.40	0.686	0.057	(	0.618)	0.629
4	0.33	4.80	0.749	0.057	(	0.674)	0.692
5	0.42	5.20	0.811	0.057	(	0.730)	0.754
6	0.50	6.20	0.967	0.057	(	0.870)	0.910
7	0.58	6.80	1.061	0.057	(	0.955)	1.004
8	0.67	8.80	1.373	0.057	(	1.235)	1.316
9	0.75	13.90	2.168	0.057	(	1.952)	2.111
10	0.83	31.40	4.898	0.057	(	4.408)	4.841
11	0.92	7.20	1.123	0.057	(	1.011)	1.066
12	1.00	3.80	0.593	0.057	(	0.534)	0.536
		(Loss Rate Not Used)					
Sum =		100.0				Sum =	14.9

Flood volume = Effective rainfall 1.24(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)
Total soil loss = 0.06(In)
Total soil loss = 0.016(Ac.Ft)

```
     Total rainfall =      1.30(In)
     Flood volume =       15112.6 Cubic Feet
     Total soil loss =      695.6 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      6.290(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        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0003      0.05  Q         |         |         |         |
   0+10       0.0019      0.23  Q         |         |         |         |
   0+15       0.0060      0.59  V Q       |         |         |         |
   0+20       0.0130      1.01  |V  Q     |         |         |         |
   0+25       0.0223      1.35  | V  Q    |         |         |         |
   0+30       0.0335      1.62  |  V  Q   |         |         |         |
   0+35       0.0465      1.89  |    V Q  |         |         |         |
   0+40       0.0617      2.22  |      VQ |         |         |         |
   0+45       0.0803      2.69  |        VQ         |         |         |
   0+50       0.1057      3.68  |         | V Q     |         |         |
   0+55       0.1415      5.21  |         |     V   Q         |         |
   1+ 0       0.1848      6.29  |         |         |V   Q    |         |
   1+ 5       0.2256      5.91  |         |         |  Q  V   |         |
   1+10       0.2546      4.21  |         |     Q   |         V|        |
   1+15       0.2738      2.79  |         |Q        |         |V        |
   1+20       0.2870      1.91  |      Q  |         |         |  V      |
   1+25       0.2969      1.45  |    Q    |         |         |   V     |
   1+30       0.3049      1.16  |   Q     |         |         |    V    |
   1+35       0.3115      0.95  |  Q      |         |         |    V    |
   1+40       0.3169      0.79  |  Q      |         |         |     V   |
   1+45       0.3216      0.68  | Q       |         |         |      V  |
   1+50       0.3255      0.57  | Q       |         |         |      V  |
   1+55       0.3288      0.48  |Q        |         |         |      V  |
   2+ 0       0.3317      0.42  |Q        |         |         |       V |
   2+ 5       0.3343      0.37  |Q        |         |         |       V |
   2+10       0.3366      0.33  |Q        |         |         |       V |
   2+15       0.3385      0.28  |Q        |         |         |        V|
   2+20       0.3402      0.24  Q         |         |         |        V|
   2+25       0.3416      0.21  Q         |         |         |        V|
   2+30       0.3428      0.17  Q         |         |         |        V|
   2+35       0.3438      0.15  Q         |         |         |        V|
   2+40       0.3447      0.12  Q         |         |         |        V|
   2+45       0.3454      0.11  Q         |         |         |        V|
   2+50       0.3461      0.10  Q         |         |         |        V|
   2+55       0.3467      0.09  Q         |         |         |        V|
   3+ 0       0.3469      0.02  Q         |         |         |        V|
   3+ 5       0.3469      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 02/20/20 File: 8946E2A13100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
100 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	0.90	3.02

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	2.25	7.54

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
13	1.083	401.235	1.386	0.047
14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
17	1.417	524.691	0.847	0.029
18	1.500	555.556	0.682	0.023
19	1.583	586.420	0.597	0.020
20	1.667	617.284	0.536	0.018
21	1.750	648.148	0.444	0.015
22	1.833	679.012	0.378	0.013
23	1.917	709.877	0.309	0.010
24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.351	0.057	(0.316)	0.294
2	0.17	1.30	0.351	0.057	(0.316)	0.294
3	0.25	1.10	0.297	0.057	(0.267)	0.240
4	0.33	1.50	0.405	0.057	(0.364)	0.348
5	0.42	1.50	0.405	0.057	(0.364)	0.348
6	0.50	1.80	0.486	0.057	(0.437)	0.429
7	0.58	1.50	0.405	0.057	(0.364)	0.348
8	0.67	1.80	0.486	0.057	(0.437)	0.429
9	0.75	1.80	0.486	0.057	(0.437)	0.429
10	0.83	1.50	0.405	0.057	(0.364)	0.348
11	0.92	1.60	0.432	0.057	(0.389)	0.375
12	1.00	1.80	0.486	0.057	(0.437)	0.429
13	1.08	2.20	0.594	0.057	(0.535)	0.537
14	1.17	2.20	0.594	0.057	(0.535)	0.537
15	1.25	2.20	0.594	0.057	(0.535)	0.537
16	1.33	2.00	0.540	0.057	(0.486)	0.483
17	1.42	2.60	0.702	0.057	(0.632)	0.645
18	1.50	2.70	0.729	0.057	(0.656)	0.672
19	1.58	2.40	0.648	0.057	(0.583)	0.591
20	1.67	2.70	0.729	0.057	(0.656)	0.672

21	1.75	3.30	0.891	0.057	(	0.802)	0.834
22	1.83	3.10	0.837	0.057	(	0.753)	0.780
23	1.92	2.90	0.783	0.057	(	0.705)	0.726
24	2.00	3.00	0.810	0.057	(	0.729)	0.753
25	2.08	3.10	0.837	0.057	(	0.753)	0.780
26	2.17	4.20	1.134	0.057	(	1.021)	1.077
27	2.25	5.00	1.350	0.057	(	1.215)	1.293
28	2.33	3.50	0.945	0.057	(	0.850)	0.888
29	2.42	6.80	1.836	0.057	(	1.652)	1.779
30	2.50	7.30	1.971	0.057	(	1.774)	1.914
31	2.58	8.20	2.214	0.057	(	1.993)	2.157
32	2.67	5.90	1.593	0.057	(	1.434)	1.536
33	2.75	2.00	0.540	0.057	(	0.486)	0.483
34	2.83	1.80	0.486	0.057	(	0.437)	0.429
35	2.92	1.80	0.486	0.057	(	0.437)	0.429
36	3.00	0.60	0.162	0.057	(	0.146)	0.105

(Loss Rate Not Used)

Sum = 100.0 Sum = 24.9

Flood volume = Effective rainfall 2.08(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.6(Ac.Ft)

Total soil loss = 0.17(In)

Total soil loss = 0.048(Ac.Ft)

Total rainfall = 2.25(In)

Flood volume = 25274.0 Cubic Feet

Total soil loss = 2086.7 Cubic Feet

Peak flow rate of this hydrograph = 5.067(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0012      0.14  Q         |         |         |         |
  0+15       0.0034      0.33  VQ        |         |         |         |
  0+20       0.0070      0.52  V Q       |         |         |         |
  0+25       0.0115      0.65  V Q       |         |         |         |
  0+30       0.0167      0.76  |V Q      |         |         |         |
  0+35       0.0228      0.88  |V Q      |         |         |         |
  0+40       0.0295      0.98  | VQ      |         |         |         |
  0+45       0.0368      1.06  | V Q     |         |         |         |
  0+50       0.0445      1.12  |  VQ     |         |         |         |
  0+55       0.0525      1.16  |  VQ     |         |         |         |
  1+ 0       0.0605      1.17  |   Q     |         |         |         |
  1+ 5       0.0688      1.20  |   Q     |         |         |         |
  1+10       0.0777      1.29  |    Q    |         |         |         |
  1+15       0.0874      1.41  |    QV   |         |         |         |
  1+20       0.0978      1.51  |     Q   |         |         |         |
  1+25       0.1086      1.58  |     QV  |         |         |         |
  1+30       0.1200      1.65  |     Q V |         |         |         |
  1+35       0.1321      1.75  |      Q V|         |         |         |
  1+40       0.1449      1.86  |      Q V|         |         |         |
  1+45       0.1583      1.95  |      Q  V         |         |         |
  1+50       0.1725      2.06  |       Q |V        |         |         |
  1+55       0.1877      2.20  |       Q | V       |         |         |
  2+ 0       0.2036      2.31  |        Q|   V     |         |         |
  2+ 5       0.2198      2.35  |        Q|    V    |         |         |
  2+10       0.2364      2.41  |        Q|     V   |         |         |
  2+15       0.2542      2.59  |         Q      V  |         |         |
  2+20       0.2740      2.87  |         |Q      V |         |         |
  2+25       0.2959      3.19  |         | Q       V         |         |
  2+30       0.3205      3.56  |         |   Q     | V       |         |
  2+35       0.3489      4.13  |         |     Q   |   V     |         |
  2+40       0.3819      4.80  |         |       Q |     V   |         |
  2+45       0.4168      5.07  |         |         Q       V |         |
```

```
    2+50       0.4492      4.69  |          |       Q |          V          |
    2+55       0.4756      3.83  |          |    Q    |          | V        |
    3+ 0       0.4961      2.98  |          |Q        |          |   V      |
    3+ 5       0.5124      2.37  |         Q|         |          |    V     |
    3+10       0.5253      1.87  |       Q  |         |          |     V    |
    3+15       0.5351      1.42  |    Q     |         |          |     V    |
    3+20       0.5427      1.10  |   Q      |         |          |      V   |
    3+25       0.5488      0.89  |  Q       |         |          |      V   |
    3+30       0.5539      0.74  | Q        |         |          |       V  |
    3+35       0.5581      0.62  | Q        |         |          |       V  |
    3+40       0.5617      0.52  | Q        |         |          |       V  |
    3+45       0.5648      0.45  |Q         |         |          |       V  |
    3+50       0.5675      0.39  |Q         |         |          |        V|
    3+55       0.5698      0.33  |Q         |         |          |        V|
    4+ 0       0.5718      0.28  |Q         |         |          |        V|
    4+ 5       0.5734      0.24  Q          |         |          |        V|
    4+10       0.5749      0.21  Q          |         |          |        V|
    4+15       0.5761      0.18  Q          |         |          |        V|
    4+20       0.5771      0.15  Q          |         |          |        V|
    4+25       0.5779      0.12  Q          |         |          |        V|
    4+30       0.5787      0.11  Q          |         |          |        V|
    4+35       0.5792      0.09  Q          |         |          |        V|
    4+40       0.5797      0.06  Q          |         |          |        V|
    4+45       0.5799      0.04  Q          |         |          |        V|
    4+50       0.5801      0.02  Q          |         |          |        V|
    4+55       0.5801      0.01  Q          |         |          |        V|
    5+ 0       0.5802      0.01  Q          |         |          |        V|
    5+ 5       0.5802      0.00  Q          |         |          |         V
-------------------------------------------------------------------------
```

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

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Study date 02/20/20 File: 8946E2A16100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
EXISTING CONDITION
100 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	1.30	4.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	3.00	10.05

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	30.864	3.014	0.102
2	0.167	61.728	11.197	0.378
3	0.250	92.593	19.414	0.655
4	0.333	123.457	20.295	0.685
5	0.417	154.321	12.336	0.416
6	0.500	185.185	7.048	0.238
7	0.583	216.049	4.671	0.158
8	0.667	246.914	3.648	0.123
9	0.750	277.778	2.960	0.100
10	0.833	308.642	2.414	0.082
11	0.917	339.506	1.948	0.066
12	1.000	370.370	1.744	0.059
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14	1.167	432.099	1.158	0.039
15	1.250	462.963	0.982	0.033
16	1.333	493.827	0.936	0.032
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24	2.000	740.741	0.309	0.010
25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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	0.180	0.057	(0.162)	0.123
2	0.17	0.60	0.216	0.057	(0.194)	0.159
3	0.25	0.60	0.216	0.057	(0.194)	0.159
4	0.33	0.60	0.216	0.057	(0.194)	0.159
5	0.42	0.60	0.216	0.057	(0.194)	0.159
6	0.50	0.70	0.252	0.057	(0.227)	0.195
7	0.58	0.70	0.252	0.057	(0.227)	0.195
8	0.67	0.70	0.252	0.057	(0.227)	0.195
9	0.75	0.70	0.252	0.057	(0.227)	0.195
10	0.83	0.70	0.252	0.057	(0.227)	0.195
11	0.92	0.70	0.252	0.057	(0.227)	0.195
12	1.00	0.80	0.288	0.057	(0.259)	0.231
13	1.08	0.80	0.288	0.057	(0.259)	0.231
14	1.17	0.80	0.288	0.057	(0.259)	0.231
15	1.25	0.80	0.288	0.057	(0.259)	0.231
16	1.33	0.80	0.288	0.057	(0.259)	0.231
17	1.42	0.80	0.288	0.057	(0.259)	0.231
18	1.50	0.80	0.288	0.057	(0.259)	0.231
19	1.58	0.80	0.288	0.057	(0.259)	0.231
20	1.67	0.80	0.288	0.057	(0.259)	0.231

21	1.75	0.80	0.288	0.057	(	0.259)	0.231
22	1.83	0.80	0.288	0.057	(	0.259)	0.231
23	1.92	0.80	0.288	0.057	(	0.259)	0.231
24	2.00	0.90	0.324	0.057	(	0.292)	0.267
25	2.08	0.80	0.288	0.057	(	0.259)	0.231
26	2.17	0.90	0.324	0.057	(	0.292)	0.267
27	2.25	0.90	0.324	0.057	(	0.292)	0.267
28	2.33	0.90	0.324	0.057	(	0.292)	0.267
29	2.42	0.90	0.324	0.057	(	0.292)	0.267
30	2.50	0.90	0.324	0.057	(	0.292)	0.267
31	2.58	0.90	0.324	0.057	(	0.292)	0.267
32	2.67	0.90	0.324	0.057	(	0.292)	0.267
33	2.75	1.00	0.360	0.057	(	0.324)	0.303
34	2.83	1.00	0.360	0.057	(	0.324)	0.303
35	2.92	1.00	0.360	0.057	(	0.324)	0.303
36	3.00	1.00	0.360	0.057	(	0.324)	0.303
37	3.08	1.00	0.360	0.057	(	0.324)	0.303
38	3.17	1.10	0.396	0.057	(	0.356)	0.339
39	3.25	1.10	0.396	0.057	(	0.356)	0.339
40	3.33	1.10	0.396	0.057	(	0.356)	0.339
41	3.42	1.20	0.432	0.057	(	0.389)	0.375
42	3.50	1.30	0.468	0.057	(	0.421)	0.411
43	3.58	1.40	0.504	0.057	(	0.454)	0.447
44	3.67	1.40	0.504	0.057	(	0.454)	0.447
45	3.75	1.50	0.540	0.057	(	0.486)	0.483
46	3.83	1.50	0.540	0.057	(	0.486)	0.483
47	3.92	1.60	0.576	0.057	(	0.518)	0.519
48	4.00	1.60	0.576	0.057	(	0.518)	0.519
49	4.08	1.70	0.612	0.057	(	0.551)	0.555
50	4.17	1.80	0.648	0.057	(	0.583)	0.591
51	4.25	1.90	0.684	0.057	(	0.616)	0.627
52	4.33	2.00	0.720	0.057	(	0.648)	0.663
53	4.42	2.10	0.756	0.057	(	0.680)	0.699
54	4.50	2.10	0.756	0.057	(	0.680)	0.699
55	4.58	2.20	0.792	0.057	(	0.713)	0.735
56	4.67	2.30	0.828	0.057	(	0.745)	0.771
57	4.75	2.40	0.864	0.057	(	0.778)	0.807
58	4.83	2.40	0.864	0.057	(	0.778)	0.807
59	4.92	2.50	0.900	0.057	(	0.810)	0.843
60	5.00	2.60	0.936	0.057	(	0.842)	0.879
61	5.08	3.10	1.116	0.057	(	1.004)	1.059
62	5.17	3.60	1.296	0.057	(	1.166)	1.239
63	5.25	3.90	1.404	0.057	(	1.264)	1.347
64	5.33	4.20	1.512	0.057	(	1.361)	1.455
65	5.42	4.70	1.692	0.057	(	1.523)	1.635
66	5.50	5.60	2.016	0.057	(	1.814)	1.959
67	5.58	1.90	0.684	0.057	(	0.616)	0.627
68	5.67	0.90	0.324	0.057	(	0.292)	0.267
69	5.75	0.60	0.216	0.057	(	0.194)	0.159
70	5.83	0.50	0.180	0.057	(	0.162)	0.123
71	5.92	0.30	0.108	0.057	(	0.097)	0.051
72	6.00	0.20	0.072	0.057	(	0.065)	0.015

(Loss Rate Not Used)

Sum = 100.0 Sum = 31.9

Flood volume = Effective rainfall 2.66(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)
Total soil loss = 0.34(In)
Total soil loss = 0.096(Ac.Ft)
Total rainfall = 3.00(In)
Flood volume = 32307.6 Cubic Feet
Total soil loss = 4173.5 Cubic Feet

Peak flow rate of this hydrograph = 4.446(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q				
0+10	0.0005	0.06	Q				
0+15	0.0016	0.16	Q				
0+20	0.0034	0.26	VQ				
0+25	0.0058	0.34	VQ				
0+30	0.0084	0.39	VQ				
0+35	0.0114	0.43	VQ				
0+40	0.0147	0.47	VQ				
0+45	0.0182	0.52	V Q				
0+50	0.0220	0.54	|VQ				
0+55	0.0258	0.56	|VQ				
1+ 0	0.0299	0.58	|VQ				
1+ 5	0.0341	0.61	|VQ				
1+10	0.0385	0.64	| Q				
1+15	0.0431	0.68	| Q				
1+20	0.0479	0.70	| Q				
1+25	0.0529	0.71	| Q				
1+30	0.0578	0.72	| QV				
1+35	0.0629	0.73	| QV				
1+40	0.0680	0.74	| QV				
1+45	0.0732	0.75	| QV				
1+50	0.0783	0.75	| QV				
1+55	0.0836	0.76	| QV				
2+ 0	0.0888	0.77	| QV				
2+ 5	0.0942	0.78	| Q V				
2+10	0.0997	0.80	| Q V				
2+15	0.1053	0.81	| Q V				
2+20	0.1110	0.83	| Q V				
2+25	0.1169	0.85	| Q V				
2+30	0.1228	0.86	| Q V				
2+35	0.1288	0.87	| Q V				
2+40	0.1348	0.88	| Q V				
2+45	0.1409	0.88	| Q V				
2+50	0.1471	0.90	| Q V				
2+55	0.1535	0.93	| Q V				
3+ 0	0.1601	0.95	| Q V				
3+ 5	0.1668	0.97	| Q V				
3+10	0.1736	0.99	| Q V				
3+15	0.1805	1.01	| Q V				
3+20	0.1876	1.04	| Q V				
3+25	0.1950	1.07	| Q V				
3+30	0.2026	1.10	| Q V				
3+35	0.2106	1.16	| Q |V				
3+40	0.2190	1.23	| Q |V				
3+45	0.2280	1.30	| Q | V				
3+50	0.2374	1.37	| Q | V				
3+55	0.2472	1.43	| Q | V				
4+ 0	0.2575	1.49	| Q | V				
4+ 5	0.2682	1.55	| Q | V				
4+10	0.2793	1.61	| Q | V				
4+15	0.2909	1.69	| Q | V				
4+20	0.3031	1.77	| Q | V				
4+25	0.3160	1.87	| Q | V				
4+30	0.3296	1.97	| Q | V				
4+35	0.3438	2.06	| Q | V				
4+40	0.3586	2.15	| Q | V				
4+45	0.3740	2.24	| Q | V				
4+50	0.3901	2.33	| Q | |V				
4+55	0.4068	2.42	| Q | |V				
5+ 0	0.4241	2.51	| Q | V				
5+ 5	0.4421	2.61	| Q | V				
5+10	0.4612	2.78	| |Q | V				
5+15	0.4821	3.04	| | Q | V				
5+20	0.5054	3.38	| | Q | V				
5+25	0.5312	3.74	| | Q | V				
5+30	0.5596	4.13	| | Q | V				
5+35	0.5903	4.45	| | Q | |V				

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    5+40       0.6204      4.38  |          |      Q  |          |  V       |
    5+45       0.6463      3.75  |          |    Q    |          |   V      |
    5+50       0.6657      2.81  |          |Q        |          |    V     |
    5+55       0.6800      2.09  |        Q |         |          |     V    |
    6+ 0       0.6912      1.62  |     Q    |         |          |      V   |
    6+ 5       0.7000      1.29  |    Q     |         |          |      V   |
    6+10       0.7071      1.03  |   Q      |         |          |       V  |
    6+15       0.7128      0.83  |  Q       |         |          |       V  |
    6+20       0.7175      0.68  | Q        |         |          |       V  |
    6+25       0.7215      0.57  | Q        |         |          |       V  |
    6+30       0.7248      0.48  |Q         |         |          |        V|
    6+35       0.7277      0.41  |Q         |         |          |        V|
    6+40       0.7301      0.35  |Q         |         |          |        V|
    6+45       0.7322      0.31  |Q         |         |          |        V|
    6+50       0.7340      0.26  |Q         |         |          |        V|
    6+55       0.7355      0.22  Q          |         |          |        V|
    7+ 0       0.7368      0.19  Q          |         |          |        V|
    7+ 5       0.7379      0.16  Q          |         |          |        V|
    7+10       0.7388      0.13  Q          |         |          |        V|
    7+15       0.7396      0.11  Q          |         |          |        V|
    7+20       0.7402      0.09  Q          |         |          |        V|
    7+25       0.7408      0.07  Q          |         |          |        V|
    7+30       0.7412      0.06  Q          |         |          |        V|
    7+35       0.7415      0.04  Q          |         |          |        V|
    7+40       0.7416      0.02  Q          |         |          |        V|
    7+45       0.7416      0.01  Q          |         |          |        V|
    7+50       0.7417      0.00  Q          |         |          |        V|
    7+55       0.7417      0.00  Q          |         |          |        V|
    8+ 0       0.7417      0.00  Q          |         |          |        V|
    8+ 5       0.7417      0.00  Q          |         |          |         V
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U n i t H y d r o g r a p h A n a l y s i s

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EXISTING CONDITION
100 YEAR - 24 HOUR
HYDROGRAPH

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Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.270 Hr.
Lag time = 16.20 Min.
25% of lag time = 4.05 Min.
40% of lag time = 6.48 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]
3.35	2.25	7.54

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	5.25	17.59

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 5.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	89.00	0.000

Total Area Entered = 3.35(Ac.)

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89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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25	2.083	771.605	0.309	0.010
26	2.167	802.469	0.438	0.015
		Sum = 100.000	Sum=	3.376

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Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.042	(0.101)	0.038	0.004
2	0.17	0.07	0.042	(0.101)	0.038	0.004
3	0.25	0.07	0.042	(0.101)	0.038	0.004
4	0.33	0.10	0.063	(0.100)	0.057	0.006
5	0.42	0.10	0.063	(0.100)	0.057	0.006
6	0.50	0.10	0.063	(0.099)	0.057	0.006
7	0.58	0.10	0.063	(0.099)	0.057	0.006
8	0.67	0.10	0.063	(0.099)	0.057	0.006
9	0.75	0.10	0.063	(0.098)	0.057	0.006
10	0.83	0.13	0.084	(0.098)	0.076	0.008
11	0.92	0.13	0.084	(0.098)	0.076	0.008
12	1.00	0.13	0.084	(0.097)	0.076	0.008
13	1.08	0.10	0.063	(0.097)	0.057	0.006
14	1.17	0.10	0.063	(0.096)	0.057	0.006
15	1.25	0.10	0.063	(0.096)	0.057	0.006
16	1.33	0.10	0.063	(0.096)	0.057	0.006
17	1.42	0.10	0.063	(0.095)	0.057	0.006
18	1.50	0.10	0.063	(0.095)	0.057	0.006
19	1.58	0.10	0.063	(0.094)	0.057	0.006
20	1.67	0.10	0.063	(0.094)	0.057	0.006

21	1.75	0.10	0.063	(	0.094)	0.057		0.006
22	1.83	0.13	0.084	(	0.093)	0.076		0.008
23	1.92	0.13	0.084	(	0.093)	0.076		0.008
24	2.00	0.13	0.084	(	0.093)	0.076		0.008
25	2.08	0.13	0.084	(	0.092)	0.076		0.008
26	2.17	0.13	0.084	(	0.092)	0.076		0.008
27	2.25	0.13	0.084	(	0.091)	0.076		0.008
28	2.33	0.13	0.084	(	0.091)	0.076		0.008
29	2.42	0.13	0.084	(	0.091)	0.076		0.008
30	2.50	0.13	0.084	(	0.090)	0.076		0.008
31	2.58	0.17	0.105		0.090	(	0.094)	0.015
32	2.67	0.17	0.105		0.090	(	0.094)	0.015
33	2.75	0.17	0.105		0.089	(	0.094)	0.016
34	2.83	0.17	0.105		0.089	(	0.094)	0.016
35	2.92	0.17	0.105		0.088	(	0.094)	0.017
36	3.00	0.17	0.105		0.088	(	0.094)	0.017
37	3.08	0.17	0.105		0.088	(	0.094)	0.017
38	3.17	0.17	0.105		0.087	(	0.094)	0.018
39	3.25	0.17	0.105		0.087	(	0.094)	0.018
40	3.33	0.17	0.105		0.087	(	0.094)	0.018
41	3.42	0.17	0.105		0.086	(	0.094)	0.019
42	3.50	0.17	0.105		0.086	(	0.094)	0.019
43	3.58	0.17	0.105		0.086	(	0.094)	0.019
44	3.67	0.17	0.105		0.085	(	0.094)	0.020
45	3.75	0.17	0.105		0.085	(	0.094)	0.020
46	3.83	0.20	0.126		0.085	(	0.113)	0.041
47	3.92	0.20	0.126		0.084	(	0.113)	0.042
48	4.00	0.20	0.126		0.084	(	0.113)	0.042
49	4.08	0.20	0.126		0.083	(	0.113)	0.043
50	4.17	0.20	0.126		0.083	(	0.113)	0.043
51	4.25	0.20	0.126		0.083	(	0.113)	0.043
52	4.33	0.23	0.147		0.082	(	0.132)	0.065
53	4.42	0.23	0.147		0.082	(	0.132)	0.065
54	4.50	0.23	0.147		0.082	(	0.132)	0.065
55	4.58	0.23	0.147		0.081	(	0.132)	0.066
56	4.67	0.23	0.147		0.081	(	0.132)	0.066
57	4.75	0.23	0.147		0.081	(	0.132)	0.066
58	4.83	0.27	0.168		0.080	(	0.151)	0.088
59	4.92	0.27	0.168		0.080	(	0.151)	0.088
60	5.00	0.27	0.168		0.080	(	0.151)	0.088
61	5.08	0.20	0.126		0.079	(	0.113)	0.047
62	5.17	0.20	0.126		0.079	(	0.113)	0.047
63	5.25	0.20	0.126		0.079	(	0.113)	0.047
64	5.33	0.23	0.147		0.078	(	0.132)	0.069
65	5.42	0.23	0.147		0.078	(	0.132)	0.069
66	5.50	0.23	0.147		0.078	(	0.132)	0.069
67	5.58	0.27	0.168		0.077	(	0.151)	0.091
68	5.67	0.27	0.168		0.077	(	0.151)	0.091
69	5.75	0.27	0.168		0.077	(	0.151)	0.091
70	5.83	0.27	0.168		0.076	(	0.151)	0.092
71	5.92	0.27	0.168		0.076	(	0.151)	0.092
72	6.00	0.27	0.168		0.076	(	0.151)	0.092
73	6.08	0.30	0.189		0.075	(	0.170)	0.114
74	6.17	0.30	0.189		0.075	(	0.170)	0.114
75	6.25	0.30	0.189		0.074	(	0.170)	0.114
76	6.33	0.30	0.189		0.074	(	0.170)	0.115
77	6.42	0.30	0.189		0.074	(	0.170)	0.115
78	6.50	0.30	0.189		0.074	(	0.170)	0.115
79	6.58	0.33	0.210		0.073	(	0.189)	0.137
80	6.67	0.33	0.210		0.073	(	0.189)	0.137
81	6.75	0.33	0.210		0.073	(	0.189)	0.137
82	6.83	0.33	0.210		0.072	(	0.189)	0.138
83	6.92	0.33	0.210		0.072	(	0.189)	0.138
84	7.00	0.33	0.210		0.072	(	0.189)	0.138
85	7.08	0.33	0.210		0.071	(	0.189)	0.139
86	7.17	0.33	0.210		0.071	(	0.189)	0.139
87	7.25	0.33	0.210		0.071	(	0.189)	0.139
88	7.33	0.37	0.231		0.070	(	0.208)	0.161
89	7.42	0.37	0.231		0.070	(	0.208)	0.161
90	7.50	0.37	0.231		0.070	(	0.208)	0.161

91	7.58	0.40	0.252	0.069	(	0.227)	0.183
92	7.67	0.40	0.252	0.069	(	0.227)	0.183
93	7.75	0.40	0.252	0.069	(	0.227)	0.183
94	7.83	0.43	0.273	0.068	(	0.246)	0.205
95	7.92	0.43	0.273	0.068	(	0.246)	0.205
96	8.00	0.43	0.273	0.068	(	0.246)	0.205
97	8.08	0.50	0.315	0.067	(	0.283)	0.248
98	8.17	0.50	0.315	0.067	(	0.283)	0.248
99	8.25	0.50	0.315	0.067	(	0.283)	0.248
100	8.33	0.50	0.315	0.066	(	0.283)	0.249
101	8.42	0.50	0.315	0.066	(	0.283)	0.249
102	8.50	0.50	0.315	0.066	(	0.283)	0.249
103	8.58	0.53	0.336	0.066	(	0.302)	0.270
104	8.67	0.53	0.336	0.065	(	0.302)	0.271
105	8.75	0.53	0.336	0.065	(	0.302)	0.271
106	8.83	0.57	0.357	0.065	(	0.321)	0.292
107	8.92	0.57	0.357	0.064	(	0.321)	0.293
108	9.00	0.57	0.357	0.064	(	0.321)	0.293
109	9.08	0.63	0.399	0.064	(	0.359)	0.335
110	9.17	0.63	0.399	0.063	(	0.359)	0.336
111	9.25	0.63	0.399	0.063	(	0.359)	0.336
112	9.33	0.67	0.420	0.063	(	0.378)	0.357
113	9.42	0.67	0.420	0.062	(	0.378)	0.358
114	9.50	0.67	0.420	0.062	(	0.378)	0.358
115	9.58	0.70	0.441	0.062	(	0.397)	0.379
116	9.67	0.70	0.441	0.062	(	0.397)	0.379
117	9.75	0.70	0.441	0.061	(	0.397)	0.380
118	9.83	0.73	0.462	0.061	(	0.416)	0.401
119	9.92	0.73	0.462	0.061	(	0.416)	0.401
120	10.00	0.73	0.462	0.060	(	0.416)	0.402
121	10.08	0.50	0.315	0.060	(	0.283)	0.255
122	10.17	0.50	0.315	0.060	(	0.283)	0.255
123	10.25	0.50	0.315	0.060	(	0.283)	0.255
124	10.33	0.50	0.315	0.059	(	0.283)	0.256
125	10.42	0.50	0.315	0.059	(	0.283)	0.256
126	10.50	0.50	0.315	0.059	(	0.283)	0.256
127	10.58	0.67	0.420	0.058	(	0.378)	0.362
128	10.67	0.67	0.420	0.058	(	0.378)	0.362
129	10.75	0.67	0.420	0.058	(	0.378)	0.362
130	10.83	0.67	0.420	0.058	(	0.378)	0.362
131	10.92	0.67	0.420	0.057	(	0.378)	0.363
132	11.00	0.67	0.420	0.057	(	0.378)	0.363
133	11.08	0.63	0.399	0.057	(	0.359)	0.342
134	11.17	0.63	0.399	0.056	(	0.359)	0.343
135	11.25	0.63	0.399	0.056	(	0.359)	0.343
136	11.33	0.63	0.399	0.056	(	0.359)	0.343
137	11.42	0.63	0.399	0.056	(	0.359)	0.343
138	11.50	0.63	0.399	0.055	(	0.359)	0.344
139	11.58	0.57	0.357	0.055	(	0.321)	0.302
140	11.67	0.57	0.357	0.055	(	0.321)	0.302
141	11.75	0.57	0.357	0.054	(	0.321)	0.303
142	11.83	0.60	0.378	0.054	(	0.340)	0.324
143	11.92	0.60	0.378	0.054	(	0.340)	0.324
144	12.00	0.60	0.378	0.054	(	0.340)	0.324
145	12.08	0.83	0.525	0.053	(	0.472)	0.472
146	12.17	0.83	0.525	0.053	(	0.472)	0.472
147	12.25	0.83	0.525	0.053	(	0.472)	0.472
148	12.33	0.87	0.546	0.053	(	0.491)	0.493
149	12.42	0.87	0.546	0.052	(	0.491)	0.494
150	12.50	0.87	0.546	0.052	(	0.491)	0.494
151	12.58	0.93	0.588	0.052	(	0.529)	0.536
152	12.67	0.93	0.588	0.052	(	0.529)	0.536
153	12.75	0.93	0.588	0.051	(	0.529)	0.537
154	12.83	0.97	0.609	0.051	(	0.548)	0.558
155	12.92	0.97	0.609	0.051	(	0.548)	0.558
156	13.00	0.97	0.609	0.051	(	0.548)	0.558
157	13.08	1.13	0.714	0.050	(	0.643)	0.664
158	13.17	1.13	0.714	0.050	(	0.643)	0.664
159	13.25	1.13	0.714	0.050	(	0.643)	0.664
160	13.33	1.13	0.714	0.049	(	0.643)	0.665

161	13.42	1.13	0.714	0.049	(	0.643)	0.665
162	13.50	1.13	0.714	0.049	(	0.643)	0.665
163	13.58	0.77	0.483	0.049	(	0.435)	0.434
164	13.67	0.77	0.483	0.048	(	0.435)	0.435
165	13.75	0.77	0.483	0.048	(	0.435)	0.435
166	13.83	0.77	0.483	0.048	(	0.435)	0.435
167	13.92	0.77	0.483	0.048	(	0.435)	0.435
168	14.00	0.77	0.483	0.048	(	0.435)	0.435
169	14.08	0.90	0.567	0.047	(	0.510)	0.520
170	14.17	0.90	0.567	0.047	(	0.510)	0.520
171	14.25	0.90	0.567	0.047	(	0.510)	0.520
172	14.33	0.87	0.546	0.047	(	0.491)	0.499
173	14.42	0.87	0.546	0.046	(	0.491)	0.500
174	14.50	0.87	0.546	0.046	(	0.491)	0.500
175	14.58	0.87	0.546	0.046	(	0.491)	0.500
176	14.67	0.87	0.546	0.046	(	0.491)	0.500
177	14.75	0.87	0.546	0.045	(	0.491)	0.501
178	14.83	0.83	0.525	0.045	(	0.472)	0.480
179	14.92	0.83	0.525	0.045	(	0.472)	0.480
180	15.00	0.83	0.525	0.045	(	0.472)	0.480
181	15.08	0.80	0.504	0.044	(	0.454)	0.460
182	15.17	0.80	0.504	0.044	(	0.454)	0.460
183	15.25	0.80	0.504	0.044	(	0.454)	0.460
184	15.33	0.77	0.483	0.044	(	0.435)	0.439
185	15.42	0.77	0.483	0.044	(	0.435)	0.439
186	15.50	0.77	0.483	0.043	(	0.435)	0.440
187	15.58	0.63	0.399	0.043	(	0.359)	0.356
188	15.67	0.63	0.399	0.043	(	0.359)	0.356
189	15.75	0.63	0.399	0.043	(	0.359)	0.356
190	15.83	0.63	0.399	0.042	(	0.359)	0.357
191	15.92	0.63	0.399	0.042	(	0.359)	0.357
192	16.00	0.63	0.399	0.042	(	0.359)	0.357
193	16.08	0.13	0.084	0.042	(	0.076)	0.042
194	16.17	0.13	0.084	0.042	(	0.076)	0.042
195	16.25	0.13	0.084	0.041	(	0.076)	0.043
196	16.33	0.13	0.084	0.041	(	0.076)	0.043
197	16.42	0.13	0.084	0.041	(	0.076)	0.043
198	16.50	0.13	0.084	0.041	(	0.076)	0.043
199	16.58	0.10	0.063	0.041	(	0.057)	0.022
200	16.67	0.10	0.063	0.040	(	0.057)	0.023
201	16.75	0.10	0.063	0.040	(	0.057)	0.023
202	16.83	0.10	0.063	0.040	(	0.057)	0.023
203	16.92	0.10	0.063	0.040	(	0.057)	0.023
204	17.00	0.10	0.063	0.040	(	0.057)	0.023
205	17.08	0.17	0.105	0.039	(	0.094)	0.066
206	17.17	0.17	0.105	0.039	(	0.094)	0.066
207	17.25	0.17	0.105	0.039	(	0.094)	0.066
208	17.33	0.17	0.105	0.039	(	0.094)	0.066
209	17.42	0.17	0.105	0.039	(	0.094)	0.066
210	17.50	0.17	0.105	0.038	(	0.094)	0.067
211	17.58	0.17	0.105	0.038	(	0.094)	0.067
212	17.67	0.17	0.105	0.038	(	0.094)	0.067
213	17.75	0.17	0.105	0.038	(	0.094)	0.067
214	17.83	0.13	0.084	0.038	(	0.076)	0.046
215	17.92	0.13	0.084	0.037	(	0.076)	0.047
216	18.00	0.13	0.084	0.037	(	0.076)	0.047
217	18.08	0.13	0.084	0.037	(	0.076)	0.047
218	18.17	0.13	0.084	0.037	(	0.076)	0.047
219	18.25	0.13	0.084	0.037	(	0.076)	0.047
220	18.33	0.13	0.084	0.036	(	0.076)	0.048
221	18.42	0.13	0.084	0.036	(	0.076)	0.048
222	18.50	0.13	0.084	0.036	(	0.076)	0.048
223	18.58	0.10	0.063	0.036	(	0.057)	0.027
224	18.67	0.10	0.063	0.036	(	0.057)	0.027
225	18.75	0.10	0.063	0.036	(	0.057)	0.027
226	18.83	0.07	0.042	0.035	(	0.038)	0.007
227	18.92	0.07	0.042	0.035	(	0.038)	0.007
228	19.00	0.07	0.042	0.035	(	0.038)	0.007
229	19.08	0.10	0.063	0.035	(	0.057)	0.028
230	19.17	0.10	0.063	0.035	(	0.057)	0.028

231	19.25	0.10	0.063	0.035	(	0.057)	0.028
232	19.33	0.13	0.084	0.034	(	0.076)	0.050
233	19.42	0.13	0.084	0.034	(	0.076)	0.050
234	19.50	0.13	0.084	0.034	(	0.076)	0.050
235	19.58	0.10	0.063	0.034	(	0.057)	0.029
236	19.67	0.10	0.063	0.034	(	0.057)	0.029
237	19.75	0.10	0.063	0.034	(	0.057)	0.029
238	19.83	0.07	0.042	0.034	(	0.038)	0.008
239	19.92	0.07	0.042	0.033	(	0.038)	0.009
240	20.00	0.07	0.042	0.033	(	0.038)	0.009
241	20.08	0.10	0.063	0.033	(	0.057)	0.030
242	20.17	0.10	0.063	0.033	(	0.057)	0.030
243	20.25	0.10	0.063	0.033	(	0.057)	0.030
244	20.33	0.10	0.063	0.033	(	0.057)	0.030
245	20.42	0.10	0.063	0.032	(	0.057)	0.031
246	20.50	0.10	0.063	0.032	(	0.057)	0.031
247	20.58	0.10	0.063	0.032	(	0.057)	0.031
248	20.67	0.10	0.063	0.032	(	0.057)	0.031
249	20.75	0.10	0.063	0.032	(	0.057)	0.031
250	20.83	0.07	0.042	0.032	(	0.038)	0.010
251	20.92	0.07	0.042	0.032	(	0.038)	0.010
252	21.00	0.07	0.042	0.032	(	0.038)	0.010
253	21.08	0.10	0.063	0.031	(	0.057)	0.032
254	21.17	0.10	0.063	0.031	(	0.057)	0.032
255	21.25	0.10	0.063	0.031	(	0.057)	0.032
256	21.33	0.07	0.042	0.031	(	0.038)	0.011
257	21.42	0.07	0.042	0.031	(	0.038)	0.011
258	21.50	0.07	0.042	0.031	(	0.038)	0.011
259	21.58	0.10	0.063	0.031	(	0.057)	0.032
260	21.67	0.10	0.063	0.031	(	0.057)	0.032
261	21.75	0.10	0.063	0.031	(	0.057)	0.032
262	21.83	0.07	0.042	0.030	(	0.038)	0.012
263	21.92	0.07	0.042	0.030	(	0.038)	0.012
264	22.00	0.07	0.042	0.030	(	0.038)	0.012
265	22.08	0.10	0.063	0.030	(	0.057)	0.033
266	22.17	0.10	0.063	0.030	(	0.057)	0.033
267	22.25	0.10	0.063	0.030	(	0.057)	0.033
268	22.33	0.07	0.042	0.030	(	0.038)	0.012
269	22.42	0.07	0.042	0.030	(	0.038)	0.012
270	22.50	0.07	0.042	0.030	(	0.038)	0.012
271	22.58	0.07	0.042	0.030	(	0.038)	0.012
272	22.67	0.07	0.042	0.029	(	0.038)	0.013
273	22.75	0.07	0.042	0.029	(	0.038)	0.013
274	22.83	0.07	0.042	0.029	(	0.038)	0.013
275	22.92	0.07	0.042	0.029	(	0.038)	0.013
276	23.00	0.07	0.042	0.029	(	0.038)	0.013
277	23.08	0.07	0.042	0.029	(	0.038)	0.013
278	23.17	0.07	0.042	0.029	(	0.038)	0.013
279	23.25	0.07	0.042	0.029	(	0.038)	0.013
280	23.33	0.07	0.042	0.029	(	0.038)	0.013
281	23.42	0.07	0.042	0.029	(	0.038)	0.013
282	23.50	0.07	0.042	0.029	(	0.038)	0.013
283	23.58	0.07	0.042	0.029	(	0.038)	0.013
284	23.67	0.07	0.042	0.029	(	0.038)	0.013
285	23.75	0.07	0.042	0.029	(	0.038)	0.013
286	23.83	0.07	0.042	0.029	(	0.038)	0.013
287	23.92	0.07	0.042	0.029	(	0.038)	0.013
288	24.00	0.07	0.042	0.029	(	0.038)	0.013

(Loss Rate Not Used)

Sum = 100.0 Sum = 47.5

Flood volume = Effective rainfall 3.96(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 1.1(Ac.Ft)

Total soil loss = 1.29(In)

Total soil loss = 0.360(Ac.Ft)

Total rainfall = 5.25(In)

Flood volume = 48157.6 Cubic Feet

Total soil loss = 15684.6 Cubic Feet

Peak flow rate of this hydrograph = 2.104(CFS)

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24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0001	0.01	Q	|	|	|	|
0+25	0.0002	0.01	Q	|	|	|	|
0+30	0.0003	0.01	Q	|	|	|	|
0+35	0.0004	0.01	Q	|	|	|	|
0+40	0.0005	0.02	Q	|	|	|	|
0+45	0.0006	0.02	Q	|	|	|	|
0+50	0.0007	0.02	Q	|	|	|	|
0+55	0.0009	0.02	Q	|	|	|	|
1+ 0	0.0010	0.02	Q	|	|	|	|
1+ 5	0.0012	0.02	Q	|	|	|	|
1+10	0.0013	0.02	Q	|	|	|	|
1+15	0.0015	0.02	Q	|	|	|	|
1+20	0.0016	0.02	Q	|	|	|	|
1+25	0.0018	0.02	Q	|	|	|	|
1+30	0.0019	0.02	Q	|	|	|	|
1+35	0.0021	0.02	Q	|	|	|	|
1+40	0.0022	0.02	Q	|	|	|	|
1+45	0.0024	0.02	Q	|	|	|	|
1+50	0.0025	0.02	Q	|	|	|	|
1+55	0.0027	0.02	Q	|	|	|	|
2+ 0	0.0028	0.02	Q	|	|	|	|
2+ 5	0.0030	0.03	Q	|	|	|	|
2+10	0.0032	0.03	Q	|	|	|	|
2+15	0.0034	0.03	Q	|	|	|	|
2+20	0.0035	0.03	Q	|	|	|	|
2+25	0.0037	0.03	Q	|	|	|	|
2+30	0.0039	0.03	Q	|	|	|	|
2+35	0.0041	0.03	Q	|	|	|	|
2+40	0.0043	0.03	Q	|	|	|	|
2+45	0.0046	0.04	Q	|	|	|	|
2+50	0.0048	0.04	Q	|	|	|	|
2+55	0.0052	0.04	Q	|	|	|	|
3+ 0	0.0055	0.05	Q	|	|	|	|
3+ 5	0.0058	0.05	Q	|	|	|	|
3+10	0.0062	0.05	Q	|	|	|	|
3+15	0.0065	0.05	Q	|	|	|	|
3+20	0.0069	0.05	Q	|	|	|	|
3+25	0.0073	0.06	Q	|	|	|	|
3+30	0.0077	0.06	Q	|	|	|	|
3+35	0.0081	0.06	Q	|	|	|	|
3+40	0.0085	0.06	Q	|	|	|	|
3+45	0.0089	0.06	Q	|	|	|	|
3+50	0.0093	0.06	Q	|	|	|	|
3+55	0.0098	0.07	Q	|	|	|	|
4+ 0	0.0105	0.09	Q	|	|	|	|
4+ 5	0.0112	0.10	Q	|	|	|	|
4+10	0.0120	0.11	Q	|	|	|	|
4+15	0.0128	0.12	Q	|	|	|	|
4+20	0.0137	0.13	Q	|	|	|	|
4+25	0.0146	0.14	Q	|	|	|	|
4+30	0.0157	0.16	Q	|	|	|	|
4+35	0.0169	0.17	Q	|	|	|	|
4+40	0.0182	0.19	Q	|	|	|	|
4+45	0.0195	0.19	Q	|	|	|	|
4+50	0.0209	0.20	Q	|	|	|	|
4+55	0.0224	0.21	Q	|	|	|	|
5+ 0	0.0240	0.23	Q	|	|	|	|
5+ 5	0.0256	0.24	Q	|	|	|	|

5+10	0.0273	0.24	Q	|	|	|	|
5+15	0.0288	0.22	QV	|	|	|	|
5+20	0.0302	0.20	QV	|	|	|	|
5+25	0.0315	0.20	QV	|	|	|	|
5+30	0.0329	0.20	QV	|	|	|	|
5+35	0.0344	0.22	QV	|	|	|	|
5+40	0.0360	0.23	QV	|	|	|	|
5+45	0.0378	0.25	QV	|	|	|	|
5+50	0.0396	0.27	|Q	|	|	|	|
5+55	0.0415	0.28	|Q	|	|	|	|
6+ 0	0.0435	0.28	|Q	|	|	|	|
6+ 5	0.0455	0.29	|Q	|	|	|	|
6+10	0.0476	0.30	|Q	|	|	|	|
6+15	0.0498	0.32	|Q	|	|	|	|
6+20	0.0521	0.34	|Q	|	|	|	|
6+25	0.0545	0.35	|Q	|	|	|	|
6+30	0.0570	0.36	|QV	|	|	|	|
6+35	0.0595	0.37	|QV	|	|	|	|
6+40	0.0621	0.38	|QV	|	|	|	|
6+45	0.0649	0.40	|QV	|	|	|	|
6+50	0.0677	0.41	|QV	|	|	|	|
6+55	0.0707	0.43	|QV	|	|	|	|
7+ 0	0.0737	0.43	|QV	|	|	|	|
7+ 5	0.0767	0.44	|QV	|	|	|	|
7+10	0.0797	0.44	|QV	|	|	|	|
7+15	0.0828	0.45	|QV	|	|	|	|
7+20	0.0860	0.45	|Q V	|	|	|	|
7+25	0.0892	0.47	|Q V	|	|	|	|
7+30	0.0925	0.48	|Q V	|	|	|	|
7+35	0.0960	0.50	| QV	|	|	|	|
7+40	0.0996	0.52	| QV	|	|	|	|
7+45	0.1033	0.54	| QV	|	|	|	|
7+50	0.1072	0.56	| QV	|	|	|	|
7+55	0.1112	0.59	| Q V	|	|	|	|
8+ 0	0.1154	0.61	| Q V	|	|	|	|
8+ 5	0.1198	0.63	| Q V	|	|	|	|
8+10	0.1244	0.66	| Q V	|	|	|	|
8+15	0.1292	0.70	| Q V	|	|	|	|
8+20	0.1343	0.74	| Q V	|	|	|	|
8+25	0.1395	0.76	| Q V	|	|	|	|
8+30	0.1449	0.78	| Q V	|	|	|	|
8+35	0.1503	0.79	| Q V	|	|	|	|
8+40	0.1559	0.81	| Q V	|	|	|	|
8+45	0.1616	0.83	| Q V	|	|	|	|
8+50	0.1674	0.85	| Q V	|	|	|	|
8+55	0.1734	0.87	| Q V	|	|	|	|
9+ 0	0.1796	0.90	| Q V	|	|	|	|
9+ 5	0.1860	0.92	| Q V	|	|	|	|
9+10	0.1926	0.96	| Q V	|	|	|	|
9+15	0.1994	0.99	| Q V	|	|	|	|
9+20	0.2065	1.03	| Q V	|	|	|	|
9+25	0.2139	1.07	| Q V	|	|	|	|
9+30	0.2214	1.09	| Q V	|	|	|	|
9+35	0.2291	1.12	| Q V	|	|	|	|
9+40	0.2371	1.15	| Q V	|	|	|	|
9+45	0.2452	1.18	| Q V	|	|	|	|
9+50	0.2534	1.20	| Q V|	|	|	|	|
9+55	0.2619	1.23	| Q V|	|	|	|	|
10+ 0	0.2705	1.25	| Q V|	|	|	|	|
10+ 5	0.2792	1.26	| Q V	|	|	|	|
10+10	0.2877	1.22	| Q V	|	|	|	|
10+15	0.2955	1.14	| Q V	|	|	|	|
10+20	0.3027	1.05	| Q V	|	|	|	|
10+25	0.3096	0.99	| Q |V	|	|	|	|
10+30	0.3162	0.97	| Q |V	|	|	|	|
10+35	0.3228	0.96	| Q |V	|	|	|	|
10+40	0.3296	0.99	| Q |V	|	|	|	|
10+45	0.3368	1.04	| Q | V	|	|	|	|
10+50	0.3444	1.11	| Q | V	|	|	|	|
10+55	0.3523	1.15	| Q | V	|	|	|	|

11+ 0	0.3603	1.16	Q	V			
11+ 5	0.3684	1.17	Q	V			
11+10	0.3765	1.18	Q	V			
11+15	0.3846	1.17	Q	V			
11+20	0.3926	1.16	Q	V			
11+25	0.4006	1.16	Q	V			
11+30	0.4085	1.16	Q	V			
11+35	0.4165	1.15	Q	V			
11+40	0.4243	1.14	Q	V			
11+45	0.4319	1.11	Q	V			
11+50	0.4394	1.08	Q	V			
11+55	0.4468	1.08	Q	V			
12+ 0	0.4543	1.08	Q	V			
12+ 5	0.4619	1.10	Q	V			
12+10	0.4699	1.16	Q	V			
12+15	0.4786	1.26	Q	V			
12+20	0.4880	1.37	Q	V			
12+25	0.4979	1.44	Q	V			
12+30	0.5081	1.49	Q	V			
12+35	0.5186	1.53	Q	V			
12+40	0.5295	1.57	Q	V			
12+45	0.5406	1.62	Q	V			
12+50	0.5521	1.67	Q	V			
12+55	0.5639	1.71	Q	V			
13+ 0	0.5759	1.74	Q	V			
13+ 5	0.5881	1.78	Q	V			
13+10	0.6008	1.84	Q	V			
13+15	0.6141	1.93	Q	V			
13+20	0.6280	2.01	Q	V			
13+25	0.6422	2.07	Q	V			
13+30	0.6567	2.10	Q	V			
13+35	0.6712	2.10	Q	V			
13+40	0.6852	2.04	Q	V			
13+45	0.6983	1.90	Q	V			
13+50	0.7104	1.76	Q	V			
13+55	0.7219	1.67	Q	V			
14+ 0	0.7332	1.63	Q	V			
14+ 5	0.7442	1.61	Q	V			
14+10	0.7554	1.62	Q	V			
14+15	0.7668	1.66	Q	V			
14+20	0.7785	1.70	Q	V			
14+25	0.7904	1.72	Q	V			
14+30	0.8022	1.71	Q	V			
14+35	0.8139	1.71	Q	V			
14+40	0.8257	1.70	Q	V			
14+45	0.8374	1.70	Q	V			
14+50	0.8491	1.70	Q	V			
14+55	0.8607	1.69	Q	V			
15+ 0	0.8722	1.67	Q	V			
15+ 5	0.8836	1.66	Q	V			
15+10	0.8949	1.64	Q	V			
15+15	0.9061	1.62	Q	V			
15+20	0.9171	1.60	Q	V			
15+25	0.9280	1.58	Q	V			
15+30	0.9387	1.56	Q	V			
15+35	0.9492	1.53	Q	V			
15+40	0.9595	1.48	Q	V			
15+45	0.9693	1.42	Q	V			
15+50	0.9786	1.36	Q	V			
15+55	0.9877	1.32	Q	V			
16+ 0	0.9967	1.30	Q	V			
16+ 5	1.0053	1.25	Q	V			
16+10	1.0130	1.12	Q	V			
16+15	1.0192	0.90	Q	V			
16+20	1.0239	0.68	Q	V			
16+25	1.0277	0.54	Q	V			
16+30	1.0308	0.46	Q	V			
16+35	1.0336	0.40	Q	V			
16+40	1.0360	0.35	Q	V			
16+45	1.0382	0.31	Q	V			

16+50	1.0400	0.26	|Q	|	|	|	V |
16+55	1.0415	0.23	Q	|	|	|	V |
17+ 0	1.0430	0.21	Q	|	|	|	V |
17+ 5	1.0443	0.19	Q	|	|	|	V |
17+10	1.0456	0.19	Q	|	|	|	V |
17+15	1.0470	0.20	Q	|	|	|	V |
17+20	1.0485	0.22	Q	|	|	|	V |
17+25	1.0501	0.23	Q	|	|	|	V |
17+30	1.0516	0.23	Q	|	|	|	V |
17+35	1.0532	0.23	Q	|	|	|	V |
17+40	1.0547	0.23	Q	|	|	|	V |
17+45	1.0563	0.22	Q	|	|	|	V |
17+50	1.0578	0.22	Q	|	|	|	V |
17+55	1.0593	0.21	Q	|	|	|	V |
18+ 0	1.0607	0.20	Q	|	|	|	V |
18+ 5	1.0619	0.18	Q	|	|	|	V |
18+10	1.0631	0.17	Q	|	|	|	V |
18+15	1.0643	0.17	Q	|	|	|	V |
18+20	1.0654	0.17	Q	|	|	|	V |
18+25	1.0666	0.17	Q	|	|	|	V |
18+30	1.0677	0.17	Q	|	|	|	V |
18+35	1.0688	0.16	Q	|	|	|	V |
18+40	1.0699	0.15	Q	|	|	|	V |
18+45	1.0709	0.14	Q	|	|	|	V |
18+50	1.0717	0.12	Q	|	|	|	V |
18+55	1.0725	0.11	Q	|	|	|	V |
19+ 0	1.0731	0.09	Q	|	|	|	V |
19+ 5	1.0736	0.07	Q	|	|	|	V |
19+10	1.0741	0.07	Q	|	|	|	V |
19+15	1.0746	0.08	Q	|	|	|	V |
19+20	1.0752	0.09	Q	|	|	|	V |
19+25	1.0760	0.10	Q	|	|	|	V |
19+30	1.0768	0.12	Q	|	|	|	V |
19+35	1.0777	0.13	Q	|	|	|	V |
19+40	1.0786	0.13	Q	|	|	|	V|
19+45	1.0795	0.12	Q	|	|	|	V|
19+50	1.0802	0.11	Q	|	|	|	V|
19+55	1.0809	0.10	Q	|	|	|	V|
20+ 0	1.0815	0.08	Q	|	|	|	V|
20+ 5	1.0819	0.07	Q	|	|	|	V|
20+10	1.0824	0.07	Q	|	|	|	V|
20+15	1.0829	0.08	Q	|	|	|	V|
20+20	1.0835	0.09	Q	|	|	|	V|
20+25	1.0841	0.09	Q	|	|	|	V|
20+30	1.0848	0.10	Q	|	|	|	V|
20+35	1.0855	0.10	Q	|	|	|	V|
20+40	1.0861	0.10	Q	|	|	|	V|
20+45	1.0868	0.10	Q	|	|	|	V|
20+50	1.0875	0.10	Q	|	|	|	V|
20+55	1.0881	0.09	Q	|	|	|	V|
21+ 0	1.0887	0.08	Q	|	|	|	V|
21+ 5	1.0891	0.07	Q	|	|	|	V|
21+10	1.0896	0.07	Q	|	|	|	V|
21+15	1.0901	0.08	Q	|	|	|	V|
21+20	1.0907	0.09	Q	|	|	|	V|
21+25	1.0913	0.08	Q	|	|	|	V|
21+30	1.0918	0.07	Q	|	|	|	V|
21+35	1.0922	0.06	Q	|	|	|	V|
21+40	1.0927	0.06	Q	|	|	|	V|
21+45	1.0932	0.07	Q	|	|	|	V|
21+50	1.0938	0.08	Q	|	|	|	V|
21+55	1.0943	0.08	Q	|	|	|	V|
22+ 0	1.0949	0.07	Q	|	|	|	V|
22+ 5	1.0953	0.06	Q	|	|	|	V|
22+10	1.0958	0.07	Q	|	|	|	V|
22+15	1.0963	0.08	Q	|	|	|	V|
22+20	1.0969	0.09	Q	|	|	|	V|
22+25	1.0975	0.09	Q	|	|	|	V|
22+30	1.0980	0.08	Q	|	|	|	V|
22+35	1.0984	0.06	Q	|	|	|	V|

22+40	1.0988	0.06	Q	|	|	|	V|
22+45	1.0992	0.05	Q	|	|	|	V|
22+50	1.0995	0.05	Q	|	|	|	V|
22+55	1.0999	0.05	Q	|	|	|	V|
23+ 0	1.1002	0.05	Q	|	|	|	V|
23+ 5	1.1005	0.05	Q	|	|	|	V|
23+10	1.1009	0.05	Q	|	|	|	V|
23+15	1.1012	0.05	Q	|	|	|	V|
23+20	1.1015	0.05	Q	|	|	|	V|
23+25	1.1018	0.05	Q	|	|	|	V|
23+30	1.1021	0.05	Q	|	|	|	V|
23+35	1.1025	0.05	Q	|	|	|	V|
23+40	1.1028	0.05	Q	|	|	|	V|
23+45	1.1031	0.05	Q	|	|	|	V|
23+50	1.1034	0.05	Q	|	|	|	V|
23+55	1.1037	0.05	Q	|	|	|	V|
24+ 0	1.1040	0.05	Q	|	|	|	V|
24+ 5	1.1043	0.04	Q	|	|	|	V|
24+10	1.1046	0.04	Q	|	|	|	V|
24+15	1.1048	0.03	Q	|	|	|	V|
24+20	1.1050	0.02	Q	|	|	|	V|
24+25	1.1051	0.02	Q	|	|	|	V|
24+30	1.1051	0.01	Q	|	|	|	V|
24+35	1.1052	0.01	Q	|	|	|	V|
24+40	1.1053	0.01	Q	|	|	|	V|
24+45	1.1053	0.01	Q	|	|	|	V|
24+50	1.1054	0.01	Q	|	|	|	V|
24+55	1.1054	0.00	Q	|	|	|	V|
25+ 0	1.1054	0.00	Q	|	|	|	V|
25+ 5	1.1054	0.00	Q	|	|	|	V|
25+10	1.1055	0.00	Q	|	|	|	V|
25+15	1.1055	0.00	Q	|	|	|	V|
25+20	1.1055	0.00	Q	|	|	|	V|
25+25	1.1055	0.00	Q	|	|	|	V|
25+30	1.1055	0.00	Q	|	|	|	V|
25+35	1.1055	0.00	Q	|	|	|	V|
25+40	1.1055	0.00	Q	|	|	|	V|
25+45	1.1055	0.00	Q	|	|	|	V|
25+50	1.1055	0.00	Q	|	|	|	V|
25+55	1.1055	0.00	Q	|	|	|	V|
26+ 0	1.1055	0.00	Q	|	|	|	V|
26+ 5	1.1055	0.00	Q	|	|	|	V

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

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Study date 02/19/20 File: 8946E2A112.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
2 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	0.55	2.04

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	1.30	4.81

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.218	(0.286)		0.196	0.022
2	0.17	4.20	0.277	(0.286)		0.249	0.028
3	0.25	4.40	0.290	(0.286)		0.261	0.029
4	0.33	4.80	0.317	(0.286)		0.285	0.032
5	0.42	5.20	0.343	0.286	(0.309)		0.057
6	0.50	6.20	0.409	0.286	(0.368)		0.123
7	0.58	6.80	0.449	0.286	(0.404)		0.162
8	0.67	8.80	0.581	0.286	(0.523)		0.294
9	0.75	13.90	0.917	0.286	(0.826)		0.631
10	0.83	31.40	2.072	0.286	(1.865)		1.786
11	0.92	7.20	0.475	0.286	(0.428)		0.189

```
 12   1.00     3.80      0.251       (  0.286)       0.226        0.025
             (Loss Rate Not Used)
    Sum =     100.0                                    Sum =     3.4
      Flood volume = Effective rainfall      0.28(In)
       times area       3.7(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      0.27(In)
      Total soil loss =     0.083(Ac.Ft)
      Total rainfall =      0.55(In)
      Flood volume =        3779.4 Cubic Feet
      Total soil loss =        3607.4 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      1.769(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        2.5       5.0       7.5      10.0
 ------------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0001      0.01  Q         |         |         |         |
   0+15       0.0002      0.02  Q         |         |         |         |
   0+20       0.0005      0.04  Q         |         |         |         |
   0+25       0.0009      0.06  Q         |         |         |         |
   0+30       0.0014      0.08  Q         |         |         |         |
   0+35       0.0023      0.13  QV        |         |         |         |
   0+40       0.0037      0.20  QV        |         |         |         |
   0+45       0.0061      0.35  |QV       |         |         |         |
   0+50       0.0107      0.67  | Q V     |         |         |         |
   0+55       0.0187      1.16  |   Q   V |         |         |         |
   1+ 0       0.0296      1.59  |     Q   |  V      |         |         |
   1+ 5       0.0418      1.77  |      Q  |        V|         |         |
   1+10       0.0523      1.53  |     Q   |         |   V     |         |
   1+15       0.0594      1.03  |   Q     |         |      V  |         |
   1+20       0.0641      0.69  | Q       |         |        V|         |
   1+25       0.0674      0.48  |Q        |         |         |V        |
   1+30       0.0701      0.38  |Q        |         |         | V       |
   1+35       0.0723      0.32  |Q        |         |         |  V      |
   1+40       0.0741      0.27  |Q        |         |         |   V     |
   1+45       0.0757      0.23  Q         |         |         |   V     |
   1+50       0.0771      0.20  Q         |         |         |    V    |
   1+55       0.0782      0.17  Q         |         |         |     V   |
   2+ 0       0.0793      0.15  Q         |         |         |     V   |
   2+ 5       0.0802      0.13  Q         |         |         |     V   |
   2+10       0.0810      0.12  Q         |         |         |      V  |
   2+15       0.0817      0.10  Q         |         |         |      V  |
   2+20       0.0823      0.09  Q         |         |         |      V  |
   2+25       0.0829      0.09  Q         |         |         |       V |
   2+30       0.0834      0.08  Q         |         |         |       V |
   2+35       0.0839      0.07  Q         |         |         |       V |
   2+40       0.0843      0.06  Q         |         |         |       V |
   2+45       0.0847      0.05  Q         |         |         |        V|
   2+50       0.0850      0.05  Q         |         |         |        V|
   2+55       0.0853      0.04  Q         |         |         |        V|
   3+ 0       0.0856      0.04  Q         |         |         |        V|
   3+ 5       0.0858      0.03  Q         |         |         |        V|
   3+10       0.0860      0.03  Q         |         |         |        V|
   3+15       0.0862      0.03  Q         |         |         |        V|
   3+20       0.0864      0.03  Q         |         |         |        V|
   3+25       0.0866      0.03  Q         |         |         |        V|
   3+30       0.0867      0.02  Q         |         |         |        V|
   3+35       0.0868      0.00  Q         |         |         |        V|
   3+40       0.0868      0.00  Q         |         |         |         V
------------------------------------------------------------------------
```

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

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Study date 02/19/20 File: 8946E2A132.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
2 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	0.90	3.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	2.25	8.33

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 0.900(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.900(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

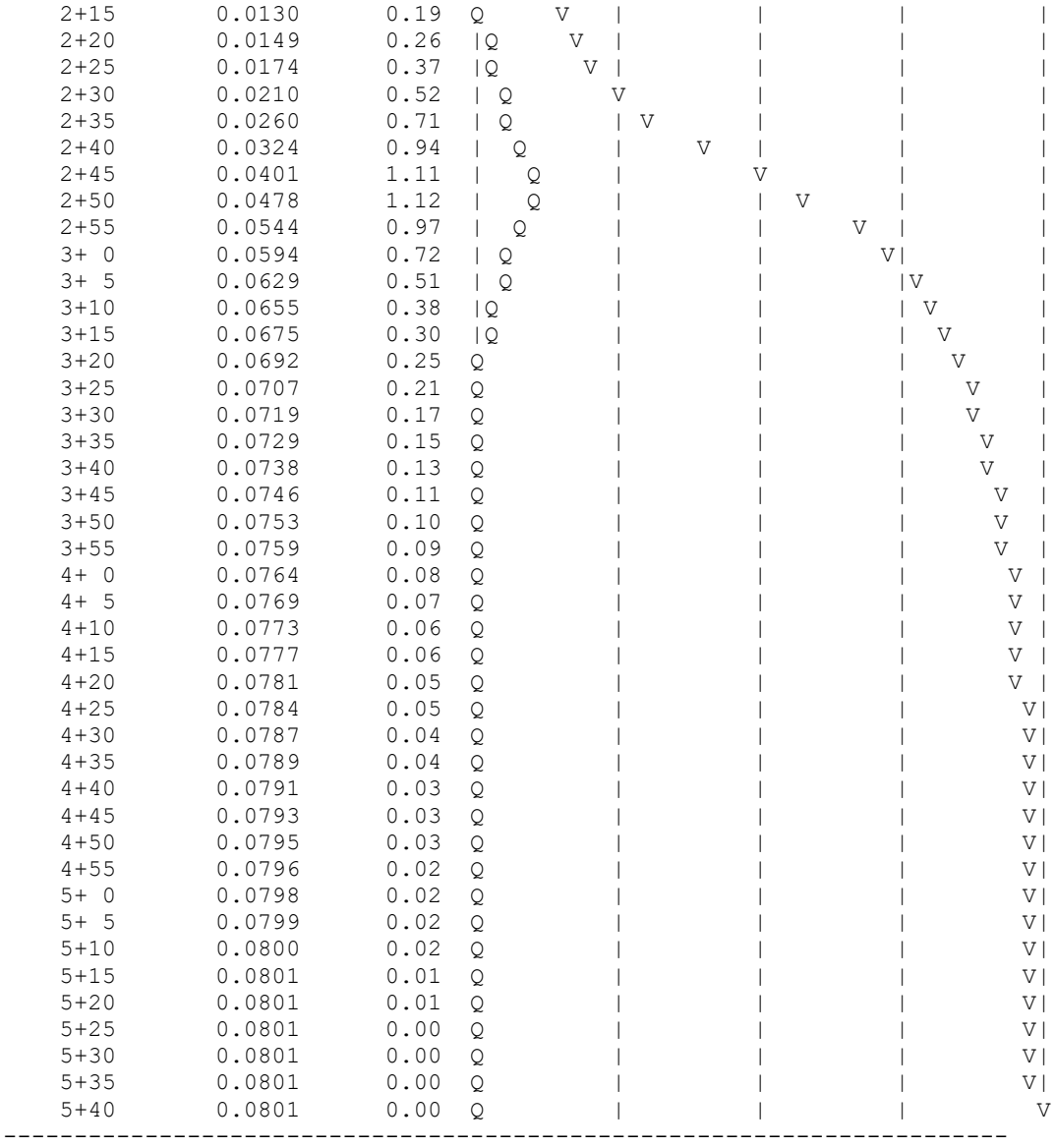
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.140	(0.286)	0.126	0.014
2	0.17	1.30	0.140	(0.286)	0.126	0.014
3	0.25	1.10	0.119	(0.286)	0.107	0.012
4	0.33	1.50	0.162	(0.286)	0.146	0.016
5	0.42	1.50	0.162	(0.286)	0.146	0.016
6	0.50	1.80	0.194	(0.286)	0.175	0.019
7	0.58	1.50	0.162	(0.286)	0.146	0.016
8	0.67	1.80	0.194	(0.286)	0.175	0.019
9	0.75	1.80	0.194	(0.286)	0.175	0.019
10	0.83	1.50	0.162	(0.286)	0.146	0.016
11	0.92	1.60	0.173	(0.286)	0.156	0.017
12	1.00	1.80	0.194	(0.286)	0.175	0.019
13	1.08	2.20	0.238	(0.286)	0.214	0.024

```
14   1.17     2.20      0.238       (  0.286)       0.214        0.024
15   1.25     2.20      0.238       (  0.286)       0.214        0.024
16   1.33     2.00      0.216       (  0.286)       0.194        0.022
17   1.42     2.60      0.281       (  0.286)       0.253        0.028
18   1.50     2.70      0.292       (  0.286)       0.262        0.029
19   1.58     2.40      0.259       (  0.286)       0.233        0.026
20   1.67     2.70      0.292       (  0.286)       0.262        0.029
21   1.75     3.30      0.356          0.286    (  0.321)        0.070
22   1.83     3.10      0.335          0.286    (  0.301)        0.048
23   1.92     2.90      0.313       (  0.286)       0.282        0.031
24   2.00     3.00      0.324          0.286    (  0.292)        0.038
25   2.08     3.10      0.335          0.286    (  0.301)        0.048
26   2.17     4.20      0.454          0.286    (  0.408)        0.167
27   2.25     5.00      0.540          0.286    (  0.486)        0.254
28   2.33     3.50      0.378          0.286    (  0.340)        0.092
29   2.42     6.80      0.734          0.286    (  0.661)        0.448
30   2.50     7.30      0.788          0.286    (  0.710)        0.502
31   2.58     8.20      0.886          0.286    (  0.797)        0.599
32   2.67     5.90      0.637          0.286    (  0.573)        0.351
33   2.75     2.00      0.216       (  0.286)       0.194        0.022
34   2.83     1.80      0.194       (  0.286)       0.175        0.019
35   2.92     1.80      0.194       (  0.286)       0.175        0.019
36   3.00     0.60      0.065       (  0.286)       0.058        0.006
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =     3.1
     Flood volume = Effective rainfall      0.26(In)
      times area       3.7(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
     Total soil loss =      0.64(In)
     Total soil loss =     0.197(Ac.Ft)
     Total rainfall =      0.90(In)
     Flood volume =        3491.1 Cubic Feet
     Total soil loss =        8596.7 Cubic Feet
     ------------------------------------------------------------------------
      Peak flow rate of this hydrograph =      1.120(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        2.5       5.0       7.5      10.0
----------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0001      0.01  Q         |         |         |         |
  0+20       0.0003      0.02  Q         |         |         |         |
  0+25       0.0005      0.03  Q         |         |         |         |
  0+30       0.0007      0.03  Q         |         |         |         |
  0+35       0.0010      0.04  Q         |         |         |         |
  0+40       0.0013      0.04  Q         |         |         |         |
  0+45       0.0016      0.05  Q         |         |         |         |
  0+50       0.0020      0.05  Q         |         |         |         |
  0+55       0.0024      0.05  QV        |         |         |         |
  1+ 0       0.0027      0.06  QV        |         |         |         |
  1+ 5       0.0031      0.06  QV        |         |         |         |
  1+10       0.0036      0.06  QV        |         |         |         |
  1+15       0.0040      0.06  Q V       |         |         |         |
  1+20       0.0045      0.07  Q V       |         |         |         |
  1+25       0.0050      0.07  Q V       |         |         |         |
  1+30       0.0055      0.08  Q V       |         |         |         |
  1+35       0.0061      0.08  Q  V      |         |         |         |
  1+40       0.0067      0.08  Q  V      |         |         |         |
  1+45       0.0073      0.09  Q  V      |         |         |         |
  1+50       0.0080      0.10  Q  V      |         |         |         |
  1+55       0.0088      0.12  Q   V     |         |         |         |
  2+ 0       0.0098      0.13  Q   V     |         |         |         |
  2+ 5       0.0107      0.14  Q    V    |         |         |         |
  2+10       0.0117      0.15  Q    V    |         |         |         |
```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2+20 0.0149 0.26
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2+30 0.0210 0.52
2+35 0.0260 0.71
2+40 0.0324 0.94
2+45 0.0401 1.11
2+50 0.0478 1.12
2+55 0.0544 0.97
3+ 0 0.0594 0.72
3+ 5 0.0629 0.51
3+10 0.0655 0.38
3+15 0.0675 0.30
3+20 0.0692 0.25
3+25 0.0707 0.21
3+30 0.0719 0.17
3+35 0.0729 0.15
3+40 0.0738 0.13
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3+50 0.0753 0.10
3+55 0.0759 0.09
4+ 0 0.0764 0.08
4+ 5 0.0769 0.07
4+10 0.0773 0.06
4+15 0.0777 0.06
4+20 0.0781 0.05
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4+55 0.0796 0.02
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5+ 5 0.0799 0.02
5+10 0.0800 0.02
5+15 0.0801 0.01
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5+25 0.0801 0.00
5+30 0.0801 0.00
5+35 0.0801 0.00
5+40 0.0801 0.00

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 02/19/20 File: 8946E2A162.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
2 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	1.30	4.81

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	3.00	11.10

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.078	(0.286)	0.070	0.008
2	0.17	0.60	0.094	(0.286)	0.084	0.009
3	0.25	0.60	0.094	(0.286)	0.084	0.009
4	0.33	0.60	0.094	(0.286)	0.084	0.009
5	0.42	0.60	0.094	(0.286)	0.084	0.009
6	0.50	0.70	0.109	(0.286)	0.098	0.011
7	0.58	0.70	0.109	(0.286)	0.098	0.011
8	0.67	0.70	0.109	(0.286)	0.098	0.011
9	0.75	0.70	0.109	(0.286)	0.098	0.011
10	0.83	0.70	0.109	(0.286)	0.098	0.011
11	0.92	0.70	0.109	(0.286)	0.098	0.011
12	1.00	0.80	0.125	(0.286)	0.112	0.012
13	1.08	0.80	0.125	(0.286)	0.112	0.012

14	1.17	0.80	0.125	(	0.286)		0.112			0.012	
15	1.25	0.80	0.125	(	0.286)		0.112			0.012	
16	1.33	0.80	0.125	(	0.286)		0.112			0.012	
17	1.42	0.80	0.125	(	0.286)		0.112			0.012	
18	1.50	0.80	0.125	(	0.286)		0.112			0.012	
19	1.58	0.80	0.125	(	0.286)		0.112			0.012	
20	1.67	0.80	0.125	(	0.286)		0.112			0.012	
21	1.75	0.80	0.125	(	0.286)		0.112			0.012	
22	1.83	0.80	0.125	(	0.286)		0.112			0.012	
23	1.92	0.80	0.125	(	0.286)		0.112			0.012	
24	2.00	0.90	0.140	(	0.286)		0.126			0.014	
25	2.08	0.80	0.125	(	0.286)		0.112			0.012	
26	2.17	0.90	0.140	(	0.286)		0.126			0.014	
27	2.25	0.90	0.140	(	0.286)		0.126			0.014	
28	2.33	0.90	0.140	(	0.286)		0.126			0.014	
29	2.42	0.90	0.140	(	0.286)		0.126			0.014	
30	2.50	0.90	0.140	(	0.286)		0.126			0.014	
31	2.58	0.90	0.140	(	0.286)		0.126			0.014	
32	2.67	0.90	0.140	(	0.286)		0.126			0.014	
33	2.75	1.00	0.156	(	0.286)		0.140			0.016	
34	2.83	1.00	0.156	(	0.286)		0.140			0.016	
35	2.92	1.00	0.156	(	0.286)		0.140			0.016	
36	3.00	1.00	0.156	(	0.286)		0.140			0.016	
37	3.08	1.00	0.156	(	0.286)		0.140			0.016	
38	3.17	1.10	0.172	(	0.286)		0.154			0.017	
39	3.25	1.10	0.172	(	0.286)		0.154			0.017	
40	3.33	1.10	0.172	(	0.286)		0.154			0.017	
41	3.42	1.20	0.187	(	0.286)		0.168			0.019	
42	3.50	1.30	0.203	(	0.286)		0.183			0.020	
43	3.58	1.40	0.218	(	0.286)		0.197			0.022	
44	3.67	1.40	0.218	(	0.286)		0.197			0.022	
45	3.75	1.50	0.234	(	0.286)		0.211			0.023	
46	3.83	1.50	0.234	(	0.286)		0.211			0.023	
47	3.92	1.60	0.250	(	0.286)		0.225			0.025	
48	4.00	1.60	0.250	(	0.286)		0.225			0.025	
49	4.08	1.70	0.265	(	0.286)		0.239			0.027	
50	4.17	1.80	0.281	(	0.286)		0.253			0.028	
51	4.25	1.90	0.296	(	0.286)		0.267			0.030	
52	4.33	2.00	0.312	(	0.286)		0.281			0.031	
53	4.42	2.10	0.328		0.286	(	0.295)			0.041	
54	4.50	2.10	0.328		0.286	(	0.295)			0.041	
55	4.58	2.20	0.343		0.286	(	0.309)			0.057	
56	4.67	2.30	0.359		0.286	(	0.323)			0.072	
57	4.75	2.40	0.374		0.286	(	0.337)			0.088	
58	4.83	2.40	0.374		0.286	(	0.337)			0.088	
59	4.92	2.50	0.390		0.286	(	0.351)			0.104	
60	5.00	2.60	0.406		0.286	(	0.365)			0.119	
61	5.08	3.10	0.484		0.286	(	0.435)			0.197	
62	5.17	3.60	0.562		0.286	(	0.505)			0.275	
63	5.25	3.90	0.608		0.286	(	0.548)			0.322	
64	5.33	4.20	0.655		0.286	(	0.590)			0.369	
65	5.42	4.70	0.733		0.286	(	0.660)			0.447	
66	5.50	5.60	0.874		0.286	(	0.786)			0.587	
67	5.58	1.90	0.296	(	0.286)		0.267			0.030	
68	5.67	0.90	0.140	(	0.286)		0.126			0.014	
69	5.75	0.60	0.094	(	0.286)		0.084			0.009	
70	5.83	0.50	0.078	(	0.286)		0.070			0.008	
71	5.92	0.30	0.047	(	0.286)		0.042			0.005	
72	6.00	0.20	0.031	(	0.286)		0.028			0.003	

(Loss Rate Not Used)

Sum = 100.0 Sum = 3.7

Flood volume = Effective rainfall 0.31(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)

Total soil loss = 0.99(In)
Total soil loss = 0.306(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 4124.1 Cubic Feet
Total soil loss = 13336.0 Cubic Feet

Peak flow rate of this hydrograph = 1.062(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	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.01	Q				
0+25	0.0003	0.02	Q				
0+30	0.0004	0.02	Q				
0+35	0.0006	0.03	Q				
0+40	0.0008	0.03	Q				
0+45	0.0010	0.03	Q				
0+50	0.0012	0.03	Q				
0+55	0.0014	0.03	Q				
1+ 0	0.0017	0.03	Q				
1+ 5	0.0019	0.04	Q				
1+10	0.0022	0.04	Q				
1+15	0.0024	0.04	QV				
1+20	0.0027	0.04	QV				
1+25	0.0030	0.04	QV				
1+30	0.0033	0.04	QV				
1+35	0.0036	0.04	QV				
1+40	0.0039	0.04	QV				
1+45	0.0042	0.04	QV				
1+50	0.0045	0.04	QV				
1+55	0.0048	0.04	Q V				
2+ 0	0.0051	0.04	Q V				
2+ 5	0.0054	0.05	Q V				
2+10	0.0057	0.05	Q V				
2+15	0.0060	0.05	Q V				
2+20	0.0064	0.05	Q V				
2+25	0.0067	0.05	Q V				
2+30	0.0070	0.05	Q V				
2+35	0.0074	0.05	Q V				
2+40	0.0077	0.05	Q V				
2+45	0.0081	0.05	Q V				
2+50	0.0084	0.05	Q V				
2+55	0.0088	0.05	Q V				
3+ 0	0.0092	0.05	Q V				
3+ 5	0.0096	0.05	Q V				
3+10	0.0099	0.06	Q V				
3+15	0.0103	0.06	Q V				
3+20	0.0107	0.06	Q V				
3+25	0.0111	0.06	Q V				
3+30	0.0115	0.06	Q V				
3+35	0.0120	0.06	Q V				
3+40	0.0124	0.07	Q V				
3+45	0.0129	0.07	Q V				
3+50	0.0134	0.07	Q V				
3+55	0.0139	0.07	Q V				
4+ 0	0.0144	0.08	Q V				
4+ 5	0.0150	0.08	Q V				
4+10	0.0156	0.08	Q V				
4+15	0.0162	0.09	Q V				
4+20	0.0168	0.09	Q V				
4+25	0.0174	0.10	Q V				
4+30	0.0181	0.10	Q V				
4+35	0.0189	0.11	Q V				
4+40	0.0198	0.13	Q V				
4+45	0.0208	0.15	Q V				
4+50	0.0220	0.17	Q V				
4+55	0.0234	0.20	Q V				
5+ 0	0.0250	0.24	Q V				

5+ 5	0.0269	0.28	Q	V			
5+10	0.0292	0.33	Q	V			
5+15	0.0322	0.43	Q	V			
5+20	0.0359	0.55	Q	V			
5+25	0.0408	0.70	Q	V			
5+30	0.0468	0.87	Q	V			
5+35	0.0538	1.02	Q	V			
5+40	0.0611	1.06	Q	V			
5+45	0.0679	0.98	Q	V			
5+50	0.0732	0.77	Q	V			
5+55	0.0769	0.54	Q	V			
6+ 0	0.0796	0.39	Q	V			
6+ 5	0.0817	0.31	Q	V			
6+10	0.0835	0.25	Q	V			
6+15	0.0849	0.21	Q	V			
6+20	0.0862	0.18	Q	V			
6+25	0.0873	0.16	Q	V			
6+30	0.0882	0.13	Q	V			
6+35	0.0890	0.12	Q	V			
6+40	0.0897	0.10	Q	V			
6+45	0.0903	0.09	Q	V			
6+50	0.0909	0.08	Q	V			
6+55	0.0914	0.07	Q	V			
7+ 0	0.0918	0.06	Q	V			
7+ 5	0.0922	0.06	Q	V			
7+10	0.0926	0.05	Q	V			
7+15	0.0929	0.05	Q	V			
7+20	0.0932	0.04	Q	V			
7+25	0.0934	0.04	Q	V			
7+30	0.0936	0.03	Q	V			
7+35	0.0938	0.03	Q	V			
7+40	0.0940	0.03	Q	V			
7+45	0.0942	0.02	Q	V			
7+50	0.0943	0.02	Q	V			
7+55	0.0944	0.02	Q	V			
8+ 0	0.0945	0.01	Q	V			
8+ 5	0.0946	0.01	Q	V			
8+10	0.0947	0.01	Q	V			
8+15	0.0947	0.00	Q	V			
8+20	0.0947	0.00	Q	V			
8+25	0.0947	0.00	Q	V			
8+30	0.0947	0.00	Q	V			
8+35	0.0947	0.00	Q	V			
8+40	0.0947	0.00	Q	V			

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

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Study date 02/19/20 File: 8946E2A1242.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
2 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	2.25	8.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	5.25	19.43

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.018	(0.508)		0.016	0.002
2	0.17	0.07	0.018	(0.506)		0.016	0.002
3	0.25	0.07	0.018	(0.504)		0.016	0.002
4	0.33	0.10	0.027	(0.502)		0.024	0.003
5	0.42	0.10	0.027	(0.500)		0.024	0.003
6	0.50	0.10	0.027	(0.498)		0.024	0.003
7	0.58	0.10	0.027	(0.496)		0.024	0.003
8	0.67	0.10	0.027	(0.494)		0.024	0.003
9	0.75	0.10	0.027	(0.492)		0.024	0.003
10	0.83	0.13	0.036	(0.490)		0.032	0.004
11	0.92	0.13	0.036	(0.488)		0.032	0.004
12	1.00	0.13	0.036	(0.486)		0.032	0.004
13	1.08	0.10	0.027	(0.485)		0.024	0.003

14	1.17	0.10	0.027	(0.483)	0.024	0.003
15	1.25	0.10	0.027	(0.481)	0.024	0.003
16	1.33	0.10	0.027	(0.479)	0.024	0.003
17	1.42	0.10	0.027	(0.477)	0.024	0.003
18	1.50	0.10	0.027	(0.475)	0.024	0.003
19	1.58	0.10	0.027	(0.473)	0.024	0.003
20	1.67	0.10	0.027	(0.471)	0.024	0.003
21	1.75	0.10	0.027	(0.469)	0.024	0.003
22	1.83	0.13	0.036	(0.467)	0.032	0.004
23	1.92	0.13	0.036	(0.466)	0.032	0.004
24	2.00	0.13	0.036	(0.464)	0.032	0.004
25	2.08	0.13	0.036	(0.462)	0.032	0.004
26	2.17	0.13	0.036	(0.460)	0.032	0.004
27	2.25	0.13	0.036	(0.458)	0.032	0.004
28	2.33	0.13	0.036	(0.456)	0.032	0.004
29	2.42	0.13	0.036	(0.454)	0.032	0.004
30	2.50	0.13	0.036	(0.452)	0.032	0.004
31	2.58	0.17	0.045	(0.451)	0.040	0.004
32	2.67	0.17	0.045	(0.449)	0.040	0.004
33	2.75	0.17	0.045	(0.447)	0.040	0.004
34	2.83	0.17	0.045	(0.445)	0.040	0.004
35	2.92	0.17	0.045	(0.443)	0.040	0.004
36	3.00	0.17	0.045	(0.441)	0.040	0.004
37	3.08	0.17	0.045	(0.440)	0.040	0.004
38	3.17	0.17	0.045	(0.438)	0.040	0.004
39	3.25	0.17	0.045	(0.436)	0.040	0.004
40	3.33	0.17	0.045	(0.434)	0.040	0.004
41	3.42	0.17	0.045	(0.432)	0.040	0.004
42	3.50	0.17	0.045	(0.430)	0.040	0.004
43	3.58	0.17	0.045	(0.429)	0.040	0.004
44	3.67	0.17	0.045	(0.427)	0.040	0.004
45	3.75	0.17	0.045	(0.425)	0.040	0.004
46	3.83	0.20	0.054	(0.423)	0.049	0.005
47	3.92	0.20	0.054	(0.422)	0.049	0.005
48	4.00	0.20	0.054	(0.420)	0.049	0.005
49	4.08	0.20	0.054	(0.418)	0.049	0.005
50	4.17	0.20	0.054	(0.416)	0.049	0.005
51	4.25	0.20	0.054	(0.414)	0.049	0.005
52	4.33	0.23	0.063	(0.413)	0.057	0.006
53	4.42	0.23	0.063	(0.411)	0.057	0.006
54	4.50	0.23	0.063	(0.409)	0.057	0.006
55	4.58	0.23	0.063	(0.407)	0.057	0.006
56	4.67	0.23	0.063	(0.406)	0.057	0.006
57	4.75	0.23	0.063	(0.404)	0.057	0.006
58	4.83	0.27	0.072	(0.402)	0.065	0.007
59	4.92	0.27	0.072	(0.400)	0.065	0.007
60	5.00	0.27	0.072	(0.399)	0.065	0.007
61	5.08	0.20	0.054	(0.397)	0.049	0.005
62	5.17	0.20	0.054	(0.395)	0.049	0.005
63	5.25	0.20	0.054	(0.393)	0.049	0.005
64	5.33	0.23	0.063	(0.392)	0.057	0.006
65	5.42	0.23	0.063	(0.390)	0.057	0.006
66	5.50	0.23	0.063	(0.388)	0.057	0.006
67	5.58	0.27	0.072	(0.387)	0.065	0.007
68	5.67	0.27	0.072	(0.385)	0.065	0.007
69	5.75	0.27	0.072	(0.383)	0.065	0.007
70	5.83	0.27	0.072	(0.382)	0.065	0.007
71	5.92	0.27	0.072	(0.380)	0.065	0.007
72	6.00	0.27	0.072	(0.378)	0.065	0.007
73	6.08	0.30	0.081	(0.376)	0.073	0.008
74	6.17	0.30	0.081	(0.375)	0.073	0.008
75	6.25	0.30	0.081	(0.373)	0.073	0.008
76	6.33	0.30	0.081	(0.371)	0.073	0.008
77	6.42	0.30	0.081	(0.370)	0.073	0.008
78	6.50	0.30	0.081	(0.368)	0.073	0.008
79	6.58	0.33	0.090	(0.366)	0.081	0.009
80	6.67	0.33	0.090	(0.365)	0.081	0.009
81	6.75	0.33	0.090	(0.363)	0.081	0.009
82	6.83	0.33	0.090	(0.362)	0.081	0.009
83	6.92	0.33	0.090	(0.360)	0.081	0.009

84	7.00	0.33	0.090	(0.358)	0.081	0.009
85	7.08	0.33	0.090	(0.357)	0.081	0.009
86	7.17	0.33	0.090	(0.355)	0.081	0.009
87	7.25	0.33	0.090	(0.353)	0.081	0.009
88	7.33	0.37	0.099	(0.352)	0.089	0.010
89	7.42	0.37	0.099	(0.350)	0.089	0.010
90	7.50	0.37	0.099	(0.349)	0.089	0.010
91	7.58	0.40	0.108	(0.347)	0.097	0.011
92	7.67	0.40	0.108	(0.345)	0.097	0.011
93	7.75	0.40	0.108	(0.344)	0.097	0.011
94	7.83	0.43	0.117	(0.342)	0.105	0.012
95	7.92	0.43	0.117	(0.341)	0.105	0.012
96	8.00	0.43	0.117	(0.339)	0.105	0.012
97	8.08	0.50	0.135	(0.337)	0.121	0.013
98	8.17	0.50	0.135	(0.336)	0.121	0.013
99	8.25	0.50	0.135	(0.334)	0.121	0.013
100	8.33	0.50	0.135	(0.333)	0.121	0.013
101	8.42	0.50	0.135	(0.331)	0.121	0.013
102	8.50	0.50	0.135	(0.330)	0.121	0.013
103	8.58	0.53	0.144	(0.328)	0.130	0.014
104	8.67	0.53	0.144	(0.327)	0.130	0.014
105	8.75	0.53	0.144	(0.325)	0.130	0.014
106	8.83	0.57	0.153	(0.323)	0.138	0.015
107	8.92	0.57	0.153	(0.322)	0.138	0.015
108	9.00	0.57	0.153	(0.320)	0.138	0.015
109	9.08	0.63	0.171	(0.319)	0.154	0.017
110	9.17	0.63	0.171	(0.317)	0.154	0.017
111	9.25	0.63	0.171	(0.316)	0.154	0.017
112	9.33	0.67	0.180	(0.314)	0.162	0.018
113	9.42	0.67	0.180	(0.313)	0.162	0.018
114	9.50	0.67	0.180	(0.311)	0.162	0.018
115	9.58	0.70	0.189	(0.310)	0.170	0.019
116	9.67	0.70	0.189	(0.308)	0.170	0.019
117	9.75	0.70	0.189	(0.307)	0.170	0.019
118	9.83	0.73	0.198	(0.305)	0.178	0.020
119	9.92	0.73	0.198	(0.304)	0.178	0.020
120	10.00	0.73	0.198	(0.303)	0.178	0.020
121	10.08	0.50	0.135	(0.301)	0.121	0.013
122	10.17	0.50	0.135	(0.300)	0.121	0.013
123	10.25	0.50	0.135	(0.298)	0.121	0.013
124	10.33	0.50	0.135	(0.297)	0.121	0.013
125	10.42	0.50	0.135	(0.295)	0.121	0.013
126	10.50	0.50	0.135	(0.294)	0.121	0.013
127	10.58	0.67	0.180	(0.292)	0.162	0.018
128	10.67	0.67	0.180	(0.291)	0.162	0.018
129	10.75	0.67	0.180	(0.290)	0.162	0.018
130	10.83	0.67	0.180	(0.288)	0.162	0.018
131	10.92	0.67	0.180	(0.287)	0.162	0.018
132	11.00	0.67	0.180	(0.285)	0.162	0.018
133	11.08	0.63	0.171	(0.284)	0.154	0.017
134	11.17	0.63	0.171	(0.282)	0.154	0.017
135	11.25	0.63	0.171	(0.281)	0.154	0.017
136	11.33	0.63	0.171	(0.280)	0.154	0.017
137	11.42	0.63	0.171	(0.278)	0.154	0.017
138	11.50	0.63	0.171	(0.277)	0.154	0.017
139	11.58	0.57	0.153	(0.276)	0.138	0.015
140	11.67	0.57	0.153	(0.274)	0.138	0.015
141	11.75	0.57	0.153	(0.273)	0.138	0.015
142	11.83	0.60	0.162	(0.271)	0.146	0.016
143	11.92	0.60	0.162	(0.270)	0.146	0.016
144	12.00	0.60	0.162	(0.269)	0.146	0.016
145	12.08	0.83	0.225	(0.267)	0.202	0.022
146	12.17	0.83	0.225	(0.266)	0.202	0.022
147	12.25	0.83	0.225	(0.265)	0.202	0.022
148	12.33	0.87	0.234	(0.263)	0.211	0.023
149	12.42	0.87	0.234	(0.262)	0.211	0.023
150	12.50	0.87	0.234	(0.261)	0.211	0.023
151	12.58	0.93	0.252	(0.259)	0.227	0.025
152	12.67	0.93	0.252	(0.258)	0.227	0.025
153	12.75	0.93	0.252	(0.257)	0.227	0.025

154	12.83	0.97	0.261	(	0.256)	0.235		0.026
155	12.92	0.97	0.261	(	0.254)	0.235		0.026
156	13.00	0.97	0.261	(	0.253)	0.235		0.026
157	13.08	1.13	0.306		0.252	(0.275)		0.054
158	13.17	1.13	0.306		0.250	(0.275)		0.056
159	13.25	1.13	0.306		0.249	(0.275)		0.057
160	13.33	1.13	0.306		0.248	(0.275)		0.058
161	13.42	1.13	0.306		0.247	(0.275)		0.059
162	13.50	1.13	0.306		0.245	(0.275)		0.061
163	13.58	0.77	0.207	(	0.244)	0.186		0.021
164	13.67	0.77	0.207	(	0.243)	0.186		0.021
165	13.75	0.77	0.207	(	0.242)	0.186		0.021
166	13.83	0.77	0.207	(	0.240)	0.186		0.021
167	13.92	0.77	0.207	(	0.239)	0.186		0.021
168	14.00	0.77	0.207	(	0.238)	0.186		0.021
169	14.08	0.90	0.243	(	0.237)	0.219		0.024
170	14.17	0.90	0.243	(	0.236)	0.219		0.024
171	14.25	0.90	0.243	(	0.234)	0.219		0.024
172	14.33	0.87	0.234	(	0.233)	0.211		0.023
173	14.42	0.87	0.234	(	0.232)	0.211		0.023
174	14.50	0.87	0.234	(	0.231)	0.211		0.023
175	14.58	0.87	0.234	(	0.230)	0.211		0.023
176	14.67	0.87	0.234	(	0.228)	0.211		0.023
177	14.75	0.87	0.234	(	0.227)	0.211		0.023
178	14.83	0.83	0.225	(	0.226)	0.202		0.022
179	14.92	0.83	0.225	(	0.225)	0.202		0.022
180	15.00	0.83	0.225	(	0.224)	0.202		0.022
181	15.08	0.80	0.216	(	0.223)	0.194		0.022
182	15.17	0.80	0.216	(	0.221)	0.194		0.022
183	15.25	0.80	0.216	(	0.220)	0.194		0.022
184	15.33	0.77	0.207	(	0.219)	0.186		0.021
185	15.42	0.77	0.207	(	0.218)	0.186		0.021
186	15.50	0.77	0.207	(	0.217)	0.186		0.021
187	15.58	0.63	0.171	(	0.216)	0.154		0.017
188	15.67	0.63	0.171	(	0.215)	0.154		0.017
189	15.75	0.63	0.171	(	0.214)	0.154		0.017
190	15.83	0.63	0.171	(	0.213)	0.154		0.017
191	15.92	0.63	0.171	(	0.211)	0.154		0.017
192	16.00	0.63	0.171	(	0.210)	0.154		0.017
193	16.08	0.13	0.036	(	0.209)	0.032		0.004
194	16.17	0.13	0.036	(	0.208)	0.032		0.004
195	16.25	0.13	0.036	(	0.207)	0.032		0.004
196	16.33	0.13	0.036	(	0.206)	0.032		0.004
197	16.42	0.13	0.036	(	0.205)	0.032		0.004
198	16.50	0.13	0.036	(	0.204)	0.032		0.004
199	16.58	0.10	0.027	(	0.203)	0.024		0.003
200	16.67	0.10	0.027	(	0.202)	0.024		0.003
201	16.75	0.10	0.027	(	0.201)	0.024		0.003
202	16.83	0.10	0.027	(	0.200)	0.024		0.003
203	16.92	0.10	0.027	(	0.199)	0.024		0.003
204	17.00	0.10	0.027	(	0.198)	0.024		0.003
205	17.08	0.17	0.045	(	0.197)	0.040		0.004
206	17.17	0.17	0.045	(	0.196)	0.040		0.004
207	17.25	0.17	0.045	(	0.195)	0.040		0.004
208	17.33	0.17	0.045	(	0.194)	0.040		0.004
209	17.42	0.17	0.045	(	0.193)	0.040		0.004
210	17.50	0.17	0.045	(	0.192)	0.040		0.004
211	17.58	0.17	0.045	(	0.191)	0.040		0.004
212	17.67	0.17	0.045	(	0.190)	0.040		0.004
213	17.75	0.17	0.045	(	0.189)	0.040		0.004
214	17.83	0.13	0.036	(	0.188)	0.032		0.004
215	17.92	0.13	0.036	(	0.187)	0.032		0.004
216	18.00	0.13	0.036	(	0.186)	0.032		0.004
217	18.08	0.13	0.036	(	0.185)	0.032		0.004
218	18.17	0.13	0.036	(	0.185)	0.032		0.004
219	18.25	0.13	0.036	(	0.184)	0.032		0.004
220	18.33	0.13	0.036	(	0.183)	0.032		0.004
221	18.42	0.13	0.036	(	0.182)	0.032		0.004
222	18.50	0.13	0.036	(	0.181)	0.032		0.004
223	18.58	0.10	0.027	(	0.180)	0.024		0.003

224	18.67	0.10	0.027	(0.179)	0.024	0.003
225	18.75	0.10	0.027	(0.178)	0.024	0.003
226	18.83	0.07	0.018	(0.177)	0.016	0.002
227	18.92	0.07	0.018	(0.177)	0.016	0.002
228	19.00	0.07	0.018	(0.176)	0.016	0.002
229	19.08	0.10	0.027	(0.175)	0.024	0.003
230	19.17	0.10	0.027	(0.174)	0.024	0.003
231	19.25	0.10	0.027	(0.173)	0.024	0.003
232	19.33	0.13	0.036	(0.173)	0.032	0.004
233	19.42	0.13	0.036	(0.172)	0.032	0.004
234	19.50	0.13	0.036	(0.171)	0.032	0.004
235	19.58	0.10	0.027	(0.170)	0.024	0.003
236	19.67	0.10	0.027	(0.169)	0.024	0.003
237	19.75	0.10	0.027	(0.169)	0.024	0.003
238	19.83	0.07	0.018	(0.168)	0.016	0.002
239	19.92	0.07	0.018	(0.167)	0.016	0.002
240	20.00	0.07	0.018	(0.166)	0.016	0.002
241	20.08	0.10	0.027	(0.166)	0.024	0.003
242	20.17	0.10	0.027	(0.165)	0.024	0.003
243	20.25	0.10	0.027	(0.164)	0.024	0.003
244	20.33	0.10	0.027	(0.163)	0.024	0.003
245	20.42	0.10	0.027	(0.163)	0.024	0.003
246	20.50	0.10	0.027	(0.162)	0.024	0.003
247	20.58	0.10	0.027	(0.161)	0.024	0.003
248	20.67	0.10	0.027	(0.161)	0.024	0.003
249	20.75	0.10	0.027	(0.160)	0.024	0.003
250	20.83	0.07	0.018	(0.159)	0.016	0.002
251	20.92	0.07	0.018	(0.159)	0.016	0.002
252	21.00	0.07	0.018	(0.158)	0.016	0.002
253	21.08	0.10	0.027	(0.157)	0.024	0.003
254	21.17	0.10	0.027	(0.157)	0.024	0.003
255	21.25	0.10	0.027	(0.156)	0.024	0.003
256	21.33	0.07	0.018	(0.156)	0.016	0.002
257	21.42	0.07	0.018	(0.155)	0.016	0.002
258	21.50	0.07	0.018	(0.155)	0.016	0.002
259	21.58	0.10	0.027	(0.154)	0.024	0.003
260	21.67	0.10	0.027	(0.153)	0.024	0.003
261	21.75	0.10	0.027	(0.153)	0.024	0.003
262	21.83	0.07	0.018	(0.152)	0.016	0.002
263	21.92	0.07	0.018	(0.152)	0.016	0.002
264	22.00	0.07	0.018	(0.151)	0.016	0.002
265	22.08	0.10	0.027	(0.151)	0.024	0.003
266	22.17	0.10	0.027	(0.150)	0.024	0.003
267	22.25	0.10	0.027	(0.150)	0.024	0.003
268	22.33	0.07	0.018	(0.149)	0.016	0.002
269	22.42	0.07	0.018	(0.149)	0.016	0.002
270	22.50	0.07	0.018	(0.148)	0.016	0.002
271	22.58	0.07	0.018	(0.148)	0.016	0.002
272	22.67	0.07	0.018	(0.148)	0.016	0.002
273	22.75	0.07	0.018	(0.147)	0.016	0.002
274	22.83	0.07	0.018	(0.147)	0.016	0.002
275	22.92	0.07	0.018	(0.146)	0.016	0.002
276	23.00	0.07	0.018	(0.146)	0.016	0.002
277	23.08	0.07	0.018	(0.146)	0.016	0.002
278	23.17	0.07	0.018	(0.145)	0.016	0.002
279	23.25	0.07	0.018	(0.145)	0.016	0.002
280	23.33	0.07	0.018	(0.145)	0.016	0.002
281	23.42	0.07	0.018	(0.145)	0.016	0.002
282	23.50	0.07	0.018	(0.144)	0.016	0.002
283	23.58	0.07	0.018	(0.144)	0.016	0.002
284	23.67	0.07	0.018	(0.144)	0.016	0.002
285	23.75	0.07	0.018	(0.144)	0.016	0.002
286	23.83	0.07	0.018	(0.143)	0.016	0.002
287	23.92	0.07	0.018	(0.143)	0.016	0.002
288	24.00	0.07	0.018	(0.143)	0.016	0.002
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	2.9

Flood volume = Effective rainfall 0.24(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 2.01(In)

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    Total soil loss =     0.620(Ac.Ft)
    Total rainfall =      2.25(In)
    Flood volume =        3202.4 Cubic Feet
    Total soil loss =       27017.1 Cubic Feet
    ---------------------------------------------------------------------
     Peak flow rate of this hydrograph =      0.175(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       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0000      0.00  Q         |         |         |         |
  0+20       0.0000      0.00  Q         |         |         |         |
  0+25       0.0001      0.00  Q         |         |         |         |
  0+30       0.0001      0.01  Q         |         |         |         |
  0+35       0.0001      0.01  Q         |         |         |         |
  0+40       0.0002      0.01  Q         |         |         |         |
  0+45       0.0002      0.01  Q         |         |         |         |
  0+50       0.0003      0.01  Q         |         |         |         |
  0+55       0.0004      0.01  Q         |         |         |         |
  1+ 0       0.0004      0.01  Q         |         |         |         |
  1+ 5       0.0005      0.01  Q         |         |         |         |
  1+10       0.0006      0.01  Q         |         |         |         |
  1+15       0.0006      0.01  Q         |         |         |         |
  1+20       0.0007      0.01  Q         |         |         |         |
  1+25       0.0008      0.01  Q         |         |         |         |
  1+30       0.0008      0.01  Q         |         |         |         |
  1+35       0.0009      0.01  Q         |         |         |         |
  1+40       0.0010      0.01  Q         |         |         |         |
  1+45       0.0010      0.01  Q         |         |         |         |
  1+50       0.0011      0.01  Q         |         |         |         |
  1+55       0.0012      0.01  Q         |         |         |         |
  2+ 0       0.0012      0.01  Q         |         |         |         |
  2+ 5       0.0013      0.01  Q         |         |         |         |
  2+10       0.0014      0.01  Q         |         |         |         |
  2+15       0.0015      0.01  Q         |         |         |         |
  2+20       0.0016      0.01  Q         |         |         |         |
  2+25       0.0017      0.01  Q         |         |         |         |
  2+30       0.0017      0.01  Q         |         |         |         |
  2+35       0.0018      0.01  Q         |         |         |         |
  2+40       0.0019      0.01  QV        |         |         |         |
  2+45       0.0020      0.01  QV        |         |         |         |
  2+50       0.0021      0.01  QV        |         |         |         |
  2+55       0.0022      0.01  QV        |         |         |         |
  3+ 0       0.0023      0.02  QV        |         |         |         |
  3+ 5       0.0024      0.02  QV        |         |         |         |
  3+10       0.0025      0.02  QV        |         |         |         |
  3+15       0.0027      0.02  QV        |         |         |         |
  3+20       0.0028      0.02  QV        |         |         |         |
  3+25       0.0029      0.02  QV        |         |         |         |
  3+30       0.0030      0.02  QV        |         |         |         |
  3+35       0.0031      0.02  QV        |         |         |         |
  3+40       0.0032      0.02  QV        |         |         |         |
  3+45       0.0033      0.02  QV        |         |         |         |
  3+50       0.0034      0.02  QV        |         |         |         |
  3+55       0.0036      0.02  QV        |         |         |         |
  4+ 0       0.0037      0.02  QV        |         |         |         |
  4+ 5       0.0038      0.02  Q V       |         |         |         |
  4+10       0.0039      0.02  Q V       |         |         |         |
  4+15       0.0041      0.02  Q V       |         |         |         |
  4+20       0.0042      0.02  Q V       |         |         |         |
  4+25       0.0043      0.02  Q V       |         |         |         |
  4+30       0.0045      0.02  Q V       |         |         |         |
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4+35	0.0046	0.02	Q V	|	|	|	|
4+40	0.0047	0.02	Q V	|	|	|	|
4+45	0.0049	0.02	Q V	|	|	|	|
4+50	0.0050	0.02	Q V	|	|	|	|
4+55	0.0052	0.02	Q V	|	|	|	|
5+ 0	0.0054	0.02	Q V	|	|	|	|
5+ 5	0.0055	0.02	Q V	|	|	|	|
5+10	0.0057	0.02	Q V	|	|	|	|
5+15	0.0059	0.02	Q V	|	|	|	|
5+20	0.0060	0.02	Q V	|	|	|	|
5+25	0.0062	0.02	Q V	|	|	|	|
5+30	0.0063	0.02	Q V	|	|	|	|
5+35	0.0065	0.02	Q V	|	|	|	|
5+40	0.0066	0.02	Q V	|	|	|	|
5+45	0.0068	0.02	Q V	|	|	|	|
5+50	0.0070	0.02	Q V	|	|	|	|
5+55	0.0071	0.02	Q V	|	|	|	|
6+ 0	0.0073	0.03	Q V	|	|	|	|
6+ 5	0.0075	0.03	Q V	|	|	|	|
6+10	0.0077	0.03	Q V	|	|	|	|
6+15	0.0078	0.03	Q V	|	|	|	|
6+20	0.0080	0.03	Q V	|	|	|	|
6+25	0.0082	0.03	Q V	|	|	|	|
6+30	0.0084	0.03	Q V	|	|	|	|
6+35	0.0086	0.03	Q V	|	|	|	|
6+40	0.0088	0.03	Q V	|	|	|	|
6+45	0.0090	0.03	Q V	|	|	|	|
6+50	0.0092	0.03	Q V	|	|	|	|
6+55	0.0095	0.03	Q V	|	|	|	|
7+ 0	0.0097	0.03	Q V	|	|	|	|
7+ 5	0.0099	0.03	Q V	|	|	|	|
7+10	0.0101	0.03	Q V	|	|	|	|
7+15	0.0103	0.03	Q V	|	|	|	|
7+20	0.0106	0.03	Q V	|	|	|	|
7+25	0.0108	0.03	Q V	|	|	|	|
7+30	0.0110	0.03	Q V	|	|	|	|
7+35	0.0113	0.03	Q V	|	|	|	|
7+40	0.0115	0.04	Q V	|	|	|	|
7+45	0.0118	0.04	Q V	|	|	|	|
7+50	0.0120	0.04	Q V	|	|	|	|
7+55	0.0123	0.04	Q V	|	|	|	|
8+ 0	0.0125	0.04	Q V	|	|	|	|
8+ 5	0.0128	0.04	Q V	|	|	|	|
8+10	0.0131	0.04	Q V	|	|	|	|
8+15	0.0134	0.04	Q V	|	|	|	|
8+20	0.0137	0.04	Q V	|	|	|	|
8+25	0.0140	0.05	Q V	|	|	|	|
8+30	0.0143	0.05	Q V	|	|	|	|
8+35	0.0146	0.05	Q V	|	|	|	|
8+40	0.0150	0.05	Q V	|	|	|	|
8+45	0.0153	0.05	Q V	|	|	|	|
8+50	0.0157	0.05	Q V	|	|	|	|
8+55	0.0160	0.05	Q V	|	|	|	|
9+ 0	0.0164	0.05	Q V	|	|	|	|
9+ 5	0.0167	0.05	Q V	|	|	|	|
9+10	0.0171	0.05	Q V	|	|	|	|
9+15	0.0175	0.06	Q V	|	|	|	|
9+20	0.0179	0.06	Q V	|	|	|	|
9+25	0.0183	0.06	Q V	|	|	|	|
9+30	0.0187	0.06	Q V	|	|	|	|
9+35	0.0191	0.06	Q V	|	|	|	|
9+40	0.0195	0.06	Q V	|	|	|	|
9+45	0.0200	0.06	Q V	|	|	|	|
9+50	0.0204	0.07	Q V	|	|	|	|
9+55	0.0209	0.07	Q V	|	|	|	|
10+ 0	0.0214	0.07	Q V	|	|	|	|
10+ 5	0.0218	0.07	Q V	|	|	|	|
10+10	0.0223	0.07	Q V	|	|	|	|
10+15	0.0227	0.07	Q V	|	|	|	|
10+20	0.0232	0.06	Q V	|	|	|	|

10+25	0.0236	0.06	Q	V			
10+30	0.0240	0.06	Q	V			
10+35	0.0243	0.06	Q	V			
10+40	0.0247	0.06	Q	V			
10+45	0.0251	0.06	Q	V			
10+50	0.0255	0.06	Q	V			
10+55	0.0260	0.06	Q	V			
11+ 0	0.0264	0.06	Q	V			
11+ 5	0.0268	0.06	Q	V			
11+10	0.0273	0.06	Q	V			
11+15	0.0277	0.06	Q	V			
11+20	0.0282	0.06	Q	V			
11+25	0.0286	0.06	Q	V			
11+30	0.0291	0.06	Q	V			
11+35	0.0295	0.06	Q	V			
11+40	0.0299	0.06	Q	V			
11+45	0.0304	0.06	Q	V			
11+50	0.0308	0.06	Q	V			
11+55	0.0312	0.06	Q	V			
12+ 0	0.0316	0.06	Q	V			
12+ 5	0.0320	0.06	Q	V			
12+10	0.0325	0.06	Q	V			
12+15	0.0329	0.07	Q	V			
12+20	0.0334	0.07	Q	V			
12+25	0.0339	0.07	Q	V			
12+30	0.0344	0.08	Q	V			
12+35	0.0350	0.08	Q	V			
12+40	0.0355	0.08	Q	V			
12+45	0.0361	0.08	Q	V			
12+50	0.0367	0.08	Q	V			
12+55	0.0373	0.09	Q	V			
13+ 0	0.0379	0.09	Q	V			
13+ 5	0.0385	0.09	Q	V			
13+10	0.0392	0.10	Q	V			
13+15	0.0400	0.12	Q	V			
13+20	0.0410	0.14	Q	V			
13+25	0.0420	0.15	Q	V			
13+30	0.0432	0.17	Q	V			
13+35	0.0444	0.17	Q	V			
13+40	0.0456	0.17	Q	V			
13+45	0.0467	0.16	Q	V			
13+50	0.0476	0.14	Q	V			
13+55	0.0484	0.12	Q	V			
14+ 0	0.0492	0.11	Q	V			
14+ 5	0.0499	0.10	Q	V			
14+10	0.0506	0.10	Q	V			
14+15	0.0512	0.10	Q	V			
14+20	0.0519	0.10	Q	V			
14+25	0.0526	0.10	Q	V			
14+30	0.0533	0.10	Q	V			
14+35	0.0539	0.10	Q	V			
14+40	0.0546	0.09	Q	V			
14+45	0.0552	0.09	Q	V			
14+50	0.0558	0.09	Q	V			
14+55	0.0565	0.09	Q	V			
15+ 0	0.0571	0.09	Q	V			
15+ 5	0.0577	0.09	Q	V			
15+10	0.0583	0.09	Q	V			
15+15	0.0589	0.09	Q	V			
15+20	0.0595	0.09	Q	V			
15+25	0.0601	0.09	Q	V			
15+30	0.0607	0.08	Q	V			
15+35	0.0613	0.08	Q	V			
15+40	0.0618	0.08	Q	V			
15+45	0.0624	0.08	Q	V			
15+50	0.0629	0.08	Q	V			
15+55	0.0634	0.07	Q	V			
16+ 0	0.0639	0.07	Q	V			
16+ 5	0.0643	0.07	Q	V			
16+10	0.0648	0.06	Q	V			

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16+15       0.0652      0.06  Q         |         |         |    V    |
16+20       0.0655      0.05  Q         |         |         |    V    |
16+25       0.0658      0.04  Q         |         |         |    V    |
16+30       0.0660      0.03  Q         |         |         |    V    |
16+35       0.0662      0.03  Q         |         |         |     V   |
16+40       0.0664      0.03  Q         |         |         |     V   |
16+45       0.0666      0.03  Q         |         |         |     V   |
16+50       0.0667      0.02  Q         |         |         |     V   |
16+55       0.0669      0.02  Q         |         |         |     V   |
17+ 0       0.0670      0.02  Q         |         |         |     V   |
17+ 5       0.0671      0.02  Q         |         |         |     V   |
17+10       0.0672      0.02  Q         |         |         |     V   |
17+15       0.0674      0.02  Q         |         |         |     V   |
17+20       0.0675      0.02  Q         |         |         |     V   |
17+25       0.0676      0.02  Q         |         |         |     V   |
17+30       0.0678      0.02  Q         |         |         |     V   |
17+35       0.0679      0.02  Q         |         |         |     V   |
17+40       0.0680      0.02  Q         |         |         |      V  |
17+45       0.0681      0.02  Q         |         |         |      V  |
17+50       0.0683      0.02  Q         |         |         |      V  |
17+55       0.0684      0.02  Q         |         |         |      V  |
18+ 0       0.0685      0.02  Q         |         |         |      V  |
18+ 5       0.0686      0.02  Q         |         |         |      V  |
18+10       0.0687      0.02  Q         |         |         |      V  |
18+15       0.0688      0.01  Q         |         |         |      V  |
18+20       0.0689      0.01  Q         |         |         |      V  |
18+25       0.0690      0.01  Q         |         |         |      V  |
18+30       0.0691      0.01  Q         |         |         |      V  |
18+35       0.0692      0.01  Q         |         |         |      V  |
18+40       0.0693      0.01  Q         |         |         |      V  |
18+45       0.0694      0.01  Q         |         |         |      V  |
18+50       0.0695      0.01  Q         |         |         |      V  |
18+55       0.0695      0.01  Q         |         |         |      V  |
19+ 0       0.0696      0.01  Q         |         |         |      V  |
19+ 5       0.0697      0.01  Q         |         |         |      V  |
19+10       0.0698      0.01  Q         |         |         |      V  |
19+15       0.0698      0.01  Q         |         |         |      V  |
19+20       0.0699      0.01  Q         |         |         |       V |
19+25       0.0700      0.01  Q         |         |         |       V |
19+30       0.0700      0.01  Q         |         |         |       V |
19+35       0.0701      0.01  Q         |         |         |       V |
19+40       0.0702      0.01  Q         |         |         |       V |
19+45       0.0703      0.01  Q         |         |         |       V |
19+50       0.0704      0.01  Q         |         |         |       V |
19+55       0.0704      0.01  Q         |         |         |       V |
20+ 0       0.0705      0.01  Q         |         |         |       V |
20+ 5       0.0706      0.01  Q         |         |         |       V |
20+10       0.0706      0.01  Q         |         |         |       V |
20+15       0.0707      0.01  Q         |         |         |       V |
20+20       0.0707      0.01  Q         |         |         |       V |
20+25       0.0708      0.01  Q         |         |         |       V |
20+30       0.0709      0.01  Q         |         |         |       V |
20+35       0.0709      0.01  Q         |         |         |       V |
20+40       0.0710      0.01  Q         |         |         |       V |
20+45       0.0711      0.01  Q         |         |         |       V |
20+50       0.0712      0.01  Q         |         |         |       V |
20+55       0.0712      0.01  Q         |         |         |       V |
21+ 0       0.0713      0.01  Q         |         |         |       V |
21+ 5       0.0713      0.01  Q         |         |         |       V |
21+10       0.0714      0.01  Q         |         |         |       V |
21+15       0.0715      0.01  Q         |         |         |       V |
21+20       0.0715      0.01  Q         |         |         |       V |
21+25       0.0716      0.01  Q         |         |         |       V |
21+30       0.0716      0.01  Q         |         |         |       V |
21+35       0.0717      0.01  Q         |         |         |        V|
21+40       0.0718      0.01  Q         |         |         |        V|
21+45       0.0718      0.01  Q         |         |         |        V|
21+50       0.0719      0.01  Q         |         |         |        V|
21+55       0.0719      0.01  Q         |         |         |        V|
22+ 0       0.0720      0.01  Q         |         |         |        V|
```

22+ 5	0.0721	0.01	Q				V
22+10	0.0721	0.01	Q				V
22+15	0.0722	0.01	Q				V
22+20	0.0722	0.01	Q				V
22+25	0.0723	0.01	Q				V
22+30	0.0723	0.01	Q				V
22+35	0.0724	0.01	Q				V
22+40	0.0725	0.01	Q				V
22+45	0.0725	0.01	Q				V
22+50	0.0726	0.01	Q				V
22+55	0.0726	0.01	Q				V
23+ 0	0.0727	0.01	Q				V
23+ 5	0.0727	0.01	Q				V
23+10	0.0728	0.01	Q				V
23+15	0.0728	0.01	Q				V
23+20	0.0728	0.01	Q				V
23+25	0.0729	0.01	Q				V
23+30	0.0729	0.01	Q				V
23+35	0.0730	0.01	Q				V
23+40	0.0730	0.01	Q				V
23+45	0.0731	0.01	Q				V
23+50	0.0731	0.01	Q				V
23+55	0.0732	0.01	Q				V
24+ 0	0.0732	0.01	Q				V
24+ 5	0.0733	0.01	Q				V
24+10	0.0733	0.01	Q				V
24+15	0.0734	0.01	Q				V
24+20	0.0734	0.00	Q				V
24+25	0.0734	0.00	Q				V
24+30	0.0734	0.00	Q				V
24+35	0.0734	0.00	Q				V
24+40	0.0734	0.00	Q				V
24+45	0.0735	0.00	Q				V
24+50	0.0735	0.00	Q				V
24+55	0.0735	0.00	Q				V
25+ 0	0.0735	0.00	Q				V
25+ 5	0.0735	0.00	Q				V
25+10	0.0735	0.00	Q				V
25+15	0.0735	0.00	Q				V
25+20	0.0735	0.00	Q				V
25+25	0.0735	0.00	Q				V
25+30	0.0735	0.00	Q				V
25+35	0.0735	0.00	Q				V
25+40	0.0735	0.00	Q				V
25+45	0.0735	0.00	Q				V
25+50	0.0735	0.00	Q				V
25+55	0.0735	0.00	Q				V
26+ 0	0.0735	0.00	Q				V
26+ 5	0.0735	0.00	Q				V
26+10	0.0735	0.00	Q				V
26+15	0.0735	0.00	Q				V
26+20	0.0735	0.00	Q				V
26+25	0.0735	0.00	Q				V
26+30	0.0735	0.00	Q				V
26+35	0.0735	0.00	Q				V
26+40	0.0735	0.00	Q				V

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

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Study date 02/19/20 File: 8946E2A115.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
5 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	0.55	2.04

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	1.30	4.81

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.726(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.726(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.287	(0.286)		0.259	0.029
2	0.17	4.20	0.366	0.286	(	0.329)	0.079
3	0.25	4.40	0.383	0.286	(	0.345)	0.097
4	0.33	4.80	0.418	0.286	(	0.376)	0.131
5	0.42	5.20	0.453	0.286	(	0.408)	0.166
6	0.50	6.20	0.540	0.286	(	0.486)	0.253
7	0.58	6.80	0.592	0.286	(	0.533)	0.306
8	0.67	8.80	0.766	0.286	(	0.690)	0.480
9	0.75	13.90	1.210	0.286	(	1.089)	0.924
10	0.83	31.40	2.734	0.286	(	2.461)	2.448
11	0.92	7.20	0.627	0.286	(	0.564)	0.340

```
 12   1.00     3.80      0.331          0.286    (  0.298)        0.044
             (Loss Rate Not Used)
    Sum =     100.0                                    Sum =     5.3
      Flood volume = Effective rainfall      0.44(In)
       times area       3.7(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
      Total soil loss =      0.28(In)
      Total soil loss =     0.088(Ac.Ft)
      Total rainfall =      0.73(In)
      Flood volume =        5929.6 Cubic Feet
      Total soil loss =        3816.5 Cubic Feet
      ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      2.592(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        2.5       5.0       7.5      10.0
 ------------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0001      0.01  Q         |         |         |         |
   0+15       0.0004      0.04  Q         |         |         |         |
   0+20       0.0011      0.09  Q         |         |         |         |
   0+25       0.0022      0.16  Q         |         |         |         |
   0+30       0.0039      0.25  QV        |         |         |         |
   0+35       0.0063      0.35  |Q        |         |         |         |
   0+40       0.0096      0.48  |QV       |         |         |         |
   0+45       0.0144      0.70  | Q V     |         |         |         |
   0+50       0.0223      1.15  |   Q V   |         |         |         |
   0+55       0.0347      1.79  |      Q  V         |         |         |
   1+ 0       0.0510      2.37  |        Q|   V     |         |         |
   1+ 5       0.0688      2.59  |         Q         V         |         |
   1+10       0.0842      2.24  |       Q |         |   V     |         |
   1+15       0.0948      1.53  |     Q   |         |      V  |         |
   1+20       0.1018      1.03  |   Q     |         |        V|         |
   1+25       0.1069      0.73  | Q       |         |         |V        |
   1+30       0.1108      0.58  | Q       |         |         | V       |
   1+35       0.1141      0.48  |Q        |         |         |  V      |
   1+40       0.1169      0.41  |Q        |         |         |   V     |
   1+45       0.1194      0.35  |Q        |         |         |    V    |
   1+50       0.1214      0.30  |Q        |         |         |    V    |
   1+55       0.1232      0.26  |Q        |         |         |     V   |
   2+ 0       0.1248      0.23  Q         |         |         |     V   |
   2+ 5       0.1262      0.20  Q         |         |         |      V  |
   2+10       0.1274      0.18  Q         |         |         |      V  |
   2+15       0.1284      0.15  Q         |         |         |      V  |
   2+20       0.1294      0.14  Q         |         |         |       V |
   2+25       0.1303      0.13  Q         |         |         |       V |
   2+30       0.1311      0.12  Q         |         |         |       V |
   2+35       0.1318      0.10  Q         |         |         |       V |
   2+40       0.1324      0.09  Q         |         |         |       V |
   2+45       0.1330      0.08  Q         |         |         |        V|
   2+50       0.1335      0.07  Q         |         |         |        V|
   2+55       0.1340      0.06  Q         |         |         |        V|
   3+ 0       0.1344      0.06  Q         |         |         |        V|
   3+ 5       0.1347      0.05  Q         |         |         |        V|
   3+10       0.1350      0.04  Q         |         |         |        V|
   3+15       0.1353      0.04  Q         |         |         |        V|
   3+20       0.1356      0.04  Q         |         |         |        V|
   3+25       0.1358      0.04  Q         |         |         |        V|
   3+30       0.1361      0.04  Q         |         |         |        V|
   3+35       0.1361      0.00  Q         |         |         |        V|
   3+40       0.1361      0.00  Q         |         |         |        V|
------------------------------------------------------------------------
```

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

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Study date 02/19/20 File: 8946E2A135.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
5 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	0.90	3.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	2.25	8.33

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.216(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.216(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.190	(0.286)		0.171	0.019
2	0.17	1.30	0.190	(0.286)		0.171	0.019
3	0.25	1.10	0.161	(0.286)		0.144	0.016
4	0.33	1.50	0.219	(0.286)		0.197	0.022
5	0.42	1.50	0.219	(0.286)		0.197	0.022
6	0.50	1.80	0.263	(0.286)		0.236	0.026
7	0.58	1.50	0.219	(0.286)		0.197	0.022
8	0.67	1.80	0.263	(0.286)		0.236	0.026
9	0.75	1.80	0.263	(0.286)		0.236	0.026
10	0.83	1.50	0.219	(0.286)		0.197	0.022
11	0.92	1.60	0.234	(0.286)		0.210	0.023
12	1.00	1.80	0.263	(0.286)		0.236	0.026
13	1.08	2.20	0.321	0.286	(0.289)		0.035

```
14   1.17     2.20      0.321          0.286    (  0.289)        0.035
15   1.25     2.20      0.321          0.286    (  0.289)        0.035
16   1.33     2.00      0.292       (  0.286)       0.263        0.029
17   1.42     2.60      0.379          0.286    (  0.342)        0.093
18   1.50     2.70      0.394          0.286    (  0.355)        0.108
19   1.58     2.40      0.350          0.286    (  0.315)        0.064
20   1.67     2.70      0.394          0.286    (  0.355)        0.108
21   1.75     3.30      0.482          0.286    (  0.433)        0.195
22   1.83     3.10      0.452          0.286    (  0.407)        0.166
23   1.92     2.90      0.423          0.286    (  0.381)        0.137
24   2.00     3.00      0.438          0.286    (  0.394)        0.151
25   2.08     3.10      0.452          0.286    (  0.407)        0.166
26   2.17     4.20      0.613          0.286    (  0.552)        0.326
27   2.25     5.00      0.730          0.286    (  0.657)        0.443
28   2.33     3.50      0.511          0.286    (  0.460)        0.224
29   2.42     6.80      0.992          0.286    (  0.893)        0.706
30   2.50     7.30      1.065          0.286    (  0.959)        0.779
31   2.58     8.20      1.197          0.286    (  1.077)        0.910
32   2.67     5.90      0.861          0.286    (  0.775)        0.575
33   2.75     2.00      0.292       (  0.286)       0.263        0.029
34   2.83     1.80      0.263       (  0.286)       0.236        0.026
35   2.92     1.80      0.263       (  0.286)       0.236        0.026
36   3.00     0.60      0.088       (  0.286)       0.079        0.009
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =     5.6
     Flood volume = Effective rainfall      0.47(In)
      times area       3.7(Ac.)/[(In)/(Ft.)] =       0.1(Ac.Ft)
     Total soil loss =      0.75(In)
     Total soil loss =     0.230(Ac.Ft)
     Total rainfall =      1.22(In)
     Flood volume =        6317.1 Cubic Feet
     Total soil loss =       10017.4 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      1.835(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0002      0.02  Q         |         |         |         |
  0+20       0.0004      0.03  Q         |         |         |         |
  0+25       0.0006      0.04  Q         |         |         |         |
  0+30       0.0009      0.05  Q         |         |         |         |
  0+35       0.0013      0.05  Q         |         |         |         |
  0+40       0.0017      0.06  Q         |         |         |         |
  0+45       0.0022      0.07  Q         |         |         |         |
  0+50       0.0027      0.07  Q         |         |         |         |
  0+55       0.0032      0.07  Q         |         |         |         |
  1+ 0       0.0037      0.08  QV        |         |         |         |
  1+ 5       0.0042      0.08  QV        |         |         |         |
  1+10       0.0048      0.08  QV        |         |         |         |
  1+15       0.0054      0.09  QV        |         |         |         |
  1+20       0.0061      0.10  QV        |         |         |         |
  1+25       0.0068      0.11  QV        |         |         |         |
  1+30       0.0077      0.13  Q V       |         |         |         |
  1+35       0.0088      0.16  Q V       |         |         |         |
  1+40       0.0102      0.20  Q V       |         |         |         |
  1+45       0.0118      0.24  Q  V      |         |         |         |
  1+50       0.0138      0.29  |Q V      |         |         |         |
  1+55       0.0162      0.34  |Q  V     |         |         |         |
  2+ 0       0.0190      0.40  |Q   V    |         |         |         |
  2+ 5       0.0220      0.44  |Q    V   |         |         |         |
  2+10       0.0253      0.48  |Q    V   |         |         |         |
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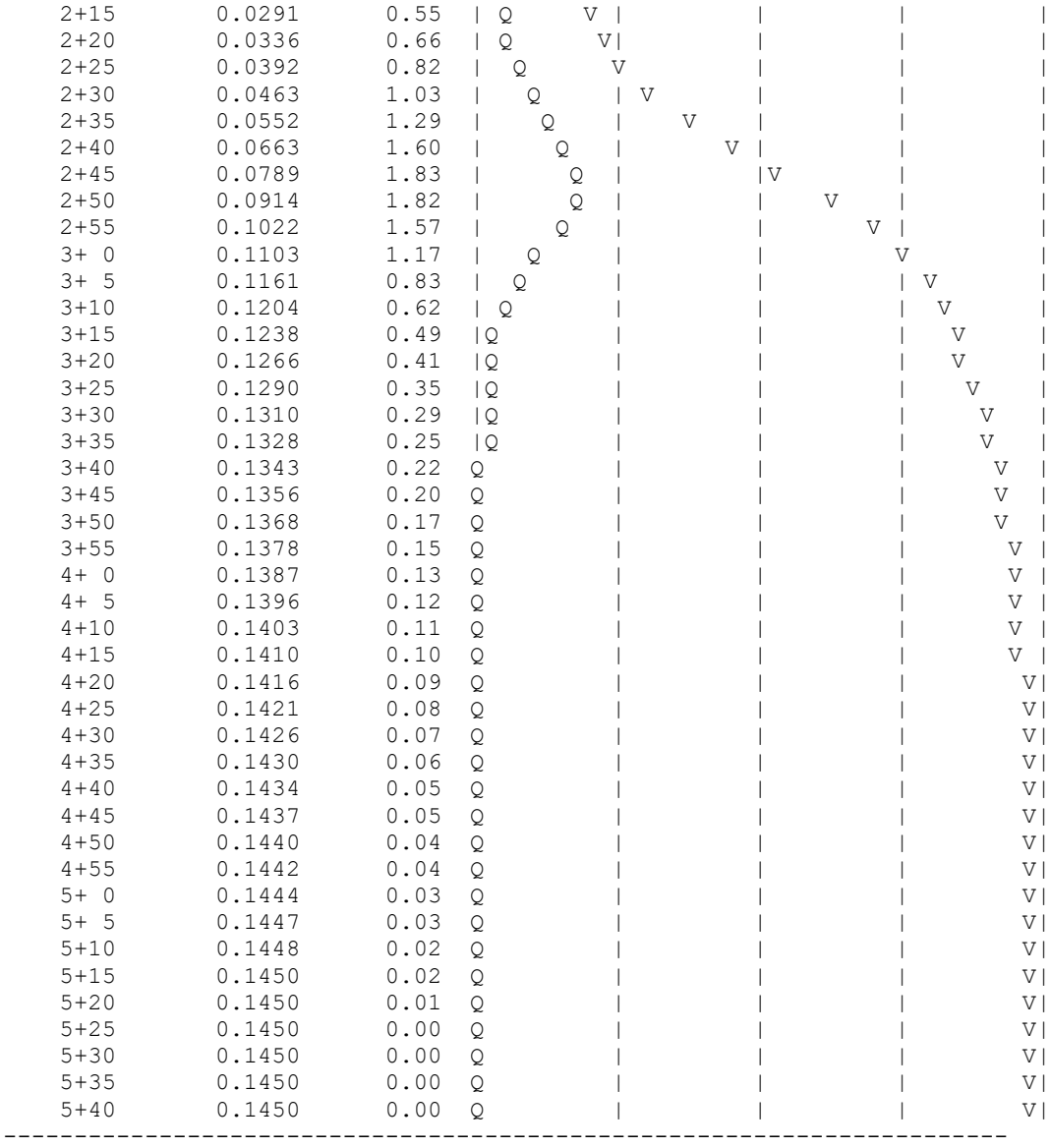

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/19/20 File: 8946E2A165.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
5 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	1.30	4.81

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	3.00	11.10

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.698(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.698(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.102	(0.286)	0.092	0.010
2	0.17	0.60	0.122	(0.286)	0.110	0.012
3	0.25	0.60	0.122	(0.286)	0.110	0.012
4	0.33	0.60	0.122	(0.286)	0.110	0.012
5	0.42	0.60	0.122	(0.286)	0.110	0.012
6	0.50	0.70	0.143	(0.286)	0.128	0.014
7	0.58	0.70	0.143	(0.286)	0.128	0.014
8	0.67	0.70	0.143	(0.286)	0.128	0.014
9	0.75	0.70	0.143	(0.286)	0.128	0.014
10	0.83	0.70	0.143	(0.286)	0.128	0.014
11	0.92	0.70	0.143	(0.286)	0.128	0.014
12	1.00	0.80	0.163	(0.286)	0.147	0.016
13	1.08	0.80	0.163	(0.286)	0.147	0.016

14	1.17	0.80	0.163	(	0.286)	0.147		0.016
15	1.25	0.80	0.163	(	0.286)	0.147		0.016
16	1.33	0.80	0.163	(	0.286)	0.147		0.016
17	1.42	0.80	0.163	(	0.286)	0.147		0.016
18	1.50	0.80	0.163	(	0.286)	0.147		0.016
19	1.58	0.80	0.163	(	0.286)	0.147		0.016
20	1.67	0.80	0.163	(	0.286)	0.147		0.016
21	1.75	0.80	0.163	(	0.286)	0.147		0.016
22	1.83	0.80	0.163	(	0.286)	0.147		0.016
23	1.92	0.80	0.163	(	0.286)	0.147		0.016
24	2.00	0.90	0.183	(	0.286)	0.165		0.018
25	2.08	0.80	0.163	(	0.286)	0.147		0.016
26	2.17	0.90	0.183	(	0.286)	0.165		0.018
27	2.25	0.90	0.183	(	0.286)	0.165		0.018
28	2.33	0.90	0.183	(	0.286)	0.165		0.018
29	2.42	0.90	0.183	(	0.286)	0.165		0.018
30	2.50	0.90	0.183	(	0.286)	0.165		0.018
31	2.58	0.90	0.183	(	0.286)	0.165		0.018
32	2.67	0.90	0.183	(	0.286)	0.165		0.018
33	2.75	1.00	0.204	(	0.286)	0.183		0.020
34	2.83	1.00	0.204	(	0.286)	0.183		0.020
35	2.92	1.00	0.204	(	0.286)	0.183		0.020
36	3.00	1.00	0.204	(	0.286)	0.183		0.020
37	3.08	1.00	0.204	(	0.286)	0.183		0.020
38	3.17	1.10	0.224	(	0.286)	0.202		0.022
39	3.25	1.10	0.224	(	0.286)	0.202		0.022
40	3.33	1.10	0.224	(	0.286)	0.202		0.022
41	3.42	1.20	0.245	(	0.286)	0.220		0.024
42	3.50	1.30	0.265	(	0.286)	0.238		0.026
43	3.58	1.40	0.285	(	0.286)	0.257		0.029
44	3.67	1.40	0.285	(	0.286)	0.257		0.029
45	3.75	1.50	0.306	(	0.286)	0.275		0.031
46	3.83	1.50	0.306	(	0.286)	0.275		0.031
47	3.92	1.60	0.326		0.286	(	0.293)	0.040
48	4.00	1.60	0.326		0.286	(	0.293)	0.040
49	4.08	1.70	0.346		0.286	(	0.312)	0.060
50	4.17	1.80	0.367		0.286	(	0.330)	0.080
51	4.25	1.90	0.387		0.286	(	0.348)	0.101
52	4.33	2.00	0.408		0.286	(	0.367)	0.121
53	4.42	2.10	0.428		0.286	(	0.385)	0.141
54	4.50	2.10	0.428		0.286	(	0.385)	0.141
55	4.58	2.20	0.448		0.286	(	0.403)	0.162
56	4.67	2.30	0.469		0.286	(	0.422)	0.182
57	4.75	2.40	0.489		0.286	(	0.440)	0.203
58	4.83	2.40	0.489		0.286	(	0.440)	0.203
59	4.92	2.50	0.509		0.286	(	0.459)	0.223
60	5.00	2.60	0.530		0.286	(	0.477)	0.243
61	5.08	3.10	0.632		0.286	(	0.569)	0.345
62	5.17	3.60	0.734		0.286	(	0.660)	0.447
63	5.25	3.90	0.795		0.286	(	0.715)	0.508
64	5.33	4.20	0.856		0.286	(	0.770)	0.569
65	5.42	4.70	0.958		0.286	(	0.862)	0.671
66	5.50	5.60	1.141		0.286	(	1.027)	0.855
67	5.58	1.90	0.387		0.286	(	0.348)	0.101
68	5.67	0.90	0.183	(	0.286)	0.165		0.018
69	5.75	0.60	0.122	(	0.286)	0.110		0.012
70	5.83	0.50	0.102	(	0.286)	0.092		0.010
71	5.92	0.30	0.061	(	0.286)	0.055		0.006
72	6.00	0.20	0.041	(	0.286)	0.037		0.004

(Loss Rate Not Used)

Sum = 100.0 Sum = 6.3

Flood volume = Effective rainfall 0.53(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)

Total soil loss = 1.17(In)
Total soil loss = 0.361(Ac.Ft)
Total rainfall = 1.70(In)
Flood volume = 7083.6 Cubic Feet
Total soil loss = 15724.4 Cubic Feet

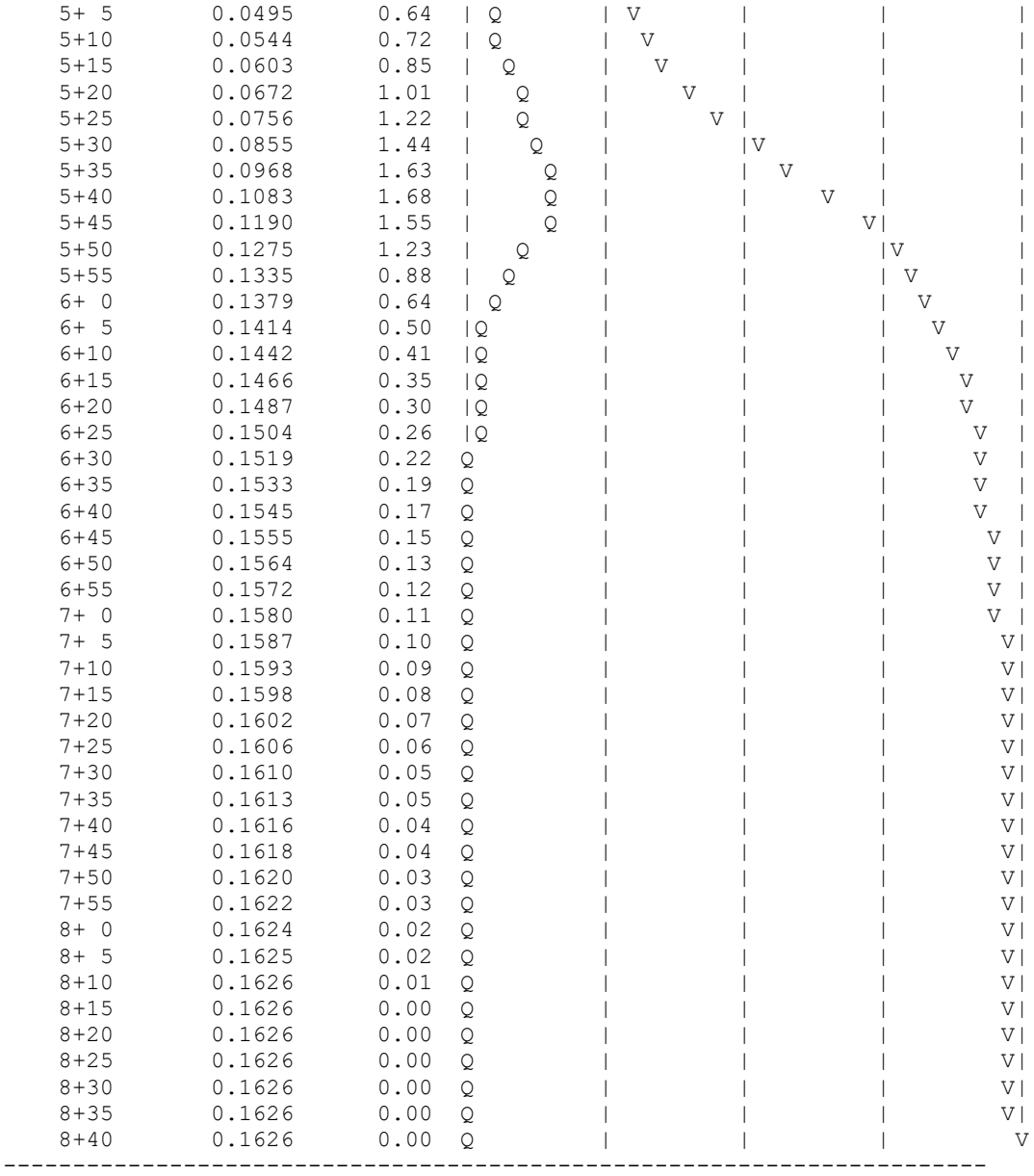
Peak flow rate of this hydrograph = 1.680(CFS)

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	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.02	Q				
0+25	0.0004	0.02	Q				
0+30	0.0006	0.03	Q				
0+35	0.0008	0.03	Q				
0+40	0.0010	0.04	Q				
0+45	0.0013	0.04	Q				
0+50	0.0016	0.04	Q				
0+55	0.0019	0.04	Q				
1+ 0	0.0022	0.04	Q				
1+ 5	0.0025	0.05	Q				
1+10	0.0028	0.05	Q				
1+15	0.0032	0.05	Q				
1+20	0.0036	0.05	Q				
1+25	0.0039	0.05	Q				
1+30	0.0043	0.05	QV				
1+35	0.0047	0.06	QV				
1+40	0.0051	0.06	QV				
1+45	0.0055	0.06	QV				
1+50	0.0059	0.06	QV				
1+55	0.0063	0.06	QV				
2+ 0	0.0067	0.06	QV				
2+ 5	0.0071	0.06	QV				
2+10	0.0075	0.06	QV				
2+15	0.0079	0.06	QV				
2+20	0.0083	0.06	Q V				
2+25	0.0088	0.06	Q V				
2+30	0.0092	0.06	Q V				
2+35	0.0097	0.07	Q V				
2+40	0.0101	0.07	Q V				
2+45	0.0106	0.07	Q V				
2+50	0.0110	0.07	Q V				
2+55	0.0115	0.07	Q V				
3+ 0	0.0120	0.07	Q V				
3+ 5	0.0125	0.07	Q V				
3+10	0.0130	0.07	Q V				
3+15	0.0135	0.07	Q V				
3+20	0.0140	0.08	Q V				
3+25	0.0145	0.08	Q V				
3+30	0.0151	0.08	Q V				
3+35	0.0156	0.08	Q V				
3+40	0.0162	0.09	Q V				
3+45	0.0168	0.09	Q V				
3+50	0.0175	0.09	Q V				
3+55	0.0182	0.10	Q V				
4+ 0	0.0189	0.10	Q V				
4+ 5	0.0197	0.11	Q V				
4+10	0.0205	0.13	Q V				
4+15	0.0216	0.15	Q V				
4+20	0.0228	0.18	Q V				
4+25	0.0244	0.23	Q V				
4+30	0.0263	0.28	|Q V				
4+35	0.0286	0.33	|Q V				
4+40	0.0312	0.38	|Q V				
4+45	0.0342	0.43	|Q V				
4+50	0.0374	0.48	|Q V|				
4+55	0.0411	0.53	| Q V				
5+ 0	0.0451	0.58	| Q |V				



5+ 5	0.0495	0.64	Q	V			
5+10	0.0544	0.72	Q	V			
5+15	0.0603	0.85	Q	V			
5+20	0.0672	1.01	Q	V			
5+25	0.0756	1.22	Q	V			
5+30	0.0855	1.44	Q	V			
5+35	0.0968	1.63	Q	V			
5+40	0.1083	1.68	Q	V			
5+45	0.1190	1.55	Q	V			
5+50	0.1275	1.23	Q	V			
5+55	0.1335	0.88	Q	V			
6+ 0	0.1379	0.64	Q	V			
6+ 5	0.1414	0.50	Q	V			
6+10	0.1442	0.41	Q	V			
6+15	0.1466	0.35	Q	V			
6+20	0.1487	0.30	Q	V			
6+25	0.1504	0.26	Q	V			
6+30	0.1519	0.22	Q	V			
6+35	0.1533	0.19	Q	V			
6+40	0.1545	0.17	Q	V			
6+45	0.1555	0.15	Q	V			
6+50	0.1564	0.13	Q	V			
6+55	0.1572	0.12	Q	V			
7+ 0	0.1580	0.11	Q	V			
7+ 5	0.1587	0.10	Q	V			
7+10	0.1593	0.09	Q	V			
7+15	0.1598	0.08	Q	V			
7+20	0.1602	0.07	Q	V			
7+25	0.1606	0.06	Q	V			
7+30	0.1610	0.05	Q	V			
7+35	0.1613	0.05	Q	V			
7+40	0.1616	0.04	Q	V			
7+45	0.1618	0.04	Q	V			
7+50	0.1620	0.03	Q	V			
7+55	0.1622	0.03	Q	V			
8+ 0	0.1624	0.02	Q	V			
8+ 5	0.1625	0.02	Q	V			
8+10	0.1626	0.01	Q	V			
8+15	0.1626	0.00	Q	V			
8+20	0.1626	0.00	Q	V			
8+25	0.1626	0.00	Q	V			
8+30	0.1626	0.00	Q	V			
8+35	0.1626	0.00	Q	V			
8+40	0.1626	0.00	Q	V			

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

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Study date 02/19/20 File: 8946E2A1245.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
5 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	2.25	8.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	5.25	19.43

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.953(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.953(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.024	(0.508)		0.021	0.002
2	0.17	0.07	0.024	(0.506)		0.021	0.002
3	0.25	0.07	0.024	(0.504)		0.021	0.002
4	0.33	0.10	0.035	(0.502)		0.032	0.004
5	0.42	0.10	0.035	(0.500)		0.032	0.004
6	0.50	0.10	0.035	(0.498)		0.032	0.004
7	0.58	0.10	0.035	(0.496)		0.032	0.004
8	0.67	0.10	0.035	(0.494)		0.032	0.004
9	0.75	0.10	0.035	(0.492)		0.032	0.004
10	0.83	0.13	0.047	(0.490)		0.043	0.005
11	0.92	0.13	0.047	(0.488)		0.043	0.005
12	1.00	0.13	0.047	(0.486)		0.043	0.005
13	1.08	0.10	0.035	(0.485)		0.032	0.004

14	1.17	0.10	0.035	(0.483)	0.032	0.004
15	1.25	0.10	0.035	(0.481)	0.032	0.004
16	1.33	0.10	0.035	(0.479)	0.032	0.004
17	1.42	0.10	0.035	(0.477)	0.032	0.004
18	1.50	0.10	0.035	(0.475)	0.032	0.004
19	1.58	0.10	0.035	(0.473)	0.032	0.004
20	1.67	0.10	0.035	(0.471)	0.032	0.004
21	1.75	0.10	0.035	(0.469)	0.032	0.004
22	1.83	0.13	0.047	(0.467)	0.043	0.005
23	1.92	0.13	0.047	(0.466)	0.043	0.005
24	2.00	0.13	0.047	(0.464)	0.043	0.005
25	2.08	0.13	0.047	(0.462)	0.043	0.005
26	2.17	0.13	0.047	(0.460)	0.043	0.005
27	2.25	0.13	0.047	(0.458)	0.043	0.005
28	2.33	0.13	0.047	(0.456)	0.043	0.005
29	2.42	0.13	0.047	(0.454)	0.043	0.005
30	2.50	0.13	0.047	(0.452)	0.043	0.005
31	2.58	0.17	0.059	(0.451)	0.053	0.006
32	2.67	0.17	0.059	(0.449)	0.053	0.006
33	2.75	0.17	0.059	(0.447)	0.053	0.006
34	2.83	0.17	0.059	(0.445)	0.053	0.006
35	2.92	0.17	0.059	(0.443)	0.053	0.006
36	3.00	0.17	0.059	(0.441)	0.053	0.006
37	3.08	0.17	0.059	(0.440)	0.053	0.006
38	3.17	0.17	0.059	(0.438)	0.053	0.006
39	3.25	0.17	0.059	(0.436)	0.053	0.006
40	3.33	0.17	0.059	(0.434)	0.053	0.006
41	3.42	0.17	0.059	(0.432)	0.053	0.006
42	3.50	0.17	0.059	(0.430)	0.053	0.006
43	3.58	0.17	0.059	(0.429)	0.053	0.006
44	3.67	0.17	0.059	(0.427)	0.053	0.006
45	3.75	0.17	0.059	(0.425)	0.053	0.006
46	3.83	0.20	0.071	(0.423)	0.064	0.007
47	3.92	0.20	0.071	(0.422)	0.064	0.007
48	4.00	0.20	0.071	(0.420)	0.064	0.007
49	4.08	0.20	0.071	(0.418)	0.064	0.007
50	4.17	0.20	0.071	(0.416)	0.064	0.007
51	4.25	0.20	0.071	(0.414)	0.064	0.007
52	4.33	0.23	0.083	(0.413)	0.074	0.008
53	4.42	0.23	0.083	(0.411)	0.074	0.008
54	4.50	0.23	0.083	(0.409)	0.074	0.008
55	4.58	0.23	0.083	(0.407)	0.074	0.008
56	4.67	0.23	0.083	(0.406)	0.074	0.008
57	4.75	0.23	0.083	(0.404)	0.074	0.008
58	4.83	0.27	0.094	(0.402)	0.085	0.009
59	4.92	0.27	0.094	(0.400)	0.085	0.009
60	5.00	0.27	0.094	(0.399)	0.085	0.009
61	5.08	0.20	0.071	(0.397)	0.064	0.007
62	5.17	0.20	0.071	(0.395)	0.064	0.007
63	5.25	0.20	0.071	(0.393)	0.064	0.007
64	5.33	0.23	0.083	(0.392)	0.074	0.008
65	5.42	0.23	0.083	(0.390)	0.074	0.008
66	5.50	0.23	0.083	(0.388)	0.074	0.008
67	5.58	0.27	0.094	(0.387)	0.085	0.009
68	5.67	0.27	0.094	(0.385)	0.085	0.009
69	5.75	0.27	0.094	(0.383)	0.085	0.009
70	5.83	0.27	0.094	(0.382)	0.085	0.009
71	5.92	0.27	0.094	(0.380)	0.085	0.009
72	6.00	0.27	0.094	(0.378)	0.085	0.009
73	6.08	0.30	0.106	(0.376)	0.096	0.011
74	6.17	0.30	0.106	(0.375)	0.096	0.011
75	6.25	0.30	0.106	(0.373)	0.096	0.011
76	6.33	0.30	0.106	(0.371)	0.096	0.011
77	6.42	0.30	0.106	(0.370)	0.096	0.011
78	6.50	0.30	0.106	(0.368)	0.096	0.011
79	6.58	0.33	0.118	(0.366)	0.106	0.012
80	6.67	0.33	0.118	(0.365)	0.106	0.012
81	6.75	0.33	0.118	(0.363)	0.106	0.012
82	6.83	0.33	0.118	(0.362)	0.106	0.012
83	6.92	0.33	0.118	(0.360)	0.106	0.012

84	7.00	0.33	0.118	(	0.358)	0.106		0.012
85	7.08	0.33	0.118	(	0.357)	0.106		0.012
86	7.17	0.33	0.118	(	0.355)	0.106		0.012
87	7.25	0.33	0.118	(	0.353)	0.106		0.012
88	7.33	0.37	0.130	(	0.352)	0.117		0.013
89	7.42	0.37	0.130	(	0.350)	0.117		0.013
90	7.50	0.37	0.130	(	0.349)	0.117		0.013
91	7.58	0.40	0.142	(	0.347)	0.128		0.014
92	7.67	0.40	0.142	(	0.345)	0.128		0.014
93	7.75	0.40	0.142	(	0.344)	0.128		0.014
94	7.83	0.43	0.154	(	0.342)	0.138		0.015
95	7.92	0.43	0.154	(	0.341)	0.138		0.015
96	8.00	0.43	0.154	(	0.339)	0.138		0.015
97	8.08	0.50	0.177	(	0.337)	0.159		0.018
98	8.17	0.50	0.177	(	0.336)	0.159		0.018
99	8.25	0.50	0.177	(	0.334)	0.159		0.018
100	8.33	0.50	0.177	(	0.333)	0.159		0.018
101	8.42	0.50	0.177	(	0.331)	0.159		0.018
102	8.50	0.50	0.177	(	0.330)	0.159		0.018
103	8.58	0.53	0.189	(	0.328)	0.170		0.019
104	8.67	0.53	0.189	(	0.327)	0.170		0.019
105	8.75	0.53	0.189	(	0.325)	0.170		0.019
106	8.83	0.57	0.201	(	0.323)	0.181		0.020
107	8.92	0.57	0.201	(	0.322)	0.181		0.020
108	9.00	0.57	0.201	(	0.320)	0.181		0.020
109	9.08	0.63	0.224	(	0.319)	0.202		0.022
110	9.17	0.63	0.224	(	0.317)	0.202		0.022
111	9.25	0.63	0.224	(	0.316)	0.202		0.022
112	9.33	0.67	0.236	(	0.314)	0.213		0.024
113	9.42	0.67	0.236	(	0.313)	0.213		0.024
114	9.50	0.67	0.236	(	0.311)	0.213		0.024
115	9.58	0.70	0.248	(	0.310)	0.223		0.025
116	9.67	0.70	0.248	(	0.308)	0.223		0.025
117	9.75	0.70	0.248	(	0.307)	0.223		0.025
118	9.83	0.73	0.260	(	0.305)	0.234		0.026
119	9.92	0.73	0.260	(	0.304)	0.234		0.026
120	10.00	0.73	0.260	(	0.303)	0.234		0.026
121	10.08	0.50	0.177	(	0.301)	0.159		0.018
122	10.17	0.50	0.177	(	0.300)	0.159		0.018
123	10.25	0.50	0.177	(	0.298)	0.159		0.018
124	10.33	0.50	0.177	(	0.297)	0.159		0.018
125	10.42	0.50	0.177	(	0.295)	0.159		0.018
126	10.50	0.50	0.177	(	0.294)	0.159		0.018
127	10.58	0.67	0.236	(	0.292)	0.213		0.024
128	10.67	0.67	0.236	(	0.291)	0.213		0.024
129	10.75	0.67	0.236	(	0.290)	0.213		0.024
130	10.83	0.67	0.236	(	0.288)	0.213		0.024
131	10.92	0.67	0.236	(	0.287)	0.213		0.024
132	11.00	0.67	0.236	(	0.285)	0.213		0.024
133	11.08	0.63	0.224	(	0.284)	0.202		0.022
134	11.17	0.63	0.224	(	0.282)	0.202		0.022
135	11.25	0.63	0.224	(	0.281)	0.202		0.022
136	11.33	0.63	0.224	(	0.280)	0.202		0.022
137	11.42	0.63	0.224	(	0.278)	0.202		0.022
138	11.50	0.63	0.224	(	0.277)	0.202		0.022
139	11.58	0.57	0.201	(	0.276)	0.181		0.020
140	11.67	0.57	0.201	(	0.274)	0.181		0.020
141	11.75	0.57	0.201	(	0.273)	0.181		0.020
142	11.83	0.60	0.213	(	0.271)	0.191		0.021
143	11.92	0.60	0.213	(	0.270)	0.191		0.021
144	12.00	0.60	0.213	(	0.269)	0.191		0.021
145	12.08	0.83	0.295	(	0.267)	0.266		0.030
146	12.17	0.83	0.295	(	0.266)	0.266		0.030
147	12.25	0.83	0.295		0.265	(0.266)		0.031
148	12.33	0.87	0.307		0.263	(0.276)		0.044
149	12.42	0.87	0.307		0.262	(0.276)		0.045
150	12.50	0.87	0.307		0.261	(0.276)		0.046
151	12.58	0.93	0.331		0.259	(0.298)		0.071
152	12.67	0.93	0.331		0.258	(0.298)		0.073
153	12.75	0.93	0.331		0.257	(0.298)		0.074

154	12.83	0.97	0.343		0.256	(0.308)	0.087
155	12.92	0.97	0.343		0.254	(0.308)	0.088
156	13.00	0.97	0.343		0.253	(0.308)	0.090
157	13.08	1.13	0.402		0.252	(0.361)	0.150
158	13.17	1.13	0.402		0.250	(0.361)	0.151
159	13.25	1.13	0.402		0.249	(0.361)	0.152
160	13.33	1.13	0.402		0.248	(0.361)	0.154
161	13.42	1.13	0.402		0.247	(0.361)	0.155
162	13.50	1.13	0.402		0.245	(0.361)	0.156
163	13.58	0.77	0.272		0.244	(0.244)	0.028
164	13.67	0.77	0.272		0.243	(0.244)	0.029
165	13.75	0.77	0.272		0.242	(0.244)	0.030
166	13.83	0.77	0.272		0.240	(0.244)	0.031
167	13.92	0.77	0.272		0.239	(0.244)	0.032
168	14.00	0.77	0.272		0.238	(0.244)	0.034
169	14.08	0.90	0.319		0.237	(0.287)	0.082
170	14.17	0.90	0.319		0.236	(0.287)	0.083
171	14.25	0.90	0.319		0.234	(0.287)	0.085
172	14.33	0.87	0.307		0.233	(0.276)	0.074
173	14.42	0.87	0.307		0.232	(0.276)	0.075
174	14.50	0.87	0.307		0.231	(0.276)	0.076
175	14.58	0.87	0.307		0.230	(0.276)	0.078
176	14.67	0.87	0.307		0.228	(0.276)	0.079
177	14.75	0.87	0.307		0.227	(0.276)	0.080
178	14.83	0.83	0.295		0.226	(0.266)	0.069
179	14.92	0.83	0.295		0.225	(0.266)	0.070
180	15.00	0.83	0.295		0.224	(0.266)	0.072
181	15.08	0.80	0.283		0.223	(0.255)	0.061
182	15.17	0.80	0.283		0.221	(0.255)	0.062
183	15.25	0.80	0.283		0.220	(0.255)	0.063
184	15.33	0.77	0.272		0.219	(0.244)	0.052
185	15.42	0.77	0.272		0.218	(0.244)	0.054
186	15.50	0.77	0.272		0.217	(0.244)	0.055
187	15.58	0.63	0.224	(0.216)		0.202	0.022
188	15.67	0.63	0.224	(0.215)		0.202	0.022
189	15.75	0.63	0.224	(0.214)		0.202	0.022
190	15.83	0.63	0.224	(0.213)		0.202	0.022
191	15.92	0.63	0.224	(0.211)		0.202	0.022
192	16.00	0.63	0.224	(0.210)		0.202	0.022
193	16.08	0.13	0.047	(0.209)		0.043	0.005
194	16.17	0.13	0.047	(0.208)		0.043	0.005
195	16.25	0.13	0.047	(0.207)		0.043	0.005
196	16.33	0.13	0.047	(0.206)		0.043	0.005
197	16.42	0.13	0.047	(0.205)		0.043	0.005
198	16.50	0.13	0.047	(0.204)		0.043	0.005
199	16.58	0.10	0.035	(0.203)		0.032	0.004
200	16.67	0.10	0.035	(0.202)		0.032	0.004
201	16.75	0.10	0.035	(0.201)		0.032	0.004
202	16.83	0.10	0.035	(0.200)		0.032	0.004
203	16.92	0.10	0.035	(0.199)		0.032	0.004
204	17.00	0.10	0.035	(0.198)		0.032	0.004
205	17.08	0.17	0.059	(0.197)		0.053	0.006
206	17.17	0.17	0.059	(0.196)		0.053	0.006
207	17.25	0.17	0.059	(0.195)		0.053	0.006
208	17.33	0.17	0.059	(0.194)		0.053	0.006
209	17.42	0.17	0.059	(0.193)		0.053	0.006
210	17.50	0.17	0.059	(0.192)		0.053	0.006
211	17.58	0.17	0.059	(0.191)		0.053	0.006
212	17.67	0.17	0.059	(0.190)		0.053	0.006
213	17.75	0.17	0.059	(0.189)		0.053	0.006
214	17.83	0.13	0.047	(0.188)		0.043	0.005
215	17.92	0.13	0.047	(0.187)		0.043	0.005
216	18.00	0.13	0.047	(0.186)		0.043	0.005
217	18.08	0.13	0.047	(0.185)		0.043	0.005
218	18.17	0.13	0.047	(0.185)		0.043	0.005
219	18.25	0.13	0.047	(0.184)		0.043	0.005
220	18.33	0.13	0.047	(0.183)		0.043	0.005
221	18.42	0.13	0.047	(0.182)		0.043	0.005
222	18.50	0.13	0.047	(0.181)		0.043	0.005
223	18.58	0.10	0.035	(0.180)		0.032	0.004

224	18.67	0.10	0.035	(0.179)	0.032	0.004
225	18.75	0.10	0.035	(0.178)	0.032	0.004
226	18.83	0.07	0.024	(0.177)	0.021	0.002
227	18.92	0.07	0.024	(0.177)	0.021	0.002
228	19.00	0.07	0.024	(0.176)	0.021	0.002
229	19.08	0.10	0.035	(0.175)	0.032	0.004
230	19.17	0.10	0.035	(0.174)	0.032	0.004
231	19.25	0.10	0.035	(0.173)	0.032	0.004
232	19.33	0.13	0.047	(0.173)	0.043	0.005
233	19.42	0.13	0.047	(0.172)	0.043	0.005
234	19.50	0.13	0.047	(0.171)	0.043	0.005
235	19.58	0.10	0.035	(0.170)	0.032	0.004
236	19.67	0.10	0.035	(0.169)	0.032	0.004
237	19.75	0.10	0.035	(0.169)	0.032	0.004
238	19.83	0.07	0.024	(0.168)	0.021	0.002
239	19.92	0.07	0.024	(0.167)	0.021	0.002
240	20.00	0.07	0.024	(0.166)	0.021	0.002
241	20.08	0.10	0.035	(0.166)	0.032	0.004
242	20.17	0.10	0.035	(0.165)	0.032	0.004
243	20.25	0.10	0.035	(0.164)	0.032	0.004
244	20.33	0.10	0.035	(0.163)	0.032	0.004
245	20.42	0.10	0.035	(0.163)	0.032	0.004
246	20.50	0.10	0.035	(0.162)	0.032	0.004
247	20.58	0.10	0.035	(0.161)	0.032	0.004
248	20.67	0.10	0.035	(0.161)	0.032	0.004
249	20.75	0.10	0.035	(0.160)	0.032	0.004
250	20.83	0.07	0.024	(0.159)	0.021	0.002
251	20.92	0.07	0.024	(0.159)	0.021	0.002
252	21.00	0.07	0.024	(0.158)	0.021	0.002
253	21.08	0.10	0.035	(0.157)	0.032	0.004
254	21.17	0.10	0.035	(0.157)	0.032	0.004
255	21.25	0.10	0.035	(0.156)	0.032	0.004
256	21.33	0.07	0.024	(0.156)	0.021	0.002
257	21.42	0.07	0.024	(0.155)	0.021	0.002
258	21.50	0.07	0.024	(0.155)	0.021	0.002
259	21.58	0.10	0.035	(0.154)	0.032	0.004
260	21.67	0.10	0.035	(0.153)	0.032	0.004
261	21.75	0.10	0.035	(0.153)	0.032	0.004
262	21.83	0.07	0.024	(0.152)	0.021	0.002
263	21.92	0.07	0.024	(0.152)	0.021	0.002
264	22.00	0.07	0.024	(0.151)	0.021	0.002
265	22.08	0.10	0.035	(0.151)	0.032	0.004
266	22.17	0.10	0.035	(0.150)	0.032	0.004
267	22.25	0.10	0.035	(0.150)	0.032	0.004
268	22.33	0.07	0.024	(0.149)	0.021	0.002
269	22.42	0.07	0.024	(0.149)	0.021	0.002
270	22.50	0.07	0.024	(0.148)	0.021	0.002
271	22.58	0.07	0.024	(0.148)	0.021	0.002
272	22.67	0.07	0.024	(0.148)	0.021	0.002
273	22.75	0.07	0.024	(0.147)	0.021	0.002
274	22.83	0.07	0.024	(0.147)	0.021	0.002
275	22.92	0.07	0.024	(0.146)	0.021	0.002
276	23.00	0.07	0.024	(0.146)	0.021	0.002
277	23.08	0.07	0.024	(0.146)	0.021	0.002
278	23.17	0.07	0.024	(0.145)	0.021	0.002
279	23.25	0.07	0.024	(0.145)	0.021	0.002
280	23.33	0.07	0.024	(0.145)	0.021	0.002
281	23.42	0.07	0.024	(0.145)	0.021	0.002
282	23.50	0.07	0.024	(0.144)	0.021	0.002
283	23.58	0.07	0.024	(0.144)	0.021	0.002
284	23.67	0.07	0.024	(0.144)	0.021	0.002
285	23.75	0.07	0.024	(0.144)	0.021	0.002
286	23.83	0.07	0.024	(0.143)	0.021	0.002
287	23.92	0.07	0.024	(0.143)	0.021	0.002
288	24.00	0.07	0.024	(0.143)	0.021	0.002
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	5.3

Flood volume = Effective rainfall 0.44(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 2.51(In)

```
    Total soil loss =     0.774(Ac.Ft)
    Total rainfall =      2.95(In)
    Flood volume =        5931.4 Cubic Feet
    Total soil loss =       33725.7 Cubic Feet
    ---------------------------------------------------------------------
     Peak flow rate of this hydrograph =      0.461(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       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0000      0.00  Q         |         |         |         |
  0+20       0.0000      0.00  Q         |         |         |         |
  0+25       0.0001      0.01  Q         |         |         |         |
  0+30       0.0001      0.01  Q         |         |         |         |
  0+35       0.0002      0.01  Q         |         |         |         |
  0+40       0.0002      0.01  Q         |         |         |         |
  0+45       0.0003      0.01  Q         |         |         |         |
  0+50       0.0004      0.01  Q         |         |         |         |
  0+55       0.0005      0.01  Q         |         |         |         |
  1+ 0       0.0005      0.01  Q         |         |         |         |
  1+ 5       0.0006      0.01  Q         |         |         |         |
  1+10       0.0007      0.01  Q         |         |         |         |
  1+15       0.0008      0.01  Q         |         |         |         |
  1+20       0.0009      0.01  Q         |         |         |         |
  1+25       0.0010      0.01  Q         |         |         |         |
  1+30       0.0011      0.01  Q         |         |         |         |
  1+35       0.0012      0.01  Q         |         |         |         |
  1+40       0.0013      0.01  Q         |         |         |         |
  1+45       0.0014      0.01  Q         |         |         |         |
  1+50       0.0014      0.01  Q         |         |         |         |
  1+55       0.0015      0.01  Q         |         |         |         |
  2+ 0       0.0016      0.01  Q         |         |         |         |
  2+ 5       0.0017      0.01  Q         |         |         |         |
  2+10       0.0018      0.02  Q         |         |         |         |
  2+15       0.0020      0.02  Q         |         |         |         |
  2+20       0.0021      0.02  Q         |         |         |         |
  2+25       0.0022      0.02  Q         |         |         |         |
  2+30       0.0023      0.02  Q         |         |         |         |
  2+35       0.0024      0.02  Q         |         |         |         |
  2+40       0.0025      0.02  Q         |         |         |         |
  2+45       0.0027      0.02  Q         |         |         |         |
  2+50       0.0028      0.02  Q         |         |         |         |
  2+55       0.0029      0.02  Q         |         |         |         |
  3+ 0       0.0031      0.02  Q         |         |         |         |
  3+ 5       0.0032      0.02  Q         |         |         |         |
  3+10       0.0033      0.02  Q         |         |         |         |
  3+15       0.0035      0.02  QV        |         |         |         |
  3+20       0.0036      0.02  QV        |         |         |         |
  3+25       0.0038      0.02  QV        |         |         |         |
  3+30       0.0039      0.02  QV        |         |         |         |
  3+35       0.0041      0.02  QV        |         |         |         |
  3+40       0.0042      0.02  QV        |         |         |         |
  3+45       0.0044      0.02  QV        |         |         |         |
  3+50       0.0045      0.02  QV        |         |         |         |
  3+55       0.0047      0.02  QV        |         |         |         |
  4+ 0       0.0048      0.02  QV        |         |         |         |
  4+ 5       0.0050      0.02  QV        |         |         |         |
  4+10       0.0051      0.02  QV        |         |         |         |
  4+15       0.0053      0.02  QV        |         |         |         |
  4+20       0.0055      0.03  QV        |         |         |         |
  4+25       0.0057      0.03  QV        |         |         |         |
  4+30       0.0058      0.03  QV        |         |         |         |
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4+35	0.0060	0.03	QV	|	|	|	|
4+40	0.0062	0.03	QV	|	|	|	|
4+45	0.0064	0.03	QV	|	|	|	|
4+50	0.0066	0.03	QV	|	|	|	|
4+55	0.0068	0.03	Q V	|	|	|	|
5+ 0	0.0070	0.03	Q V	|	|	|	|
5+ 5	0.0073	0.03	Q V	|	|	|	|
5+10	0.0075	0.03	Q V	|	|	|	|
5+15	0.0077	0.03	Q V	|	|	|	|
5+20	0.0079	0.03	Q V	|	|	|	|
5+25	0.0081	0.03	Q V	|	|	|	|
5+30	0.0083	0.03	Q V	|	|	|	|
5+35	0.0085	0.03	Q V	|	|	|	|
5+40	0.0087	0.03	Q V	|	|	|	|
5+45	0.0089	0.03	Q V	|	|	|	|
5+50	0.0091	0.03	Q V	|	|	|	|
5+55	0.0094	0.03	Q V	|	|	|	|
6+ 0	0.0096	0.03	Q V	|	|	|	|
6+ 5	0.0098	0.03	Q V	|	|	|	|
6+10	0.0101	0.03	Q V	|	|	|	|
6+15	0.0103	0.04	Q V	|	|	|	|
6+20	0.0105	0.04	Q V	|	|	|	|
6+25	0.0108	0.04	Q V	|	|	|	|
6+30	0.0111	0.04	Q V	|	|	|	|
6+35	0.0113	0.04	Q V	|	|	|	|
6+40	0.0116	0.04	Q V	|	|	|	|
6+45	0.0119	0.04	Q V	|	|	|	|
6+50	0.0121	0.04	Q V	|	|	|	|
6+55	0.0124	0.04	Q V	|	|	|	|
7+ 0	0.0127	0.04	Q V	|	|	|	|
7+ 5	0.0130	0.04	Q V	|	|	|	|
7+10	0.0133	0.04	Q V	|	|	|	|
7+15	0.0136	0.04	Q V	|	|	|	|
7+20	0.0139	0.04	Q V	|	|	|	|
7+25	0.0142	0.04	Q V	|	|	|	|
7+30	0.0145	0.04	Q V	|	|	|	|
7+35	0.0148	0.04	Q V	|	|	|	|
7+40	0.0151	0.05	Q V	|	|	|	|
7+45	0.0154	0.05	Q V	|	|	|	|
7+50	0.0158	0.05	Q V	|	|	|	|
7+55	0.0161	0.05	Q V	|	|	|	|
8+ 0	0.0164	0.05	Q V	|	|	|	|
8+ 5	0.0168	0.05	Q V	|	|	|	|
8+10	0.0172	0.05	Q V	|	|	|	|
8+15	0.0176	0.06	Q V	|	|	|	|
8+20	0.0180	0.06	Q V	|	|	|	|
8+25	0.0184	0.06	Q V	|	|	|	|
8+30	0.0188	0.06	Q V	|	|	|	|
8+35	0.0192	0.06	Q V	|	|	|	|
8+40	0.0196	0.06	Q V	|	|	|	|
8+45	0.0201	0.06	Q V	|	|	|	|
8+50	0.0205	0.07	Q V	|	|	|	|
8+55	0.0210	0.07	Q V	|	|	|	|
9+ 0	0.0215	0.07	Q V	|	|	|	|
9+ 5	0.0219	0.07	Q V	|	|	|	|
9+10	0.0224	0.07	Q V	|	|	|	|
9+15	0.0229	0.07	Q V	|	|	|	|
9+20	0.0234	0.08	Q V	|	|	|	|
9+25	0.0240	0.08	Q V	|	|	|	|
9+30	0.0245	0.08	Q V	|	|	|	|
9+35	0.0251	0.08	Q V	|	|	|	|
9+40	0.0256	0.08	Q V	|	|	|	|
9+45	0.0262	0.08	Q V	|	|	|	|
9+50	0.0268	0.09	Q V	|	|	|	|
9+55	0.0274	0.09	Q V	|	|	|	|
10+ 0	0.0280	0.09	Q V	|	|	|	|
10+ 5	0.0286	0.09	Q V	|	|	|	|
10+10	0.0293	0.09	Q V	|	|	|	|
10+15	0.0298	0.09	Q V	|	|	|	|
10+20	0.0304	0.08	Q V	|	|	|	|

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10+25       0.0309      0.08  Q        V|         |         |         |
10+30       0.0314      0.07  Q        V|         |         |         |
10+35       0.0319      0.07  Q        V|         |         |         |
10+40       0.0324      0.07  Q        V|         |         |         |
10+45       0.0330      0.08  Q        V|         |         |         |
10+50       0.0335      0.08  Q        V|         |         |         |
10+55       0.0341      0.08  Q         V         |         |         |
11+ 0       0.0347      0.08  Q         V         |         |         |
11+ 5       0.0352      0.08  Q         V         |         |         |
11+10       0.0358      0.08  Q         V         |         |         |
11+15       0.0364      0.08  Q         V         |         |         |
11+20       0.0370      0.08  Q         V         |         |         |
11+25       0.0376      0.08  Q         |V        |         |         |
11+30       0.0381      0.08  Q         |V        |         |         |
11+35       0.0387      0.08  Q         |V        |         |         |
11+40       0.0393      0.08  Q         |V        |         |         |
11+45       0.0398      0.08  Q         |V        |         |         |
11+50       0.0404      0.08  Q         |V        |         |         |
11+55       0.0409      0.08  Q         | V       |         |         |
12+ 0       0.0415      0.08  Q         | V       |         |         |
12+ 5       0.0420      0.08  Q         | V       |         |         |
12+10       0.0426      0.08  Q         | V       |         |         |
12+15       0.0432      0.09  Q         | V       |         |         |
12+20       0.0438      0.09  Q         | V       |         |         |
12+25       0.0445      0.10  Q         |  V      |         |         |
12+30       0.0453      0.11  Q         |  V      |         |         |
12+35       0.0462      0.13  Q         |  V      |         |         |
12+40       0.0472      0.14  Q         |  V      |         |         |
12+45       0.0483      0.16  Q         |   V     |         |         |
12+50       0.0496      0.19  Q         |   V     |         |         |
12+55       0.0510      0.21  Q         |   V     |         |         |
13+ 0       0.0526      0.23  Q         |    V    |         |         |
13+ 5       0.0544      0.25  |Q        |    V    |         |         |
13+10       0.0564      0.29  |Q        |     V   |         |         |
13+15       0.0586      0.33  |Q        |      V  |         |         |
13+20       0.0612      0.38  |Q        |      V  |         |         |
13+25       0.0641      0.42  |Q        |       V |         |         |
13+30       0.0672      0.45  |Q        |        V|         |         |
13+35       0.0704      0.46  |Q        |         V         |         |
13+40       0.0734      0.44  |Q        |         |V        |         |
13+45       0.0762      0.39  |Q        |         | V       |         |
13+50       0.0784      0.33  |Q        |         |  V      |         |
13+55       0.0802      0.26  |Q        |         |  V      |         |
14+ 0       0.0818      0.23  Q         |         |   V     |         |
14+ 5       0.0832      0.21  Q         |         |   V     |         |
14+10       0.0846      0.21  Q         |         |   V     |         |
14+15       0.0862      0.22  Q         |         |    V    |         |
14+20       0.0879      0.25  Q         |         |    V    |         |
14+25       0.0897      0.27  |Q        |         |     V   |         |
14+30       0.0916      0.28  |Q        |         |     V   |         |
14+35       0.0936      0.28  |Q        |         |      V  |         |
14+40       0.0955      0.28  |Q        |         |       V |         |
14+45       0.0974      0.28  |Q        |         |       V |         |
14+50       0.0994      0.28  |Q        |         |        V|         |
14+55       0.1013      0.28  |Q        |         |        V|         |
15+ 0       0.1033      0.28  |Q        |         |         V         |
15+ 5       0.1052      0.28  |Q        |         |         V         |
15+10       0.1071      0.27  |Q        |         |         |V        |
15+15       0.1089      0.26  |Q        |         |         |V        |
15+20       0.1107      0.26  |Q        |         |         | V       |
15+25       0.1124      0.25  Q         |         |         |  V      |
15+30       0.1140      0.24  Q         |         |         |  V      |
15+35       0.1156      0.23  Q         |         |         |  V      |
15+40       0.1171      0.21  Q         |         |         |   V     |
15+45       0.1184      0.20  Q         |         |         |   V     |
15+50       0.1196      0.17  Q         |         |         |    V    |
15+55       0.1207      0.15  Q         |         |         |    V    |
16+ 0       0.1216      0.14  Q         |         |         |    V    |
16+ 5       0.1225      0.13  Q         |         |         |    V    |
16+10       0.1233      0.12  Q         |         |         |     V   |
```

16+15	0.1240	0.10	Q	|	|	|	V |
16+20	0.1246	0.09	Q	|	|	|	V |
16+25	0.1251	0.07	Q	|	|	|	V |
16+30	0.1255	0.06	Q	|	|	|	V |
16+35	0.1259	0.06	Q	|	|	|	V |
16+40	0.1262	0.05	Q	|	|	|	V |
16+45	0.1265	0.05	Q	|	|	|	V |
16+50	0.1268	0.04	Q	|	|	|	V |
16+55	0.1271	0.04	Q	|	|	|	V |
17+ 0	0.1273	0.03	Q	|	|	|	V |
17+ 5	0.1275	0.03	Q	|	|	|	V |
17+10	0.1277	0.03	Q	|	|	|	V |
17+15	0.1279	0.03	Q	|	|	|	V |
17+20	0.1281	0.03	Q	|	|	|	V |
17+25	0.1283	0.03	Q	|	|	|	V |
17+30	0.1285	0.03	Q	|	|	|	V |
17+35	0.1287	0.03	Q	|	|	|	V |
17+40	0.1289	0.03	Q	|	|	|	V |
17+45	0.1291	0.03	Q	|	|	|	V |
17+50	0.1292	0.02	Q	|	|	|	V |
17+55	0.1294	0.02	Q	|	|	|	V |
18+ 0	0.1296	0.02	Q	|	|	|	V |
18+ 5	0.1297	0.02	Q	|	|	|	V |
18+10	0.1299	0.02	Q	|	|	|	V |
18+15	0.1300	0.02	Q	|	|	|	V |
18+20	0.1301	0.02	Q	|	|	|	V |
18+25	0.1302	0.02	Q	|	|	|	V |
18+30	0.1304	0.02	Q	|	|	|	V |
18+35	0.1305	0.02	Q	|	|	|	V |
18+40	0.1306	0.02	Q	|	|	|	V |
18+45	0.1307	0.02	Q	|	|	|	V |
18+50	0.1309	0.02	Q	|	|	|	V |
18+55	0.1310	0.02	Q	|	|	|	V |
19+ 0	0.1311	0.01	Q	|	|	|	V |
19+ 5	0.1311	0.01	Q	|	|	|	V |
19+10	0.1312	0.01	Q	|	|	|	V |
19+15	0.1313	0.01	Q	|	|	|	V |
19+20	0.1314	0.01	Q	|	|	|	V |
19+25	0.1315	0.01	Q	|	|	|	V |
19+30	0.1316	0.01	Q	|	|	|	V |
19+35	0.1317	0.02	Q	|	|	|	V |
19+40	0.1318	0.02	Q	|	|	|	V |
19+45	0.1319	0.02	Q	|	|	|	V |
19+50	0.1320	0.01	Q	|	|	|	V |
19+55	0.1321	0.01	Q	|	|	|	V |
20+ 0	0.1322	0.01	Q	|	|	|	V |
20+ 5	0.1323	0.01	Q	|	|	|	V |
20+10	0.1324	0.01	Q	|	|	|	V |
20+15	0.1324	0.01	Q	|	|	|	V |
20+20	0.1325	0.01	Q	|	|	|	V |
20+25	0.1326	0.01	Q	|	|	|	V |
20+30	0.1327	0.01	Q	|	|	|	V |
20+35	0.1328	0.01	Q	|	|	|	V|
20+40	0.1329	0.01	Q	|	|	|	V|
20+45	0.1330	0.01	Q	|	|	|	V|
20+50	0.1331	0.01	Q	|	|	|	V|
20+55	0.1331	0.01	Q	|	|	|	V|
21+ 0	0.1332	0.01	Q	|	|	|	V|
21+ 5	0.1333	0.01	Q	|	|	|	V|
21+10	0.1334	0.01	Q	|	|	|	V|
21+15	0.1335	0.01	Q	|	|	|	V|
21+20	0.1335	0.01	Q	|	|	|	V|
21+25	0.1336	0.01	Q	|	|	|	V|
21+30	0.1337	0.01	Q	|	|	|	V|
21+35	0.1338	0.01	Q	|	|	|	V|
21+40	0.1339	0.01	Q	|	|	|	V|
21+45	0.1339	0.01	Q	|	|	|	V|
21+50	0.1340	0.01	Q	|	|	|	V|
21+55	0.1341	0.01	Q	|	|	|	V|
22+ 0	0.1342	0.01	Q	|	|	|	V|

```
  22+ 5       0.1342      0.01  Q         |         |         |        V|
  22+10       0.1343      0.01  Q         |         |         |        V|
  22+15       0.1344      0.01  Q         |         |         |        V|
  22+20       0.1345      0.01  Q         |         |         |        V|
  22+25       0.1345      0.01  Q         |         |         |        V|
  22+30       0.1346      0.01  Q         |         |         |        V|
  22+35       0.1347      0.01  Q         |         |         |        V|
  22+40       0.1348      0.01  Q         |         |         |        V|
  22+45       0.1348      0.01  Q         |         |         |        V|
  22+50       0.1349      0.01  Q         |         |         |        V|
  22+55       0.1350      0.01  Q         |         |         |        V|
  23+ 0       0.1350      0.01  Q         |         |         |        V|
  23+ 5       0.1351      0.01  Q         |         |         |        V|
  23+10       0.1352      0.01  Q         |         |         |        V|
  23+15       0.1352      0.01  Q         |         |         |        V|
  23+20       0.1353      0.01  Q         |         |         |        V|
  23+25       0.1354      0.01  Q         |         |         |        V|
  23+30       0.1354      0.01  Q         |         |         |        V|
  23+35       0.1355      0.01  Q         |         |         |        V|
  23+40       0.1355      0.01  Q         |         |         |        V|
  23+45       0.1356      0.01  Q         |         |         |        V|
  23+50       0.1357      0.01  Q         |         |         |        V|
  23+55       0.1357      0.01  Q         |         |         |        V|
  24+ 0       0.1358      0.01  Q         |         |         |        V|
  24+ 5       0.1358      0.01  Q         |         |         |        V|
  24+10       0.1359      0.01  Q         |         |         |        V|
  24+15       0.1359      0.01  Q         |         |         |        V|
  24+20       0.1360      0.01  Q         |         |         |        V|
  24+25       0.1360      0.00  Q         |         |         |        V|
  24+30       0.1360      0.00  Q         |         |         |        V|
  24+35       0.1361      0.00  Q         |         |         |        V|
  24+40       0.1361      0.00  Q         |         |         |        V|
  24+45       0.1361      0.00  Q         |         |         |        V|
  24+50       0.1361      0.00  Q         |         |         |        V|
  24+55       0.1361      0.00  Q         |         |         |        V|
  25+ 0       0.1361      0.00  Q         |         |         |        V|
  25+ 5       0.1361      0.00  Q         |         |         |        V|
  25+10       0.1361      0.00  Q         |         |         |        V|
  25+15       0.1361      0.00  Q         |         |         |        V|
  25+20       0.1361      0.00  Q         |         |         |        V|
  25+25       0.1361      0.00  Q         |         |         |        V|
  25+30       0.1361      0.00  Q         |         |         |        V|
  25+35       0.1361      0.00  Q         |         |         |        V|
  25+40       0.1362      0.00  Q         |         |         |        V|
  25+45       0.1362      0.00  Q         |         |         |        V|
  25+50       0.1362      0.00  Q         |         |         |        V|
  25+55       0.1362      0.00  Q         |         |         |        V|
  26+ 0       0.1362      0.00  Q         |         |         |        V|
  26+ 5       0.1362      0.00  Q         |         |         |        V|
  26+10       0.1362      0.00  Q         |         |         |        V|
  26+15       0.1362      0.00  Q         |         |         |        V|
  26+20       0.1362      0.00  Q         |         |         |        V|
  26+25       0.1362      0.00  Q         |         |         |        V|
  26+30       0.1362      0.00  Q         |         |         |        V|
  26+35       0.1362      0.00  Q         |         |         |        V|
  26+40       0.1362      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 02/19/20 File: 8946E2A1110.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
10 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	0.55	2.04

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	1.30	4.81

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.859(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.859(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.340	0.141	(	0.306)	0.199
2	0.17	4.20	0.433	0.141	(	0.389)	0.291
3	0.25	4.40	0.453	0.141	(	0.408)	0.312
4	0.33	4.80	0.495	0.141	(	0.445)	0.353
5	0.42	5.20	0.536	0.141	(	0.482)	0.394
6	0.50	6.20	0.639	0.141	(	0.575)	0.497
7	0.58	6.80	0.701	0.141	(	0.631)	0.559
8	0.67	8.80	0.907	0.141	(	0.816)	0.765
9	0.75	13.90	1.432	0.141	(	1.289)	1.291
10	0.83	31.40	3.235	0.141	(	2.911)	3.094
11	0.92	7.20	0.742	0.141	(	0.668)	0.600

```
 12   1.00     3.80      0.391          0.141    (  0.352)        0.250
             (Loss Rate Not Used)
    Sum =     100.0                                    Sum =     8.6
      Flood volume = Effective rainfall      0.72(In)
       times area       3.7(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
      Total soil loss =      0.14(In)
      Total soil loss =     0.044(Ac.Ft)
      Total rainfall =      0.86(In)
      Flood volume =        9631.7 Cubic Feet
      Total soil loss =        1899.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      3.694(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        2.5       5.0       7.5      10.0
 ------------------------------------------------------------------------
   0+ 5       0.0001      0.02  Q         |         |         |         |
   0+10       0.0007      0.08  Q         |         |         |         |
   0+15       0.0020      0.20  Q         |         |         |         |
   0+20       0.0046      0.38  VQ        |         |         |         |
   0+25       0.0086      0.58  |VQ       |         |         |         |
   0+30       0.0138      0.76  | VQ      |         |         |         |
   0+35       0.0202      0.93  |  Q      |         |         |         |
   0+40       0.0280      1.12  |   QV    |         |         |         |
   0+45       0.0376      1.40  |    QV   |         |         |         |
   0+50       0.0511      1.95  |      Q V|         |         |         |
   0+55       0.0699      2.74  |         Q V       |         |         |
   1+ 0       0.0936      3.43  |         |  Q  V   |         |         |
   1+ 5       0.1190      3.69  |         |   Q     |V        |         |
   1+10       0.1413      3.23  |         | Q       |    V    |         |
   1+15       0.1572      2.31  |        Q|         |       V |         |
   1+20       0.1682      1.60  |     Q   |         |         V         |
   1+25       0.1761      1.14  |   Q     |         |         |V        |
   1+30       0.1822      0.90  |  Q      |         |         | V       |
   1+35       0.1873      0.74  | Q       |         |         |  V      |
   1+40       0.1916      0.63  | Q       |         |         |   V     |
   1+45       0.1953      0.54  | Q       |         |         |    V    |
   1+50       0.1985      0.46  |Q        |         |         |    V    |
   1+55       0.2013      0.40  |Q        |         |         |     V   |
   2+ 0       0.2037      0.36  |Q        |         |         |     V   |
   2+ 5       0.2058      0.31  |Q        |         |         |      V  |
   2+10       0.2077      0.27  |Q        |         |         |      V  |
   2+15       0.2093      0.24  Q         |         |         |      V  |
   2+20       0.2108      0.22  Q         |         |         |       V |
   2+25       0.2122      0.20  Q         |         |         |       V |
   2+30       0.2135      0.18  Q         |         |         |       V |
   2+35       0.2146      0.16  Q         |         |         |       V |
   2+40       0.2155      0.14  Q         |         |         |       V |
   2+45       0.2164      0.13  Q         |         |         |        V|
   2+50       0.2172      0.12  Q         |         |         |        V|
   2+55       0.2179      0.10  Q         |         |         |        V|
   3+ 0       0.2185      0.09  Q         |         |         |        V|
   3+ 5       0.2190      0.08  Q         |         |         |        V|
   3+10       0.2195      0.07  Q         |         |         |        V|
   3+15       0.2199      0.06  Q         |         |         |        V|
   3+20       0.2203      0.06  Q         |         |         |        V|
   3+25       0.2207      0.05  Q         |         |         |        V|
   3+30       0.2210      0.05  Q         |         |         |        V|
   3+35       0.2211      0.01  Q         |         |         |        V|
   3+40       0.2211      0.00  Q         |         |         |        V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/19/20 File: 8946E2A1310.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
10 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	0.90	3.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	2.25	8.33

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.455(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.455(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

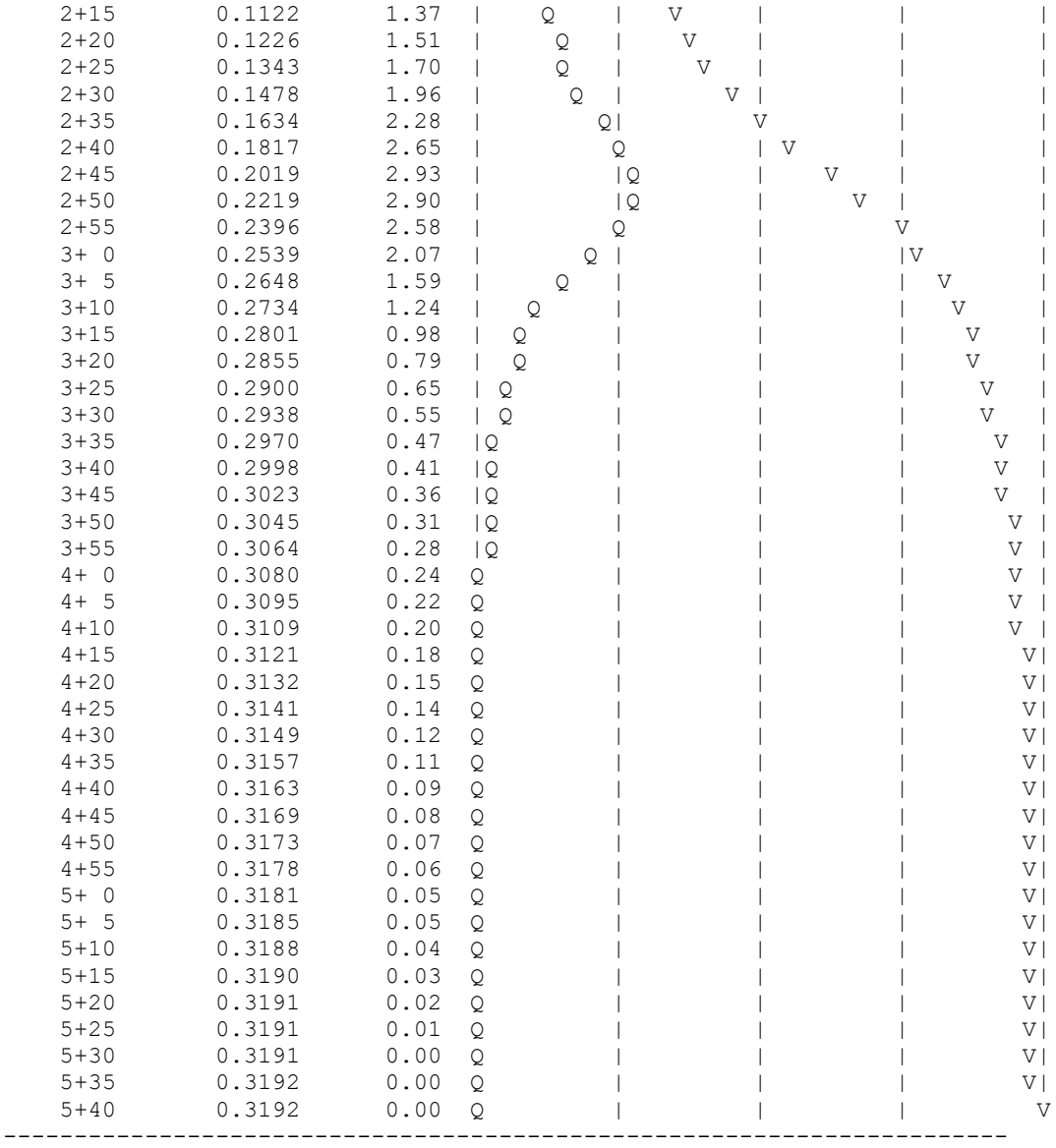
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.227	0.141	(	0.204)	0.086
2	0.17	1.30	0.227	0.141	(	0.204)	0.086
3	0.25	1.10	0.192	0.141	(	0.173)	0.051
4	0.33	1.50	0.262	0.141	(	0.236)	0.121
5	0.42	1.50	0.262	0.141	(	0.236)	0.121
6	0.50	1.80	0.314	0.141	(	0.283)	0.173
7	0.58	1.50	0.262	0.141	(	0.236)	0.121
8	0.67	1.80	0.314	0.141	(	0.283)	0.173
9	0.75	1.80	0.314	0.141	(	0.283)	0.173
10	0.83	1.50	0.262	0.141	(	0.236)	0.121
11	0.92	1.60	0.279	0.141	(	0.251)	0.138
12	1.00	1.80	0.314	0.141	(	0.283)	0.173
13	1.08	2.20	0.384	0.141	(	0.346)	0.243

```
14   1.17     2.20      0.384          0.141    (  0.346)        0.243
15   1.25     2.20      0.384          0.141    (  0.346)        0.243
16   1.33     2.00      0.349          0.141    (  0.314)        0.208
17   1.42     2.60      0.454          0.141    (  0.409)        0.313
18   1.50     2.70      0.472          0.141    (  0.424)        0.330
19   1.58     2.40      0.419          0.141    (  0.377)        0.278
20   1.67     2.70      0.472          0.141    (  0.424)        0.330
21   1.75     3.30      0.576          0.141    (  0.519)        0.435
22   1.83     3.10      0.541          0.141    (  0.487)        0.400
23   1.92     2.90      0.506          0.141    (  0.456)        0.365
24   2.00     3.00      0.524          0.141    (  0.472)        0.383
25   2.08     3.10      0.541          0.141    (  0.487)        0.400
26   2.17     4.20      0.734          0.141    (  0.660)        0.592
27   2.25     5.00      0.873          0.141    (  0.786)        0.732
28   2.33     3.50      0.611          0.141    (  0.550)        0.470
29   2.42     6.80      1.188          0.141    (  1.069)        1.046
30   2.50     7.30      1.275          0.141    (  1.147)        1.134
31   2.58     8.20      1.432          0.141    (  1.289)        1.291
32   2.67     5.90      1.030          0.141    (  0.927)        0.889
33   2.75     2.00      0.349          0.141    (  0.314)        0.208
34   2.83     1.80      0.314          0.141    (  0.283)        0.173
35   2.92     1.80      0.314          0.141    (  0.283)        0.173
36   3.00     0.60      0.105       (  0.141)       0.094        0.010
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    12.4
     Flood volume = Effective rainfall      1.04(In)
      times area       3.7(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
     Total soil loss =      0.42(In)
     Total soil loss =     0.130(Ac.Ft)
     Total rainfall =      1.46(In)
     Flood volume =       13902.5 Cubic Feet
     Total soil loss =        5644.7 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      2.929(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0000      0.01  Q         |         |         |         |
  0+10       0.0003      0.03  Q         |         |         |         |
  0+15       0.0007      0.07  Q         |         |         |         |
  0+20       0.0015      0.12  Q         |         |         |         |
  0+25       0.0027      0.17  Q         |         |         |         |
  0+30       0.0042      0.22  Q         |         |         |         |
  0+35       0.0061      0.27  VQ        |         |         |         |
  0+40       0.0084      0.33  |Q        |         |         |         |
  0+45       0.0110      0.38  |Q        |         |         |         |
  0+50       0.0139      0.42  |Q        |         |         |         |
  0+55       0.0169      0.44  |QV       |         |         |         |
  1+ 0       0.0200      0.46  |QV       |         |         |         |
  1+ 5       0.0233      0.47  |QV       |         |         |         |
  1+10       0.0268      0.51  | QV      |         |         |         |
  1+15       0.0308      0.57  | QV      |         |         |         |
  1+20       0.0352      0.64  | Q V     |         |         |         |
  1+25       0.0399      0.70  | Q  V    |         |         |         |
  1+30       0.0451      0.75  | Q  V    |         |         |         |
  1+35       0.0506      0.80  |  Q  V   |         |         |         |
  1+40       0.0566      0.87  |  Q   V  |         |         |         |
  1+45       0.0631      0.94  |  Q   V  |         |         |         |
  1+50       0.0701      1.01  |   Q   V |         |         |         |
  1+55       0.0776      1.09  |   Q    V|         |         |         |
  2+ 0       0.0856      1.17  |   Q     V         |         |         |
  2+ 5       0.0941      1.23  |   Q     |V        |         |         |
  2+10       0.1028      1.27  |    Q    | V       |         |         |
```


2+15 0.1122 1.37
2+20 0.1226 1.51
2+25 0.1343 1.70
2+30 0.1478 1.96
2+35 0.1634 2.28
2+40 0.1817 2.65
2+45 0.2019 2.93
2+50 0.2219 2.90
2+55 0.2396 2.58
3+ 0 0.2539 2.07
3+ 5 0.2648 1.59
3+10 0.2734 1.24
3+15 0.2801 0.98
3+20 0.2855 0.79
3+25 0.2900 0.65
3+30 0.2938 0.55
3+35 0.2970 0.47
3+40 0.2998 0.41
3+45 0.3023 0.36
3+50 0.3045 0.31
3+55 0.3064 0.28
4+ 0 0.3080 0.24
4+ 5 0.3095 0.22
4+10 0.3109 0.20
4+15 0.3121 0.18
4+20 0.3132 0.15
4+25 0.3141 0.14
4+30 0.3149 0.12
4+35 0.3157 0.11
4+40 0.3163 0.09
4+45 0.3169 0.08
4+50 0.3173 0.07
4+55 0.3178 0.06
5+ 0 0.3181 0.05
5+ 5 0.3185 0.05
5+10 0.3188 0.04
5+15 0.3190 0.03
5+20 0.3191 0.02
5+25 0.3191 0.01
5+30 0.3191 0.00
5+35 0.3192 0.00
5+40 0.3192 0.00

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 02/19/20 File: 8946E2A1610.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
10 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	1.30	4.81

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	3.00	11.10

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.999(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.120	(0.141)	0.108	0.012
2	0.17	0.60	0.144	(0.141)	0.130	0.014
3	0.25	0.60	0.144	(0.141)	0.130	0.014
4	0.33	0.60	0.144	(0.141)	0.130	0.014
5	0.42	0.60	0.144	(0.141)	0.130	0.014
6	0.50	0.70	0.168	0.141	(0.151)	0.027
7	0.58	0.70	0.168	0.141	(0.151)	0.027
8	0.67	0.70	0.168	0.141	(0.151)	0.027
9	0.75	0.70	0.168	0.141	(0.151)	0.027
10	0.83	0.70	0.168	0.141	(0.151)	0.027
11	0.92	0.70	0.168	0.141	(0.151)	0.027
12	1.00	0.80	0.192	0.141	(0.173)	0.051
13	1.08	0.80	0.192	0.141	(0.173)	0.051

14	1.17	0.80	0.192	0.141	(	0.173)	0.051
15	1.25	0.80	0.192	0.141	(	0.173)	0.051
16	1.33	0.80	0.192	0.141	(	0.173)	0.051
17	1.42	0.80	0.192	0.141	(	0.173)	0.051
18	1.50	0.80	0.192	0.141	(	0.173)	0.051
19	1.58	0.80	0.192	0.141	(	0.173)	0.051
20	1.67	0.80	0.192	0.141	(	0.173)	0.051
21	1.75	0.80	0.192	0.141	(	0.173)	0.051
22	1.83	0.80	0.192	0.141	(	0.173)	0.051
23	1.92	0.80	0.192	0.141	(	0.173)	0.051
24	2.00	0.90	0.216	0.141	(	0.194)	0.075
25	2.08	0.80	0.192	0.141	(	0.173)	0.051
26	2.17	0.90	0.216	0.141	(	0.194)	0.075
27	2.25	0.90	0.216	0.141	(	0.194)	0.075
28	2.33	0.90	0.216	0.141	(	0.194)	0.075
29	2.42	0.90	0.216	0.141	(	0.194)	0.075
30	2.50	0.90	0.216	0.141	(	0.194)	0.075
31	2.58	0.90	0.216	0.141	(	0.194)	0.075
32	2.67	0.90	0.216	0.141	(	0.194)	0.075
33	2.75	1.00	0.240	0.141	(	0.216)	0.099
34	2.83	1.00	0.240	0.141	(	0.216)	0.099
35	2.92	1.00	0.240	0.141	(	0.216)	0.099
36	3.00	1.00	0.240	0.141	(	0.216)	0.099
37	3.08	1.00	0.240	0.141	(	0.216)	0.099
38	3.17	1.10	0.264	0.141	(	0.238)	0.123
39	3.25	1.10	0.264	0.141	(	0.238)	0.123
40	3.33	1.10	0.264	0.141	(	0.238)	0.123
41	3.42	1.20	0.288	0.141	(	0.259)	0.147
42	3.50	1.30	0.312	0.141	(	0.281)	0.171
43	3.58	1.40	0.336	0.141	(	0.302)	0.194
44	3.67	1.40	0.336	0.141	(	0.302)	0.194
45	3.75	1.50	0.360	0.141	(	0.324)	0.218
46	3.83	1.50	0.360	0.141	(	0.324)	0.218
47	3.92	1.60	0.384	0.141	(	0.345)	0.242
48	4.00	1.60	0.384	0.141	(	0.345)	0.242
49	4.08	1.70	0.408	0.141	(	0.367)	0.266
50	4.17	1.80	0.432	0.141	(	0.389)	0.290
51	4.25	1.90	0.456	0.141	(	0.410)	0.314
52	4.33	2.00	0.480	0.141	(	0.432)	0.338
53	4.42	2.10	0.504	0.141	(	0.453)	0.362
54	4.50	2.10	0.504	0.141	(	0.453)	0.362
55	4.58	2.20	0.528	0.141	(	0.475)	0.386
56	4.67	2.30	0.552	0.141	(	0.497)	0.410
57	4.75	2.40	0.576	0.141	(	0.518)	0.434
58	4.83	2.40	0.576	0.141	(	0.518)	0.434
59	4.92	2.50	0.600	0.141	(	0.540)	0.458
60	5.00	2.60	0.624	0.141	(	0.561)	0.482
61	5.08	3.10	0.744	0.141	(	0.669)	0.602
62	5.17	3.60	0.864	0.141	(	0.777)	0.722
63	5.25	3.90	0.936	0.141	(	0.842)	0.794
64	5.33	4.20	1.008	0.141	(	0.907)	0.866
65	5.42	4.70	1.128	0.141	(	1.015)	0.986
66	5.50	5.60	1.344	0.141	(	1.209)	1.202
67	5.58	1.90	0.456	0.141	(	0.410)	0.314
68	5.67	0.90	0.216	0.141	(	0.194)	0.075
69	5.75	0.60	0.144	(0.141)		0.130	0.014
70	5.83	0.50	0.120	(0.141)		0.108	0.012
71	5.92	0.30	0.072	(0.141)		0.065	0.007
72	6.00	0.20	0.048	(0.141)		0.043	0.005

(Loss Rate Not Used)

Sum = 100.0 Sum = 14.1

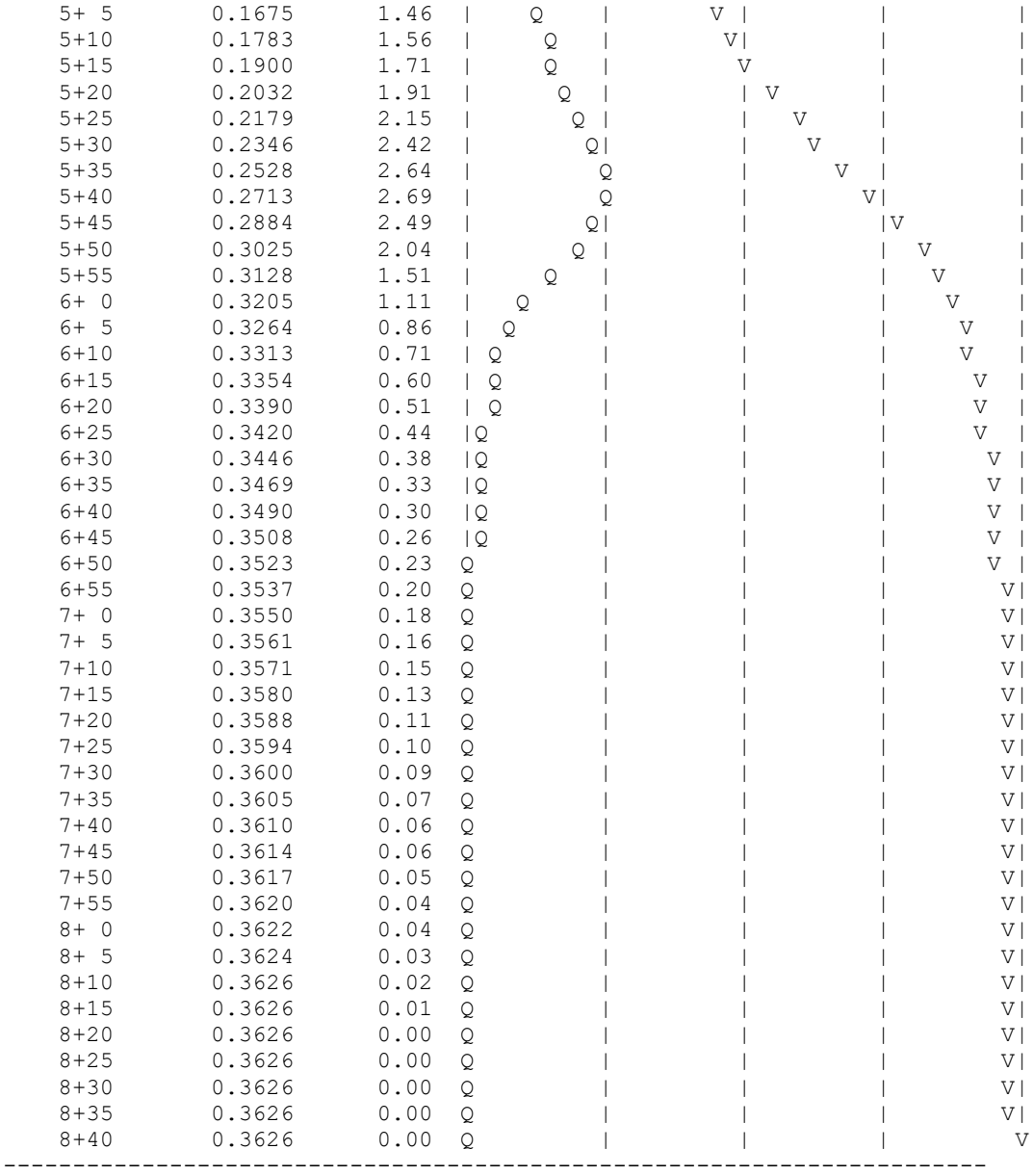
Flood volume = Effective rainfall 1.18(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)
Total soil loss = 0.82(In)
Total soil loss = 0.254(Ac.Ft)
Total rainfall = 2.00(In)
Flood volume = 15795.4 Cubic Feet
Total soil loss = 11058.1 Cubic Feet

Peak flow rate of this hydrograph = 2.689(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	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.02	Q				
0+25	0.0004	0.03	Q				
0+30	0.0007	0.03	Q				
0+35	0.0010	0.04	Q				
0+40	0.0013	0.05	Q				
0+45	0.0017	0.06	Q				
0+50	0.0022	0.07	Q				
0+55	0.0027	0.07	Q				
1+ 0	0.0033	0.08	Q				
1+ 5	0.0039	0.09	Q				
1+10	0.0046	0.10	Q				
1+15	0.0054	0.12	Q				
1+20	0.0064	0.14	Q				
1+25	0.0074	0.15	Q				
1+30	0.0084	0.15	Q				
1+35	0.0095	0.16	QV				
1+40	0.0106	0.16	QV				
1+45	0.0118	0.17	QV				
1+50	0.0129	0.17	QV				
1+55	0.0141	0.17	QV				
2+ 0	0.0153	0.18	QV				
2+ 5	0.0166	0.18	QV				
2+10	0.0179	0.19	QV				
2+15	0.0193	0.20	Q V				
2+20	0.0208	0.21	Q V				
2+25	0.0223	0.22	Q V				
2+30	0.0239	0.24	Q V				
2+35	0.0256	0.24	Q V				
2+40	0.0274	0.25	|Q V				
2+45	0.0291	0.26	|Q V				
2+50	0.0310	0.27	|Q V				
2+55	0.0329	0.28	|Q V				
3+ 0	0.0349	0.30	|Q V				
3+ 5	0.0371	0.31	|Q V				
3+10	0.0394	0.33	|Q V				
3+15	0.0417	0.34	|Q V				
3+20	0.0442	0.36	|Q V				
3+25	0.0468	0.38	|Q V				
3+30	0.0495	0.40	|Q V				
3+35	0.0525	0.44	|Q V				
3+40	0.0558	0.48	|Q V				
3+45	0.0595	0.53	| Q V				
3+50	0.0634	0.58	| Q V				
3+55	0.0677	0.62	| Q V				
4+ 0	0.0723	0.67	| Q V				
4+ 5	0.0772	0.71	| Q V				
4+10	0.0824	0.75	| Q V|				
4+15	0.0879	0.80	| Q V|				
4+20	0.0938	0.86	| Q V				
4+25	0.1002	0.92	| Q |V				
4+30	0.1070	0.99	| Q |V				
4+35	0.1143	1.06	| Q | V				
4+40	0.1221	1.13	| Q | V				
4+45	0.1303	1.19	| Q | V				
4+50	0.1389	1.25	| Q | V				
4+55	0.1480	1.32	| Q | V				
5+ 0	0.1575	1.38	| 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 02/19/20 File: 8946E2A12410.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
10 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	2.25	8.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	5.25	19.43

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 3.484(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.484(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.028	(0.251)	0.025	0.003
2	0.17	0.07	0.028	(0.250)	0.025	0.003
3	0.25	0.07	0.028	(0.249)	0.025	0.003
4	0.33	0.10	0.042	(0.248)	0.038	0.004
5	0.42	0.10	0.042	(0.247)	0.038	0.004
6	0.50	0.10	0.042	(0.246)	0.038	0.004
7	0.58	0.10	0.042	(0.245)	0.038	0.004
8	0.67	0.10	0.042	(0.244)	0.038	0.004
9	0.75	0.10	0.042	(0.243)	0.038	0.004
10	0.83	0.13	0.056	(0.242)	0.050	0.006
11	0.92	0.13	0.056	(0.241)	0.050	0.006
12	1.00	0.13	0.056	(0.240)	0.050	0.006
13	1.08	0.10	0.042	(0.239)	0.038	0.004

14	1.17	0.10	0.042	(0.238)	0.038	0.004
15	1.25	0.10	0.042	(0.237)	0.038	0.004
16	1.33	0.10	0.042	(0.236)	0.038	0.004
17	1.42	0.10	0.042	(0.235)	0.038	0.004
18	1.50	0.10	0.042	(0.234)	0.038	0.004
19	1.58	0.10	0.042	(0.234)	0.038	0.004
20	1.67	0.10	0.042	(0.233)	0.038	0.004
21	1.75	0.10	0.042	(0.232)	0.038	0.004
22	1.83	0.13	0.056	(0.231)	0.050	0.006
23	1.92	0.13	0.056	(0.230)	0.050	0.006
24	2.00	0.13	0.056	(0.229)	0.050	0.006
25	2.08	0.13	0.056	(0.228)	0.050	0.006
26	2.17	0.13	0.056	(0.227)	0.050	0.006
27	2.25	0.13	0.056	(0.226)	0.050	0.006
28	2.33	0.13	0.056	(0.225)	0.050	0.006
29	2.42	0.13	0.056	(0.224)	0.050	0.006
30	2.50	0.13	0.056	(0.223)	0.050	0.006
31	2.58	0.17	0.070	(0.222)	0.063	0.007
32	2.67	0.17	0.070	(0.221)	0.063	0.007
33	2.75	0.17	0.070	(0.221)	0.063	0.007
34	2.83	0.17	0.070	(0.220)	0.063	0.007
35	2.92	0.17	0.070	(0.219)	0.063	0.007
36	3.00	0.17	0.070	(0.218)	0.063	0.007
37	3.08	0.17	0.070	(0.217)	0.063	0.007
38	3.17	0.17	0.070	(0.216)	0.063	0.007
39	3.25	0.17	0.070	(0.215)	0.063	0.007
40	3.33	0.17	0.070	(0.214)	0.063	0.007
41	3.42	0.17	0.070	(0.213)	0.063	0.007
42	3.50	0.17	0.070	(0.212)	0.063	0.007
43	3.58	0.17	0.070	(0.212)	0.063	0.007
44	3.67	0.17	0.070	(0.211)	0.063	0.007
45	3.75	0.17	0.070	(0.210)	0.063	0.007
46	3.83	0.20	0.084	(0.209)	0.075	0.008
47	3.92	0.20	0.084	(0.208)	0.075	0.008
48	4.00	0.20	0.084	(0.207)	0.075	0.008
49	4.08	0.20	0.084	(0.206)	0.075	0.008
50	4.17	0.20	0.084	(0.205)	0.075	0.008
51	4.25	0.20	0.084	(0.205)	0.075	0.008
52	4.33	0.23	0.098	(0.204)	0.088	0.010
53	4.42	0.23	0.098	(0.203)	0.088	0.010
54	4.50	0.23	0.098	(0.202)	0.088	0.010
55	4.58	0.23	0.098	(0.201)	0.088	0.010
56	4.67	0.23	0.098	(0.200)	0.088	0.010
57	4.75	0.23	0.098	(0.199)	0.088	0.010
58	4.83	0.27	0.111	(0.198)	0.100	0.011
59	4.92	0.27	0.111	(0.198)	0.100	0.011
60	5.00	0.27	0.111	(0.197)	0.100	0.011
61	5.08	0.20	0.084	(0.196)	0.075	0.008
62	5.17	0.20	0.084	(0.195)	0.075	0.008
63	5.25	0.20	0.084	(0.194)	0.075	0.008
64	5.33	0.23	0.098	(0.193)	0.088	0.010
65	5.42	0.23	0.098	(0.193)	0.088	0.010
66	5.50	0.23	0.098	(0.192)	0.088	0.010
67	5.58	0.27	0.111	(0.191)	0.100	0.011
68	5.67	0.27	0.111	(0.190)	0.100	0.011
69	5.75	0.27	0.111	(0.189)	0.100	0.011
70	5.83	0.27	0.111	(0.188)	0.100	0.011
71	5.92	0.27	0.111	(0.187)	0.100	0.011
72	6.00	0.27	0.111	(0.187)	0.100	0.011
73	6.08	0.30	0.125	(0.186)	0.113	0.013
74	6.17	0.30	0.125	(0.185)	0.113	0.013
75	6.25	0.30	0.125	(0.184)	0.113	0.013
76	6.33	0.30	0.125	(0.183)	0.113	0.013
77	6.42	0.30	0.125	(0.183)	0.113	0.013
78	6.50	0.30	0.125	(0.182)	0.113	0.013
79	6.58	0.33	0.139	(0.181)	0.125	0.014
80	6.67	0.33	0.139	(0.180)	0.125	0.014
81	6.75	0.33	0.139	(0.179)	0.125	0.014
82	6.83	0.33	0.139	(0.178)	0.125	0.014
83	6.92	0.33	0.139	(0.178)	0.125	0.014

84	7.00	0.33	0.139	(	0.177)	0.125		0.014
85	7.08	0.33	0.139	(	0.176)	0.125		0.014
86	7.17	0.33	0.139	(	0.175)	0.125		0.014
87	7.25	0.33	0.139	(	0.174)	0.125		0.014
88	7.33	0.37	0.153	(	0.174)	0.138		0.015
89	7.42	0.37	0.153	(	0.173)	0.138		0.015
90	7.50	0.37	0.153	(	0.172)	0.138		0.015
91	7.58	0.40	0.167	(	0.171)	0.151		0.017
92	7.67	0.40	0.167	(	0.170)	0.151		0.017
93	7.75	0.40	0.167	(	0.170)	0.151		0.017
94	7.83	0.43	0.181	(	0.169)	0.163		0.018
95	7.92	0.43	0.181	(	0.168)	0.163		0.018
96	8.00	0.43	0.181	(	0.167)	0.163		0.018
97	8.08	0.50	0.209		0.167	(	0.188)	0.042
98	8.17	0.50	0.209		0.166	(	0.188)	0.043
99	8.25	0.50	0.209		0.165	(	0.188)	0.044
100	8.33	0.50	0.209		0.164	(	0.188)	0.045
101	8.42	0.50	0.209		0.163	(	0.188)	0.046
102	8.50	0.50	0.209		0.163	(	0.188)	0.046
103	8.58	0.53	0.223		0.162	(	0.201)	0.061
104	8.67	0.53	0.223		0.161	(	0.201)	0.062
105	8.75	0.53	0.223		0.160	(	0.201)	0.063
106	8.83	0.57	0.237		0.160	(	0.213)	0.077
107	8.92	0.57	0.237		0.159	(	0.213)	0.078
108	9.00	0.57	0.237		0.158	(	0.213)	0.079
109	9.08	0.63	0.265		0.157	(	0.238)	0.107
110	9.17	0.63	0.265		0.157	(	0.238)	0.108
111	9.25	0.63	0.265		0.156	(	0.238)	0.109
112	9.33	0.67	0.279		0.155	(	0.251)	0.124
113	9.42	0.67	0.279		0.154	(	0.251)	0.124
114	9.50	0.67	0.279		0.154	(	0.251)	0.125
115	9.58	0.70	0.293		0.153	(	0.263)	0.140
116	9.67	0.70	0.293		0.152	(	0.263)	0.140
117	9.75	0.70	0.293		0.151	(	0.263)	0.141
118	9.83	0.73	0.307		0.151	(	0.276)	0.156
119	9.92	0.73	0.307		0.150	(	0.276)	0.157
120	10.00	0.73	0.307		0.149	(	0.276)	0.157
121	10.08	0.50	0.209		0.149	(	0.188)	0.060
122	10.17	0.50	0.209		0.148	(	0.188)	0.061
123	10.25	0.50	0.209		0.147	(	0.188)	0.062
124	10.33	0.50	0.209		0.146	(	0.188)	0.063
125	10.42	0.50	0.209		0.146	(	0.188)	0.063
126	10.50	0.50	0.209		0.145	(	0.188)	0.064
127	10.58	0.67	0.279		0.144	(	0.251)	0.134
128	10.67	0.67	0.279		0.144	(	0.251)	0.135
129	10.75	0.67	0.279		0.143	(	0.251)	0.136
130	10.83	0.67	0.279		0.142	(	0.251)	0.137
131	10.92	0.67	0.279		0.142	(	0.251)	0.137
132	11.00	0.67	0.279		0.141	(	0.251)	0.138
133	11.08	0.63	0.265		0.140	(	0.238)	0.125
134	11.17	0.63	0.265		0.139	(	0.238)	0.125
135	11.25	0.63	0.265		0.139	(	0.238)	0.126
136	11.33	0.63	0.265		0.138	(	0.238)	0.127
137	11.42	0.63	0.265		0.137	(	0.238)	0.127
138	11.50	0.63	0.265		0.137	(	0.238)	0.128
139	11.58	0.57	0.237		0.136	(	0.213)	0.101
140	11.67	0.57	0.237		0.135	(	0.213)	0.102
141	11.75	0.57	0.237		0.135	(	0.213)	0.102
142	11.83	0.60	0.251		0.134	(	0.226)	0.117
143	11.92	0.60	0.251		0.133	(	0.226)	0.118
144	12.00	0.60	0.251		0.133	(	0.226)	0.118
145	12.08	0.83	0.348		0.132	(	0.314)	0.216
146	12.17	0.83	0.348		0.131	(	0.314)	0.217
147	12.25	0.83	0.348		0.131	(	0.314)	0.218
148	12.33	0.87	0.362		0.130	(	0.326)	0.232
149	12.42	0.87	0.362		0.129	(	0.326)	0.233
150	12.50	0.87	0.362		0.129	(	0.326)	0.234
151	12.58	0.93	0.390		0.128	(	0.351)	0.262
152	12.67	0.93	0.390		0.127	(	0.351)	0.263
153	12.75	0.93	0.390		0.127	(	0.351)	0.263

154	12.83	0.97	0.404	0.126	(	0.364)	0.278
155	12.92	0.97	0.404	0.126	(	0.364)	0.279
156	13.00	0.97	0.404	0.125	(	0.364)	0.279
157	13.08	1.13	0.474	0.124	(	0.426)	0.350
158	13.17	1.13	0.474	0.124	(	0.426)	0.350
159	13.25	1.13	0.474	0.123	(	0.426)	0.351
160	13.33	1.13	0.474	0.122	(	0.426)	0.351
161	13.42	1.13	0.474	0.122	(	0.426)	0.352
162	13.50	1.13	0.474	0.121	(	0.426)	0.353
163	13.58	0.77	0.321	0.120	(	0.288)	0.200
164	13.67	0.77	0.321	0.120	(	0.288)	0.201
165	13.75	0.77	0.321	0.119	(	0.288)	0.201
166	13.83	0.77	0.321	0.119	(	0.288)	0.202
167	13.92	0.77	0.321	0.118	(	0.288)	0.202
168	14.00	0.77	0.321	0.117	(	0.288)	0.203
169	14.08	0.90	0.376	0.117	(	0.339)	0.259
170	14.17	0.90	0.376	0.116	(	0.339)	0.260
171	14.25	0.90	0.376	0.116	(	0.339)	0.261
172	14.33	0.87	0.362	0.115	(	0.326)	0.247
173	14.42	0.87	0.362	0.114	(	0.326)	0.248
174	14.50	0.87	0.362	0.114	(	0.326)	0.248
175	14.58	0.87	0.362	0.113	(	0.326)	0.249
176	14.67	0.87	0.362	0.113	(	0.326)	0.250
177	14.75	0.87	0.362	0.112	(	0.326)	0.250
178	14.83	0.83	0.348	0.112	(	0.314)	0.237
179	14.92	0.83	0.348	0.111	(	0.314)	0.237
180	15.00	0.83	0.348	0.110	(	0.314)	0.238
181	15.08	0.80	0.334	0.110	(	0.301)	0.225
182	15.17	0.80	0.334	0.109	(	0.301)	0.225
183	15.25	0.80	0.334	0.109	(	0.301)	0.226
184	15.33	0.77	0.321	0.108	(	0.288)	0.212
185	15.42	0.77	0.321	0.108	(	0.288)	0.213
186	15.50	0.77	0.321	0.107	(	0.288)	0.213
187	15.58	0.63	0.265	0.107	(	0.238)	0.158
188	15.67	0.63	0.265	0.106	(	0.238)	0.159
189	15.75	0.63	0.265	0.105	(	0.238)	0.159
190	15.83	0.63	0.265	0.105	(	0.238)	0.160
191	15.92	0.63	0.265	0.104	(	0.238)	0.160
192	16.00	0.63	0.265	0.104	(	0.238)	0.161
193	16.08	0.13	0.056	(0.103)		0.050	0.006
194	16.17	0.13	0.056	(0.103)		0.050	0.006
195	16.25	0.13	0.056	(0.102)		0.050	0.006
196	16.33	0.13	0.056	(0.102)		0.050	0.006
197	16.42	0.13	0.056	(0.101)		0.050	0.006
198	16.50	0.13	0.056	(0.101)		0.050	0.006
199	16.58	0.10	0.042	(0.100)		0.038	0.004
200	16.67	0.10	0.042	(0.100)		0.038	0.004
201	16.75	0.10	0.042	(0.099)		0.038	0.004
202	16.83	0.10	0.042	(0.099)		0.038	0.004
203	16.92	0.10	0.042	(0.098)		0.038	0.004
204	17.00	0.10	0.042	(0.098)		0.038	0.004
205	17.08	0.17	0.070	(0.097)		0.063	0.007
206	17.17	0.17	0.070	(0.097)		0.063	0.007
207	17.25	0.17	0.070	(0.096)		0.063	0.007
208	17.33	0.17	0.070	(0.096)		0.063	0.007
209	17.42	0.17	0.070	(0.095)		0.063	0.007
210	17.50	0.17	0.070	(0.095)		0.063	0.007
211	17.58	0.17	0.070	(0.094)		0.063	0.007
212	17.67	0.17	0.070	(0.094)		0.063	0.007
213	17.75	0.17	0.070	(0.093)		0.063	0.007
214	17.83	0.13	0.056	(0.093)		0.050	0.006
215	17.92	0.13	0.056	(0.092)		0.050	0.006
216	18.00	0.13	0.056	(0.092)		0.050	0.006
217	18.08	0.13	0.056	(0.092)		0.050	0.006
218	18.17	0.13	0.056	(0.091)		0.050	0.006
219	18.25	0.13	0.056	(0.091)		0.050	0.006
220	18.33	0.13	0.056	(0.090)		0.050	0.006
221	18.42	0.13	0.056	(0.090)		0.050	0.006
222	18.50	0.13	0.056	(0.089)		0.050	0.006
223	18.58	0.10	0.042	(0.089)		0.038	0.004

224	18.67	0.10	0.042	(0.088)	0.038	0.004
225	18.75	0.10	0.042	(0.088)	0.038	0.004
226	18.83	0.07	0.028	(0.088)	0.025	0.003
227	18.92	0.07	0.028	(0.087)	0.025	0.003
228	19.00	0.07	0.028	(0.087)	0.025	0.003
229	19.08	0.10	0.042	(0.086)	0.038	0.004
230	19.17	0.10	0.042	(0.086)	0.038	0.004
231	19.25	0.10	0.042	(0.086)	0.038	0.004
232	19.33	0.13	0.056	(0.085)	0.050	0.006
233	19.42	0.13	0.056	(0.085)	0.050	0.006
234	19.50	0.13	0.056	(0.084)	0.050	0.006
235	19.58	0.10	0.042	(0.084)	0.038	0.004
236	19.67	0.10	0.042	(0.084)	0.038	0.004
237	19.75	0.10	0.042	(0.083)	0.038	0.004
238	19.83	0.07	0.028	(0.083)	0.025	0.003
239	19.92	0.07	0.028	(0.082)	0.025	0.003
240	20.00	0.07	0.028	(0.082)	0.025	0.003
241	20.08	0.10	0.042	(0.082)	0.038	0.004
242	20.17	0.10	0.042	(0.081)	0.038	0.004
243	20.25	0.10	0.042	(0.081)	0.038	0.004
244	20.33	0.10	0.042	(0.081)	0.038	0.004
245	20.42	0.10	0.042	(0.080)	0.038	0.004
246	20.50	0.10	0.042	(0.080)	0.038	0.004
247	20.58	0.10	0.042	(0.080)	0.038	0.004
248	20.67	0.10	0.042	(0.079)	0.038	0.004
249	20.75	0.10	0.042	(0.079)	0.038	0.004
250	20.83	0.07	0.028	(0.079)	0.025	0.003
251	20.92	0.07	0.028	(0.078)	0.025	0.003
252	21.00	0.07	0.028	(0.078)	0.025	0.003
253	21.08	0.10	0.042	(0.078)	0.038	0.004
254	21.17	0.10	0.042	(0.077)	0.038	0.004
255	21.25	0.10	0.042	(0.077)	0.038	0.004
256	21.33	0.07	0.028	(0.077)	0.025	0.003
257	21.42	0.07	0.028	(0.077)	0.025	0.003
258	21.50	0.07	0.028	(0.076)	0.025	0.003
259	21.58	0.10	0.042	(0.076)	0.038	0.004
260	21.67	0.10	0.042	(0.076)	0.038	0.004
261	21.75	0.10	0.042	(0.075)	0.038	0.004
262	21.83	0.07	0.028	(0.075)	0.025	0.003
263	21.92	0.07	0.028	(0.075)	0.025	0.003
264	22.00	0.07	0.028	(0.075)	0.025	0.003
265	22.08	0.10	0.042	(0.074)	0.038	0.004
266	22.17	0.10	0.042	(0.074)	0.038	0.004
267	22.25	0.10	0.042	(0.074)	0.038	0.004
268	22.33	0.07	0.028	(0.074)	0.025	0.003
269	22.42	0.07	0.028	(0.073)	0.025	0.003
270	22.50	0.07	0.028	(0.073)	0.025	0.003
271	22.58	0.07	0.028	(0.073)	0.025	0.003
272	22.67	0.07	0.028	(0.073)	0.025	0.003
273	22.75	0.07	0.028	(0.073)	0.025	0.003
274	22.83	0.07	0.028	(0.072)	0.025	0.003
275	22.92	0.07	0.028	(0.072)	0.025	0.003
276	23.00	0.07	0.028	(0.072)	0.025	0.003
277	23.08	0.07	0.028	(0.072)	0.025	0.003
278	23.17	0.07	0.028	(0.072)	0.025	0.003
279	23.25	0.07	0.028	(0.072)	0.025	0.003
280	23.33	0.07	0.028	(0.071)	0.025	0.003
281	23.42	0.07	0.028	(0.071)	0.025	0.003
282	23.50	0.07	0.028	(0.071)	0.025	0.003
283	23.58	0.07	0.028	(0.071)	0.025	0.003
284	23.67	0.07	0.028	(0.071)	0.025	0.003
285	23.75	0.07	0.028	(0.071)	0.025	0.003
286	23.83	0.07	0.028	(0.071)	0.025	0.003
287	23.92	0.07	0.028	(0.071)	0.025	0.003
288	24.00	0.07	0.028	(0.071)	0.025	0.003
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	17.7

Flood volume = Effective rainfall 1.47(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)
Total soil loss = 2.01(In)

Total soil loss = 0.620(Ac.Ft)
Total rainfall = 3.48(In)
Flood volume = 19796.2 Cubic Feet
Total soil loss = 27000.1 Cubic Feet

Peak flow rate of this hydrograph = 1.169(CFS)

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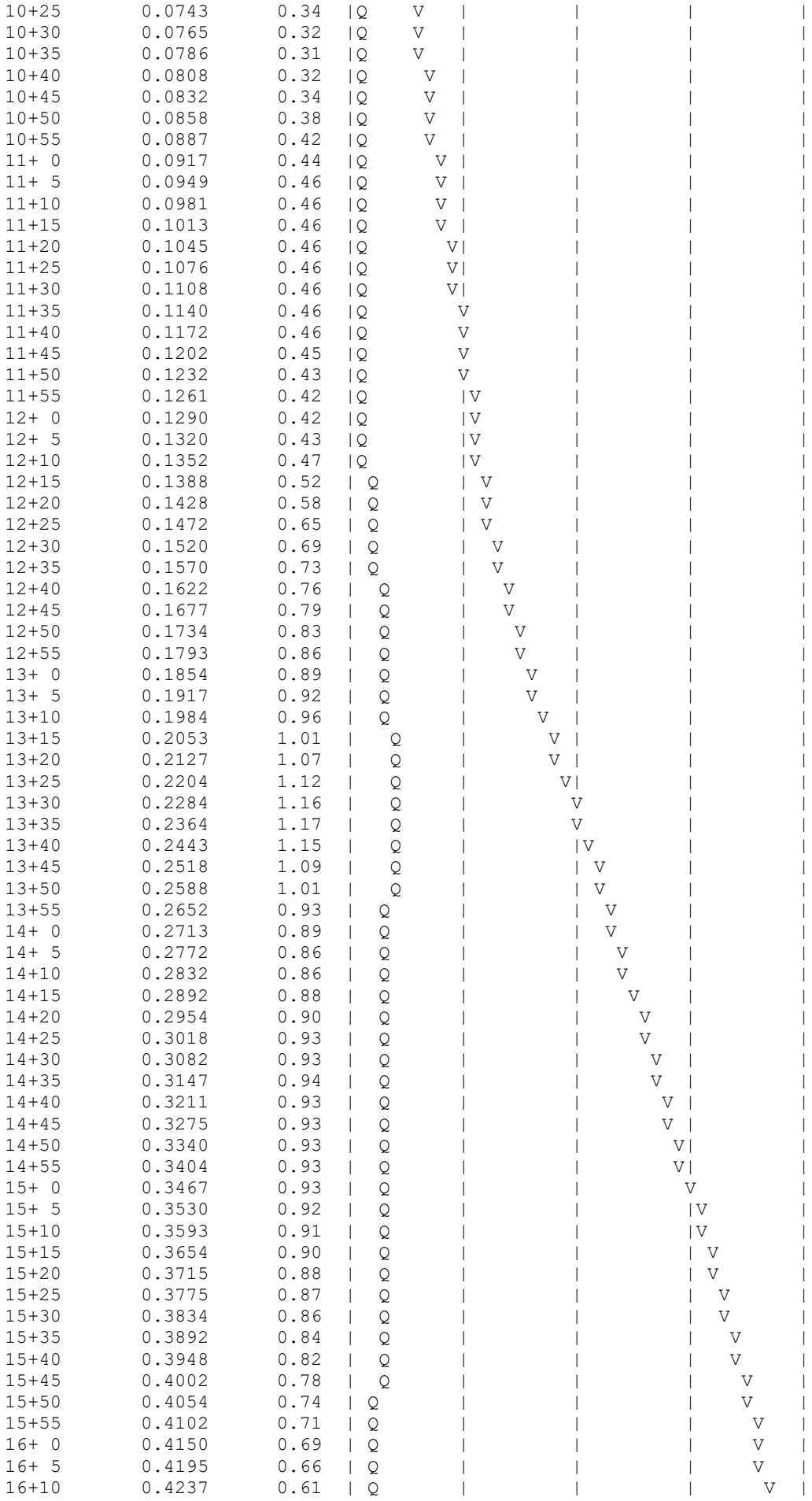
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0000	0.00	Q				
0+20	0.0001	0.00	Q				
0+25	0.0001	0.01	Q				
0+30	0.0002	0.01	Q				
0+35	0.0002	0.01	Q				
0+40	0.0003	0.01	Q				
0+45	0.0004	0.01	Q				
0+50	0.0005	0.01	Q				
0+55	0.0005	0.01	Q				
1+ 0	0.0006	0.01	Q				
1+ 5	0.0007	0.02	Q				
1+10	0.0009	0.02	Q				
1+15	0.0010	0.02	Q				
1+20	0.0011	0.02	Q				
1+25	0.0012	0.02	Q				
1+30	0.0013	0.02	Q				
1+35	0.0014	0.02	Q				
1+40	0.0015	0.02	Q				
1+45	0.0016	0.02	Q				
1+50	0.0017	0.02	Q				
1+55	0.0018	0.02	Q				
2+ 0	0.0019	0.02	Q				
2+ 5	0.0020	0.02	Q				
2+10	0.0022	0.02	Q				
2+15	0.0023	0.02	Q				
2+20	0.0024	0.02	Q				
2+25	0.0026	0.02	Q				
2+30	0.0027	0.02	Q				
2+35	0.0028	0.02	Q				
2+40	0.0030	0.02	Q				
2+45	0.0031	0.02	Q				
2+50	0.0033	0.02	Q				
2+55	0.0034	0.02	Q				
3+ 0	0.0036	0.02	Q				
3+ 5	0.0038	0.02	Q				
3+10	0.0039	0.02	Q				
3+15	0.0041	0.02	Q				
3+20	0.0043	0.02	Q				
3+25	0.0045	0.02	Q				
3+30	0.0046	0.03	Q				
3+35	0.0048	0.03	Q				
3+40	0.0050	0.03	Q				
3+45	0.0051	0.03	Q				
3+50	0.0053	0.03	Q				
3+55	0.0055	0.03	Q				
4+ 0	0.0057	0.03	Q				
4+ 5	0.0059	0.03	Q				
4+10	0.0061	0.03	Q				
4+15	0.0063	0.03	Q				
4+20	0.0065	0.03	Q				
4+25	0.0067	0.03	Q				
4+30	0.0069	0.03	Q				

4+35	0.0071	0.03	Q				
4+40	0.0073	0.03	Q				
4+45	0.0076	0.03	Q				
4+50	0.0078	0.03	Q				
4+55	0.0081	0.03	Q				
5+ 0	0.0083	0.04	Q				
5+ 5	0.0086	0.04	Q				
5+10	0.0088	0.04	Q				
5+15	0.0091	0.04	Q				
5+20	0.0093	0.04	Q				
5+25	0.0095	0.03	Q				
5+30	0.0098	0.03	Q				
5+35	0.0100	0.03	Q				
5+40	0.0103	0.04	Q				
5+45	0.0105	0.04	Q				
5+50	0.0108	0.04	Q				
5+55	0.0110	0.04	Q				
6+ 0	0.0113	0.04	Q				
6+ 5	0.0116	0.04	QV				
6+10	0.0119	0.04	QV				
6+15	0.0122	0.04	QV				
6+20	0.0124	0.04	QV				
6+25	0.0127	0.04	QV				
6+30	0.0130	0.04	QV				
6+35	0.0134	0.04	QV				
6+40	0.0137	0.05	QV				
6+45	0.0140	0.05	QV				
6+50	0.0143	0.05	QV				
6+55	0.0146	0.05	QV				
7+ 0	0.0150	0.05	QV				
7+ 5	0.0153	0.05	QV				
7+10	0.0157	0.05	QV				
7+15	0.0160	0.05	QV				
7+20	0.0164	0.05	QV				
7+25	0.0167	0.05	QV				
7+30	0.0171	0.05	QV				
7+35	0.0174	0.05	QV				
7+40	0.0178	0.05	QV				
7+45	0.0182	0.06	QV				
7+50	0.0186	0.06	QV				
7+55	0.0190	0.06	QV				
8+ 0	0.0194	0.06	QV				
8+ 5	0.0198	0.06	QV				
8+10	0.0203	0.07	QV				
8+15	0.0209	0.08	QV				
8+20	0.0216	0.10	QV				
8+25	0.0224	0.12	QV				
8+30	0.0233	0.13	Q V				
8+35	0.0242	0.14	Q V				
8+40	0.0252	0.15	Q V				
8+45	0.0263	0.16	Q V				
8+50	0.0275	0.17	Q V				
8+55	0.0289	0.19	Q V				
9+ 0	0.0303	0.21	Q V				
9+ 5	0.0318	0.23	Q V				
9+10	0.0335	0.25	Q V				
9+15	0.0354	0.27	|Q V				
9+20	0.0374	0.30	|Q V				
9+25	0.0397	0.33	|Q V				
9+30	0.0421	0.35	|Q V				
9+35	0.0446	0.37	|Q V				
9+40	0.0473	0.39	|Q V				
9+45	0.0502	0.41	|Q V				
9+50	0.0532	0.43	|Q V				
9+55	0.0563	0.45	|Q V				
10+ 0	0.0596	0.47	|Q V				
10+ 5	0.0629	0.49	|Q V				
10+10	0.0662	0.48	|Q V				
10+15	0.0693	0.44	|Q V				
10+20	0.0720	0.39	|Q V				



16+15	0.4273	0.52	| Q	|	|	|	V |
16+20	0.4301	0.42	|Q	|	|	|	V |
16+25	0.4323	0.32	|Q	|	|	|	V |
16+30	0.4341	0.26	|Q	|	|	|	V |
16+35	0.4356	0.22	Q	|	|	|	V |
16+40	0.4370	0.19	Q	|	|	|	V |
16+45	0.4381	0.17	Q	|	|	|	V |
16+50	0.4391	0.15	Q	|	|	|	V |
16+55	0.4400	0.13	Q	|	|	|	V |
17+ 0	0.4408	0.11	Q	|	|	|	V |
17+ 5	0.4415	0.10	Q	|	|	|	V |
17+10	0.4421	0.09	Q	|	|	|	V |
17+15	0.4427	0.08	Q	|	|	|	V |
17+20	0.4433	0.08	Q	|	|	|	V|
17+25	0.4438	0.07	Q	|	|	|	V|
17+30	0.4442	0.07	Q	|	|	|	V|
17+35	0.4446	0.06	Q	|	|	|	V|
17+40	0.4450	0.06	Q	|	|	|	V|
17+45	0.4454	0.05	Q	|	|	|	V|
17+50	0.4457	0.05	Q	|	|	|	V|
17+55	0.4460	0.04	Q	|	|	|	V|
18+ 0	0.4463	0.04	Q	|	|	|	V|
18+ 5	0.4466	0.04	Q	|	|	|	V|
18+10	0.4468	0.03	Q	|	|	|	V|
18+15	0.4470	0.03	Q	|	|	|	V|
18+20	0.4472	0.03	Q	|	|	|	V|
18+25	0.4474	0.03	Q	|	|	|	V|
18+30	0.4476	0.03	Q	|	|	|	V|
18+35	0.4478	0.02	Q	|	|	|	V|
18+40	0.4479	0.02	Q	|	|	|	V|
18+45	0.4481	0.02	Q	|	|	|	V|
18+50	0.4482	0.02	Q	|	|	|	V|
18+55	0.4483	0.02	Q	|	|	|	V|
19+ 0	0.4484	0.02	Q	|	|	|	V|
19+ 5	0.4485	0.02	Q	|	|	|	V|
19+10	0.4486	0.01	Q	|	|	|	V|
19+15	0.4487	0.01	Q	|	|	|	V|
19+20	0.4488	0.02	Q	|	|	|	V|
19+25	0.4490	0.02	Q	|	|	|	V|
19+30	0.4491	0.02	Q	|	|	|	V|
19+35	0.4492	0.02	Q	|	|	|	V|
19+40	0.4493	0.02	Q	|	|	|	V|
19+45	0.4494	0.02	Q	|	|	|	V|
19+50	0.4496	0.02	Q	|	|	|	V|
19+55	0.4497	0.02	Q	|	|	|	V|
20+ 0	0.4498	0.02	Q	|	|	|	V|
20+ 5	0.4499	0.01	Q	|	|	|	V|
20+10	0.4500	0.01	Q	|	|	|	V|
20+15	0.4501	0.01	Q	|	|	|	V|
20+20	0.4502	0.01	Q	|	|	|	V|
20+25	0.4503	0.01	Q	|	|	|	V|
20+30	0.4504	0.02	Q	|	|	|	V|
20+35	0.4505	0.02	Q	|	|	|	V|
20+40	0.4506	0.02	Q	|	|	|	V|
20+45	0.4507	0.02	Q	|	|	|	V|
20+50	0.4508	0.02	Q	|	|	|	V|
20+55	0.4509	0.01	Q	|	|	|	V|
21+ 0	0.4510	0.01	Q	|	|	|	V|
21+ 5	0.4511	0.01	Q	|	|	|	V|
21+10	0.4512	0.01	Q	|	|	|	V|
21+15	0.4513	0.01	Q	|	|	|	V|
21+20	0.4514	0.01	Q	|	|	|	V|
21+25	0.4515	0.01	Q	|	|	|	V|
21+30	0.4516	0.01	Q	|	|	|	V|
21+35	0.4516	0.01	Q	|	|	|	V|
21+40	0.4517	0.01	Q	|	|	|	V|
21+45	0.4518	0.01	Q	|	|	|	V|
21+50	0.4519	0.01	Q	|	|	|	V|
21+55	0.4520	0.01	Q	|	|	|	V|
22+ 0	0.4521	0.01	Q	|	|	|	V|

22+ 5	0.4522	0.01	Q	|	|	|	V|
22+10	0.4523	0.01	Q	|	|	|	V|
22+15	0.4524	0.01	Q	|	|	|	V|
22+20	0.4525	0.01	Q	|	|	|	V|
22+25	0.4526	0.01	Q	|	|	|	V|
22+30	0.4526	0.01	Q	|	|	|	V|
22+35	0.4527	0.01	Q	|	|	|	V|
22+40	0.4528	0.01	Q	|	|	|	V|
22+45	0.4529	0.01	Q	|	|	|	V|
22+50	0.4530	0.01	Q	|	|	|	V|
22+55	0.4530	0.01	Q	|	|	|	V|
23+ 0	0.4531	0.01	Q	|	|	|	V|
23+ 5	0.4532	0.01	Q	|	|	|	V|
23+10	0.4533	0.01	Q	|	|	|	V|
23+15	0.4534	0.01	Q	|	|	|	V|
23+20	0.4534	0.01	Q	|	|	|	V|
23+25	0.4535	0.01	Q	|	|	|	V|
23+30	0.4536	0.01	Q	|	|	|	V|
23+35	0.4536	0.01	Q	|	|	|	V|
23+40	0.4537	0.01	Q	|	|	|	V|
23+45	0.4538	0.01	Q	|	|	|	V|
23+50	0.4539	0.01	Q	|	|	|	V|
23+55	0.4539	0.01	Q	|	|	|	V|
24+ 0	0.4540	0.01	Q	|	|	|	V|
24+ 5	0.4541	0.01	Q	|	|	|	V|
24+10	0.4541	0.01	Q	|	|	|	V|
24+15	0.4542	0.01	Q	|	|	|	V|
24+20	0.4542	0.01	Q	|	|	|	V|
24+25	0.4543	0.00	Q	|	|	|	V|
24+30	0.4543	0.00	Q	|	|	|	V|
24+35	0.4543	0.00	Q	|	|	|	V|
24+40	0.4543	0.00	Q	|	|	|	V|
24+45	0.4544	0.00	Q	|	|	|	V|
24+50	0.4544	0.00	Q	|	|	|	V|
24+55	0.4544	0.00	Q	|	|	|	V|
25+ 0	0.4544	0.00	Q	|	|	|	V|
25+ 5	0.4544	0.00	Q	|	|	|	V|
25+10	0.4544	0.00	Q	|	|	|	V|
25+15	0.4544	0.00	Q	|	|	|	V|
25+20	0.4544	0.00	Q	|	|	|	V|
25+25	0.4544	0.00	Q	|	|	|	V|
25+30	0.4544	0.00	Q	|	|	|	V|
25+35	0.4544	0.00	Q	|	|	|	V|
25+40	0.4544	0.00	Q	|	|	|	V|
25+45	0.4544	0.00	Q	|	|	|	V|
25+50	0.4544	0.00	Q	|	|	|	V|
25+55	0.4544	0.00	Q	|	|	|	V|
26+ 0	0.4545	0.00	Q	|	|	|	V|
26+ 5	0.4545	0.00	Q	|	|	|	V|
26+10	0.4545	0.00	Q	|	|	|	V|
26+15	0.4545	0.00	Q	|	|	|	V|
26+20	0.4545	0.00	Q	|	|	|	V|
26+25	0.4545	0.00	Q	|	|	|	V|
26+30	0.4545	0.00	Q	|	|	|	V|
26+35	0.4545	0.00	Q	|	|	|	V|
26+40	0.4545	0.00	Q	|	|	|	V|

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

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Study date 02/20/20 File: 8946E2A11100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
100 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	0.55	2.04

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	1.30	4.81

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.515	0.057	(	0.463)	0.458
2	0.17	4.20	0.655	0.057	(	0.590)	0.598
3	0.25	4.40	0.686	0.057	(	0.618)	0.629
4	0.33	4.80	0.749	0.057	(	0.674)	0.692
5	0.42	5.20	0.811	0.057	(	0.730)	0.754
6	0.50	6.20	0.967	0.057	(	0.870)	0.910
7	0.58	6.80	1.061	0.057	(	0.955)	1.004
8	0.67	8.80	1.373	0.057	(	1.235)	1.316
9	0.75	13.90	2.168	0.057	(	1.951)	2.111
10	0.83	31.40	4.898	0.057	(	4.408)	4.841
11	0.92	7.20	1.123	0.057	(	1.011)	1.066

```
 12   1.00     3.80      0.593          0.057    (  0.534)        0.536
             (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    14.9
      Flood volume = Effective rainfall      1.24(In)
       times area       3.7(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
      Total soil loss =      0.06(In)
      Total soil loss =     0.018(Ac.Ft)
      Total rainfall =      1.30(In)
      Flood volume =       16691.5 Cubic Feet
      Total soil loss =         768.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      6.094(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        2.5       5.0       7.5      10.0
 ------------------------------------------------------------------------
   0+ 5       0.0003      0.04  Q         |         |         |         |
   0+10       0.0015      0.17  Q         |         |         |         |
   0+15       0.0045      0.43  VQ        |         |         |         |
   0+20       0.0100      0.80  |V Q      |         |         |         |
   0+25       0.0182      1.19  |V  Q     |         |         |         |
   0+30       0.0287      1.52  | V   Q   |         |         |         |
   0+35       0.0413      1.82  |   V  Q  |         |         |         |
   0+40       0.0560      2.14  |    V  Q |         |         |         |
   0+45       0.0738      2.58  |      V  Q         |         |         |
   0+50       0.0975      3.43  |         V  Q      |         |         |
   0+55       0.1294      4.64  |         |  V    Q |         |         |
   1+ 0       0.1687      5.70  |         |      V  | Q       |         |
   1+ 5       0.2106      6.09  |         |         |V  Q     |         |
   1+10       0.2475      5.36  |         |         |Q   V    |         |
   1+15       0.2744      3.90  |         |    Q    |       V |         |
   1+20       0.2932      2.73  |         Q         |         V         |
   1+25       0.3066      1.95  |      Q  |         |         | V       |
   1+30       0.3171      1.52  |     Q   |         |         |  V      |
   1+35       0.3257      1.25  |    Q    |         |         |   V     |
   1+40       0.3331      1.06  |   Q     |         |         |   V     |
   1+45       0.3394      0.91  |  Q      |         |         |    V    |
   1+50       0.3448      0.78  |  Q      |         |         |    V    |
   1+55       0.3495      0.68  | Q       |         |         |     V   |
   2+ 0       0.3537      0.61  | Q       |         |         |     V   |
   2+ 5       0.3573      0.52  | Q       |         |         |      V  |
   2+10       0.3605      0.47  |Q        |         |         |      V  |
   2+15       0.3633      0.40  |Q        |         |         |      V  |
   2+20       0.3658      0.37  |Q        |         |         |       V |
   2+25       0.3681      0.34  |Q        |         |         |       V |
   2+30       0.3703      0.31  |Q        |         |         |       V |
   2+35       0.3721      0.27  |Q        |         |         |       V |
   2+40       0.3738      0.24  Q         |         |         |        V|
   2+45       0.3753      0.22  Q         |         |         |        V|
   2+50       0.3767      0.20  Q         |         |         |        V|
   2+55       0.3778      0.17  Q         |         |         |        V|
   3+ 0       0.3789      0.15  Q         |         |         |        V|
   3+ 5       0.3797      0.13  Q         |         |         |        V|
   3+10       0.3805      0.11  Q         |         |         |        V|
   3+15       0.3812      0.10  Q         |         |         |        V|
   3+20       0.3819      0.09  Q         |         |         |        V|
   3+25       0.3825      0.09  Q         |         |         |        V|
   3+30       0.3830      0.08  Q         |         |         |        V|
   3+35       0.3831      0.02  Q         |         |         |        V|
   3+40       0.3832      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 02/20/20 File: 8946E2A13100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
100 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	0.90	3.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	2.25	8.33

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

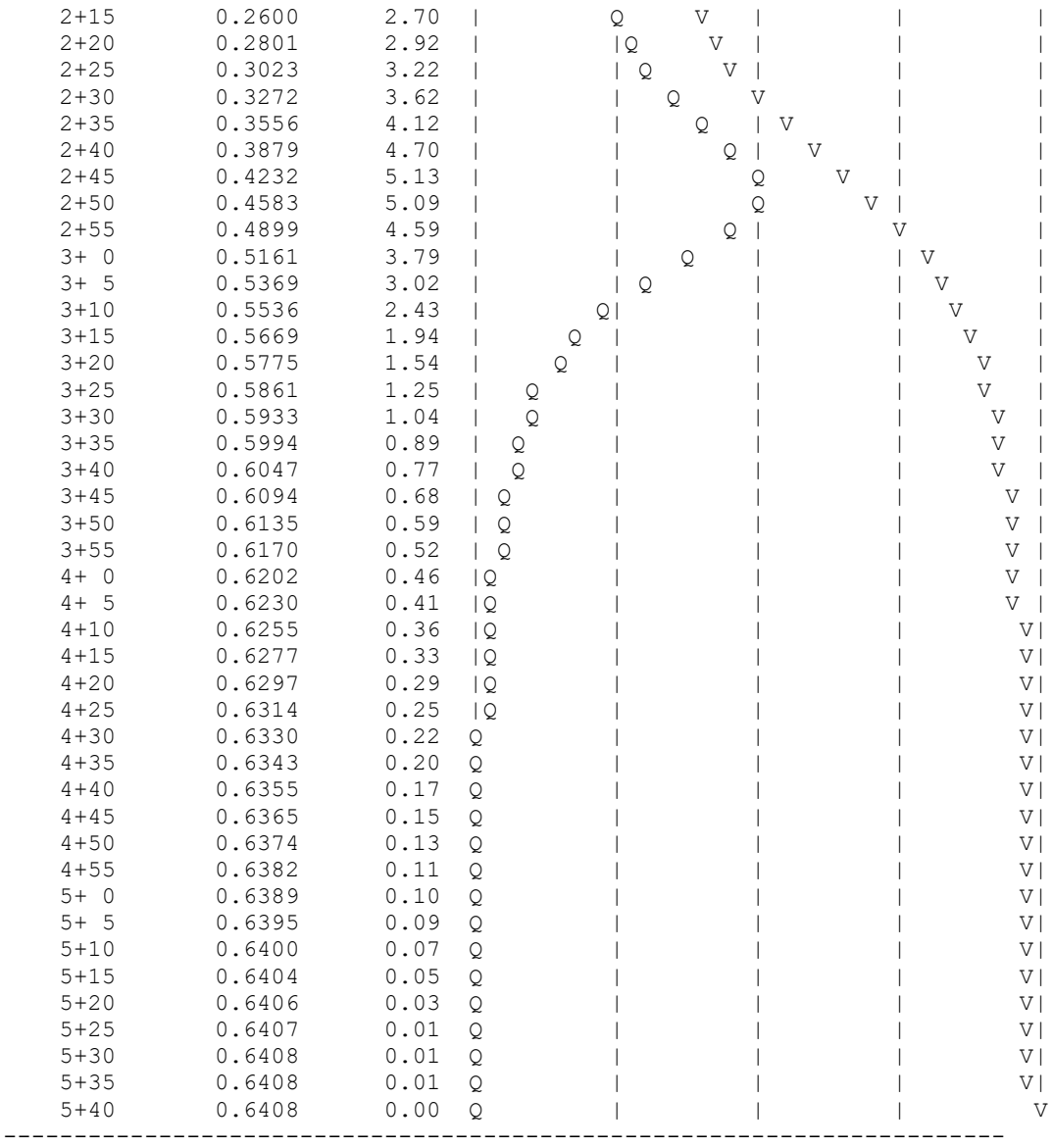
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.351	0.057	(	0.316)	0.294
2	0.17	1.30	0.351	0.057	(	0.316)	0.294
3	0.25	1.10	0.297	0.057	(	0.267)	0.240
4	0.33	1.50	0.405	0.057	(	0.364)	0.348
5	0.42	1.50	0.405	0.057	(	0.364)	0.348
6	0.50	1.80	0.486	0.057	(	0.437)	0.429
7	0.58	1.50	0.405	0.057	(	0.364)	0.348
8	0.67	1.80	0.486	0.057	(	0.437)	0.429
9	0.75	1.80	0.486	0.057	(	0.437)	0.429
10	0.83	1.50	0.405	0.057	(	0.364)	0.348
11	0.92	1.60	0.432	0.057	(	0.389)	0.375
12	1.00	1.80	0.486	0.057	(	0.437)	0.429
13	1.08	2.20	0.594	0.057	(	0.535)	0.537

```
14   1.17     2.20      0.594          0.057    (  0.535)        0.537
15   1.25     2.20      0.594          0.057    (  0.535)        0.537
16   1.33     2.00      0.540          0.057    (  0.486)        0.483
17   1.42     2.60      0.702          0.057    (  0.632)        0.645
18   1.50     2.70      0.729          0.057    (  0.656)        0.672
19   1.58     2.40      0.648          0.057    (  0.583)        0.591
20   1.67     2.70      0.729          0.057    (  0.656)        0.672
21   1.75     3.30      0.891          0.057    (  0.802)        0.834
22   1.83     3.10      0.837          0.057    (  0.753)        0.780
23   1.92     2.90      0.783          0.057    (  0.705)        0.726
24   2.00     3.00      0.810          0.057    (  0.729)        0.753
25   2.08     3.10      0.837          0.057    (  0.753)        0.780
26   2.17     4.20      1.134          0.057    (  1.021)        1.077
27   2.25     5.00      1.350          0.057    (  1.215)        1.293
28   2.33     3.50      0.945          0.057    (  0.850)        0.888
29   2.42     6.80      1.836          0.057    (  1.652)        1.779
30   2.50     7.30      1.971          0.057    (  1.774)        1.914
31   2.58     8.20      2.214          0.057    (  1.993)        2.157
32   2.67     5.90      1.593          0.057    (  1.434)        1.536
33   2.75     2.00      0.540          0.057    (  0.486)        0.483
34   2.83     1.80      0.486          0.057    (  0.437)        0.429
35   2.92     1.80      0.486          0.057    (  0.437)        0.429
36   3.00     0.60      0.162          0.057    (  0.146)        0.105
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    24.9
     Flood volume = Effective rainfall      2.08(In)
      times area       3.7(Ac.)/[(In)/(Ft.)] =       0.6(Ac.Ft)
     Total soil loss =      0.17(In)
     Total soil loss =     0.053(Ac.Ft)
     Total rainfall =      2.25(In)
     Flood volume =       27914.5 Cubic Feet
     Total soil loss =        2304.8 Cubic Feet
     --------------------------------------------------------------------
      Peak flow rate of this hydrograph =      5.130(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.02  Q         |         |         |         |
  0+10       0.0009      0.10  Q         |         |         |         |
  0+15       0.0025      0.24  Q         |         |         |         |
  0+20       0.0054      0.42  VQ        |         |         |         |
  0+25       0.0095      0.59  V Q       |         |         |         |
  0+30       0.0145      0.73  V Q       |         |         |         |
  0+35       0.0204      0.85  |V Q      |         |         |         |
  0+40       0.0270      0.96  |V Q      |         |         |         |
  0+45       0.0343      1.06  | V Q     |         |         |         |
  0+50       0.0421      1.14  | V Q     |         |         |         |
  0+55       0.0503      1.19  |  VQ     |         |         |         |
  1+ 0       0.0588      1.23  |  VQ     |         |         |         |
  1+ 5       0.0675      1.26  |   VQ    |         |         |         |
  1+10       0.0766      1.32  |   VQ    |         |         |         |
  1+15       0.0864      1.43  |    Q    |         |         |         |
  1+20       0.0970      1.54  |     Q   |         |         |         |
  1+25       0.1083      1.63  |     Q   |         |         |         |
  1+30       0.1201      1.72  |     QV  |         |         |         |
  1+35       0.1326      1.81  |      QV |         |         |         |
  1+40       0.1458      1.91  |      Q V|         |         |         |
  1+45       0.1597      2.03  |       QV|         |         |         |
  1+50       0.1745      2.15  |       Q V         |         |         |
  1+55       0.1901      2.27  |        Q|V        |         |         |
  2+ 0       0.2066      2.39  |        Q| V       |         |         |
  2+ 5       0.2237      2.48  |        Q|  V      |         |         |
  2+10       0.2414      2.56  |         Q    V    |         |         |
```



2+15	0.2600	2.70	Q V
2+20	0.2801	2.92	Q V
2+25	0.3023	3.22	Q V
2+30	0.3272	3.62	Q V
2+35	0.3556	4.12	Q V
2+40	0.3879	4.70	Q V
2+45	0.4232	5.13	Q V
2+50	0.4583	5.09	Q V
2+55	0.4899	4.59	Q V
3+ 0	0.5161	3.79	Q V
3+ 5	0.5369	3.02	Q V
3+10	0.5536	2.43	Q V
3+15	0.5669	1.94	Q V
3+20	0.5775	1.54	Q V
3+25	0.5861	1.25	Q V
3+30	0.5933	1.04	Q V
3+35	0.5994	0.89	Q V
3+40	0.6047	0.77	Q V
3+45	0.6094	0.68	Q V
3+50	0.6135	0.59	Q V
3+55	0.6170	0.52	Q V
4+ 0	0.6202	0.46	Q V
4+ 5	0.6230	0.41	Q V
4+10	0.6255	0.36	Q V
4+15	0.6277	0.33	Q V
4+20	0.6297	0.29	Q V
4+25	0.6314	0.25	Q V
4+30	0.6330	0.22	Q V
4+35	0.6343	0.20	Q V
4+40	0.6355	0.17	Q V
4+45	0.6365	0.15	Q V
4+50	0.6374	0.13	Q V
4+55	0.6382	0.11	Q V
5+ 0	0.6389	0.10	Q V
5+ 5	0.6395	0.09	Q V
5+10	0.6400	0.07	Q V
5+15	0.6404	0.05	Q V
5+20	0.6406	0.03	Q V
5+25	0.6407	0.01	Q V
5+30	0.6408	0.01	Q V
5+35	0.6408	0.01	Q V
5+40	0.6408	0.00	Q V

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

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Study date 02/20/20 File: 8946E2A16100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
100 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	1.30	4.81

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	3.00	11.10

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	24.299	2.225	0.083
2	0.167	48.598	7.279	0.271
3	0.250	72.897	12.896	0.481
4	0.333	97.196	16.836	0.628
5	0.417	121.495	15.554	0.580
6	0.500	145.794	9.920	0.370
7	0.583	170.093	6.390	0.238
8	0.667	194.392	4.262	0.159
9	0.750	218.691	3.406	0.127
10	0.833	242.990	2.801	0.104
11	0.917	267.289	2.372	0.088
12	1.000	291.588	2.060	0.077
13	1.083	315.887	1.707	0.064
14	1.167	340.186	1.475	0.055
15	1.250	364.485	1.389	0.052
16	1.333	388.784	1.101	0.041
17	1.417	413.083	1.027	0.038
18	1.500	437.382	0.809	0.030
19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
22	1.833	534.577	0.567	0.021
23	1.917	558.876	0.528	0.020
24	2.000	583.175	0.457	0.017
25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.180	0.057	(	0.162)	0.123
2	0.17	0.60	0.216	0.057	(	0.194)	0.159
3	0.25	0.60	0.216	0.057	(	0.194)	0.159
4	0.33	0.60	0.216	0.057	(	0.194)	0.159
5	0.42	0.60	0.216	0.057	(	0.194)	0.159
6	0.50	0.70	0.252	0.057	(	0.227)	0.195
7	0.58	0.70	0.252	0.057	(	0.227)	0.195
8	0.67	0.70	0.252	0.057	(	0.227)	0.195
9	0.75	0.70	0.252	0.057	(	0.227)	0.195
10	0.83	0.70	0.252	0.057	(	0.227)	0.195
11	0.92	0.70	0.252	0.057	(	0.227)	0.195
12	1.00	0.80	0.288	0.057	(	0.259)	0.231
13	1.08	0.80	0.288	0.057	(	0.259)	0.231

14	1.17	0.80	0.288	0.057	(	0.259)	0.231
15	1.25	0.80	0.288	0.057	(	0.259)	0.231
16	1.33	0.80	0.288	0.057	(	0.259)	0.231
17	1.42	0.80	0.288	0.057	(	0.259)	0.231
18	1.50	0.80	0.288	0.057	(	0.259)	0.231
19	1.58	0.80	0.288	0.057	(	0.259)	0.231
20	1.67	0.80	0.288	0.057	(	0.259)	0.231
21	1.75	0.80	0.288	0.057	(	0.259)	0.231
22	1.83	0.80	0.288	0.057	(	0.259)	0.231
23	1.92	0.80	0.288	0.057	(	0.259)	0.231
24	2.00	0.90	0.324	0.057	(	0.292)	0.267
25	2.08	0.80	0.288	0.057	(	0.259)	0.231
26	2.17	0.90	0.324	0.057	(	0.292)	0.267
27	2.25	0.90	0.324	0.057	(	0.292)	0.267
28	2.33	0.90	0.324	0.057	(	0.292)	0.267
29	2.42	0.90	0.324	0.057	(	0.292)	0.267
30	2.50	0.90	0.324	0.057	(	0.292)	0.267
31	2.58	0.90	0.324	0.057	(	0.292)	0.267
32	2.67	0.90	0.324	0.057	(	0.292)	0.267
33	2.75	1.00	0.360	0.057	(	0.324)	0.303
34	2.83	1.00	0.360	0.057	(	0.324)	0.303
35	2.92	1.00	0.360	0.057	(	0.324)	0.303
36	3.00	1.00	0.360	0.057	(	0.324)	0.303
37	3.08	1.00	0.360	0.057	(	0.324)	0.303
38	3.17	1.10	0.396	0.057	(	0.356)	0.339
39	3.25	1.10	0.396	0.057	(	0.356)	0.339
40	3.33	1.10	0.396	0.057	(	0.356)	0.339
41	3.42	1.20	0.432	0.057	(	0.389)	0.375
42	3.50	1.30	0.468	0.057	(	0.421)	0.411
43	3.58	1.40	0.504	0.057	(	0.454)	0.447
44	3.67	1.40	0.504	0.057	(	0.454)	0.447
45	3.75	1.50	0.540	0.057	(	0.486)	0.483
46	3.83	1.50	0.540	0.057	(	0.486)	0.483
47	3.92	1.60	0.576	0.057	(	0.518)	0.519
48	4.00	1.60	0.576	0.057	(	0.518)	0.519
49	4.08	1.70	0.612	0.057	(	0.551)	0.555
50	4.17	1.80	0.648	0.057	(	0.583)	0.591
51	4.25	1.90	0.684	0.057	(	0.616)	0.627
52	4.33	2.00	0.720	0.057	(	0.648)	0.663
53	4.42	2.10	0.756	0.057	(	0.680)	0.699
54	4.50	2.10	0.756	0.057	(	0.680)	0.699
55	4.58	2.20	0.792	0.057	(	0.713)	0.735
56	4.67	2.30	0.828	0.057	(	0.745)	0.771
57	4.75	2.40	0.864	0.057	(	0.778)	0.807
58	4.83	2.40	0.864	0.057	(	0.778)	0.807
59	4.92	2.50	0.900	0.057	(	0.810)	0.843
60	5.00	2.60	0.936	0.057	(	0.842)	0.879
61	5.08	3.10	1.116	0.057	(	1.004)	1.059
62	5.17	3.60	1.296	0.057	(	1.166)	1.239
63	5.25	3.90	1.404	0.057	(	1.264)	1.347
64	5.33	4.20	1.512	0.057	(	1.361)	1.455
65	5.42	4.70	1.692	0.057	(	1.523)	1.635
66	5.50	5.60	2.016	0.057	(	1.814)	1.959
67	5.58	1.90	0.684	0.057	(	0.616)	0.627
68	5.67	0.90	0.324	0.057	(	0.292)	0.267
69	5.75	0.60	0.216	0.057	(	0.194)	0.159
70	5.83	0.50	0.180	0.057	(	0.162)	0.123
71	5.92	0.30	0.108	0.057	(	0.097)	0.051
72	6.00	0.20	0.072	0.057	(	0.065)	0.015

(Loss Rate Not Used)

Sum = 100.0 Sum = 31.9

Flood volume = Effective rainfall 2.66(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.8(Ac.Ft)
Total soil loss = 0.34(In)
Total soil loss = 0.106(Ac.Ft)
Total rainfall = 3.00(In)
Flood volume = 35683.0 Cubic Feet
Total soil loss = 4609.5 Cubic Feet

Peak flow rate of this hydrograph = 4.613(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	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q				
0+10	0.0004	0.05	Q				
0+15	0.0012	0.12	Q				
0+20	0.0026	0.21	Q				
0+25	0.0047	0.30	VQ				
0+30	0.0073	0.37	VQ				
0+35	0.0102	0.43	VQ				
0+40	0.0135	0.47	VQ				
0+45	0.0170	0.51	V Q				
0+50	0.0208	0.55	|VQ				
0+55	0.0248	0.58	|VQ				
1+ 0	0.0290	0.61	|VQ				
1+ 5	0.0333	0.63	|VQ				
1+10	0.0379	0.66	|VQ				
1+15	0.0427	0.70	| Q				
1+20	0.0477	0.73	| Q				
1+25	0.0529	0.75	| VQ				
1+30	0.0582	0.77	| VQ				
1+35	0.0635	0.78	| Q				
1+40	0.0690	0.79	| Q				
1+45	0.0745	0.80	| Q				
1+50	0.0800	0.81	| Q				
1+55	0.0856	0.81	| QV				
2+ 0	0.0913	0.82	| QV				
2+ 5	0.0970	0.84	| QV				
2+10	0.1029	0.85	| Q V				
2+15	0.1089	0.87	| Q V				
2+20	0.1150	0.89	| Q V				
2+25	0.1213	0.91	| Q V				
2+30	0.1277	0.93	| Q V				
2+35	0.1341	0.94	| Q V				
2+40	0.1407	0.95	| Q V				
2+45	0.1473	0.96	| Q V				
2+50	0.1540	0.98	| Q V				
2+55	0.1609	1.00	| Q V				
3+ 0	0.1680	1.02	| Q V				
3+ 5	0.1752	1.05	| Q V				
3+10	0.1826	1.07	| Q V				
3+15	0.1901	1.09	| Q V|				
3+20	0.1977	1.11	| Q V|				
3+25	0.2056	1.15	| Q V				
3+30	0.2138	1.18	| Q V				
3+35	0.2223	1.23	| Q V				
3+40	0.2312	1.30	| Q |V				
3+45	0.2406	1.37	| Q |V				
3+50	0.2505	1.44	| Q | V				
3+55	0.2610	1.51	| Q | V				
4+ 0	0.2718	1.58	| Q | V				
4+ 5	0.2831	1.64	| Q | V				
4+10	0.2949	1.71	| Q | V				
4+15	0.3072	1.78	| Q | V				
4+20	0.3200	1.87	| Q | V				
4+25	0.3335	1.97	| Q | V				
4+30	0.3478	2.07	| Q | V				
4+35	0.3627	2.17	| Q | V				
4+40	0.3783	2.27	| Q| V				
4+45	0.3946	2.36	| Q| V|				
4+50	0.4116	2.46	| Q| V				
4+55	0.4292	2.56	| Q V				
5+ 0	0.4474	2.65	| Q |V				

5+ 5	0.4665	2.76	|	Q	V	|	|
5+10	0.4865	2.91	|	Q	V	|	|
5+15	0.5082	3.14	|	Q	V	|	|
5+20	0.5319	3.44	|	Q	V	|	|
5+25	0.5580	3.80	|	Q	V	|	|
5+30	0.5870	4.20	|	Q	V	|	|
5+35	0.6182	4.54	|	Q	V	|	|
5+40	0.6500	4.61	|	Q	V	|	|
5+45	0.6797	4.31	|	Q	V	|	|
5+50	0.7047	3.63	|	Q	V	|	|
5+55	0.7240	2.81	|	Q	V	|	|
6+ 0	0.7389	2.17	|	Q	V	|	|
6+ 5	0.7508	1.72	|	Q	V	|	|
6+10	0.7605	1.41	|	Q	V	|	|
6+15	0.7685	1.16	|	Q	V	|	|
6+20	0.7752	0.98	|	Q	V	|	|
6+25	0.7810	0.83	|	Q	V	|	|
6+30	0.7859	0.72	|	Q	V	|	|
6+35	0.7902	0.62	|	Q	V	|	|
6+40	0.7940	0.55	|	Q	V	|	|
6+45	0.7973	0.48	|	Q	V	|	|
6+50	0.8002	0.42	|	Q	V	|	|
6+55	0.8028	0.37	|	Q	V	|	|
7+ 0	0.8051	0.34	|	Q	V	|	|
7+ 5	0.8072	0.30	|	Q	V	|	|
7+10	0.8090	0.27	|	Q	V	|	|
7+15	0.8106	0.23	Q	V	|	|	|
7+20	0.8120	0.20	Q	V	|	|	|
7+25	0.8133	0.18	Q	V	|	|	|
7+30	0.8144	0.16	Q	V	|	|	|
7+35	0.8153	0.14	Q	V	|	|	|
7+40	0.8161	0.12	Q	V	|	|	|
7+45	0.8168	0.10	Q	V	|	|	|
7+50	0.8174	0.09	Q	V	|	|	|
7+55	0.8179	0.08	Q	V	|	|	|
8+ 0	0.8184	0.06	Q	V	|	|	|
8+ 5	0.8187	0.05	Q	V	|	|	|
8+10	0.8190	0.04	Q	V	|	|	|
8+15	0.8191	0.01	Q	V	|	|	|
8+20	0.8191	0.01	Q	V	|	|	|
8+25	0.8191	0.00	Q	V	|	|	|
8+30	0.8192	0.00	Q	V	|	|	|
8+35	0.8192	0.00	Q	V	|	|	|
8+40	0.8192	0.00	Q	V	|	|	|

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

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Study date 02/20/20 File: 8946E2A124100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
EXISTING CONDITION
100 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.343 Hr.
Lag time = 20.58 Min.
25% of lag time = 5.14 Min.
40% of lag time = 8.23 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]
3.70	2.25	8.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	5.25	19.43

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 5.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	89.00	0.000

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

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17	1.417	413.083	1.027	0.038
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19	1.583	461.681	0.772	0.029
20	1.667	485.979	0.736	0.027
21	1.750	510.278	0.712	0.027
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25	2.083	607.474	0.433	0.016
26	2.167	631.773	0.363	0.014
27	2.250	656.072	0.337	0.013
28	2.333	680.371	0.270	0.010
29	2.417	704.670	0.243	0.009
30	2.500	728.969	0.243	0.009
31	2.583	753.268	0.243	0.009
32	2.667	777.567	0.243	0.009
33	2.750	801.866	0.346	0.013
		Sum = 100.000	Sum=	3.729

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	0.042	(0.101)		0.038	0.004
2	0.17	0.07	0.042	(0.101)		0.038	0.004
3	0.25	0.07	0.042	(0.101)		0.038	0.004
4	0.33	0.10	0.063	(0.100)		0.057	0.006
5	0.42	0.10	0.063	(0.100)		0.057	0.006
6	0.50	0.10	0.063	(0.099)		0.057	0.006
7	0.58	0.10	0.063	(0.099)		0.057	0.006
8	0.67	0.10	0.063	(0.099)		0.057	0.006
9	0.75	0.10	0.063	(0.098)		0.057	0.006
10	0.83	0.13	0.084	(0.098)		0.076	0.008
11	0.92	0.13	0.084	(0.098)		0.076	0.008
12	1.00	0.13	0.084	(0.097)		0.076	0.008
13	1.08	0.10	0.063	(0.097)		0.057	0.006

14	1.17	0.10	0.063	(	0.096)		0.057	0.006
15	1.25	0.10	0.063	(	0.096)		0.057	0.006
16	1.33	0.10	0.063	(	0.096)		0.057	0.006
17	1.42	0.10	0.063	(	0.095)		0.057	0.006
18	1.50	0.10	0.063	(	0.095)		0.057	0.006
19	1.58	0.10	0.063	(	0.094)		0.057	0.006
20	1.67	0.10	0.063	(	0.094)		0.057	0.006
21	1.75	0.10	0.063	(	0.094)		0.057	0.006
22	1.83	0.13	0.084	(	0.093)		0.076	0.008
23	1.92	0.13	0.084	(	0.093)		0.076	0.008
24	2.00	0.13	0.084	(	0.093)		0.076	0.008
25	2.08	0.13	0.084	(	0.092)		0.076	0.008
26	2.17	0.13	0.084	(	0.092)		0.076	0.008
27	2.25	0.13	0.084	(	0.091)		0.076	0.008
28	2.33	0.13	0.084	(	0.091)		0.076	0.008
29	2.42	0.13	0.084	(	0.091)		0.076	0.008
30	2.50	0.13	0.084	(	0.090)		0.076	0.008
31	2.58	0.17	0.105		0.090	(	0.094)	0.015
32	2.67	0.17	0.105		0.090	(	0.094)	0.015
33	2.75	0.17	0.105		0.089	(	0.094)	0.016
34	2.83	0.17	0.105		0.089	(	0.094)	0.016
35	2.92	0.17	0.105		0.088	(	0.094)	0.017
36	3.00	0.17	0.105		0.088	(	0.094)	0.017
37	3.08	0.17	0.105		0.088	(	0.094)	0.017
38	3.17	0.17	0.105		0.087	(	0.094)	0.018
39	3.25	0.17	0.105		0.087	(	0.094)	0.018
40	3.33	0.17	0.105		0.087	(	0.094)	0.018
41	3.42	0.17	0.105		0.086	(	0.094)	0.019
42	3.50	0.17	0.105		0.086	(	0.094)	0.019
43	3.58	0.17	0.105		0.086	(	0.094)	0.019
44	3.67	0.17	0.105		0.085	(	0.094)	0.020
45	3.75	0.17	0.105		0.085	(	0.094)	0.020
46	3.83	0.20	0.126		0.085	(	0.113)	0.041
47	3.92	0.20	0.126		0.084	(	0.113)	0.042
48	4.00	0.20	0.126		0.084	(	0.113)	0.042
49	4.08	0.20	0.126		0.083	(	0.113)	0.043
50	4.17	0.20	0.126		0.083	(	0.113)	0.043
51	4.25	0.20	0.126		0.083	(	0.113)	0.043
52	4.33	0.23	0.147		0.082	(	0.132)	0.065
53	4.42	0.23	0.147		0.082	(	0.132)	0.065
54	4.50	0.23	0.147		0.082	(	0.132)	0.065
55	4.58	0.23	0.147		0.081	(	0.132)	0.066
56	4.67	0.23	0.147		0.081	(	0.132)	0.066
57	4.75	0.23	0.147		0.081	(	0.132)	0.066
58	4.83	0.27	0.168		0.080	(	0.151)	0.088
59	4.92	0.27	0.168		0.080	(	0.151)	0.088
60	5.00	0.27	0.168		0.080	(	0.151)	0.088
61	5.08	0.20	0.126		0.079	(	0.113)	0.047
62	5.17	0.20	0.126		0.079	(	0.113)	0.047
63	5.25	0.20	0.126		0.079	(	0.113)	0.047
64	5.33	0.23	0.147		0.078	(	0.132)	0.069
65	5.42	0.23	0.147		0.078	(	0.132)	0.069
66	5.50	0.23	0.147		0.078	(	0.132)	0.069
67	5.58	0.27	0.168		0.077	(	0.151)	0.091
68	5.67	0.27	0.168		0.077	(	0.151)	0.091
69	5.75	0.27	0.168		0.077	(	0.151)	0.091
70	5.83	0.27	0.168		0.076	(	0.151)	0.092
71	5.92	0.27	0.168		0.076	(	0.151)	0.092
72	6.00	0.27	0.168		0.076	(	0.151)	0.092
73	6.08	0.30	0.189		0.075	(	0.170)	0.114
74	6.17	0.30	0.189		0.075	(	0.170)	0.114
75	6.25	0.30	0.189		0.074	(	0.170)	0.114
76	6.33	0.30	0.189		0.074	(	0.170)	0.115
77	6.42	0.30	0.189		0.074	(	0.170)	0.115
78	6.50	0.30	0.189		0.074	(	0.170)	0.115
79	6.58	0.33	0.210		0.073	(	0.189)	0.137
80	6.67	0.33	0.210		0.073	(	0.189)	0.137
81	6.75	0.33	0.210		0.073	(	0.189)	0.137
82	6.83	0.33	0.210		0.072	(	0.189)	0.138
83	6.92	0.33	0.210		0.072	(	0.189)	0.138

84	7.00	0.33	0.210	0.072	(	0.189)	0.138
85	7.08	0.33	0.210	0.071	(	0.189)	0.139
86	7.17	0.33	0.210	0.071	(	0.189)	0.139
87	7.25	0.33	0.210	0.071	(	0.189)	0.139
88	7.33	0.37	0.231	0.070	(	0.208)	0.161
89	7.42	0.37	0.231	0.070	(	0.208)	0.161
90	7.50	0.37	0.231	0.070	(	0.208)	0.161
91	7.58	0.40	0.252	0.069	(	0.227)	0.183
92	7.67	0.40	0.252	0.069	(	0.227)	0.183
93	7.75	0.40	0.252	0.069	(	0.227)	0.183
94	7.83	0.43	0.273	0.068	(	0.246)	0.205
95	7.92	0.43	0.273	0.068	(	0.246)	0.205
96	8.00	0.43	0.273	0.068	(	0.246)	0.205
97	8.08	0.50	0.315	0.067	(	0.283)	0.248
98	8.17	0.50	0.315	0.067	(	0.283)	0.248
99	8.25	0.50	0.315	0.067	(	0.283)	0.248
100	8.33	0.50	0.315	0.066	(	0.283)	0.249
101	8.42	0.50	0.315	0.066	(	0.283)	0.249
102	8.50	0.50	0.315	0.066	(	0.283)	0.249
103	8.58	0.53	0.336	0.066	(	0.302)	0.270
104	8.67	0.53	0.336	0.065	(	0.302)	0.271
105	8.75	0.53	0.336	0.065	(	0.302)	0.271
106	8.83	0.57	0.357	0.065	(	0.321)	0.292
107	8.92	0.57	0.357	0.064	(	0.321)	0.293
108	9.00	0.57	0.357	0.064	(	0.321)	0.293
109	9.08	0.63	0.399	0.064	(	0.359)	0.335
110	9.17	0.63	0.399	0.063	(	0.359)	0.336
111	9.25	0.63	0.399	0.063	(	0.359)	0.336
112	9.33	0.67	0.420	0.063	(	0.378)	0.357
113	9.42	0.67	0.420	0.062	(	0.378)	0.358
114	9.50	0.67	0.420	0.062	(	0.378)	0.358
115	9.58	0.70	0.441	0.062	(	0.397)	0.379
116	9.67	0.70	0.441	0.062	(	0.397)	0.379
117	9.75	0.70	0.441	0.061	(	0.397)	0.380
118	9.83	0.73	0.462	0.061	(	0.416)	0.401
119	9.92	0.73	0.462	0.061	(	0.416)	0.401
120	10.00	0.73	0.462	0.060	(	0.416)	0.402
121	10.08	0.50	0.315	0.060	(	0.283)	0.255
122	10.17	0.50	0.315	0.060	(	0.283)	0.255
123	10.25	0.50	0.315	0.060	(	0.283)	0.255
124	10.33	0.50	0.315	0.059	(	0.283)	0.256
125	10.42	0.50	0.315	0.059	(	0.283)	0.256
126	10.50	0.50	0.315	0.059	(	0.283)	0.256
127	10.58	0.67	0.420	0.058	(	0.378)	0.362
128	10.67	0.67	0.420	0.058	(	0.378)	0.362
129	10.75	0.67	0.420	0.058	(	0.378)	0.362
130	10.83	0.67	0.420	0.058	(	0.378)	0.362
131	10.92	0.67	0.420	0.057	(	0.378)	0.363
132	11.00	0.67	0.420	0.057	(	0.378)	0.363
133	11.08	0.63	0.399	0.057	(	0.359)	0.342
134	11.17	0.63	0.399	0.056	(	0.359)	0.343
135	11.25	0.63	0.399	0.056	(	0.359)	0.343
136	11.33	0.63	0.399	0.056	(	0.359)	0.343
137	11.42	0.63	0.399	0.056	(	0.359)	0.343
138	11.50	0.63	0.399	0.055	(	0.359)	0.344
139	11.58	0.57	0.357	0.055	(	0.321)	0.302
140	11.67	0.57	0.357	0.055	(	0.321)	0.302
141	11.75	0.57	0.357	0.054	(	0.321)	0.303
142	11.83	0.60	0.378	0.054	(	0.340)	0.324
143	11.92	0.60	0.378	0.054	(	0.340)	0.324
144	12.00	0.60	0.378	0.054	(	0.340)	0.324
145	12.08	0.83	0.525	0.053	(	0.472)	0.472
146	12.17	0.83	0.525	0.053	(	0.472)	0.472
147	12.25	0.83	0.525	0.053	(	0.472)	0.472
148	12.33	0.87	0.546	0.053	(	0.491)	0.493
149	12.42	0.87	0.546	0.052	(	0.491)	0.494
150	12.50	0.87	0.546	0.052	(	0.491)	0.494
151	12.58	0.93	0.588	0.052	(	0.529)	0.536
152	12.67	0.93	0.588	0.052	(	0.529)	0.536
153	12.75	0.93	0.588	0.051	(	0.529)	0.537

154	12.83	0.97	0.609	0.051	(	0.548)	0.558
155	12.92	0.97	0.609	0.051	(	0.548)	0.558
156	13.00	0.97	0.609	0.051	(	0.548)	0.558
157	13.08	1.13	0.714	0.050	(	0.643)	0.664
158	13.17	1.13	0.714	0.050	(	0.643)	0.664
159	13.25	1.13	0.714	0.050	(	0.643)	0.664
160	13.33	1.13	0.714	0.049	(	0.643)	0.664
161	13.42	1.13	0.714	0.049	(	0.643)	0.665
162	13.50	1.13	0.714	0.049	(	0.643)	0.665
163	13.58	0.77	0.483	0.049	(	0.435)	0.434
164	13.67	0.77	0.483	0.048	(	0.435)	0.435
165	13.75	0.77	0.483	0.048	(	0.435)	0.435
166	13.83	0.77	0.483	0.048	(	0.435)	0.435
167	13.92	0.77	0.483	0.048	(	0.435)	0.435
168	14.00	0.77	0.483	0.048	(	0.435)	0.435
169	14.08	0.90	0.567	0.047	(	0.510)	0.520
170	14.17	0.90	0.567	0.047	(	0.510)	0.520
171	14.25	0.90	0.567	0.047	(	0.510)	0.520
172	14.33	0.87	0.546	0.047	(	0.491)	0.499
173	14.42	0.87	0.546	0.046	(	0.491)	0.500
174	14.50	0.87	0.546	0.046	(	0.491)	0.500
175	14.58	0.87	0.546	0.046	(	0.491)	0.500
176	14.67	0.87	0.546	0.046	(	0.491)	0.500
177	14.75	0.87	0.546	0.045	(	0.491)	0.501
178	14.83	0.83	0.525	0.045	(	0.472)	0.480
179	14.92	0.83	0.525	0.045	(	0.472)	0.480
180	15.00	0.83	0.525	0.045	(	0.472)	0.480
181	15.08	0.80	0.504	0.044	(	0.454)	0.460
182	15.17	0.80	0.504	0.044	(	0.454)	0.460
183	15.25	0.80	0.504	0.044	(	0.454)	0.460
184	15.33	0.77	0.483	0.044	(	0.435)	0.439
185	15.42	0.77	0.483	0.044	(	0.435)	0.439
186	15.50	0.77	0.483	0.043	(	0.435)	0.440
187	15.58	0.63	0.399	0.043	(	0.359)	0.356
188	15.67	0.63	0.399	0.043	(	0.359)	0.356
189	15.75	0.63	0.399	0.043	(	0.359)	0.356
190	15.83	0.63	0.399	0.042	(	0.359)	0.357
191	15.92	0.63	0.399	0.042	(	0.359)	0.357
192	16.00	0.63	0.399	0.042	(	0.359)	0.357
193	16.08	0.13	0.084	0.042	(	0.076)	0.042
194	16.17	0.13	0.084	0.042	(	0.076)	0.042
195	16.25	0.13	0.084	0.041	(	0.076)	0.043
196	16.33	0.13	0.084	0.041	(	0.076)	0.043
197	16.42	0.13	0.084	0.041	(	0.076)	0.043
198	16.50	0.13	0.084	0.041	(	0.076)	0.043
199	16.58	0.10	0.063	0.041	(	0.057)	0.022
200	16.67	0.10	0.063	0.040	(	0.057)	0.023
201	16.75	0.10	0.063	0.040	(	0.057)	0.023
202	16.83	0.10	0.063	0.040	(	0.057)	0.023
203	16.92	0.10	0.063	0.040	(	0.057)	0.023
204	17.00	0.10	0.063	0.040	(	0.057)	0.023
205	17.08	0.17	0.105	0.039	(	0.094)	0.066
206	17.17	0.17	0.105	0.039	(	0.094)	0.066
207	17.25	0.17	0.105	0.039	(	0.094)	0.066
208	17.33	0.17	0.105	0.039	(	0.094)	0.066
209	17.42	0.17	0.105	0.039	(	0.094)	0.066
210	17.50	0.17	0.105	0.038	(	0.094)	0.067
211	17.58	0.17	0.105	0.038	(	0.094)	0.067
212	17.67	0.17	0.105	0.038	(	0.094)	0.067
213	17.75	0.17	0.105	0.038	(	0.094)	0.067
214	17.83	0.13	0.084	0.038	(	0.076)	0.046
215	17.92	0.13	0.084	0.037	(	0.076)	0.047
216	18.00	0.13	0.084	0.037	(	0.076)	0.047
217	18.08	0.13	0.084	0.037	(	0.076)	0.047
218	18.17	0.13	0.084	0.037	(	0.076)	0.047
219	18.25	0.13	0.084	0.037	(	0.076)	0.047
220	18.33	0.13	0.084	0.036	(	0.076)	0.048
221	18.42	0.13	0.084	0.036	(	0.076)	0.048
222	18.50	0.13	0.084	0.036	(	0.076)	0.048
223	18.58	0.10	0.063	0.036	(	0.057)	0.027

224	18.67	0.10	0.063	0.036	(	0.057)	0.027
225	18.75	0.10	0.063	0.036	(	0.057)	0.027
226	18.83	0.07	0.042	0.035	(	0.038)	0.007
227	18.92	0.07	0.042	0.035	(	0.038)	0.007
228	19.00	0.07	0.042	0.035	(	0.038)	0.007
229	19.08	0.10	0.063	0.035	(	0.057)	0.028
230	19.17	0.10	0.063	0.035	(	0.057)	0.028
231	19.25	0.10	0.063	0.035	(	0.057)	0.028
232	19.33	0.13	0.084	0.034	(	0.076)	0.050
233	19.42	0.13	0.084	0.034	(	0.076)	0.050
234	19.50	0.13	0.084	0.034	(	0.076)	0.050
235	19.58	0.10	0.063	0.034	(	0.057)	0.029
236	19.67	0.10	0.063	0.034	(	0.057)	0.029
237	19.75	0.10	0.063	0.034	(	0.057)	0.029
238	19.83	0.07	0.042	0.034	(	0.038)	0.008
239	19.92	0.07	0.042	0.033	(	0.038)	0.009
240	20.00	0.07	0.042	0.033	(	0.038)	0.009
241	20.08	0.10	0.063	0.033	(	0.057)	0.030
242	20.17	0.10	0.063	0.033	(	0.057)	0.030
243	20.25	0.10	0.063	0.033	(	0.057)	0.030
244	20.33	0.10	0.063	0.033	(	0.057)	0.030
245	20.42	0.10	0.063	0.032	(	0.057)	0.031
246	20.50	0.10	0.063	0.032	(	0.057)	0.031
247	20.58	0.10	0.063	0.032	(	0.057)	0.031
248	20.67	0.10	0.063	0.032	(	0.057)	0.031
249	20.75	0.10	0.063	0.032	(	0.057)	0.031
250	20.83	0.07	0.042	0.032	(	0.038)	0.010
251	20.92	0.07	0.042	0.032	(	0.038)	0.010
252	21.00	0.07	0.042	0.032	(	0.038)	0.010
253	21.08	0.10	0.063	0.031	(	0.057)	0.032
254	21.17	0.10	0.063	0.031	(	0.057)	0.032
255	21.25	0.10	0.063	0.031	(	0.057)	0.032
256	21.33	0.07	0.042	0.031	(	0.038)	0.011
257	21.42	0.07	0.042	0.031	(	0.038)	0.011
258	21.50	0.07	0.042	0.031	(	0.038)	0.011
259	21.58	0.10	0.063	0.031	(	0.057)	0.032
260	21.67	0.10	0.063	0.031	(	0.057)	0.032
261	21.75	0.10	0.063	0.031	(	0.057)	0.032
262	21.83	0.07	0.042	0.030	(	0.038)	0.012
263	21.92	0.07	0.042	0.030	(	0.038)	0.012
264	22.00	0.07	0.042	0.030	(	0.038)	0.012
265	22.08	0.10	0.063	0.030	(	0.057)	0.033
266	22.17	0.10	0.063	0.030	(	0.057)	0.033
267	22.25	0.10	0.063	0.030	(	0.057)	0.033
268	22.33	0.07	0.042	0.030	(	0.038)	0.012
269	22.42	0.07	0.042	0.030	(	0.038)	0.012
270	22.50	0.07	0.042	0.030	(	0.038)	0.012
271	22.58	0.07	0.042	0.030	(	0.038)	0.012
272	22.67	0.07	0.042	0.029	(	0.038)	0.013
273	22.75	0.07	0.042	0.029	(	0.038)	0.013
274	22.83	0.07	0.042	0.029	(	0.038)	0.013
275	22.92	0.07	0.042	0.029	(	0.038)	0.013
276	23.00	0.07	0.042	0.029	(	0.038)	0.013
277	23.08	0.07	0.042	0.029	(	0.038)	0.013
278	23.17	0.07	0.042	0.029	(	0.038)	0.013
279	23.25	0.07	0.042	0.029	(	0.038)	0.013
280	23.33	0.07	0.042	0.029	(	0.038)	0.013
281	23.42	0.07	0.042	0.029	(	0.038)	0.013
282	23.50	0.07	0.042	0.029	(	0.038)	0.013
283	23.58	0.07	0.042	0.029	(	0.038)	0.013
284	23.67	0.07	0.042	0.029	(	0.038)	0.013
285	23.75	0.07	0.042	0.029	(	0.038)	0.013
286	23.83	0.07	0.042	0.029	(	0.038)	0.013
287	23.92	0.07	0.042	0.029	(	0.038)	0.013
288	24.00	0.07	0.042	0.029	(	0.038)	0.013

(Loss Rate Not Used)

Sum = 100.0 Sum = 47.5

Flood volume = Effective rainfall 3.96(In)

times area 3.7(Ac.)/[(In)/(Ft.)] = 1.2(Ac.Ft)

Total soil loss = 1.29(In)

Total soil loss = 0.398(Ac.Ft)
Total rainfall = 5.25(In)
Flood volume = 53188.9 Cubic Feet
Total soil loss = 17323.3 Cubic Feet

Peak flow rate of this hydrograph = 2.273(CFS)

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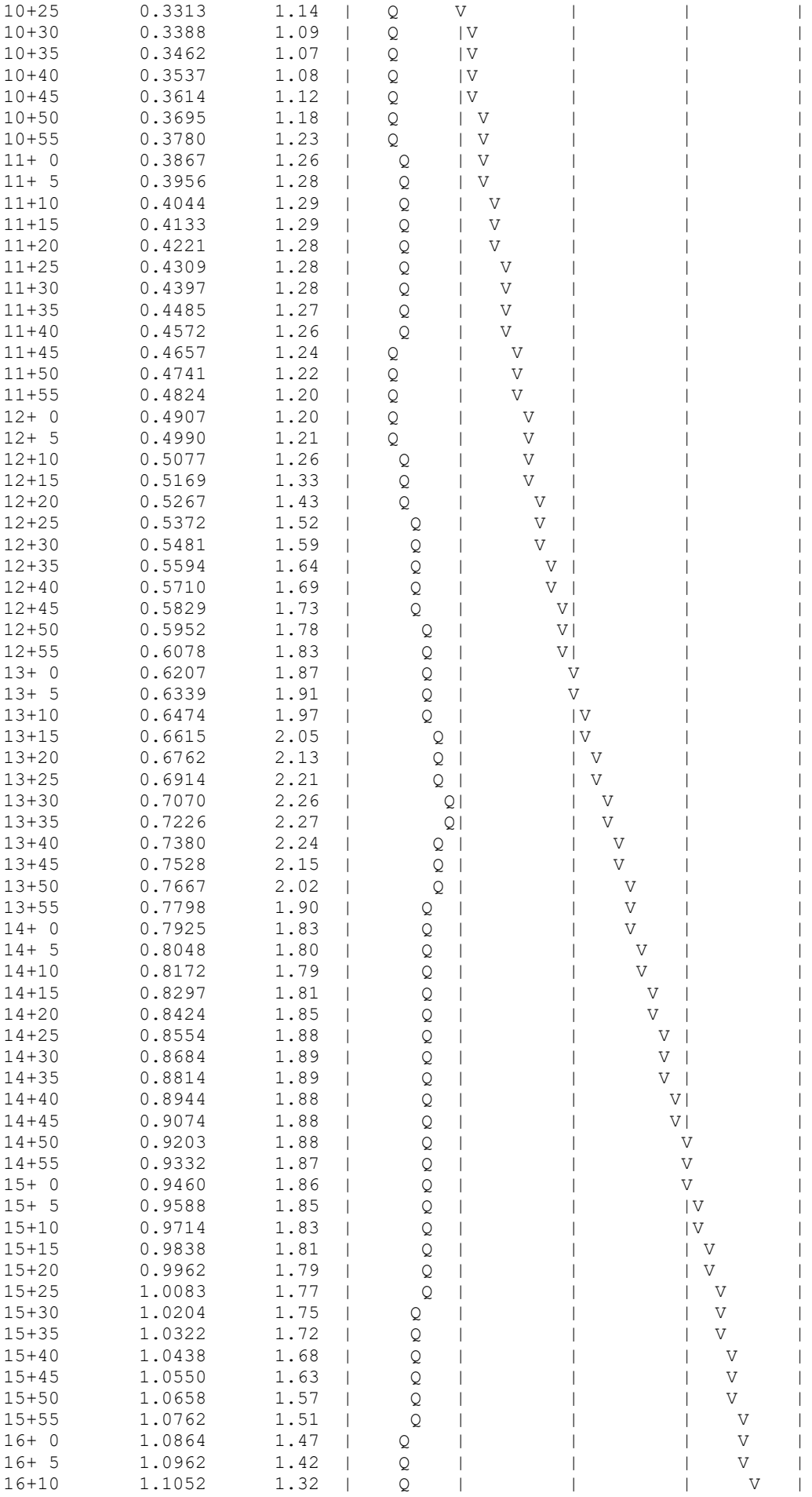
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0000	0.00	Q				
0+20	0.0001	0.01	Q				
0+25	0.0001	0.01	Q				
0+30	0.0002	0.01	Q				
0+35	0.0003	0.01	Q				
0+40	0.0004	0.02	Q				
0+45	0.0006	0.02	Q				
0+50	0.0007	0.02	Q				
0+55	0.0008	0.02	Q				
1+ 0	0.0010	0.02	Q				
1+ 5	0.0011	0.02	Q				
1+10	0.0013	0.02	Q				
1+15	0.0015	0.02	Q				
1+20	0.0016	0.02	Q				
1+25	0.0018	0.02	Q				
1+30	0.0019	0.02	Q				
1+35	0.0021	0.02	Q				
1+40	0.0023	0.02	Q				
1+45	0.0024	0.02	Q				
1+50	0.0026	0.02	Q				
1+55	0.0027	0.02	Q				
2+ 0	0.0029	0.02	Q				
2+ 5	0.0031	0.03	Q				
2+10	0.0033	0.03	Q				
2+15	0.0035	0.03	Q				
2+20	0.0037	0.03	Q				
2+25	0.0039	0.03	Q				
2+30	0.0041	0.03	Q				
2+35	0.0043	0.03	Q				
2+40	0.0045	0.03	Q				
2+45	0.0048	0.04	Q				
2+50	0.0050	0.04	Q				
2+55	0.0053	0.05	Q				
3+ 0	0.0057	0.05	Q				
3+ 5	0.0060	0.05	Q				
3+10	0.0064	0.05	Q				
3+15	0.0068	0.06	Q				
3+20	0.0072	0.06	Q				
3+25	0.0076	0.06	Q				
3+30	0.0080	0.06	Q				
3+35	0.0084	0.06	Q				
3+40	0.0088	0.06	Q				
3+45	0.0093	0.07	Q				
3+50	0.0098	0.07	Q				
3+55	0.0103	0.08	Q				
4+ 0	0.0109	0.09	Q				
4+ 5	0.0116	0.10	Q				
4+10	0.0124	0.12	Q				
4+15	0.0132	0.12	Q				
4+20	0.0142	0.13	Q				
4+25	0.0151	0.14	Q				
4+30	0.0162	0.16	Q				

4+35	0.0174	0.17	Q				
4+40	0.0187	0.19	Q				
4+45	0.0201	0.20	Q				
4+50	0.0216	0.21	Q				
4+55	0.0231	0.22	Q				
5+ 0	0.0247	0.24	Q				
5+ 5	0.0264	0.25	VQ				
5+10	0.0282	0.26	VQ				
5+15	0.0299	0.25	Q				
5+20	0.0315	0.23	QV				
5+25	0.0330	0.22	QV				
5+30	0.0345	0.22	QV				
5+35	0.0361	0.23	QV				
5+40	0.0377	0.24	QV				
5+45	0.0395	0.26	|Q				
5+50	0.0415	0.28	|Q				
5+55	0.0435	0.29	|Q				
6+ 0	0.0456	0.30	|Q				
6+ 5	0.0477	0.31	|Q				
6+10	0.0499	0.32	|Q				
6+15	0.0523	0.34	|Q				
6+20	0.0547	0.36	|Q				
6+25	0.0573	0.37	|Q				
6+30	0.0599	0.38	|Q				
6+35	0.0626	0.39	|QV				
6+40	0.0654	0.40	|QV				
6+45	0.0683	0.42	|QV				
6+50	0.0713	0.44	|QV				
6+55	0.0744	0.45	|QV				
7+ 0	0.0776	0.46	|QV				
7+ 5	0.0809	0.47	|QV				
7+10	0.0842	0.48	|QV				
7+15	0.0875	0.48	|QV				
7+20	0.0909	0.49	|QV				
7+25	0.0943	0.50	| QV				
7+30	0.0979	0.52	| QV				
7+35	0.1016	0.53	| QV				
7+40	0.1054	0.55	| QV				
7+45	0.1093	0.58	| QV				
7+50	0.1135	0.60	| QV				
7+55	0.1178	0.62	| QV				
8+ 0	0.1222	0.65	| Q V				
8+ 5	0.1268	0.67	| Q V				
8+10	0.1317	0.70	| Q V				
8+15	0.1367	0.74	| Q V				
8+20	0.1421	0.77	| QV				
8+25	0.1476	0.81	| QV				
8+30	0.1533	0.83	| Q V				
8+35	0.1592	0.85	| Q V				
8+40	0.1651	0.86	| Q V				
8+45	0.1712	0.89	| Q V				
8+50	0.1775	0.91	| Q V				
8+55	0.1839	0.93	| Q V				
9+ 0	0.1905	0.96	| Q V				
9+ 5	0.1973	0.99	| Q V				
9+10	0.2044	1.02	| Q V				
9+15	0.2116	1.05	| Q V				
9+20	0.2192	1.09	| Q V				
9+25	0.2270	1.13	| Q V				
9+30	0.2350	1.17	| Q V				
9+35	0.2433	1.20	| Q V				
9+40	0.2517	1.23	| Q V				
9+45	0.2604	1.26	| Q V				
9+50	0.2693	1.29	| Q V				
9+55	0.2784	1.32	| Q V|				
10+ 0	0.2876	1.35	| Q V|				
10+ 5	0.2970	1.36	| Q V|				
10+10	0.3062	1.34	| Q V				
10+15	0.3151	1.29	| Q V				
10+20	0.3235	1.21	| Q V				



```
16+15       1.1132      1.15  |   Q     |         |         |     V   |
16+20       1.1197      0.95  |  Q      |         |         |     V   |
16+25       1.1249      0.75  |  Q      |         |         |     V   |
16+30       1.1292      0.63  | Q       |         |         |     V   |
16+35       1.1330      0.55  | Q       |         |         |      V  |
16+40       1.1363      0.49  |Q        |         |         |      V  |
16+45       1.1393      0.43  |Q        |         |         |      V  |
16+50       1.1419      0.38  |Q        |         |         |      V  |
16+55       1.1443      0.34  |Q        |         |         |      V  |
17+ 0       1.1463      0.30  |Q        |         |         |      V  |
17+ 5       1.1482      0.28  |Q        |         |         |      V  |
17+10       1.1501      0.27  |Q        |         |         |      V  |
17+15       1.1519      0.27  |Q        |         |         |      V  |
17+20       1.1538      0.27  |Q        |         |         |      V  |
17+25       1.1558      0.28  |Q        |         |         |      V  |
17+30       1.1577      0.29  |Q        |         |         |      V  |
17+35       1.1597      0.29  |Q        |         |         |      V  |
17+40       1.1616      0.28  |Q        |         |         |       V |
17+45       1.1635      0.28  |Q        |         |         |       V |
17+50       1.1654      0.27  |Q        |         |         |       V |
17+55       1.1672      0.26  |Q        |         |         |       V |
18+ 0       1.1689      0.25  Q         |         |         |       V |
18+ 5       1.1705      0.23  Q         |         |         |       V |
18+10       1.1720      0.22  Q         |         |         |       V |
18+15       1.1734      0.21  Q         |         |         |       V |
18+20       1.1748      0.20  Q         |         |         |       V |
18+25       1.1762      0.20  Q         |         |         |       V |
18+30       1.1775      0.19  Q         |         |         |       V |
18+35       1.1788      0.19  Q         |         |         |       V |
18+40       1.1800      0.18  Q         |         |         |       V |
18+45       1.1812      0.16  Q         |         |         |       V |
18+50       1.1822      0.15  Q         |         |         |       V |
18+55       1.1831      0.13  Q         |         |         |       V |
19+ 0       1.1839      0.11  Q         |         |         |       V |
19+ 5       1.1845      0.10  Q         |         |         |       V |
19+10       1.1852      0.09  Q         |         |         |       V |
19+15       1.1858      0.09  Q         |         |         |       V |
19+20       1.1864      0.10  Q         |         |         |       V |
19+25       1.1872      0.11  Q         |         |         |       V |
19+30       1.1880      0.12  Q         |         |         |       V |
19+35       1.1890      0.14  Q         |         |         |       V |
19+40       1.1900      0.14  Q         |         |         |       V |
19+45       1.1909      0.14  Q         |         |         |        V|
19+50       1.1919      0.13  Q         |         |         |        V|
19+55       1.1927      0.12  Q         |         |         |        V|
20+ 0       1.1934      0.10  Q         |         |         |        V|
20+ 5       1.1940      0.09  Q         |         |         |        V|
20+10       1.1946      0.08  Q         |         |         |        V|
20+15       1.1952      0.08  Q         |         |         |        V|
20+20       1.1958      0.09  Q         |         |         |        V|
20+25       1.1965      0.10  Q         |         |         |        V|
20+30       1.1972      0.10  Q         |         |         |        V|
20+35       1.1979      0.11  Q         |         |         |        V|
20+40       1.1987      0.11  Q         |         |         |        V|
20+45       1.1994      0.11  Q         |         |         |        V|
20+50       1.2002      0.11  Q         |         |         |        V|
20+55       1.2009      0.10  Q         |         |         |        V|
21+ 0       1.2015      0.09  Q         |         |         |        V|
21+ 5       1.2021      0.08  Q         |         |         |        V|
21+10       1.2026      0.08  Q         |         |         |        V|
21+15       1.2032      0.08  Q         |         |         |        V|
21+20       1.2038      0.09  Q         |         |         |        V|
21+25       1.2044      0.09  Q         |         |         |        V|
21+30       1.2050      0.09  Q         |         |         |        V|
21+35       1.2056      0.08  Q         |         |         |        V|
21+40       1.2061      0.07  Q         |         |         |        V|
21+45       1.2066      0.08  Q         |         |         |        V|
21+50       1.2072      0.09  Q         |         |         |        V|
21+55       1.2079      0.09  Q         |         |         |        V|
22+ 0       1.2085      0.09  Q         |         |         |        V|
```

22+ 5	1.2090	0.08	Q	|	|	|	V|
22+10	1.2095	0.08	Q	|	|	|	V|
22+15	1.2101	0.08	Q	|	|	|	V|
22+20	1.2107	0.09	Q	|	|	|	V|
22+25	1.2113	0.09	Q	|	|	|	V|
22+30	1.2119	0.09	Q	|	|	|	V|
22+35	1.2124	0.08	Q	|	|	|	V|
22+40	1.2129	0.07	Q	|	|	|	V|
22+45	1.2134	0.06	Q	|	|	|	V|
22+50	1.2138	0.06	Q	|	|	|	V|
22+55	1.2142	0.06	Q	|	|	|	V|
23+ 0	1.2146	0.06	Q	|	|	|	V|
23+ 5	1.2149	0.06	Q	|	|	|	V|
23+10	1.2153	0.05	Q	|	|	|	V|
23+15	1.2157	0.05	Q	|	|	|	V|
23+20	1.2160	0.05	Q	|	|	|	V|
23+25	1.2164	0.05	Q	|	|	|	V|
23+30	1.2168	0.05	Q	|	|	|	V|
23+35	1.2171	0.05	Q	|	|	|	V|
23+40	1.2175	0.05	Q	|	|	|	V|
23+45	1.2178	0.05	Q	|	|	|	V|
23+50	1.2182	0.05	Q	|	|	|	V|
23+55	1.2185	0.05	Q	|	|	|	V|
24+ 0	1.2189	0.05	Q	|	|	|	V|
24+ 5	1.2192	0.05	Q	|	|	|	V|
24+10	1.2195	0.05	Q	|	|	|	V|
24+15	1.2198	0.04	Q	|	|	|	V|
24+20	1.2200	0.03	Q	|	|	|	V|
24+25	1.2202	0.02	Q	|	|	|	V|
24+30	1.2203	0.02	Q	|	|	|	V|
24+35	1.2204	0.01	Q	|	|	|	V|
24+40	1.2205	0.01	Q	|	|	|	V|
24+45	1.2206	0.01	Q	|	|	|	V|
24+50	1.2206	0.01	Q	|	|	|	V|
24+55	1.2207	0.01	Q	|	|	|	V|
25+ 0	1.2207	0.01	Q	|	|	|	V|
25+ 5	1.2208	0.01	Q	|	|	|	V|
25+10	1.2208	0.01	Q	|	|	|	V|
25+15	1.2209	0.00	Q	|	|	|	V|
25+20	1.2209	0.00	Q	|	|	|	V|
25+25	1.2209	0.00	Q	|	|	|	V|
25+30	1.2209	0.00	Q	|	|	|	V|
25+35	1.2210	0.00	Q	|	|	|	V|
25+40	1.2210	0.00	Q	|	|	|	V|
25+45	1.2210	0.00	Q	|	|	|	V|
25+50	1.2210	0.00	Q	|	|	|	V|
25+55	1.2210	0.00	Q	|	|	|	V|
26+ 0	1.2210	0.00	Q	|	|	|	V|
26+ 5	1.2210	0.00	Q	|	|	|	V|
26+10	1.2210	0.00	Q	|	|	|	V|
26+15	1.2210	0.00	Q	|	|	|	V|
26+20	1.2210	0.00	Q	|	|	|	V|
26+25	1.2210	0.00	Q	|	|	|	V|
26+30	1.2210	0.00	Q	|	|	|	V|
26+35	1.2210	0.00	Q	|	|	|	V|
26+40	1.2210	0.00	Q	|	|	|	V

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

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Study date 02/20/20 File: 8946E2A112.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
2 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	0.55	4.20

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	1.30	9.92

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.218	(0.286)		0.196	0.022
2	0.17	4.20	0.277	(0.286)		0.249	0.028
3	0.25	4.40	0.290	(0.286)		0.261	0.029
4	0.33	4.80	0.317	(0.286)		0.285	0.032
5	0.42	5.20	0.343	0.286	(0.309)		0.057
6	0.50	6.20	0.409	0.286	(0.368)		0.123
7	0.58	6.80	0.449	0.286	(0.404)		0.162
8	0.67	8.80	0.581	0.286	(0.523)		0.294
9	0.75	13.90	0.917	0.286	(0.826)		0.631
10	0.83	31.40	2.072	0.286	(1.865)		1.786

```
 11   0.92     7.20      0.475          0.286    (  0.428)        0.189
 12   1.00     3.80      0.251       (  0.286)       0.226        0.025
            (Loss Rate Not Used)
    Sum =     100.0                                    Sum =     3.4
     Flood volume = Effective rainfall      0.28(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
     Total soil loss =      0.27(In)
     Total soil loss =     0.171(Ac.Ft)
     Total rainfall =      0.55(In)
     Flood volume =        7793.4 Cubic Feet
     Total soil loss =        7438.9 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      3.568(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        2.5       5.0       7.5      10.0
 ------------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0001      0.02  Q         |         |         |         |
   0+15       0.0004      0.04  Q         |         |         |         |
   0+20       0.0009      0.07  Q         |         |         |         |
   0+25       0.0017      0.11  Q         |         |         |         |
   0+30       0.0029      0.17  Q         |         |         |         |
   0+35       0.0046      0.25  |Q        |         |         |         |
   0+40       0.0074      0.40  |Q        |         |         |         |
   0+45       0.0121      0.69  | Q       |         |         |         |
   0+50       0.0213      1.34  |   VQ    |         |         |         |
   0+55       0.0371      2.29  |       VQ|         |         |         |
   1+ 0       0.0588      3.15  |         | QV      |         |         |
   1+ 5       0.0834      3.57  |         |   Q   V |         |         |
   1+10       0.1053      3.18  |         | Q       |  V      |         |
   1+15       0.1204      2.20  |       Q |         |     V   |         |
   1+20       0.1306      1.47  |    Q    |         |        V|         |
   1+25       0.1376      1.03  |   Q     |         |         V         |
   1+30       0.1432      0.80  |  Q      |         |         | V       |
   1+35       0.1478      0.67  | Q       |         |         |  V      |
   1+40       0.1517      0.57  | Q       |         |         |  V      |
   1+45       0.1550      0.49  |Q        |         |         |   V     |
   1+50       0.1579      0.42  |Q        |         |         |    V    |
   1+55       0.1604      0.36  |Q        |         |         |    V    |
   2+ 0       0.1626      0.33  |Q        |         |         |     V   |
   2+ 5       0.1645      0.28  |Q        |         |         |     V   |
   2+10       0.1662      0.24  Q         |         |         |      V  |
   2+15       0.1677      0.21  Q         |         |         |      V  |
   2+20       0.1690      0.19  Q         |         |         |      V  |
   2+25       0.1702      0.18  Q         |         |         |       V |
   2+30       0.1714      0.17  Q         |         |         |       V |
   2+35       0.1724      0.15  Q         |         |         |       V |
   2+40       0.1733      0.13  Q         |         |         |       V |
   2+45       0.1741      0.12  Q         |         |         |       V |
   2+50       0.1748      0.10  Q         |         |         |        V|
   2+55       0.1755      0.10  Q         |         |         |        V|
   3+ 0       0.1760      0.08  Q         |         |         |        V|
   3+ 5       0.1765      0.07  Q         |         |         |        V|
   3+10       0.1770      0.06  Q         |         |         |        V|
   3+15       0.1774      0.06  Q         |         |         |        V|
   3+20       0.1778      0.06  Q         |         |         |        V|
   3+25       0.1782      0.06  Q         |         |         |        V|
   3+30       0.1785      0.05  Q         |         |         |        V|
   3+35       0.1789      0.05  Q         |         |         |        V|
   3+40       0.1789      0.01  Q         |         |         |        V|
   3+45       0.1789      0.00  Q         |         |         |        V|
------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946E2A132.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
2 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	0.90	6.87

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	2.25	17.17

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 0.900(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.900(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

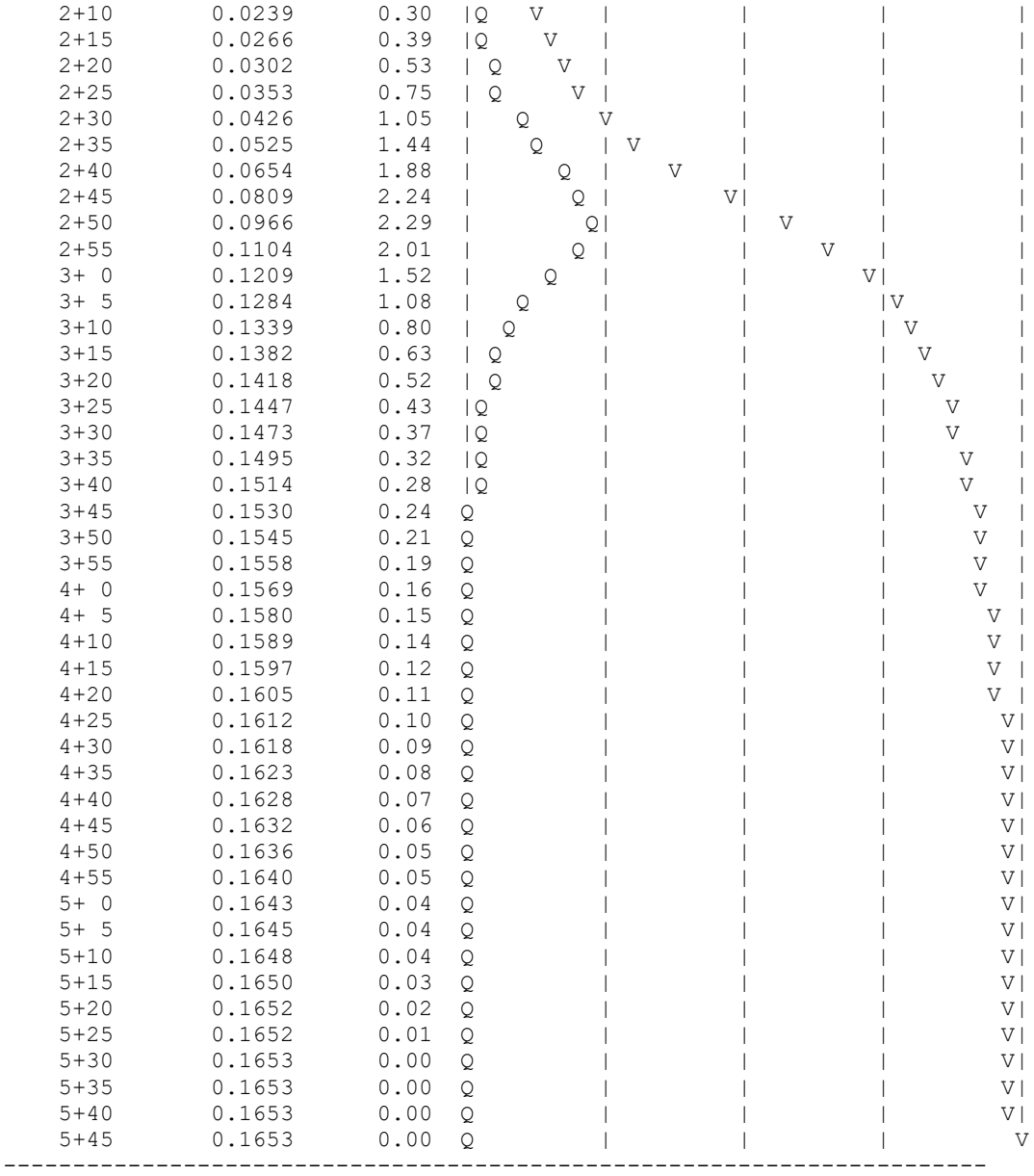
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.140	(0.286)	0.126	0.014
2	0.17	1.30	0.140	(0.286)	0.126	0.014
3	0.25	1.10	0.119	(0.286)	0.107	0.012
4	0.33	1.50	0.162	(0.286)	0.146	0.016
5	0.42	1.50	0.162	(0.286)	0.146	0.016
6	0.50	1.80	0.194	(0.286)	0.175	0.019
7	0.58	1.50	0.162	(0.286)	0.146	0.016
8	0.67	1.80	0.194	(0.286)	0.175	0.019
9	0.75	1.80	0.194	(0.286)	0.175	0.019
10	0.83	1.50	0.162	(0.286)	0.146	0.016
11	0.92	1.60	0.173	(0.286)	0.156	0.017
12	1.00	1.80	0.194	(0.286)	0.175	0.019

```
13   1.08     2.20      0.238       (  0.286)       0.214        0.024
14   1.17     2.20      0.238       (  0.286)       0.214        0.024
15   1.25     2.20      0.238       (  0.286)       0.214        0.024
16   1.33     2.00      0.216       (  0.286)       0.194        0.022
17   1.42     2.60      0.281       (  0.286)       0.253        0.028
18   1.50     2.70      0.292       (  0.286)       0.262        0.029
19   1.58     2.40      0.259       (  0.286)       0.233        0.026
20   1.67     2.70      0.292       (  0.286)       0.262        0.029
21   1.75     3.30      0.356          0.286    (  0.321)        0.070
22   1.83     3.10      0.335          0.286    (  0.301)        0.048
23   1.92     2.90      0.313       (  0.286)       0.282        0.031
24   2.00     3.00      0.324          0.286    (  0.292)        0.038
25   2.08     3.10      0.335          0.286    (  0.301)        0.048
26   2.17     4.20      0.454          0.286    (  0.408)        0.167
27   2.25     5.00      0.540          0.286    (  0.486)        0.254
28   2.33     3.50      0.378          0.286    (  0.340)        0.092
29   2.42     6.80      0.734          0.286    (  0.661)        0.448
30   2.50     7.30      0.788          0.286    (  0.710)        0.502
31   2.58     8.20      0.886          0.286    (  0.797)        0.599
32   2.67     5.90      0.637          0.286    (  0.573)        0.351
33   2.75     2.00      0.216       (  0.286)       0.194        0.022
34   2.83     1.80      0.194       (  0.286)       0.175        0.019
35   2.92     1.80      0.194       (  0.286)       0.175        0.019
36   3.00     0.60      0.065       (  0.286)       0.058        0.006
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =     3.1
     Flood volume = Effective rainfall      0.26(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
     Total soil loss =      0.64(In)
     Total soil loss =     0.407(Ac.Ft)
     Total rainfall =      0.90(In)
     Flood volume =        7198.9 Cubic Feet
     Total soil loss =       17727.5 Cubic Feet
     --------------------------------------------------------------------
      Peak flow rate of this hydrograph =      2.285(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0002      0.02  Q         |         |         |         |
  0+20       0.0005      0.04  Q         |         |         |         |
  0+25       0.0009      0.06  Q         |         |         |         |
  0+30       0.0014      0.07  Q         |         |         |         |
  0+35       0.0019      0.08  Q         |         |         |         |
  0+40       0.0026      0.09  Q         |         |         |         |
  0+45       0.0033      0.10  Q         |         |         |         |
  0+50       0.0040      0.11  Q         |         |         |         |
  0+55       0.0048      0.11  QV        |         |         |         |
  1+ 0       0.0056      0.12  QV        |         |         |         |
  1+ 5       0.0064      0.12  QV        |         |         |         |
  1+10       0.0072      0.12  QV        |         |         |         |
  1+15       0.0081      0.13  QV        |         |         |         |
  1+20       0.0091      0.14  Q V       |         |         |         |
  1+25       0.0101      0.15  Q V       |         |         |         |
  1+30       0.0112      0.16  Q V       |         |         |         |
  1+35       0.0124      0.16  Q V       |         |         |         |
  1+40       0.0136      0.17  Q  V      |         |         |         |
  1+45       0.0149      0.19  Q  V      |         |         |         |
  1+50       0.0163      0.21  Q  V      |         |         |         |
  1+55       0.0180      0.24  Q   V     |         |         |         |
  2+ 0       0.0198      0.27  |Q  V     |         |         |         |
  2+ 5       0.0218      0.29  |Q   V    |         |         |         |
```


2+10 0.0239 0.30
2+15 0.0266 0.39
2+20 0.0302 0.53
2+25 0.0353 0.75
2+30 0.0426 1.05
2+35 0.0525 1.44
2+40 0.0654 1.88
2+45 0.0809 2.24
2+50 0.0966 2.29
2+55 0.1104 2.01
3+ 0 0.1209 1.52
3+ 5 0.1284 1.08
3+10 0.1339 0.80
3+15 0.1382 0.63
3+20 0.1418 0.52
3+25 0.1447 0.43
3+30 0.1473 0.37
3+35 0.1495 0.32
3+40 0.1514 0.28
3+45 0.1530 0.24
3+50 0.1545 0.21
3+55 0.1558 0.19
4+ 0 0.1569 0.16
4+ 5 0.1580 0.15
4+10 0.1589 0.14
4+15 0.1597 0.12
4+20 0.1605 0.11
4+25 0.1612 0.10
4+30 0.1618 0.09
4+35 0.1623 0.08
4+40 0.1628 0.07
4+45 0.1632 0.06
4+50 0.1636 0.05
4+55 0.1640 0.05
5+ 0 0.1643 0.04
5+ 5 0.1645 0.04
5+10 0.1648 0.04
5+15 0.1650 0.03
5+20 0.1652 0.02
5+25 0.1652 0.01
5+30 0.1653 0.00
5+35 0.1653 0.00
5+40 0.1653 0.00
5+45 0.1653 0.00

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 02/20/20 File: 8946E2A162.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
2 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	1.30	9.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	3.00	22.89

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.078	(0.286)		0.070	0.008
2	0.17	0.60	0.094	(0.286)		0.084	0.009
3	0.25	0.60	0.094	(0.286)		0.084	0.009
4	0.33	0.60	0.094	(0.286)		0.084	0.009
5	0.42	0.60	0.094	(0.286)		0.084	0.009
6	0.50	0.70	0.109	(0.286)		0.098	0.011
7	0.58	0.70	0.109	(0.286)		0.098	0.011
8	0.67	0.70	0.109	(0.286)		0.098	0.011
9	0.75	0.70	0.109	(0.286)		0.098	0.011
10	0.83	0.70	0.109	(0.286)		0.098	0.011
11	0.92	0.70	0.109	(0.286)		0.098	0.011
12	1.00	0.80	0.125	(0.286)		0.112	0.012

13	1.08	0.80	0.125	(	0.286)	0.112					0.012
14	1.17	0.80	0.125	(	0.286)	0.112					0.012
15	1.25	0.80	0.125	(	0.286)	0.112					0.012
16	1.33	0.80	0.125	(	0.286)	0.112					0.012
17	1.42	0.80	0.125	(	0.286)	0.112					0.012
18	1.50	0.80	0.125	(	0.286)	0.112					0.012
19	1.58	0.80	0.125	(	0.286)	0.112					0.012
20	1.67	0.80	0.125	(	0.286)	0.112					0.012
21	1.75	0.80	0.125	(	0.286)	0.112					0.012
22	1.83	0.80	0.125	(	0.286)	0.112					0.012
23	1.92	0.80	0.125	(	0.286)	0.112					0.012
24	2.00	0.90	0.140	(	0.286)	0.126					0.014
25	2.08	0.80	0.125	(	0.286)	0.112					0.012
26	2.17	0.90	0.140	(	0.286)	0.126					0.014
27	2.25	0.90	0.140	(	0.286)	0.126					0.014
28	2.33	0.90	0.140	(	0.286)	0.126					0.014
29	2.42	0.90	0.140	(	0.286)	0.126					0.014
30	2.50	0.90	0.140	(	0.286)	0.126					0.014
31	2.58	0.90	0.140	(	0.286)	0.126					0.014
32	2.67	0.90	0.140	(	0.286)	0.126					0.014
33	2.75	1.00	0.156	(	0.286)	0.140					0.016
34	2.83	1.00	0.156	(	0.286)	0.140					0.016
35	2.92	1.00	0.156	(	0.286)	0.140					0.016
36	3.00	1.00	0.156	(	0.286)	0.140					0.016
37	3.08	1.00	0.156	(	0.286)	0.140					0.016
38	3.17	1.10	0.172	(	0.286)	0.154					0.017
39	3.25	1.10	0.172	(	0.286)	0.154					0.017
40	3.33	1.10	0.172	(	0.286)	0.154					0.017
41	3.42	1.20	0.187	(	0.286)	0.168					0.019
42	3.50	1.30	0.203	(	0.286)	0.183					0.020
43	3.58	1.40	0.218	(	0.286)	0.197					0.022
44	3.67	1.40	0.218	(	0.286)	0.197					0.022
45	3.75	1.50	0.234	(	0.286)	0.211					0.023
46	3.83	1.50	0.234	(	0.286)	0.211					0.023
47	3.92	1.60	0.250	(	0.286)	0.225					0.025
48	4.00	1.60	0.250	(	0.286)	0.225					0.025
49	4.08	1.70	0.265	(	0.286)	0.239					0.027
50	4.17	1.80	0.281	(	0.286)	0.253					0.028
51	4.25	1.90	0.296	(	0.286)	0.267					0.030
52	4.33	2.00	0.312	(	0.286)	0.281					0.031
53	4.42	2.10	0.328		0.286	(	0.295)				0.041
54	4.50	2.10	0.328		0.286	(	0.295)				0.041
55	4.58	2.20	0.343		0.286	(	0.309)				0.057
56	4.67	2.30	0.359		0.286	(	0.323)				0.072
57	4.75	2.40	0.374		0.286	(	0.337)				0.088
58	4.83	2.40	0.374		0.286	(	0.337)				0.088
59	4.92	2.50	0.390		0.286	(	0.351)				0.104
60	5.00	2.60	0.406		0.286	(	0.365)				0.119
61	5.08	3.10	0.484		0.286	(	0.435)				0.197
62	5.17	3.60	0.562		0.286	(	0.505)				0.275
63	5.25	3.90	0.608		0.286	(	0.548)				0.322
64	5.33	4.20	0.655		0.286	(	0.590)				0.369
65	5.42	4.70	0.733		0.286	(	0.660)				0.447
66	5.50	5.60	0.874		0.286	(	0.786)				0.587
67	5.58	1.90	0.296	(	0.286)	0.267					0.030
68	5.67	0.90	0.140	(	0.286)	0.126					0.014
69	5.75	0.60	0.094	(	0.286)	0.084					0.009
70	5.83	0.50	0.078	(	0.286)	0.070					0.008
71	5.92	0.30	0.047	(	0.286)	0.042					0.005
72	6.00	0.20	0.031	(	0.286)	0.028					0.003

(Loss Rate Not Used)

Sum = 100.0 Sum = 3.7

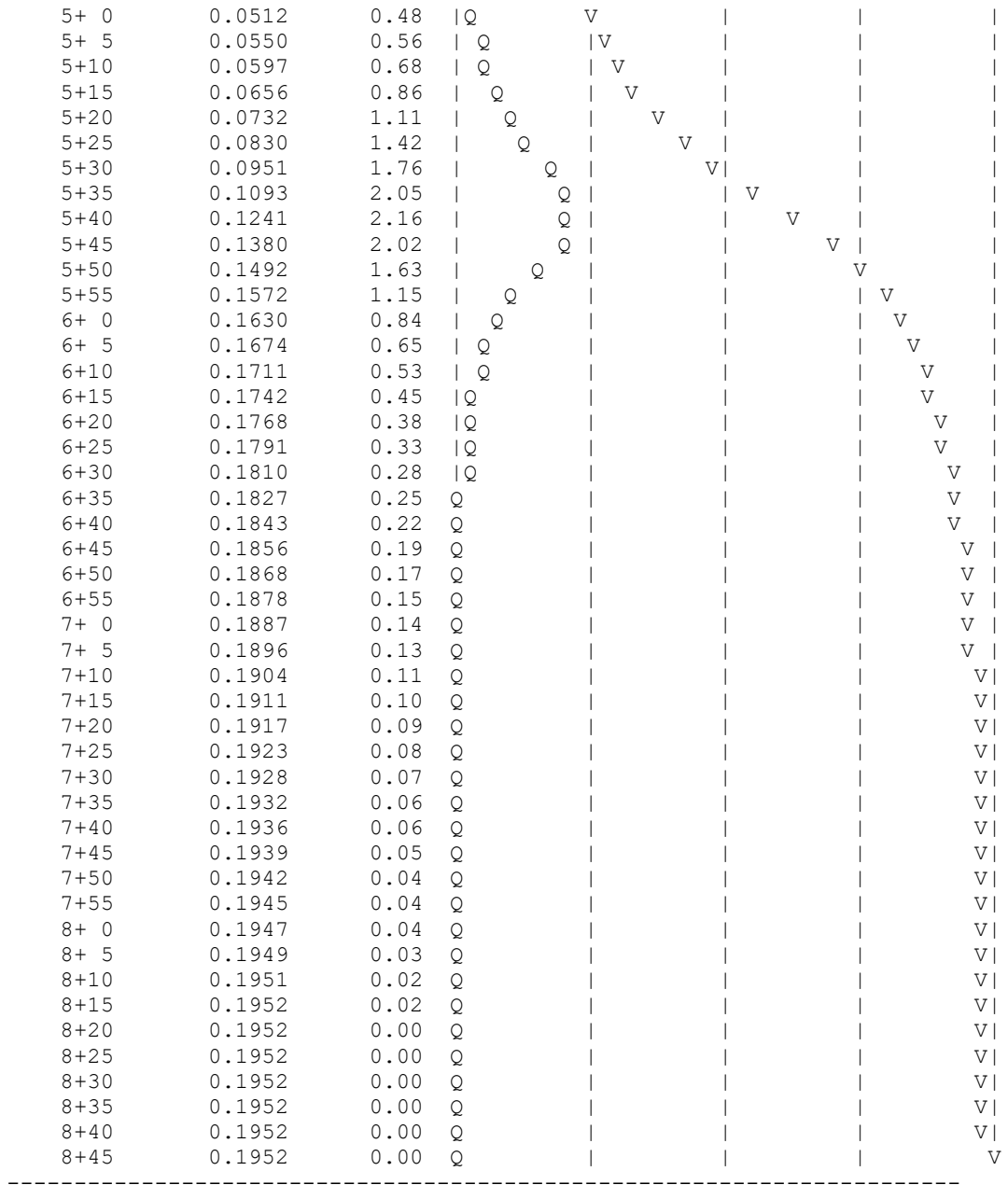
Flood volume = Effective rainfall 0.31(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 0.99(In)
Total soil loss = 0.631(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 8504.2 Cubic Feet
Total soil loss = 27500.8 Cubic Feet

Peak flow rate of this hydrograph = 2.159(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	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.01	Q				
0+15	0.0001	0.01	Q				
0+20	0.0003	0.03	Q				
0+25	0.0006	0.04	Q				
0+30	0.0009	0.04	Q				
0+35	0.0012	0.05	Q				
0+40	0.0016	0.06	Q				
0+45	0.0020	0.06	Q				
0+50	0.0025	0.06	Q				
0+55	0.0029	0.07	Q				
1+ 0	0.0034	0.07	Q				
1+ 5	0.0039	0.07	Q				
1+10	0.0044	0.08	Q				
1+15	0.0050	0.08	QV				
1+20	0.0055	0.08	QV				
1+25	0.0061	0.08	QV				
1+30	0.0067	0.09	QV				
1+35	0.0073	0.09	QV				
1+40	0.0079	0.09	QV				
1+45	0.0085	0.09	QV				
1+50	0.0091	0.09	QV				
1+55	0.0098	0.09	Q V				
2+ 0	0.0104	0.09	Q V				
2+ 5	0.0110	0.09	Q V				
2+10	0.0117	0.09	Q V				
2+15	0.0124	0.10	Q V				
2+20	0.0130	0.10	Q V				
2+25	0.0137	0.10	Q V				
2+30	0.0144	0.10	Q V				
2+35	0.0151	0.10	Q V				
2+40	0.0158	0.10	Q V				
2+45	0.0166	0.10	Q V				
2+50	0.0173	0.11	Q V				
2+55	0.0180	0.11	Q V				
3+ 0	0.0188	0.11	Q V				
3+ 5	0.0196	0.11	Q V				
3+10	0.0204	0.11	Q V				
3+15	0.0212	0.12	Q V				
3+20	0.0220	0.12	Q V				
3+25	0.0228	0.12	Q V				
3+30	0.0237	0.12	Q V				
3+35	0.0245	0.13	Q V				
3+40	0.0255	0.13	Q V				
3+45	0.0264	0.14	Q V				
3+50	0.0274	0.15	Q V				
3+55	0.0285	0.15	Q V				
4+ 0	0.0296	0.16	Q V				
4+ 5	0.0307	0.16	Q V				
4+10	0.0319	0.17	Q V				
4+15	0.0331	0.18	Q V				
4+20	0.0344	0.18	Q V				
4+25	0.0357	0.19	Q V				
4+30	0.0372	0.21	Q V				
4+35	0.0388	0.23	Q V				
4+40	0.0405	0.26	|Q V				
4+45	0.0426	0.30	|Q V				
4+50	0.0450	0.35	|Q V|				
4+55	0.0478	0.41	|Q V|				


5+ 0 0.0512 0.48
5+ 5 0.0550 0.56
5+10 0.0597 0.68
5+15 0.0656 0.86
5+20 0.0732 1.11
5+25 0.0830 1.42
5+30 0.0951 1.76
5+35 0.1093 2.05
5+40 0.1241 2.16
5+45 0.1380 2.02
5+50 0.1492 1.63
5+55 0.1572 1.15
6+ 0 0.1630 0.84
6+ 5 0.1674 0.65
6+10 0.1711 0.53
6+15 0.1742 0.45
6+20 0.1768 0.38
6+25 0.1791 0.33
6+30 0.1810 0.28
6+35 0.1827 0.25
6+40 0.1843 0.22
6+45 0.1856 0.19
6+50 0.1868 0.17
6+55 0.1878 0.15
7+ 0 0.1887 0.14
7+ 5 0.1896 0.13
7+10 0.1904 0.11
7+15 0.1911 0.10
7+20 0.1917 0.09
7+25 0.1923 0.08
7+30 0.1928 0.07
7+35 0.1932 0.06
7+40 0.1936 0.06
7+45 0.1939 0.05
7+50 0.1942 0.04
7+55 0.1945 0.04
8+ 0 0.1947 0.04
8+ 5 0.1949 0.03
8+10 0.1951 0.02
8+15 0.1952 0.02
8+20 0.1952 0.00
8+25 0.1952 0.00
8+30 0.1952 0.00
8+35 0.1952 0.00
8+40 0.1952 0.00
8+45 0.1952 0.00

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 02/20/20 File: 8946E2A1242.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
2 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	2.25	17.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	5.25	40.06

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.018	(0.508)		0.016	0.002
2	0.17	0.07	0.018	(0.506)		0.016	0.002
3	0.25	0.07	0.018	(0.504)		0.016	0.002
4	0.33	0.10	0.027	(0.502)		0.024	0.003
5	0.42	0.10	0.027	(0.500)		0.024	0.003
6	0.50	0.10	0.027	(0.498)		0.024	0.003
7	0.58	0.10	0.027	(0.496)		0.024	0.003
8	0.67	0.10	0.027	(0.494)		0.024	0.003
9	0.75	0.10	0.027	(0.492)		0.024	0.003
10	0.83	0.13	0.036	(0.490)		0.032	0.004
11	0.92	0.13	0.036	(0.488)		0.032	0.004
12	1.00	0.13	0.036	(0.486)		0.032	0.004

13	1.08	0.10	0.027	(0.485)	0.024	0.003
14	1.17	0.10	0.027	(0.483)	0.024	0.003
15	1.25	0.10	0.027	(0.481)	0.024	0.003
16	1.33	0.10	0.027	(0.479)	0.024	0.003
17	1.42	0.10	0.027	(0.477)	0.024	0.003
18	1.50	0.10	0.027	(0.475)	0.024	0.003
19	1.58	0.10	0.027	(0.473)	0.024	0.003
20	1.67	0.10	0.027	(0.471)	0.024	0.003
21	1.75	0.10	0.027	(0.469)	0.024	0.003
22	1.83	0.13	0.036	(0.467)	0.032	0.004
23	1.92	0.13	0.036	(0.466)	0.032	0.004
24	2.00	0.13	0.036	(0.464)	0.032	0.004
25	2.08	0.13	0.036	(0.462)	0.032	0.004
26	2.17	0.13	0.036	(0.460)	0.032	0.004
27	2.25	0.13	0.036	(0.458)	0.032	0.004
28	2.33	0.13	0.036	(0.456)	0.032	0.004
29	2.42	0.13	0.036	(0.454)	0.032	0.004
30	2.50	0.13	0.036	(0.452)	0.032	0.004
31	2.58	0.17	0.045	(0.451)	0.040	0.004
32	2.67	0.17	0.045	(0.449)	0.040	0.004
33	2.75	0.17	0.045	(0.447)	0.040	0.004
34	2.83	0.17	0.045	(0.445)	0.040	0.004
35	2.92	0.17	0.045	(0.443)	0.040	0.004
36	3.00	0.17	0.045	(0.441)	0.040	0.004
37	3.08	0.17	0.045	(0.440)	0.040	0.004
38	3.17	0.17	0.045	(0.438)	0.040	0.004
39	3.25	0.17	0.045	(0.436)	0.040	0.004
40	3.33	0.17	0.045	(0.434)	0.040	0.004
41	3.42	0.17	0.045	(0.432)	0.040	0.004
42	3.50	0.17	0.045	(0.430)	0.040	0.004
43	3.58	0.17	0.045	(0.429)	0.040	0.004
44	3.67	0.17	0.045	(0.427)	0.040	0.004
45	3.75	0.17	0.045	(0.425)	0.040	0.004
46	3.83	0.20	0.054	(0.423)	0.049	0.005
47	3.92	0.20	0.054	(0.422)	0.049	0.005
48	4.00	0.20	0.054	(0.420)	0.049	0.005
49	4.08	0.20	0.054	(0.418)	0.049	0.005
50	4.17	0.20	0.054	(0.416)	0.049	0.005
51	4.25	0.20	0.054	(0.414)	0.049	0.005
52	4.33	0.23	0.063	(0.413)	0.057	0.006
53	4.42	0.23	0.063	(0.411)	0.057	0.006
54	4.50	0.23	0.063	(0.409)	0.057	0.006
55	4.58	0.23	0.063	(0.407)	0.057	0.006
56	4.67	0.23	0.063	(0.406)	0.057	0.006
57	4.75	0.23	0.063	(0.404)	0.057	0.006
58	4.83	0.27	0.072	(0.402)	0.065	0.007
59	4.92	0.27	0.072	(0.400)	0.065	0.007
60	5.00	0.27	0.072	(0.399)	0.065	0.007
61	5.08	0.20	0.054	(0.397)	0.049	0.005
62	5.17	0.20	0.054	(0.395)	0.049	0.005
63	5.25	0.20	0.054	(0.393)	0.049	0.005
64	5.33	0.23	0.063	(0.392)	0.057	0.006
65	5.42	0.23	0.063	(0.390)	0.057	0.006
66	5.50	0.23	0.063	(0.388)	0.057	0.006
67	5.58	0.27	0.072	(0.387)	0.065	0.007
68	5.67	0.27	0.072	(0.385)	0.065	0.007
69	5.75	0.27	0.072	(0.383)	0.065	0.007
70	5.83	0.27	0.072	(0.382)	0.065	0.007
71	5.92	0.27	0.072	(0.380)	0.065	0.007
72	6.00	0.27	0.072	(0.378)	0.065	0.007
73	6.08	0.30	0.081	(0.376)	0.073	0.008
74	6.17	0.30	0.081	(0.375)	0.073	0.008
75	6.25	0.30	0.081	(0.373)	0.073	0.008
76	6.33	0.30	0.081	(0.371)	0.073	0.008
77	6.42	0.30	0.081	(0.370)	0.073	0.008
78	6.50	0.30	0.081	(0.368)	0.073	0.008
79	6.58	0.33	0.090	(0.366)	0.081	0.009
80	6.67	0.33	0.090	(0.365)	0.081	0.009
81	6.75	0.33	0.090	(0.363)	0.081	0.009
82	6.83	0.33	0.090	(0.362)	0.081	0.009

83	6.92	0.33	0.090	(0.360)	0.081	0.009
84	7.00	0.33	0.090	(0.358)	0.081	0.009
85	7.08	0.33	0.090	(0.357)	0.081	0.009
86	7.17	0.33	0.090	(0.355)	0.081	0.009
87	7.25	0.33	0.090	(0.353)	0.081	0.009
88	7.33	0.37	0.099	(0.352)	0.089	0.010
89	7.42	0.37	0.099	(0.350)	0.089	0.010
90	7.50	0.37	0.099	(0.349)	0.089	0.010
91	7.58	0.40	0.108	(0.347)	0.097	0.011
92	7.67	0.40	0.108	(0.345)	0.097	0.011
93	7.75	0.40	0.108	(0.344)	0.097	0.011
94	7.83	0.43	0.117	(0.342)	0.105	0.012
95	7.92	0.43	0.117	(0.341)	0.105	0.012
96	8.00	0.43	0.117	(0.339)	0.105	0.012
97	8.08	0.50	0.135	(0.337)	0.121	0.013
98	8.17	0.50	0.135	(0.336)	0.121	0.013
99	8.25	0.50	0.135	(0.334)	0.121	0.013
100	8.33	0.50	0.135	(0.333)	0.121	0.013
101	8.42	0.50	0.135	(0.331)	0.121	0.013
102	8.50	0.50	0.135	(0.330)	0.121	0.013
103	8.58	0.53	0.144	(0.328)	0.130	0.014
104	8.67	0.53	0.144	(0.327)	0.130	0.014
105	8.75	0.53	0.144	(0.325)	0.130	0.014
106	8.83	0.57	0.153	(0.323)	0.138	0.015
107	8.92	0.57	0.153	(0.322)	0.138	0.015
108	9.00	0.57	0.153	(0.320)	0.138	0.015
109	9.08	0.63	0.171	(0.319)	0.154	0.017
110	9.17	0.63	0.171	(0.317)	0.154	0.017
111	9.25	0.63	0.171	(0.316)	0.154	0.017
112	9.33	0.67	0.180	(0.314)	0.162	0.018
113	9.42	0.67	0.180	(0.313)	0.162	0.018
114	9.50	0.67	0.180	(0.311)	0.162	0.018
115	9.58	0.70	0.189	(0.310)	0.170	0.019
116	9.67	0.70	0.189	(0.308)	0.170	0.019
117	9.75	0.70	0.189	(0.307)	0.170	0.019
118	9.83	0.73	0.198	(0.305)	0.178	0.020
119	9.92	0.73	0.198	(0.304)	0.178	0.020
120	10.00	0.73	0.198	(0.303)	0.178	0.020
121	10.08	0.50	0.135	(0.301)	0.121	0.013
122	10.17	0.50	0.135	(0.300)	0.121	0.013
123	10.25	0.50	0.135	(0.298)	0.121	0.013
124	10.33	0.50	0.135	(0.297)	0.121	0.013
125	10.42	0.50	0.135	(0.295)	0.121	0.013
126	10.50	0.50	0.135	(0.294)	0.121	0.013
127	10.58	0.67	0.180	(0.292)	0.162	0.018
128	10.67	0.67	0.180	(0.291)	0.162	0.018
129	10.75	0.67	0.180	(0.290)	0.162	0.018
130	10.83	0.67	0.180	(0.288)	0.162	0.018
131	10.92	0.67	0.180	(0.287)	0.162	0.018
132	11.00	0.67	0.180	(0.285)	0.162	0.018
133	11.08	0.63	0.171	(0.284)	0.154	0.017
134	11.17	0.63	0.171	(0.282)	0.154	0.017
135	11.25	0.63	0.171	(0.281)	0.154	0.017
136	11.33	0.63	0.171	(0.280)	0.154	0.017
137	11.42	0.63	0.171	(0.278)	0.154	0.017
138	11.50	0.63	0.171	(0.277)	0.154	0.017
139	11.58	0.57	0.153	(0.276)	0.138	0.015
140	11.67	0.57	0.153	(0.274)	0.138	0.015
141	11.75	0.57	0.153	(0.273)	0.138	0.015
142	11.83	0.60	0.162	(0.271)	0.146	0.016
143	11.92	0.60	0.162	(0.270)	0.146	0.016
144	12.00	0.60	0.162	(0.269)	0.146	0.016
145	12.08	0.83	0.225	(0.267)	0.202	0.022
146	12.17	0.83	0.225	(0.266)	0.202	0.022
147	12.25	0.83	0.225	(0.265)	0.202	0.022
148	12.33	0.87	0.234	(0.263)	0.211	0.023
149	12.42	0.87	0.234	(0.262)	0.211	0.023
150	12.50	0.87	0.234	(0.261)	0.211	0.023
151	12.58	0.93	0.252	(0.259)	0.227	0.025
152	12.67	0.93	0.252	(0.258)	0.227	0.025

153	12.75	0.93	0.252	(	0.257)		0.227		0.025
154	12.83	0.97	0.261	(	0.256)		0.235		0.026
155	12.92	0.97	0.261	(	0.254)		0.235		0.026
156	13.00	0.97	0.261	(	0.253)		0.235		0.026
157	13.08	1.13	0.306		0.252	(	0.275)		0.054
158	13.17	1.13	0.306		0.250	(	0.275)		0.056
159	13.25	1.13	0.306		0.249	(	0.275)		0.057
160	13.33	1.13	0.306		0.248	(	0.275)		0.058
161	13.42	1.13	0.306		0.247	(	0.275)		0.059
162	13.50	1.13	0.306		0.245	(	0.275)		0.061
163	13.58	0.77	0.207	(	0.244)		0.186		0.021
164	13.67	0.77	0.207	(	0.243)		0.186		0.021
165	13.75	0.77	0.207	(	0.242)		0.186		0.021
166	13.83	0.77	0.207	(	0.240)		0.186		0.021
167	13.92	0.77	0.207	(	0.239)		0.186		0.021
168	14.00	0.77	0.207	(	0.238)		0.186		0.021
169	14.08	0.90	0.243	(	0.237)		0.219		0.024
170	14.17	0.90	0.243	(	0.236)		0.219		0.024
171	14.25	0.90	0.243	(	0.234)		0.219		0.024
172	14.33	0.87	0.234	(	0.233)		0.211		0.023
173	14.42	0.87	0.234	(	0.232)		0.211		0.023
174	14.50	0.87	0.234	(	0.231)		0.211		0.023
175	14.58	0.87	0.234	(	0.230)		0.211		0.023
176	14.67	0.87	0.234	(	0.228)		0.211		0.023
177	14.75	0.87	0.234	(	0.227)		0.211		0.023
178	14.83	0.83	0.225	(	0.226)		0.202		0.022
179	14.92	0.83	0.225	(	0.225)		0.202		0.022
180	15.00	0.83	0.225	(	0.224)		0.202		0.022
181	15.08	0.80	0.216	(	0.223)		0.194		0.022
182	15.17	0.80	0.216	(	0.221)		0.194		0.022
183	15.25	0.80	0.216	(	0.220)		0.194		0.022
184	15.33	0.77	0.207	(	0.219)		0.186		0.021
185	15.42	0.77	0.207	(	0.218)		0.186		0.021
186	15.50	0.77	0.207	(	0.217)		0.186		0.021
187	15.58	0.63	0.171	(	0.216)		0.154		0.017
188	15.67	0.63	0.171	(	0.215)		0.154		0.017
189	15.75	0.63	0.171	(	0.214)		0.154		0.017
190	15.83	0.63	0.171	(	0.213)		0.154		0.017
191	15.92	0.63	0.171	(	0.211)		0.154		0.017
192	16.00	0.63	0.171	(	0.210)		0.154		0.017
193	16.08	0.13	0.036	(	0.209)		0.032		0.004
194	16.17	0.13	0.036	(	0.208)		0.032		0.004
195	16.25	0.13	0.036	(	0.207)		0.032		0.004
196	16.33	0.13	0.036	(	0.206)		0.032		0.004
197	16.42	0.13	0.036	(	0.205)		0.032		0.004
198	16.50	0.13	0.036	(	0.204)		0.032		0.004
199	16.58	0.10	0.027	(	0.203)		0.024		0.003
200	16.67	0.10	0.027	(	0.202)		0.024		0.003
201	16.75	0.10	0.027	(	0.201)		0.024		0.003
202	16.83	0.10	0.027	(	0.200)		0.024		0.003
203	16.92	0.10	0.027	(	0.199)		0.024		0.003
204	17.00	0.10	0.027	(	0.198)		0.024		0.003
205	17.08	0.17	0.045	(	0.197)		0.040		0.004
206	17.17	0.17	0.045	(	0.196)		0.040		0.004
207	17.25	0.17	0.045	(	0.195)		0.040		0.004
208	17.33	0.17	0.045	(	0.194)		0.040		0.004
209	17.42	0.17	0.045	(	0.193)		0.040		0.004
210	17.50	0.17	0.045	(	0.192)		0.040		0.004
211	17.58	0.17	0.045	(	0.191)		0.040		0.004
212	17.67	0.17	0.045	(	0.190)		0.040		0.004
213	17.75	0.17	0.045	(	0.189)		0.040		0.004
214	17.83	0.13	0.036	(	0.188)		0.032		0.004
215	17.92	0.13	0.036	(	0.187)		0.032		0.004
216	18.00	0.13	0.036	(	0.186)		0.032		0.004
217	18.08	0.13	0.036	(	0.185)		0.032		0.004
218	18.17	0.13	0.036	(	0.185)		0.032		0.004
219	18.25	0.13	0.036	(	0.184)		0.032		0.004
220	18.33	0.13	0.036	(	0.183)		0.032		0.004
221	18.42	0.13	0.036	(	0.182)		0.032		0.004
222	18.50	0.13	0.036	(	0.181)		0.032		0.004

223	18.58	0.10	0.027	(0.180)	0.024	0.003
224	18.67	0.10	0.027	(0.179)	0.024	0.003
225	18.75	0.10	0.027	(0.178)	0.024	0.003
226	18.83	0.07	0.018	(0.177)	0.016	0.002
227	18.92	0.07	0.018	(0.177)	0.016	0.002
228	19.00	0.07	0.018	(0.176)	0.016	0.002
229	19.08	0.10	0.027	(0.175)	0.024	0.003
230	19.17	0.10	0.027	(0.174)	0.024	0.003
231	19.25	0.10	0.027	(0.173)	0.024	0.003
232	19.33	0.13	0.036	(0.173)	0.032	0.004
233	19.42	0.13	0.036	(0.172)	0.032	0.004
234	19.50	0.13	0.036	(0.171)	0.032	0.004
235	19.58	0.10	0.027	(0.170)	0.024	0.003
236	19.67	0.10	0.027	(0.169)	0.024	0.003
237	19.75	0.10	0.027	(0.169)	0.024	0.003
238	19.83	0.07	0.018	(0.168)	0.016	0.002
239	19.92	0.07	0.018	(0.167)	0.016	0.002
240	20.00	0.07	0.018	(0.166)	0.016	0.002
241	20.08	0.10	0.027	(0.166)	0.024	0.003
242	20.17	0.10	0.027	(0.165)	0.024	0.003
243	20.25	0.10	0.027	(0.164)	0.024	0.003
244	20.33	0.10	0.027	(0.163)	0.024	0.003
245	20.42	0.10	0.027	(0.163)	0.024	0.003
246	20.50	0.10	0.027	(0.162)	0.024	0.003
247	20.58	0.10	0.027	(0.161)	0.024	0.003
248	20.67	0.10	0.027	(0.161)	0.024	0.003
249	20.75	0.10	0.027	(0.160)	0.024	0.003
250	20.83	0.07	0.018	(0.159)	0.016	0.002
251	20.92	0.07	0.018	(0.159)	0.016	0.002
252	21.00	0.07	0.018	(0.158)	0.016	0.002
253	21.08	0.10	0.027	(0.157)	0.024	0.003
254	21.17	0.10	0.027	(0.157)	0.024	0.003
255	21.25	0.10	0.027	(0.156)	0.024	0.003
256	21.33	0.07	0.018	(0.156)	0.016	0.002
257	21.42	0.07	0.018	(0.155)	0.016	0.002
258	21.50	0.07	0.018	(0.155)	0.016	0.002
259	21.58	0.10	0.027	(0.154)	0.024	0.003
260	21.67	0.10	0.027	(0.153)	0.024	0.003
261	21.75	0.10	0.027	(0.153)	0.024	0.003
262	21.83	0.07	0.018	(0.152)	0.016	0.002
263	21.92	0.07	0.018	(0.152)	0.016	0.002
264	22.00	0.07	0.018	(0.151)	0.016	0.002
265	22.08	0.10	0.027	(0.151)	0.024	0.003
266	22.17	0.10	0.027	(0.150)	0.024	0.003
267	22.25	0.10	0.027	(0.150)	0.024	0.003
268	22.33	0.07	0.018	(0.149)	0.016	0.002
269	22.42	0.07	0.018	(0.149)	0.016	0.002
270	22.50	0.07	0.018	(0.148)	0.016	0.002
271	22.58	0.07	0.018	(0.148)	0.016	0.002
272	22.67	0.07	0.018	(0.148)	0.016	0.002
273	22.75	0.07	0.018	(0.147)	0.016	0.002
274	22.83	0.07	0.018	(0.147)	0.016	0.002
275	22.92	0.07	0.018	(0.146)	0.016	0.002
276	23.00	0.07	0.018	(0.146)	0.016	0.002
277	23.08	0.07	0.018	(0.146)	0.016	0.002
278	23.17	0.07	0.018	(0.145)	0.016	0.002
279	23.25	0.07	0.018	(0.145)	0.016	0.002
280	23.33	0.07	0.018	(0.145)	0.016	0.002
281	23.42	0.07	0.018	(0.145)	0.016	0.002
282	23.50	0.07	0.018	(0.144)	0.016	0.002
283	23.58	0.07	0.018	(0.144)	0.016	0.002
284	23.67	0.07	0.018	(0.144)	0.016	0.002
285	23.75	0.07	0.018	(0.144)	0.016	0.002
286	23.83	0.07	0.018	(0.143)	0.016	0.002
287	23.92	0.07	0.018	(0.143)	0.016	0.002
288	24.00	0.07	0.018	(0.143)	0.016	0.002

(Loss Rate Not Used)

Sum = 100.0 Sum = 2.9

Flood volume = Effective rainfall 0.24(In)

times area 7.6(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)

```
    Total soil loss =      2.01(In)
    Total soil loss =     1.279(Ac.Ft)
    Total rainfall =      2.25(In)
    Flood volume =        6603.8 Cubic Feet
    Total soil loss =       55713.3 Cubic Feet
    ---------------------------------------------------------------------
     Peak flow rate of this hydrograph =      0.358(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       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0000      0.00  Q         |         |         |         |
  0+20       0.0001      0.01  Q         |         |         |         |
  0+25       0.0001      0.01  Q         |         |         |         |
  0+30       0.0002      0.01  Q         |         |         |         |
  0+35       0.0003      0.01  Q         |         |         |         |
  0+40       0.0004      0.01  Q         |         |         |         |
  0+45       0.0005      0.02  Q         |         |         |         |
  0+50       0.0006      0.02  Q         |         |         |         |
  0+55       0.0007      0.02  Q         |         |         |         |
  1+ 0       0.0008      0.02  Q         |         |         |         |
  1+ 5       0.0010      0.02  Q         |         |         |         |
  1+10       0.0011      0.02  Q         |         |         |         |
  1+15       0.0013      0.02  Q         |         |         |         |
  1+20       0.0014      0.02  Q         |         |         |         |
  1+25       0.0016      0.02  Q         |         |         |         |
  1+30       0.0017      0.02  Q         |         |         |         |
  1+35       0.0018      0.02  Q         |         |         |         |
  1+40       0.0020      0.02  Q         |         |         |         |
  1+45       0.0021      0.02  Q         |         |         |         |
  1+50       0.0022      0.02  Q         |         |         |         |
  1+55       0.0024      0.02  Q         |         |         |         |
  2+ 0       0.0025      0.02  Q         |         |         |         |
  2+ 5       0.0027      0.02  Q         |         |         |         |
  2+10       0.0029      0.02  Q         |         |         |         |
  2+15       0.0030      0.02  Q         |         |         |         |
  2+20       0.0032      0.03  Q         |         |         |         |
  2+25       0.0034      0.03  Q         |         |         |         |
  2+30       0.0036      0.03  Q         |         |         |         |
  2+35       0.0038      0.03  Q         |         |         |         |
  2+40       0.0039      0.03  QV        |         |         |         |
  2+45       0.0041      0.03  QV        |         |         |         |
  2+50       0.0043      0.03  QV        |         |         |         |
  2+55       0.0045      0.03  QV        |         |         |         |
  3+ 0       0.0048      0.03  QV        |         |         |         |
  3+ 5       0.0050      0.03  QV        |         |         |         |
  3+10       0.0052      0.03  QV        |         |         |         |
  3+15       0.0054      0.03  QV        |         |         |         |
  3+20       0.0057      0.03  QV        |         |         |         |
  3+25       0.0059      0.03  QV        |         |         |         |
  3+30       0.0061      0.03  QV        |         |         |         |
  3+35       0.0063      0.03  QV        |         |         |         |
  3+40       0.0066      0.03  QV        |         |         |         |
  3+45       0.0068      0.03  QV        |         |         |         |
  3+50       0.0070      0.03  QV        |         |         |         |
  3+55       0.0073      0.03  QV        |         |         |         |
  4+ 0       0.0075      0.04  QV        |         |         |         |
  4+ 5       0.0078      0.04  Q V       |         |         |         |
  4+10       0.0080      0.04  Q V       |         |         |         |
  4+15       0.0083      0.04  Q V       |         |         |         |
  4+20       0.0086      0.04  Q V       |         |         |         |
  4+25       0.0089      0.04  Q V       |         |         |         |
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4+30	0.0091	0.04	Q V	|	|	|	|
4+35	0.0094	0.04	Q V	|	|	|	|
4+40	0.0097	0.04	Q V	|	|	|	|
4+45	0.0100	0.04	Q V	|	|	|	|
4+50	0.0104	0.05	Q V	|	|	|	|
4+55	0.0107	0.05	Q V	|	|	|	|
5+ 0	0.0110	0.05	Q V	|	|	|	|
5+ 5	0.0113	0.05	Q V	|	|	|	|
5+10	0.0117	0.05	Q V	|	|	|	|
5+15	0.0120	0.05	Q V	|	|	|	|
5+20	0.0123	0.05	Q V	|	|	|	|
5+25	0.0127	0.05	Q V	|	|	|	|
5+30	0.0130	0.05	Q V	|	|	|	|
5+35	0.0133	0.05	Q V	|	|	|	|
5+40	0.0136	0.05	Q V	|	|	|	|
5+45	0.0139	0.05	Q V	|	|	|	|
5+50	0.0143	0.05	Q V	|	|	|	|
5+55	0.0146	0.05	Q V	|	|	|	|
6+ 0	0.0150	0.05	Q V	|	|	|	|
6+ 5	0.0154	0.05	Q V	|	|	|	|
6+10	0.0157	0.05	Q V	|	|	|	|
6+15	0.0161	0.05	Q V	|	|	|	|
6+20	0.0165	0.06	Q V	|	|	|	|
6+25	0.0169	0.06	Q V	|	|	|	|
6+30	0.0173	0.06	Q V	|	|	|	|
6+35	0.0177	0.06	Q V	|	|	|	|
6+40	0.0181	0.06	Q V	|	|	|	|
6+45	0.0186	0.06	Q V	|	|	|	|
6+50	0.0190	0.06	Q V	|	|	|	|
6+55	0.0194	0.06	Q V	|	|	|	|
7+ 0	0.0199	0.07	Q V	|	|	|	|
7+ 5	0.0203	0.07	Q V	|	|	|	|
7+10	0.0208	0.07	Q V	|	|	|	|
7+15	0.0212	0.07	Q V	|	|	|	|
7+20	0.0217	0.07	Q V	|	|	|	|
7+25	0.0222	0.07	Q V	|	|	|	|
7+30	0.0227	0.07	Q V	|	|	|	|
7+35	0.0231	0.07	Q V	|	|	|	|
7+40	0.0236	0.07	Q V	|	|	|	|
7+45	0.0241	0.07	Q V	|	|	|	|
7+50	0.0247	0.08	Q V	|	|	|	|
7+55	0.0252	0.08	Q V	|	|	|	|
8+ 0	0.0257	0.08	Q V	|	|	|	|
8+ 5	0.0263	0.08	Q V	|	|	|	|
8+10	0.0269	0.08	Q V	|	|	|	|
8+15	0.0275	0.09	Q V	|	|	|	|
8+20	0.0281	0.09	Q V	|	|	|	|
8+25	0.0288	0.09	Q V	|	|	|	|
8+30	0.0294	0.10	Q V	|	|	|	|
8+35	0.0301	0.10	Q V	|	|	|	|
8+40	0.0308	0.10	Q V	|	|	|	|
8+45	0.0315	0.10	Q V	|	|	|	|
8+50	0.0322	0.10	Q V	|	|	|	|
8+55	0.0329	0.10	Q V	|	|	|	|
9+ 0	0.0336	0.11	Q V	|	|	|	|
9+ 5	0.0343	0.11	Q V	|	|	|	|
9+10	0.0351	0.11	Q V	|	|	|	|
9+15	0.0359	0.11	Q V	|	|	|	|
9+20	0.0367	0.12	Q V	|	|	|	|
9+25	0.0375	0.12	Q V	|	|	|	|
9+30	0.0384	0.12	Q V	|	|	|	|
9+35	0.0393	0.13	Q V	|	|	|	|
9+40	0.0402	0.13	Q V	|	|	|	|
9+45	0.0411	0.13	Q V	|	|	|	|
9+50	0.0420	0.13	Q V	|	|	|	|
9+55	0.0429	0.14	Q V	|	|	|	|
10+ 0	0.0439	0.14	Q V	|	|	|	|
10+ 5	0.0448	0.14	Q V	|	|	|	|
10+10	0.0458	0.14	Q V	|	|	|	|
10+15	0.0467	0.13	Q V	|	|	|	|

10+20	0.0476	0.13	Q	V			
10+25	0.0484	0.12	Q	V			
10+30	0.0492	0.12	Q	V			
10+35	0.0500	0.11	Q	V			
10+40	0.0508	0.12	Q	V			
10+45	0.0517	0.12	Q	V			
10+50	0.0525	0.12	Q	V			
10+55	0.0534	0.13	Q	V			
11+ 0	0.0543	0.13	Q	V			
11+ 5	0.0552	0.13	Q	V			
11+10	0.0561	0.13	Q	V			
11+15	0.0570	0.13	Q	V			
11+20	0.0579	0.13	Q	V			
11+25	0.0588	0.13	Q	V			
11+30	0.0598	0.13	Q	V			
11+35	0.0607	0.13	Q	V			
11+40	0.0616	0.13	Q	V			
11+45	0.0624	0.13	Q	V			
11+50	0.0633	0.13	Q	V			
11+55	0.0642	0.12	Q	V			
12+ 0	0.0650	0.12	Q	V			
12+ 5	0.0659	0.13	Q	V			
12+10	0.0668	0.13	Q	V			
12+15	0.0677	0.14	Q	V			
12+20	0.0687	0.14	Q	V			
12+25	0.0697	0.15	Q	V			
12+30	0.0708	0.16	Q	V			
12+35	0.0719	0.16	Q	V			
12+40	0.0731	0.17	Q	V			
12+45	0.0742	0.17	Q	V			
12+50	0.0754	0.17	Q	V			
12+55	0.0767	0.18	Q	V			
13+ 0	0.0779	0.18	Q	V			
13+ 5	0.0792	0.19	Q	V			
13+10	0.0807	0.21	Q	V			
13+15	0.0823	0.24	Q	V			
13+20	0.0842	0.28	Q	V			
13+25	0.0864	0.31	Q	V			
13+30	0.0887	0.34	Q	V			
13+35	0.0912	0.36	Q	V			
13+40	0.0936	0.35	Q	V			
13+45	0.0959	0.33	Q	V			
13+50	0.0979	0.29	Q	V			
13+55	0.0996	0.25	Q	V			
14+ 0	0.1011	0.23	Q	V			
14+ 5	0.1026	0.21	Q	V			
14+10	0.1040	0.20	Q	V			
14+15	0.1054	0.20	Q	V			
14+20	0.1068	0.20	Q	V			
14+25	0.1082	0.20	Q	V			
14+30	0.1095	0.20	Q	V			
14+35	0.1109	0.20	Q	V			
14+40	0.1122	0.19	Q	V			
14+45	0.1136	0.19	Q	V			
14+50	0.1149	0.19	Q	V			
14+55	0.1162	0.19	Q	V			
15+ 0	0.1175	0.19	Q	V			
15+ 5	0.1188	0.19	Q	V			
15+10	0.1200	0.18	Q	V			
15+15	0.1213	0.18	Q	V			
15+20	0.1225	0.18	Q	V			
15+25	0.1237	0.18	Q	V			
15+30	0.1249	0.17	Q	V			
15+35	0.1261	0.17	Q	V			
15+40	0.1272	0.17	Q	V			
15+45	0.1283	0.16	Q	V			
15+50	0.1294	0.16	Q	V			
15+55	0.1305	0.15	Q	V			
16+ 0	0.1315	0.15	Q	V			
16+ 5	0.1325	0.14	Q	V			

```
16+10       0.1334      0.13  Q         |         |         |    V    |
16+15       0.1342      0.12  Q         |         |         |    V    |
16+20       0.1349      0.10  Q         |         |         |    V    |
16+25       0.1355      0.08  Q         |         |         |    V    |
16+30       0.1359      0.07  Q         |         |         |    V    |
16+35       0.1364      0.06  Q         |         |         |    V    |
16+40       0.1368      0.06  Q         |         |         |     V   |
16+45       0.1371      0.05  Q         |         |         |     V   |
16+50       0.1375      0.05  Q         |         |         |     V   |
16+55       0.1378      0.04  Q         |         |         |     V   |
17+ 0       0.1381      0.04  Q         |         |         |     V   |
17+ 5       0.1383      0.04  Q         |         |         |     V   |
17+10       0.1386      0.04  Q         |         |         |     V   |
17+15       0.1388      0.04  Q         |         |         |     V   |
17+20       0.1391      0.04  Q         |         |         |     V   |
17+25       0.1394      0.04  Q         |         |         |     V   |
17+30       0.1396      0.04  Q         |         |         |     V   |
17+35       0.1399      0.04  Q         |         |         |     V   |
17+40       0.1402      0.04  Q         |         |         |     V   |
17+45       0.1404      0.04  Q         |         |         |      V  |
17+50       0.1407      0.04  Q         |         |         |      V  |
17+55       0.1409      0.04  Q         |         |         |      V  |
18+ 0       0.1412      0.04  Q         |         |         |      V  |
18+ 5       0.1414      0.03  Q         |         |         |      V  |
18+10       0.1416      0.03  Q         |         |         |      V  |
18+15       0.1418      0.03  Q         |         |         |      V  |
18+20       0.1421      0.03  Q         |         |         |      V  |
18+25       0.1423      0.03  Q         |         |         |      V  |
18+30       0.1425      0.03  Q         |         |         |      V  |
18+35       0.1427      0.03  Q         |         |         |      V  |
18+40       0.1429      0.03  Q         |         |         |      V  |
18+45       0.1430      0.03  Q         |         |         |      V  |
18+50       0.1432      0.03  Q         |         |         |      V  |
18+55       0.1434      0.02  Q         |         |         |      V  |
19+ 0       0.1435      0.02  Q         |         |         |      V  |
19+ 5       0.1437      0.02  Q         |         |         |      V  |
19+10       0.1438      0.02  Q         |         |         |      V  |
19+15       0.1440      0.02  Q         |         |         |      V  |
19+20       0.1441      0.02  Q         |         |         |       V |
19+25       0.1442      0.02  Q         |         |         |       V |
19+30       0.1444      0.02  Q         |         |         |       V |
19+35       0.1446      0.02  Q         |         |         |       V |
19+40       0.1447      0.02  Q         |         |         |       V |
19+45       0.1449      0.02  Q         |         |         |       V |
19+50       0.1450      0.02  Q         |         |         |       V |
19+55       0.1452      0.02  Q         |         |         |       V |
20+ 0       0.1453      0.02  Q         |         |         |       V |
20+ 5       0.1455      0.02  Q         |         |         |       V |
20+10       0.1456      0.02  Q         |         |         |       V |
20+15       0.1457      0.02  Q         |         |         |       V |
20+20       0.1459      0.02  Q         |         |         |       V |
20+25       0.1460      0.02  Q         |         |         |       V |
20+30       0.1461      0.02  Q         |         |         |       V |
20+35       0.1463      0.02  Q         |         |         |       V |
20+40       0.1464      0.02  Q         |         |         |       V |
20+45       0.1466      0.02  Q         |         |         |       V |
20+50       0.1467      0.02  Q         |         |         |       V |
20+55       0.1468      0.02  Q         |         |         |       V |
21+ 0       0.1470      0.02  Q         |         |         |       V |
21+ 5       0.1471      0.02  Q         |         |         |       V |
21+10       0.1472      0.02  Q         |         |         |       V |
21+15       0.1473      0.02  Q         |         |         |       V |
21+20       0.1475      0.02  Q         |         |         |       V |
21+25       0.1476      0.02  Q         |         |         |       V |
21+30       0.1477      0.02  Q         |         |         |       V |
21+35       0.1478      0.02  Q         |         |         |        V|
21+40       0.1479      0.02  Q         |         |         |        V|
21+45       0.1481      0.02  Q         |         |         |        V|
21+50       0.1482      0.02  Q         |         |         |        V|
21+55       0.1483      0.02  Q         |         |         |        V|
```

22+ 0	0.1484	0.02	Q	|	|	|	V|
22+ 5	0.1486	0.02	Q	|	|	|	V|
22+10	0.1487	0.02	Q	|	|	|	V|
22+15	0.1488	0.02	Q	|	|	|	V|
22+20	0.1489	0.02	Q	|	|	|	V|
22+25	0.1490	0.02	Q	|	|	|	V|
22+30	0.1492	0.02	Q	|	|	|	V|
22+35	0.1493	0.02	Q	|	|	|	V|
22+40	0.1494	0.02	Q	|	|	|	V|
22+45	0.1495	0.02	Q	|	|	|	V|
22+50	0.1496	0.02	Q	|	|	|	V|
22+55	0.1497	0.01	Q	|	|	|	V|
23+ 0	0.1498	0.01	Q	|	|	|	V|
23+ 5	0.1499	0.01	Q	|	|	|	V|
23+10	0.1500	0.01	Q	|	|	|	V|
23+15	0.1501	0.01	Q	|	|	|	V|
23+20	0.1502	0.01	Q	|	|	|	V|
23+25	0.1503	0.01	Q	|	|	|	V|
23+30	0.1504	0.01	Q	|	|	|	V|
23+35	0.1505	0.01	Q	|	|	|	V|
23+40	0.1506	0.01	Q	|	|	|	V|
23+45	0.1507	0.01	Q	|	|	|	V|
23+50	0.1508	0.01	Q	|	|	|	V|
23+55	0.1509	0.01	Q	|	|	|	V|
24+ 0	0.1510	0.01	Q	|	|	|	V|
24+ 5	0.1511	0.01	Q	|	|	|	V|
24+10	0.1512	0.01	Q	|	|	|	V|
24+15	0.1512	0.01	Q	|	|	|	V|
24+20	0.1513	0.01	Q	|	|	|	V|
24+25	0.1513	0.01	Q	|	|	|	V|
24+30	0.1514	0.01	Q	|	|	|	V|
24+35	0.1514	0.00	Q	|	|	|	V|
24+40	0.1514	0.00	Q	|	|	|	V|
24+45	0.1515	0.00	Q	|	|	|	V|
24+50	0.1515	0.00	Q	|	|	|	V|
24+55	0.1515	0.00	Q	|	|	|	V|
25+ 0	0.1515	0.00	Q	|	|	|	V|
25+ 5	0.1515	0.00	Q	|	|	|	V|
25+10	0.1515	0.00	Q	|	|	|	V|
25+15	0.1515	0.00	Q	|	|	|	V|
25+20	0.1516	0.00	Q	|	|	|	V|
25+25	0.1516	0.00	Q	|	|	|	V|
25+30	0.1516	0.00	Q	|	|	|	V|
25+35	0.1516	0.00	Q	|	|	|	V|
25+40	0.1516	0.00	Q	|	|	|	V|
25+45	0.1516	0.00	Q	|	|	|	V|
25+50	0.1516	0.00	Q	|	|	|	V|
25+55	0.1516	0.00	Q	|	|	|	V|
26+ 0	0.1516	0.00	Q	|	|	|	V|
26+ 5	0.1516	0.00	Q	|	|	|	V|
26+10	0.1516	0.00	Q	|	|	|	V|
26+15	0.1516	0.00	Q	|	|	|	V|
26+20	0.1516	0.00	Q	|	|	|	V|
26+25	0.1516	0.00	Q	|	|	|	V|
26+30	0.1516	0.00	Q	|	|	|	V|
26+35	0.1516	0.00	Q	|	|	|	V|
26+40	0.1516	0.00	Q	|	|	|	V|
26+45	0.1516	0.00	Q	|	|	|	V|

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

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Study date 02/20/20 File: 8946E2A115.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
5 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	0.55	4.20

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	1.30	9.92

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.726(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.726(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
			Sum = 100.000	Sum= 7.690

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	0.287	(0.286)		0.259	0.029
2	0.17	4.20	0.366	0.286	(	0.329)	0.079
3	0.25	4.40	0.383	0.286	(	0.345)	0.097
4	0.33	4.80	0.418	0.286	(	0.376)	0.131
5	0.42	5.20	0.453	0.286	(	0.408)	0.166
6	0.50	6.20	0.540	0.286	(	0.486)	0.253
7	0.58	6.80	0.592	0.286	(	0.533)	0.306
8	0.67	8.80	0.766	0.286	(	0.690)	0.480
9	0.75	13.90	1.210	0.286	(	1.089)	0.924
10	0.83	31.40	2.734	0.286	(	2.461)	2.448

```
 11   0.92     7.20      0.627          0.286    (  0.564)        0.340
 12   1.00     3.80      0.331          0.286    (  0.298)        0.044
             (Loss Rate Not Used)
    Sum =     100.0                                    Sum =     5.3
      Flood volume = Effective rainfall      0.44(In)
       times area       7.6(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
      Total soil loss =      0.28(In)
      Total soil loss =     0.181(Ac.Ft)
      Total rainfall =      0.73(In)
      Flood volume =       12227.1 Cubic Feet
      Total soil loss =        7870.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      5.236(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        2.5       5.0       7.5      10.0
 ------------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0002      0.03  Q         |         |         |         |
   0+15       0.0008      0.09  Q         |         |         |         |
   0+20       0.0021      0.18  Q         |         |         |         |
   0+25       0.0043      0.32  VQ        |         |         |         |
   0+30       0.0077      0.49  |Q        |         |         |         |
   0+35       0.0125      0.70  |VQ       |         |         |         |
   0+40       0.0192      0.97  | VQ      |         |         |         |
   0+45       0.0288      1.40  |   VQ    |         |         |         |
   0+50       0.0446      2.29  |     V  Q|         |         |         |
   0+55       0.0692      3.57  |        V|   Q     |         |         |
   1+ 0       0.1017      4.72  |         |   V   Q |         |         |
   1+ 5       0.1377      5.24  |         |        VQ         |         |
   1+10       0.1698      4.65  |         |       Q |   V     |         |
   1+15       0.1923      3.26  |         |  Q      |      V  |         |
   1+20       0.2075      2.21  |       Q |         |        V|         |
   1+25       0.2182      1.55  |     Q   |         |         |V        |
   1+30       0.2265      1.21  |   Q     |         |         | V       |
   1+35       0.2335      1.01  |   Q     |         |         |  V      |
   1+40       0.2393      0.86  |  Q      |         |         |   V     |
   1+45       0.2444      0.74  | Q       |         |         |   V     |
   1+50       0.2488      0.63  | Q       |         |         |    V    |
   1+55       0.2526      0.55  | Q       |         |         |    V    |
   2+ 0       0.2559      0.49  |Q        |         |         |     V   |
   2+ 5       0.2589      0.42  |Q        |         |         |     V   |
   2+10       0.2614      0.37  |Q        |         |         |      V  |
   2+15       0.2637      0.33  |Q        |         |         |      V  |
   2+20       0.2657      0.29  |Q        |         |         |      V  |
   2+25       0.2676      0.27  |Q        |         |         |       V |
   2+30       0.2693      0.25  |Q        |         |         |       V |
   2+35       0.2709      0.23  Q         |         |         |       V |
   2+40       0.2722      0.20  Q         |         |         |       V |
   2+45       0.2734      0.18  Q         |         |         |       V |
   2+50       0.2745      0.16  Q         |         |         |        V|
   2+55       0.2755      0.15  Q         |         |         |        V|
   3+ 0       0.2764      0.13  Q         |         |         |        V|
   3+ 5       0.2772      0.11  Q         |         |         |        V|
   3+10       0.2779      0.10  Q         |         |         |        V|
   3+15       0.2785      0.09  Q         |         |         |        V|
   3+20       0.2791      0.08  Q         |         |         |        V|
   3+25       0.2796      0.08  Q         |         |         |        V|
   3+30       0.2801      0.08  Q         |         |         |        V|
   3+35       0.2806      0.07  Q         |         |         |        V|
   3+40       0.2807      0.01  Q         |         |         |        V|
   3+45       0.2807      0.00  Q         |         |         |        V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946E2A135.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
5 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	0.90	6.87

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	2.25	17.17

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.216(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.216(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

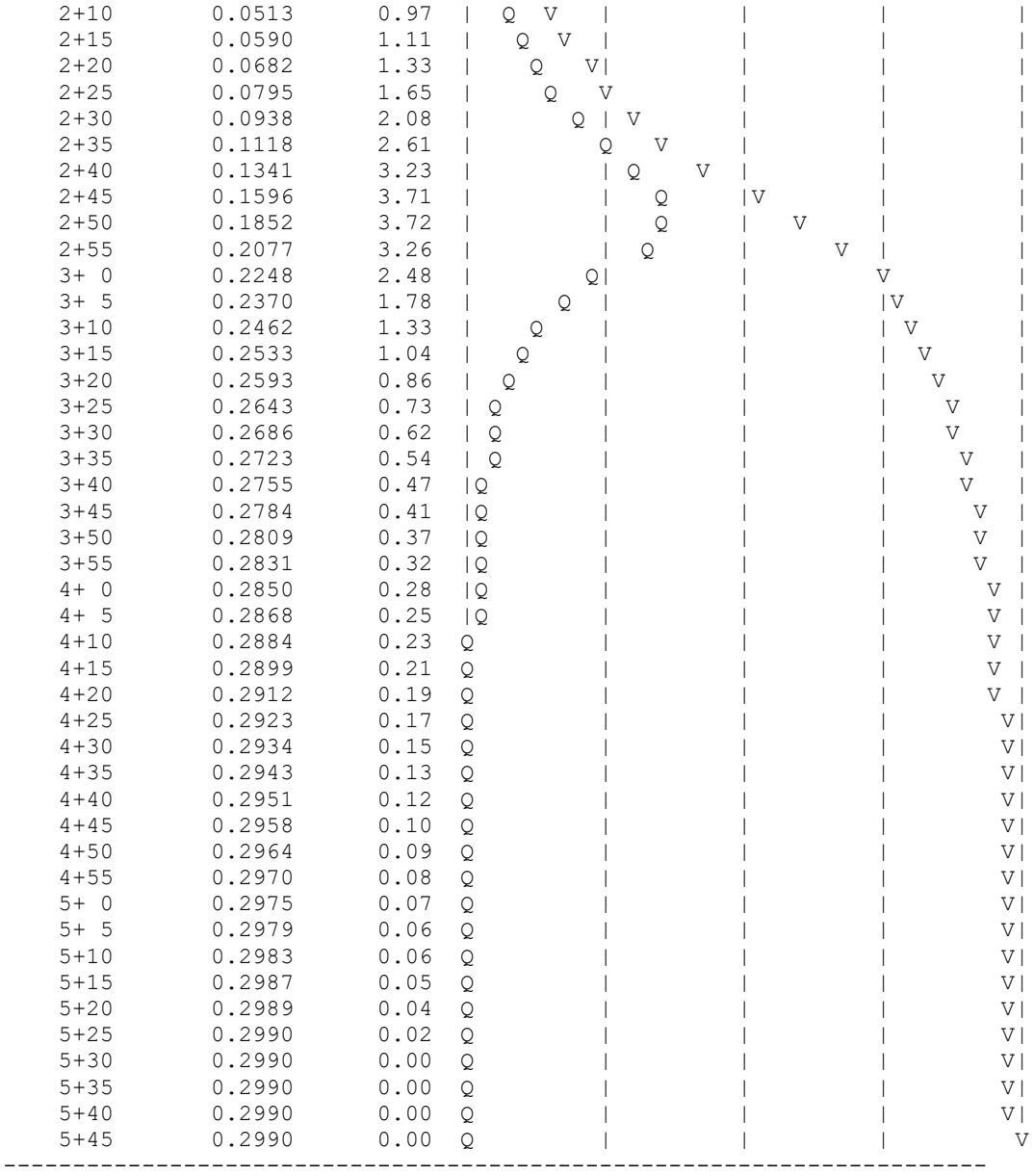
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.190	(0.286)	0.171	0.019
2	0.17	1.30	0.190	(0.286)	0.171	0.019
3	0.25	1.10	0.161	(0.286)	0.144	0.016
4	0.33	1.50	0.219	(0.286)	0.197	0.022
5	0.42	1.50	0.219	(0.286)	0.197	0.022
6	0.50	1.80	0.263	(0.286)	0.236	0.026
7	0.58	1.50	0.219	(0.286)	0.197	0.022
8	0.67	1.80	0.263	(0.286)	0.236	0.026
9	0.75	1.80	0.263	(0.286)	0.236	0.026
10	0.83	1.50	0.219	(0.286)	0.197	0.022
11	0.92	1.60	0.234	(0.286)	0.210	0.023
12	1.00	1.80	0.263	(0.286)	0.236	0.026

```
13   1.08     2.20      0.321          0.286    (  0.289)        0.035
14   1.17     2.20      0.321          0.286    (  0.289)        0.035
15   1.25     2.20      0.321          0.286    (  0.289)        0.035
16   1.33     2.00      0.292       (  0.286)       0.263        0.029
17   1.42     2.60      0.379          0.286    (  0.341)        0.093
18   1.50     2.70      0.394          0.286    (  0.355)        0.108
19   1.58     2.40      0.350          0.286    (  0.315)        0.064
20   1.67     2.70      0.394          0.286    (  0.355)        0.108
21   1.75     3.30      0.482          0.286    (  0.433)        0.195
22   1.83     3.10      0.452          0.286    (  0.407)        0.166
23   1.92     2.90      0.423          0.286    (  0.381)        0.137
24   2.00     3.00      0.438          0.286    (  0.394)        0.151
25   2.08     3.10      0.452          0.286    (  0.407)        0.166
26   2.17     4.20      0.613          0.286    (  0.552)        0.326
27   2.25     5.00      0.730          0.286    (  0.657)        0.443
28   2.33     3.50      0.511          0.286    (  0.460)        0.224
29   2.42     6.80      0.992          0.286    (  0.893)        0.706
30   2.50     7.30      1.065          0.286    (  0.959)        0.779
31   2.58     8.20      1.197          0.286    (  1.077)        0.910
32   2.67     5.90      0.861          0.286    (  0.775)        0.575
33   2.75     2.00      0.292       (  0.286)       0.263        0.029
34   2.83     1.80      0.263       (  0.286)       0.236        0.026
35   2.92     1.80      0.263       (  0.286)       0.236        0.026
36   3.00     0.60      0.088       (  0.286)       0.079        0.009
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =     5.6
     Flood volume = Effective rainfall      0.47(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
     Total soil loss =      0.75(In)
     Total soil loss =     0.474(Ac.Ft)
     Total rainfall =      1.22(In)
     Flood volume =       13026.5 Cubic Feet
     Total soil loss =       20657.4 Cubic Feet
     --------------------------------------------------------------------
      Peak flow rate of this hydrograph =      3.723(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0003      0.03  Q         |         |         |         |
  0+20       0.0007      0.05  Q         |         |         |         |
  0+25       0.0012      0.08  Q         |         |         |         |
  0+30       0.0019      0.09  Q         |         |         |         |
  0+35       0.0026      0.11  Q         |         |         |         |
  0+40       0.0035      0.12  Q         |         |         |         |
  0+45       0.0044      0.14  Q         |         |         |         |
  0+50       0.0054      0.14  Q         |         |         |         |
  0+55       0.0064      0.15  Q         |         |         |         |
  1+ 0       0.0075      0.16  QV        |         |         |         |
  1+ 5       0.0086      0.16  QV        |         |         |         |
  1+10       0.0098      0.17  QV        |         |         |         |
  1+15       0.0110      0.18  QV        |         |         |         |
  1+20       0.0124      0.20  QV        |         |         |         |
  1+25       0.0139      0.22  QV        |         |         |         |
  1+30       0.0157      0.26  |QV       |         |         |         |
  1+35       0.0179      0.32  |QV       |         |         |         |
  1+40       0.0207      0.40  |QV       |         |         |         |
  1+45       0.0240      0.49  |Q V      |         |         |         |
  1+50       0.0281      0.59  | QV      |         |         |         |
  1+55       0.0328      0.69  | Q V     |         |         |         |
  2+ 0       0.0384      0.81  |  Q V    |         |         |         |
  2+ 5       0.0446      0.90  |  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 02/20/20 File: 8946E2A165.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
5 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	1.30	9.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	3.00	22.89

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.698(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.698(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.102	(0.286)		0.092	0.010
2	0.17	0.60	0.122	(0.286)		0.110	0.012
3	0.25	0.60	0.122	(0.286)		0.110	0.012
4	0.33	0.60	0.122	(0.286)		0.110	0.012
5	0.42	0.60	0.122	(0.286)		0.110	0.012
6	0.50	0.70	0.143	(0.286)		0.128	0.014
7	0.58	0.70	0.143	(0.286)		0.128	0.014
8	0.67	0.70	0.143	(0.286)		0.128	0.014
9	0.75	0.70	0.143	(0.286)		0.128	0.014
10	0.83	0.70	0.143	(0.286)		0.128	0.014
11	0.92	0.70	0.143	(0.286)		0.128	0.014
12	1.00	0.80	0.163	(0.286)		0.147	0.016

13	1.08	0.80	0.163	(	0.286)	0.147			0.016		
14	1.17	0.80	0.163	(	0.286)	0.147			0.016		
15	1.25	0.80	0.163	(	0.286)	0.147			0.016		
16	1.33	0.80	0.163	(	0.286)	0.147			0.016		
17	1.42	0.80	0.163	(	0.286)	0.147			0.016		
18	1.50	0.80	0.163	(	0.286)	0.147			0.016		
19	1.58	0.80	0.163	(	0.286)	0.147			0.016		
20	1.67	0.80	0.163	(	0.286)	0.147			0.016		
21	1.75	0.80	0.163	(	0.286)	0.147			0.016		
22	1.83	0.80	0.163	(	0.286)	0.147			0.016		
23	1.92	0.80	0.163	(	0.286)	0.147			0.016		
24	2.00	0.90	0.183	(	0.286)	0.165			0.018		
25	2.08	0.80	0.163	(	0.286)	0.147			0.016		
26	2.17	0.90	0.183	(	0.286)	0.165			0.018		
27	2.25	0.90	0.183	(	0.286)	0.165			0.018		
28	2.33	0.90	0.183	(	0.286)	0.165			0.018		
29	2.42	0.90	0.183	(	0.286)	0.165			0.018		
30	2.50	0.90	0.183	(	0.286)	0.165			0.018		
31	2.58	0.90	0.183	(	0.286)	0.165			0.018		
32	2.67	0.90	0.183	(	0.286)	0.165			0.018		
33	2.75	1.00	0.204	(	0.286)	0.183			0.020		
34	2.83	1.00	0.204	(	0.286)	0.183			0.020		
35	2.92	1.00	0.204	(	0.286)	0.183			0.020		
36	3.00	1.00	0.204	(	0.286)	0.183			0.020		
37	3.08	1.00	0.204	(	0.286)	0.183			0.020		
38	3.17	1.10	0.224	(	0.286)	0.202			0.022		
39	3.25	1.10	0.224	(	0.286)	0.202			0.022		
40	3.33	1.10	0.224	(	0.286)	0.202			0.022		
41	3.42	1.20	0.245	(	0.286)	0.220			0.024		
42	3.50	1.30	0.265	(	0.286)	0.238			0.026		
43	3.58	1.40	0.285	(	0.286)	0.257			0.029		
44	3.67	1.40	0.285	(	0.286)	0.257			0.029		
45	3.75	1.50	0.306	(	0.286)	0.275			0.031		
46	3.83	1.50	0.306	(	0.286)	0.275			0.031		
47	3.92	1.60	0.326		0.286	(	0.293)		0.040		
48	4.00	1.60	0.326		0.286	(	0.293)		0.040		
49	4.08	1.70	0.346		0.286	(	0.312)		0.060		
50	4.17	1.80	0.367		0.286	(	0.330)		0.080		
51	4.25	1.90	0.387		0.286	(	0.348)		0.101		
52	4.33	2.00	0.408		0.286	(	0.367)		0.121		
53	4.42	2.10	0.428		0.286	(	0.385)		0.141		
54	4.50	2.10	0.428		0.286	(	0.385)		0.141		
55	4.58	2.20	0.448		0.286	(	0.403)		0.162		
56	4.67	2.30	0.469		0.286	(	0.422)		0.182		
57	4.75	2.40	0.489		0.286	(	0.440)		0.203		
58	4.83	2.40	0.489		0.286	(	0.440)		0.203		
59	4.92	2.50	0.509		0.286	(	0.458)		0.223		
60	5.00	2.60	0.530		0.286	(	0.477)		0.243		
61	5.08	3.10	0.632		0.286	(	0.569)		0.345		
62	5.17	3.60	0.734		0.286	(	0.660)		0.447		
63	5.25	3.90	0.795		0.286	(	0.715)		0.508		
64	5.33	4.20	0.856		0.286	(	0.770)		0.569		
65	5.42	4.70	0.958		0.286	(	0.862)		0.671		
66	5.50	5.60	1.141		0.286	(	1.027)		0.855		
67	5.58	1.90	0.387		0.286	(	0.348)		0.101		
68	5.67	0.90	0.183	(	0.286)	0.165			0.018		
69	5.75	0.60	0.122	(	0.286)	0.110			0.012		
70	5.83	0.50	0.102	(	0.286)	0.092			0.010		
71	5.92	0.30	0.061	(	0.286)	0.055			0.006		
72	6.00	0.20	0.041	(	0.286)	0.037			0.004		

(Loss Rate Not Used)

Sum = 100.0 Sum = 6.3

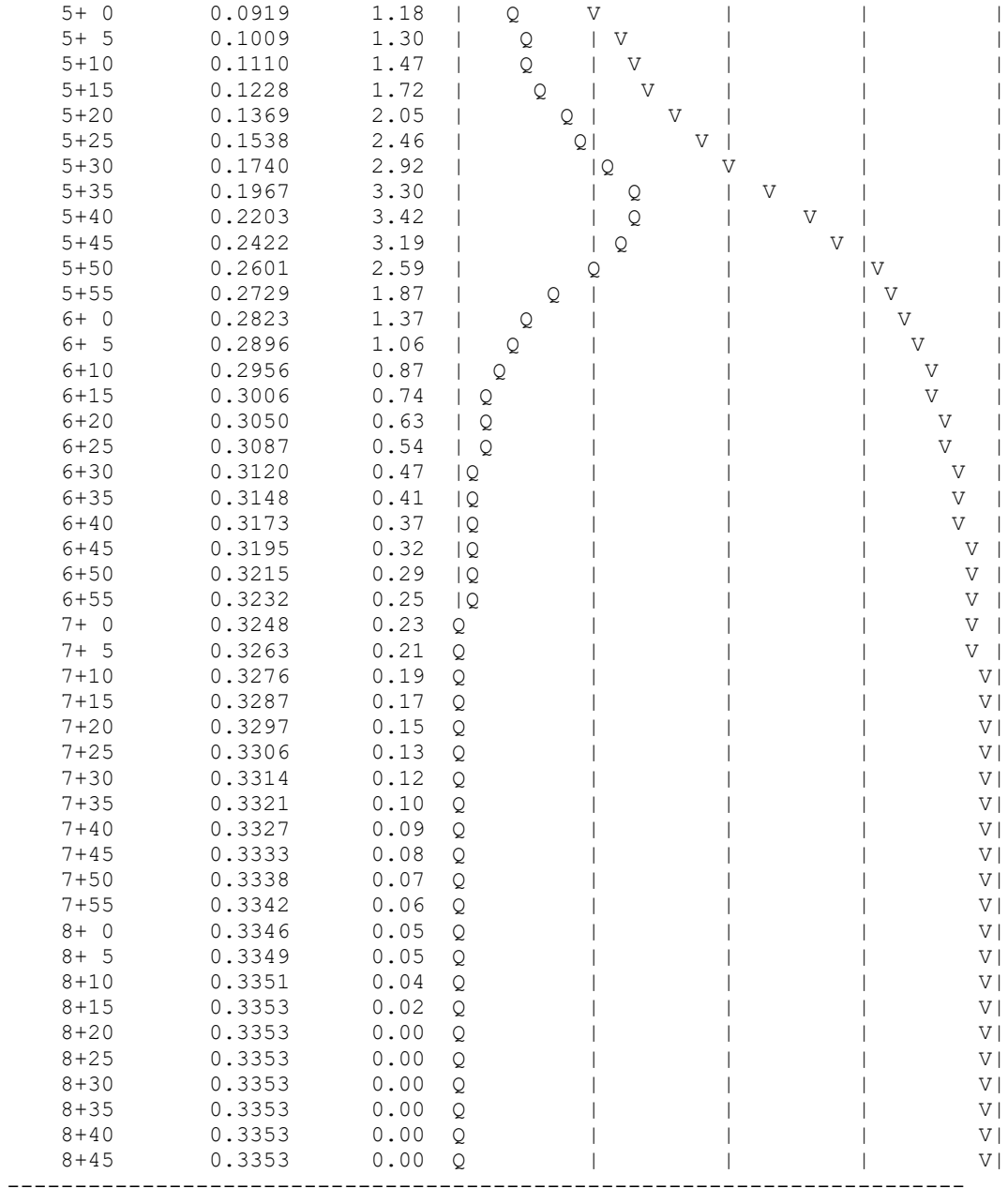
Flood volume = Effective rainfall 0.53(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)
Total soil loss = 1.17(In)
Total soil loss = 0.744(Ac.Ft)
Total rainfall = 1.70(In)
Flood volume = 14607.1 Cubic Feet
Total soil loss = 32426.0 Cubic Feet

Peak flow rate of this hydrograph = 3.423(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	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.01	Q				
0+15	0.0002	0.02	Q				
0+20	0.0004	0.03	Q				
0+25	0.0007	0.05	Q				
0+30	0.0011	0.06	Q				
0+35	0.0016	0.07	Q				
0+40	0.0021	0.07	Q				
0+45	0.0026	0.08	Q				
0+50	0.0032	0.08	Q				
0+55	0.0038	0.09	Q				
1+ 0	0.0045	0.09	Q				
1+ 5	0.0051	0.09	Q				
1+10	0.0058	0.10	Q				
1+15	0.0065	0.10	Q				
1+20	0.0072	0.11	Q				
1+25	0.0080	0.11	Q				
1+30	0.0088	0.11	QV				
1+35	0.0095	0.11	QV				
1+40	0.0103	0.12	QV				
1+45	0.0111	0.12	QV				
1+50	0.0119	0.12	QV				
1+55	0.0128	0.12	QV				
2+ 0	0.0136	0.12	QV				
2+ 5	0.0144	0.12	QV				
2+10	0.0153	0.12	QV				
2+15	0.0161	0.13	QV				
2+20	0.0170	0.13	Q V				
2+25	0.0179	0.13	Q V				
2+30	0.0188	0.13	Q V				
2+35	0.0198	0.13	Q V				
2+40	0.0207	0.14	Q V				
2+45	0.0216	0.14	Q V				
2+50	0.0226	0.14	Q V				
2+55	0.0236	0.14	Q V				
3+ 0	0.0245	0.14	Q V				
3+ 5	0.0256	0.15	Q V				
3+10	0.0266	0.15	Q V				
3+15	0.0276	0.15	Q V				
3+20	0.0287	0.15	Q V				
3+25	0.0298	0.16	Q V				
3+30	0.0309	0.16	Q V				
3+35	0.0321	0.17	Q V				
3+40	0.0333	0.18	Q V				
3+45	0.0345	0.18	Q V				
3+50	0.0359	0.19	Q V				
3+55	0.0372	0.20	Q V				
4+ 0	0.0387	0.21	Q V				
4+ 5	0.0403	0.23	Q V				
4+10	0.0421	0.26	|Q V				
4+15	0.0442	0.31	|Q V				
4+20	0.0468	0.37	|Q V				
4+25	0.0500	0.46	|Q V				
4+30	0.0538	0.56	| Q V				
4+35	0.0584	0.67	| Q V				
4+40	0.0637	0.77	| Q V				
4+45	0.0697	0.87	| Q V				
4+50	0.0764	0.97	| Q V|				
4+55	0.0838	1.07	| Q V|				



5+ 0	0.0919	1.18	Q V
5+ 5	0.1009	1.30	Q V
5+10	0.1110	1.47	Q V
5+15	0.1228	1.72	Q V
5+20	0.1369	2.05	Q V
5+25	0.1538	2.46	Q V
5+30	0.1740	2.92	Q V
5+35	0.1967	3.30	Q V
5+40	0.2203	3.42	Q V
5+45	0.2422	3.19	Q V
5+50	0.2601	2.59	Q V
5+55	0.2729	1.87	Q V
6+ 0	0.2823	1.37	Q V
6+ 5	0.2896	1.06	Q V
6+10	0.2956	0.87	Q V
6+15	0.3006	0.74	Q V
6+20	0.3050	0.63	Q V
6+25	0.3087	0.54	Q V
6+30	0.3120	0.47	Q V
6+35	0.3148	0.41	Q V
6+40	0.3173	0.37	Q V
6+45	0.3195	0.32	Q V
6+50	0.3215	0.29	Q V
6+55	0.3232	0.25	Q V
7+ 0	0.3248	0.23	Q V
7+ 5	0.3263	0.21	Q V
7+10	0.3276	0.19	Q V
7+15	0.3287	0.17	Q V
7+20	0.3297	0.15	Q V
7+25	0.3306	0.13	Q V
7+30	0.3314	0.12	Q V
7+35	0.3321	0.10	Q V
7+40	0.3327	0.09	Q V
7+45	0.3333	0.08	Q V
7+50	0.3338	0.07	Q V
7+55	0.3342	0.06	Q V
8+ 0	0.3346	0.05	Q V
8+ 5	0.3349	0.05	Q V
8+10	0.3351	0.04	Q V
8+15	0.3353	0.02	Q V
8+20	0.3353	0.00	Q V
8+25	0.3353	0.00	Q V
8+30	0.3353	0.00	Q V
8+35	0.3353	0.00	Q V
8+40	0.3353	0.00	Q V
8+45	0.3353	0.00	Q V

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

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Study date 02/20/20 File: 8946E2A1245.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
5 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	2.25	17.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	5.25	40.06

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.953(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.953(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	76.4	0.286	0.000	0.286	1.000	0.286

Sum (F) = 0.286

Area averaged mean soil loss (F) (In/Hr) = 0.286
Minimum soil loss rate ((In/Hr)) = 0.143
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.024	(0.508)	0.021	0.002
2	0.17	0.07	0.024	(0.506)	0.021	0.002
3	0.25	0.07	0.024	(0.504)	0.021	0.002
4	0.33	0.10	0.035	(0.502)	0.032	0.004
5	0.42	0.10	0.035	(0.500)	0.032	0.004
6	0.50	0.10	0.035	(0.498)	0.032	0.004
7	0.58	0.10	0.035	(0.496)	0.032	0.004
8	0.67	0.10	0.035	(0.494)	0.032	0.004
9	0.75	0.10	0.035	(0.492)	0.032	0.004
10	0.83	0.13	0.047	(0.490)	0.043	0.005
11	0.92	0.13	0.047	(0.488)	0.043	0.005
12	1.00	0.13	0.047	(0.486)	0.043	0.005

13	1.08	0.10	0.035	(0.485)	0.032	0.004
14	1.17	0.10	0.035	(0.483)	0.032	0.004
15	1.25	0.10	0.035	(0.481)	0.032	0.004
16	1.33	0.10	0.035	(0.479)	0.032	0.004
17	1.42	0.10	0.035	(0.477)	0.032	0.004
18	1.50	0.10	0.035	(0.475)	0.032	0.004
19	1.58	0.10	0.035	(0.473)	0.032	0.004
20	1.67	0.10	0.035	(0.471)	0.032	0.004
21	1.75	0.10	0.035	(0.469)	0.032	0.004
22	1.83	0.13	0.047	(0.467)	0.043	0.005
23	1.92	0.13	0.047	(0.466)	0.043	0.005
24	2.00	0.13	0.047	(0.464)	0.043	0.005
25	2.08	0.13	0.047	(0.462)	0.043	0.005
26	2.17	0.13	0.047	(0.460)	0.043	0.005
27	2.25	0.13	0.047	(0.458)	0.043	0.005
28	2.33	0.13	0.047	(0.456)	0.043	0.005
29	2.42	0.13	0.047	(0.454)	0.043	0.005
30	2.50	0.13	0.047	(0.452)	0.043	0.005
31	2.58	0.17	0.059	(0.451)	0.053	0.006
32	2.67	0.17	0.059	(0.449)	0.053	0.006
33	2.75	0.17	0.059	(0.447)	0.053	0.006
34	2.83	0.17	0.059	(0.445)	0.053	0.006
35	2.92	0.17	0.059	(0.443)	0.053	0.006
36	3.00	0.17	0.059	(0.441)	0.053	0.006
37	3.08	0.17	0.059	(0.440)	0.053	0.006
38	3.17	0.17	0.059	(0.438)	0.053	0.006
39	3.25	0.17	0.059	(0.436)	0.053	0.006
40	3.33	0.17	0.059	(0.434)	0.053	0.006
41	3.42	0.17	0.059	(0.432)	0.053	0.006
42	3.50	0.17	0.059	(0.430)	0.053	0.006
43	3.58	0.17	0.059	(0.429)	0.053	0.006
44	3.67	0.17	0.059	(0.427)	0.053	0.006
45	3.75	0.17	0.059	(0.425)	0.053	0.006
46	3.83	0.20	0.071	(0.423)	0.064	0.007
47	3.92	0.20	0.071	(0.422)	0.064	0.007
48	4.00	0.20	0.071	(0.420)	0.064	0.007
49	4.08	0.20	0.071	(0.418)	0.064	0.007
50	4.17	0.20	0.071	(0.416)	0.064	0.007
51	4.25	0.20	0.071	(0.414)	0.064	0.007
52	4.33	0.23	0.083	(0.413)	0.074	0.008
53	4.42	0.23	0.083	(0.411)	0.074	0.008
54	4.50	0.23	0.083	(0.409)	0.074	0.008
55	4.58	0.23	0.083	(0.407)	0.074	0.008
56	4.67	0.23	0.083	(0.406)	0.074	0.008
57	4.75	0.23	0.083	(0.404)	0.074	0.008
58	4.83	0.27	0.094	(0.402)	0.085	0.009
59	4.92	0.27	0.094	(0.400)	0.085	0.009
60	5.00	0.27	0.094	(0.399)	0.085	0.009
61	5.08	0.20	0.071	(0.397)	0.064	0.007
62	5.17	0.20	0.071	(0.395)	0.064	0.007
63	5.25	0.20	0.071	(0.393)	0.064	0.007
64	5.33	0.23	0.083	(0.392)	0.074	0.008
65	5.42	0.23	0.083	(0.390)	0.074	0.008
66	5.50	0.23	0.083	(0.388)	0.074	0.008
67	5.58	0.27	0.094	(0.387)	0.085	0.009
68	5.67	0.27	0.094	(0.385)	0.085	0.009
69	5.75	0.27	0.094	(0.383)	0.085	0.009
70	5.83	0.27	0.094	(0.382)	0.085	0.009
71	5.92	0.27	0.094	(0.380)	0.085	0.009
72	6.00	0.27	0.094	(0.378)	0.085	0.009
73	6.08	0.30	0.106	(0.376)	0.096	0.011
74	6.17	0.30	0.106	(0.375)	0.096	0.011
75	6.25	0.30	0.106	(0.373)	0.096	0.011
76	6.33	0.30	0.106	(0.371)	0.096	0.011
77	6.42	0.30	0.106	(0.370)	0.096	0.011
78	6.50	0.30	0.106	(0.368)	0.096	0.011
79	6.58	0.33	0.118	(0.366)	0.106	0.012
80	6.67	0.33	0.118	(0.365)	0.106	0.012
81	6.75	0.33	0.118	(0.363)	0.106	0.012
82	6.83	0.33	0.118	(0.362)	0.106	0.012

83	6.92	0.33	0.118	(	0.360)	0.106		0.012
84	7.00	0.33	0.118	(	0.358)	0.106		0.012
85	7.08	0.33	0.118	(	0.357)	0.106		0.012
86	7.17	0.33	0.118	(	0.355)	0.106		0.012
87	7.25	0.33	0.118	(	0.353)	0.106		0.012
88	7.33	0.37	0.130	(	0.352)	0.117		0.013
89	7.42	0.37	0.130	(	0.350)	0.117		0.013
90	7.50	0.37	0.130	(	0.349)	0.117		0.013
91	7.58	0.40	0.142	(	0.347)	0.128		0.014
92	7.67	0.40	0.142	(	0.345)	0.128		0.014
93	7.75	0.40	0.142	(	0.344)	0.128		0.014
94	7.83	0.43	0.154	(	0.342)	0.138		0.015
95	7.92	0.43	0.154	(	0.341)	0.138		0.015
96	8.00	0.43	0.154	(	0.339)	0.138		0.015
97	8.08	0.50	0.177	(	0.337)	0.159		0.018
98	8.17	0.50	0.177	(	0.336)	0.159		0.018
99	8.25	0.50	0.177	(	0.334)	0.159		0.018
100	8.33	0.50	0.177	(	0.333)	0.159		0.018
101	8.42	0.50	0.177	(	0.331)	0.159		0.018
102	8.50	0.50	0.177	(	0.330)	0.159		0.018
103	8.58	0.53	0.189	(	0.328)	0.170		0.019
104	8.67	0.53	0.189	(	0.327)	0.170		0.019
105	8.75	0.53	0.189	(	0.325)	0.170		0.019
106	8.83	0.57	0.201	(	0.323)	0.181		0.020
107	8.92	0.57	0.201	(	0.322)	0.181		0.020
108	9.00	0.57	0.201	(	0.320)	0.181		0.020
109	9.08	0.63	0.224	(	0.319)	0.202		0.022
110	9.17	0.63	0.224	(	0.317)	0.202		0.022
111	9.25	0.63	0.224	(	0.316)	0.202		0.022
112	9.33	0.67	0.236	(	0.314)	0.213		0.024
113	9.42	0.67	0.236	(	0.313)	0.213		0.024
114	9.50	0.67	0.236	(	0.311)	0.213		0.024
115	9.58	0.70	0.248	(	0.310)	0.223		0.025
116	9.67	0.70	0.248	(	0.308)	0.223		0.025
117	9.75	0.70	0.248	(	0.307)	0.223		0.025
118	9.83	0.73	0.260	(	0.305)	0.234		0.026
119	9.92	0.73	0.260	(	0.304)	0.234		0.026
120	10.00	0.73	0.260	(	0.303)	0.234		0.026
121	10.08	0.50	0.177	(	0.301)	0.159		0.018
122	10.17	0.50	0.177	(	0.300)	0.159		0.018
123	10.25	0.50	0.177	(	0.298)	0.159		0.018
124	10.33	0.50	0.177	(	0.297)	0.159		0.018
125	10.42	0.50	0.177	(	0.295)	0.159		0.018
126	10.50	0.50	0.177	(	0.294)	0.159		0.018
127	10.58	0.67	0.236	(	0.292)	0.213		0.024
128	10.67	0.67	0.236	(	0.291)	0.213		0.024
129	10.75	0.67	0.236	(	0.290)	0.213		0.024
130	10.83	0.67	0.236	(	0.288)	0.213		0.024
131	10.92	0.67	0.236	(	0.287)	0.213		0.024
132	11.00	0.67	0.236	(	0.285)	0.213		0.024
133	11.08	0.63	0.224	(	0.284)	0.202		0.022
134	11.17	0.63	0.224	(	0.282)	0.202		0.022
135	11.25	0.63	0.224	(	0.281)	0.202		0.022
136	11.33	0.63	0.224	(	0.280)	0.202		0.022
137	11.42	0.63	0.224	(	0.278)	0.202		0.022
138	11.50	0.63	0.224	(	0.277)	0.202		0.022
139	11.58	0.57	0.201	(	0.276)	0.181		0.020
140	11.67	0.57	0.201	(	0.274)	0.181		0.020
141	11.75	0.57	0.201	(	0.273)	0.181		0.020
142	11.83	0.60	0.213	(	0.271)	0.191		0.021
143	11.92	0.60	0.213	(	0.270)	0.191		0.021
144	12.00	0.60	0.213	(	0.269)	0.191		0.021
145	12.08	0.83	0.295	(	0.267)	0.266		0.030
146	12.17	0.83	0.295	(	0.266)	0.266		0.030
147	12.25	0.83	0.295		0.265	(0.266)		0.031
148	12.33	0.87	0.307		0.263	(0.276)		0.044
149	12.42	0.87	0.307		0.262	(0.276)		0.045
150	12.50	0.87	0.307		0.261	(0.276)		0.046
151	12.58	0.93	0.331		0.259	(0.298)		0.071
152	12.67	0.93	0.331		0.258	(0.298)		0.073

153	12.75	0.93	0.331		0.257	(0.298)	0.074
154	12.83	0.97	0.343		0.256	(0.308)	0.087
155	12.92	0.97	0.343		0.254	(0.308)	0.088
156	13.00	0.97	0.343		0.253	(0.308)	0.090
157	13.08	1.13	0.402		0.252	(0.361)	0.150
158	13.17	1.13	0.402		0.250	(0.361)	0.151
159	13.25	1.13	0.402		0.249	(0.361)	0.152
160	13.33	1.13	0.402		0.248	(0.361)	0.154
161	13.42	1.13	0.402		0.247	(0.361)	0.155
162	13.50	1.13	0.402		0.245	(0.361)	0.156
163	13.58	0.77	0.272		0.244	(0.244)	0.028
164	13.67	0.77	0.272		0.243	(0.244)	0.029
165	13.75	0.77	0.272		0.242	(0.244)	0.030
166	13.83	0.77	0.272		0.240	(0.244)	0.031
167	13.92	0.77	0.272		0.239	(0.244)	0.032
168	14.00	0.77	0.272		0.238	(0.244)	0.034
169	14.08	0.90	0.319		0.237	(0.287)	0.082
170	14.17	0.90	0.319		0.236	(0.287)	0.083
171	14.25	0.90	0.319		0.234	(0.287)	0.085
172	14.33	0.87	0.307		0.233	(0.276)	0.074
173	14.42	0.87	0.307		0.232	(0.276)	0.075
174	14.50	0.87	0.307		0.231	(0.276)	0.076
175	14.58	0.87	0.307		0.230	(0.276)	0.077
176	14.67	0.87	0.307		0.228	(0.276)	0.079
177	14.75	0.87	0.307		0.227	(0.276)	0.080
178	14.83	0.83	0.295		0.226	(0.266)	0.069
179	14.92	0.83	0.295		0.225	(0.266)	0.070
180	15.00	0.83	0.295		0.224	(0.266)	0.072
181	15.08	0.80	0.283		0.223	(0.255)	0.061
182	15.17	0.80	0.283		0.221	(0.255)	0.062
183	15.25	0.80	0.283		0.220	(0.255)	0.063
184	15.33	0.77	0.272		0.219	(0.244)	0.052
185	15.42	0.77	0.272		0.218	(0.244)	0.054
186	15.50	0.77	0.272		0.217	(0.244)	0.055
187	15.58	0.63	0.224	(0.216)		0.202	0.022
188	15.67	0.63	0.224	(0.215)		0.202	0.022
189	15.75	0.63	0.224	(0.214)		0.202	0.022
190	15.83	0.63	0.224	(0.213)		0.202	0.022
191	15.92	0.63	0.224	(0.211)		0.202	0.022
192	16.00	0.63	0.224	(0.210)		0.202	0.022
193	16.08	0.13	0.047	(0.209)		0.043	0.005
194	16.17	0.13	0.047	(0.208)		0.043	0.005
195	16.25	0.13	0.047	(0.207)		0.043	0.005
196	16.33	0.13	0.047	(0.206)		0.043	0.005
197	16.42	0.13	0.047	(0.205)		0.043	0.005
198	16.50	0.13	0.047	(0.204)		0.043	0.005
199	16.58	0.10	0.035	(0.203)		0.032	0.004
200	16.67	0.10	0.035	(0.202)		0.032	0.004
201	16.75	0.10	0.035	(0.201)		0.032	0.004
202	16.83	0.10	0.035	(0.200)		0.032	0.004
203	16.92	0.10	0.035	(0.199)		0.032	0.004
204	17.00	0.10	0.035	(0.198)		0.032	0.004
205	17.08	0.17	0.059	(0.197)		0.053	0.006
206	17.17	0.17	0.059	(0.196)		0.053	0.006
207	17.25	0.17	0.059	(0.195)		0.053	0.006
208	17.33	0.17	0.059	(0.194)		0.053	0.006
209	17.42	0.17	0.059	(0.193)		0.053	0.006
210	17.50	0.17	0.059	(0.192)		0.053	0.006
211	17.58	0.17	0.059	(0.191)		0.053	0.006
212	17.67	0.17	0.059	(0.190)		0.053	0.006
213	17.75	0.17	0.059	(0.189)		0.053	0.006
214	17.83	0.13	0.047	(0.188)		0.043	0.005
215	17.92	0.13	0.047	(0.187)		0.043	0.005
216	18.00	0.13	0.047	(0.186)		0.043	0.005
217	18.08	0.13	0.047	(0.185)		0.043	0.005
218	18.17	0.13	0.047	(0.185)		0.043	0.005
219	18.25	0.13	0.047	(0.184)		0.043	0.005
220	18.33	0.13	0.047	(0.183)		0.043	0.005
221	18.42	0.13	0.047	(0.182)		0.043	0.005
222	18.50	0.13	0.047	(0.181)		0.043	0.005

223	18.58	0.10	0.035	(0.180)	0.032	0.004
224	18.67	0.10	0.035	(0.179)	0.032	0.004
225	18.75	0.10	0.035	(0.178)	0.032	0.004
226	18.83	0.07	0.024	(0.177)	0.021	0.002
227	18.92	0.07	0.024	(0.177)	0.021	0.002
228	19.00	0.07	0.024	(0.176)	0.021	0.002
229	19.08	0.10	0.035	(0.175)	0.032	0.004
230	19.17	0.10	0.035	(0.174)	0.032	0.004
231	19.25	0.10	0.035	(0.173)	0.032	0.004
232	19.33	0.13	0.047	(0.173)	0.043	0.005
233	19.42	0.13	0.047	(0.172)	0.043	0.005
234	19.50	0.13	0.047	(0.171)	0.043	0.005
235	19.58	0.10	0.035	(0.170)	0.032	0.004
236	19.67	0.10	0.035	(0.169)	0.032	0.004
237	19.75	0.10	0.035	(0.169)	0.032	0.004
238	19.83	0.07	0.024	(0.168)	0.021	0.002
239	19.92	0.07	0.024	(0.167)	0.021	0.002
240	20.00	0.07	0.024	(0.166)	0.021	0.002
241	20.08	0.10	0.035	(0.166)	0.032	0.004
242	20.17	0.10	0.035	(0.165)	0.032	0.004
243	20.25	0.10	0.035	(0.164)	0.032	0.004
244	20.33	0.10	0.035	(0.163)	0.032	0.004
245	20.42	0.10	0.035	(0.163)	0.032	0.004
246	20.50	0.10	0.035	(0.162)	0.032	0.004
247	20.58	0.10	0.035	(0.161)	0.032	0.004
248	20.67	0.10	0.035	(0.161)	0.032	0.004
249	20.75	0.10	0.035	(0.160)	0.032	0.004
250	20.83	0.07	0.024	(0.159)	0.021	0.002
251	20.92	0.07	0.024	(0.159)	0.021	0.002
252	21.00	0.07	0.024	(0.158)	0.021	0.002
253	21.08	0.10	0.035	(0.157)	0.032	0.004
254	21.17	0.10	0.035	(0.157)	0.032	0.004
255	21.25	0.10	0.035	(0.156)	0.032	0.004
256	21.33	0.07	0.024	(0.156)	0.021	0.002
257	21.42	0.07	0.024	(0.155)	0.021	0.002
258	21.50	0.07	0.024	(0.155)	0.021	0.002
259	21.58	0.10	0.035	(0.154)	0.032	0.004
260	21.67	0.10	0.035	(0.153)	0.032	0.004
261	21.75	0.10	0.035	(0.153)	0.032	0.004
262	21.83	0.07	0.024	(0.152)	0.021	0.002
263	21.92	0.07	0.024	(0.152)	0.021	0.002
264	22.00	0.07	0.024	(0.151)	0.021	0.002
265	22.08	0.10	0.035	(0.151)	0.032	0.004
266	22.17	0.10	0.035	(0.150)	0.032	0.004
267	22.25	0.10	0.035	(0.150)	0.032	0.004
268	22.33	0.07	0.024	(0.149)	0.021	0.002
269	22.42	0.07	0.024	(0.149)	0.021	0.002
270	22.50	0.07	0.024	(0.148)	0.021	0.002
271	22.58	0.07	0.024	(0.148)	0.021	0.002
272	22.67	0.07	0.024	(0.148)	0.021	0.002
273	22.75	0.07	0.024	(0.147)	0.021	0.002
274	22.83	0.07	0.024	(0.147)	0.021	0.002
275	22.92	0.07	0.024	(0.146)	0.021	0.002
276	23.00	0.07	0.024	(0.146)	0.021	0.002
277	23.08	0.07	0.024	(0.146)	0.021	0.002
278	23.17	0.07	0.024	(0.145)	0.021	0.002
279	23.25	0.07	0.024	(0.145)	0.021	0.002
280	23.33	0.07	0.024	(0.145)	0.021	0.002
281	23.42	0.07	0.024	(0.145)	0.021	0.002
282	23.50	0.07	0.024	(0.144)	0.021	0.002
283	23.58	0.07	0.024	(0.144)	0.021	0.002
284	23.67	0.07	0.024	(0.144)	0.021	0.002
285	23.75	0.07	0.024	(0.144)	0.021	0.002
286	23.83	0.07	0.024	(0.143)	0.021	0.002
287	23.92	0.07	0.024	(0.143)	0.021	0.002
288	24.00	0.07	0.024	(0.143)	0.021	0.002

(Loss Rate Not Used)

Sum = 100.0 Sum = 5.3

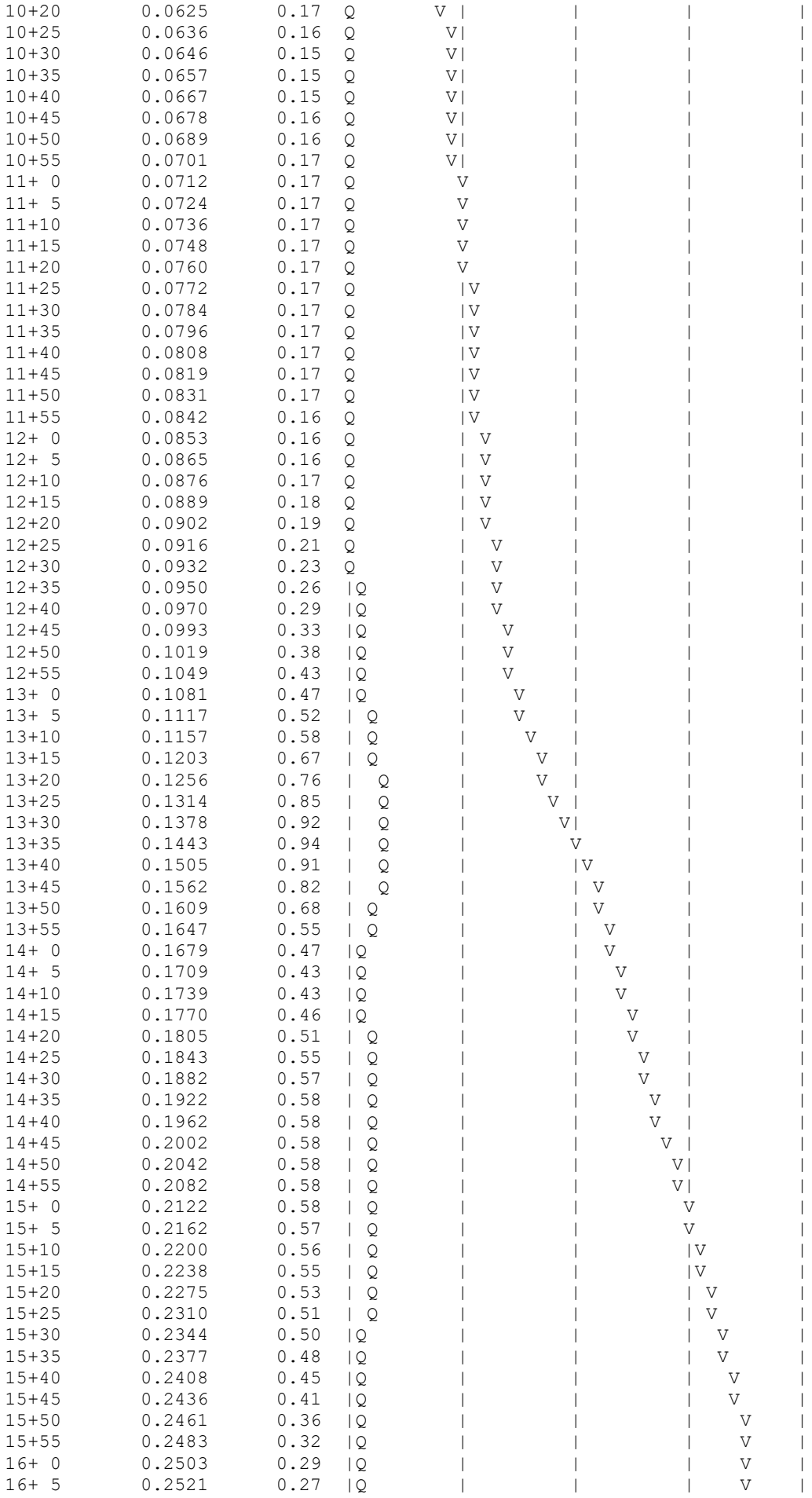
Flood volume = Effective rainfall 0.44(In)

times area 7.6(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)

```
    Total soil loss =      2.51(In)
    Total soil loss =     1.597(Ac.Ft)
    Total rainfall =      2.95(In)
    Flood volume =       12231.2 Cubic Feet
    Total soil loss =       69547.5 Cubic Feet
    ---------------------------------------------------------------------
     Peak flow rate of this hydrograph =      0.943(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       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0000      0.00  Q         |         |         |         |
  0+20       0.0001      0.01  Q         |         |         |         |
  0+25       0.0002      0.01  Q         |         |         |         |
  0+30       0.0003      0.01  Q         |         |         |         |
  0+35       0.0004      0.02  Q         |         |         |         |
  0+40       0.0005      0.02  Q         |         |         |         |
  0+45       0.0006      0.02  Q         |         |         |         |
  0+50       0.0008      0.02  Q         |         |         |         |
  0+55       0.0009      0.02  Q         |         |         |         |
  1+ 0       0.0011      0.02  Q         |         |         |         |
  1+ 5       0.0013      0.03  Q         |         |         |         |
  1+10       0.0015      0.03  Q         |         |         |         |
  1+15       0.0017      0.03  Q         |         |         |         |
  1+20       0.0019      0.03  Q         |         |         |         |
  1+25       0.0020      0.03  Q         |         |         |         |
  1+30       0.0022      0.03  Q         |         |         |         |
  1+35       0.0024      0.03  Q         |         |         |         |
  1+40       0.0026      0.03  Q         |         |         |         |
  1+45       0.0028      0.03  Q         |         |         |         |
  1+50       0.0029      0.03  Q         |         |         |         |
  1+55       0.0031      0.03  Q         |         |         |         |
  2+ 0       0.0033      0.03  Q         |         |         |         |
  2+ 5       0.0035      0.03  Q         |         |         |         |
  2+10       0.0038      0.03  Q         |         |         |         |
  2+15       0.0040      0.03  Q         |         |         |         |
  2+20       0.0042      0.03  Q         |         |         |         |
  2+25       0.0044      0.03  Q         |         |         |         |
  2+30       0.0047      0.03  Q         |         |         |         |
  2+35       0.0049      0.03  Q         |         |         |         |
  2+40       0.0052      0.04  Q         |         |         |         |
  2+45       0.0054      0.04  Q         |         |         |         |
  2+50       0.0057      0.04  Q         |         |         |         |
  2+55       0.0060      0.04  Q         |         |         |         |
  3+ 0       0.0063      0.04  Q         |         |         |         |
  3+ 5       0.0065      0.04  Q         |         |         |         |
  3+10       0.0068      0.04  Q         |         |         |         |
  3+15       0.0071      0.04  QV        |         |         |         |
  3+20       0.0074      0.04  QV        |         |         |         |
  3+25       0.0077      0.04  QV        |         |         |         |
  3+30       0.0080      0.04  QV        |         |         |         |
  3+35       0.0083      0.04  QV        |         |         |         |
  3+40       0.0086      0.04  QV        |         |         |         |
  3+45       0.0089      0.04  QV        |         |         |         |
  3+50       0.0092      0.04  QV        |         |         |         |
  3+55       0.0096      0.05  QV        |         |         |         |
  4+ 0       0.0099      0.05  QV        |         |         |         |
  4+ 5       0.0102      0.05  QV        |         |         |         |
  4+10       0.0106      0.05  QV        |         |         |         |
  4+15       0.0109      0.05  QV        |         |         |         |
  4+20       0.0113      0.05  QV        |         |         |         |
  4+25       0.0116      0.05  QV        |         |         |         |
```

4+30	0.0120	0.05	QV	|	|	|	|
4+35	0.0124	0.06	QV	|	|	|	|
4+40	0.0128	0.06	QV	|	|	|	|
4+45	0.0132	0.06	QV	|	|	|	|
4+50	0.0136	0.06	QV	|	|	|	|
4+55	0.0140	0.06	QV	|	|	|	|
5+ 0	0.0144	0.06	Q V	|	|	|	|
5+ 5	0.0149	0.06	Q V	|	|	|	|
5+10	0.0153	0.06	Q V	|	|	|	|
5+15	0.0158	0.06	Q V	|	|	|	|
5+20	0.0162	0.06	Q V	|	|	|	|
5+25	0.0166	0.06	Q V	|	|	|	|
5+30	0.0170	0.06	Q V	|	|	|	|
5+35	0.0174	0.06	Q V	|	|	|	|
5+40	0.0179	0.06	Q V	|	|	|	|
5+45	0.0183	0.06	Q V	|	|	|	|
5+50	0.0188	0.07	Q V	|	|	|	|
5+55	0.0192	0.07	Q V	|	|	|	|
6+ 0	0.0197	0.07	Q V	|	|	|	|
6+ 5	0.0202	0.07	Q V	|	|	|	|
6+10	0.0207	0.07	Q V	|	|	|	|
6+15	0.0212	0.07	Q V	|	|	|	|
6+20	0.0217	0.07	Q V	|	|	|	|
6+25	0.0222	0.08	Q V	|	|	|	|
6+30	0.0227	0.08	Q V	|	|	|	|
6+35	0.0232	0.08	Q V	|	|	|	|
6+40	0.0238	0.08	Q V	|	|	|	|
6+45	0.0243	0.08	Q V	|	|	|	|
6+50	0.0249	0.08	Q V	|	|	|	|
6+55	0.0255	0.08	Q V	|	|	|	|
7+ 0	0.0261	0.09	Q V	|	|	|	|
7+ 5	0.0267	0.09	Q V	|	|	|	|
7+10	0.0273	0.09	Q V	|	|	|	|
7+15	0.0279	0.09	Q V	|	|	|	|
7+20	0.0285	0.09	Q V	|	|	|	|
7+25	0.0291	0.09	Q V	|	|	|	|
7+30	0.0297	0.09	Q V	|	|	|	|
7+35	0.0304	0.09	Q V	|	|	|	|
7+40	0.0310	0.09	Q V	|	|	|	|
7+45	0.0317	0.10	Q V	|	|	|	|
7+50	0.0324	0.10	Q V	|	|	|	|
7+55	0.0331	0.10	Q V	|	|	|	|
8+ 0	0.0338	0.10	Q V	|	|	|	|
8+ 5	0.0345	0.11	Q V	|	|	|	|
8+10	0.0353	0.11	Q V	|	|	|	|
8+15	0.0361	0.11	Q V	|	|	|	|
8+20	0.0369	0.12	Q V	|	|	|	|
8+25	0.0377	0.12	Q V	|	|	|	|
8+30	0.0386	0.13	Q V	|	|	|	|
8+35	0.0395	0.13	Q V	|	|	|	|
8+40	0.0404	0.13	Q V	|	|	|	|
8+45	0.0413	0.13	Q V	|	|	|	|
8+50	0.0422	0.13	Q V	|	|	|	|
8+55	0.0431	0.14	Q V	|	|	|	|
9+ 0	0.0441	0.14	Q V	|	|	|	|
9+ 5	0.0451	0.14	Q V	|	|	|	|
9+10	0.0461	0.15	Q V	|	|	|	|
9+15	0.0471	0.15	Q V	|	|	|	|
9+20	0.0482	0.15	Q V	|	|	|	|
9+25	0.0493	0.16	Q V	|	|	|	|
9+30	0.0504	0.16	Q V	|	|	|	|
9+35	0.0515	0.17	Q V	|	|	|	|
9+40	0.0527	0.17	Q V	|	|	|	|
9+45	0.0539	0.17	Q V	|	|	|	|
9+50	0.0551	0.18	Q V	|	|	|	|
9+55	0.0563	0.18	Q V	|	|	|	|
10+ 0	0.0576	0.18	Q V	|	|	|	|
10+ 5	0.0589	0.18	Q V	|	|	|	|
10+10	0.0601	0.18	Q V	|	|	|	|
10+15	0.0613	0.18	Q V	|	|	|	|



16+10	0.2538	0.24	Q	|	|	|	V |
16+15	0.2553	0.21	Q	|	|	|	V |
16+20	0.2565	0.18	Q	|	|	|	V |
16+25	0.2575	0.15	Q	|	|	|	V |
16+30	0.2585	0.13	Q	|	|	|	V |
16+35	0.2593	0.12	Q	|	|	|	V |
16+40	0.2600	0.11	Q	|	|	|	V |
16+45	0.2607	0.10	Q	|	|	|	V |
16+50	0.2613	0.09	Q	|	|	|	V |
16+55	0.2618	0.08	Q	|	|	|	V |
17+ 0	0.2623	0.07	Q	|	|	|	V |
17+ 5	0.2628	0.07	Q	|	|	|	V |
17+10	0.2632	0.06	Q	|	|	|	V |
17+15	0.2637	0.06	Q	|	|	|	V |
17+20	0.2641	0.06	Q	|	|	|	V |
17+25	0.2645	0.06	Q	|	|	|	V |
17+30	0.2649	0.06	Q	|	|	|	V |
17+35	0.2653	0.06	Q	|	|	|	V |
17+40	0.2657	0.06	Q	|	|	|	V |
17+45	0.2660	0.05	Q	|	|	|	V |
17+50	0.2664	0.05	Q	|	|	|	V |
17+55	0.2668	0.05	Q	|	|	|	V |
18+ 0	0.2671	0.05	Q	|	|	|	V |
18+ 5	0.2674	0.05	Q	|	|	|	V |
18+10	0.2677	0.04	Q	|	|	|	V |
18+15	0.2680	0.04	Q	|	|	|	V |
18+20	0.2683	0.04	Q	|	|	|	V |
18+25	0.2685	0.04	Q	|	|	|	V |
18+30	0.2688	0.04	Q	|	|	|	V |
18+35	0.2691	0.04	Q	|	|	|	V |
18+40	0.2693	0.04	Q	|	|	|	V |
18+45	0.2696	0.04	Q	|	|	|	V |
18+50	0.2698	0.03	Q	|	|	|	V |
18+55	0.2700	0.03	Q	|	|	|	V |
19+ 0	0.2702	0.03	Q	|	|	|	V |
19+ 5	0.2704	0.03	Q	|	|	|	V |
19+10	0.2706	0.03	Q	|	|	|	V |
19+15	0.2707	0.03	Q	|	|	|	V |
19+20	0.2709	0.03	Q	|	|	|	V |
19+25	0.2711	0.03	Q	|	|	|	V |
19+30	0.2713	0.03	Q	|	|	|	V |
19+35	0.2715	0.03	Q	|	|	|	V |
19+40	0.2718	0.03	Q	|	|	|	V |
19+45	0.2720	0.03	Q	|	|	|	V |
19+50	0.2722	0.03	Q	|	|	|	V |
19+55	0.2724	0.03	Q	|	|	|	V |
20+ 0	0.2726	0.03	Q	|	|	|	V |
20+ 5	0.2727	0.03	Q	|	|	|	V |
20+10	0.2729	0.02	Q	|	|	|	V |
20+15	0.2731	0.02	Q	|	|	|	V |
20+20	0.2733	0.03	Q	|	|	|	V |
20+25	0.2734	0.03	Q	|	|	|	V |
20+30	0.2736	0.03	Q	|	|	|	V |
20+35	0.2738	0.03	Q	|	|	|	V|
20+40	0.2740	0.03	Q	|	|	|	V|
20+45	0.2742	0.03	Q	|	|	|	V|
20+50	0.2744	0.03	Q	|	|	|	V|
20+55	0.2745	0.03	Q	|	|	|	V|
21+ 0	0.2747	0.03	Q	|	|	|	V|
21+ 5	0.2749	0.02	Q	|	|	|	V|
21+10	0.2750	0.02	Q	|	|	|	V|
21+15	0.2752	0.02	Q	|	|	|	V|
21+20	0.2754	0.02	Q	|	|	|	V|
21+25	0.2755	0.02	Q	|	|	|	V|
21+30	0.2757	0.02	Q	|	|	|	V|
21+35	0.2758	0.02	Q	|	|	|	V|
21+40	0.2760	0.02	Q	|	|	|	V|
21+45	0.2762	0.02	Q	|	|	|	V|
21+50	0.2763	0.02	Q	|	|	|	V|
21+55	0.2765	0.02	Q	|	|	|	V|

22+ 0	0.2766	0.02	Q	|	|	|	V|
22+ 5	0.2768	0.02	Q	|	|	|	V|
22+10	0.2769	0.02	Q	|	|	|	V|
22+15	0.2771	0.02	Q	|	|	|	V|
22+20	0.2773	0.02	Q	|	|	|	V|
22+25	0.2774	0.02	Q	|	|	|	V|
22+30	0.2776	0.02	Q	|	|	|	V|
22+35	0.2777	0.02	Q	|	|	|	V|
22+40	0.2779	0.02	Q	|	|	|	V|
22+45	0.2780	0.02	Q	|	|	|	V|
22+50	0.2782	0.02	Q	|	|	|	V|
22+55	0.2783	0.02	Q	|	|	|	V|
23+ 0	0.2784	0.02	Q	|	|	|	V|
23+ 5	0.2786	0.02	Q	|	|	|	V|
23+10	0.2787	0.02	Q	|	|	|	V|
23+15	0.2788	0.02	Q	|	|	|	V|
23+20	0.2790	0.02	Q	|	|	|	V|
23+25	0.2791	0.02	Q	|	|	|	V|
23+30	0.2792	0.02	Q	|	|	|	V|
23+35	0.2793	0.02	Q	|	|	|	V|
23+40	0.2795	0.02	Q	|	|	|	V|
23+45	0.2796	0.02	Q	|	|	|	V|
23+50	0.2797	0.02	Q	|	|	|	V|
23+55	0.2799	0.02	Q	|	|	|	V|
24+ 0	0.2800	0.02	Q	|	|	|	V|
24+ 5	0.2801	0.02	Q	|	|	|	V|
24+10	0.2802	0.02	Q	|	|	|	V|
24+15	0.2803	0.01	Q	|	|	|	V|
24+20	0.2804	0.01	Q	|	|	|	V|
24+25	0.2805	0.01	Q	|	|	|	V|
24+30	0.2805	0.01	Q	|	|	|	V|
24+35	0.2805	0.01	Q	|	|	|	V|
24+40	0.2806	0.00	Q	|	|	|	V|
24+45	0.2806	0.00	Q	|	|	|	V|
24+50	0.2806	0.00	Q	|	|	|	V|
24+55	0.2806	0.00	Q	|	|	|	V|
25+ 0	0.2807	0.00	Q	|	|	|	V|
25+ 5	0.2807	0.00	Q	|	|	|	V|
25+10	0.2807	0.00	Q	|	|	|	V|
25+15	0.2807	0.00	Q	|	|	|	V|
25+20	0.2807	0.00	Q	|	|	|	V|
25+25	0.2807	0.00	Q	|	|	|	V|
25+30	0.2807	0.00	Q	|	|	|	V|
25+35	0.2807	0.00	Q	|	|	|	V|
25+40	0.2808	0.00	Q	|	|	|	V|
25+45	0.2808	0.00	Q	|	|	|	V|
25+50	0.2808	0.00	Q	|	|	|	V|
25+55	0.2808	0.00	Q	|	|	|	V|
26+ 0	0.2808	0.00	Q	|	|	|	V|
26+ 5	0.2808	0.00	Q	|	|	|	V|
26+10	0.2808	0.00	Q	|	|	|	V|
26+15	0.2808	0.00	Q	|	|	|	V|
26+20	0.2808	0.00	Q	|	|	|	V|
26+25	0.2808	0.00	Q	|	|	|	V|
26+30	0.2808	0.00	Q	|	|	|	V|
26+35	0.2808	0.00	Q	|	|	|	V|
26+40	0.2808	0.00	Q	|	|	|	V|
26+45	0.2808	0.00	Q	|	|	|	V

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

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Study date 02/20/20 File: 8946E2A1110.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
10 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	0.55	4.20

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	1.30	9.92

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.859(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.858(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.340	0.141	(	0.306)	0.199
2	0.17	4.20	0.433	0.141	(	0.389)	0.291
3	0.25	4.40	0.453	0.141	(	0.408)	0.312
4	0.33	4.80	0.494	0.141	(	0.445)	0.353
5	0.42	5.20	0.536	0.141	(	0.482)	0.394
6	0.50	6.20	0.639	0.141	(	0.575)	0.497
7	0.58	6.80	0.701	0.141	(	0.630)	0.559
8	0.67	8.80	0.907	0.141	(	0.816)	0.765
9	0.75	13.90	1.432	0.141	(	1.289)	1.291
10	0.83	31.40	3.235	0.141	(	2.911)	3.093

```
 11   0.92     7.20      0.742          0.141    (  0.668)        0.600
 12   1.00     3.80      0.391          0.141    (  0.352)        0.250
             (Loss Rate Not Used)
    Sum =     100.0                                    Sum =     8.6
      Flood volume = Effective rainfall      0.72(In)
       times area       7.6(Ac.)/[(In)/(Ft.)] =       0.5(Ac.Ft)
      Total soil loss =      0.14(In)
      Total soil loss =     0.090(Ac.Ft)
      Total rainfall =      0.86(In)
      Flood volume =       19861.4 Cubic Feet
      Total soil loss =        3916.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      7.481(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        2.5       5.0       7.5      10.0
 ------------------------------------------------------------------------
   0+ 5       0.0002      0.03  Q         |         |         |         |
   0+10       0.0013      0.15  Q         |         |         |         |
   0+15       0.0040      0.39  VQ        |         |         |         |
   0+20       0.0091      0.74  V Q       |         |         |         |
   0+25       0.0170      1.15  |V  Q     |         |         |         |
   0+30       0.0275      1.52  | V   Q   |         |         |         |
   0+35       0.0404      1.88  |  V   Q  |         |         |         |
   0+40       0.0560      2.27  |   V    Q|         |         |         |
   0+45       0.0755      2.83  |     V   |Q        |         |         |
   0+50       0.1026      3.93  |        V|    Q    |         |         |
   0+55       0.1404      5.48  |         | V       |Q        |         |
   1+ 0       0.1877      6.87  |         |     V   |      Q  |         |
   1+ 5       0.2393      7.48  |         |         V        Q|         |
   1+10       0.2855      6.71  |         |         |    VQ   |         |
   1+15       0.3192      4.90  |         |        Q|       V |         |
   1+20       0.3428      3.42  |         |  Q      |         V         |
   1+25       0.3595      2.43  |        Q|         |         |V        |
   1+30       0.3725      1.89  |      Q  |         |         | V       |
   1+35       0.3832      1.55  |     Q   |         |         |  V      |
   1+40       0.3923      1.31  |    Q    |         |         |   V     |
   1+45       0.4001      1.14  |   Q     |         |         |    V    |
   1+50       0.4068      0.98  |  Q      |         |         |    V    |
   1+55       0.4126      0.85  |  Q      |         |         |     V   |
   2+ 0       0.4179      0.76  |  Q      |         |         |     V   |
   2+ 5       0.4224      0.66  | Q       |         |         |      V  |
   2+10       0.4264      0.58  | Q       |         |         |      V  |
   2+15       0.4299      0.51  | Q       |         |         |      V  |
   2+20       0.4330      0.45  |Q        |         |         |      V  |
   2+25       0.4359      0.42  |Q        |         |         |       V |
   2+30       0.4386      0.39  |Q        |         |         |       V |
   2+35       0.4410      0.35  |Q        |         |         |       V |
   2+40       0.4431      0.30  |Q        |         |         |       V |
   2+45       0.4450      0.28  |Q        |         |         |        V|
   2+50       0.4467      0.25  Q         |         |         |        V|
   2+55       0.4483      0.23  Q         |         |         |        V|
   3+ 0       0.4496      0.20  Q         |         |         |        V|
   3+ 5       0.4508      0.17  Q         |         |         |        V|
   3+10       0.4518      0.15  Q         |         |         |        V|
   3+15       0.4528      0.13  Q         |         |         |        V|
   3+20       0.4536      0.12  Q         |         |         |        V|
   3+25       0.4544      0.11  Q         |         |         |        V|
   3+30       0.4551      0.10  Q         |         |         |        V|
   3+35       0.4558      0.10  Q         |         |         |        V|
   3+40       0.4559      0.02  Q         |         |         |        V|
   3+45       0.4560      0.01  Q         |         |         |        V|
------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946E2A1310.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
10 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	0.90	6.87

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	2.25	17.17

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.455(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.455(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

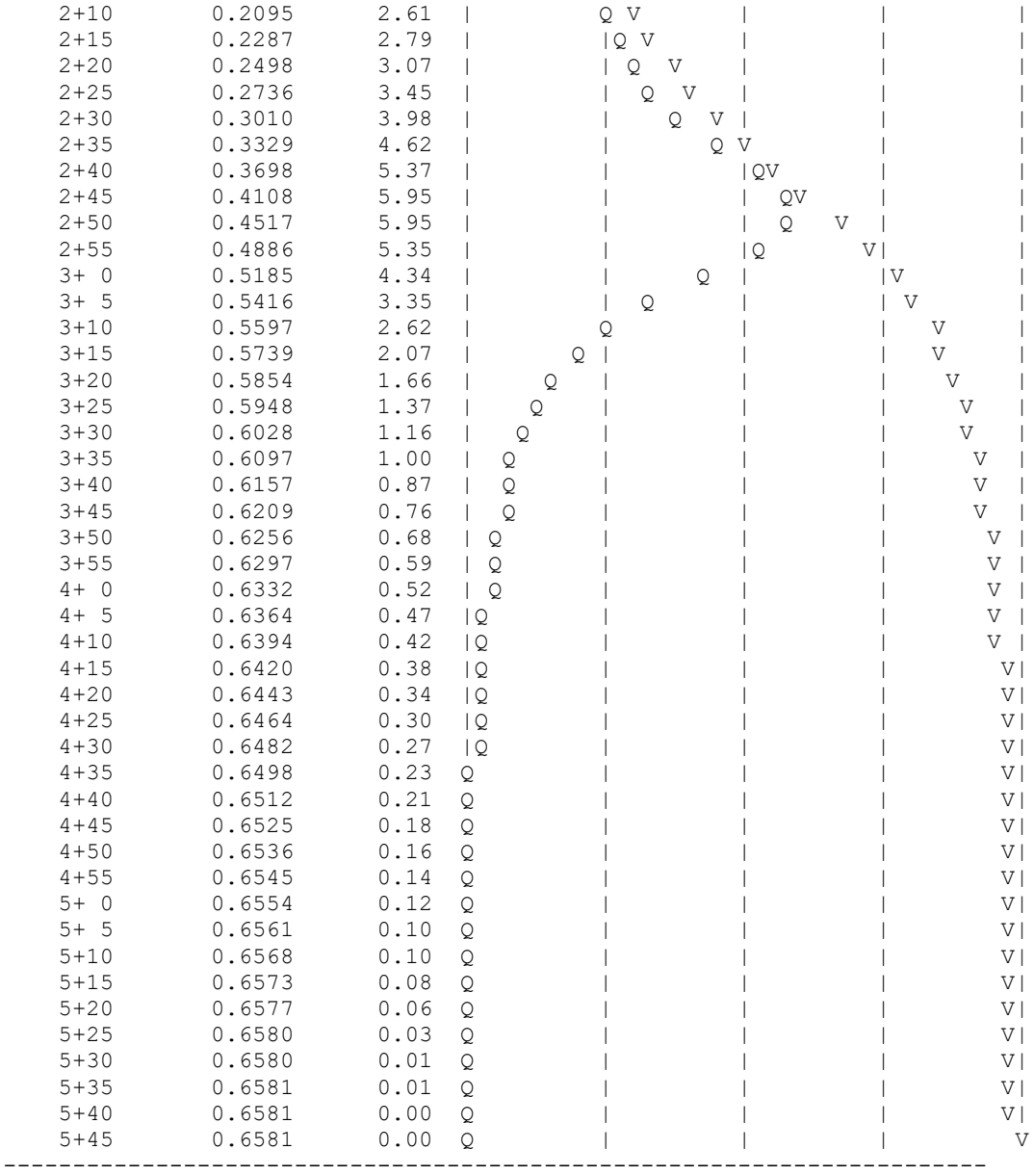
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.227	0.141	(	0.204)	0.086
2	0.17	1.30	0.227	0.141	(	0.204)	0.086
3	0.25	1.10	0.192	0.141	(	0.173)	0.051
4	0.33	1.50	0.262	0.141	(	0.236)	0.121
5	0.42	1.50	0.262	0.141	(	0.236)	0.121
6	0.50	1.80	0.314	0.141	(	0.283)	0.173
7	0.58	1.50	0.262	0.141	(	0.236)	0.121
8	0.67	1.80	0.314	0.141	(	0.283)	0.173
9	0.75	1.80	0.314	0.141	(	0.283)	0.173
10	0.83	1.50	0.262	0.141	(	0.236)	0.121
11	0.92	1.60	0.279	0.141	(	0.251)	0.138
12	1.00	1.80	0.314	0.141	(	0.283)	0.173

```
13   1.08     2.20      0.384          0.141    (  0.346)        0.243
14   1.17     2.20      0.384          0.141    (  0.346)        0.243
15   1.25     2.20      0.384          0.141    (  0.346)        0.243
16   1.33     2.00      0.349          0.141    (  0.314)        0.208
17   1.42     2.60      0.454          0.141    (  0.409)        0.313
18   1.50     2.70      0.472          0.141    (  0.424)        0.330
19   1.58     2.40      0.419          0.141    (  0.377)        0.278
20   1.67     2.70      0.472          0.141    (  0.424)        0.330
21   1.75     3.30      0.576          0.141    (  0.519)        0.435
22   1.83     3.10      0.541          0.141    (  0.487)        0.400
23   1.92     2.90      0.506          0.141    (  0.456)        0.365
24   2.00     3.00      0.524          0.141    (  0.472)        0.383
25   2.08     3.10      0.541          0.141    (  0.487)        0.400
26   2.17     4.20      0.733          0.141    (  0.660)        0.592
27   2.25     5.00      0.873          0.141    (  0.786)        0.732
28   2.33     3.50      0.611          0.141    (  0.550)        0.470
29   2.42     6.80      1.188          0.141    (  1.069)        1.046
30   2.50     7.30      1.275          0.141    (  1.147)        1.133
31   2.58     8.20      1.432          0.141    (  1.289)        1.291
32   2.67     5.90      1.030          0.141    (  0.927)        0.889
33   2.75     2.00      0.349          0.141    (  0.314)        0.208
34   2.83     1.80      0.314          0.141    (  0.283)        0.173
35   2.92     1.80      0.314          0.141    (  0.283)        0.173
36   3.00     0.60      0.105       (  0.141)       0.094        0.010
            (Loss Rate Not Used)
   Sum =     100.0                                          Sum =    12.4
     Flood volume = Effective rainfall      1.04(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       0.7(Ac.Ft)
     Total soil loss =      0.42(In)
     Total soil loss =     0.267(Ac.Ft)
     Total rainfall =      1.46(In)
     Flood volume =       28668.4 Cubic Feet
     Total soil loss =       11640.3 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      5.948(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q         |         |         |         |
  0+10       0.0005      0.06  Q         |         |         |         |
  0+15       0.0014      0.13  Q         |         |         |         |
  0+20       0.0030      0.23  Q         |         |         |         |
  0+25       0.0054      0.34  VQ        |         |         |         |
  0+30       0.0084      0.44  VQ        |         |         |         |
  0+35       0.0122      0.55  V Q       |         |         |         |
  0+40       0.0168      0.66  |VQ       |         |         |         |
  0+45       0.0221      0.77  |V Q      |         |         |         |
  0+50       0.0279      0.85  |V Q      |         |         |         |
  0+55       0.0341      0.90  | VQ      |         |         |         |
  1+ 0       0.0406      0.94  | VQ      |         |         |         |
  1+ 5       0.0472      0.97  | VQ      |         |         |         |
  1+10       0.0544      1.04  |  VQ     |         |         |         |
  1+15       0.0624      1.16  |  VQ     |         |         |         |
  1+20       0.0713      1.30  |   VQ    |         |         |         |
  1+25       0.0811      1.42  |   VQ    |         |         |         |
  1+30       0.0916      1.53  |    VQ   |         |         |         |
  1+35       0.1029      1.64  |     Q   |         |         |         |
  1+40       0.1151      1.77  |     VQ  |         |         |         |
  1+45       0.1283      1.92  |      Q  |         |         |         |
  1+50       0.1425      2.07  |       Q |         |         |         |
  1+55       0.1579      2.22  |       QV|         |         |         |
  2+ 0       0.1743      2.38  |        QV         |         |         |
  2+ 5       0.1915      2.51  |         QV        |         |         |
```



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 02/20/20 File: 8946E2A1610.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
10 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	1.30	9.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	3.00	22.89

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.999(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.120	(0.141)		0.108	0.012
2	0.17	0.60	0.144	(0.141)		0.130	0.014
3	0.25	0.60	0.144	(0.141)		0.130	0.014
4	0.33	0.60	0.144	(0.141)		0.130	0.014
5	0.42	0.60	0.144	(0.141)		0.130	0.014
6	0.50	0.70	0.168	0.141	(	0.151)	0.027
7	0.58	0.70	0.168	0.141	(	0.151)	0.027
8	0.67	0.70	0.168	0.141	(	0.151)	0.027
9	0.75	0.70	0.168	0.141	(	0.151)	0.027
10	0.83	0.70	0.168	0.141	(	0.151)	0.027
11	0.92	0.70	0.168	0.141	(	0.151)	0.027
12	1.00	0.80	0.192	0.141	(	0.173)	0.051

13	1.08	0.80	0.192	0.141	(	0.173)	0.051
14	1.17	0.80	0.192	0.141	(	0.173)	0.051
15	1.25	0.80	0.192	0.141	(	0.173)	0.051
16	1.33	0.80	0.192	0.141	(	0.173)	0.051
17	1.42	0.80	0.192	0.141	(	0.173)	0.051
18	1.50	0.80	0.192	0.141	(	0.173)	0.051
19	1.58	0.80	0.192	0.141	(	0.173)	0.051
20	1.67	0.80	0.192	0.141	(	0.173)	0.051
21	1.75	0.80	0.192	0.141	(	0.173)	0.051
22	1.83	0.80	0.192	0.141	(	0.173)	0.051
23	1.92	0.80	0.192	0.141	(	0.173)	0.051
24	2.00	0.90	0.216	0.141	(	0.194)	0.075
25	2.08	0.80	0.192	0.141	(	0.173)	0.051
26	2.17	0.90	0.216	0.141	(	0.194)	0.075
27	2.25	0.90	0.216	0.141	(	0.194)	0.075
28	2.33	0.90	0.216	0.141	(	0.194)	0.075
29	2.42	0.90	0.216	0.141	(	0.194)	0.075
30	2.50	0.90	0.216	0.141	(	0.194)	0.075
31	2.58	0.90	0.216	0.141	(	0.194)	0.075
32	2.67	0.90	0.216	0.141	(	0.194)	0.075
33	2.75	1.00	0.240	0.141	(	0.216)	0.099
34	2.83	1.00	0.240	0.141	(	0.216)	0.099
35	2.92	1.00	0.240	0.141	(	0.216)	0.099
36	3.00	1.00	0.240	0.141	(	0.216)	0.099
37	3.08	1.00	0.240	0.141	(	0.216)	0.099
38	3.17	1.10	0.264	0.141	(	0.238)	0.123
39	3.25	1.10	0.264	0.141	(	0.238)	0.123
40	3.33	1.10	0.264	0.141	(	0.238)	0.123
41	3.42	1.20	0.288	0.141	(	0.259)	0.147
42	3.50	1.30	0.312	0.141	(	0.281)	0.170
43	3.58	1.40	0.336	0.141	(	0.302)	0.194
44	3.67	1.40	0.336	0.141	(	0.302)	0.194
45	3.75	1.50	0.360	0.141	(	0.324)	0.218
46	3.83	1.50	0.360	0.141	(	0.324)	0.218
47	3.92	1.60	0.384	0.141	(	0.345)	0.242
48	4.00	1.60	0.384	0.141	(	0.345)	0.242
49	4.08	1.70	0.408	0.141	(	0.367)	0.266
50	4.17	1.80	0.432	0.141	(	0.389)	0.290
51	4.25	1.90	0.456	0.141	(	0.410)	0.314
52	4.33	2.00	0.480	0.141	(	0.432)	0.338
53	4.42	2.10	0.504	0.141	(	0.453)	0.362
54	4.50	2.10	0.504	0.141	(	0.453)	0.362
55	4.58	2.20	0.528	0.141	(	0.475)	0.386
56	4.67	2.30	0.552	0.141	(	0.497)	0.410
57	4.75	2.40	0.576	0.141	(	0.518)	0.434
58	4.83	2.40	0.576	0.141	(	0.518)	0.434
59	4.92	2.50	0.600	0.141	(	0.540)	0.458
60	5.00	2.60	0.624	0.141	(	0.561)	0.482
61	5.08	3.10	0.744	0.141	(	0.669)	0.602
62	5.17	3.60	0.864	0.141	(	0.777)	0.722
63	5.25	3.90	0.936	0.141	(	0.842)	0.794
64	5.33	4.20	1.008	0.141	(	0.907)	0.866
65	5.42	4.70	1.128	0.141	(	1.015)	0.986
66	5.50	5.60	1.344	0.141	(	1.209)	1.202
67	5.58	1.90	0.456	0.141	(	0.410)	0.314
68	5.67	0.90	0.216	0.141	(	0.194)	0.075
69	5.75	0.60	0.144	(0.141)		0.130	0.014
70	5.83	0.50	0.120	(0.141)		0.108	0.012
71	5.92	0.30	0.072	(0.141)		0.065	0.007
72	6.00	0.20	0.048	(0.141)		0.043	0.005

(Loss Rate Not Used)

Sum = 100.0 Sum = 14.1

Flood volume = Effective rainfall 1.18(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)
Total soil loss = 0.82(In)
Total soil loss = 0.523(Ac.Ft)
Total rainfall = 2.00(In)
Flood volume = 32572.1 Cubic Feet
Total soil loss = 22803.5 Cubic Feet

Peak flow rate of this hydrograph = 5.494(CFS)

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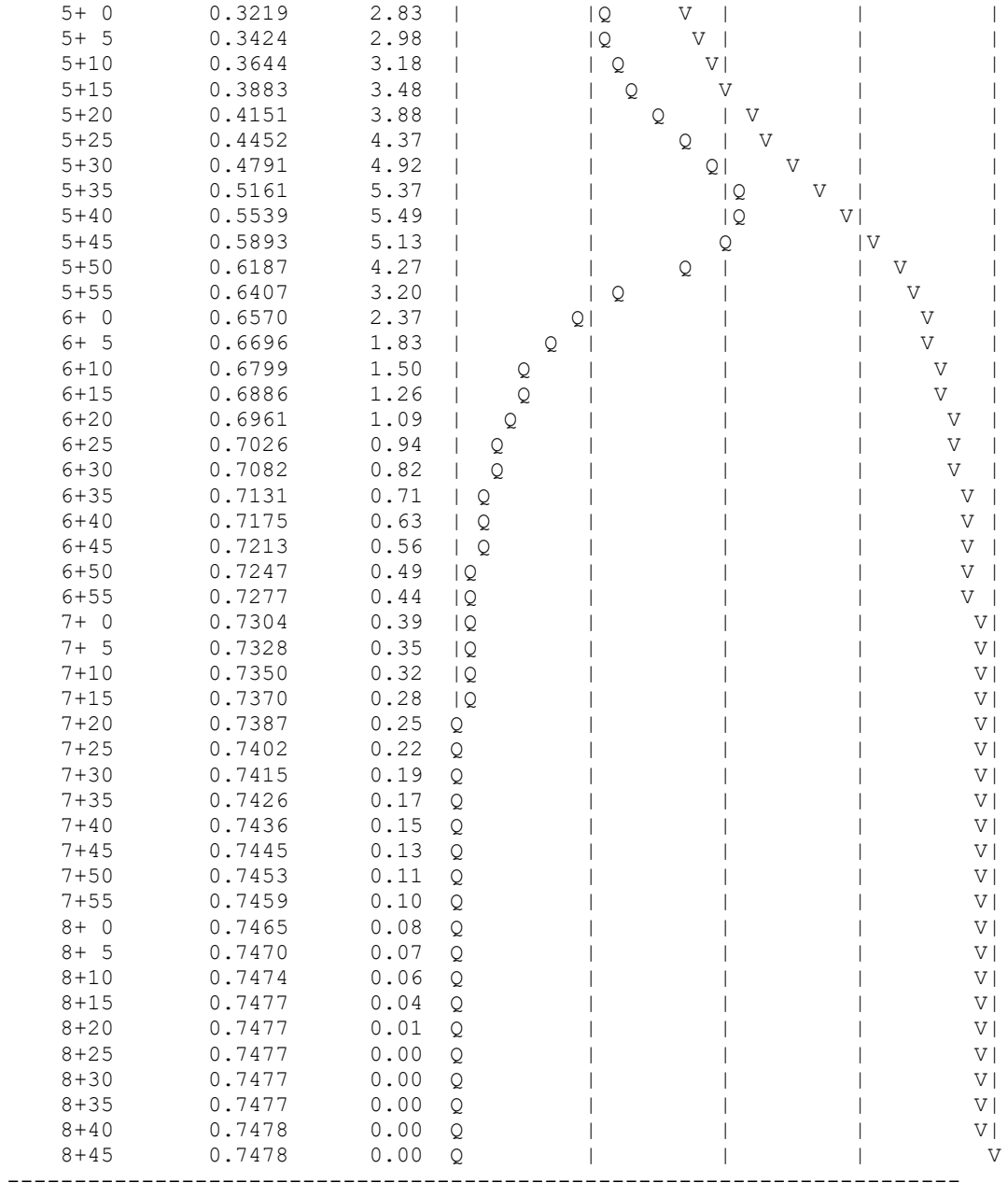
6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.01	Q				
0+15	0.0002	0.02	Q				
0+20	0.0005	0.04	Q				
0+25	0.0009	0.06	Q				
0+30	0.0014	0.07	Q				
0+35	0.0019	0.08	Q				
0+40	0.0026	0.10	Q				
0+45	0.0035	0.12	Q				
0+50	0.0044	0.14	Q				
0+55	0.0055	0.15	Q				
1+ 0	0.0066	0.16	Q				
1+ 5	0.0078	0.18	Q				
1+10	0.0093	0.21	Q				
1+15	0.0110	0.24	Q				
1+20	0.0129	0.28	VQ				
1+25	0.0149	0.30	VQ				
1+30	0.0171	0.31	VQ				
1+35	0.0193	0.32	|Q				
1+40	0.0216	0.33	|Q				
1+45	0.0240	0.34	|Q				
1+50	0.0263	0.35	|Q				
1+55	0.0288	0.35	|Q				
2+ 0	0.0312	0.36	|Q				
2+ 5	0.0338	0.37	|Q				
2+10	0.0365	0.39	|Q				
2+15	0.0393	0.41	|QV				
2+20	0.0424	0.44	|QV				
2+25	0.0455	0.46	|QV				
2+30	0.0489	0.48	|QV				
2+35	0.0523	0.50	| Q				
2+40	0.0558	0.51	| Q				
2+45	0.0595	0.53	| QV				
2+50	0.0632	0.55	| QV				
2+55	0.0672	0.57	| QV				
3+ 0	0.0714	0.61	| QV				
3+ 5	0.0758	0.64	| Q V				
3+10	0.0804	0.67	| Q V				
3+15	0.0852	0.70	| Q V				
3+20	0.0903	0.73	| Q V				
3+25	0.0956	0.77	| Q V				
3+30	0.1013	0.83	| Q V				
3+35	0.1074	0.89	| Q V				
3+40	0.1141	0.97	| Q V				
3+45	0.1215	1.07	| Q V				
3+50	0.1296	1.17	| Q V				
3+55	0.1384	1.27	| Q V				
4+ 0	0.1477	1.36	| Q V				
4+ 5	0.1577	1.45	| Q V				
4+10	0.1683	1.54	| Q V|				
4+15	0.1796	1.64	| Q V|				
4+20	0.1917	1.76	| Q V				
4+25	0.2047	1.89	| Q V				
4+30	0.2187	2.03	| Q |V				
4+35	0.2336	2.17	| Q | V				
4+40	0.2494	2.30	| Q| V				
4+45	0.2662	2.43	| Q| V				
4+50	0.2838	2.56	| Q V				
4+55	0.3024	2.70	| Q V				



5+ 0	0.3219	2.83	Q V
5+ 5	0.3424	2.98	Q V
5+10	0.3644	3.18	Q V
5+15	0.3883	3.48	Q V
5+20	0.4151	3.88	Q V
5+25	0.4452	4.37	Q V
5+30	0.4791	4.92	Q V
5+35	0.5161	5.37	Q V
5+40	0.5539	5.49	Q V
5+45	0.5893	5.13	Q V
5+50	0.6187	4.27	Q V
5+55	0.6407	3.20	Q V
6+ 0	0.6570	2.37	Q V
6+ 5	0.6696	1.83	Q V
6+10	0.6799	1.50	Q V
6+15	0.6886	1.26	Q V
6+20	0.6961	1.09	Q V
6+25	0.7026	0.94	Q V
6+30	0.7082	0.82	Q V
6+35	0.7131	0.71	Q V
6+40	0.7175	0.63	Q V
6+45	0.7213	0.56	Q V
6+50	0.7247	0.49	Q V
6+55	0.7277	0.44	Q V
7+ 0	0.7304	0.39	Q V
7+ 5	0.7328	0.35	Q V
7+10	0.7350	0.32	Q V
7+15	0.7370	0.28	Q V
7+20	0.7387	0.25	Q V
7+25	0.7402	0.22	Q V
7+30	0.7415	0.19	Q V
7+35	0.7426	0.17	Q V
7+40	0.7436	0.15	Q V
7+45	0.7445	0.13	Q V
7+50	0.7453	0.11	Q V
7+55	0.7459	0.10	Q V
8+ 0	0.7465	0.08	Q V
8+ 5	0.7470	0.07	Q V
8+10	0.7474	0.06	Q V
8+15	0.7477	0.04	Q V
8+20	0.7477	0.01	Q V
8+25	0.7477	0.00	Q V
8+30	0.7477	0.00	Q V
8+35	0.7477	0.00	Q V
8+40	0.7478	0.00	Q V
8+45	0.7478	0.00	Q V

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

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Study date 02/20/20 File: 8946E2A12410.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
10 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	2.25	17.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	5.25	40.06

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 3.484(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.484(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	89.0	0.141	0.000	0.141	1.000	0.141

Sum (F) = 0.141

Area averaged mean soil loss (F) (In/Hr) = 0.141
Minimum soil loss rate ((In/Hr)) = 0.071
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
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6	0.500	141.511	10.334	0.795
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34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.028	(0.251)	0.025	0.003
2	0.17	0.07	0.028	(0.250)	0.025	0.003
3	0.25	0.07	0.028	(0.249)	0.025	0.003
4	0.33	0.10	0.042	(0.248)	0.038	0.004
5	0.42	0.10	0.042	(0.247)	0.038	0.004
6	0.50	0.10	0.042	(0.246)	0.038	0.004
7	0.58	0.10	0.042	(0.245)	0.038	0.004
8	0.67	0.10	0.042	(0.244)	0.038	0.004
9	0.75	0.10	0.042	(0.243)	0.038	0.004
10	0.83	0.13	0.056	(0.242)	0.050	0.006
11	0.92	0.13	0.056	(0.241)	0.050	0.006
12	1.00	0.13	0.056	(0.240)	0.050	0.006

13	1.08	0.10	0.042	(0.239)	0.038	0.004
14	1.17	0.10	0.042	(0.238)	0.038	0.004
15	1.25	0.10	0.042	(0.237)	0.038	0.004
16	1.33	0.10	0.042	(0.236)	0.038	0.004
17	1.42	0.10	0.042	(0.235)	0.038	0.004
18	1.50	0.10	0.042	(0.234)	0.038	0.004
19	1.58	0.10	0.042	(0.234)	0.038	0.004
20	1.67	0.10	0.042	(0.233)	0.038	0.004
21	1.75	0.10	0.042	(0.232)	0.038	0.004
22	1.83	0.13	0.056	(0.231)	0.050	0.006
23	1.92	0.13	0.056	(0.230)	0.050	0.006
24	2.00	0.13	0.056	(0.229)	0.050	0.006
25	2.08	0.13	0.056	(0.228)	0.050	0.006
26	2.17	0.13	0.056	(0.227)	0.050	0.006
27	2.25	0.13	0.056	(0.226)	0.050	0.006
28	2.33	0.13	0.056	(0.225)	0.050	0.006
29	2.42	0.13	0.056	(0.224)	0.050	0.006
30	2.50	0.13	0.056	(0.223)	0.050	0.006
31	2.58	0.17	0.070	(0.222)	0.063	0.007
32	2.67	0.17	0.070	(0.221)	0.063	0.007
33	2.75	0.17	0.070	(0.221)	0.063	0.007
34	2.83	0.17	0.070	(0.220)	0.063	0.007
35	2.92	0.17	0.070	(0.219)	0.063	0.007
36	3.00	0.17	0.070	(0.218)	0.063	0.007
37	3.08	0.17	0.070	(0.217)	0.063	0.007
38	3.17	0.17	0.070	(0.216)	0.063	0.007
39	3.25	0.17	0.070	(0.215)	0.063	0.007
40	3.33	0.17	0.070	(0.214)	0.063	0.007
41	3.42	0.17	0.070	(0.213)	0.063	0.007
42	3.50	0.17	0.070	(0.212)	0.063	0.007
43	3.58	0.17	0.070	(0.212)	0.063	0.007
44	3.67	0.17	0.070	(0.211)	0.063	0.007
45	3.75	0.17	0.070	(0.210)	0.063	0.007
46	3.83	0.20	0.084	(0.209)	0.075	0.008
47	3.92	0.20	0.084	(0.208)	0.075	0.008
48	4.00	0.20	0.084	(0.207)	0.075	0.008
49	4.08	0.20	0.084	(0.206)	0.075	0.008
50	4.17	0.20	0.084	(0.205)	0.075	0.008
51	4.25	0.20	0.084	(0.205)	0.075	0.008
52	4.33	0.23	0.098	(0.204)	0.088	0.010
53	4.42	0.23	0.098	(0.203)	0.088	0.010
54	4.50	0.23	0.098	(0.202)	0.088	0.010
55	4.58	0.23	0.098	(0.201)	0.088	0.010
56	4.67	0.23	0.098	(0.200)	0.088	0.010
57	4.75	0.23	0.098	(0.199)	0.088	0.010
58	4.83	0.27	0.111	(0.198)	0.100	0.011
59	4.92	0.27	0.111	(0.198)	0.100	0.011
60	5.00	0.27	0.111	(0.197)	0.100	0.011
61	5.08	0.20	0.084	(0.196)	0.075	0.008
62	5.17	0.20	0.084	(0.195)	0.075	0.008
63	5.25	0.20	0.084	(0.194)	0.075	0.008
64	5.33	0.23	0.098	(0.193)	0.088	0.010
65	5.42	0.23	0.098	(0.193)	0.088	0.010
66	5.50	0.23	0.098	(0.192)	0.088	0.010
67	5.58	0.27	0.111	(0.191)	0.100	0.011
68	5.67	0.27	0.111	(0.190)	0.100	0.011
69	5.75	0.27	0.111	(0.189)	0.100	0.011
70	5.83	0.27	0.111	(0.188)	0.100	0.011
71	5.92	0.27	0.111	(0.187)	0.100	0.011
72	6.00	0.27	0.111	(0.187)	0.100	0.011
73	6.08	0.30	0.125	(0.186)	0.113	0.013
74	6.17	0.30	0.125	(0.185)	0.113	0.013
75	6.25	0.30	0.125	(0.184)	0.113	0.013
76	6.33	0.30	0.125	(0.183)	0.113	0.013
77	6.42	0.30	0.125	(0.183)	0.113	0.013
78	6.50	0.30	0.125	(0.182)	0.113	0.013
79	6.58	0.33	0.139	(0.181)	0.125	0.014
80	6.67	0.33	0.139	(0.180)	0.125	0.014
81	6.75	0.33	0.139	(0.179)	0.125	0.014
82	6.83	0.33	0.139	(0.178)	0.125	0.014

83	6.92	0.33	0.139	(	0.178)		0.125		0.014
84	7.00	0.33	0.139	(	0.177)		0.125		0.014
85	7.08	0.33	0.139	(	0.176)		0.125		0.014
86	7.17	0.33	0.139	(	0.175)		0.125		0.014
87	7.25	0.33	0.139	(	0.174)		0.125		0.014
88	7.33	0.37	0.153	(	0.174)		0.138		0.015
89	7.42	0.37	0.153	(	0.173)		0.138		0.015
90	7.50	0.37	0.153	(	0.172)		0.138		0.015
91	7.58	0.40	0.167	(	0.171)		0.151		0.017
92	7.67	0.40	0.167	(	0.170)		0.151		0.017
93	7.75	0.40	0.167	(	0.170)		0.151		0.017
94	7.83	0.43	0.181	(	0.169)		0.163		0.018
95	7.92	0.43	0.181	(	0.168)		0.163		0.018
96	8.00	0.43	0.181	(	0.167)		0.163		0.018
97	8.08	0.50	0.209		0.167	(	0.188)		0.042
98	8.17	0.50	0.209		0.166	(	0.188)		0.043
99	8.25	0.50	0.209		0.165	(	0.188)		0.044
100	8.33	0.50	0.209		0.164	(	0.188)		0.045
101	8.42	0.50	0.209		0.163	(	0.188)		0.046
102	8.50	0.50	0.209		0.163	(	0.188)		0.046
103	8.58	0.53	0.223		0.162	(	0.201)		0.061
104	8.67	0.53	0.223		0.161	(	0.201)		0.062
105	8.75	0.53	0.223		0.160	(	0.201)		0.063
106	8.83	0.57	0.237		0.160	(	0.213)		0.077
107	8.92	0.57	0.237		0.159	(	0.213)		0.078
108	9.00	0.57	0.237		0.158	(	0.213)		0.079
109	9.08	0.63	0.265		0.157	(	0.238)		0.107
110	9.17	0.63	0.265		0.157	(	0.238)		0.108
111	9.25	0.63	0.265		0.156	(	0.238)		0.109
112	9.33	0.67	0.279		0.155	(	0.251)		0.124
113	9.42	0.67	0.279		0.154	(	0.251)		0.124
114	9.50	0.67	0.279		0.154	(	0.251)		0.125
115	9.58	0.70	0.293		0.153	(	0.263)		0.140
116	9.67	0.70	0.293		0.152	(	0.263)		0.140
117	9.75	0.70	0.293		0.151	(	0.263)		0.141
118	9.83	0.73	0.307		0.151	(	0.276)		0.156
119	9.92	0.73	0.307		0.150	(	0.276)		0.157
120	10.00	0.73	0.307		0.149	(	0.276)		0.157
121	10.08	0.50	0.209		0.149	(	0.188)		0.060
122	10.17	0.50	0.209		0.148	(	0.188)		0.061
123	10.25	0.50	0.209		0.147	(	0.188)		0.062
124	10.33	0.50	0.209		0.146	(	0.188)		0.063
125	10.42	0.50	0.209		0.146	(	0.188)		0.063
126	10.50	0.50	0.209		0.145	(	0.188)		0.064
127	10.58	0.67	0.279		0.144	(	0.251)		0.134
128	10.67	0.67	0.279		0.144	(	0.251)		0.135
129	10.75	0.67	0.279		0.143	(	0.251)		0.136
130	10.83	0.67	0.279		0.142	(	0.251)		0.137
131	10.92	0.67	0.279		0.142	(	0.251)		0.137
132	11.00	0.67	0.279		0.141	(	0.251)		0.138
133	11.08	0.63	0.265		0.140	(	0.238)		0.125
134	11.17	0.63	0.265		0.139	(	0.238)		0.125
135	11.25	0.63	0.265		0.139	(	0.238)		0.126
136	11.33	0.63	0.265		0.138	(	0.238)		0.127
137	11.42	0.63	0.265		0.137	(	0.238)		0.127
138	11.50	0.63	0.265		0.137	(	0.238)		0.128
139	11.58	0.57	0.237		0.136	(	0.213)		0.101
140	11.67	0.57	0.237		0.135	(	0.213)		0.102
141	11.75	0.57	0.237		0.135	(	0.213)		0.102
142	11.83	0.60	0.251		0.134	(	0.226)		0.117
143	11.92	0.60	0.251		0.133	(	0.226)		0.118
144	12.00	0.60	0.251		0.133	(	0.226)		0.118
145	12.08	0.83	0.348		0.132	(	0.314)		0.216
146	12.17	0.83	0.348		0.131	(	0.314)		0.217
147	12.25	0.83	0.348		0.131	(	0.314)		0.218
148	12.33	0.87	0.362		0.130	(	0.326)		0.232
149	12.42	0.87	0.362		0.129	(	0.326)		0.233
150	12.50	0.87	0.362		0.129	(	0.326)		0.234
151	12.58	0.93	0.390		0.128	(	0.351)		0.262
152	12.67	0.93	0.390		0.127	(	0.351)		0.263

153	12.75	0.93	0.390	0.127	(0.351)		0.263
154	12.83	0.97	0.404	0.126	(0.364)		0.278
155	12.92	0.97	0.404	0.126	(0.364)		0.279
156	13.00	0.97	0.404	0.125	(0.364)		0.279
157	13.08	1.13	0.474	0.124	(0.426)		0.350
158	13.17	1.13	0.474	0.124	(0.426)		0.350
159	13.25	1.13	0.474	0.123	(0.426)		0.351
160	13.33	1.13	0.474	0.122	(0.426)		0.351
161	13.42	1.13	0.474	0.122	(0.426)		0.352
162	13.50	1.13	0.474	0.121	(0.426)		0.353
163	13.58	0.77	0.321	0.120	(0.288)		0.200
164	13.67	0.77	0.321	0.120	(0.288)		0.201
165	13.75	0.77	0.321	0.119	(0.288)		0.201
166	13.83	0.77	0.321	0.119	(0.288)		0.202
167	13.92	0.77	0.321	0.118	(0.288)		0.202
168	14.00	0.77	0.321	0.117	(0.288)		0.203
169	14.08	0.90	0.376	0.117	(0.339)		0.259
170	14.17	0.90	0.376	0.116	(0.339)		0.260
171	14.25	0.90	0.376	0.116	(0.339)		0.261
172	14.33	0.87	0.362	0.115	(0.326)		0.247
173	14.42	0.87	0.362	0.114	(0.326)		0.248
174	14.50	0.87	0.362	0.114	(0.326)		0.248
175	14.58	0.87	0.362	0.113	(0.326)		0.249
176	14.67	0.87	0.362	0.113	(0.326)		0.250
177	14.75	0.87	0.362	0.112	(0.326)		0.250
178	14.83	0.83	0.348	0.112	(0.314)		0.237
179	14.92	0.83	0.348	0.111	(0.314)		0.237
180	15.00	0.83	0.348	0.110	(0.314)		0.238
181	15.08	0.80	0.334	0.110	(0.301)		0.225
182	15.17	0.80	0.334	0.109	(0.301)		0.225
183	15.25	0.80	0.334	0.109	(0.301)		0.226
184	15.33	0.77	0.321	0.108	(0.288)		0.212
185	15.42	0.77	0.321	0.108	(0.288)		0.213
186	15.50	0.77	0.321	0.107	(0.288)		0.213
187	15.58	0.63	0.265	0.107	(0.238)		0.158
188	15.67	0.63	0.265	0.106	(0.238)		0.159
189	15.75	0.63	0.265	0.105	(0.238)		0.159
190	15.83	0.63	0.265	0.105	(0.238)		0.160
191	15.92	0.63	0.265	0.104	(0.238)		0.160
192	16.00	0.63	0.265	0.104	(0.238)		0.161
193	16.08	0.13	0.056	(0.103)	0.050		0.006
194	16.17	0.13	0.056	(0.103)	0.050		0.006
195	16.25	0.13	0.056	(0.102)	0.050		0.006
196	16.33	0.13	0.056	(0.102)	0.050		0.006
197	16.42	0.13	0.056	(0.101)	0.050		0.006
198	16.50	0.13	0.056	(0.101)	0.050		0.006
199	16.58	0.10	0.042	(0.100)	0.038		0.004
200	16.67	0.10	0.042	(0.100)	0.038		0.004
201	16.75	0.10	0.042	(0.099)	0.038		0.004
202	16.83	0.10	0.042	(0.099)	0.038		0.004
203	16.92	0.10	0.042	(0.098)	0.038		0.004
204	17.00	0.10	0.042	(0.098)	0.038		0.004
205	17.08	0.17	0.070	(0.097)	0.063		0.007
206	17.17	0.17	0.070	(0.097)	0.063		0.007
207	17.25	0.17	0.070	(0.096)	0.063		0.007
208	17.33	0.17	0.070	(0.096)	0.063		0.007
209	17.42	0.17	0.070	(0.095)	0.063		0.007
210	17.50	0.17	0.070	(0.095)	0.063		0.007
211	17.58	0.17	0.070	(0.094)	0.063		0.007
212	17.67	0.17	0.070	(0.094)	0.063		0.007
213	17.75	0.17	0.070	(0.093)	0.063		0.007
214	17.83	0.13	0.056	(0.093)	0.050		0.006
215	17.92	0.13	0.056	(0.092)	0.050		0.006
216	18.00	0.13	0.056	(0.092)	0.050		0.006
217	18.08	0.13	0.056	(0.092)	0.050		0.006
218	18.17	0.13	0.056	(0.091)	0.050		0.006
219	18.25	0.13	0.056	(0.091)	0.050		0.006
220	18.33	0.13	0.056	(0.090)	0.050		0.006
221	18.42	0.13	0.056	(0.090)	0.050		0.006
222	18.50	0.13	0.056	(0.089)	0.050		0.006

223	18.58	0.10	0.042	(0.089)	0.038	0.004
224	18.67	0.10	0.042	(0.088)	0.038	0.004
225	18.75	0.10	0.042	(0.088)	0.038	0.004
226	18.83	0.07	0.028	(0.088)	0.025	0.003
227	18.92	0.07	0.028	(0.087)	0.025	0.003
228	19.00	0.07	0.028	(0.087)	0.025	0.003
229	19.08	0.10	0.042	(0.086)	0.038	0.004
230	19.17	0.10	0.042	(0.086)	0.038	0.004
231	19.25	0.10	0.042	(0.086)	0.038	0.004
232	19.33	0.13	0.056	(0.085)	0.050	0.006
233	19.42	0.13	0.056	(0.085)	0.050	0.006
234	19.50	0.13	0.056	(0.084)	0.050	0.006
235	19.58	0.10	0.042	(0.084)	0.038	0.004
236	19.67	0.10	0.042	(0.084)	0.038	0.004
237	19.75	0.10	0.042	(0.083)	0.038	0.004
238	19.83	0.07	0.028	(0.083)	0.025	0.003
239	19.92	0.07	0.028	(0.082)	0.025	0.003
240	20.00	0.07	0.028	(0.082)	0.025	0.003
241	20.08	0.10	0.042	(0.082)	0.038	0.004
242	20.17	0.10	0.042	(0.081)	0.038	0.004
243	20.25	0.10	0.042	(0.081)	0.038	0.004
244	20.33	0.10	0.042	(0.081)	0.038	0.004
245	20.42	0.10	0.042	(0.080)	0.038	0.004
246	20.50	0.10	0.042	(0.080)	0.038	0.004
247	20.58	0.10	0.042	(0.080)	0.038	0.004
248	20.67	0.10	0.042	(0.079)	0.038	0.004
249	20.75	0.10	0.042	(0.079)	0.038	0.004
250	20.83	0.07	0.028	(0.079)	0.025	0.003
251	20.92	0.07	0.028	(0.078)	0.025	0.003
252	21.00	0.07	0.028	(0.078)	0.025	0.003
253	21.08	0.10	0.042	(0.078)	0.038	0.004
254	21.17	0.10	0.042	(0.077)	0.038	0.004
255	21.25	0.10	0.042	(0.077)	0.038	0.004
256	21.33	0.07	0.028	(0.077)	0.025	0.003
257	21.42	0.07	0.028	(0.077)	0.025	0.003
258	21.50	0.07	0.028	(0.076)	0.025	0.003
259	21.58	0.10	0.042	(0.076)	0.038	0.004
260	21.67	0.10	0.042	(0.076)	0.038	0.004
261	21.75	0.10	0.042	(0.075)	0.038	0.004
262	21.83	0.07	0.028	(0.075)	0.025	0.003
263	21.92	0.07	0.028	(0.075)	0.025	0.003
264	22.00	0.07	0.028	(0.075)	0.025	0.003
265	22.08	0.10	0.042	(0.074)	0.038	0.004
266	22.17	0.10	0.042	(0.074)	0.038	0.004
267	22.25	0.10	0.042	(0.074)	0.038	0.004
268	22.33	0.07	0.028	(0.074)	0.025	0.003
269	22.42	0.07	0.028	(0.073)	0.025	0.003
270	22.50	0.07	0.028	(0.073)	0.025	0.003
271	22.58	0.07	0.028	(0.073)	0.025	0.003
272	22.67	0.07	0.028	(0.073)	0.025	0.003
273	22.75	0.07	0.028	(0.073)	0.025	0.003
274	22.83	0.07	0.028	(0.072)	0.025	0.003
275	22.92	0.07	0.028	(0.072)	0.025	0.003
276	23.00	0.07	0.028	(0.072)	0.025	0.003
277	23.08	0.07	0.028	(0.072)	0.025	0.003
278	23.17	0.07	0.028	(0.072)	0.025	0.003
279	23.25	0.07	0.028	(0.072)	0.025	0.003
280	23.33	0.07	0.028	(0.071)	0.025	0.003
281	23.42	0.07	0.028	(0.071)	0.025	0.003
282	23.50	0.07	0.028	(0.071)	0.025	0.003
283	23.58	0.07	0.028	(0.071)	0.025	0.003
284	23.67	0.07	0.028	(0.071)	0.025	0.003
285	23.75	0.07	0.028	(0.071)	0.025	0.003
286	23.83	0.07	0.028	(0.071)	0.025	0.003
287	23.92	0.07	0.028	(0.071)	0.025	0.003
288	24.00	0.07	0.028	(0.071)	0.025	0.003

(Loss Rate Not Used)

Sum = 100.0 Sum = 17.7

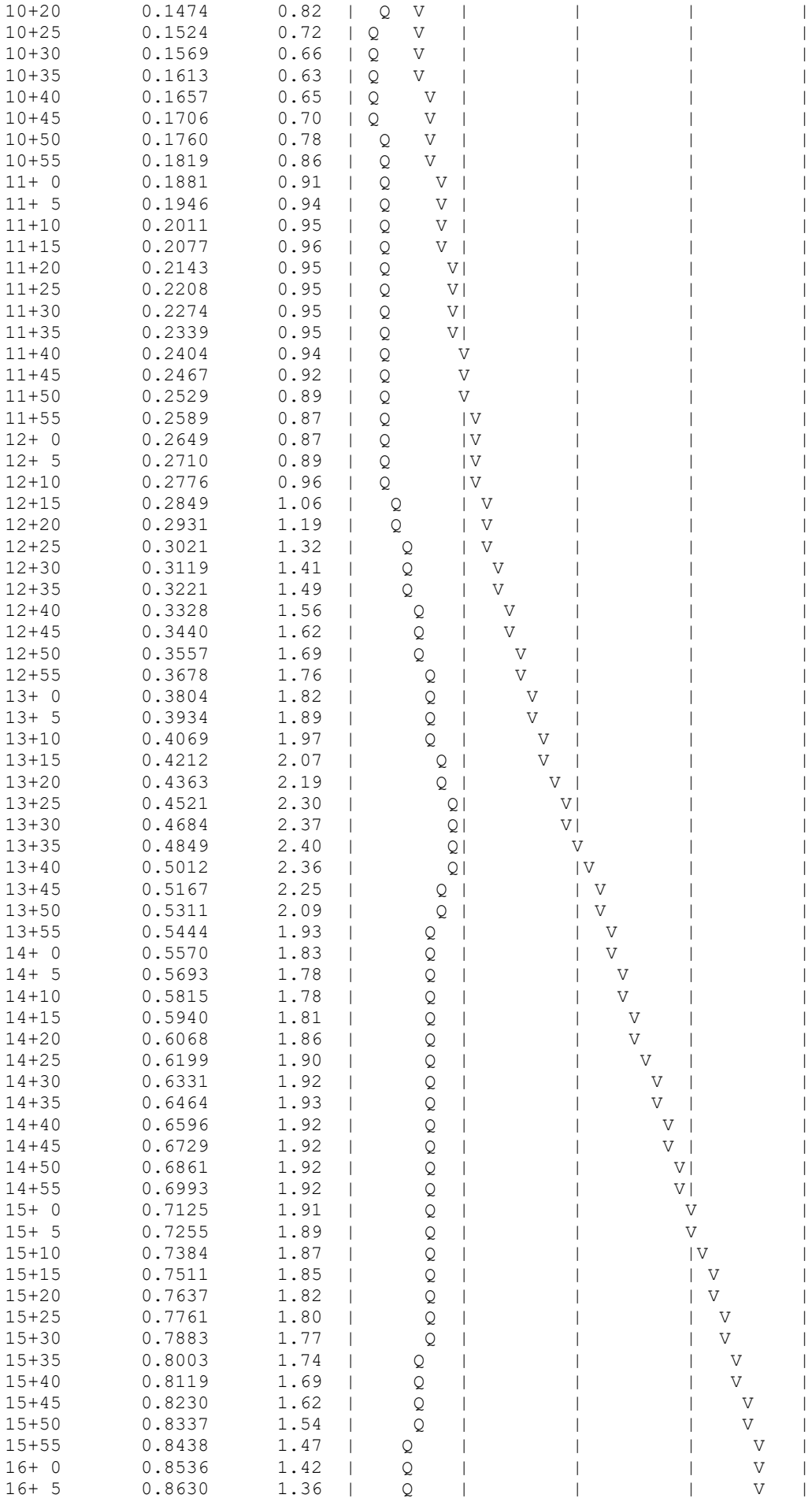
Flood volume = Effective rainfall 1.47(In)

times area 7.6(Ac.)/[(In)/(Ft.)] = 0.9(Ac.Ft)

```
    Total soil loss =      2.01(In)
    Total soil loss =     1.278(Ac.Ft)
    Total rainfall =      3.48(In)
    Flood volume =       40822.4 Cubic Feet
    Total soil loss =       55678.3 Cubic Feet
    ---------------------------------------------------------------------
     Peak flow rate of this hydrograph =      2.400(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       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0000      0.00  Q         |         |         |         |
  0+20       0.0001      0.01  Q         |         |         |         |
  0+25       0.0002      0.01  Q         |         |         |         |
  0+30       0.0003      0.02  Q         |         |         |         |
  0+35       0.0004      0.02  Q         |         |         |         |
  0+40       0.0006      0.02  Q         |         |         |         |
  0+45       0.0007      0.02  Q         |         |         |         |
  0+50       0.0009      0.03  Q         |         |         |         |
  0+55       0.0011      0.03  Q         |         |         |         |
  1+ 0       0.0013      0.03  Q         |         |         |         |
  1+ 5       0.0015      0.03  Q         |         |         |         |
  1+10       0.0017      0.03  Q         |         |         |         |
  1+15       0.0020      0.03  Q         |         |         |         |
  1+20       0.0022      0.03  Q         |         |         |         |
  1+25       0.0024      0.03  Q         |         |         |         |
  1+30       0.0026      0.03  Q         |         |         |         |
  1+35       0.0028      0.03  Q         |         |         |         |
  1+40       0.0030      0.03  Q         |         |         |         |
  1+45       0.0033      0.03  Q         |         |         |         |
  1+50       0.0035      0.03  Q         |         |         |         |
  1+55       0.0037      0.03  Q         |         |         |         |
  2+ 0       0.0039      0.03  Q         |         |         |         |
  2+ 5       0.0042      0.04  Q         |         |         |         |
  2+10       0.0044      0.04  Q         |         |         |         |
  2+15       0.0047      0.04  Q         |         |         |         |
  2+20       0.0050      0.04  Q         |         |         |         |
  2+25       0.0053      0.04  Q         |         |         |         |
  2+30       0.0055      0.04  Q         |         |         |         |
  2+35       0.0058      0.04  Q         |         |         |         |
  2+40       0.0061      0.04  Q         |         |         |         |
  2+45       0.0064      0.04  Q         |         |         |         |
  2+50       0.0067      0.05  Q         |         |         |         |
  2+55       0.0070      0.05  Q         |         |         |         |
  3+ 0       0.0074      0.05  Q         |         |         |         |
  3+ 5       0.0077      0.05  Q         |         |         |         |
  3+10       0.0081      0.05  Q         |         |         |         |
  3+15       0.0084      0.05  Q         |         |         |         |
  3+20       0.0088      0.05  Q         |         |         |         |
  3+25       0.0091      0.05  Q         |         |         |         |
  3+30       0.0095      0.05  Q         |         |         |         |
  3+35       0.0098      0.05  Q         |         |         |         |
  3+40       0.0102      0.05  Q         |         |         |         |
  3+45       0.0105      0.05  Q         |         |         |         |
  3+50       0.0109      0.05  Q         |         |         |         |
  3+55       0.0113      0.05  Q         |         |         |         |
  4+ 0       0.0117      0.05  Q         |         |         |         |
  4+ 5       0.0120      0.06  Q         |         |         |         |
  4+10       0.0125      0.06  Q         |         |         |         |
  4+15       0.0129      0.06  Q         |         |         |         |
  4+20       0.0133      0.06  Q         |         |         |         |
  4+25       0.0137      0.06  Q         |         |         |         |
```

4+30	0.0142	0.06	Q				
4+35	0.0146	0.07	Q				
4+40	0.0151	0.07	Q				
4+45	0.0156	0.07	Q				
4+50	0.0160	0.07	Q				
4+55	0.0165	0.07	Q				
5+ 0	0.0170	0.07	Q				
5+ 5	0.0176	0.08	Q				
5+10	0.0181	0.08	Q				
5+15	0.0186	0.07	Q				
5+20	0.0191	0.07	Q				
5+25	0.0196	0.07	Q				
5+30	0.0201	0.07	Q				
5+35	0.0206	0.07	Q				
5+40	0.0211	0.07	Q				
5+45	0.0216	0.08	Q				
5+50	0.0221	0.08	Q				
5+55	0.0227	0.08	Q				
6+ 0	0.0232	0.08	Q				
6+ 5	0.0238	0.08	QV				
6+10	0.0244	0.08	QV				
6+15	0.0250	0.09	QV				
6+20	0.0256	0.09	QV				
6+25	0.0262	0.09	QV				
6+30	0.0268	0.09	QV				
6+35	0.0274	0.09	QV				
6+40	0.0281	0.09	QV				
6+45	0.0287	0.10	QV				
6+50	0.0294	0.10	QV				
6+55	0.0301	0.10	QV				
7+ 0	0.0308	0.10	QV				
7+ 5	0.0315	0.10	QV				
7+10	0.0322	0.10	QV				
7+15	0.0329	0.10	QV				
7+20	0.0336	0.10	QV				
7+25	0.0343	0.11	QV				
7+30	0.0351	0.11	QV				
7+35	0.0358	0.11	QV				
7+40	0.0366	0.11	QV				
7+45	0.0374	0.11	QV				
7+50	0.0382	0.12	QV				
7+55	0.0390	0.12	QV				
8+ 0	0.0399	0.12	QV				
8+ 5	0.0408	0.13	QV				
8+10	0.0418	0.15	QV				
8+15	0.0430	0.17	QV				
8+20	0.0444	0.20	QV				
8+25	0.0460	0.24	QV				
8+30	0.0478	0.26	|QV				
8+35	0.0497	0.28	|QV				
8+40	0.0518	0.30	|QV				
8+45	0.0540	0.32	|QV				
8+50	0.0565	0.35	|QV				
8+55	0.0591	0.39	|QV				
9+ 0	0.0620	0.42	|QV				
9+ 5	0.0652	0.46	|QV				
9+10	0.0687	0.50	| Q				
9+15	0.0725	0.55	| QV				
9+20	0.0767	0.61	| QV				
9+25	0.0812	0.66	| QV				
9+30	0.0861	0.71	| QV				
9+35	0.0913	0.76	| Q				
9+40	0.0969	0.80	| QV				
9+45	0.1027	0.84	| QV				
9+50	0.1088	0.89	| QV				
9+55	0.1152	0.93	| QV				
10+ 0	0.1219	0.97	| Q V				
10+ 5	0.1288	1.00	| Q V				
10+10	0.1355	0.98	| Q V				
10+15	0.1418	0.92	| Q V				



16+10	0.8717	1.26	| Q	|	|	|	V |
16+15	0.8792	1.10	| Q	|	|	|	V |
16+20	0.8853	0.89	| Q	|	|	|	V |
16+25	0.8901	0.69	| Q	|	|	|	V |
16+30	0.8939	0.55	| Q	|	|	|	V |
16+35	0.8971	0.47	|Q	|	|	|	V |
16+40	0.8999	0.40	|Q	|	|	|	V |
16+45	0.9023	0.36	|Q	|	|	|	V |
16+50	0.9045	0.31	|Q	|	|	|	V |
16+55	0.9064	0.28	|Q	|	|	|	V |
17+ 0	0.9081	0.25	Q	|	|	|	V |
17+ 5	0.9097	0.22	Q	|	|	|	V |
17+10	0.9110	0.20	Q	|	|	|	V |
17+15	0.9123	0.18	Q	|	|	|	V |
17+20	0.9135	0.17	Q	|	|	|	V |
17+25	0.9145	0.16	Q	|	|	|	V|
17+30	0.9155	0.14	Q	|	|	|	V|
17+35	0.9165	0.13	Q	|	|	|	V|
17+40	0.9173	0.12	Q	|	|	|	V|
17+45	0.9181	0.11	Q	|	|	|	V|
17+50	0.9188	0.11	Q	|	|	|	V|
17+55	0.9195	0.10	Q	|	|	|	V|
18+ 0	0.9201	0.09	Q	|	|	|	V|
18+ 5	0.9207	0.08	Q	|	|	|	V|
18+10	0.9212	0.07	Q	|	|	|	V|
18+15	0.9217	0.07	Q	|	|	|	V|
18+20	0.9221	0.06	Q	|	|	|	V|
18+25	0.9225	0.06	Q	|	|	|	V|
18+30	0.9229	0.06	Q	|	|	|	V|
18+35	0.9233	0.05	Q	|	|	|	V|
18+40	0.9236	0.05	Q	|	|	|	V|
18+45	0.9239	0.05	Q	|	|	|	V|
18+50	0.9242	0.04	Q	|	|	|	V|
18+55	0.9244	0.04	Q	|	|	|	V|
19+ 0	0.9247	0.03	Q	|	|	|	V|
19+ 5	0.9249	0.03	Q	|	|	|	V|
19+10	0.9251	0.03	Q	|	|	|	V|
19+15	0.9253	0.03	Q	|	|	|	V|
19+20	0.9255	0.03	Q	|	|	|	V|
19+25	0.9257	0.03	Q	|	|	|	V|
19+30	0.9260	0.03	Q	|	|	|	V|
19+35	0.9262	0.04	Q	|	|	|	V|
19+40	0.9265	0.04	Q	|	|	|	V|
19+45	0.9268	0.04	Q	|	|	|	V|
19+50	0.9270	0.04	Q	|	|	|	V|
19+55	0.9272	0.03	Q	|	|	|	V|
20+ 0	0.9275	0.03	Q	|	|	|	V|
20+ 5	0.9277	0.03	Q	|	|	|	V|
20+10	0.9279	0.03	Q	|	|	|	V|
20+15	0.9281	0.03	Q	|	|	|	V|
20+20	0.9283	0.03	Q	|	|	|	V|
20+25	0.9285	0.03	Q	|	|	|	V|
20+30	0.9287	0.03	Q	|	|	|	V|
20+35	0.9289	0.03	Q	|	|	|	V|
20+40	0.9291	0.03	Q	|	|	|	V|
20+45	0.9293	0.03	Q	|	|	|	V|
20+50	0.9296	0.03	Q	|	|	|	V|
20+55	0.9298	0.03	Q	|	|	|	V|
21+ 0	0.9300	0.03	Q	|	|	|	V|
21+ 5	0.9302	0.03	Q	|	|	|	V|
21+10	0.9304	0.03	Q	|	|	|	V|
21+15	0.9305	0.03	Q	|	|	|	V|
21+20	0.9307	0.03	Q	|	|	|	V|
21+25	0.9309	0.03	Q	|	|	|	V|
21+30	0.9311	0.03	Q	|	|	|	V|
21+35	0.9313	0.03	Q	|	|	|	V|
21+40	0.9315	0.03	Q	|	|	|	V|
21+45	0.9317	0.03	Q	|	|	|	V|
21+50	0.9319	0.03	Q	|	|	|	V|
21+55	0.9321	0.03	Q	|	|	|	V|

22+ 0	0.9323	0.03	Q	|	|	|	V|
22+ 5	0.9324	0.03	Q	|	|	|	V|
22+10	0.9326	0.03	Q	|	|	|	V|
22+15	0.9328	0.03	Q	|	|	|	V|
22+20	0.9330	0.03	Q	|	|	|	V|
22+25	0.9332	0.03	Q	|	|	|	V|
22+30	0.9334	0.03	Q	|	|	|	V|
22+35	0.9336	0.03	Q	|	|	|	V|
22+40	0.9337	0.02	Q	|	|	|	V|
22+45	0.9339	0.02	Q	|	|	|	V|
22+50	0.9341	0.02	Q	|	|	|	V|
22+55	0.9342	0.02	Q	|	|	|	V|
23+ 0	0.9344	0.02	Q	|	|	|	V|
23+ 5	0.9345	0.02	Q	|	|	|	V|
23+10	0.9347	0.02	Q	|	|	|	V|
23+15	0.9348	0.02	Q	|	|	|	V|
23+20	0.9350	0.02	Q	|	|	|	V|
23+25	0.9351	0.02	Q	|	|	|	V|
23+30	0.9353	0.02	Q	|	|	|	V|
23+35	0.9354	0.02	Q	|	|	|	V|
23+40	0.9356	0.02	Q	|	|	|	V|
23+45	0.9358	0.02	Q	|	|	|	V|
23+50	0.9359	0.02	Q	|	|	|	V|
23+55	0.9361	0.02	Q	|	|	|	V|
24+ 0	0.9362	0.02	Q	|	|	|	V|
24+ 5	0.9363	0.02	Q	|	|	|	V|
24+10	0.9365	0.02	Q	|	|	|	V|
24+15	0.9366	0.02	Q	|	|	|	V|
24+20	0.9367	0.01	Q	|	|	|	V|
24+25	0.9368	0.01	Q	|	|	|	V|
24+30	0.9368	0.01	Q	|	|	|	V|
24+35	0.9369	0.01	Q	|	|	|	V|
24+40	0.9369	0.01	Q	|	|	|	V|
24+45	0.9369	0.00	Q	|	|	|	V|
24+50	0.9370	0.00	Q	|	|	|	V|
24+55	0.9370	0.00	Q	|	|	|	V|
25+ 0	0.9370	0.00	Q	|	|	|	V|
25+ 5	0.9370	0.00	Q	|	|	|	V|
25+10	0.9370	0.00	Q	|	|	|	V|
25+15	0.9371	0.00	Q	|	|	|	V|
25+20	0.9371	0.00	Q	|	|	|	V|
25+25	0.9371	0.00	Q	|	|	|	V|
25+30	0.9371	0.00	Q	|	|	|	V|
25+35	0.9371	0.00	Q	|	|	|	V|
25+40	0.9371	0.00	Q	|	|	|	V|
25+45	0.9371	0.00	Q	|	|	|	V|
25+50	0.9371	0.00	Q	|	|	|	V|
25+55	0.9371	0.00	Q	|	|	|	V|
26+ 0	0.9371	0.00	Q	|	|	|	V|
26+ 5	0.9371	0.00	Q	|	|	|	V|
26+10	0.9371	0.00	Q	|	|	|	V|
26+15	0.9371	0.00	Q	|	|	|	V|
26+20	0.9371	0.00	Q	|	|	|	V|
26+25	0.9372	0.00	Q	|	|	|	V|
26+30	0.9372	0.00	Q	|	|	|	V|
26+35	0.9372	0.00	Q	|	|	|	V|
26+40	0.9372	0.00	Q	|	|	|	V|
26+45	0.9372	0.00	Q	|	|	|	V

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

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Study date 02/20/20 File: 8946E2A11100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
100 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	0.55	4.20

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	1.30	9.92

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(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 %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.515	0.057	(0.463)	0.458
2	0.17	4.20	0.655	0.057	(0.590)	0.598
3	0.25	4.40	0.686	0.057	(0.618)	0.629
4	0.33	4.80	0.749	0.057	(0.674)	0.692
5	0.42	5.20	0.811	0.057	(0.730)	0.754
6	0.50	6.20	0.967	0.057	(0.870)	0.910
7	0.58	6.80	1.061	0.057	(0.955)	1.004
8	0.67	8.80	1.373	0.057	(1.235)	1.316
9	0.75	13.90	2.168	0.057	(1.951)	2.111
10	0.83	31.40	4.898	0.057	(4.408)	4.841

```
 11   0.92     7.20      1.123          0.057    (  1.011)        1.066
 12   1.00     3.80      0.593          0.057    (  0.533)        0.536
             (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    14.9
      Flood volume = Effective rainfall      1.24(In)
       times area       7.6(Ac.)/[(In)/(Ft.)] =       0.8(Ac.Ft)
      Total soil loss =      0.06(In)
      Total soil loss =     0.036(Ac.Ft)
      Total rainfall =      1.30(In)
      Flood volume =       34419.2 Cubic Feet
      Total soil loss =        1584.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     12.354(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      10.0      15.0      20.0
 ------------------------------------------------------------------------
   0+ 5       0.0005      0.08  Q         |          |          |          |
   0+10       0.0029      0.34  Q         |          |          |          |
   0+15       0.0087      0.85  VQ        |          |          |          |
   0+20       0.0196      1.58  V  Q      |          |          |          |
   0+25       0.0360      2.38  |V  Q     |          |          |          |
   0+30       0.0571      3.07  | V   Q   |          |          |          |
   0+35       0.0825      3.69  |   V  Q  |          |          |          |
   0+40       0.1124      4.34  |    V  Q |          |          |          |
   0+45       0.1484      5.23  |      V  Q          |          |          |
   0+50       0.1961      6.93  |        V|  Q       |          |          |
   0+55       0.2602      9.31  |         |  V    Q  |          |          |
   1+ 0       0.3390     11.44  |         |      V   | Q        |          |
   1+ 5       0.4241     12.35  |         |          |V  Q      |          |
   1+10       0.5007     11.12  |         |          | Q  V     |          |
   1+15       0.5575      8.25  |         |     Q    |       V  |          |
   1+20       0.5977      5.83  |         |Q         |          V          |
   1+25       0.6263      4.15  |       Q |          |          |V         |
   1+30       0.6484      3.21  |     Q   |          |          | V        |
   1+35       0.6666      2.64  |    Q    |          |          |  V       |
   1+40       0.6819      2.23  |   Q     |          |          |   V      |
   1+45       0.6952      1.93  |  Q      |          |          |    V     |
   1+50       0.7067      1.66  |  Q      |          |          |    V     |
   1+55       0.7166      1.44  | Q       |          |          |     V    |
   2+ 0       0.7255      1.29  | Q       |          |          |     V    |
   2+ 5       0.7332      1.12  | Q       |          |          |      V   |
   2+10       0.7400      0.99  |Q        |          |          |      V   |
   2+15       0.7460      0.87  |Q        |          |          |      V   |
   2+20       0.7513      0.77  |Q        |          |          |       V  |
   2+25       0.7562      0.71  |Q        |          |          |       V  |
   2+30       0.7608      0.66  |Q        |          |          |       V  |
   2+35       0.7648      0.59  |Q        |          |          |       V  |
   2+40       0.7684      0.52  |Q        |          |          |       V  |
   2+45       0.7717      0.47  Q         |          |          |        V |
   2+50       0.7746      0.43  Q         |          |          |        V |
   2+55       0.7773      0.38  Q         |          |          |        V |
   3+ 0       0.7795      0.33  Q         |          |          |        V |
   3+ 5       0.7816      0.30  Q         |          |          |        V |
   3+10       0.7833      0.25  Q         |          |          |        V |
   3+15       0.7848      0.23  Q         |          |          |        V |
   3+20       0.7863      0.21  Q         |          |          |        V |
   3+25       0.7876      0.19  Q         |          |          |        V |
   3+30       0.7887      0.17  Q         |          |          |        V |
   3+35       0.7898      0.15  Q         |          |          |        V |
   3+40       0.7901      0.04  Q         |          |          |        V |
   3+45       0.7902      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 02/20/20 File: 8946E2A13100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
100 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	0.90	6.87

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	2.25	17.17

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

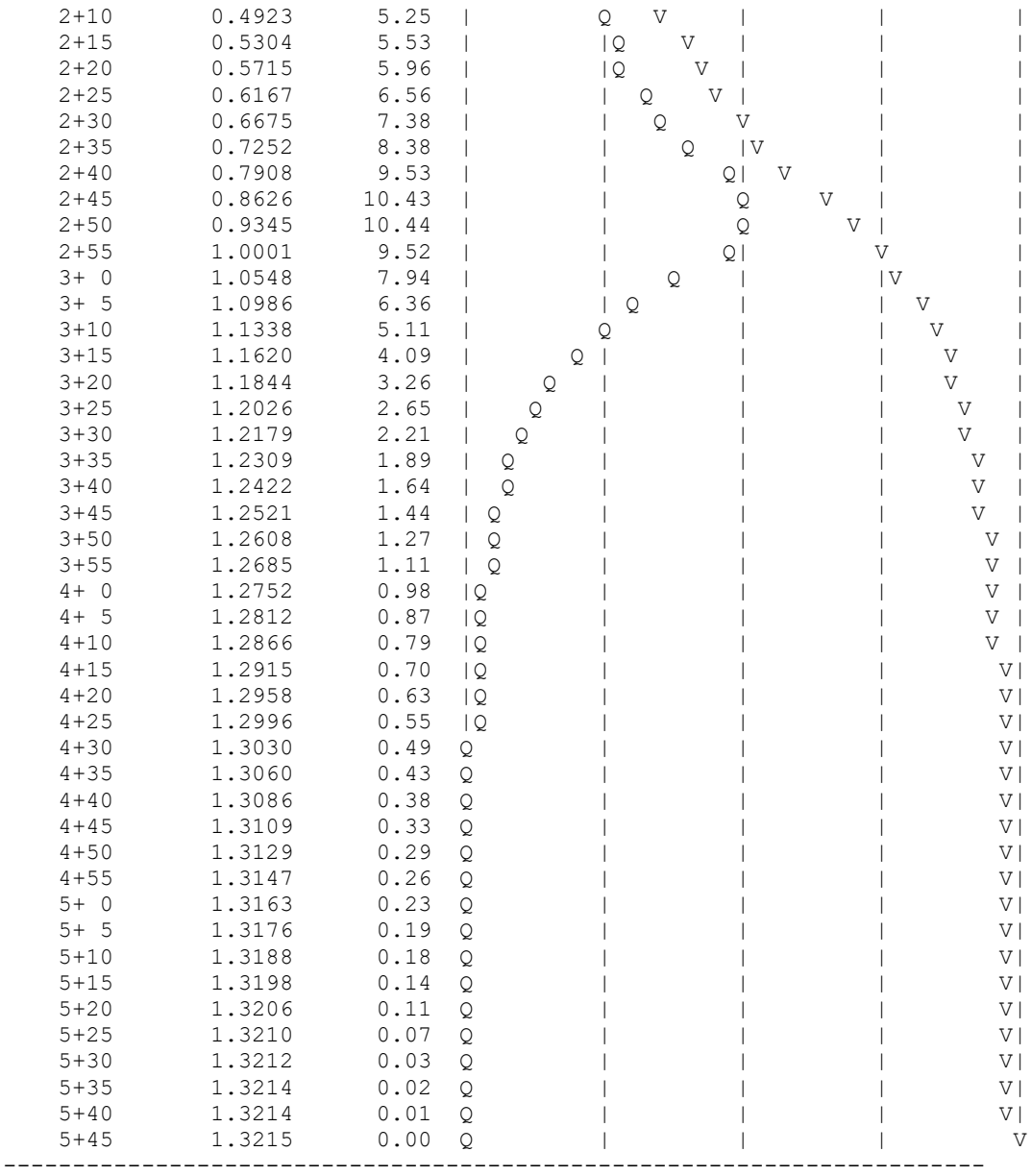
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.351	0.057	(	0.316)	0.294
2	0.17	1.30	0.351	0.057	(	0.316)	0.294
3	0.25	1.10	0.297	0.057	(	0.267)	0.240
4	0.33	1.50	0.405	0.057	(	0.364)	0.348
5	0.42	1.50	0.405	0.057	(	0.364)	0.348
6	0.50	1.80	0.486	0.057	(	0.437)	0.429
7	0.58	1.50	0.405	0.057	(	0.364)	0.348
8	0.67	1.80	0.486	0.057	(	0.437)	0.429
9	0.75	1.80	0.486	0.057	(	0.437)	0.429
10	0.83	1.50	0.405	0.057	(	0.364)	0.348
11	0.92	1.60	0.432	0.057	(	0.389)	0.375
12	1.00	1.80	0.486	0.057	(	0.437)	0.429

```
13   1.08     2.20      0.594          0.057    (  0.535)        0.537
14   1.17     2.20      0.594          0.057    (  0.535)        0.537
15   1.25     2.20      0.594          0.057    (  0.535)        0.537
16   1.33     2.00      0.540          0.057    (  0.486)        0.483
17   1.42     2.60      0.702          0.057    (  0.632)        0.645
18   1.50     2.70      0.729          0.057    (  0.656)        0.672
19   1.58     2.40      0.648          0.057    (  0.583)        0.591
20   1.67     2.70      0.729          0.057    (  0.656)        0.672
21   1.75     3.30      0.891          0.057    (  0.802)        0.834
22   1.83     3.10      0.837          0.057    (  0.753)        0.780
23   1.92     2.90      0.783          0.057    (  0.705)        0.726
24   2.00     3.00      0.810          0.057    (  0.729)        0.753
25   2.08     3.10      0.837          0.057    (  0.753)        0.780
26   2.17     4.20      1.134          0.057    (  1.021)        1.077
27   2.25     5.00      1.350          0.057    (  1.215)        1.293
28   2.33     3.50      0.945          0.057    (  0.850)        0.888
29   2.42     6.80      1.836          0.057    (  1.652)        1.779
30   2.50     7.30      1.971          0.057    (  1.774)        1.914
31   2.58     8.20      2.214          0.057    (  1.993)        2.157
32   2.67     5.90      1.593          0.057    (  1.434)        1.536
33   2.75     2.00      0.540          0.057    (  0.486)        0.483
34   2.83     1.80      0.486          0.057    (  0.437)        0.429
35   2.92     1.80      0.486          0.057    (  0.437)        0.429
36   3.00     0.60      0.162          0.057    (  0.146)        0.105
            (Loss Rate Not Used)
   Sum =     100.0                                      Sum =    24.9
     Flood volume = Effective rainfall      2.08(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       1.3(Ac.Ft)
     Total soil loss =      0.17(In)
     Total soil loss =     0.109(Ac.Ft)
     Total rainfall =      2.25(In)
     Flood volume =       57563.2 Cubic Feet
     Total soil loss =        4752.8 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     10.437(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       0.0003      0.05  Q         |         |         |         |
  0+10       0.0017      0.20  Q         |         |         |         |
  0+15       0.0050      0.47  Q         |         |         |         |
  0+20       0.0107      0.83  VQ        |         |         |         |
  0+25       0.0189      1.19  V Q       |         |         |         |
  0+30       0.0290      1.47  V Q       |         |         |         |
  0+35       0.0408      1.72  |V Q      |         |         |         |
  0+40       0.0542      1.95  |V Q      |         |         |         |
  0+45       0.0691      2.16  | V Q     |         |         |         |
  0+50       0.0850      2.32  | V Q     |         |         |         |
  0+55       0.1017      2.42  |  VQ     |         |         |         |
  1+ 0       0.1190      2.51  |  V Q    |         |         |         |
  1+ 5       0.1368      2.58  |   VQ    |         |         |         |
  1+10       0.1554      2.71  |   VQ    |         |         |         |
  1+15       0.1755      2.91  |    Q    |         |         |         |
  1+20       0.1971      3.14  |    VQ   |         |         |         |
  1+25       0.2201      3.34  |     Q   |         |         |         |
  1+30       0.2443      3.52  |      Q  |         |         |         |
  1+35       0.2698      3.70  |      QV |         |         |         |
  1+40       0.2967      3.91  |      QV |         |         |         |
  1+45       0.3253      4.15  |       QV|         |         |         |
  1+50       0.3555      4.39  |       Q V         |         |         |
  1+55       0.3875      4.64  |        Q|V        |         |         |
  2+ 0       0.4211      4.89  |        Q| V       |         |         |
  2+ 5       0.4561      5.08  |         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 02/20/20 File: 8946E2A16100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
100 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	1.30	9.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	3.00	22.89

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.180	0.057	(	0.162)	0.123
2	0.17	0.60	0.216	0.057	(	0.194)	0.159
3	0.25	0.60	0.216	0.057	(	0.194)	0.159
4	0.33	0.60	0.216	0.057	(	0.194)	0.159
5	0.42	0.60	0.216	0.057	(	0.194)	0.159
6	0.50	0.70	0.252	0.057	(	0.227)	0.195
7	0.58	0.70	0.252	0.057	(	0.227)	0.195
8	0.67	0.70	0.252	0.057	(	0.227)	0.195
9	0.75	0.70	0.252	0.057	(	0.227)	0.195
10	0.83	0.70	0.252	0.057	(	0.227)	0.195
11	0.92	0.70	0.252	0.057	(	0.227)	0.195
12	1.00	0.80	0.288	0.057	(	0.259)	0.231

13	1.08	0.80	0.288	0.057	(	0.259)	0.231
14	1.17	0.80	0.288	0.057	(	0.259)	0.231
15	1.25	0.80	0.288	0.057	(	0.259)	0.231
16	1.33	0.80	0.288	0.057	(	0.259)	0.231
17	1.42	0.80	0.288	0.057	(	0.259)	0.231
18	1.50	0.80	0.288	0.057	(	0.259)	0.231
19	1.58	0.80	0.288	0.057	(	0.259)	0.231
20	1.67	0.80	0.288	0.057	(	0.259)	0.231
21	1.75	0.80	0.288	0.057	(	0.259)	0.231
22	1.83	0.80	0.288	0.057	(	0.259)	0.231
23	1.92	0.80	0.288	0.057	(	0.259)	0.231
24	2.00	0.90	0.324	0.057	(	0.292)	0.267
25	2.08	0.80	0.288	0.057	(	0.259)	0.231
26	2.17	0.90	0.324	0.057	(	0.292)	0.267
27	2.25	0.90	0.324	0.057	(	0.292)	0.267
28	2.33	0.90	0.324	0.057	(	0.292)	0.267
29	2.42	0.90	0.324	0.057	(	0.292)	0.267
30	2.50	0.90	0.324	0.057	(	0.292)	0.267
31	2.58	0.90	0.324	0.057	(	0.292)	0.267
32	2.67	0.90	0.324	0.057	(	0.292)	0.267
33	2.75	1.00	0.360	0.057	(	0.324)	0.303
34	2.83	1.00	0.360	0.057	(	0.324)	0.303
35	2.92	1.00	0.360	0.057	(	0.324)	0.303
36	3.00	1.00	0.360	0.057	(	0.324)	0.303
37	3.08	1.00	0.360	0.057	(	0.324)	0.303
38	3.17	1.10	0.396	0.057	(	0.356)	0.339
39	3.25	1.10	0.396	0.057	(	0.356)	0.339
40	3.33	1.10	0.396	0.057	(	0.356)	0.339
41	3.42	1.20	0.432	0.057	(	0.389)	0.375
42	3.50	1.30	0.468	0.057	(	0.421)	0.411
43	3.58	1.40	0.504	0.057	(	0.454)	0.447
44	3.67	1.40	0.504	0.057	(	0.454)	0.447
45	3.75	1.50	0.540	0.057	(	0.486)	0.483
46	3.83	1.50	0.540	0.057	(	0.486)	0.483
47	3.92	1.60	0.576	0.057	(	0.518)	0.519
48	4.00	1.60	0.576	0.057	(	0.518)	0.519
49	4.08	1.70	0.612	0.057	(	0.551)	0.555
50	4.17	1.80	0.648	0.057	(	0.583)	0.591
51	4.25	1.90	0.684	0.057	(	0.616)	0.627
52	4.33	2.00	0.720	0.057	(	0.648)	0.663
53	4.42	2.10	0.756	0.057	(	0.680)	0.699
54	4.50	2.10	0.756	0.057	(	0.680)	0.699
55	4.58	2.20	0.792	0.057	(	0.713)	0.735
56	4.67	2.30	0.828	0.057	(	0.745)	0.771
57	4.75	2.40	0.864	0.057	(	0.778)	0.807
58	4.83	2.40	0.864	0.057	(	0.778)	0.807
59	4.92	2.50	0.900	0.057	(	0.810)	0.843
60	5.00	2.60	0.936	0.057	(	0.842)	0.879
61	5.08	3.10	1.116	0.057	(	1.004)	1.059
62	5.17	3.60	1.296	0.057	(	1.166)	1.239
63	5.25	3.90	1.404	0.057	(	1.264)	1.347
64	5.33	4.20	1.512	0.057	(	1.361)	1.455
65	5.42	4.70	1.692	0.057	(	1.523)	1.635
66	5.50	5.60	2.016	0.057	(	1.814)	1.959
67	5.58	1.90	0.684	0.057	(	0.616)	0.627
68	5.67	0.90	0.324	0.057	(	0.292)	0.267
69	5.75	0.60	0.216	0.057	(	0.194)	0.159
70	5.83	0.50	0.180	0.057	(	0.162)	0.123
71	5.92	0.30	0.108	0.057	(	0.097)	0.051
72	6.00	0.20	0.072	0.057	(	0.065)	0.015

(Loss Rate Not Used)

Sum = 100.0 Sum = 31.9

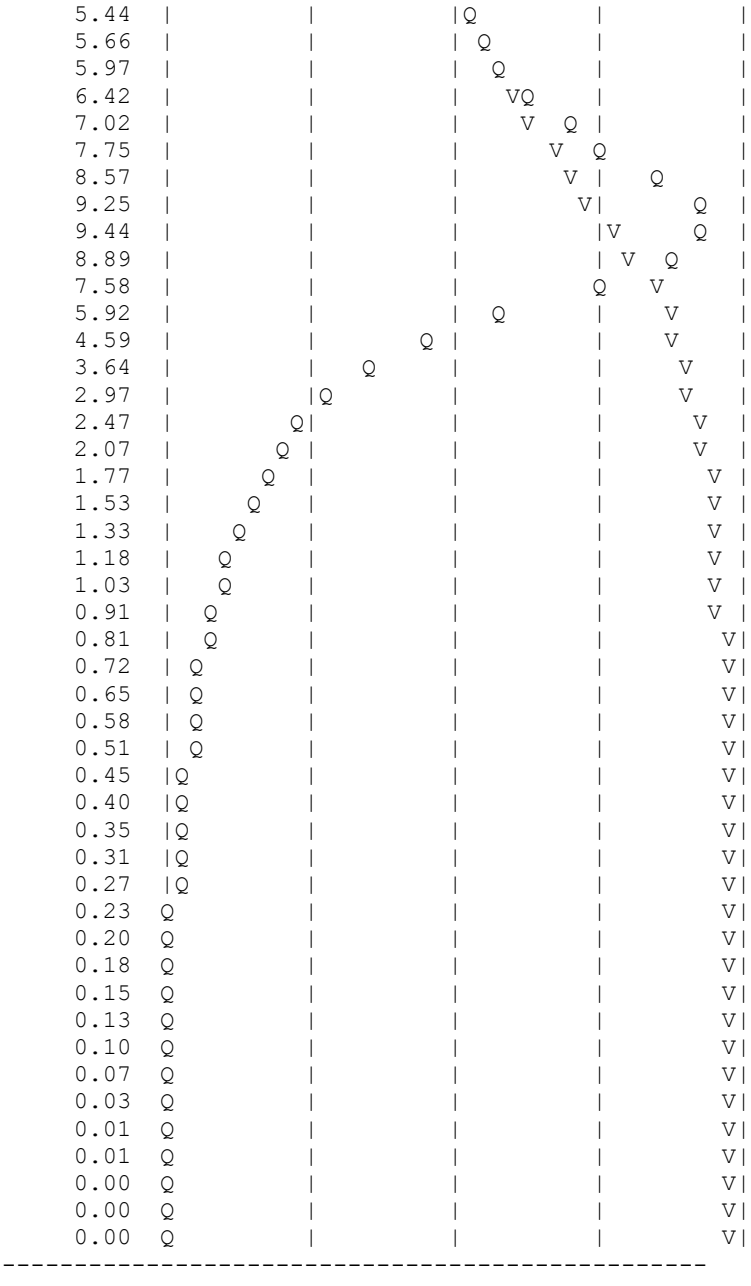
Flood volume = Effective rainfall 2.66(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 1.7(Ac.Ft)
Total soil loss = 0.34(In)
Total soil loss = 0.218(Ac.Ft)
Total rainfall = 3.00(In)
Flood volume = 73582.9 Cubic Feet
Total soil loss = 9505.6 Cubic Feet

Peak flow rate of this hydrograph = 9.436(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 2.5 5.0 7.5 10.0
0+ 5	0.0001	0.02	Q
0+10	0.0008	0.09	Q
0+15	0.0023	0.23	Q
0+20	0.0052	0.41	VQ
0+25	0.0093	0.61	V Q
0+30	0.0145	0.75	V Q
0+35	0.0205	0.86	V Q
0+40	0.0270	0.96	V Q
0+45	0.0343	1.05	V Q
0+50	0.0420	1.13	V Q
0+55	0.0502	1.19	|V Q
1+ 0	0.0587	1.24	|V Q
1+ 5	0.0676	1.29	|V Q
1+10	0.0769	1.35	|V Q
1+15	0.0867	1.42	| V Q
1+20	0.0970	1.49	| V Q
1+25	0.1075	1.54	| V Q
1+30	0.1184	1.57	| V Q
1+35	0.1294	1.60	| V Q
1+40	0.1405	1.62	| V Q
1+45	0.1518	1.64	| V Q
1+50	0.1632	1.66	| V Q
1+55	0.1747	1.67	| V Q
2+ 0	0.1864	1.69	| V Q
2+ 5	0.1982	1.72	| V Q
2+10	0.2102	1.75	| V Q
2+15	0.2225	1.79	| V Q
2+20	0.2351	1.83	| V Q
2+25	0.2479	1.86	| V Q
2+30	0.2610	1.90	| VQ
2+35	0.2743	1.93	| VQ
2+40	0.2878	1.95	| VQ
2+45	0.3014	1.98	| Q
2+50	0.3152	2.01	| VQ
2+55	0.3294	2.05	| VQ
3+ 0	0.3439	2.11	| Q
3+ 5	0.3587	2.16	| Q
3+10	0.3738	2.20	| Q
3+15	0.3893	2.24	| QV|
3+20	0.4050	2.29	| Q|
3+25	0.4212	2.35	| Q|
3+30	0.4380	2.43	| QV
3+35	0.4554	2.53	| Q
3+40	0.4737	2.65	| QV
3+45	0.4930	2.80	| |Q
3+50	0.5133	2.95	| |QV
3+55	0.5347	3.10	| | Q
4+ 0	0.5569	3.23	| | QV
4+ 5	0.5801	3.37	| | Q
4+10	0.6042	3.50	| | Q
4+15	0.6294	3.65	| | Q
4+20	0.6558	3.83	| | Q
4+25	0.6835	4.02	| | Q
4+30	0.7126	4.23	| | Q
4+35	0.7432	4.44	| | Q
4+40	0.7752	4.64	| | Q |
4+45	0.8086	4.84	| | Q|
4+50	0.8433	5.04	| | VQ
4+55	0.8794	5.24	| | Q

5+ 0	0.9168	5.44	
5+ 5	0.9558	5.66	
5+10	0.9969	5.97	
5+15	1.0412	6.42	
5+20	1.0895	7.02	
5+25	1.1429	7.75	
5+30	1.2019	8.57	
5+35	1.2656	9.25	
5+40	1.3306	9.44	
5+45	1.3919	8.89	
5+50	1.4441	7.58	
5+55	1.4849	5.92	
6+ 0	1.5165	4.59	
6+ 5	1.5416	3.64	
6+10	1.5621	2.97	
6+15	1.5791	2.47	
6+20	1.5934	2.07	
6+25	1.6056	1.77	
6+30	1.6161	1.53	
6+35	1.6253	1.33	
6+40	1.6334	1.18	
6+45	1.6405	1.03	
6+50	1.6468	0.91	
6+55	1.6523	0.81	
7+ 0	1.6573	0.72	
7+ 5	1.6618	0.65	
7+10	1.6658	0.58	
7+15	1.6693	0.51	
7+20	1.6724	0.45	
7+25	1.6752	0.40	
7+30	1.6776	0.35	
7+35	1.6797	0.31	
7+40	1.6815	0.27	
7+45	1.6831	0.23	
7+50	1.6845	0.20	
7+55	1.6857	0.18	
8+ 0	1.6868	0.15	
8+ 5	1.6877	0.13	
8+10	1.6884	0.10	
8+15	1.6889	0.07	
8+20	1.6890	0.03	
8+25	1.6891	0.01	
8+30	1.6892	0.01	
8+35	1.6892	0.00	
8+40	1.6892	0.00	
8+45	1.6892	0.00	

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 02/20/20 File: 8946E2A124100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
EXISTING CONDITION
100 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.353 Hr.
Lag time = 21.20 Min.
25% of lag time = 5.30 Min.
40% of lag time = 8.48 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]
7.63	2.25	17.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	5.25	40.06

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 5.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	89.00	0.000

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
89.0	95.6	0.057	0.000	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.029
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	23.585	2.148	0.165
2	0.167	47.170	6.907	0.531
3	0.250	70.755	12.198	0.938
4	0.333	94.341	16.189	1.245
5	0.417	117.926	15.635	1.202
6	0.500	141.511	10.334	0.795
7	0.583	165.096	6.674	0.513
8	0.667	188.681	4.448	0.342
9	0.750	212.266	3.447	0.265
10	0.833	235.851	2.856	0.220
11	0.917	259.436	2.405	0.185
12	1.000	283.022	2.105	0.162
13	1.083	306.607	1.769	0.136
14	1.167	330.192	1.488	0.114
15	1.250	353.777	1.410	0.108
16	1.333	377.362	1.171	0.090
17	1.417	400.947	1.038	0.080
18	1.500	424.532	0.885	0.068
19	1.583	448.117	0.755	0.058
20	1.667	471.703	0.735	0.056
21	1.750	495.288	0.708	0.054
22	1.833	518.873	0.647	0.050
23	1.917	542.458	0.523	0.040
24	2.000	566.043	0.497	0.038
25	2.083	589.628	0.429	0.033
26	2.167	613.213	0.410	0.032
27	2.250	636.798	0.339	0.026
28	2.333	660.384	0.321	0.025
29	2.417	683.969	0.251	0.019
30	2.500	707.554	0.236	0.018
31	2.583	731.139	0.236	0.018
32	2.667	754.724	0.236	0.018
33	2.750	778.309	0.236	0.018
34	2.833	801.894	0.335	0.026
		Sum = 100.000	Sum=	7.690

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	0.042	(0.101)	0.038	0.004
2	0.17	0.07	0.042	(0.101)	0.038	0.004
3	0.25	0.07	0.042	(0.101)	0.038	0.004
4	0.33	0.10	0.063	(0.100)	0.057	0.006
5	0.42	0.10	0.063	(0.100)	0.057	0.006
6	0.50	0.10	0.063	(0.099)	0.057	0.006
7	0.58	0.10	0.063	(0.099)	0.057	0.006
8	0.67	0.10	0.063	(0.099)	0.057	0.006
9	0.75	0.10	0.063	(0.098)	0.057	0.006
10	0.83	0.13	0.084	(0.098)	0.076	0.008
11	0.92	0.13	0.084	(0.098)	0.076	0.008
12	1.00	0.13	0.084	(0.097)	0.076	0.008

13	1.08	0.10	0.063	(	0.097)		0.057	0.006
14	1.17	0.10	0.063	(	0.096)		0.057	0.006
15	1.25	0.10	0.063	(	0.096)		0.057	0.006
16	1.33	0.10	0.063	(	0.096)		0.057	0.006
17	1.42	0.10	0.063	(	0.095)		0.057	0.006
18	1.50	0.10	0.063	(	0.095)		0.057	0.006
19	1.58	0.10	0.063	(	0.094)		0.057	0.006
20	1.67	0.10	0.063	(	0.094)		0.057	0.006
21	1.75	0.10	0.063	(	0.094)		0.057	0.006
22	1.83	0.13	0.084	(	0.093)		0.076	0.008
23	1.92	0.13	0.084	(	0.093)		0.076	0.008
24	2.00	0.13	0.084	(	0.093)		0.076	0.008
25	2.08	0.13	0.084	(	0.092)		0.076	0.008
26	2.17	0.13	0.084	(	0.092)		0.076	0.008
27	2.25	0.13	0.084	(	0.091)		0.076	0.008
28	2.33	0.13	0.084	(	0.091)		0.076	0.008
29	2.42	0.13	0.084	(	0.091)		0.076	0.008
30	2.50	0.13	0.084	(	0.090)		0.076	0.008
31	2.58	0.17	0.105		0.090	(	0.094)	0.015
32	2.67	0.17	0.105		0.090	(	0.094)	0.015
33	2.75	0.17	0.105		0.089	(	0.094)	0.016
34	2.83	0.17	0.105		0.089	(	0.094)	0.016
35	2.92	0.17	0.105		0.088	(	0.094)	0.017
36	3.00	0.17	0.105		0.088	(	0.094)	0.017
37	3.08	0.17	0.105		0.088	(	0.094)	0.017
38	3.17	0.17	0.105		0.087	(	0.094)	0.018
39	3.25	0.17	0.105		0.087	(	0.094)	0.018
40	3.33	0.17	0.105		0.087	(	0.094)	0.018
41	3.42	0.17	0.105		0.086	(	0.094)	0.019
42	3.50	0.17	0.105		0.086	(	0.094)	0.019
43	3.58	0.17	0.105		0.086	(	0.094)	0.019
44	3.67	0.17	0.105		0.085	(	0.094)	0.020
45	3.75	0.17	0.105		0.085	(	0.094)	0.020
46	3.83	0.20	0.126		0.085	(	0.113)	0.041
47	3.92	0.20	0.126		0.084	(	0.113)	0.042
48	4.00	0.20	0.126		0.084	(	0.113)	0.042
49	4.08	0.20	0.126		0.083	(	0.113)	0.043
50	4.17	0.20	0.126		0.083	(	0.113)	0.043
51	4.25	0.20	0.126		0.083	(	0.113)	0.043
52	4.33	0.23	0.147		0.082	(	0.132)	0.065
53	4.42	0.23	0.147		0.082	(	0.132)	0.065
54	4.50	0.23	0.147		0.082	(	0.132)	0.065
55	4.58	0.23	0.147		0.081	(	0.132)	0.066
56	4.67	0.23	0.147		0.081	(	0.132)	0.066
57	4.75	0.23	0.147		0.081	(	0.132)	0.066
58	4.83	0.27	0.168		0.080	(	0.151)	0.088
59	4.92	0.27	0.168		0.080	(	0.151)	0.088
60	5.00	0.27	0.168		0.080	(	0.151)	0.088
61	5.08	0.20	0.126		0.079	(	0.113)	0.047
62	5.17	0.20	0.126		0.079	(	0.113)	0.047
63	5.25	0.20	0.126		0.079	(	0.113)	0.047
64	5.33	0.23	0.147		0.078	(	0.132)	0.069
65	5.42	0.23	0.147		0.078	(	0.132)	0.069
66	5.50	0.23	0.147		0.078	(	0.132)	0.069
67	5.58	0.27	0.168		0.077	(	0.151)	0.091
68	5.67	0.27	0.168		0.077	(	0.151)	0.091
69	5.75	0.27	0.168		0.077	(	0.151)	0.091
70	5.83	0.27	0.168		0.076	(	0.151)	0.092
71	5.92	0.27	0.168		0.076	(	0.151)	0.092
72	6.00	0.27	0.168		0.076	(	0.151)	0.092
73	6.08	0.30	0.189		0.075	(	0.170)	0.114
74	6.17	0.30	0.189		0.075	(	0.170)	0.114
75	6.25	0.30	0.189		0.074	(	0.170)	0.114
76	6.33	0.30	0.189		0.074	(	0.170)	0.115
77	6.42	0.30	0.189		0.074	(	0.170)	0.115
78	6.50	0.30	0.189		0.074	(	0.170)	0.115
79	6.58	0.33	0.210		0.073	(	0.189)	0.137
80	6.67	0.33	0.210		0.073	(	0.189)	0.137
81	6.75	0.33	0.210		0.073	(	0.189)	0.137
82	6.83	0.33	0.210		0.072	(	0.189)	0.138

83	6.92	0.33	0.210	0.072	(	0.189)	0.138
84	7.00	0.33	0.210	0.072	(	0.189)	0.138
85	7.08	0.33	0.210	0.071	(	0.189)	0.139
86	7.17	0.33	0.210	0.071	(	0.189)	0.139
87	7.25	0.33	0.210	0.071	(	0.189)	0.139
88	7.33	0.37	0.231	0.070	(	0.208)	0.161
89	7.42	0.37	0.231	0.070	(	0.208)	0.161
90	7.50	0.37	0.231	0.070	(	0.208)	0.161
91	7.58	0.40	0.252	0.069	(	0.227)	0.183
92	7.67	0.40	0.252	0.069	(	0.227)	0.183
93	7.75	0.40	0.252	0.069	(	0.227)	0.183
94	7.83	0.43	0.273	0.068	(	0.246)	0.205
95	7.92	0.43	0.273	0.068	(	0.246)	0.205
96	8.00	0.43	0.273	0.068	(	0.246)	0.205
97	8.08	0.50	0.315	0.067	(	0.283)	0.248
98	8.17	0.50	0.315	0.067	(	0.283)	0.248
99	8.25	0.50	0.315	0.067	(	0.283)	0.248
100	8.33	0.50	0.315	0.066	(	0.283)	0.249
101	8.42	0.50	0.315	0.066	(	0.283)	0.249
102	8.50	0.50	0.315	0.066	(	0.283)	0.249
103	8.58	0.53	0.336	0.066	(	0.302)	0.270
104	8.67	0.53	0.336	0.065	(	0.302)	0.271
105	8.75	0.53	0.336	0.065	(	0.302)	0.271
106	8.83	0.57	0.357	0.065	(	0.321)	0.292
107	8.92	0.57	0.357	0.064	(	0.321)	0.293
108	9.00	0.57	0.357	0.064	(	0.321)	0.293
109	9.08	0.63	0.399	0.064	(	0.359)	0.335
110	9.17	0.63	0.399	0.063	(	0.359)	0.336
111	9.25	0.63	0.399	0.063	(	0.359)	0.336
112	9.33	0.67	0.420	0.063	(	0.378)	0.357
113	9.42	0.67	0.420	0.062	(	0.378)	0.358
114	9.50	0.67	0.420	0.062	(	0.378)	0.358
115	9.58	0.70	0.441	0.062	(	0.397)	0.379
116	9.67	0.70	0.441	0.062	(	0.397)	0.379
117	9.75	0.70	0.441	0.061	(	0.397)	0.380
118	9.83	0.73	0.462	0.061	(	0.416)	0.401
119	9.92	0.73	0.462	0.061	(	0.416)	0.401
120	10.00	0.73	0.462	0.060	(	0.416)	0.402
121	10.08	0.50	0.315	0.060	(	0.283)	0.255
122	10.17	0.50	0.315	0.060	(	0.283)	0.255
123	10.25	0.50	0.315	0.060	(	0.283)	0.255
124	10.33	0.50	0.315	0.059	(	0.283)	0.256
125	10.42	0.50	0.315	0.059	(	0.283)	0.256
126	10.50	0.50	0.315	0.059	(	0.283)	0.256
127	10.58	0.67	0.420	0.058	(	0.378)	0.362
128	10.67	0.67	0.420	0.058	(	0.378)	0.362
129	10.75	0.67	0.420	0.058	(	0.378)	0.362
130	10.83	0.67	0.420	0.058	(	0.378)	0.362
131	10.92	0.67	0.420	0.057	(	0.378)	0.363
132	11.00	0.67	0.420	0.057	(	0.378)	0.363
133	11.08	0.63	0.399	0.057	(	0.359)	0.342
134	11.17	0.63	0.399	0.056	(	0.359)	0.343
135	11.25	0.63	0.399	0.056	(	0.359)	0.343
136	11.33	0.63	0.399	0.056	(	0.359)	0.343
137	11.42	0.63	0.399	0.056	(	0.359)	0.343
138	11.50	0.63	0.399	0.055	(	0.359)	0.344
139	11.58	0.57	0.357	0.055	(	0.321)	0.302
140	11.67	0.57	0.357	0.055	(	0.321)	0.302
141	11.75	0.57	0.357	0.054	(	0.321)	0.303
142	11.83	0.60	0.378	0.054	(	0.340)	0.324
143	11.92	0.60	0.378	0.054	(	0.340)	0.324
144	12.00	0.60	0.378	0.054	(	0.340)	0.324
145	12.08	0.83	0.525	0.053	(	0.472)	0.472
146	12.17	0.83	0.525	0.053	(	0.472)	0.472
147	12.25	0.83	0.525	0.053	(	0.472)	0.472
148	12.33	0.87	0.546	0.053	(	0.491)	0.493
149	12.42	0.87	0.546	0.052	(	0.491)	0.494
150	12.50	0.87	0.546	0.052	(	0.491)	0.494
151	12.58	0.93	0.588	0.052	(	0.529)	0.536
152	12.67	0.93	0.588	0.052	(	0.529)	0.536

153	12.75	0.93	0.588	0.051	(	0.529)	0.537
154	12.83	0.97	0.609	0.051	(	0.548)	0.558
155	12.92	0.97	0.609	0.051	(	0.548)	0.558
156	13.00	0.97	0.609	0.051	(	0.548)	0.558
157	13.08	1.13	0.714	0.050	(	0.643)	0.664
158	13.17	1.13	0.714	0.050	(	0.643)	0.664
159	13.25	1.13	0.714	0.050	(	0.643)	0.664
160	13.33	1.13	0.714	0.049	(	0.643)	0.664
161	13.42	1.13	0.714	0.049	(	0.643)	0.665
162	13.50	1.13	0.714	0.049	(	0.643)	0.665
163	13.58	0.77	0.483	0.049	(	0.435)	0.434
164	13.67	0.77	0.483	0.048	(	0.435)	0.434
165	13.75	0.77	0.483	0.048	(	0.435)	0.435
166	13.83	0.77	0.483	0.048	(	0.435)	0.435
167	13.92	0.77	0.483	0.048	(	0.435)	0.435
168	14.00	0.77	0.483	0.048	(	0.435)	0.435
169	14.08	0.90	0.567	0.047	(	0.510)	0.520
170	14.17	0.90	0.567	0.047	(	0.510)	0.520
171	14.25	0.90	0.567	0.047	(	0.510)	0.520
172	14.33	0.87	0.546	0.047	(	0.491)	0.499
173	14.42	0.87	0.546	0.046	(	0.491)	0.500
174	14.50	0.87	0.546	0.046	(	0.491)	0.500
175	14.58	0.87	0.546	0.046	(	0.491)	0.500
176	14.67	0.87	0.546	0.046	(	0.491)	0.500
177	14.75	0.87	0.546	0.045	(	0.491)	0.501
178	14.83	0.83	0.525	0.045	(	0.472)	0.480
179	14.92	0.83	0.525	0.045	(	0.472)	0.480
180	15.00	0.83	0.525	0.045	(	0.472)	0.480
181	15.08	0.80	0.504	0.044	(	0.454)	0.460
182	15.17	0.80	0.504	0.044	(	0.454)	0.460
183	15.25	0.80	0.504	0.044	(	0.454)	0.460
184	15.33	0.77	0.483	0.044	(	0.435)	0.439
185	15.42	0.77	0.483	0.044	(	0.435)	0.439
186	15.50	0.77	0.483	0.043	(	0.435)	0.440
187	15.58	0.63	0.399	0.043	(	0.359)	0.356
188	15.67	0.63	0.399	0.043	(	0.359)	0.356
189	15.75	0.63	0.399	0.043	(	0.359)	0.356
190	15.83	0.63	0.399	0.042	(	0.359)	0.357
191	15.92	0.63	0.399	0.042	(	0.359)	0.357
192	16.00	0.63	0.399	0.042	(	0.359)	0.357
193	16.08	0.13	0.084	0.042	(	0.076)	0.042
194	16.17	0.13	0.084	0.042	(	0.076)	0.042
195	16.25	0.13	0.084	0.041	(	0.076)	0.043
196	16.33	0.13	0.084	0.041	(	0.076)	0.043
197	16.42	0.13	0.084	0.041	(	0.076)	0.043
198	16.50	0.13	0.084	0.041	(	0.076)	0.043
199	16.58	0.10	0.063	0.041	(	0.057)	0.022
200	16.67	0.10	0.063	0.040	(	0.057)	0.023
201	16.75	0.10	0.063	0.040	(	0.057)	0.023
202	16.83	0.10	0.063	0.040	(	0.057)	0.023
203	16.92	0.10	0.063	0.040	(	0.057)	0.023
204	17.00	0.10	0.063	0.040	(	0.057)	0.023
205	17.08	0.17	0.105	0.039	(	0.094)	0.066
206	17.17	0.17	0.105	0.039	(	0.094)	0.066
207	17.25	0.17	0.105	0.039	(	0.094)	0.066
208	17.33	0.17	0.105	0.039	(	0.094)	0.066
209	17.42	0.17	0.105	0.039	(	0.094)	0.066
210	17.50	0.17	0.105	0.038	(	0.094)	0.067
211	17.58	0.17	0.105	0.038	(	0.094)	0.067
212	17.67	0.17	0.105	0.038	(	0.094)	0.067
213	17.75	0.17	0.105	0.038	(	0.094)	0.067
214	17.83	0.13	0.084	0.038	(	0.076)	0.046
215	17.92	0.13	0.084	0.037	(	0.076)	0.047
216	18.00	0.13	0.084	0.037	(	0.076)	0.047
217	18.08	0.13	0.084	0.037	(	0.076)	0.047
218	18.17	0.13	0.084	0.037	(	0.076)	0.047
219	18.25	0.13	0.084	0.037	(	0.076)	0.047
220	18.33	0.13	0.084	0.036	(	0.076)	0.048
221	18.42	0.13	0.084	0.036	(	0.076)	0.048
222	18.50	0.13	0.084	0.036	(	0.076)	0.048

223	18.58	0.10	0.063	0.036	(	0.057)	0.027
224	18.67	0.10	0.063	0.036	(	0.057)	0.027
225	18.75	0.10	0.063	0.036	(	0.057)	0.027
226	18.83	0.07	0.042	0.035	(	0.038)	0.007
227	18.92	0.07	0.042	0.035	(	0.038)	0.007
228	19.00	0.07	0.042	0.035	(	0.038)	0.007
229	19.08	0.10	0.063	0.035	(	0.057)	0.028
230	19.17	0.10	0.063	0.035	(	0.057)	0.028
231	19.25	0.10	0.063	0.035	(	0.057)	0.028
232	19.33	0.13	0.084	0.034	(	0.076)	0.050
233	19.42	0.13	0.084	0.034	(	0.076)	0.050
234	19.50	0.13	0.084	0.034	(	0.076)	0.050
235	19.58	0.10	0.063	0.034	(	0.057)	0.029
236	19.67	0.10	0.063	0.034	(	0.057)	0.029
237	19.75	0.10	0.063	0.034	(	0.057)	0.029
238	19.83	0.07	0.042	0.034	(	0.038)	0.008
239	19.92	0.07	0.042	0.033	(	0.038)	0.009
240	20.00	0.07	0.042	0.033	(	0.038)	0.009
241	20.08	0.10	0.063	0.033	(	0.057)	0.030
242	20.17	0.10	0.063	0.033	(	0.057)	0.030
243	20.25	0.10	0.063	0.033	(	0.057)	0.030
244	20.33	0.10	0.063	0.033	(	0.057)	0.030
245	20.42	0.10	0.063	0.032	(	0.057)	0.031
246	20.50	0.10	0.063	0.032	(	0.057)	0.031
247	20.58	0.10	0.063	0.032	(	0.057)	0.031
248	20.67	0.10	0.063	0.032	(	0.057)	0.031
249	20.75	0.10	0.063	0.032	(	0.057)	0.031
250	20.83	0.07	0.042	0.032	(	0.038)	0.010
251	20.92	0.07	0.042	0.032	(	0.038)	0.010
252	21.00	0.07	0.042	0.032	(	0.038)	0.010
253	21.08	0.10	0.063	0.031	(	0.057)	0.032
254	21.17	0.10	0.063	0.031	(	0.057)	0.032
255	21.25	0.10	0.063	0.031	(	0.057)	0.032
256	21.33	0.07	0.042	0.031	(	0.038)	0.011
257	21.42	0.07	0.042	0.031	(	0.038)	0.011
258	21.50	0.07	0.042	0.031	(	0.038)	0.011
259	21.58	0.10	0.063	0.031	(	0.057)	0.032
260	21.67	0.10	0.063	0.031	(	0.057)	0.032
261	21.75	0.10	0.063	0.031	(	0.057)	0.032
262	21.83	0.07	0.042	0.030	(	0.038)	0.012
263	21.92	0.07	0.042	0.030	(	0.038)	0.012
264	22.00	0.07	0.042	0.030	(	0.038)	0.012
265	22.08	0.10	0.063	0.030	(	0.057)	0.033
266	22.17	0.10	0.063	0.030	(	0.057)	0.033
267	22.25	0.10	0.063	0.030	(	0.057)	0.033
268	22.33	0.07	0.042	0.030	(	0.038)	0.012
269	22.42	0.07	0.042	0.030	(	0.038)	0.012
270	22.50	0.07	0.042	0.030	(	0.038)	0.012
271	22.58	0.07	0.042	0.030	(	0.038)	0.012
272	22.67	0.07	0.042	0.029	(	0.038)	0.013
273	22.75	0.07	0.042	0.029	(	0.038)	0.013
274	22.83	0.07	0.042	0.029	(	0.038)	0.013
275	22.92	0.07	0.042	0.029	(	0.038)	0.013
276	23.00	0.07	0.042	0.029	(	0.038)	0.013
277	23.08	0.07	0.042	0.029	(	0.038)	0.013
278	23.17	0.07	0.042	0.029	(	0.038)	0.013
279	23.25	0.07	0.042	0.029	(	0.038)	0.013
280	23.33	0.07	0.042	0.029	(	0.038)	0.013
281	23.42	0.07	0.042	0.029	(	0.038)	0.013
282	23.50	0.07	0.042	0.029	(	0.038)	0.013
283	23.58	0.07	0.042	0.029	(	0.038)	0.013
284	23.67	0.07	0.042	0.029	(	0.038)	0.013
285	23.75	0.07	0.042	0.029	(	0.038)	0.013
286	23.83	0.07	0.042	0.029	(	0.038)	0.013
287	23.92	0.07	0.042	0.029	(	0.038)	0.013
288	24.00	0.07	0.042	0.029	(	0.038)	0.013

(Loss Rate Not Used)

Sum = 100.0 Sum = 47.5

Flood volume = Effective rainfall 3.96(In)

times area 7.6(Ac.)/[(In)/(Ft.)] = 2.5(Ac.Ft)

```
    Total soil loss =      1.29(In)
    Total soil loss =     0.820(Ac.Ft)
    Total rainfall =      5.25(In)
    Flood volume =      109683.1 Cubic Feet
    Total soil loss =       35723.5 Cubic Feet
    ---------------------------------------------------------------------
     Peak flow rate of this hydrograph =      4.673(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       0.0000      0.00  Q         |         |         |         |
  0+10       0.0000      0.00  Q         |         |         |         |
  0+15       0.0001      0.01  Q         |         |         |         |
  0+20       0.0002      0.01  Q         |         |         |         |
  0+25       0.0003      0.02  Q         |         |         |         |
  0+30       0.0005      0.02  Q         |         |         |         |
  0+35       0.0006      0.03  Q         |         |         |         |
  0+40       0.0009      0.03  Q         |         |         |         |
  0+45       0.0011      0.04  Q         |         |         |         |
  0+50       0.0014      0.04  Q         |         |         |         |
  0+55       0.0017      0.04  Q         |         |         |         |
  1+ 0       0.0020      0.04  Q         |         |         |         |
  1+ 5       0.0023      0.05  Q         |         |         |         |
  1+10       0.0026      0.05  Q         |         |         |         |
  1+15       0.0030      0.05  Q         |         |         |         |
  1+20       0.0033      0.05  Q         |         |         |         |
  1+25       0.0036      0.05  Q         |         |         |         |
  1+30       0.0039      0.05  Q         |         |         |         |
  1+35       0.0043      0.05  Q         |         |         |         |
  1+40       0.0046      0.05  Q         |         |         |         |
  1+45       0.0049      0.05  Q         |         |         |         |
  1+50       0.0052      0.05  Q         |         |         |         |
  1+55       0.0056      0.05  Q         |         |         |         |
  2+ 0       0.0059      0.05  Q         |         |         |         |
  2+ 5       0.0063      0.05  Q         |         |         |         |
  2+10       0.0067      0.06  Q         |         |         |         |
  2+15       0.0071      0.06  Q         |         |         |         |
  2+20       0.0075      0.06  Q         |         |         |         |
  2+25       0.0079      0.06  Q         |         |         |         |
  2+30       0.0083      0.06  Q         |         |         |         |
  2+35       0.0088      0.06  Q         |         |         |         |
  2+40       0.0092      0.07  Q         |         |         |         |
  2+45       0.0097      0.07  Q         |         |         |         |
  2+50       0.0103      0.08  Q         |         |         |         |
  2+55       0.0109      0.09  Q         |         |         |         |
  3+ 0       0.0116      0.10  Q         |         |         |         |
  3+ 5       0.0123      0.10  Q         |         |         |         |
  3+10       0.0131      0.11  Q         |         |         |         |
  3+15       0.0139      0.11  Q         |         |         |         |
  3+20       0.0147      0.12  Q         |         |         |         |
  3+25       0.0155      0.12  Q         |         |         |         |
  3+30       0.0163      0.12  Q         |         |         |         |
  3+35       0.0172      0.13  Q         |         |         |         |
  3+40       0.0181      0.13  Q         |         |         |         |
  3+45       0.0190      0.13  Q         |         |         |         |
  3+50       0.0200      0.14  Q         |         |         |         |
  3+55       0.0211      0.15  Q         |         |         |         |
  4+ 0       0.0223      0.18  Q         |         |         |         |
  4+ 5       0.0237      0.21  Q         |         |         |         |
  4+10       0.0253      0.23  Q         |         |         |         |
  4+15       0.0271      0.25  VQ        |         |         |         |
  4+20       0.0289      0.27  VQ        |         |         |         |
  4+25       0.0310      0.29  VQ        |         |         |         |
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 4+30       0.0332      0.32  VQ        |         |         |         |
 4+35       0.0356      0.35  VQ        |         |         |         |
 4+40       0.0383      0.39  VQ        |         |         |         |
 4+45       0.0411      0.41  VQ        |         |         |         |
 4+50       0.0441      0.43  VQ        |         |         |         |
 4+55       0.0472      0.45  VQ        |         |         |         |
 5+ 0       0.0505      0.48  VQ        |         |         |         |
 5+ 5       0.0540      0.51  V Q       |         |         |         |
 5+10       0.0576      0.52  V Q       |         |         |         |
 5+15       0.0611      0.51  V Q       |         |         |         |
 5+20       0.0644      0.48  |Q        |         |         |         |
 5+25       0.0675      0.45  |Q        |         |         |         |
 5+30       0.0706      0.45  |Q        |         |         |         |
 5+35       0.0738      0.47  |Q        |         |         |         |
 5+40       0.0773      0.50  |Q        |         |         |         |
 5+45       0.0809      0.53  |VQ       |         |         |         |
 5+50       0.0848      0.57  |VQ       |         |         |         |
 5+55       0.0890      0.60  |VQ       |         |         |         |
 6+ 0       0.0932      0.62  |VQ       |         |         |         |
 6+ 5       0.0976      0.64  |VQ       |         |         |         |
 6+10       0.1022      0.66  |VQ       |         |         |         |
 6+15       0.1070      0.69  |VQ       |         |         |         |
 6+20       0.1120      0.73  |VQ       |         |         |         |
 6+25       0.1172      0.76  |V Q      |         |         |         |
 6+30       0.1226      0.78  |V Q      |         |         |         |
 6+35       0.1282      0.81  | VQ      |         |         |         |
 6+40       0.1339      0.83  | VQ      |         |         |         |
 6+45       0.1398      0.86  | VQ      |         |         |         |
 6+50       0.1460      0.90  | VQ      |         |         |         |
 6+55       0.1524      0.93  | VQ      |         |         |         |
 7+ 0       0.1589      0.95  | VQ      |         |         |         |
 7+ 5       0.1656      0.97  | VQ      |         |         |         |
 7+10       0.1724      0.99  | VQ      |         |         |         |
 7+15       0.1793      1.00  | VQ      |         |         |         |
 7+20       0.1862      1.01  | V Q     |         |         |         |
 7+25       0.1933      1.03  |  VQ     |         |         |         |
 7+30       0.2006      1.06  |  VQ     |         |         |         |
 7+35       0.2082      1.10  |  VQ     |         |         |         |
 7+40       0.2160      1.14  |  VQ     |         |         |         |
 7+45       0.2242      1.18  |  VQ     |         |         |         |
 7+50       0.2326      1.23  |  VQ     |         |         |         |
 7+55       0.2414      1.28  |  V Q    |         |         |         |
 8+ 0       0.2505      1.32  |  V Q    |         |         |         |
 8+ 5       0.2600      1.38  |   VQ    |         |         |         |
 8+10       0.2699      1.44  |   VQ    |         |         |         |
 8+15       0.2803      1.51  |   V Q   |         |         |         |
 8+20       0.2912      1.59  |   V Q   |         |         |         |
 8+25       0.3026      1.65  |   V Q   |         |         |         |
 8+30       0.3143      1.70  |   V Q   |         |         |         |
 8+35       0.3263      1.74  |    VQ   |         |         |         |
 8+40       0.3386      1.78  |    V Q  |         |         |         |
 8+45       0.3511      1.82  |    V Q  |         |         |         |
 8+50       0.3639      1.87  |    V Q  |         |         |         |
 8+55       0.3771      1.92  |    V Q  |         |         |         |
 9+ 0       0.3907      1.97  |     VQ  |         |         |         |
 9+ 5       0.4046      2.03  |     V Q |         |         |         |
 9+10       0.4190      2.09  |     V Q |         |         |         |
 9+15       0.4340      2.16  |     V Q |         |         |         |
 9+20       0.4494      2.24  |      VQ |         |         |         |
 9+25       0.4654      2.33  |      V Q|         |         |         |
 9+30       0.4819      2.40  |      V Q|         |         |         |
 9+35       0.4989      2.46  |      V Q|         |         |         |
 9+40       0.5163      2.52  |       V Q         |         |         |
 9+45       0.5341      2.58  |       V Q         |         |         |
 9+50       0.5523      2.64  |       V Q         |         |         |
 9+55       0.5709      2.71  |        VQ         |         |         |
10+ 0       0.5899      2.76  |        V|Q        |         |         |
10+ 5       0.6092      2.79  |        V|Q        |         |         |
10+10       0.6282      2.76  |        V|Q        |         |         |
10+15       0.6466      2.66  |         Q         |         |         |
```

10+20	0.6639	2.51	Q			
10+25	0.6801	2.35	QV			
10+30	0.6956	2.26	Q|V			
10+35	0.7109	2.22	Q |V			
10+40	0.7263	2.24	Q |V			
10+45	0.7422	2.31	Q|V			
10+50	0.7589	2.42	Q| V			
10+55	0.7763	2.53	Q V			
11+ 0	0.7942	2.60	Q V			
11+ 5	0.8124	2.64	Q V			
11+10	0.8307	2.65	Q V			
11+15	0.8490	2.65	Q V			
11+20	0.8672	2.65	Q V			
11+25	0.8853	2.63	Q V			
11+30	0.9034	2.63	Q V			
11+35	0.9215	2.62	Q V			
11+40	0.9394	2.60	Q V			
11+45	0.9571	2.57	Q V			
11+50	0.9744	2.52	Q V			
11+55	0.9915	2.48	Q| V			
12+ 0	1.0085	2.47	Q| V			
12+ 5	1.0258	2.50	Q V			
12+10	1.0436	2.59	Q V			
12+15	1.0625	2.74	Q V			
12+20	1.0826	2.93	|Q V			
12+25	1.1041	3.12	| Q V			
12+30	1.1265	3.26	| Q V			
12+35	1.1497	3.37	| Q V			
12+40	1.1736	3.46	| Q V			
12+45	1.1981	3.56	| Q V|			
12+50	1.2232	3.66	| Q V|			
12+55	1.2491	3.75	| Q V|			
13+ 0	1.2755	3.84	| Q V			
13+ 5	1.3026	3.93	| Q V			
13+10	1.3305	4.05	| Q |V			
13+15	1.3594	4.20	| Q |V			
13+20	1.3895	4.37	| Q | V			
13+25	1.4207	4.53	| Q | V			
13+30	1.4526	4.63	| Q | V			
13+35	1.4848	4.67	| Q | V			
13+40	1.5165	4.61	| Q | V			
13+45	1.5471	4.44	| Q | V			
13+50	1.5759	4.19	| Q | V			
13+55	1.6031	3.94	| Q | V			
14+ 0	1.6292	3.79	| Q | V			
14+ 5	1.6547	3.71	| Q | V			
14+10	1.6802	3.70	| Q | V			
14+15	1.7060	3.74	| Q | V			
14+20	1.7322	3.81	| Q | V			
14+25	1.7589	3.87	| Q | V			
14+30	1.7857	3.90	| Q | V			
14+35	1.8125	3.90	| Q | V			
14+40	1.8393	3.89	| Q | V|			
14+45	1.8660	3.88	| Q | V|			
14+50	1.8927	3.88	| Q | V			
14+55	1.9193	3.86	| Q | V			
15+ 0	1.9458	3.84	| Q | V			
15+ 5	1.9720	3.81	| Q | |V			
15+10	1.9981	3.78	| Q | |V			
15+15	2.0238	3.74	| Q | | V			
15+20	2.0493	3.70	| Q | | V			
15+25	2.0744	3.65	| Q | | V			
15+30	2.0993	3.61	| Q | | V			
15+35	2.1238	3.55	| Q | | V			
15+40	2.1477	3.47	| Q | | V			
15+45	2.1709	3.37	| Q | | V			
15+50	2.1932	3.25	| Q | | V			
15+55	2.2148	3.13	| Q | | V			
16+ 0	2.2359	3.05	| Q | | V			
16+ 5	2.2562	2.95	|Q | | V			

16+10	2.2751	2.74		Q		V
16+15	2.2917	2.42		Q		V
16+20	2.3055	2.00		Q		V
16+25	2.3165	1.60		Q		V
16+30	2.3257	1.33		Q		V
16+35	2.3337	1.16		Q		V
16+40	2.3407	1.03		Q		V
16+45	2.3470	0.91		Q		V
16+50	2.3526	0.81		Q		V
16+55	2.3576	0.72	Q			V
17+ 0	2.3620	0.65	Q			V
17+ 5	2.3661	0.59	Q			V
17+10	2.3700	0.57	Q			V
17+15	2.3739	0.56	Q			V
17+20	2.3778	0.58	Q			V
17+25	2.3819	0.59	Q			V
17+30	2.3861	0.60	Q			V
17+35	2.3902	0.60	Q			V
17+40	2.3943	0.59	Q			V
17+45	2.3983	0.58	Q			V
17+50	2.4022	0.57	Q			V
17+55	2.4059	0.55	Q			V
18+ 0	2.4095	0.52	Q			V
18+ 5	2.4129	0.49	Q			V
18+10	2.4161	0.46	Q			V
18+15	2.4191	0.44	Q			V
18+20	2.4220	0.42	Q			V
18+25	2.4248	0.41	Q			V
18+30	2.4276	0.40	Q			V
18+35	2.4303	0.39	Q			V
18+40	2.4328	0.37	Q			V
18+45	2.4352	0.35	Q			V
18+50	2.4374	0.31	Q			V
18+55	2.4393	0.27	Q			V
19+ 0	2.4409	0.24	Q			V
19+ 5	2.4423	0.21	Q			V
19+10	2.4436	0.19	Q			V
19+15	2.4449	0.18	Q			V
19+20	2.4462	0.20	Q			V
19+25	2.4478	0.22	Q			V
19+30	2.4495	0.25	Q			V
19+35	2.4515	0.28	Q			V
19+40	2.4535	0.30	Q			V
19+45	2.4555	0.29	Q			V
19+50	2.4574	0.28	Q			V
19+55	2.4591	0.25	Q			V
20+ 0	2.4606	0.22	Q			V
20+ 5	2.4619	0.19	Q			V
20+10	2.4631	0.17	Q			V
20+15	2.4643	0.17	Q			V
20+20	2.4656	0.19	Q			V
20+25	2.4670	0.20	Q			V
20+30	2.4685	0.21	Q			V
20+35	2.4700	0.22	Q			V
20+40	2.4715	0.22	Q			V
20+45	2.4731	0.23	Q			V
20+50	2.4746	0.22	Q			V
20+55	2.4761	0.21	Q			V
21+ 0	2.4774	0.20	Q			V
21+ 5	2.4786	0.18	Q			V
21+10	2.4798	0.16	Q			V
21+15	2.4809	0.17	Q			V
21+20	2.4822	0.18	Q			V
21+25	2.4834	0.19	Q			V
21+30	2.4847	0.18	Q			V
21+35	2.4858	0.16	Q			V
21+40	2.4869	0.16	Q			V
21+45	2.4880	0.16	Q			V
21+50	2.4892	0.18	Q			V
21+55	2.4905	0.19	Q			V

22+ 0	2.4918	0.18	Q	|	|	|	V|
22+ 5	2.4929	0.17	Q	|	|	|	V|
22+10	2.4940	0.16	Q	|	|	|	V|
22+15	2.4951	0.16	Q	|	|	|	V|
22+20	2.4963	0.18	Q	|	|	|	V|
22+25	2.4976	0.19	Q	|	|	|	V|
22+30	2.4989	0.18	Q	|	|	|	V|
22+35	2.5000	0.16	Q	|	|	|	V|
22+40	2.5010	0.14	Q	|	|	|	V|
22+45	2.5019	0.13	Q	|	|	|	V|
22+50	2.5028	0.12	Q	|	|	|	V|
22+55	2.5036	0.12	Q	|	|	|	V|
23+ 0	2.5044	0.12	Q	|	|	|	V|
23+ 5	2.5052	0.11	Q	|	|	|	V|
23+10	2.5060	0.11	Q	|	|	|	V|
23+15	2.5067	0.11	Q	|	|	|	V|
23+20	2.5075	0.11	Q	|	|	|	V|
23+25	2.5082	0.11	Q	|	|	|	V|
23+30	2.5090	0.11	Q	|	|	|	V|
23+35	2.5097	0.11	Q	|	|	|	V|
23+40	2.5104	0.11	Q	|	|	|	V|
23+45	2.5112	0.11	Q	|	|	|	V|
23+50	2.5119	0.11	Q	|	|	|	V|
23+55	2.5126	0.11	Q	|	|	|	V|
24+ 0	2.5134	0.11	Q	|	|	|	V|
24+ 5	2.5141	0.10	Q	|	|	|	V|
24+10	2.5147	0.10	Q	|	|	|	V|
24+15	2.5153	0.08	Q	|	|	|	V|
24+20	2.5158	0.07	Q	|	|	|	V|
24+25	2.5161	0.05	Q	|	|	|	V|
24+30	2.5164	0.04	Q	|	|	|	V|
24+35	2.5166	0.03	Q	|	|	|	V|
24+40	2.5168	0.03	Q	|	|	|	V|
24+45	2.5169	0.02	Q	|	|	|	V|
24+50	2.5171	0.02	Q	|	|	|	V|
24+55	2.5172	0.02	Q	|	|	|	V|
25+ 0	2.5173	0.02	Q	|	|	|	V|
25+ 5	2.5174	0.01	Q	|	|	|	V|
25+10	2.5175	0.01	Q	|	|	|	V|
25+15	2.5175	0.01	Q	|	|	|	V|
25+20	2.5176	0.01	Q	|	|	|	V|
25+25	2.5177	0.01	Q	|	|	|	V|
25+30	2.5177	0.01	Q	|	|	|	V|
25+35	2.5177	0.01	Q	|	|	|	V|
25+40	2.5178	0.01	Q	|	|	|	V|
25+45	2.5178	0.00	Q	|	|	|	V|
25+50	2.5178	0.00	Q	|	|	|	V|
25+55	2.5179	0.00	Q	|	|	|	V|
26+ 0	2.5179	0.00	Q	|	|	|	V|
26+ 5	2.5179	0.00	Q	|	|	|	V|
26+10	2.5179	0.00	Q	|	|	|	V|
26+15	2.5179	0.00	Q	|	|	|	V|
26+20	2.5179	0.00	Q	|	|	|	V|
26+25	2.5180	0.00	Q	|	|	|	V|
26+30	2.5180	0.00	Q	|	|	|	V|
26+35	2.5180	0.00	Q	|	|	|	V|
26+40	2.5180	0.00	Q	|	|	|	V|
26+45	2.5180	0.00	Q	|	|	|	V

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

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Study date 02/19/20 File: 8946E2A112.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
2 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.121 Hr.
Lag time = 7.27 Min.
25% of lag time = 1.82 Min.
40% of lag time = 2.91 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]
3.35	0.55	1.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	1.30	4.36

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	68.776	10.314	0.348
2	0.167	137.551	39.453	1.332
3	0.250	206.327	23.573	0.796
4	0.333	275.102	9.126	0.308
5	0.417	343.878	5.550	0.187
6	0.500	412.654	3.710	0.125
7	0.583	481.429	2.466	0.083
8	0.667	550.205	1.937	0.065
9	0.750	618.980	1.384	0.047
10	0.833	687.756	0.994	0.034
11	0.917	756.532	0.716	0.024
12	1.000	825.307	0.779	0.026
		Sum = 100.000	Sum=	3.376

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	0.218	(0.199)	0.079	0.139
2	0.17	4.20	0.277	(0.199)	0.101	0.176
3	0.25	4.40	0.290	(0.199)	0.106	0.185
4	0.33	4.80	0.317	(0.199)	0.115	0.201
5	0.42	5.20	0.343	(0.199)	0.125	0.218
6	0.50	6.20	0.409	(0.199)	0.149	0.260
7	0.58	6.80	0.449	(0.199)	0.163	0.285
8	0.67	8.80	0.581	0.199	(0.211)	0.382
9	0.75	13.90	0.917	0.199	(0.334)	0.719
10	0.83	31.40	2.072	0.199	(0.754)	1.874
11	0.92	7.20	0.475	(0.199)	0.173	0.302
12	1.00	3.80	0.251	(0.199)	0.091	0.160
	(Loss Rate Not Used)					
Sum =	100.0				Sum =	4.9

Flood volume = Effective rainfall 0.41(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.040(Ac.Ft)
Total rainfall = 0.55(In)
Flood volume = 4966.5 Cubic Feet
Total soil loss = 1721.6 Cubic Feet

Peak flow rate of this hydrograph = 3.428(CFS)

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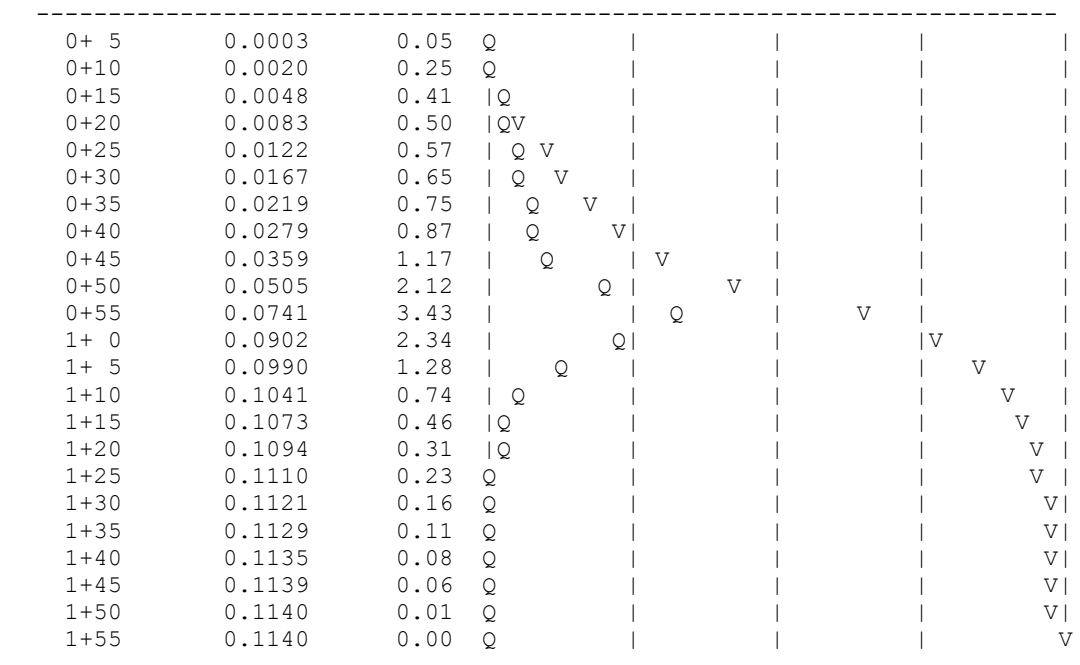
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

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



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 02/19/20 File: 8946E2A132.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
2 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.121 Hr.
Lag time = 7.27 Min.
25% of lag time = 1.82 Min.
40% of lag time = 2.91 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]
3.35	0.90	3.02

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	2.25	7.54

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 0.900(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.900(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	68.776	10.314	0.348
2	0.167	137.551	39.453	1.332
3	0.250	206.327	23.573	0.796
4	0.333	275.102	9.126	0.308
5	0.417	343.878	5.550	0.187
6	0.500	412.654	3.710	0.125
7	0.583	481.429	2.466	0.083
8	0.667	550.205	1.937	0.065
9	0.750	618.980	1.384	0.047
10	0.833	687.756	0.994	0.034
11	0.917	756.532	0.716	0.024
12	1.000	825.307	0.779	0.026
		Sum = 100.000	Sum=	3.376

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	0.140	(0.199)	0.051	0.089
2	0.17	1.30	0.140	(0.199)	0.051	0.089
3	0.25	1.10	0.119	(0.199)	0.043	0.076
4	0.33	1.50	0.162	(0.199)	0.059	0.103
5	0.42	1.50	0.162	(0.199)	0.059	0.103
6	0.50	1.80	0.194	(0.199)	0.071	0.124
7	0.58	1.50	0.162	(0.199)	0.059	0.103
8	0.67	1.80	0.194	(0.199)	0.071	0.124
9	0.75	1.80	0.194	(0.199)	0.071	0.124
10	0.83	1.50	0.162	(0.199)	0.059	0.103
11	0.92	1.60	0.173	(0.199)	0.063	0.110
12	1.00	1.80	0.194	(0.199)	0.071	0.124
13	1.08	2.20	0.238	(0.199)	0.086	0.151
14	1.17	2.20	0.238	(0.199)	0.086	0.151
15	1.25	2.20	0.238	(0.199)	0.086	0.151
16	1.33	2.00	0.216	(0.199)	0.079	0.137
17	1.42	2.60	0.281	(0.199)	0.102	0.179
18	1.50	2.70	0.292	(0.199)	0.106	0.185
19	1.58	2.40	0.259	(0.199)	0.094	0.165
20	1.67	2.70	0.292	(0.199)	0.106	0.185
21	1.75	3.30	0.356	(0.199)	0.130	0.227
22	1.83	3.10	0.335	(0.199)	0.122	0.213
23	1.92	2.90	0.313	(0.199)	0.114	0.199
24	2.00	3.00	0.324	(0.199)	0.118	0.206
25	2.08	3.10	0.335	(0.199)	0.122	0.213
26	2.17	4.20	0.454	(0.199)	0.165	0.288
27	2.25	5.00	0.540	(0.199)	0.197	0.343
28	2.33	3.50	0.378	(0.199)	0.138	0.240
29	2.42	6.80	0.734	0.199	(0.267)	0.536
30	2.50	7.30	0.788	0.199	(0.287)	0.590
31	2.58	8.20	0.886	0.199	(0.322)	0.687
32	2.67	5.90	0.637	0.199	(0.232)	0.438
33	2.75	2.00	0.216	(0.199)	0.079	0.137
34	2.83	1.80	0.194	(0.199)	0.071	0.124

```
35   2.92     1.80      0.194       (  0.199)       0.071        0.124
36   3.00     0.60      0.065       (  0.199)       0.024        0.041
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =     7.2
     Flood volume = Effective rainfall      0.60(In)
      times area       3.4(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
     Total soil loss =      0.30(In)
     Total soil loss =     0.084(Ac.Ft)
     Total rainfall =      0.90(In)
     Flood volume =        7278.4 Cubic Feet
     Total soil loss =        3665.9 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      1.856(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0012      0.15  Q         |         |         |         |
  0+15       0.0027      0.22  Q         |         |         |         |
  0+20       0.0044      0.24  QV        |         |         |         |
  0+25       0.0063      0.28  |Q        |         |         |         |
  0+30       0.0084      0.31  |QV       |         |         |         |
  0+35       0.0108      0.35  |QV       |         |         |         |
  0+40       0.0133      0.35  |Q V      |         |         |         |
  0+45       0.0158      0.38  |Q V      |         |         |         |
  0+50       0.0185      0.39  |Q  V     |         |         |         |
  0+55       0.0211      0.37  |Q   V    |         |         |         |
  1+ 0       0.0236      0.37  |Q   V    |         |         |         |
  1+ 5       0.0264      0.40  |Q    V   |         |         |         |
  1+10       0.0295      0.45  |Q     V  |         |         |         |
  1+15       0.0328      0.48  |Q     V  |         |         |         |
  1+20       0.0362      0.48  |Q      V |         |         |         |
  1+25       0.0395      0.49  |Q       V|         |         |         |
  1+30       0.0432      0.54  | Q       V         |         |         |
  1+35       0.0472      0.57  | Q       |V        |         |         |
  1+40       0.0511      0.57  | Q       | V       |         |         |
  1+45       0.0553      0.60  | Q       |  V      |         |         |
  1+50       0.0599      0.67  | Q       |   V     |         |         |
  1+55       0.0646      0.69  | Q       |    V    |         |         |
  2+ 0       0.0693      0.68  | Q       |     V   |         |         |
  2+ 5       0.0740      0.69  | Q       |      V  |         |         |
  2+10       0.0790      0.73  | Q       |       V |         |         |
  2+15       0.0849      0.85  |  Q      |         V         |         |
  2+20       0.0915      0.96  |  Q      |         |V        |         |
  2+25       0.0983      0.99  |  Q      |         |  V      |         |
  2+30       0.1076      1.35  |    Q    |         |    V    |         |
  2+35       0.1192      1.68  |     Q   |         |       V |         |
  2+40       0.1320      1.86  |      Q  |         |         |V        |
  2+45       0.1428      1.57  |     Q   |         |         |   V     |
  2+50       0.1500      1.04  |   Q     |         |         |    V    |
  2+55       0.1551      0.75  |  Q      |         |         |      V  |
  3+ 0       0.1593      0.61  | Q       |         |         |       V |
  3+ 5       0.1622      0.42  |Q        |         |         |       V |
  3+10       0.1639      0.25  |Q        |         |         |        V|
  3+15       0.1651      0.16  Q         |         |         |        V|
  3+20       0.1658      0.11  Q         |         |         |        V|
  3+25       0.1664      0.08  Q         |         |         |        V|
  3+30       0.1667      0.05  Q         |         |         |        V|
  3+35       0.1669      0.03  Q         |         |         |        V|
  3+40       0.1670      0.01  Q         |         |         |        V|
  3+45       0.1671      0.01  Q         |         |         |        V|
  3+50       0.1671      0.00  Q         |         |         |        V|
  3+55       0.1671      0.00  Q         |         |         |         V
```

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

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Study date 02/19/20 File: 8946E2A162.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
2 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.121 Hr.
Lag time = 7.27 Min.
25% of lag time = 1.82 Min.
40% of lag time = 2.91 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]
3.35	1.30	4.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	3.00	10.05

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	68.776	10.314	0.348
2	0.167	137.551	39.453	1.332
3	0.250	206.327	23.573	0.796
4	0.333	275.102	9.126	0.308
5	0.417	343.878	5.550	0.187
6	0.500	412.654	3.710	0.125
7	0.583	481.429	2.466	0.083
8	0.667	550.205	1.937	0.065
9	0.750	618.980	1.384	0.047
10	0.833	687.756	0.994	0.034
11	0.917	756.532	0.716	0.024
12	1.000	825.307	0.779	0.026
		Sum = 100.000	Sum=	3.376

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	0.078	(0.199)	0.028	0.050
2	0.17	0.60	0.094	(0.199)	0.034	0.060
3	0.25	0.60	0.094	(0.199)	0.034	0.060
4	0.33	0.60	0.094	(0.199)	0.034	0.060
5	0.42	0.60	0.094	(0.199)	0.034	0.060
6	0.50	0.70	0.109	(0.199)	0.040	0.069
7	0.58	0.70	0.109	(0.199)	0.040	0.069
8	0.67	0.70	0.109	(0.199)	0.040	0.069
9	0.75	0.70	0.109	(0.199)	0.040	0.069
10	0.83	0.70	0.109	(0.199)	0.040	0.069
11	0.92	0.70	0.109	(0.199)	0.040	0.069
12	1.00	0.80	0.125	(0.199)	0.045	0.079
13	1.08	0.80	0.125	(0.199)	0.045	0.079
14	1.17	0.80	0.125	(0.199)	0.045	0.079
15	1.25	0.80	0.125	(0.199)	0.045	0.079
16	1.33	0.80	0.125	(0.199)	0.045	0.079
17	1.42	0.80	0.125	(0.199)	0.045	0.079
18	1.50	0.80	0.125	(0.199)	0.045	0.079
19	1.58	0.80	0.125	(0.199)	0.045	0.079
20	1.67	0.80	0.125	(0.199)	0.045	0.079
21	1.75	0.80	0.125	(0.199)	0.045	0.079
22	1.83	0.80	0.125	(0.199)	0.045	0.079
23	1.92	0.80	0.125	(0.199)	0.045	0.079
24	2.00	0.90	0.140	(0.199)	0.051	0.089
25	2.08	0.80	0.125	(0.199)	0.045	0.079
26	2.17	0.90	0.140	(0.199)	0.051	0.089
27	2.25	0.90	0.140	(0.199)	0.051	0.089
28	2.33	0.90	0.140	(0.199)	0.051	0.089
29	2.42	0.90	0.140	(0.199)	0.051	0.089
30	2.50	0.90	0.140	(0.199)	0.051	0.089
31	2.58	0.90	0.140	(0.199)	0.051	0.089
32	2.67	0.90	0.140	(0.199)	0.051	0.089
33	2.75	1.00	0.156	(0.199)	0.057	0.099
34	2.83	1.00	0.156	(0.199)	0.057	0.099

35	2.92	1.00	0.156	(	0.199)	0.057	0.099
36	3.00	1.00	0.156	(	0.199)	0.057	0.099
37	3.08	1.00	0.156	(	0.199)	0.057	0.099
38	3.17	1.10	0.172	(	0.199)	0.062	0.109
39	3.25	1.10	0.172	(	0.199)	0.062	0.109
40	3.33	1.10	0.172	(	0.199)	0.062	0.109
41	3.42	1.20	0.187	(	0.199)	0.068	0.119
42	3.50	1.30	0.203	(	0.199)	0.074	0.129
43	3.58	1.40	0.218	(	0.199)	0.079	0.139
44	3.67	1.40	0.218	(	0.199)	0.079	0.139
45	3.75	1.50	0.234	(	0.199)	0.085	0.149
46	3.83	1.50	0.234	(	0.199)	0.085	0.149
47	3.92	1.60	0.250	(	0.199)	0.091	0.159
48	4.00	1.60	0.250	(	0.199)	0.091	0.159
49	4.08	1.70	0.265	(	0.199)	0.097	0.169
50	4.17	1.80	0.281	(	0.199)	0.102	0.179
51	4.25	1.90	0.296	(	0.199)	0.108	0.189
52	4.33	2.00	0.312	(	0.199)	0.114	0.198
53	4.42	2.10	0.328	(	0.199)	0.119	0.208
54	4.50	2.10	0.328	(	0.199)	0.119	0.208
55	4.58	2.20	0.343	(	0.199)	0.125	0.218
56	4.67	2.30	0.359	(	0.199)	0.131	0.228
57	4.75	2.40	0.374	(	0.199)	0.136	0.238
58	4.83	2.40	0.374	(	0.199)	0.136	0.238
59	4.92	2.50	0.390	(	0.199)	0.142	0.248
60	5.00	2.60	0.406	(	0.199)	0.148	0.258
61	5.08	3.10	0.484	(	0.199)	0.176	0.308
62	5.17	3.60	0.562		0.199	(0.204)	0.363
63	5.25	3.90	0.608		0.199	(0.221)	0.410
64	5.33	4.20	0.655		0.199	(0.238)	0.456
65	5.42	4.70	0.733		0.199	(0.267)	0.534
66	5.50	5.60	0.874		0.199	(0.318)	0.675
67	5.58	1.90	0.296	(	0.199)	0.108	0.189
68	5.67	0.90	0.140	(	0.199)	0.051	0.089
69	5.75	0.60	0.094	(	0.199)	0.034	0.060
70	5.83	0.50	0.078	(	0.199)	0.028	0.050
71	5.92	0.30	0.047	(	0.199)	0.017	0.030
72	6.00	0.20	0.031	(	0.199)	0.011	0.020

(Loss Rate Not Used)

Sum = 100.0 Sum = 10.2

Flood volume = Effective rainfall 0.85(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)

Total soil loss = 0.45(In)
Total soil loss = 0.126(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 10313.1 Cubic Feet
Total soil loss = 5495.3 Cubic Feet

Peak flow rate of this hydrograph = 1.727(CFS)

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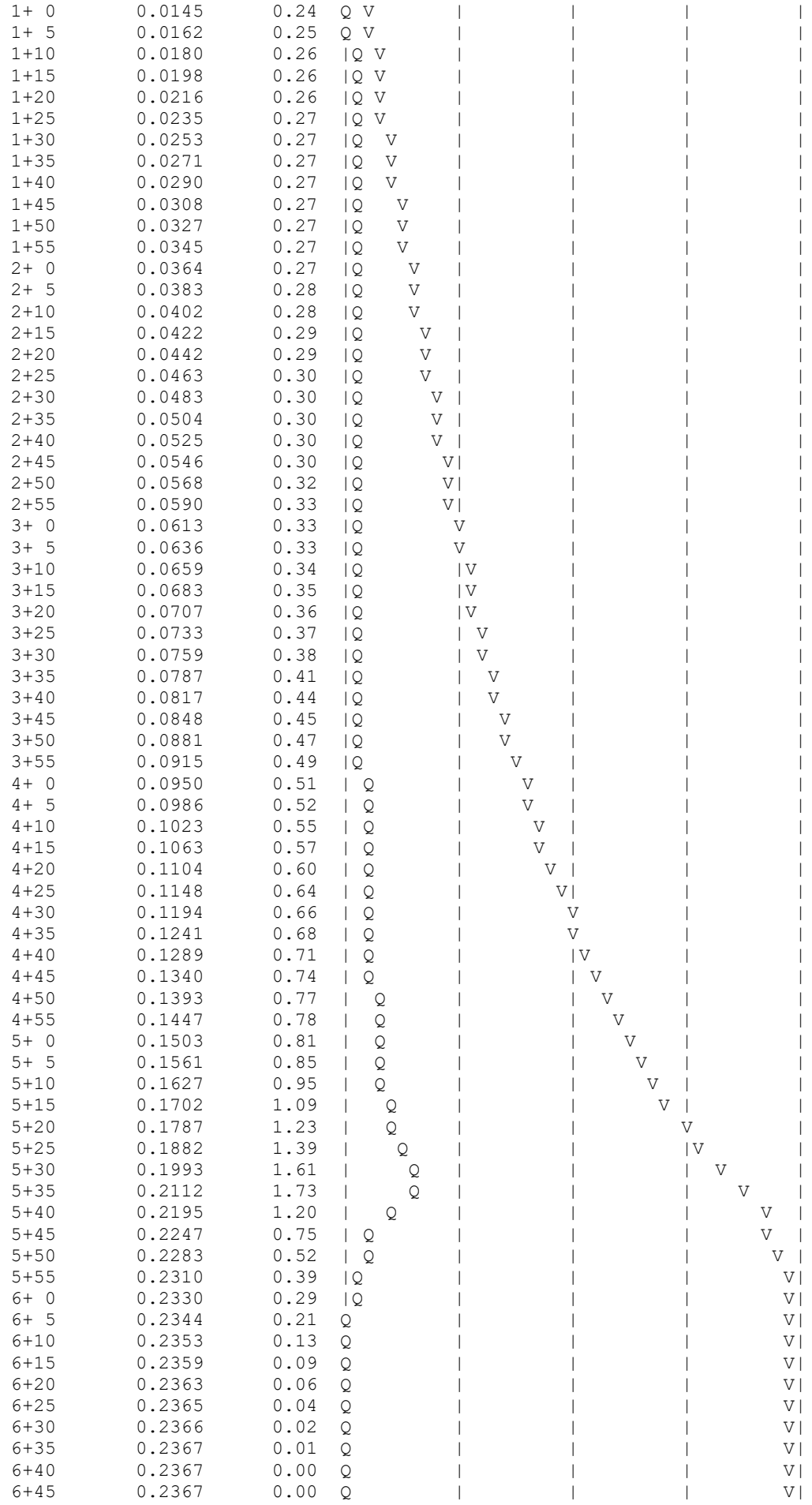
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.02	Q				
0+10	0.0007	0.09	Q				
0+15	0.0017	0.14	Q				
0+20	0.0028	0.16	Q				
0+25	0.0040	0.18	Q				
0+30	0.0053	0.19	Q				
0+35	0.0067	0.21	QV				
0+40	0.0082	0.22	QV				
0+45	0.0097	0.22	QV				
0+50	0.0113	0.23	QV				
0+55	0.0129	0.23	Q V				



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    6+50       0.2368      0.00  Q         |         |         |        V|
    6+55       0.2368      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/19/20 File: 8946E2A1242.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
2 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.121 Hr.
Lag time = 7.27 Min.
25% of lag time = 1.82 Min.
40% of lag time = 2.91 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]
3.35	2.25	7.54

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	5.25	17.59

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	68.776	10.314	0.348
2	0.167	137.551	39.453	1.332
3	0.250	206.327	23.573	0.796
4	0.333	275.102	9.126	0.308
5	0.417	343.878	5.550	0.187
6	0.500	412.654	3.710	0.125
7	0.583	481.429	2.466	0.083
8	0.667	550.205	1.937	0.065
9	0.750	618.980	1.384	0.047
10	0.833	687.756	0.994	0.034
11	0.917	756.532	0.716	0.024
12	1.000	825.307	0.779	0.026
		Sum = 100.000	Sum=	3.376

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	0.018	(0.352)	0.007	0.011
2	0.17	0.07	0.018	(0.351)	0.007	0.011
3	0.25	0.07	0.018	(0.350)	0.007	0.011
4	0.33	0.10	0.027	(0.348)	0.010	0.017
5	0.42	0.10	0.027	(0.347)	0.010	0.017
6	0.50	0.10	0.027	(0.346)	0.010	0.017
7	0.58	0.10	0.027	(0.344)	0.010	0.017
8	0.67	0.10	0.027	(0.343)	0.010	0.017
9	0.75	0.10	0.027	(0.341)	0.010	0.017
10	0.83	0.13	0.036	(0.340)	0.013	0.023
11	0.92	0.13	0.036	(0.339)	0.013	0.023
12	1.00	0.13	0.036	(0.337)	0.013	0.023
13	1.08	0.10	0.027	(0.336)	0.010	0.017
14	1.17	0.10	0.027	(0.335)	0.010	0.017
15	1.25	0.10	0.027	(0.333)	0.010	0.017
16	1.33	0.10	0.027	(0.332)	0.010	0.017
17	1.42	0.10	0.027	(0.331)	0.010	0.017
18	1.50	0.10	0.027	(0.330)	0.010	0.017
19	1.58	0.10	0.027	(0.328)	0.010	0.017
20	1.67	0.10	0.027	(0.327)	0.010	0.017
21	1.75	0.10	0.027	(0.326)	0.010	0.017
22	1.83	0.13	0.036	(0.324)	0.013	0.023
23	1.92	0.13	0.036	(0.323)	0.013	0.023
24	2.00	0.13	0.036	(0.322)	0.013	0.023
25	2.08	0.13	0.036	(0.320)	0.013	0.023
26	2.17	0.13	0.036	(0.319)	0.013	0.023
27	2.25	0.13	0.036	(0.318)	0.013	0.023
28	2.33	0.13	0.036	(0.316)	0.013	0.023
29	2.42	0.13	0.036	(0.315)	0.013	0.023
30	2.50	0.13	0.036	(0.314)	0.013	0.023
31	2.58	0.17	0.045	(0.313)	0.016	0.029
32	2.67	0.17	0.045	(0.311)	0.016	0.029
33	2.75	0.17	0.045	(0.310)	0.016	0.029
34	2.83	0.17	0.045	(0.309)	0.016	0.029

35	2.92	0.17	0.045	(0.307)	0.016	0.029
36	3.00	0.17	0.045	(0.306)	0.016	0.029
37	3.08	0.17	0.045	(0.305)	0.016	0.029
38	3.17	0.17	0.045	(0.304)	0.016	0.029
39	3.25	0.17	0.045	(0.302)	0.016	0.029
40	3.33	0.17	0.045	(0.301)	0.016	0.029
41	3.42	0.17	0.045	(0.300)	0.016	0.029
42	3.50	0.17	0.045	(0.299)	0.016	0.029
43	3.58	0.17	0.045	(0.297)	0.016	0.029
44	3.67	0.17	0.045	(0.296)	0.016	0.029
45	3.75	0.17	0.045	(0.295)	0.016	0.029
46	3.83	0.20	0.054	(0.294)	0.020	0.034
47	3.92	0.20	0.054	(0.292)	0.020	0.034
48	4.00	0.20	0.054	(0.291)	0.020	0.034
49	4.08	0.20	0.054	(0.290)	0.020	0.034
50	4.17	0.20	0.054	(0.289)	0.020	0.034
51	4.25	0.20	0.054	(0.287)	0.020	0.034
52	4.33	0.23	0.063	(0.286)	0.023	0.040
53	4.42	0.23	0.063	(0.285)	0.023	0.040
54	4.50	0.23	0.063	(0.284)	0.023	0.040
55	4.58	0.23	0.063	(0.283)	0.023	0.040
56	4.67	0.23	0.063	(0.281)	0.023	0.040
57	4.75	0.23	0.063	(0.280)	0.023	0.040
58	4.83	0.27	0.072	(0.279)	0.026	0.046
59	4.92	0.27	0.072	(0.278)	0.026	0.046
60	5.00	0.27	0.072	(0.277)	0.026	0.046
61	5.08	0.20	0.054	(0.275)	0.020	0.034
62	5.17	0.20	0.054	(0.274)	0.020	0.034
63	5.25	0.20	0.054	(0.273)	0.020	0.034
64	5.33	0.23	0.063	(0.272)	0.023	0.040
65	5.42	0.23	0.063	(0.271)	0.023	0.040
66	5.50	0.23	0.063	(0.269)	0.023	0.040
67	5.58	0.27	0.072	(0.268)	0.026	0.046
68	5.67	0.27	0.072	(0.267)	0.026	0.046
69	5.75	0.27	0.072	(0.266)	0.026	0.046
70	5.83	0.27	0.072	(0.265)	0.026	0.046
71	5.92	0.27	0.072	(0.263)	0.026	0.046
72	6.00	0.27	0.072	(0.262)	0.026	0.046
73	6.08	0.30	0.081	(0.261)	0.029	0.052
74	6.17	0.30	0.081	(0.260)	0.029	0.052
75	6.25	0.30	0.081	(0.259)	0.029	0.052
76	6.33	0.30	0.081	(0.258)	0.029	0.052
77	6.42	0.30	0.081	(0.257)	0.029	0.052
78	6.50	0.30	0.081	(0.255)	0.029	0.052
79	6.58	0.33	0.090	(0.254)	0.033	0.057
80	6.67	0.33	0.090	(0.253)	0.033	0.057
81	6.75	0.33	0.090	(0.252)	0.033	0.057
82	6.83	0.33	0.090	(0.251)	0.033	0.057
83	6.92	0.33	0.090	(0.250)	0.033	0.057
84	7.00	0.33	0.090	(0.249)	0.033	0.057
85	7.08	0.33	0.090	(0.247)	0.033	0.057
86	7.17	0.33	0.090	(0.246)	0.033	0.057
87	7.25	0.33	0.090	(0.245)	0.033	0.057
88	7.33	0.37	0.099	(0.244)	0.036	0.063
89	7.42	0.37	0.099	(0.243)	0.036	0.063
90	7.50	0.37	0.099	(0.242)	0.036	0.063
91	7.58	0.40	0.108	(0.241)	0.039	0.069
92	7.67	0.40	0.108	(0.240)	0.039	0.069
93	7.75	0.40	0.108	(0.238)	0.039	0.069
94	7.83	0.43	0.117	(0.237)	0.043	0.074
95	7.92	0.43	0.117	(0.236)	0.043	0.074
96	8.00	0.43	0.117	(0.235)	0.043	0.074
97	8.08	0.50	0.135	(0.234)	0.049	0.086
98	8.17	0.50	0.135	(0.233)	0.049	0.086
99	8.25	0.50	0.135	(0.232)	0.049	0.086
100	8.33	0.50	0.135	(0.231)	0.049	0.086
101	8.42	0.50	0.135	(0.230)	0.049	0.086
102	8.50	0.50	0.135	(0.229)	0.049	0.086
103	8.58	0.53	0.144	(0.228)	0.052	0.092
104	8.67	0.53	0.144	(0.227)	0.052	0.092

105	8.75	0.53	0.144	(0.225)	0.052	0.092
106	8.83	0.57	0.153	(0.224)	0.056	0.097
107	8.92	0.57	0.153	(0.223)	0.056	0.097
108	9.00	0.57	0.153	(0.222)	0.056	0.097
109	9.08	0.63	0.171	(0.221)	0.062	0.109
110	9.17	0.63	0.171	(0.220)	0.062	0.109
111	9.25	0.63	0.171	(0.219)	0.062	0.109
112	9.33	0.67	0.180	(0.218)	0.066	0.114
113	9.42	0.67	0.180	(0.217)	0.066	0.114
114	9.50	0.67	0.180	(0.216)	0.066	0.114
115	9.58	0.70	0.189	(0.215)	0.069	0.120
116	9.67	0.70	0.189	(0.214)	0.069	0.120
117	9.75	0.70	0.189	(0.213)	0.069	0.120
118	9.83	0.73	0.198	(0.212)	0.072	0.126
119	9.92	0.73	0.198	(0.211)	0.072	0.126
120	10.00	0.73	0.198	(0.210)	0.072	0.126
121	10.08	0.50	0.135	(0.209)	0.049	0.086
122	10.17	0.50	0.135	(0.208)	0.049	0.086
123	10.25	0.50	0.135	(0.207)	0.049	0.086
124	10.33	0.50	0.135	(0.206)	0.049	0.086
125	10.42	0.50	0.135	(0.205)	0.049	0.086
126	10.50	0.50	0.135	(0.204)	0.049	0.086
127	10.58	0.67	0.180	(0.203)	0.066	0.114
128	10.67	0.67	0.180	(0.202)	0.066	0.114
129	10.75	0.67	0.180	(0.201)	0.066	0.114
130	10.83	0.67	0.180	(0.200)	0.066	0.114
131	10.92	0.67	0.180	(0.199)	0.066	0.114
132	11.00	0.67	0.180	(0.198)	0.066	0.114
133	11.08	0.63	0.171	(0.197)	0.062	0.109
134	11.17	0.63	0.171	(0.196)	0.062	0.109
135	11.25	0.63	0.171	(0.195)	0.062	0.109
136	11.33	0.63	0.171	(0.194)	0.062	0.109
137	11.42	0.63	0.171	(0.193)	0.062	0.109
138	11.50	0.63	0.171	(0.192)	0.062	0.109
139	11.58	0.57	0.153	(0.191)	0.056	0.097
140	11.67	0.57	0.153	(0.190)	0.056	0.097
141	11.75	0.57	0.153	(0.189)	0.056	0.097
142	11.83	0.60	0.162	(0.188)	0.059	0.103
143	11.92	0.60	0.162	(0.187)	0.059	0.103
144	12.00	0.60	0.162	(0.186)	0.059	0.103
145	12.08	0.83	0.225	(0.186)	0.082	0.143
146	12.17	0.83	0.225	(0.185)	0.082	0.143
147	12.25	0.83	0.225	(0.184)	0.082	0.143
148	12.33	0.87	0.234	(0.183)	0.085	0.149
149	12.42	0.87	0.234	(0.182)	0.085	0.149
150	12.50	0.87	0.234	(0.181)	0.085	0.149
151	12.58	0.93	0.252	(0.180)	0.092	0.160
152	12.67	0.93	0.252	(0.179)	0.092	0.160
153	12.75	0.93	0.252	(0.178)	0.092	0.160
154	12.83	0.97	0.261	(0.177)	0.095	0.166
155	12.92	0.97	0.261	(0.176)	0.095	0.166
156	13.00	0.97	0.261	(0.176)	0.095	0.166
157	13.08	1.13	0.306	(0.175)	0.111	0.195
158	13.17	1.13	0.306	(0.174)	0.111	0.195
159	13.25	1.13	0.306	(0.173)	0.111	0.195
160	13.33	1.13	0.306	(0.172)	0.111	0.195
161	13.42	1.13	0.306	(0.171)	0.111	0.195
162	13.50	1.13	0.306	(0.170)	0.111	0.195
163	13.58	0.77	0.207	(0.169)	0.075	0.132
164	13.67	0.77	0.207	(0.168)	0.075	0.132
165	13.75	0.77	0.207	(0.168)	0.075	0.132
166	13.83	0.77	0.207	(0.167)	0.075	0.132
167	13.92	0.77	0.207	(0.166)	0.075	0.132
168	14.00	0.77	0.207	(0.165)	0.075	0.132
169	14.08	0.90	0.243	(0.164)	0.088	0.155
170	14.17	0.90	0.243	(0.163)	0.088	0.155
171	14.25	0.90	0.243	(0.163)	0.088	0.155
172	14.33	0.87	0.234	(0.162)	0.085	0.149
173	14.42	0.87	0.234	(0.161)	0.085	0.149
174	14.50	0.87	0.234	(0.160)	0.085	0.149

175	14.58	0.87	0.234	(0.159)	0.085	0.149
176	14.67	0.87	0.234	(0.158)	0.085	0.149
177	14.75	0.87	0.234	(0.158)	0.085	0.149
178	14.83	0.83	0.225	(0.157)	0.082	0.143
179	14.92	0.83	0.225	(0.156)	0.082	0.143
180	15.00	0.83	0.225	(0.155)	0.082	0.143
181	15.08	0.80	0.216	(0.154)	0.079	0.137
182	15.17	0.80	0.216	(0.154)	0.079	0.137
183	15.25	0.80	0.216	(0.153)	0.079	0.137
184	15.33	0.77	0.207	(0.152)	0.075	0.132
185	15.42	0.77	0.207	(0.151)	0.075	0.132
186	15.50	0.77	0.207	(0.151)	0.075	0.132
187	15.58	0.63	0.171	(0.150)	0.062	0.109
188	15.67	0.63	0.171	(0.149)	0.062	0.109
189	15.75	0.63	0.171	(0.148)	0.062	0.109
190	15.83	0.63	0.171	(0.147)	0.062	0.109
191	15.92	0.63	0.171	(0.147)	0.062	0.109
192	16.00	0.63	0.171	(0.146)	0.062	0.109
193	16.08	0.13	0.036	(0.145)	0.013	0.023
194	16.17	0.13	0.036	(0.144)	0.013	0.023
195	16.25	0.13	0.036	(0.144)	0.013	0.023
196	16.33	0.13	0.036	(0.143)	0.013	0.023
197	16.42	0.13	0.036	(0.142)	0.013	0.023
198	16.50	0.13	0.036	(0.142)	0.013	0.023
199	16.58	0.10	0.027	(0.141)	0.010	0.017
200	16.67	0.10	0.027	(0.140)	0.010	0.017
201	16.75	0.10	0.027	(0.139)	0.010	0.017
202	16.83	0.10	0.027	(0.139)	0.010	0.017
203	16.92	0.10	0.027	(0.138)	0.010	0.017
204	17.00	0.10	0.027	(0.137)	0.010	0.017
205	17.08	0.17	0.045	(0.137)	0.016	0.029
206	17.17	0.17	0.045	(0.136)	0.016	0.029
207	17.25	0.17	0.045	(0.135)	0.016	0.029
208	17.33	0.17	0.045	(0.135)	0.016	0.029
209	17.42	0.17	0.045	(0.134)	0.016	0.029
210	17.50	0.17	0.045	(0.133)	0.016	0.029
211	17.58	0.17	0.045	(0.133)	0.016	0.029
212	17.67	0.17	0.045	(0.132)	0.016	0.029
213	17.75	0.17	0.045	(0.131)	0.016	0.029
214	17.83	0.13	0.036	(0.131)	0.013	0.023
215	17.92	0.13	0.036	(0.130)	0.013	0.023
216	18.00	0.13	0.036	(0.129)	0.013	0.023
217	18.08	0.13	0.036	(0.129)	0.013	0.023
218	18.17	0.13	0.036	(0.128)	0.013	0.023
219	18.25	0.13	0.036	(0.127)	0.013	0.023
220	18.33	0.13	0.036	(0.127)	0.013	0.023
221	18.42	0.13	0.036	(0.126)	0.013	0.023
222	18.50	0.13	0.036	(0.126)	0.013	0.023
223	18.58	0.10	0.027	(0.125)	0.010	0.017
224	18.67	0.10	0.027	(0.124)	0.010	0.017
225	18.75	0.10	0.027	(0.124)	0.010	0.017
226	18.83	0.07	0.018	(0.123)	0.007	0.011
227	18.92	0.07	0.018	(0.123)	0.007	0.011
228	19.00	0.07	0.018	(0.122)	0.007	0.011
229	19.08	0.10	0.027	(0.121)	0.010	0.017
230	19.17	0.10	0.027	(0.121)	0.010	0.017
231	19.25	0.10	0.027	(0.120)	0.010	0.017
232	19.33	0.13	0.036	(0.120)	0.013	0.023
233	19.42	0.13	0.036	(0.119)	0.013	0.023
234	19.50	0.13	0.036	(0.119)	0.013	0.023
235	19.58	0.10	0.027	(0.118)	0.010	0.017
236	19.67	0.10	0.027	(0.117)	0.010	0.017
237	19.75	0.10	0.027	(0.117)	0.010	0.017
238	19.83	0.07	0.018	(0.116)	0.007	0.011
239	19.92	0.07	0.018	(0.116)	0.007	0.011
240	20.00	0.07	0.018	(0.115)	0.007	0.011
241	20.08	0.10	0.027	(0.115)	0.010	0.017
242	20.17	0.10	0.027	(0.114)	0.010	0.017
243	20.25	0.10	0.027	(0.114)	0.010	0.017
244	20.33	0.10	0.027	(0.113)	0.010	0.017

245	20.42	0.10	0.027	(	0.113)	0.010	0.017
246	20.50	0.10	0.027	(	0.112)	0.010	0.017
247	20.58	0.10	0.027	(	0.112)	0.010	0.017
248	20.67	0.10	0.027	(	0.111)	0.010	0.017
249	20.75	0.10	0.027	(	0.111)	0.010	0.017
250	20.83	0.07	0.018	(	0.111)	0.007	0.011
251	20.92	0.07	0.018	(	0.110)	0.007	0.011
252	21.00	0.07	0.018	(	0.110)	0.007	0.011
253	21.08	0.10	0.027	(	0.109)	0.010	0.017
254	21.17	0.10	0.027	(	0.109)	0.010	0.017
255	21.25	0.10	0.027	(	0.108)	0.010	0.017
256	21.33	0.07	0.018	(	0.108)	0.007	0.011
257	21.42	0.07	0.018	(	0.108)	0.007	0.011
258	21.50	0.07	0.018	(	0.107)	0.007	0.011
259	21.58	0.10	0.027	(	0.107)	0.010	0.017
260	21.67	0.10	0.027	(	0.106)	0.010	0.017
261	21.75	0.10	0.027	(	0.106)	0.010	0.017
262	21.83	0.07	0.018	(	0.106)	0.007	0.011
263	21.92	0.07	0.018	(	0.105)	0.007	0.011
264	22.00	0.07	0.018	(	0.105)	0.007	0.011
265	22.08	0.10	0.027	(	0.105)	0.010	0.017
266	22.17	0.10	0.027	(	0.104)	0.010	0.017
267	22.25	0.10	0.027	(	0.104)	0.010	0.017
268	22.33	0.07	0.018	(	0.104)	0.007	0.011
269	22.42	0.07	0.018	(	0.103)	0.007	0.011
270	22.50	0.07	0.018	(	0.103)	0.007	0.011
271	22.58	0.07	0.018	(	0.103)	0.007	0.011
272	22.67	0.07	0.018	(	0.102)	0.007	0.011
273	22.75	0.07	0.018	(	0.102)	0.007	0.011
274	22.83	0.07	0.018	(	0.102)	0.007	0.011
275	22.92	0.07	0.018	(	0.102)	0.007	0.011
276	23.00	0.07	0.018	(	0.101)	0.007	0.011
277	23.08	0.07	0.018	(	0.101)	0.007	0.011
278	23.17	0.07	0.018	(	0.101)	0.007	0.011
279	23.25	0.07	0.018	(	0.101)	0.007	0.011
280	23.33	0.07	0.018	(	0.100)	0.007	0.011
281	23.42	0.07	0.018	(	0.100)	0.007	0.011
282	23.50	0.07	0.018	(	0.100)	0.007	0.011
283	23.58	0.07	0.018	(	0.100)	0.007	0.011
284	23.67	0.07	0.018	(	0.100)	0.007	0.011
285	23.75	0.07	0.018	(	0.100)	0.007	0.011
286	23.83	0.07	0.018	(	0.100)	0.007	0.011
287	23.92	0.07	0.018	(	0.099)	0.007	0.011
288	24.00	0.07	0.018	(	0.099)	0.007	0.011

(Loss Rate Not Used)

Sum = 100.0 Sum = 17.2

Flood volume = Effective rainfall 1.43(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)
Total soil loss = 0.82(In)
Total soil loss = 0.229(Ac.Ft)
Total rainfall = 2.25(In)
Flood volume = 17401.6 Cubic Feet
Total soil loss = 9959.4 Cubic Feet

Peak flow rate of this hydrograph = 0.649(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0002	0.02	Q	|	|	|	|
0+15	0.0004	0.03	Q	|	|	|	|
0+20	0.0006	0.03	Q	|	|	|	|
0+25	0.0009	0.04	Q	|	|	|	|

0+30	0.0012	0.05	Q	|	|	|	|
0+35	0.0016	0.05	Q	|	|	|	|
0+40	0.0020	0.05	Q	|	|	|	|
0+45	0.0023	0.06	Q	|	|	|	|
0+50	0.0027	0.06	Q	|	|	|	|
0+55	0.0032	0.07	Q	|	|	|	|
1+ 0	0.0037	0.07	Q	|	|	|	|
1+ 5	0.0042	0.07	Q	|	|	|	|
1+10	0.0046	0.07	Q	|	|	|	|
1+15	0.0051	0.06	Q	|	|	|	|
1+20	0.0055	0.06	Q	|	|	|	|
1+25	0.0059	0.06	Q	|	|	|	|
1+30	0.0063	0.06	Q	|	|	|	|
1+35	0.0067	0.06	Q	|	|	|	|
1+40	0.0071	0.06	Q	|	|	|	|
1+45	0.0075	0.06	Q	|	|	|	|
1+50	0.0079	0.06	Q	|	|	|	|
1+55	0.0084	0.07	Q	|	|	|	|
2+ 0	0.0089	0.07	Q	|	|	|	|
2+ 5	0.0094	0.07	Q	|	|	|	|
2+10	0.0099	0.08	Q	|	|	|	|
2+15	0.0104	0.08	QV	|	|	|	|
2+20	0.0110	0.08	QV	|	|	|	|
2+25	0.0115	0.08	QV	|	|	|	|
2+30	0.0120	0.08	QV	|	|	|	|
2+35	0.0126	0.08	QV	|	|	|	|
2+40	0.0132	0.09	QV	|	|	|	|
2+45	0.0138	0.09	QV	|	|	|	|
2+50	0.0144	0.09	QV	|	|	|	|
2+55	0.0151	0.09	QV	|	|	|	|
3+ 0	0.0157	0.10	QV	|	|	|	|
3+ 5	0.0164	0.10	QV	|	|	|	|
3+10	0.0171	0.10	QV	|	|	|	|
3+15	0.0177	0.10	QV	|	|	|	|
3+20	0.0184	0.10	QV	|	|	|	|
3+25	0.0191	0.10	QV	|	|	|	|
3+30	0.0197	0.10	QV	|	|	|	|
3+35	0.0204	0.10	Q V	|	|	|	|
3+40	0.0210	0.10	Q V	|	|	|	|
3+45	0.0217	0.10	Q V	|	|	|	|
3+50	0.0224	0.10	Q V	|	|	|	|
3+55	0.0231	0.11	Q V	|	|	|	|
4+ 0	0.0239	0.11	Q V	|	|	|	|
4+ 5	0.0247	0.11	Q V	|	|	|	|
4+10	0.0254	0.11	Q V	|	|	|	|
4+15	0.0262	0.11	Q V	|	|	|	|
4+20	0.0270	0.12	Q V	|	|	|	|
4+25	0.0279	0.12	Q V	|	|	|	|
4+30	0.0288	0.13	Q V	|	|	|	|
4+35	0.0297	0.13	Q V	|	|	|	|
4+40	0.0306	0.13	Q V	|	|	|	|
4+45	0.0315	0.13	Q V	|	|	|	|
4+50	0.0325	0.14	Q V	|	|	|	|
4+55	0.0335	0.14	Q V	|	|	|	|
5+ 0	0.0345	0.15	Q V	|	|	|	|
5+ 5	0.0355	0.15	Q V	|	|	|	|
5+10	0.0364	0.13	Q V	|	|	|	|
5+15	0.0373	0.12	Q V	|	|	|	|
5+20	0.0381	0.12	Q V	|	|	|	|
5+25	0.0390	0.13	Q V	|	|	|	|
5+30	0.0399	0.13	Q V	|	|	|	|
5+35	0.0409	0.14	Q V	|	|	|	|
5+40	0.0419	0.14	Q V	|	|	|	|
5+45	0.0429	0.15	Q V	|	|	|	|
5+50	0.0439	0.15	Q V	|	|	|	|
5+55	0.0450	0.15	Q V	|	|	|	|
6+ 0	0.0460	0.15	Q V	|	|	|	|
6+ 5	0.0471	0.16	Q V	|	|	|	|
6+10	0.0482	0.16	Q V	|	|	|	|
6+15	0.0494	0.17	Q V	|	|	|	|

```
 6+20       0.0506      0.17  Q    V    |          |          |          |
 6+25       0.0517      0.17  Q    V    |          |          |          |
 6+30       0.0529      0.17  Q    V    |          |          |          |
 6+35       0.0541      0.17  Q    V    |          |          |          |
 6+40       0.0554      0.18  Q    V    |          |          |          |
 6+45       0.0567      0.19  Q    V    |          |          |          |
 6+50       0.0580      0.19  Q    V    |          |          |          |
 6+55       0.0593      0.19  Q    V    |          |          |          |
 7+ 0       0.0606      0.19  Q     V   |          |          |          |
 7+ 5       0.0619      0.19  Q     V   |          |          |          |
 7+10       0.0633      0.19  Q     V   |          |          |          |
 7+15       0.0646      0.19  Q     V   |          |          |          |
 7+20       0.0659      0.20  Q     V   |          |          |          |
 7+25       0.0673      0.20  Q     V   |          |          |          |
 7+30       0.0688      0.21  Q     V   |          |          |          |
 7+35       0.0702      0.21  Q      V  |          |          |          |
 7+40       0.0717      0.22  Q      V  |          |          |          |
 7+45       0.0733      0.23  Q      V  |          |          |          |
 7+50       0.0749      0.23  Q      V  |          |          |          |
 7+55       0.0765      0.24  Q      V  |          |          |          |
 8+ 0       0.0782      0.24  Q      V  |          |          |          |
 8+ 5       0.0799      0.25  |Q      V |          |          |          |
 8+10       0.0818      0.27  |Q      V |          |          |          |
 8+15       0.0837      0.28  |Q      V |          |          |          |
 8+20       0.0856      0.28  |Q      V |          |          |          |
 8+25       0.0876      0.28  |Q      V |          |          |          |
 8+30       0.0895      0.29  |Q      V |          |          |          |
 8+35       0.0915      0.29  |Q       V|          |          |          |
 8+40       0.0936      0.30  |Q       V|          |          |          |
 8+45       0.0957      0.30  |Q       V|          |          |          |
 8+50       0.0978      0.31  |Q       V|          |          |          |
 8+55       0.1000      0.32  |Q        V          |          |          |
 9+ 0       0.1022      0.32  |Q        V          |          |          |
 9+ 5       0.1045      0.33  |Q        V          |          |          |
 9+10       0.1068      0.34  |Q        V          |          |          |
 9+15       0.1093      0.35  |Q        V          |          |          |
 9+20       0.1118      0.36  |Q        |V         |          |          |
 9+25       0.1143      0.37  |Q        |V         |          |          |
 9+30       0.1169      0.38  |Q        |V         |          |          |
 9+35       0.1196      0.38  |Q        |V         |          |          |
 9+40       0.1223      0.39  |Q        | V        |          |          |
 9+45       0.1250      0.40  |Q        | V        |          |          |
 9+50       0.1278      0.40  |Q        | V        |          |          |
 9+55       0.1306      0.41  |Q        |  V       |          |          |
10+ 0       0.1335      0.42  |Q        |  V       |          |          |
10+ 5       0.1363      0.41  |Q        |  V       |          |          |
10+10       0.1387      0.35  |Q        |  V       |          |          |
10+15       0.1410      0.32  |Q        |   V      |          |          |
10+20       0.1431      0.31  |Q        |   V      |          |          |
10+25       0.1452      0.31  |Q        |   V      |          |          |
10+30       0.1473      0.30  |Q        |   V      |          |          |
10+35       0.1494      0.31  |Q        |   V      |          |          |
10+40       0.1518      0.34  |Q        |    V     |          |          |
10+45       0.1543      0.36  |Q        |    V     |          |          |
10+50       0.1569      0.37  |Q        |    V     |          |          |
10+55       0.1594      0.38  |Q        |    V     |          |          |
11+ 0       0.1621      0.38  |Q        |     V    |          |          |
11+ 5       0.1647      0.38  |Q        |     V    |          |          |
11+10       0.1672      0.37  |Q        |     V    |          |          |
11+15       0.1698      0.37  |Q        |      V   |          |          |
11+20       0.1723      0.37  |Q        |      V   |          |          |
11+25       0.1749      0.37  |Q        |      V   |          |          |
11+30       0.1774      0.37  |Q        |      V   |          |          |
11+35       0.1799      0.36  |Q        |       V  |          |          |
11+40       0.1823      0.35  |Q        |       V  |          |          |
11+45       0.1847      0.34  |Q        |       V  |          |          |
11+50       0.1870      0.34  |Q        |       V  |          |          |
11+55       0.1893      0.34  |Q        |       V  |          |          |
12+ 0       0.1917      0.35  |Q        |        V |          |          |
12+ 5       0.1942      0.36  |Q        |        V |          |          |
```

12+10	0.1971	0.41	Q		V		
12+15	0.2001	0.45	Q		V		
12+20	0.2033	0.46	Q		V		
12+25	0.2066	0.48	Q		V		
12+30	0.2100	0.49	Q		V		
12+35	0.2134	0.50	Q		V		
12+40	0.2169	0.51	Q		V		
12+45	0.2205	0.53	Q		V		
12+50	0.2242	0.53	Q		V		
12+55	0.2280	0.54	Q		V		
13+ 0	0.2318	0.55	Q		V		
13+ 5	0.2356	0.56	Q		V		
13+10	0.2398	0.60	Q		V		
13+15	0.2441	0.63	Q		V		
13+20	0.2485	0.64	Q		V		
13+25	0.2530	0.64	Q		V		
13+30	0.2574	0.65	Q		V		
13+35	0.2618	0.63	Q		V		
13+40	0.2656	0.55	Q		V		
13+45	0.2690	0.50	Q		V		
13+50	0.2723	0.48	Q		V		
13+55	0.2755	0.47	Q		V		
14+ 0	0.2787	0.46	Q		V		
14+ 5	0.2819	0.47	Q		V		
14+10	0.2853	0.49	Q		V		
14+15	0.2888	0.51	Q		V		
14+20	0.2923	0.51	Q		V		
14+25	0.2958	0.50	Q		V		
14+30	0.2992	0.50	Q		V		
14+35	0.3027	0.50	Q		V		
14+40	0.3061	0.50	Q		V		
14+45	0.3096	0.50	Q		V		
14+50	0.3131	0.50	Q		V		
14+55	0.3165	0.49	Q		V		
15+ 0	0.3198	0.49	Q		V		
15+ 5	0.3232	0.49	Q		V		
15+10	0.3264	0.48	Q		V		
15+15	0.3297	0.47	Q		V		
15+20	0.3329	0.47	Q		V		
15+25	0.3360	0.46	Q		V		
15+30	0.3392	0.45	Q		V		
15+35	0.3422	0.44	Q		V		
15+40	0.3450	0.41	Q		V		
15+45	0.3477	0.39	Q		V		
15+50	0.3503	0.38	Q		V		
15+55	0.3529	0.38	Q		V		
16+ 0	0.3555	0.37	Q		V		
16+ 5	0.3579	0.34	Q		V		
16+10	0.3594	0.23	Q		V		
16+15	0.3605	0.16	Q		V		
16+20	0.3614	0.13	Q		V		
16+25	0.3622	0.11	Q		V		
16+30	0.3629	0.10	Q		V		
16+35	0.3635	0.09	Q		V		
16+40	0.3641	0.08	Q		V		
16+45	0.3645	0.07	Q		V		
16+50	0.3650	0.07	Q		V		
16+55	0.3654	0.06	Q		V		
17+ 0	0.3658	0.06	Q		V		
17+ 5	0.3663	0.06	Q		V		
17+10	0.3668	0.08	Q		V		
17+15	0.3674	0.09	Q		V		
17+20	0.3680	0.09	Q		V		
17+25	0.3687	0.09	Q		V		
17+30	0.3693	0.09	Q		V		
17+35	0.3700	0.09	Q		V		
17+40	0.3706	0.10	Q		V		
17+45	0.3713	0.10	Q		V		
17+50	0.3719	0.09	Q		V		
17+55	0.3725	0.09	Q		V		

18+ 0	0.3731	0.08	Q	|	|	|	V |
18+ 5	0.3736	0.08	Q	|	|	|	V |
18+10	0.3742	0.08	Q	|	|	|	V |
18+15	0.3747	0.08	Q	|	|	|	V |
18+20	0.3753	0.08	Q	|	|	|	V |
18+25	0.3758	0.08	Q	|	|	|	V |
18+30	0.3763	0.08	Q	|	|	|	V |
18+35	0.3769	0.08	Q	|	|	|	V |
18+40	0.3773	0.07	Q	|	|	|	V |
18+45	0.3778	0.06	Q	|	|	|	V |
18+50	0.3782	0.06	Q	|	|	|	V |
18+55	0.3785	0.05	Q	|	|	|	V |
19+ 0	0.3788	0.05	Q	|	|	|	V |
19+ 5	0.3792	0.05	Q	|	|	|	V |
19+10	0.3795	0.05	Q	|	|	|	V |
19+15	0.3799	0.05	Q	|	|	|	V |
19+20	0.3803	0.06	Q	|	|	|	V |
19+25	0.3807	0.07	Q	|	|	|	V |
19+30	0.3812	0.07	Q	|	|	|	V |
19+35	0.3817	0.07	Q	|	|	|	V |
19+40	0.3822	0.06	Q	|	|	|	V |
19+45	0.3826	0.06	Q	|	|	|	V |
19+50	0.3830	0.06	Q	|	|	|	V |
19+55	0.3833	0.05	Q	|	|	|	V |
20+ 0	0.3836	0.04	Q	|	|	|	V |
20+ 5	0.3839	0.04	Q	|	|	|	V |
20+10	0.3843	0.05	Q	|	|	|	V |
20+15	0.3847	0.05	Q	|	|	|	V |
20+20	0.3851	0.06	Q	|	|	|	V |
20+25	0.3855	0.06	Q	|	|	|	V |
20+30	0.3858	0.06	Q	|	|	|	V |
20+35	0.3862	0.06	Q	|	|	|	V |
20+40	0.3866	0.06	Q	|	|	|	V |
20+45	0.3870	0.06	Q	|	|	|	V |
20+50	0.3874	0.06	Q	|	|	|	V |
20+55	0.3877	0.05	Q	|	|	|	V |
21+ 0	0.3880	0.04	Q	|	|	|	V |
21+ 5	0.3883	0.04	Q	|	|	|	V |
21+10	0.3887	0.05	Q	|	|	|	V |
21+15	0.3891	0.05	Q	|	|	|	V |
21+20	0.3894	0.05	Q	|	|	|	V |
21+25	0.3898	0.05	Q	|	|	|	V|
21+30	0.3901	0.04	Q	|	|	|	V|
21+35	0.3904	0.04	Q	|	|	|	V|
21+40	0.3907	0.05	Q	|	|	|	V|
21+45	0.3911	0.05	Q	|	|	|	V|
21+50	0.3914	0.05	Q	|	|	|	V|
21+55	0.3918	0.05	Q	|	|	|	V|
22+ 0	0.3921	0.04	Q	|	|	|	V|
22+ 5	0.3924	0.04	Q	|	|	|	V|
22+10	0.3927	0.05	Q	|	|	|	V|
22+15	0.3931	0.05	Q	|	|	|	V|
22+20	0.3934	0.05	Q	|	|	|	V|
22+25	0.3938	0.05	Q	|	|	|	V|
22+30	0.3941	0.04	Q	|	|	|	V|
22+35	0.3943	0.04	Q	|	|	|	V|
22+40	0.3946	0.04	Q	|	|	|	V|
22+45	0.3949	0.04	Q	|	|	|	V|
22+50	0.3952	0.04	Q	|	|	|	V|
22+55	0.3954	0.04	Q	|	|	|	V|
23+ 0	0.3957	0.04	Q	|	|	|	V|
23+ 5	0.3960	0.04	Q	|	|	|	V|
23+10	0.3962	0.04	Q	|	|	|	V|
23+15	0.3965	0.04	Q	|	|	|	V|
23+20	0.3968	0.04	Q	|	|	|	V|
23+25	0.3970	0.04	Q	|	|	|	V|
23+30	0.3973	0.04	Q	|	|	|	V|
23+35	0.3976	0.04	Q	|	|	|	V|
23+40	0.3978	0.04	Q	|	|	|	V|
23+45	0.3981	0.04	Q	|	|	|	V|

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   23+50       0.3984      0.04  Q          |          |          |         V|
   23+55       0.3986      0.04  Q          |          |          |         V|
   24+ 0       0.3989      0.04  Q          |          |          |         V|
   24+ 5       0.3991      0.03  Q          |          |          |         V|
   24+10       0.3993      0.02  Q          |          |          |         V|
   24+15       0.3993      0.01  Q          |          |          |         V|
   24+20       0.3994      0.01  Q          |          |          |         V|
   24+25       0.3994      0.00  Q          |          |          |         V|
   24+30       0.3994      0.00  Q          |          |          |         V|
   24+35       0.3995      0.00  Q          |          |          |         V|
   24+40       0.3995      0.00  Q          |          |          |         V|
   24+45       0.3995      0.00  Q          |          |          |         V|
   24+50       0.3995      0.00  Q          |          |          |         V|
   24+55       0.3995      0.00  Q          |          |          |          V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/19/20 File: 8946E2A115.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
5 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.13 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.85 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]
3.35	0.55	1.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	1.30	4.36

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.726(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.726(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.146	10.662	0.360
2	0.167	140.292	40.179	1.357
3	0.250	210.438	23.100	0.780
4	0.333	280.584	8.996	0.304
5	0.417	350.730	5.470	0.185
6	0.500	420.875	3.631	0.123
7	0.583	491.021	2.428	0.082
8	0.667	561.167	1.900	0.064
9	0.750	631.313	1.338	0.045
10	0.833	701.459	0.950	0.032
11	0.917	771.605	0.711	0.024
12	1.000	841.751	0.635	0.021
		Sum = 100.000	Sum=	3.376

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	0.287	(0.199)	0.105	0.183
2	0.17	4.20	0.366	(0.199)	0.133	0.233
3	0.25	4.40	0.383	(0.199)	0.139	0.244
4	0.33	4.80	0.418	(0.199)	0.152	0.266
5	0.42	5.20	0.453	(0.199)	0.165	0.288
6	0.50	6.20	0.540	(0.199)	0.197	0.343
7	0.58	6.80	0.592	0.199	(0.216)	0.393
8	0.67	8.80	0.766	0.199	(0.279)	0.568
9	0.75	13.90	1.210	0.199	(0.441)	1.012
10	0.83	31.40	2.734	0.199	(0.995)	2.535
11	0.92	7.20	0.627	0.199	(0.228)	0.428
12	1.00	3.80	0.331	(0.199)	0.120	0.210
	(Loss Rate Not Used)				
Sum =	100.0				Sum = 6.7

Flood volume = Effective rainfall 0.56(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 0.17(In)
Total soil loss = 0.047(Ac.Ft)
Total rainfall = 0.73(In)
Flood volume = 6792.6 Cubic Feet
Total soil loss = 2031.6 Cubic Feet

Peak flow rate of this hydrograph = 4.736(CFS)

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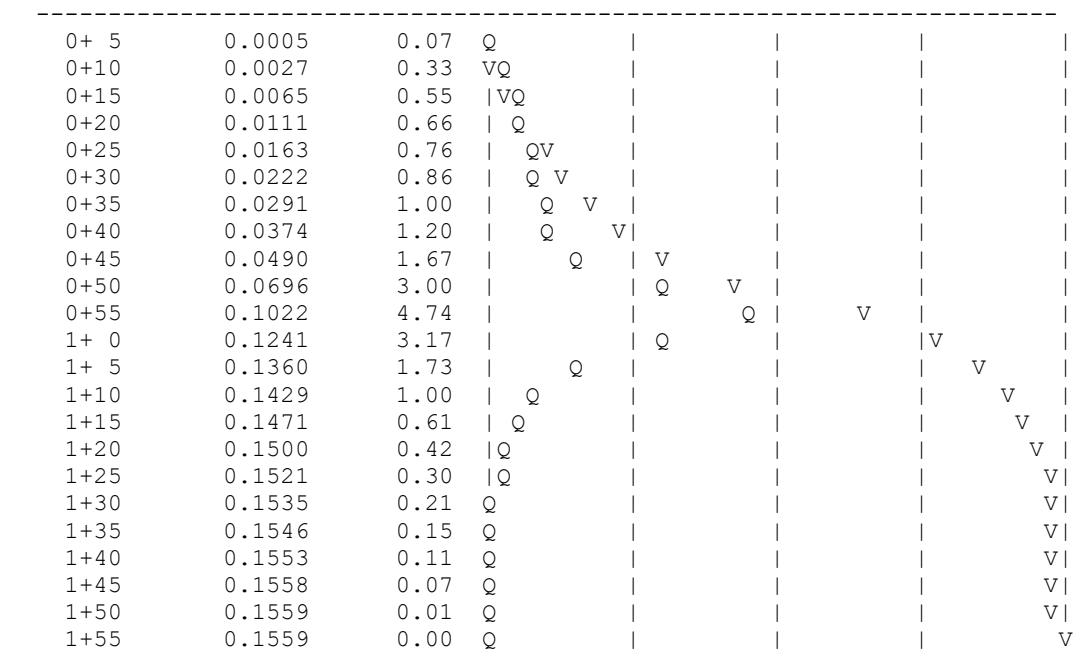
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

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



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 02/19/20 File: 8946E2A135.out

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Riverside County Synthetic Unit Hydrology Method
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Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
5 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.13 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.85 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]
3.35	0.90	3.02

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	2.25	7.54

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.216(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.216(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.146	10.662	0.360
2	0.167	140.292	40.179	1.357
3	0.250	210.438	23.100	0.780
4	0.333	280.584	8.996	0.304
5	0.417	350.730	5.470	0.185
6	0.500	420.875	3.631	0.123
7	0.583	491.021	2.428	0.082
8	0.667	561.167	1.900	0.064
9	0.750	631.313	1.338	0.045
10	0.833	701.459	0.950	0.032
11	0.917	771.605	0.711	0.024
12	1.000	841.751	0.635	0.021
		Sum = 100.000	Sum=	3.376

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	0.190	(0.199)		0.069	0.121
2	0.17	1.30	0.190	(0.199)		0.069	0.121
3	0.25	1.10	0.161	(0.199)		0.058	0.102
4	0.33	1.50	0.219	(0.199)		0.080	0.139
5	0.42	1.50	0.219	(0.199)		0.080	0.139
6	0.50	1.80	0.263	(0.199)		0.096	0.167
7	0.58	1.50	0.219	(0.199)		0.080	0.139
8	0.67	1.80	0.263	(0.199)		0.096	0.167
9	0.75	1.80	0.263	(0.199)		0.096	0.167
10	0.83	1.50	0.219	(0.199)		0.080	0.139
11	0.92	1.60	0.234	(0.199)		0.085	0.149
12	1.00	1.80	0.263	(0.199)		0.096	0.167
13	1.08	2.20	0.321	(0.199)		0.117	0.204
14	1.17	2.20	0.321	(0.199)		0.117	0.204
15	1.25	2.20	0.321	(0.199)		0.117	0.204
16	1.33	2.00	0.292	(0.199)		0.106	0.186
17	1.42	2.60	0.379	(0.199)		0.138	0.241
18	1.50	2.70	0.394	(0.199)		0.143	0.251
19	1.58	2.40	0.350	(0.199)		0.127	0.223
20	1.67	2.70	0.394	(0.199)		0.143	0.251
21	1.75	3.30	0.482	(0.199)		0.175	0.306
22	1.83	3.10	0.452	(0.199)		0.165	0.288
23	1.92	2.90	0.423	(0.199)		0.154	0.269
24	2.00	3.00	0.438	(0.199)		0.159	0.278
25	2.08	3.10	0.452	(0.199)		0.165	0.288
26	2.17	4.20	0.613	0.199	(	0.223)	0.414
27	2.25	5.00	0.730	0.199	(	0.266)	0.531
28	2.33	3.50	0.511	(0.199)		0.186	0.325
29	2.42	6.80	0.992	0.199	(	0.361)	0.794
30	2.50	7.30	1.065	0.199	(	0.388)	0.867
31	2.58	8.20	1.197	0.199	(	0.436)	0.998
32	2.67	5.90	0.861	0.199	(	0.313)	0.662
33	2.75	2.00	0.292	(0.199)		0.106	0.186
34	2.83	1.80	0.263	(0.199)		0.096	0.167

```
35   2.92     1.80      0.263       (  0.199)       0.096        0.167
36   3.00     0.60      0.088       (  0.199)       0.032        0.056
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    10.1
     Flood volume = Effective rainfall      0.84(In)
      times area       3.4(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
     Total soil loss =      0.38(In)
     Total soil loss =     0.105(Ac.Ft)
     Total rainfall =      1.22(In)
     Flood volume =       10211.1 Cubic Feet
     Total soil loss =        4578.4 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      2.723(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0003      0.04  Q         |         |         |         |
  0+10       0.0017      0.21  Q         |         |         |         |
  0+15       0.0038      0.29  VQ        |         |         |         |
  0+20       0.0060      0.32  |Q        |         |         |         |
  0+25       0.0086      0.38  |Q        |         |         |         |
  0+30       0.0115      0.43  |Q        |         |         |         |
  0+35       0.0147      0.47  |QV       |         |         |         |
  0+40       0.0180      0.48  |Q V      |         |         |         |
  0+45       0.0215      0.51  | QV      |         |         |         |
  0+50       0.0252      0.52  | Q V     |         |         |         |
  0+55       0.0286      0.50  | Q V     |         |         |         |
  1+ 0       0.0321      0.51  | Q  V    |         |         |         |
  1+ 5       0.0359      0.55  | Q   V   |         |         |         |
  1+10       0.0401      0.61  | Q   V   |         |         |         |
  1+15       0.0446      0.65  | Q    V  |         |         |         |
  1+20       0.0491      0.66  | Q     V |         |         |         |
  1+25       0.0536      0.66  | Q      V|         |         |         |
  1+30       0.0586      0.73  | Q       V         |         |         |
  1+35       0.0640      0.77  |  Q      V         |         |         |
  1+40       0.0693      0.77  |  Q      |V        |         |         |
  1+45       0.0749      0.82  |  Q      | V       |         |         |
  1+50       0.0812      0.91  |  Q      |  V      |         |         |
  1+55       0.0876      0.93  |  Q      |   V     |         |         |
  2+ 0       0.0939      0.92  |  Q      |     V   |         |         |
  2+ 5       0.1003      0.93  |  Q      |      V  |         |         |
  2+10       0.1071      0.99  |  Q      |       V |         |         |
  2+15       0.1155      1.22  |   Q     |        V|         |         |
  2+20       0.1252      1.41  |    Q    |         |V        |         |
  2+25       0.1350      1.43  |    Q    |         |  V      |         |
  2+30       0.1487      1.99  |      Q  |         |    V    |         |
  2+35       0.1658      2.48  |        Q|         |       V |         |
  2+40       0.1845      2.72  |         Q         |         |V        |
  2+45       0.2004      2.30  |        Q|         |         |   V     |
  2+50       0.2106      1.49  |    Q    |         |         |    V    |
  2+55       0.2179      1.06  |   Q     |         |         |      V  |
  3+ 0       0.2238      0.85  |  Q      |         |         |       V |
  3+ 5       0.2278      0.58  | Q       |         |         |       V |
  3+10       0.2302      0.35  |Q        |         |         |        V|
  3+15       0.2317      0.22  Q         |         |         |        V|
  3+20       0.2328      0.16  Q         |         |         |        V|
  3+25       0.2335      0.10  Q         |         |         |        V|
  3+30       0.2340      0.07  Q         |         |         |        V|
  3+35       0.2342      0.04  Q         |         |         |        V|
  3+40       0.2343      0.02  Q         |         |         |        V|
  3+45       0.2344      0.01  Q         |         |         |        V|
  3+50       0.2344      0.00  Q         |         |         |        V|
  3+55       0.2344      0.00  Q         |         |         |         V
```

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

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Study date 02/19/20 File: 8946E2A165.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
5 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.13 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.85 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]
3.35	1.30	4.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	3.00	10.05

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.698(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.698(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.146	10.662	0.360
2	0.167	140.292	40.179	1.357
3	0.250	210.438	23.100	0.780
4	0.333	280.584	8.996	0.304
5	0.417	350.730	5.470	0.185
6	0.500	420.875	3.631	0.123
7	0.583	491.021	2.428	0.082
8	0.667	561.167	1.900	0.064
9	0.750	631.313	1.338	0.045
10	0.833	701.459	0.950	0.032
11	0.917	771.605	0.711	0.024
12	1.000	841.751	0.635	0.021
		Sum = 100.000	Sum=	3.376

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	0.102	(0.199)	0.037	0.065
2	0.17	0.60	0.122	(0.199)	0.045	0.078
3	0.25	0.60	0.122	(0.199)	0.045	0.078
4	0.33	0.60	0.122	(0.199)	0.045	0.078
5	0.42	0.60	0.122	(0.199)	0.045	0.078
6	0.50	0.70	0.143	(0.199)	0.052	0.091
7	0.58	0.70	0.143	(0.199)	0.052	0.091
8	0.67	0.70	0.143	(0.199)	0.052	0.091
9	0.75	0.70	0.143	(0.199)	0.052	0.091
10	0.83	0.70	0.143	(0.199)	0.052	0.091
11	0.92	0.70	0.143	(0.199)	0.052	0.091
12	1.00	0.80	0.163	(0.199)	0.059	0.104
13	1.08	0.80	0.163	(0.199)	0.059	0.104
14	1.17	0.80	0.163	(0.199)	0.059	0.104
15	1.25	0.80	0.163	(0.199)	0.059	0.104
16	1.33	0.80	0.163	(0.199)	0.059	0.104
17	1.42	0.80	0.163	(0.199)	0.059	0.104
18	1.50	0.80	0.163	(0.199)	0.059	0.104
19	1.58	0.80	0.163	(0.199)	0.059	0.104
20	1.67	0.80	0.163	(0.199)	0.059	0.104
21	1.75	0.80	0.163	(0.199)	0.059	0.104
22	1.83	0.80	0.163	(0.199)	0.059	0.104
23	1.92	0.80	0.163	(0.199)	0.059	0.104
24	2.00	0.90	0.183	(0.199)	0.067	0.117
25	2.08	0.80	0.163	(0.199)	0.059	0.104
26	2.17	0.90	0.183	(0.199)	0.067	0.117
27	2.25	0.90	0.183	(0.199)	0.067	0.117
28	2.33	0.90	0.183	(0.199)	0.067	0.117
29	2.42	0.90	0.183	(0.199)	0.067	0.117
30	2.50	0.90	0.183	(0.199)	0.067	0.117
31	2.58	0.90	0.183	(0.199)	0.067	0.117
32	2.67	0.90	0.183	(0.199)	0.067	0.117
33	2.75	1.00	0.204	(0.199)	0.074	0.130
34	2.83	1.00	0.204	(0.199)	0.074	0.130

35	2.92	1.00	0.204	(0.199)	0.074	0.130	
36	3.00	1.00	0.204	(0.199)	0.074	0.130	
37	3.08	1.00	0.204	(0.199)	0.074	0.130	
38	3.17	1.10	0.224	(0.199)	0.082	0.143	
39	3.25	1.10	0.224	(0.199)	0.082	0.143	
40	3.33	1.10	0.224	(0.199)	0.082	0.143	
41	3.42	1.20	0.245	(0.199)	0.089	0.156	
42	3.50	1.30	0.265	(0.199)	0.096	0.168	
43	3.58	1.40	0.285	(0.199)	0.104	0.181	
44	3.67	1.40	0.285	(0.199)	0.104	0.181	
45	3.75	1.50	0.306	(0.199)	0.111	0.194	
46	3.83	1.50	0.306	(0.199)	0.111	0.194	
47	3.92	1.60	0.326	(0.199)	0.119	0.207	
48	4.00	1.60	0.326	(0.199)	0.119	0.207	
49	4.08	1.70	0.346	(0.199)	0.126	0.220	
50	4.17	1.80	0.367	(0.199)	0.134	0.233	
51	4.25	1.90	0.387	(0.199)	0.141	0.246	
52	4.33	2.00	0.408	(0.199)	0.148	0.259	
53	4.42	2.10	0.428	(0.199)	0.156	0.272	
54	4.50	2.10	0.428	(0.199)	0.156	0.272	
55	4.58	2.20	0.448	(0.199)	0.163	0.285	
56	4.67	2.30	0.469	(0.199)	0.171	0.298	
57	4.75	2.40	0.489	(0.199)	0.178	0.311	
58	4.83	2.40	0.489	(0.199)	0.178	0.311	
59	4.92	2.50	0.509	(0.199)	0.185	0.324	
60	5.00	2.60	0.530	(0.199)	0.193	0.337	
61	5.08	3.10	0.632	0.199	(0.230)	0.433	
62	5.17	3.60	0.734	0.199	(0.267)	0.535	
63	5.25	3.90	0.795	0.199	(0.289)	0.596	
64	5.33	4.20	0.856	0.199	(0.312)	0.657	
65	5.42	4.70	0.958	0.199	(0.349)	0.759	
66	5.50	5.60	1.141	0.199	(0.415)	0.942	
67	5.58	1.90	0.387	(0.199)	0.141	0.246	
68	5.67	0.90	0.183	(0.199)	0.067	0.117	
69	5.75	0.60	0.122	(0.199)	0.045	0.078	
70	5.83	0.50	0.102	(0.199)	0.037	0.065	
71	5.92	0.30	0.061	(0.199)	0.022	0.039	
72	6.00	0.20	0.041	(0.199)	0.015	0.026	

(Loss Rate Not Used)

Sum = 100.0 Sum = 13.6

Flood volume = Effective rainfall 1.14(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)

Total soil loss = 0.56(In)

Total soil loss = 0.157(Ac.Ft)

Total rainfall = 1.70(In)

Flood volume = 13812.0 Cubic Feet

Total soil loss = 6838.4 Cubic Feet

Peak flow rate of this hydrograph = 2.431(CFS)

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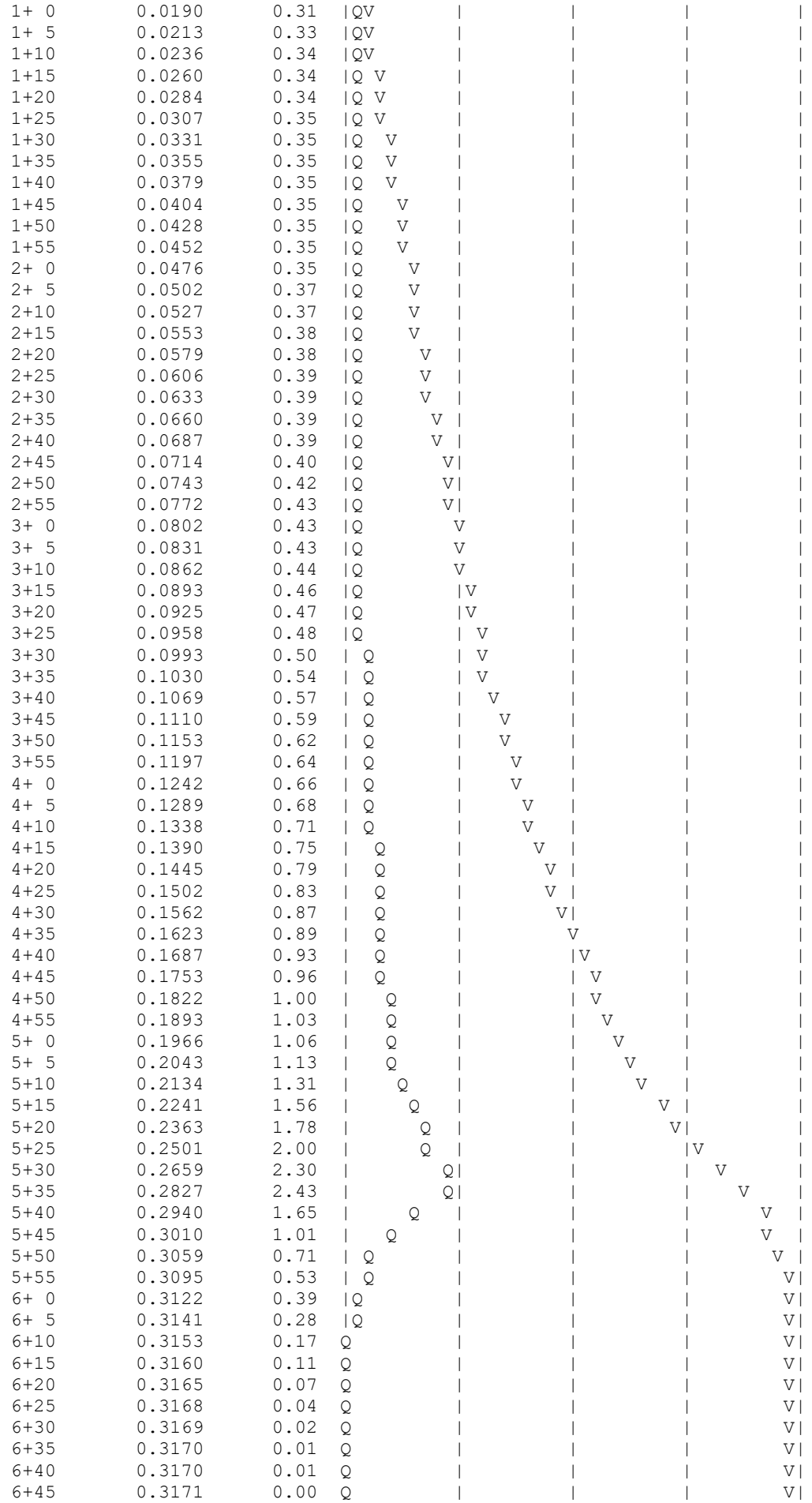
6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.02	Q	|	|	|	|
0+10	0.0010	0.12	Q	|	|	|	|
0+15	0.0022	0.18	Q	|	|	|	|
0+20	0.0037	0.21	Q	|	|	|	|
0+25	0.0053	0.23	Q	|	|	|	|
0+30	0.0070	0.24	Q	|	|	|	|
0+35	0.0088	0.27	|Q	|	|	|	|
0+40	0.0108	0.28	|Q	|	|	|	|
0+45	0.0128	0.29	|Q	|	|	|	|
0+50	0.0148	0.30	|Q	|	|	|	|
0+55	0.0169	0.30	|QV	|	|	|	|



```
    6+50       0.3171      0.00  Q         |         |         |        V|
    6+55       0.3171      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/19/20 File: 8946E2A1245.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
5 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.13 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.85 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]
3.35	2.25	7.54

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	5.25	17.59

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.953(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.953(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.146	10.662	0.360
2	0.167	140.292	40.179	1.357
3	0.250	210.438	23.100	0.780
4	0.333	280.584	8.996	0.304
5	0.417	350.730	5.470	0.185
6	0.500	420.875	3.631	0.123
7	0.583	491.021	2.428	0.082
8	0.667	561.167	1.900	0.064
9	0.750	631.313	1.338	0.045
10	0.833	701.459	0.950	0.032
11	0.917	771.605	0.711	0.024
12	1.000	841.751	0.635	0.021
		Sum = 100.000	Sum=	3.376

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	0.024	(0.352)		0.009	0.015
2	0.17	0.07	0.024	(0.351)		0.009	0.015
3	0.25	0.07	0.024	(0.350)		0.009	0.015
4	0.33	0.10	0.035	(0.348)		0.013	0.023
5	0.42	0.10	0.035	(0.347)		0.013	0.023
6	0.50	0.10	0.035	(0.346)		0.013	0.023
7	0.58	0.10	0.035	(0.344)		0.013	0.023
8	0.67	0.10	0.035	(0.343)		0.013	0.023
9	0.75	0.10	0.035	(0.341)		0.013	0.023
10	0.83	0.13	0.047	(0.340)		0.017	0.030
11	0.92	0.13	0.047	(0.339)		0.017	0.030
12	1.00	0.13	0.047	(0.337)		0.017	0.030
13	1.08	0.10	0.035	(0.336)		0.013	0.023
14	1.17	0.10	0.035	(0.335)		0.013	0.023
15	1.25	0.10	0.035	(0.333)		0.013	0.023
16	1.33	0.10	0.035	(0.332)		0.013	0.023
17	1.42	0.10	0.035	(0.331)		0.013	0.023
18	1.50	0.10	0.035	(0.330)		0.013	0.023
19	1.58	0.10	0.035	(0.328)		0.013	0.023
20	1.67	0.10	0.035	(0.327)		0.013	0.023
21	1.75	0.10	0.035	(0.326)		0.013	0.023
22	1.83	0.13	0.047	(0.324)		0.017	0.030
23	1.92	0.13	0.047	(0.323)		0.017	0.030
24	2.00	0.13	0.047	(0.322)		0.017	0.030
25	2.08	0.13	0.047	(0.320)		0.017	0.030
26	2.17	0.13	0.047	(0.319)		0.017	0.030
27	2.25	0.13	0.047	(0.318)		0.017	0.030
28	2.33	0.13	0.047	(0.316)		0.017	0.030
29	2.42	0.13	0.047	(0.315)		0.017	0.030
30	2.50	0.13	0.047	(0.314)		0.017	0.030
31	2.58	0.17	0.059	(0.313)		0.021	0.038
32	2.67	0.17	0.059	(0.311)		0.021	0.038
33	2.75	0.17	0.059	(0.310)		0.021	0.038
34	2.83	0.17	0.059	(0.309)		0.021	0.038

35	2.92	0.17	0.059	(0.307)	0.021	0.038
36	3.00	0.17	0.059	(0.306)	0.021	0.038
37	3.08	0.17	0.059	(0.305)	0.021	0.038
38	3.17	0.17	0.059	(0.304)	0.021	0.038
39	3.25	0.17	0.059	(0.302)	0.021	0.038
40	3.33	0.17	0.059	(0.301)	0.021	0.038
41	3.42	0.17	0.059	(0.300)	0.021	0.038
42	3.50	0.17	0.059	(0.299)	0.021	0.038
43	3.58	0.17	0.059	(0.297)	0.021	0.038
44	3.67	0.17	0.059	(0.296)	0.021	0.038
45	3.75	0.17	0.059	(0.295)	0.021	0.038
46	3.83	0.20	0.071	(0.294)	0.026	0.045
47	3.92	0.20	0.071	(0.292)	0.026	0.045
48	4.00	0.20	0.071	(0.291)	0.026	0.045
49	4.08	0.20	0.071	(0.290)	0.026	0.045
50	4.17	0.20	0.071	(0.289)	0.026	0.045
51	4.25	0.20	0.071	(0.287)	0.026	0.045
52	4.33	0.23	0.083	(0.286)	0.030	0.053
53	4.42	0.23	0.083	(0.285)	0.030	0.053
54	4.50	0.23	0.083	(0.284)	0.030	0.053
55	4.58	0.23	0.083	(0.283)	0.030	0.053
56	4.67	0.23	0.083	(0.281)	0.030	0.053
57	4.75	0.23	0.083	(0.280)	0.030	0.053
58	4.83	0.27	0.094	(0.279)	0.034	0.060
59	4.92	0.27	0.094	(0.278)	0.034	0.060
60	5.00	0.27	0.094	(0.277)	0.034	0.060
61	5.08	0.20	0.071	(0.275)	0.026	0.045
62	5.17	0.20	0.071	(0.274)	0.026	0.045
63	5.25	0.20	0.071	(0.273)	0.026	0.045
64	5.33	0.23	0.083	(0.272)	0.030	0.053
65	5.42	0.23	0.083	(0.271)	0.030	0.053
66	5.50	0.23	0.083	(0.269)	0.030	0.053
67	5.58	0.27	0.094	(0.268)	0.034	0.060
68	5.67	0.27	0.094	(0.267)	0.034	0.060
69	5.75	0.27	0.094	(0.266)	0.034	0.060
70	5.83	0.27	0.094	(0.265)	0.034	0.060
71	5.92	0.27	0.094	(0.263)	0.034	0.060
72	6.00	0.27	0.094	(0.262)	0.034	0.060
73	6.08	0.30	0.106	(0.261)	0.039	0.068
74	6.17	0.30	0.106	(0.260)	0.039	0.068
75	6.25	0.30	0.106	(0.259)	0.039	0.068
76	6.33	0.30	0.106	(0.258)	0.039	0.068
77	6.42	0.30	0.106	(0.257)	0.039	0.068
78	6.50	0.30	0.106	(0.255)	0.039	0.068
79	6.58	0.33	0.118	(0.254)	0.043	0.075
80	6.67	0.33	0.118	(0.253)	0.043	0.075
81	6.75	0.33	0.118	(0.252)	0.043	0.075
82	6.83	0.33	0.118	(0.251)	0.043	0.075
83	6.92	0.33	0.118	(0.250)	0.043	0.075
84	7.00	0.33	0.118	(0.249)	0.043	0.075
85	7.08	0.33	0.118	(0.247)	0.043	0.075
86	7.17	0.33	0.118	(0.246)	0.043	0.075
87	7.25	0.33	0.118	(0.245)	0.043	0.075
88	7.33	0.37	0.130	(0.244)	0.047	0.083
89	7.42	0.37	0.130	(0.243)	0.047	0.083
90	7.50	0.37	0.130	(0.242)	0.047	0.083
91	7.58	0.40	0.142	(0.241)	0.052	0.090
92	7.67	0.40	0.142	(0.240)	0.052	0.090
93	7.75	0.40	0.142	(0.238)	0.052	0.090
94	7.83	0.43	0.154	(0.237)	0.056	0.098
95	7.92	0.43	0.154	(0.236)	0.056	0.098
96	8.00	0.43	0.154	(0.235)	0.056	0.098
97	8.08	0.50	0.177	(0.234)	0.064	0.113
98	8.17	0.50	0.177	(0.233)	0.064	0.113
99	8.25	0.50	0.177	(0.232)	0.064	0.113
100	8.33	0.50	0.177	(0.231)	0.064	0.113
101	8.42	0.50	0.177	(0.230)	0.064	0.113
102	8.50	0.50	0.177	(0.229)	0.064	0.113
103	8.58	0.53	0.189	(0.228)	0.069	0.120
104	8.67	0.53	0.189	(0.227)	0.069	0.120

105	8.75	0.53	0.189	(0.225)	0.069	0.120
106	8.83	0.57	0.201	(0.224)	0.073	0.128
107	8.92	0.57	0.201	(0.223)	0.073	0.128
108	9.00	0.57	0.201	(0.222)	0.073	0.128
109	9.08	0.63	0.224	(0.221)	0.082	0.143
110	9.17	0.63	0.224	(0.220)	0.082	0.143
111	9.25	0.63	0.224	(0.219)	0.082	0.143
112	9.33	0.67	0.236	(0.218)	0.086	0.150
113	9.42	0.67	0.236	(0.217)	0.086	0.150
114	9.50	0.67	0.236	(0.216)	0.086	0.150
115	9.58	0.70	0.248	(0.215)	0.090	0.158
116	9.67	0.70	0.248	(0.214)	0.090	0.158
117	9.75	0.70	0.248	(0.213)	0.090	0.158
118	9.83	0.73	0.260	(0.212)	0.095	0.165
119	9.92	0.73	0.260	(0.211)	0.095	0.165
120	10.00	0.73	0.260	(0.210)	0.095	0.165
121	10.08	0.50	0.177	(0.209)	0.064	0.113
122	10.17	0.50	0.177	(0.208)	0.064	0.113
123	10.25	0.50	0.177	(0.207)	0.064	0.113
124	10.33	0.50	0.177	(0.206)	0.064	0.113
125	10.42	0.50	0.177	(0.205)	0.064	0.113
126	10.50	0.50	0.177	(0.204)	0.064	0.113
127	10.58	0.67	0.236	(0.203)	0.086	0.150
128	10.67	0.67	0.236	(0.202)	0.086	0.150
129	10.75	0.67	0.236	(0.201)	0.086	0.150
130	10.83	0.67	0.236	(0.200)	0.086	0.150
131	10.92	0.67	0.236	(0.199)	0.086	0.150
132	11.00	0.67	0.236	(0.198)	0.086	0.150
133	11.08	0.63	0.224	(0.197)	0.082	0.143
134	11.17	0.63	0.224	(0.196)	0.082	0.143
135	11.25	0.63	0.224	(0.195)	0.082	0.143
136	11.33	0.63	0.224	(0.194)	0.082	0.143
137	11.42	0.63	0.224	(0.193)	0.082	0.143
138	11.50	0.63	0.224	(0.192)	0.082	0.143
139	11.58	0.57	0.201	(0.191)	0.073	0.128
140	11.67	0.57	0.201	(0.190)	0.073	0.128
141	11.75	0.57	0.201	(0.189)	0.073	0.128
142	11.83	0.60	0.213	(0.188)	0.077	0.135
143	11.92	0.60	0.213	(0.187)	0.077	0.135
144	12.00	0.60	0.213	(0.186)	0.077	0.135
145	12.08	0.83	0.295	(0.186)	0.107	0.188
146	12.17	0.83	0.295	(0.185)	0.107	0.188
147	12.25	0.83	0.295	(0.184)	0.107	0.188
148	12.33	0.87	0.307	(0.183)	0.112	0.195
149	12.42	0.87	0.307	(0.182)	0.112	0.195
150	12.50	0.87	0.307	(0.181)	0.112	0.195
151	12.58	0.93	0.331	(0.180)	0.120	0.210
152	12.67	0.93	0.331	(0.179)	0.120	0.210
153	12.75	0.93	0.331	(0.178)	0.120	0.210
154	12.83	0.97	0.343	(0.177)	0.125	0.218
155	12.92	0.97	0.343	(0.176)	0.125	0.218
156	13.00	0.97	0.343	(0.176)	0.125	0.218
157	13.08	1.13	0.402	(0.175)	0.146	0.255
158	13.17	1.13	0.402	(0.174)	0.146	0.255
159	13.25	1.13	0.402	(0.173)	0.146	0.255
160	13.33	1.13	0.402	(0.172)	0.146	0.255
161	13.42	1.13	0.402	(0.171)	0.146	0.255
162	13.50	1.13	0.402	(0.170)	0.146	0.255
163	13.58	0.77	0.272	(0.169)	0.099	0.173
164	13.67	0.77	0.272	(0.168)	0.099	0.173
165	13.75	0.77	0.272	(0.168)	0.099	0.173
166	13.83	0.77	0.272	(0.167)	0.099	0.173
167	13.92	0.77	0.272	(0.166)	0.099	0.173
168	14.00	0.77	0.272	(0.165)	0.099	0.173
169	14.08	0.90	0.319	(0.164)	0.116	0.203
170	14.17	0.90	0.319	(0.163)	0.116	0.203
171	14.25	0.90	0.319	(0.163)	0.116	0.203
172	14.33	0.87	0.307	(0.162)	0.112	0.195
173	14.42	0.87	0.307	(0.161)	0.112	0.195
174	14.50	0.87	0.307	(0.160)	0.112	0.195

175	14.58	0.87	0.307	(0.159)	0.112	0.195
176	14.67	0.87	0.307	(0.158)	0.112	0.195
177	14.75	0.87	0.307	(0.158)	0.112	0.195
178	14.83	0.83	0.295	(0.157)	0.107	0.188
179	14.92	0.83	0.295	(0.156)	0.107	0.188
180	15.00	0.83	0.295	(0.155)	0.107	0.188
181	15.08	0.80	0.283	(0.154)	0.103	0.180
182	15.17	0.80	0.283	(0.154)	0.103	0.180
183	15.25	0.80	0.283	(0.153)	0.103	0.180
184	15.33	0.77	0.272	(0.152)	0.099	0.173
185	15.42	0.77	0.272	(0.151)	0.099	0.173
186	15.50	0.77	0.272	(0.151)	0.099	0.173
187	15.58	0.63	0.224	(0.150)	0.082	0.143
188	15.67	0.63	0.224	(0.149)	0.082	0.143
189	15.75	0.63	0.224	(0.148)	0.082	0.143
190	15.83	0.63	0.224	(0.147)	0.082	0.143
191	15.92	0.63	0.224	(0.147)	0.082	0.143
192	16.00	0.63	0.224	(0.146)	0.082	0.143
193	16.08	0.13	0.047	(0.145)	0.017	0.030
194	16.17	0.13	0.047	(0.144)	0.017	0.030
195	16.25	0.13	0.047	(0.144)	0.017	0.030
196	16.33	0.13	0.047	(0.143)	0.017	0.030
197	16.42	0.13	0.047	(0.142)	0.017	0.030
198	16.50	0.13	0.047	(0.142)	0.017	0.030
199	16.58	0.10	0.035	(0.141)	0.013	0.023
200	16.67	0.10	0.035	(0.140)	0.013	0.023
201	16.75	0.10	0.035	(0.139)	0.013	0.023
202	16.83	0.10	0.035	(0.139)	0.013	0.023
203	16.92	0.10	0.035	(0.138)	0.013	0.023
204	17.00	0.10	0.035	(0.137)	0.013	0.023
205	17.08	0.17	0.059	(0.137)	0.021	0.038
206	17.17	0.17	0.059	(0.136)	0.021	0.038
207	17.25	0.17	0.059	(0.135)	0.021	0.038
208	17.33	0.17	0.059	(0.135)	0.021	0.038
209	17.42	0.17	0.059	(0.134)	0.021	0.038
210	17.50	0.17	0.059	(0.133)	0.021	0.038
211	17.58	0.17	0.059	(0.133)	0.021	0.038
212	17.67	0.17	0.059	(0.132)	0.021	0.038
213	17.75	0.17	0.059	(0.131)	0.021	0.038
214	17.83	0.13	0.047	(0.131)	0.017	0.030
215	17.92	0.13	0.047	(0.130)	0.017	0.030
216	18.00	0.13	0.047	(0.129)	0.017	0.030
217	18.08	0.13	0.047	(0.129)	0.017	0.030
218	18.17	0.13	0.047	(0.128)	0.017	0.030
219	18.25	0.13	0.047	(0.127)	0.017	0.030
220	18.33	0.13	0.047	(0.127)	0.017	0.030
221	18.42	0.13	0.047	(0.126)	0.017	0.030
222	18.50	0.13	0.047	(0.126)	0.017	0.030
223	18.58	0.10	0.035	(0.125)	0.013	0.023
224	18.67	0.10	0.035	(0.124)	0.013	0.023
225	18.75	0.10	0.035	(0.124)	0.013	0.023
226	18.83	0.07	0.024	(0.123)	0.009	0.015
227	18.92	0.07	0.024	(0.123)	0.009	0.015
228	19.00	0.07	0.024	(0.122)	0.009	0.015
229	19.08	0.10	0.035	(0.121)	0.013	0.023
230	19.17	0.10	0.035	(0.121)	0.013	0.023
231	19.25	0.10	0.035	(0.120)	0.013	0.023
232	19.33	0.13	0.047	(0.120)	0.017	0.030
233	19.42	0.13	0.047	(0.119)	0.017	0.030
234	19.50	0.13	0.047	(0.119)	0.017	0.030
235	19.58	0.10	0.035	(0.118)	0.013	0.023
236	19.67	0.10	0.035	(0.117)	0.013	0.023
237	19.75	0.10	0.035	(0.117)	0.013	0.023
238	19.83	0.07	0.024	(0.116)	0.009	0.015
239	19.92	0.07	0.024	(0.116)	0.009	0.015
240	20.00	0.07	0.024	(0.115)	0.009	0.015
241	20.08	0.10	0.035	(0.115)	0.013	0.023
242	20.17	0.10	0.035	(0.114)	0.013	0.023
243	20.25	0.10	0.035	(0.114)	0.013	0.023
244	20.33	0.10	0.035	(0.113)	0.013	0.023

245	20.42	0.10	0.035	(	0.113)	0.013	0.023
246	20.50	0.10	0.035	(	0.112)	0.013	0.023
247	20.58	0.10	0.035	(	0.112)	0.013	0.023
248	20.67	0.10	0.035	(	0.111)	0.013	0.023
249	20.75	0.10	0.035	(	0.111)	0.013	0.023
250	20.83	0.07	0.024	(	0.111)	0.009	0.015
251	20.92	0.07	0.024	(	0.110)	0.009	0.015
252	21.00	0.07	0.024	(	0.110)	0.009	0.015
253	21.08	0.10	0.035	(	0.109)	0.013	0.023
254	21.17	0.10	0.035	(	0.109)	0.013	0.023
255	21.25	0.10	0.035	(	0.108)	0.013	0.023
256	21.33	0.07	0.024	(	0.108)	0.009	0.015
257	21.42	0.07	0.024	(	0.108)	0.009	0.015
258	21.50	0.07	0.024	(	0.107)	0.009	0.015
259	21.58	0.10	0.035	(	0.107)	0.013	0.023
260	21.67	0.10	0.035	(	0.106)	0.013	0.023
261	21.75	0.10	0.035	(	0.106)	0.013	0.023
262	21.83	0.07	0.024	(	0.106)	0.009	0.015
263	21.92	0.07	0.024	(	0.105)	0.009	0.015
264	22.00	0.07	0.024	(	0.105)	0.009	0.015
265	22.08	0.10	0.035	(	0.105)	0.013	0.023
266	22.17	0.10	0.035	(	0.104)	0.013	0.023
267	22.25	0.10	0.035	(	0.104)	0.013	0.023
268	22.33	0.07	0.024	(	0.104)	0.009	0.015
269	22.42	0.07	0.024	(	0.103)	0.009	0.015
270	22.50	0.07	0.024	(	0.103)	0.009	0.015
271	22.58	0.07	0.024	(	0.103)	0.009	0.015
272	22.67	0.07	0.024	(	0.102)	0.009	0.015
273	22.75	0.07	0.024	(	0.102)	0.009	0.015
274	22.83	0.07	0.024	(	0.102)	0.009	0.015
275	22.92	0.07	0.024	(	0.102)	0.009	0.015
276	23.00	0.07	0.024	(	0.101)	0.009	0.015
277	23.08	0.07	0.024	(	0.101)	0.009	0.015
278	23.17	0.07	0.024	(	0.101)	0.009	0.015
279	23.25	0.07	0.024	(	0.101)	0.009	0.015
280	23.33	0.07	0.024	(	0.100)	0.009	0.015
281	23.42	0.07	0.024	(	0.100)	0.009	0.015
282	23.50	0.07	0.024	(	0.100)	0.009	0.015
283	23.58	0.07	0.024	(	0.100)	0.009	0.015
284	23.67	0.07	0.024	(	0.100)	0.009	0.015
285	23.75	0.07	0.024	(	0.100)	0.009	0.015
286	23.83	0.07	0.024	(	0.100)	0.009	0.015
287	23.92	0.07	0.024	(	0.099)	0.009	0.015
288	24.00	0.07	0.024	(	0.099)	0.009	0.015

(Loss Rate Not Used)

Sum = 100.0 Sum = 22.5

Flood volume = Effective rainfall 1.88(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)
Total soil loss = 1.07(In)
Total soil loss = 0.300(Ac.Ft)
Total rainfall = 2.95(In)
Flood volume = 22836.1 Cubic Feet
Total soil loss = 13069.7 Cubic Feet

Peak flow rate of this hydrograph = 0.852(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01	Q	|	|	|	|
0+10	0.0002	0.03	Q	|	|	|	|
0+15	0.0005	0.04	Q	|	|	|	|
0+20	0.0008	0.04	Q	|	|	|	|
0+25	0.0012	0.06	Q	|	|	|	|

0+30	0.0016	0.07	Q	|	|	|	|
0+35	0.0021	0.07	Q	|	|	|	|
0+40	0.0026	0.07	Q	|	|	|	|
0+45	0.0031	0.07	Q	|	|	|	|
0+50	0.0036	0.08	Q	|	|	|	|
0+55	0.0042	0.09	Q	|	|	|	|
1+ 0	0.0049	0.09	Q	|	|	|	|
1+ 5	0.0055	0.09	Q	|	|	|	|
1+10	0.0061	0.09	Q	|	|	|	|
1+15	0.0067	0.08	Q	|	|	|	|
1+20	0.0072	0.08	Q	|	|	|	|
1+25	0.0078	0.08	Q	|	|	|	|
1+30	0.0083	0.08	Q	|	|	|	|
1+35	0.0088	0.08	Q	|	|	|	|
1+40	0.0094	0.08	Q	|	|	|	|
1+45	0.0099	0.08	Q	|	|	|	|
1+50	0.0104	0.08	Q	|	|	|	|
1+55	0.0110	0.09	Q	|	|	|	|
2+ 0	0.0117	0.09	Q	|	|	|	|
2+ 5	0.0124	0.10	Q	|	|	|	|
2+10	0.0130	0.10	Q	|	|	|	|
2+15	0.0137	0.10	QV	|	|	|	|
2+20	0.0144	0.10	QV	|	|	|	|
2+25	0.0151	0.10	QV	|	|	|	|
2+30	0.0158	0.10	QV	|	|	|	|
2+35	0.0165	0.10	QV	|	|	|	|
2+40	0.0173	0.11	QV	|	|	|	|
2+45	0.0181	0.12	QV	|	|	|	|
2+50	0.0190	0.12	QV	|	|	|	|
2+55	0.0198	0.12	QV	|	|	|	|
3+ 0	0.0207	0.12	QV	|	|	|	|
3+ 5	0.0216	0.13	QV	|	|	|	|
3+10	0.0224	0.13	QV	|	|	|	|
3+15	0.0233	0.13	QV	|	|	|	|
3+20	0.0242	0.13	QV	|	|	|	|
3+25	0.0250	0.13	QV	|	|	|	|
3+30	0.0259	0.13	QV	|	|	|	|
3+35	0.0268	0.13	Q V	|	|	|	|
3+40	0.0277	0.13	Q V	|	|	|	|
3+45	0.0285	0.13	Q V	|	|	|	|
3+50	0.0294	0.13	Q V	|	|	|	|
3+55	0.0304	0.14	Q V	|	|	|	|
4+ 0	0.0314	0.15	Q V	|	|	|	|
4+ 5	0.0324	0.15	Q V	|	|	|	|
4+10	0.0334	0.15	Q V	|	|	|	|
4+15	0.0345	0.15	Q V	|	|	|	|
4+20	0.0355	0.15	Q V	|	|	|	|
4+25	0.0367	0.16	Q V	|	|	|	|
4+30	0.0378	0.17	Q V	|	|	|	|
4+35	0.0390	0.17	Q V	|	|	|	|
4+40	0.0402	0.17	Q V	|	|	|	|
4+45	0.0414	0.18	Q V	|	|	|	|
4+50	0.0427	0.18	Q V	|	|	|	|
4+55	0.0440	0.19	Q V	|	|	|	|
5+ 0	0.0453	0.20	Q V	|	|	|	|
5+ 5	0.0466	0.19	Q V	|	|	|	|
5+10	0.0478	0.17	Q V	|	|	|	|
5+15	0.0490	0.16	Q V	|	|	|	|
5+20	0.0501	0.16	Q V	|	|	|	|
5+25	0.0513	0.17	Q V	|	|	|	|
5+30	0.0525	0.17	Q V	|	|	|	|
5+35	0.0537	0.18	Q V	|	|	|	|
5+40	0.0550	0.19	Q V	|	|	|	|
5+45	0.0563	0.20	Q V	|	|	|	|
5+50	0.0577	0.20	Q V	|	|	|	|
5+55	0.0591	0.20	Q V	|	|	|	|
6+ 0	0.0605	0.20	Q V	|	|	|	|
6+ 5	0.0619	0.20	Q V	|	|	|	|
6+10	0.0633	0.21	Q V	|	|	|	|
6+15	0.0649	0.22	Q V	|	|	|	|

6+20	0.0664	0.22	Q	V			
6+25	0.0680	0.23	Q	V			
6+30	0.0695	0.23	Q	V			
6+35	0.0711	0.23	Q	V			
6+40	0.0728	0.24	Q	V			
6+45	0.0745	0.25	Q	V			
6+50	0.0762	0.25	Q	V			
6+55	0.0779	0.25	|Q	V			
7+ 0	0.0796	0.25	|Q	V			
7+ 5	0.0814	0.25	|Q	V			
7+10	0.0831	0.25	|Q	V			
7+15	0.0849	0.25	|Q	V			
7+20	0.0866	0.26	|Q	V			
7+25	0.0884	0.27	|Q	V			
7+30	0.0903	0.27	|Q	V			
7+35	0.0922	0.28	|Q	V			
7+40	0.0942	0.29	|Q	V			
7+45	0.0963	0.30	|Q	V			
7+50	0.0983	0.30	|Q	V			
7+55	0.1005	0.31	|Q	V			
8+ 0	0.1027	0.32	|Q	V			
8+ 5	0.1050	0.33	|Q	V			
8+10	0.1074	0.35	|Q	V			
8+15	0.1099	0.36	|Q	V			
8+20	0.1125	0.37	|Q	V			
8+25	0.1150	0.37	|Q	V			
8+30	0.1176	0.38	|Q	V			
8+35	0.1202	0.38	|Q	V|			
8+40	0.1229	0.39	|Q	V|			
8+45	0.1257	0.40	|Q	V|			
8+50	0.1285	0.40	|Q	V|			
8+55	0.1313	0.42	|Q	V			
9+ 0	0.1342	0.42	|Q	V			
9+ 5	0.1372	0.43	|Q	V			
9+10	0.1403	0.45	|Q	V			
9+15	0.1435	0.47	|Q	V			
9+20	0.1468	0.47	|Q	|V			
9+25	0.1502	0.49	|Q	|V			
9+30	0.1536	0.50	|Q	|V			
9+35	0.1570	0.50	| Q	|V			
9+40	0.1606	0.52	| Q	| V			
9+45	0.1642	0.52	| Q	| V			
9+50	0.1678	0.53	| Q	| V			
9+55	0.1716	0.54	| Q	| V			
10+ 0	0.1753	0.55	| Q	| V			
10+ 5	0.1790	0.53	| Q	| V			
10+10	0.1822	0.46	|Q	| V			
10+15	0.1851	0.42	|Q	| V			
10+20	0.1880	0.41	|Q	| V			
10+25	0.1907	0.40	|Q	| V			
10+30	0.1934	0.39	|Q	| V			
10+35	0.1962	0.40	|Q	| V			
10+40	0.1993	0.45	|Q	| V			
10+45	0.2026	0.48	|Q	| V			
10+50	0.2060	0.49	|Q	| V			
10+55	0.2094	0.49	|Q	| V			
11+ 0	0.2128	0.50	|Q	| V			
11+ 5	0.2162	0.50	|Q	| V			
11+10	0.2196	0.49	|Q	| V			
11+15	0.2229	0.49	|Q	| V			
11+20	0.2263	0.48	|Q	| V			
11+25	0.2296	0.48	|Q	| V			
11+30	0.2330	0.48	|Q	| V			
11+35	0.2362	0.48	|Q	| V			
11+40	0.2394	0.46	|Q	| V			
11+45	0.2425	0.45	|Q	| V			
11+50	0.2455	0.44	|Q	| V			
11+55	0.2486	0.45	|Q	| V			
12+ 0	0.2517	0.45	|Q	| V|			
12+ 5	0.2550	0.47	|Q	| V|			

12+10	0.2588	0.55	Q		V			
12+15	0.2628	0.59	Q		V			
12+20	0.2670	0.61	Q		V			
12+25	0.2713	0.63	Q		V			
12+30	0.2757	0.64	Q		V			
12+35	0.2802	0.65	Q		V			
12+40	0.2848	0.68	Q		V			
12+45	0.2896	0.69	Q		V			
12+50	0.2944	0.70	Q		V			
12+55	0.2993	0.72	Q		V			
13+ 0	0.3043	0.72	Q		V			
13+ 5	0.3094	0.74	Q		V			
13+10	0.3149	0.80	Q		V			
13+15	0.3206	0.83	Q		V			
13+20	0.3264	0.84	Q		V			
13+25	0.3322	0.85	Q		V			
13+30	0.3381	0.85	Q		V			
13+35	0.3438	0.83	Q		V			
13+40	0.3487	0.72	Q		V			
13+45	0.3532	0.65	Q		V			
13+50	0.3575	0.63	Q		V			
13+55	0.3618	0.62	Q		V			
14+ 0	0.3659	0.61	Q		V			
14+ 5	0.3701	0.61	Q		V			
14+10	0.3746	0.65	Q		V			
14+15	0.3792	0.67	Q		V			
14+20	0.3838	0.67	Q		V			
14+25	0.3883	0.66	Q		V			
14+30	0.3929	0.66	Q		V			
14+35	0.3974	0.66	Q		V			
14+40	0.4019	0.66	Q		V			
14+45	0.4065	0.66	Q		V			
14+50	0.4110	0.66	Q		V			
14+55	0.4155	0.65	Q		V			
15+ 0	0.4199	0.64	Q		V			
15+ 5	0.4243	0.64	Q		V			
15+10	0.4286	0.62	Q		V			
15+15	0.4328	0.62	Q		V			
15+20	0.4370	0.61	Q		V			
15+25	0.4412	0.60	Q		V			
15+30	0.4453	0.59	Q		V			
15+35	0.4492	0.58	Q		V			
15+40	0.4529	0.54	Q		V			
15+45	0.4565	0.51	Q		V			
15+50	0.4599	0.50	Q		V			
15+55	0.4633	0.49	Q		V			
16+ 0	0.4667	0.49	Q		V			
16+ 5	0.4698	0.45	Q		V			
16+10	0.4718	0.29	Q		V			
16+15	0.4732	0.20	Q		V			
16+20	0.4743	0.17	Q		V			
16+25	0.4753	0.15	Q		V			
16+30	0.4763	0.13	Q		V			
16+35	0.4771	0.12	Q		V			
16+40	0.4778	0.10	Q		V			
16+45	0.4784	0.09	Q		V			
16+50	0.4790	0.09	Q		V			
16+55	0.4796	0.08	Q		V			
17+ 0	0.4801	0.08	Q		V			
17+ 5	0.4807	0.08	Q		V			
17+10	0.4814	0.10	Q		V			
17+15	0.4822	0.11	Q		V			
17+20	0.4830	0.12	Q		V			
17+25	0.4838	0.12	Q		V			
17+30	0.4847	0.12	Q		V			
17+35	0.4855	0.12	Q		V			
17+40	0.4864	0.13	Q		V			
17+45	0.4873	0.13	Q		V			
17+50	0.4881	0.12	Q		V			
17+55	0.4889	0.11	Q		V			

18+ 0	0.4896	0.11	Q	|	|	|	V |
18+ 5	0.4904	0.11	Q	|	|	|	V |
18+10	0.4911	0.10	Q	|	|	|	V |
18+15	0.4918	0.10	Q	|	|	|	V |
18+20	0.4925	0.10	Q	|	|	|	V |
18+25	0.4932	0.10	Q	|	|	|	V |
18+30	0.4939	0.10	Q	|	|	|	V |
18+35	0.4946	0.10	Q	|	|	|	V |
18+40	0.4952	0.09	Q	|	|	|	V |
18+45	0.4958	0.08	Q	|	|	|	V |
18+50	0.4963	0.08	Q	|	|	|	V |
18+55	0.4968	0.07	Q	|	|	|	V |
19+ 0	0.4972	0.06	Q	|	|	|	V |
19+ 5	0.4976	0.06	Q	|	|	|	V |
19+10	0.4980	0.07	Q	|	|	|	V |
19+15	0.4985	0.07	Q	|	|	|	V |
19+20	0.4991	0.08	Q	|	|	|	V |
19+25	0.4997	0.09	Q	|	|	|	V |
19+30	0.5003	0.09	Q	|	|	|	V |
19+35	0.5010	0.09	Q	|	|	|	V |
19+40	0.5015	0.08	Q	|	|	|	V |
19+45	0.5021	0.08	Q	|	|	|	V |
19+50	0.5026	0.08	Q	|	|	|	V |
19+55	0.5031	0.07	Q	|	|	|	V |
20+ 0	0.5035	0.06	Q	|	|	|	V |
20+ 5	0.5039	0.06	Q	|	|	|	V |
20+10	0.5043	0.07	Q	|	|	|	V |
20+15	0.5048	0.07	Q	|	|	|	V |
20+20	0.5053	0.07	Q	|	|	|	V |
20+25	0.5058	0.07	Q	|	|	|	V |
20+30	0.5064	0.07	Q	|	|	|	V |
20+35	0.5069	0.08	Q	|	|	|	V |
20+40	0.5074	0.08	Q	|	|	|	V |
20+45	0.5079	0.08	Q	|	|	|	V |
20+50	0.5084	0.07	Q	|	|	|	V |
20+55	0.5089	0.06	Q	|	|	|	V |
21+ 0	0.5093	0.06	Q	|	|	|	V |
21+ 5	0.5096	0.06	Q	|	|	|	V |
21+10	0.5101	0.07	Q	|	|	|	V |
21+15	0.5106	0.07	Q	|	|	|	V |
21+20	0.5111	0.07	Q	|	|	|	V |
21+25	0.5115	0.06	Q	|	|	|	V|
21+30	0.5119	0.06	Q	|	|	|	V|
21+35	0.5123	0.06	Q	|	|	|	V|
21+40	0.5127	0.07	Q	|	|	|	V|
21+45	0.5132	0.07	Q	|	|	|	V|
21+50	0.5137	0.07	Q	|	|	|	V|
21+55	0.5141	0.06	Q	|	|	|	V|
22+ 0	0.5145	0.06	Q	|	|	|	V|
22+ 5	0.5149	0.06	Q	|	|	|	V|
22+10	0.5154	0.07	Q	|	|	|	V|
22+15	0.5158	0.07	Q	|	|	|	V|
22+20	0.5163	0.07	Q	|	|	|	V|
22+25	0.5168	0.06	Q	|	|	|	V|
22+30	0.5171	0.06	Q	|	|	|	V|
22+35	0.5175	0.05	Q	|	|	|	V|
22+40	0.5179	0.05	Q	|	|	|	V|
22+45	0.5182	0.05	Q	|	|	|	V|
22+50	0.5186	0.05	Q	|	|	|	V|
22+55	0.5189	0.05	Q	|	|	|	V|
23+ 0	0.5193	0.05	Q	|	|	|	V|
23+ 5	0.5196	0.05	Q	|	|	|	V|
23+10	0.5200	0.05	Q	|	|	|	V|
23+15	0.5203	0.05	Q	|	|	|	V|
23+20	0.5207	0.05	Q	|	|	|	V|
23+25	0.5210	0.05	Q	|	|	|	V|
23+30	0.5214	0.05	Q	|	|	|	V|
23+35	0.5217	0.05	Q	|	|	|	V|
23+40	0.5221	0.05	Q	|	|	|	V|
23+45	0.5224	0.05	Q	|	|	|	V|

23+50	0.5228	0.05	Q				V
23+55	0.5231	0.05	Q				V
24+ 0	0.5235	0.05	Q				V
24+ 5	0.5238	0.05	Q				V
24+10	0.5240	0.02	Q				V
24+15	0.5241	0.01	Q				V
24+20	0.5241	0.01	Q				V
24+25	0.5242	0.01	Q				V
24+30	0.5242	0.00	Q				V
24+35	0.5242	0.00	Q				V
24+40	0.5242	0.00	Q				V
24+45	0.5242	0.00	Q				V
24+50	0.5242	0.00	Q				V
24+55	0.5242	0.00	Q				V

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

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Study date 02/19/20 File: 8946E2A1110.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
10 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.117 Hr.
Lag time = 7.05 Min.
25% of lag time = 1.76 Min.
40% of lag time = 2.82 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]
3.35	0.55	1.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	1.30	4.36

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.859(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.859(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.670	0.120	1.000	0.120

Sum (F) = 0.120

Area averaged mean soil loss (F) (In/Hr) = 0.120
Minimum soil loss rate ((In/Hr)) = 0.060
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.922	10.862	0.367
2	0.167	141.844	40.576	1.370
3	0.250	212.766	22.832	0.771
4	0.333	283.688	8.927	0.301
5	0.417	354.610	5.427	0.183
6	0.500	425.532	3.584	0.121
7	0.583	496.454	2.413	0.081
8	0.667	567.376	1.872	0.063
9	0.750	638.298	1.317	0.044
10	0.833	709.220	0.924	0.031
11	0.917	780.142	0.713	0.024
12	1.000	851.064	0.553	0.019
		Sum = 100.000	Sum=	3.376

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	0.340	0.120	(0.124)	0.220
2	0.17	4.20	0.433	0.120	(0.158)	0.312
3	0.25	4.40	0.453	0.120	(0.165)	0.333
4	0.33	4.80	0.495	0.120	(0.180)	0.374
5	0.42	5.20	0.536	0.120	(0.195)	0.415
6	0.50	6.20	0.639	0.120	(0.233)	0.518
7	0.58	6.80	0.701	0.120	(0.255)	0.580
8	0.67	8.80	0.907	0.120	(0.330)	0.786
9	0.75	13.90	1.432	0.120	(0.521)	1.312
10	0.83	31.40	3.235	0.120	(1.178)	3.115
11	0.92	7.20	0.742	0.120	(0.270)	0.621
12	1.00	3.80	0.391	0.120	(0.143)	0.271
		(Loss Rate Not Used)				
Sum =		100.0				Sum = 8.9

Flood volume = Effective rainfall 0.74(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 0.12(In)
Total soil loss = 0.034(Ac.Ft)
Total rainfall = 0.86(In)
Flood volume = 8977.4 Cubic Feet
Total soil loss = 1462.8 Cubic Feet

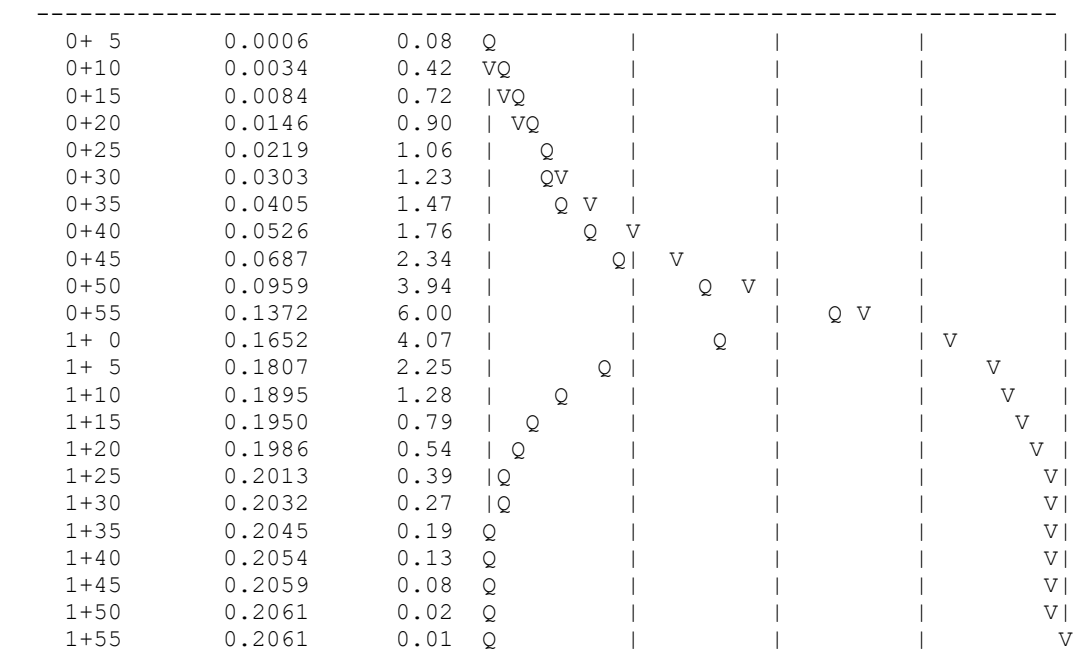
Peak flow rate of this hydrograph = 6.002(CFS)

++

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	2.5	5.0	7.5	10.0



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 02/19/20 File: 8946E2A1310.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
10 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.117 Hr.
Lag time = 7.05 Min.
25% of lag time = 1.76 Min.
40% of lag time = 2.82 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]
3.35	0.90	3.02

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	2.25	7.54

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.455(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.455(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.670	0.120	1.000	0.120

Sum (F) = 0.120

Area averaged mean soil loss (F) (In/Hr) = 0.120
Minimum soil loss rate ((In/Hr)) = 0.060
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.922	10.862	0.367
2	0.167	141.844	40.576	1.370
3	0.250	212.766	22.832	0.771
4	0.333	283.688	8.927	0.301
5	0.417	354.610	5.427	0.183
6	0.500	425.532	3.584	0.121
7	0.583	496.454	2.413	0.081
8	0.667	567.376	1.872	0.063
9	0.750	638.298	1.317	0.044
10	0.833	709.220	0.924	0.031
11	0.917	780.142	0.713	0.024
12	1.000	851.064	0.553	0.019
		Sum = 100.000	Sum=	3.376

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	0.227	(0.120)	0.083	0.144
2	0.17	1.30	0.227	(0.120)	0.083	0.144
3	0.25	1.10	0.192	(0.120)	0.070	0.122
4	0.33	1.50	0.262	(0.120)	0.095	0.167
5	0.42	1.50	0.262	(0.120)	0.095	0.167
6	0.50	1.80	0.314	(0.120)	0.114	0.200
7	0.58	1.50	0.262	(0.120)	0.095	0.167
8	0.67	1.80	0.314	(0.120)	0.114	0.200
9	0.75	1.80	0.314	(0.120)	0.114	0.200
10	0.83	1.50	0.262	(0.120)	0.095	0.167
11	0.92	1.60	0.279	(0.120)	0.102	0.178
12	1.00	1.80	0.314	(0.120)	0.114	0.200
13	1.08	2.20	0.384	0.120	(0.140)	0.264
14	1.17	2.20	0.384	0.120	(0.140)	0.264
15	1.25	2.20	0.384	0.120	(0.140)	0.264
16	1.33	2.00	0.349	0.120	(0.127)	0.229
17	1.42	2.60	0.454	0.120	(0.165)	0.334
18	1.50	2.70	0.472	0.120	(0.172)	0.351
19	1.58	2.40	0.419	0.120	(0.153)	0.299
20	1.67	2.70	0.472	0.120	(0.172)	0.351
21	1.75	3.30	0.576	0.120	(0.210)	0.456
22	1.83	3.10	0.541	0.120	(0.197)	0.421
23	1.92	2.90	0.506	0.120	(0.184)	0.386
24	2.00	3.00	0.524	0.120	(0.191)	0.404
25	2.08	3.10	0.541	0.120	(0.197)	0.421
26	2.17	4.20	0.734	0.120	(0.267)	0.613
27	2.25	5.00	0.873	0.120	(0.318)	0.753
28	2.33	3.50	0.611	0.120	(0.222)	0.491
29	2.42	6.80	1.188	0.120	(0.432)	1.067
30	2.50	7.30	1.275	0.120	(0.464)	1.155
31	2.58	8.20	1.432	0.120	(0.521)	1.312
32	2.67	5.90	1.030	0.120	(0.375)	0.910
33	2.75	2.00	0.349	0.120	(0.127)	0.229
34	2.83	1.80	0.314	(0.120)	0.114	0.200

```
35   2.92     1.80      0.314       (  0.120)       0.114        0.200
36   3.00     0.60      0.105       (  0.120)       0.038        0.067
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    13.5
     Flood volume = Effective rainfall      1.12(In)
      times area       3.4(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
     Total soil loss =      0.33(In)
     Total soil loss =     0.092(Ac.Ft)
     Total rainfall =      1.46(In)
     Flood volume =       13675.9 Cubic Feet
     Total soil loss =        4022.3 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      3.651(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0004      0.05  Q         |         |         |         |
  0+10       0.0021      0.25  VQ        |         |         |         |
  0+15       0.0045      0.35  VQ        |         |         |         |
  0+20       0.0072      0.38  VQ        |         |         |         |
  0+25       0.0103      0.45  |Q        |         |         |         |
  0+30       0.0138      0.51  |VQ       |         |         |         |
  0+35       0.0177      0.57  | Q       |         |         |         |
  0+40       0.0217      0.57  | Q       |         |         |         |
  0+45       0.0259      0.61  | QV      |         |         |         |
  0+50       0.0302      0.63  | QV      |         |         |         |
  0+55       0.0343      0.60  | Q V     |         |         |         |
  1+ 0       0.0385      0.61  | Q V     |         |         |         |
  1+ 5       0.0431      0.66  | Q  V    |         |         |         |
  1+10       0.0484      0.77  |  Q  V   |         |         |         |
  1+15       0.0541      0.82  |  Q  V   |         |         |         |
  1+20       0.0598      0.84  |  Q   V  |         |         |         |
  1+25       0.0656      0.84  |  Q    V |         |         |         |
  1+30       0.0723      0.97  |  Q     V|         |         |         |
  1+35       0.0795      1.05  |   Q     V         |         |         |
  1+40       0.0867      1.04  |   Q     |V        |         |         |
  1+45       0.0946      1.14  |   Q     | V       |         |         |
  1+50       0.1036      1.31  |    Q    |  V      |         |         |
  1+55       0.1129      1.35  |    Q    |   V     |         |         |
  2+ 0       0.1219      1.32  |    Q    |    V    |         |         |
  2+ 5       0.1312      1.34  |    Q    |     V   |         |         |
  2+10       0.1411      1.45  |    Q    |      V  |         |         |
  2+15       0.1534      1.78  |      Q  |         V|         |         |
  2+20       0.1674      2.04  |       Q |          |V        |         |
  2+25       0.1816      2.06  |       Q |          |  V      |         |
  2+30       0.2006      2.76  |         |Q         |    V    |         |
  2+35       0.2237      3.36  |         |  Q       |       V |         |
  2+40       0.2488      3.65  |         |   Q      |         |V        |
  2+45       0.2702      3.10  |         | Q        |         |   V     |
  2+50       0.2837      1.97  |       Q |          |         |     V   |
  2+55       0.2932      1.37  |    Q    |          |         |      V  |
  3+ 0       0.3006      1.08  |   Q     |          |         |       V |
  3+ 5       0.3056      0.73  | Q       |          |         |       V |
  3+10       0.3087      0.44  |Q        |          |         |        V|
  3+15       0.3106      0.29  |Q        |          |         |        V|
  3+20       0.3120      0.20  Q         |          |         |        V|
  3+25       0.3129      0.13  Q         |          |         |        V|
  3+30       0.3134      0.08  Q         |          |         |        V|
  3+35       0.3137      0.04  Q         |          |         |        V|
  3+40       0.3138      0.02  Q         |          |         |        V|
  3+45       0.3139      0.01  Q         |          |         |        V|
  3+50       0.3139      0.01  Q         |          |         |        V|
  3+55       0.3140      0.00  Q         |          |         |         V
```

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

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Study date 02/19/20 File: 8946E2A1610.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
10 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.117 Hr.
Lag time = 7.05 Min.
25% of lag time = 1.76 Min.
40% of lag time = 2.82 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]
3.35	1.30	4.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	3.00	10.05

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.999(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.670	0.120	1.000	0.120

Sum (F) = 0.120

Area averaged mean soil loss (F) (In/Hr) = 0.120
Minimum soil loss rate ((In/Hr)) = 0.060
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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

Unit Hydrograph Data

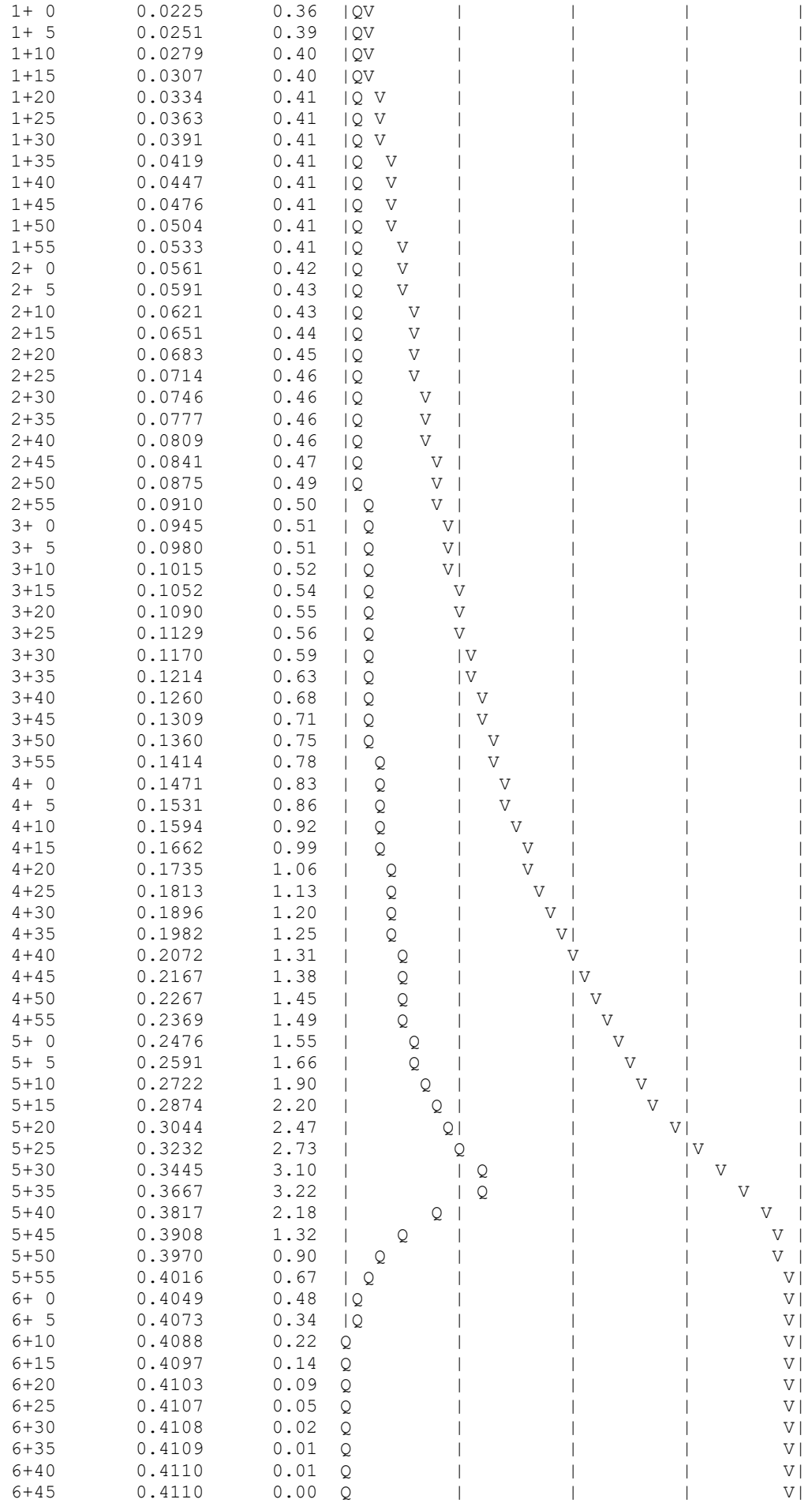
Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	70.922	10.862	0.367
2	0.167	141.844	40.576	1.370
3	0.250	212.766	22.832	0.771
4	0.333	283.688	8.927	0.301
5	0.417	354.610	5.427	0.183
6	0.500	425.532	3.584	0.121
7	0.583	496.454	2.413	0.081
8	0.667	567.376	1.872	0.063
9	0.750	638.298	1.317	0.044
10	0.833	709.220	0.924	0.031
11	0.917	780.142	0.713	0.024
12	1.000	851.064	0.553	0.019
		Sum = 100.000	Sum=	3.376

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	0.120	(0.120)		0.044	0.076
2	0.17	0.60	0.144	(0.120)		0.052	0.092
3	0.25	0.60	0.144	(0.120)		0.052	0.092
4	0.33	0.60	0.144	(0.120)		0.052	0.092
5	0.42	0.60	0.144	(0.120)		0.052	0.092
6	0.50	0.70	0.168	(0.120)		0.061	0.107
7	0.58	0.70	0.168	(0.120)		0.061	0.107
8	0.67	0.70	0.168	(0.120)		0.061	0.107
9	0.75	0.70	0.168	(0.120)		0.061	0.107
10	0.83	0.70	0.168	(0.120)		0.061	0.107
11	0.92	0.70	0.168	(0.120)		0.061	0.107
12	1.00	0.80	0.192	(0.120)		0.070	0.122
13	1.08	0.80	0.192	(0.120)		0.070	0.122
14	1.17	0.80	0.192	(0.120)		0.070	0.122
15	1.25	0.80	0.192	(0.120)		0.070	0.122
16	1.33	0.80	0.192	(0.120)		0.070	0.122
17	1.42	0.80	0.192	(0.120)		0.070	0.122
18	1.50	0.80	0.192	(0.120)		0.070	0.122
19	1.58	0.80	0.192	(0.120)		0.070	0.122
20	1.67	0.80	0.192	(0.120)		0.070	0.122
21	1.75	0.80	0.192	(0.120)		0.070	0.122
22	1.83	0.80	0.192	(0.120)		0.070	0.122
23	1.92	0.80	0.192	(0.120)		0.070	0.122
24	2.00	0.90	0.216	(0.120)		0.079	0.137
25	2.08	0.80	0.192	(0.120)		0.070	0.122
26	2.17	0.90	0.216	(0.120)		0.079	0.137
27	2.25	0.90	0.216	(0.120)		0.079	0.137
28	2.33	0.90	0.216	(0.120)		0.079	0.137
29	2.42	0.90	0.216	(0.120)		0.079	0.137
30	2.50	0.90	0.216	(0.120)		0.079	0.137
31	2.58	0.90	0.216	(0.120)		0.079	0.137
32	2.67	0.90	0.216	(0.120)		0.079	0.137
33	2.75	1.00	0.240	(0.120)		0.087	0.153
34	2.83	1.00	0.240	(0.120)		0.087	0.153

```
35   2.92     1.00      0.240       (  0.120)       0.087        0.153
36   3.00     1.00      0.240       (  0.120)       0.087        0.153
37   3.08     1.00      0.240       (  0.120)       0.087        0.153
38   3.17     1.10      0.264       (  0.120)       0.096        0.168
39   3.25     1.10      0.264       (  0.120)       0.096        0.168
40   3.33     1.10      0.264       (  0.120)       0.096        0.168
41   3.42     1.20      0.288       (  0.120)       0.105        0.183
42   3.50     1.30      0.312       (  0.120)       0.114        0.198
43   3.58     1.40      0.336          0.120    (  0.122)        0.216
44   3.67     1.40      0.336          0.120    (  0.122)        0.216
45   3.75     1.50      0.360          0.120    (  0.131)        0.240
46   3.83     1.50      0.360          0.120    (  0.131)        0.240
47   3.92     1.60      0.384          0.120    (  0.140)        0.264
48   4.00     1.60      0.384          0.120    (  0.140)        0.264
49   4.08     1.70      0.408          0.120    (  0.148)        0.288
50   4.17     1.80      0.432          0.120    (  0.157)        0.312
51   4.25     1.90      0.456          0.120    (  0.166)        0.336
52   4.33     2.00      0.480          0.120    (  0.175)        0.360
53   4.42     2.10      0.504          0.120    (  0.183)        0.384
54   4.50     2.10      0.504          0.120    (  0.183)        0.384
55   4.58     2.20      0.528          0.120    (  0.192)        0.408
56   4.67     2.30      0.552          0.120    (  0.201)        0.432
57   4.75     2.40      0.576          0.120    (  0.210)        0.456
58   4.83     2.40      0.576          0.120    (  0.210)        0.456
59   4.92     2.50      0.600          0.120    (  0.218)        0.480
60   5.00     2.60      0.624          0.120    (  0.227)        0.504
61   5.08     3.10      0.744          0.120    (  0.271)        0.623
62   5.17     3.60      0.864          0.120    (  0.314)        0.743
63   5.25     3.90      0.936          0.120    (  0.341)        0.815
64   5.33     4.20      1.008          0.120    (  0.367)        0.887
65   5.42     4.70      1.128          0.120    (  0.410)        1.007
66   5.50     5.60      1.344          0.120    (  0.489)        1.223
67   5.58     1.90      0.456          0.120    (  0.166)        0.336
68   5.67     0.90      0.216       (  0.120)       0.079        0.137
69   5.75     0.60      0.144       (  0.120)       0.052        0.092
70   5.83     0.50      0.120       (  0.120)       0.044        0.076
71   5.92     0.30      0.072       (  0.120)       0.026        0.046
72   6.00     0.20      0.048       (  0.120)       0.017        0.031
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    17.7
     Flood volume = Effective rainfall      1.47(In)
      times area       3.4(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
     Total soil loss =      0.53(In)
     Total soil loss =     0.147(Ac.Ft)
     Total rainfall =      2.00(In)
     Flood volume =       17902.8 Cubic Feet
     Total soil loss =        6410.5 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      3.221(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0011      0.14  Q         |         |         |         |
  0+15       0.0026      0.22  Q         |         |         |         |
  0+20       0.0044      0.25  VQ        |         |         |         |
  0+25       0.0063      0.27  VQ        |         |         |         |
  0+30       0.0082      0.29  VQ        |         |         |         |
  0+35       0.0104      0.32  |Q        |         |         |         |
  0+40       0.0127      0.34  |Q        |         |         |         |
  0+45       0.0151      0.34  |Q        |         |         |         |
  0+50       0.0175      0.35  |Q        |         |         |         |
  0+55       0.0200      0.35  |Q        |         |         |         |
```



```
    6+50       0.4110      0.00  Q         |         |         |        V|
    6+55       0.4110      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 02/19/20 File: 8946E2A12410.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
10 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.117 Hr.
Lag time = 7.05 Min.
25% of lag time = 1.76 Min.
40% of lag time = 2.82 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]
3.35	2.25	7.54

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	5.25	17.59

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 3.484(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.484(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.670	0.120	1.000	0.120

Sum (F) = 0.120

Area averaged mean soil loss (F) (In/Hr) = 0.120
Minimum soil loss rate ((In/Hr)) = 0.060
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.922	10.862	0.367
2	0.167	141.844	40.576	1.370
3	0.250	212.766	22.832	0.771
4	0.333	283.688	8.927	0.301
5	0.417	354.610	5.427	0.183
6	0.500	425.532	3.584	0.121
7	0.583	496.454	2.413	0.081
8	0.667	567.376	1.872	0.063
9	0.750	638.298	1.317	0.044
10	0.833	709.220	0.924	0.031
11	0.917	780.142	0.713	0.024
12	1.000	851.064	0.553	0.019
			Sum = 100.000	Sum= 3.376

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.028	(0.213)	0.010	0.018
2	0.17	0.07	0.028	(0.212)	0.010	0.018
3	0.25	0.07	0.028	(0.212)	0.010	0.018
4	0.33	0.10	0.042	(0.211)	0.015	0.027
5	0.42	0.10	0.042	(0.210)	0.015	0.027
6	0.50	0.10	0.042	(0.209)	0.015	0.027
7	0.58	0.10	0.042	(0.208)	0.015	0.027
8	0.67	0.10	0.042	(0.208)	0.015	0.027
9	0.75	0.10	0.042	(0.207)	0.015	0.027
10	0.83	0.13	0.056	(0.206)	0.020	0.035
11	0.92	0.13	0.056	(0.205)	0.020	0.035
12	1.00	0.13	0.056	(0.204)	0.020	0.035
13	1.08	0.10	0.042	(0.203)	0.015	0.027
14	1.17	0.10	0.042	(0.203)	0.015	0.027
15	1.25	0.10	0.042	(0.202)	0.015	0.027
16	1.33	0.10	0.042	(0.201)	0.015	0.027
17	1.42	0.10	0.042	(0.200)	0.015	0.027
18	1.50	0.10	0.042	(0.199)	0.015	0.027
19	1.58	0.10	0.042	(0.199)	0.015	0.027
20	1.67	0.10	0.042	(0.198)	0.015	0.027
21	1.75	0.10	0.042	(0.197)	0.015	0.027
22	1.83	0.13	0.056	(0.196)	0.020	0.035
23	1.92	0.13	0.056	(0.195)	0.020	0.035
24	2.00	0.13	0.056	(0.195)	0.020	0.035
25	2.08	0.13	0.056	(0.194)	0.020	0.035
26	2.17	0.13	0.056	(0.193)	0.020	0.035
27	2.25	0.13	0.056	(0.192)	0.020	0.035
28	2.33	0.13	0.056	(0.192)	0.020	0.035
29	2.42	0.13	0.056	(0.191)	0.020	0.035
30	2.50	0.13	0.056	(0.190)	0.020	0.035
31	2.58	0.17	0.070	(0.189)	0.025	0.044
32	2.67	0.17	0.070	(0.188)	0.025	0.044
33	2.75	0.17	0.070	(0.188)	0.025	0.044
34	2.83	0.17	0.070	(0.187)	0.025	0.044

35	2.92	0.17	0.070	(0.186)	0.025	0.044
36	3.00	0.17	0.070	(0.185)	0.025	0.044
37	3.08	0.17	0.070	(0.185)	0.025	0.044
38	3.17	0.17	0.070	(0.184)	0.025	0.044
39	3.25	0.17	0.070	(0.183)	0.025	0.044
40	3.33	0.17	0.070	(0.182)	0.025	0.044
41	3.42	0.17	0.070	(0.182)	0.025	0.044
42	3.50	0.17	0.070	(0.181)	0.025	0.044
43	3.58	0.17	0.070	(0.180)	0.025	0.044
44	3.67	0.17	0.070	(0.179)	0.025	0.044
45	3.75	0.17	0.070	(0.178)	0.025	0.044
46	3.83	0.20	0.084	(0.178)	0.030	0.053
47	3.92	0.20	0.084	(0.177)	0.030	0.053
48	4.00	0.20	0.084	(0.176)	0.030	0.053
49	4.08	0.20	0.084	(0.175)	0.030	0.053
50	4.17	0.20	0.084	(0.175)	0.030	0.053
51	4.25	0.20	0.084	(0.174)	0.030	0.053
52	4.33	0.23	0.098	(0.173)	0.036	0.062
53	4.42	0.23	0.098	(0.173)	0.036	0.062
54	4.50	0.23	0.098	(0.172)	0.036	0.062
55	4.58	0.23	0.098	(0.171)	0.036	0.062
56	4.67	0.23	0.098	(0.170)	0.036	0.062
57	4.75	0.23	0.098	(0.170)	0.036	0.062
58	4.83	0.27	0.111	(0.169)	0.041	0.071
59	4.92	0.27	0.111	(0.168)	0.041	0.071
60	5.00	0.27	0.111	(0.167)	0.041	0.071
61	5.08	0.20	0.084	(0.167)	0.030	0.053
62	5.17	0.20	0.084	(0.166)	0.030	0.053
63	5.25	0.20	0.084	(0.165)	0.030	0.053
64	5.33	0.23	0.098	(0.164)	0.036	0.062
65	5.42	0.23	0.098	(0.164)	0.036	0.062
66	5.50	0.23	0.098	(0.163)	0.036	0.062
67	5.58	0.27	0.111	(0.162)	0.041	0.071
68	5.67	0.27	0.111	(0.162)	0.041	0.071
69	5.75	0.27	0.111	(0.161)	0.041	0.071
70	5.83	0.27	0.111	(0.160)	0.041	0.071
71	5.92	0.27	0.111	(0.159)	0.041	0.071
72	6.00	0.27	0.111	(0.159)	0.041	0.071
73	6.08	0.30	0.125	(0.158)	0.046	0.080
74	6.17	0.30	0.125	(0.157)	0.046	0.080
75	6.25	0.30	0.125	(0.157)	0.046	0.080
76	6.33	0.30	0.125	(0.156)	0.046	0.080
77	6.42	0.30	0.125	(0.155)	0.046	0.080
78	6.50	0.30	0.125	(0.155)	0.046	0.080
79	6.58	0.33	0.139	(0.154)	0.051	0.089
80	6.67	0.33	0.139	(0.153)	0.051	0.089
81	6.75	0.33	0.139	(0.152)	0.051	0.089
82	6.83	0.33	0.139	(0.152)	0.051	0.089
83	6.92	0.33	0.139	(0.151)	0.051	0.089
84	7.00	0.33	0.139	(0.150)	0.051	0.089
85	7.08	0.33	0.139	(0.150)	0.051	0.089
86	7.17	0.33	0.139	(0.149)	0.051	0.089
87	7.25	0.33	0.139	(0.148)	0.051	0.089
88	7.33	0.37	0.153	(0.148)	0.056	0.098
89	7.42	0.37	0.153	(0.147)	0.056	0.098
90	7.50	0.37	0.153	(0.146)	0.056	0.098
91	7.58	0.40	0.167	(0.146)	0.061	0.106
92	7.67	0.40	0.167	(0.145)	0.061	0.106
93	7.75	0.40	0.167	(0.144)	0.061	0.106
94	7.83	0.43	0.181	(0.144)	0.066	0.115
95	7.92	0.43	0.181	(0.143)	0.066	0.115
96	8.00	0.43	0.181	(0.142)	0.066	0.115
97	8.08	0.50	0.209	(0.142)	0.076	0.133
98	8.17	0.50	0.209	(0.141)	0.076	0.133
99	8.25	0.50	0.209	(0.140)	0.076	0.133
100	8.33	0.50	0.209	(0.140)	0.076	0.133
101	8.42	0.50	0.209	(0.139)	0.076	0.133
102	8.50	0.50	0.209	(0.138)	0.076	0.133
103	8.58	0.53	0.223	(0.138)	0.081	0.142
104	8.67	0.53	0.223	(0.137)	0.081	0.142

105	8.75	0.53	0.223	(	0.136)	0.081	0.142
106	8.83	0.57	0.237	(	0.136)	0.086	0.151
107	8.92	0.57	0.237	(	0.135)	0.086	0.151
108	9.00	0.57	0.237	(	0.135)	0.086	0.151
109	9.08	0.63	0.265	(	0.134)	0.096	0.168
110	9.17	0.63	0.265	(	0.133)	0.096	0.168
111	9.25	0.63	0.265	(	0.133)	0.096	0.168
112	9.33	0.67	0.279	(	0.132)	0.101	0.177
113	9.42	0.67	0.279	(	0.131)	0.101	0.177
114	9.50	0.67	0.279	(	0.131)	0.101	0.177
115	9.58	0.70	0.293	(	0.130)	0.107	0.186
116	9.67	0.70	0.293	(	0.130)	0.107	0.186
117	9.75	0.70	0.293	(	0.129)	0.107	0.186
118	9.83	0.73	0.307	(	0.128)	0.112	0.195
119	9.92	0.73	0.307	(	0.128)	0.112	0.195
120	10.00	0.73	0.307	(	0.127)	0.112	0.195
121	10.08	0.50	0.209	(	0.126)	0.076	0.133
122	10.17	0.50	0.209	(	0.126)	0.076	0.133
123	10.25	0.50	0.209	(	0.125)	0.076	0.133
124	10.33	0.50	0.209	(	0.125)	0.076	0.133
125	10.42	0.50	0.209	(	0.124)	0.076	0.133
126	10.50	0.50	0.209	(	0.123)	0.076	0.133
127	10.58	0.67	0.279	(	0.123)	0.101	0.177
128	10.67	0.67	0.279	(	0.122)	0.101	0.177
129	10.75	0.67	0.279	(	0.122)	0.101	0.177
130	10.83	0.67	0.279	(	0.121)	0.101	0.177
131	10.92	0.67	0.279	(	0.120)	0.101	0.177
132	11.00	0.67	0.279	(	0.120)	0.101	0.177
133	11.08	0.63	0.265	(	0.119)	0.096	0.168
134	11.17	0.63	0.265	(	0.119)	0.096	0.168
135	11.25	0.63	0.265	(	0.118)	0.096	0.168
136	11.33	0.63	0.265	(	0.117)	0.096	0.168
137	11.42	0.63	0.265	(	0.117)	0.096	0.168
138	11.50	0.63	0.265	(	0.116)	0.096	0.168
139	11.58	0.57	0.237	(	0.116)	0.086	0.151
140	11.67	0.57	0.237	(	0.115)	0.086	0.151
141	11.75	0.57	0.237	(	0.115)	0.086	0.151
142	11.83	0.60	0.251	(	0.114)	0.091	0.160
143	11.92	0.60	0.251	(	0.113)	0.091	0.160
144	12.00	0.60	0.251	(	0.113)	0.091	0.160
145	12.08	0.83	0.348	0.112	(	0.127)	0.236
146	12.17	0.83	0.348	0.112	(	0.127)	0.237
147	12.25	0.83	0.348	0.111	(	0.127)	0.237
148	12.33	0.87	0.362	0.111	(	0.132)	0.252
149	12.42	0.87	0.362	0.110	(	0.132)	0.252
150	12.50	0.87	0.362	0.109	(	0.132)	0.253
151	12.58	0.93	0.390	0.109	(	0.142)	0.281
152	12.67	0.93	0.390	0.108	(	0.142)	0.282
153	12.75	0.93	0.390	0.108	(	0.142)	0.282
154	12.83	0.97	0.404	0.107	(	0.147)	0.297
155	12.92	0.97	0.404	0.107	(	0.147)	0.297
156	13.00	0.97	0.404	0.106	(	0.147)	0.298
157	13.08	1.13	0.474	0.106	(	0.172)	0.368
158	13.17	1.13	0.474	0.105	(	0.172)	0.369
159	13.25	1.13	0.474	0.105	(	0.172)	0.369
160	13.33	1.13	0.474	0.104	(	0.172)	0.370
161	13.42	1.13	0.474	0.104	(	0.172)	0.370
162	13.50	1.13	0.474	0.103	(	0.172)	0.371
163	13.58	0.77	0.321	0.103	(	0.117)	0.218
164	13.67	0.77	0.321	0.102	(	0.117)	0.219
165	13.75	0.77	0.321	0.101	(	0.117)	0.219
166	13.83	0.77	0.321	0.101	(	0.117)	0.220
167	13.92	0.77	0.321	0.100	(	0.117)	0.220
168	14.00	0.77	0.321	0.100	(	0.117)	0.221
169	14.08	0.90	0.376	0.099	(	0.137)	0.277
170	14.17	0.90	0.376	0.099	(	0.137)	0.277
171	14.25	0.90	0.376	0.098	(	0.137)	0.278
172	14.33	0.87	0.362	0.098	(	0.132)	0.264
173	14.42	0.87	0.362	0.097	(	0.132)	0.265
174	14.50	0.87	0.362	0.097	(	0.132)	0.265

175	14.58	0.87	0.362		0.096	(	0.132)	0.266
176	14.67	0.87	0.362		0.096	(	0.132)	0.266
177	14.75	0.87	0.362		0.095	(	0.132)	0.267
178	14.83	0.83	0.348		0.095	(	0.127)	0.253
179	14.92	0.83	0.348		0.094	(	0.127)	0.254
180	15.00	0.83	0.348		0.094	(	0.127)	0.254
181	15.08	0.80	0.334		0.093	(	0.122)	0.241
182	15.17	0.80	0.334		0.093	(	0.122)	0.241
183	15.25	0.80	0.334		0.093	(	0.122)	0.242
184	15.33	0.77	0.321		0.092	(	0.117)	0.229
185	15.42	0.77	0.321		0.092	(	0.117)	0.229
186	15.50	0.77	0.321		0.091	(	0.117)	0.229
187	15.58	0.63	0.265		0.091	(	0.096)	0.174
188	15.67	0.63	0.265		0.090	(	0.096)	0.175
189	15.75	0.63	0.265		0.090	(	0.096)	0.175
190	15.83	0.63	0.265		0.089	(	0.096)	0.176
191	15.92	0.63	0.265		0.089	(	0.096)	0.176
192	16.00	0.63	0.265		0.088	(	0.096)	0.176
193	16.08	0.13	0.056	(	0.088)		0.020	0.035
194	16.17	0.13	0.056	(	0.087)		0.020	0.035
195	16.25	0.13	0.056	(	0.087)		0.020	0.035
196	16.33	0.13	0.056	(	0.087)		0.020	0.035
197	16.42	0.13	0.056	(	0.086)		0.020	0.035
198	16.50	0.13	0.056	(	0.086)		0.020	0.035
199	16.58	0.10	0.042	(	0.085)		0.015	0.027
200	16.67	0.10	0.042	(	0.085)		0.015	0.027
201	16.75	0.10	0.042	(	0.084)		0.015	0.027
202	16.83	0.10	0.042	(	0.084)		0.015	0.027
203	16.92	0.10	0.042	(	0.084)		0.015	0.027
204	17.00	0.10	0.042	(	0.083)		0.015	0.027
205	17.08	0.17	0.070	(	0.083)		0.025	0.044
206	17.17	0.17	0.070	(	0.082)		0.025	0.044
207	17.25	0.17	0.070	(	0.082)		0.025	0.044
208	17.33	0.17	0.070	(	0.081)		0.025	0.044
209	17.42	0.17	0.070	(	0.081)		0.025	0.044
210	17.50	0.17	0.070	(	0.081)		0.025	0.044
211	17.58	0.17	0.070	(	0.080)		0.025	0.044
212	17.67	0.17	0.070	(	0.080)		0.025	0.044
213	17.75	0.17	0.070	(	0.079)		0.025	0.044
214	17.83	0.13	0.056	(	0.079)		0.020	0.035
215	17.92	0.13	0.056	(	0.079)		0.020	0.035
216	18.00	0.13	0.056	(	0.078)		0.020	0.035
217	18.08	0.13	0.056	(	0.078)		0.020	0.035
218	18.17	0.13	0.056	(	0.077)		0.020	0.035
219	18.25	0.13	0.056	(	0.077)		0.020	0.035
220	18.33	0.13	0.056	(	0.077)		0.020	0.035
221	18.42	0.13	0.056	(	0.076)		0.020	0.035
222	18.50	0.13	0.056	(	0.076)		0.020	0.035
223	18.58	0.10	0.042	(	0.076)		0.015	0.027
224	18.67	0.10	0.042	(	0.075)		0.015	0.027
225	18.75	0.10	0.042	(	0.075)		0.015	0.027
226	18.83	0.07	0.028	(	0.075)		0.010	0.018
227	18.92	0.07	0.028	(	0.074)		0.010	0.018
228	19.00	0.07	0.028	(	0.074)		0.010	0.018
229	19.08	0.10	0.042	(	0.073)		0.015	0.027
230	19.17	0.10	0.042	(	0.073)		0.015	0.027
231	19.25	0.10	0.042	(	0.073)		0.015	0.027
232	19.33	0.13	0.056	(	0.072)		0.020	0.035
233	19.42	0.13	0.056	(	0.072)		0.020	0.035
234	19.50	0.13	0.056	(	0.072)		0.020	0.035
235	19.58	0.10	0.042	(	0.071)		0.015	0.027
236	19.67	0.10	0.042	(	0.071)		0.015	0.027
237	19.75	0.10	0.042	(	0.071)		0.015	0.027
238	19.83	0.07	0.028	(	0.070)		0.010	0.018
239	19.92	0.07	0.028	(	0.070)		0.010	0.018
240	20.00	0.07	0.028	(	0.070)		0.010	0.018
241	20.08	0.10	0.042	(	0.070)		0.015	0.027
242	20.17	0.10	0.042	(	0.069)		0.015	0.027
243	20.25	0.10	0.042	(	0.069)		0.015	0.027
244	20.33	0.10	0.042	(	0.069)		0.015	0.027

245	20.42	0.10	0.042	(0.068)	0.015	0.027
246	20.50	0.10	0.042	(0.068)	0.015	0.027
247	20.58	0.10	0.042	(0.068)	0.015	0.027
248	20.67	0.10	0.042	(0.067)	0.015	0.027
249	20.75	0.10	0.042	(0.067)	0.015	0.027
250	20.83	0.07	0.028	(0.067)	0.010	0.018
251	20.92	0.07	0.028	(0.067)	0.010	0.018
252	21.00	0.07	0.028	(0.066)	0.010	0.018
253	21.08	0.10	0.042	(0.066)	0.015	0.027
254	21.17	0.10	0.042	(0.066)	0.015	0.027
255	21.25	0.10	0.042	(0.066)	0.015	0.027
256	21.33	0.07	0.028	(0.065)	0.010	0.018
257	21.42	0.07	0.028	(0.065)	0.010	0.018
258	21.50	0.07	0.028	(0.065)	0.010	0.018
259	21.58	0.10	0.042	(0.065)	0.015	0.027
260	21.67	0.10	0.042	(0.064)	0.015	0.027
261	21.75	0.10	0.042	(0.064)	0.015	0.027
262	21.83	0.07	0.028	(0.064)	0.010	0.018
263	21.92	0.07	0.028	(0.064)	0.010	0.018
264	22.00	0.07	0.028	(0.064)	0.010	0.018
265	22.08	0.10	0.042	(0.063)	0.015	0.027
266	22.17	0.10	0.042	(0.063)	0.015	0.027
267	22.25	0.10	0.042	(0.063)	0.015	0.027
268	22.33	0.07	0.028	(0.063)	0.010	0.018
269	22.42	0.07	0.028	(0.063)	0.010	0.018
270	22.50	0.07	0.028	(0.062)	0.010	0.018
271	22.58	0.07	0.028	(0.062)	0.010	0.018
272	22.67	0.07	0.028	(0.062)	0.010	0.018
273	22.75	0.07	0.028	(0.062)	0.010	0.018
274	22.83	0.07	0.028	(0.062)	0.010	0.018
275	22.92	0.07	0.028	(0.061)	0.010	0.018
276	23.00	0.07	0.028	(0.061)	0.010	0.018
277	23.08	0.07	0.028	(0.061)	0.010	0.018
278	23.17	0.07	0.028	(0.061)	0.010	0.018
279	23.25	0.07	0.028	(0.061)	0.010	0.018
280	23.33	0.07	0.028	(0.061)	0.010	0.018
281	23.42	0.07	0.028	(0.061)	0.010	0.018
282	23.50	0.07	0.028	(0.061)	0.010	0.018
283	23.58	0.07	0.028	(0.060)	0.010	0.018
284	23.67	0.07	0.028	(0.060)	0.010	0.018
285	23.75	0.07	0.028	(0.060)	0.010	0.018
286	23.83	0.07	0.028	(0.060)	0.010	0.018
287	23.92	0.07	0.028	(0.060)	0.010	0.018
288	24.00	0.07	0.028	(0.060)	0.010	0.018

(Loss Rate Not Used)

Sum = 100.0 Sum = 28.1

Flood volume = Effective rainfall 2.34(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)
Total soil loss = 1.15(In)
Total soil loss = 0.320(Ac.Ft)
Total rainfall = 3.48(In)
Flood volume = 28426.9 Cubic Feet
Total soil loss = 13942.7 Cubic Feet

Peak flow rate of this hydrograph = 1.229(CFS)

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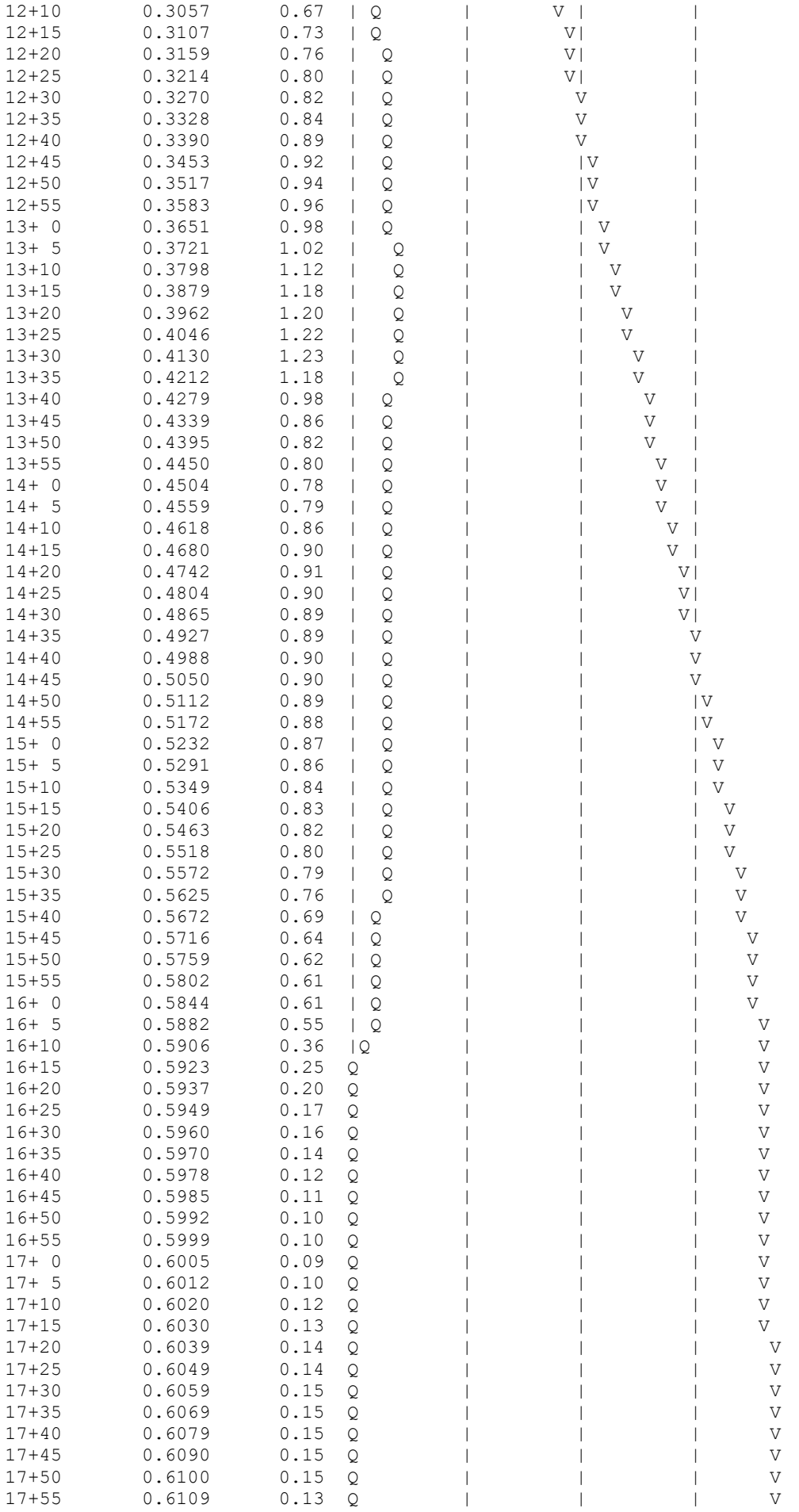
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01	Q	|	|	|	|
0+10	0.0003	0.03	Q	|	|	|	|
0+15	0.0006	0.04	Q	|	|	|	|
0+20	0.0009	0.05	Q	|	|	|	|
0+25	0.0014	0.07	Q	|	|	|	|

0+30	0.0019	0.08	Q	|	|	|	|
0+35	0.0025	0.08	Q	|	|	|	|
0+40	0.0031	0.08	Q	|	|	|	|
0+45	0.0037	0.09	Q	|	|	|	|
0+50	0.0043	0.09	Q	|	|	|	|
0+55	0.0050	0.10	Q	|	|	|	|
1+ 0	0.0058	0.11	Q	|	|	|	|
1+ 5	0.0065	0.11	Q	|	|	|	|
1+10	0.0072	0.10	Q	|	|	|	|
1+15	0.0079	0.10	Q	|	|	|	|
1+20	0.0085	0.09	Q	|	|	|	|
1+25	0.0092	0.09	Q	|	|	|	|
1+30	0.0098	0.09	Q	|	|	|	|
1+35	0.0104	0.09	Q	|	|	|	|
1+40	0.0111	0.09	Q	|	|	|	|
1+45	0.0117	0.09	Q	|	|	|	|
1+50	0.0123	0.09	Q	|	|	|	|
1+55	0.0130	0.11	Q	|	|	|	|
2+ 0	0.0138	0.11	Q	|	|	|	|
2+ 5	0.0146	0.11	Q	|	|	|	|
2+10	0.0154	0.12	Q	|	|	|	|
2+15	0.0162	0.12	Q	|	|	|	|
2+20	0.0170	0.12	QV	|	|	|	|
2+25	0.0178	0.12	QV	|	|	|	|
2+30	0.0187	0.12	QV	|	|	|	|
2+35	0.0195	0.12	QV	|	|	|	|
2+40	0.0204	0.14	QV	|	|	|	|
2+45	0.0214	0.14	QV	|	|	|	|
2+50	0.0224	0.14	QV	|	|	|	|
2+55	0.0234	0.15	QV	|	|	|	|
3+ 0	0.0244	0.15	QV	|	|	|	|
3+ 5	0.0255	0.15	QV	|	|	|	|
3+10	0.0265	0.15	QV	|	|	|	|
3+15	0.0275	0.15	QV	|	|	|	|
3+20	0.0285	0.15	QV	|	|	|	|
3+25	0.0296	0.15	QV	|	|	|	|
3+30	0.0306	0.15	QV	|	|	|	|
3+35	0.0316	0.15	QV	|	|	|	|
3+40	0.0327	0.15	Q V	|	|	|	|
3+45	0.0337	0.15	Q V	|	|	|	|
3+50	0.0347	0.15	Q V	|	|	|	|
3+55	0.0359	0.17	Q V	|	|	|	|
4+ 0	0.0371	0.17	Q V	|	|	|	|
4+ 5	0.0383	0.17	Q V	|	|	|	|
4+10	0.0395	0.18	Q V	|	|	|	|
4+15	0.0407	0.18	Q V	|	|	|	|
4+20	0.0420	0.18	Q V	|	|	|	|
4+25	0.0433	0.19	Q V	|	|	|	|
4+30	0.0447	0.20	Q V	|	|	|	|
4+35	0.0461	0.20	Q V	|	|	|	|
4+40	0.0475	0.21	Q V	|	|	|	|
4+45	0.0489	0.21	Q V	|	|	|	|
4+50	0.0504	0.21	Q V	|	|	|	|
4+55	0.0519	0.22	Q V	|	|	|	|
5+ 0	0.0535	0.23	Q V	|	|	|	|
5+ 5	0.0551	0.23	Q V	|	|	|	|
5+10	0.0565	0.21	Q V	|	|	|	|
5+15	0.0578	0.19	Q V	|	|	|	|
5+20	0.0591	0.19	Q V	|	|	|	|
5+25	0.0605	0.20	Q V	|	|	|	|
5+30	0.0619	0.21	Q V	|	|	|	|
5+35	0.0634	0.21	Q V	|	|	|	|
5+40	0.0649	0.22	Q V	|	|	|	|
5+45	0.0665	0.23	Q V	|	|	|	|
5+50	0.0681	0.23	Q V	|	|	|	|
5+55	0.0698	0.24	Q V	|	|	|	|
6+ 0	0.0714	0.24	Q V	|	|	|	|
6+ 5	0.0730	0.24	Q V	|	|	|	|
6+10	0.0748	0.25	|Q V	|	|	|	|
6+15	0.0766	0.26	|Q V	|	|	|	|

6+20	0.0784	0.26	Q V				
6+25	0.0802	0.27	Q V				
6+30	0.0821	0.27	Q V				
6+35	0.0839	0.27	Q V				
6+40	0.0859	0.28	Q V				
6+45	0.0879	0.29	Q V				
6+50	0.0899	0.29	Q V				
6+55	0.0920	0.30	Q V				
7+ 0	0.0940	0.30	Q V				
7+ 5	0.0961	0.30	Q V				
7+10	0.0981	0.30	Q V				
7+15	0.1002	0.30	Q V				
7+20	0.1023	0.30	Q V				
7+25	0.1044	0.31	Q V				
7+30	0.1066	0.32	Q V				
7+35	0.1089	0.33	Q V				
7+40	0.1112	0.34	Q V				
7+45	0.1136	0.35	Q V				
7+50	0.1161	0.36	Q V				
7+55	0.1187	0.37	Q V				
8+ 0	0.1213	0.38	Q V				
8+ 5	0.1239	0.39	Q V				
8+10	0.1268	0.42	Q V				
8+15	0.1298	0.43	Q V				
8+20	0.1328	0.44	Q V				
8+25	0.1358	0.44	Q V				
8+30	0.1389	0.44	Q V				
8+35	0.1420	0.45	Q V				
8+40	0.1451	0.46	Q V				
8+45	0.1484	0.47	Q V				
8+50	0.1517	0.48	Q V				
8+55	0.1550	0.49	Q V				
9+ 0	0.1585	0.50	Q V				
9+ 5	0.1620	0.51	Q V				
9+10	0.1657	0.54	Q V				
9+15	0.1695	0.55	Q V				
9+20	0.1733	0.56	Q V				
9+25	0.1773	0.58	Q V				
9+30	0.1813	0.59	Q V				
9+35	0.1854	0.59	Q V				
9+40	0.1896	0.61	Q V				
9+45	0.1938	0.62	Q V				
9+50	0.1982	0.62	Q V				
9+55	0.2026	0.64	Q V				
10+ 0	0.2070	0.65	Q V				
10+ 5	0.2113	0.63	Q V				
10+10	0.2151	0.55	Q V				
10+15	0.2186	0.50	Q V				
10+20	0.2219	0.48	Q V				
10+25	0.2251	0.47	Q V				
10+30	0.2283	0.46	Q V				
10+35	0.2316	0.48	Q V				
10+40	0.2353	0.53	Q V				
10+45	0.2392	0.56	Q V				
10+50	0.2431	0.58	Q V				
10+55	0.2472	0.58	Q V				
11+ 0	0.2512	0.59	Q V				
11+ 5	0.2552	0.59	Q V				
11+10	0.2592	0.58	Q V				
11+15	0.2632	0.57	Q V				
11+20	0.2671	0.57	Q V				
11+25	0.2710	0.57	Q V				
11+30	0.2750	0.57	Q V				
11+35	0.2789	0.56	Q V				
11+40	0.2826	0.54	Q V				
11+45	0.2862	0.53	Q V				
11+50	0.2898	0.52	Q V				
11+55	0.2935	0.53	Q V				
12+ 0	0.2971	0.54	Q V				
12+ 5	0.3010	0.57	Q V				



18+ 0	0.6118	0.13	Q	|	|	|	V |
18+ 5	0.6126	0.12	Q	|	|	|	V |
18+10	0.6135	0.12	Q	|	|	|	V |
18+15	0.6143	0.12	Q	|	|	|	V |
18+20	0.6152	0.12	Q	|	|	|	V |
18+25	0.6160	0.12	Q	|	|	|	V |
18+30	0.6168	0.12	Q	|	|	|	V |
18+35	0.6176	0.12	Q	|	|	|	V |
18+40	0.6183	0.10	Q	|	|	|	V |
18+45	0.6190	0.10	Q	|	|	|	V |
18+50	0.6196	0.09	Q	|	|	|	V |
18+55	0.6202	0.08	Q	|	|	|	V |
19+ 0	0.6207	0.07	Q	|	|	|	V |
19+ 5	0.6211	0.07	Q	|	|	|	V |
19+10	0.6217	0.08	Q	|	|	|	V |
19+15	0.6223	0.09	Q	|	|	|	V |
19+20	0.6229	0.09	Q	|	|	|	V |
19+25	0.6236	0.10	Q	|	|	|	V |
19+30	0.6244	0.11	Q	|	|	|	V |
19+35	0.6251	0.11	Q	|	|	|	V |
19+40	0.6258	0.10	Q	|	|	|	V |
19+45	0.6265	0.09	Q	|	|	|	V |
19+50	0.6271	0.09	Q	|	|	|	V |
19+55	0.6276	0.08	Q	|	|	|	V |
20+ 0	0.6281	0.07	Q	|	|	|	V |
20+ 5	0.6286	0.07	Q	|	|	|	V |
20+10	0.6291	0.08	Q	|	|	|	V |
20+15	0.6297	0.09	Q	|	|	|	V |
20+20	0.6303	0.09	Q	|	|	|	V |
20+25	0.6309	0.09	Q	|	|	|	V |
20+30	0.6315	0.09	Q	|	|	|	V |
20+35	0.6321	0.09	Q	|	|	|	V |
20+40	0.6327	0.09	Q	|	|	|	V |
20+45	0.6333	0.09	Q	|	|	|	V |
20+50	0.6339	0.09	Q	|	|	|	V |
20+55	0.6344	0.07	Q	|	|	|	V |
21+ 0	0.6349	0.07	Q	|	|	|	V |
21+ 5	0.6354	0.07	Q	|	|	|	V |
21+10	0.6359	0.08	Q	|	|	|	V |
21+15	0.6365	0.08	Q	|	|	|	V|
21+20	0.6371	0.08	Q	|	|	|	V|
21+25	0.6376	0.07	Q	|	|	|	V|
21+30	0.6380	0.07	Q	|	|	|	V|
21+35	0.6385	0.07	Q	|	|	|	V|
21+40	0.6390	0.08	Q	|	|	|	V|
21+45	0.6396	0.08	Q	|	|	|	V|
21+50	0.6402	0.08	Q	|	|	|	V|
21+55	0.6407	0.07	Q	|	|	|	V|
22+ 0	0.6411	0.07	Q	|	|	|	V|
22+ 5	0.6416	0.07	Q	|	|	|	V|
22+10	0.6421	0.08	Q	|	|	|	V|
22+15	0.6427	0.08	Q	|	|	|	V|
22+20	0.6433	0.08	Q	|	|	|	V|
22+25	0.6438	0.07	Q	|	|	|	V|
22+30	0.6442	0.07	Q	|	|	|	V|
22+35	0.6447	0.06	Q	|	|	|	V|
22+40	0.6451	0.06	Q	|	|	|	V|
22+45	0.6455	0.06	Q	|	|	|	V|
22+50	0.6459	0.06	Q	|	|	|	V|
22+55	0.6463	0.06	Q	|	|	|	V|
23+ 0	0.6468	0.06	Q	|	|	|	V|
23+ 5	0.6472	0.06	Q	|	|	|	V|
23+10	0.6476	0.06	Q	|	|	|	V|
23+15	0.6480	0.06	Q	|	|	|	V|
23+20	0.6484	0.06	Q	|	|	|	V|
23+25	0.6488	0.06	Q	|	|	|	V|
23+30	0.6492	0.06	Q	|	|	|	V|
23+35	0.6497	0.06	Q	|	|	|	V|
23+40	0.6501	0.06	Q	|	|	|	V|
23+45	0.6505	0.06	Q	|	|	|	V|

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   23+50       0.6509      0.06  Q          |          |          |         V|
   23+55       0.6513      0.06  Q          |          |          |         V|
   24+ 0       0.6517      0.06  Q          |          |          |         V|
   24+ 5       0.6521      0.05  Q          |          |          |         V|
   24+10       0.6523      0.03  Q          |          |          |         V|
   24+15       0.6524      0.02  Q          |          |          |         V|
   24+20       0.6525      0.01  Q          |          |          |         V|
   24+25       0.6525      0.01  Q          |          |          |         V|
   24+30       0.6525      0.00  Q          |          |          |         V|
   24+35       0.6526      0.00  Q          |          |          |         V|
   24+40       0.6526      0.00  Q          |          |          |         V|
   24+45       0.6526      0.00  Q          |          |          |         V|
   24+50       0.6526      0.00  Q          |          |          |         V|
   24+55       0.6526      0.00  Q          |          |          |          V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946E2A11100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
100 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.115 Hr.
Lag time = 6.88 Min.
25% of lag time = 1.72 Min.
40% of lag time = 2.75 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]
3.35	0.55	1.84

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	1.30	4.36

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.670	0.061	1.000	0.061

Sum (F) = 0.061

Area averaged mean soil loss (F) (In/Hr) = 0.061
Minimum soil loss rate ((In/Hr)) = 0.030
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	72.672	11.317	0.382
2	0.167	145.345	41.430	1.399
3	0.250	218.017	22.240	0.751
4	0.333	290.689	8.779	0.296
5	0.417	363.362	5.330	0.180
6	0.500	436.034	3.485	0.118
7	0.583	508.706	2.385	0.081
8	0.667	581.378	1.800	0.061
9	0.750	654.051	1.274	0.043
10	0.833	726.723	0.866	0.029
11	0.917	799.395	0.727	0.025
12	1.000	872.068	0.369	0.012
		Sum = 100.000	Sum=	3.376

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	0.515	0.061	(0.187)	0.454
2	0.17	4.20	0.655	0.061	(0.238)	0.595
3	0.25	4.40	0.686	0.061	(0.250)	0.626
4	0.33	4.80	0.749	0.061	(0.273)	0.688
5	0.42	5.20	0.811	0.061	(0.295)	0.751
6	0.50	6.20	0.967	0.061	(0.352)	0.907
7	0.58	6.80	1.061	0.061	(0.386)	1.000
8	0.67	8.80	1.373	0.061	(0.500)	1.312
9	0.75	13.90	2.168	0.061	(0.789)	2.108
10	0.83	31.40	4.898	0.061	(1.783)	4.838
11	0.92	7.20	1.123	0.061	(0.409)	1.063
12	1.00	3.80	0.593	0.061	(0.216)	0.532
	(Loss Rate Not Used)				
Sum =	100.0				Sum =	14.9

Flood volume = Effective rainfall 1.24(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)
Total soil loss = 0.06(In)
Total soil loss = 0.017(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 15070.5 Cubic Feet
Total soil loss = 737.7 Cubic Feet

Peak flow rate of this hydrograph = 9.593(CFS)

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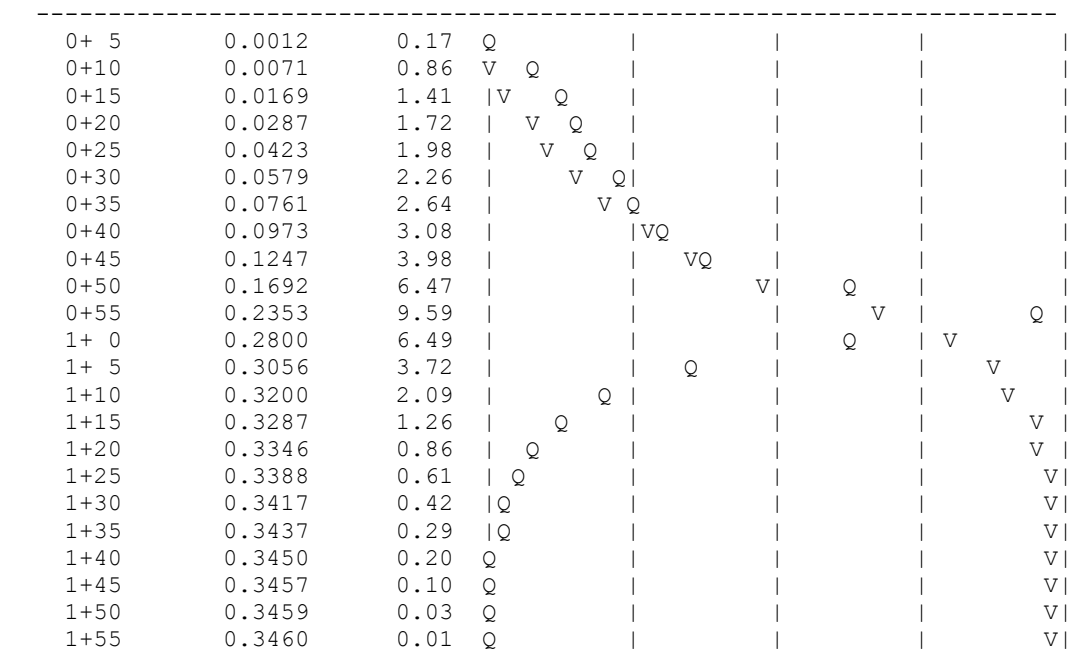
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

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



0+ 5	0.0012	0.17	Q
0+10	0.0071	0.86	V Q
0+15	0.0169	1.41	V Q
0+20	0.0287	1.72	V Q
0+25	0.0423	1.98	V Q
0+30	0.0579	2.26	V Q
0+35	0.0761	2.64	V Q
0+40	0.0973	3.08	VQ
0+45	0.1247	3.98	VQ
0+50	0.1692	6.47	V Q
0+55	0.2353	9.59	V Q
1+ 0	0.2800	6.49	Q V
1+ 5	0.3056	3.72	Q V
1+10	0.3200	2.09	Q V
1+15	0.3287	1.26	Q V
1+20	0.3346	0.86	Q V
1+25	0.3388	0.61	Q V
1+30	0.3417	0.42	Q V
1+35	0.3437	0.29	Q V
1+40	0.3450	0.20	Q V
1+45	0.3457	0.10	Q V
1+50	0.3459	0.03	Q V
1+55	0.3460	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 02/20/20 File: 8946E2A13100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
100 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.115 Hr.
Lag time = 6.88 Min.
25% of lag time = 1.72 Min.
40% of lag time = 2.75 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]
3.35	0.90	3.02

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	2.25	7.54

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.670	0.061	1.000	0.061

Sum (F) = 0.061

Area averaged mean soil loss (F) (In/Hr) = 0.061
Minimum soil loss rate ((In/Hr)) = 0.030
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	72.672	11.317	0.382
2	0.167	145.345	41.430	1.399
3	0.250	218.017	22.240	0.751
4	0.333	290.689	8.779	0.296
5	0.417	363.362	5.330	0.180
6	0.500	436.034	3.485	0.118
7	0.583	508.706	2.385	0.081
8	0.667	581.378	1.800	0.061
9	0.750	654.051	1.274	0.043
10	0.833	726.723	0.866	0.029
11	0.917	799.395	0.727	0.025
12	1.000	872.068	0.369	0.012
			Sum = 100.000	Sum= 3.376

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	0.351	0.061	(	0.128)	0.290
2	0.17	1.30	0.351	0.061	(	0.128)	0.290
3	0.25	1.10	0.297	0.061	(	0.108)	0.236
4	0.33	1.50	0.405	0.061	(	0.147)	0.344
5	0.42	1.50	0.405	0.061	(	0.147)	0.344
6	0.50	1.80	0.486	0.061	(	0.177)	0.425
7	0.58	1.50	0.405	0.061	(	0.147)	0.344
8	0.67	1.80	0.486	0.061	(	0.177)	0.425
9	0.75	1.80	0.486	0.061	(	0.177)	0.425
10	0.83	1.50	0.405	0.061	(	0.147)	0.344
11	0.92	1.60	0.432	0.061	(	0.157)	0.371
12	1.00	1.80	0.486	0.061	(	0.177)	0.425
13	1.08	2.20	0.594	0.061	(	0.216)	0.533
14	1.17	2.20	0.594	0.061	(	0.216)	0.533
15	1.25	2.20	0.594	0.061	(	0.216)	0.533
16	1.33	2.00	0.540	0.061	(	0.197)	0.479
17	1.42	2.60	0.702	0.061	(	0.256)	0.641
18	1.50	2.70	0.729	0.061	(	0.265)	0.668
19	1.58	2.40	0.648	0.061	(	0.236)	0.587
20	1.67	2.70	0.729	0.061	(	0.265)	0.668
21	1.75	3.30	0.891	0.061	(	0.324)	0.830
22	1.83	3.10	0.837	0.061	(	0.305)	0.776
23	1.92	2.90	0.783	0.061	(	0.285)	0.722
24	2.00	3.00	0.810	0.061	(	0.295)	0.749
25	2.08	3.10	0.837	0.061	(	0.305)	0.776
26	2.17	4.20	1.134	0.061	(	0.413)	1.073
27	2.25	5.00	1.350	0.061	(	0.491)	1.289
28	2.33	3.50	0.945	0.061	(	0.344)	0.884
29	2.42	6.80	1.836	0.061	(	0.668)	1.775
30	2.50	7.30	1.971	0.061	(	0.717)	1.910
31	2.58	8.20	2.214	0.061	(	0.806)	2.153
32	2.67	5.90	1.593	0.061	(	0.580)	1.532
33	2.75	2.00	0.540	0.061	(	0.197)	0.479
34	2.83	1.80	0.486	0.061	(	0.177)	0.425

```
35   2.92     1.80      0.486          0.061    (  0.177)        0.425
36   3.00     0.60      0.162       (  0.061)       0.059        0.103
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    24.8
     Flood volume = Effective rainfall      2.07(In)
      times area       3.4(Ac.)/[(In)/(Ft.)] =       0.6(Ac.Ft)
     Total soil loss =      0.18(In)
     Total soil loss =     0.051(Ac.Ft)
     Total rainfall =      2.25(In)
     Flood volume =       25149.4 Cubic Feet
     Total soil loss =        2211.3 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      6.088(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0008      0.11  Q         |         |         |         |
  0+10       0.0043      0.52  V Q       |         |         |         |
  0+15       0.0092      0.71  V Q       |         |         |         |
  0+20       0.0145      0.77  |V Q      |         |         |         |
  0+25       0.0209      0.93  |V Q      |         |         |         |
  0+30       0.0282      1.06  |V  Q     |         |         |         |
  0+35       0.0364      1.19  | V Q     |         |         |         |
  0+40       0.0447      1.20  |  VQ     |         |         |         |
  0+45       0.0536      1.29  |  V Q    |         |         |         |
  0+50       0.0627      1.33  |   VQ    |         |         |         |
  0+55       0.0714      1.26  |   VQ    |         |         |         |
  1+ 0       0.0801      1.27  |    Q    |         |         |         |
  1+ 5       0.0897      1.39  |    QV   |         |         |         |
  1+10       0.1007      1.59  |     Q   |         |         |         |
  1+15       0.1123      1.68  |     QV  |         |         |         |
  1+20       0.1240      1.71  |     Q V |         |         |         |
  1+25       0.1358      1.72  |     Q  V|         |         |         |
  1+30       0.1491      1.93  |      Q  V         |         |         |
  1+35       0.1633      2.05  |       Q |V        |         |         |
  1+40       0.1773      2.04  |       Q | V       |         |         |
  1+45       0.1924      2.19  |       Q |  V      |         |         |
  1+50       0.2093      2.46  |        Q|   V     |         |         |
  1+55       0.2265      2.51  |         Q    V    |         |         |
  2+ 0       0.2435      2.47  |        Q|     V   |         |         |
  2+ 5       0.2607      2.50  |        Q|       V |         |         |
  2+10       0.2791      2.67  |         Q        V|         |         |
  2+15       0.3011      3.20  |         | Q       V         |         |
  2+20       0.3257      3.58  |         |   Q     | V       |         |
  2+25       0.3506      3.61  |         |   Q     |   V     |         |
  2+30       0.3832      4.73  |         |       Q |     V   |         |
  2+35       0.4221      5.64  |         |         | Q       V|        |
  2+40       0.4640      6.09  |         |         |   Q     | V       |
  2+45       0.4997      5.19  |         |         Q         |   V     |
  2+50       0.5233      3.42  |         |  Q      |         |     V   |
  2+55       0.5405      2.50  |        Q|         |         |      V  |
  3+ 0       0.5543      2.00  |      Q  |         |         |       V |
  3+ 5       0.5632      1.29  |    Q    |         |         |        V|
  3+10       0.5684      0.76  |  Q      |         |         |        V|
  3+15       0.5718      0.49  |Q        |         |         |        V|
  3+20       0.5741      0.33  |Q        |         |         |        V|
  3+25       0.5756      0.21  Q         |         |         |        V|
  3+30       0.5765      0.13  Q         |         |         |        V|
  3+35       0.5769      0.07  Q         |         |         |        V|
  3+40       0.5772      0.03  Q         |         |         |        V|
  3+45       0.5773      0.02  Q         |         |         |        V|
  3+50       0.5773      0.01  Q         |         |         |        V|
  3+55       0.5774      0.00  Q         |         |         |         V
```

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

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Study date 02/20/20 File: 8946E2A16100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
100 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.115 Hr.
Lag time = 6.88 Min.
25% of lag time = 1.72 Min.
40% of lag time = 2.75 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]
3.35	1.30	4.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	3.00	10.05

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.670	0.061	1.000	0.061

Sum (F) = 0.061

Area averaged mean soil loss (F) (In/Hr) = 0.061
Minimum soil loss rate ((In/Hr)) = 0.030
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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

Unit Hydrograph Data

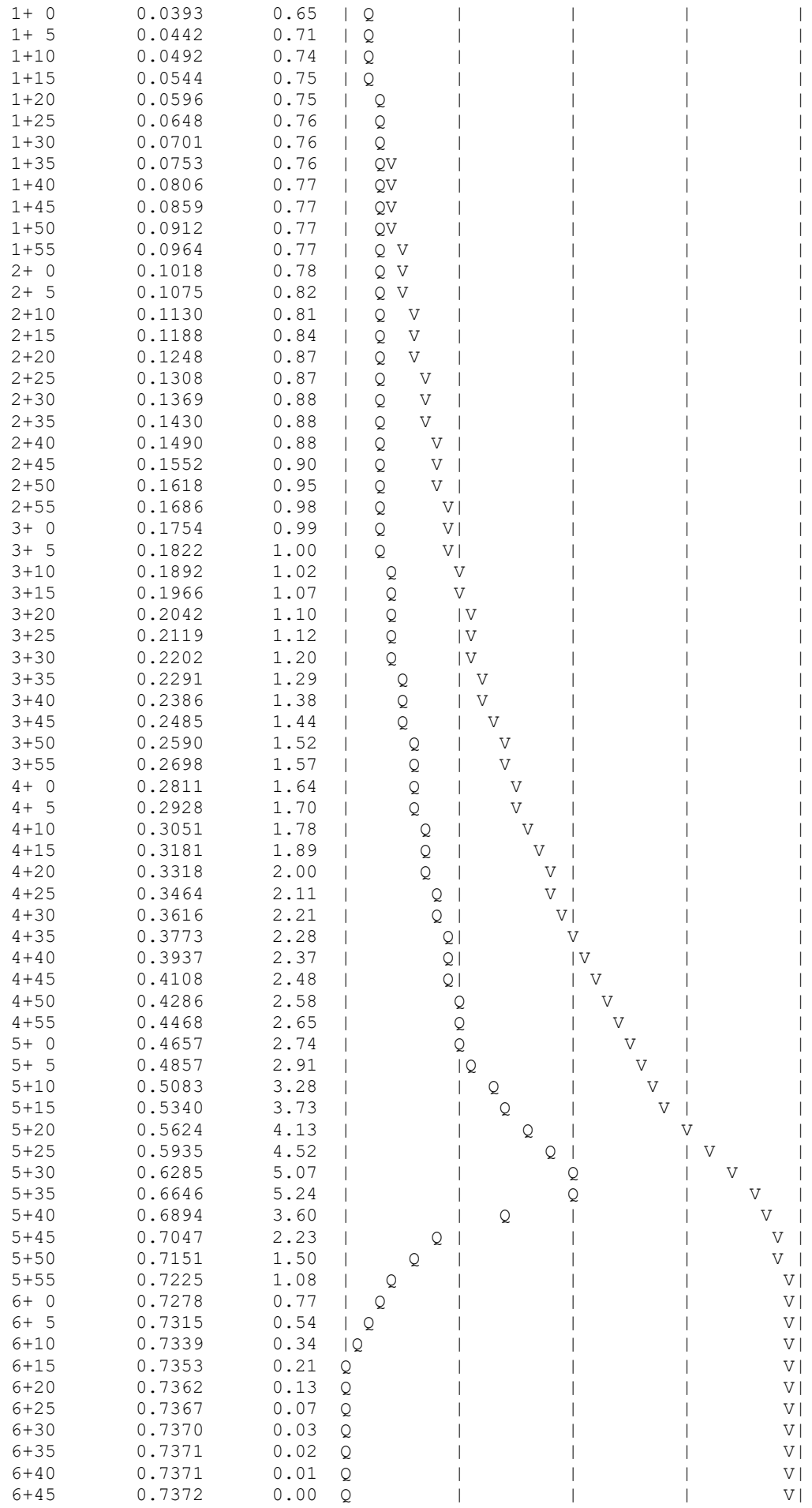
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	72.672	11.317	0.382
2	0.167	145.345	41.430	1.399
3	0.250	218.017	22.240	0.751
4	0.333	290.689	8.779	0.296
5	0.417	363.362	5.330	0.180
6	0.500	436.034	3.485	0.118
7	0.583	508.706	2.385	0.081
8	0.667	581.378	1.800	0.061
9	0.750	654.051	1.274	0.043
10	0.833	726.723	0.866	0.029
11	0.917	799.395	0.727	0.025
12	1.000	872.068	0.369	0.012
			Sum = 100.000 Sum=	3.376

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	0.180	0.061	(0.066)	0.119
2	0.17	0.60	0.216	0.061	(0.079)	0.155
3	0.25	0.60	0.216	0.061	(0.079)	0.155
4	0.33	0.60	0.216	0.061	(0.079)	0.155
5	0.42	0.60	0.216	0.061	(0.079)	0.155
6	0.50	0.70	0.252	0.061	(0.092)	0.191
7	0.58	0.70	0.252	0.061	(0.092)	0.191
8	0.67	0.70	0.252	0.061	(0.092)	0.191
9	0.75	0.70	0.252	0.061	(0.092)	0.191
10	0.83	0.70	0.252	0.061	(0.092)	0.191
11	0.92	0.70	0.252	0.061	(0.092)	0.191
12	1.00	0.80	0.288	0.061	(0.105)	0.227
13	1.08	0.80	0.288	0.061	(0.105)	0.227
14	1.17	0.80	0.288	0.061	(0.105)	0.227
15	1.25	0.80	0.288	0.061	(0.105)	0.227
16	1.33	0.80	0.288	0.061	(0.105)	0.227
17	1.42	0.80	0.288	0.061	(0.105)	0.227
18	1.50	0.80	0.288	0.061	(0.105)	0.227
19	1.58	0.80	0.288	0.061	(0.105)	0.227
20	1.67	0.80	0.288	0.061	(0.105)	0.227
21	1.75	0.80	0.288	0.061	(0.105)	0.227
22	1.83	0.80	0.288	0.061	(0.105)	0.227
23	1.92	0.80	0.288	0.061	(0.105)	0.227
24	2.00	0.90	0.324	0.061	(0.118)	0.263
25	2.08	0.80	0.288	0.061	(0.105)	0.227
26	2.17	0.90	0.324	0.061	(0.118)	0.263
27	2.25	0.90	0.324	0.061	(0.118)	0.263
28	2.33	0.90	0.324	0.061	(0.118)	0.263
29	2.42	0.90	0.324	0.061	(0.118)	0.263
30	2.50	0.90	0.324	0.061	(0.118)	0.263
31	2.58	0.90	0.324	0.061	(0.118)	0.263
32	2.67	0.90	0.324	0.061	(0.118)	0.263
33	2.75	1.00	0.360	0.061	(0.131)	0.299
34	2.83	1.00	0.360	0.061	(0.131)	0.299

```
35   2.92     1.00      0.360          0.061    (  0.131)        0.299
36   3.00     1.00      0.360          0.061    (  0.131)        0.299
37   3.08     1.00      0.360          0.061    (  0.131)        0.299
38   3.17     1.10      0.396          0.061    (  0.144)        0.335
39   3.25     1.10      0.396          0.061    (  0.144)        0.335
40   3.33     1.10      0.396          0.061    (  0.144)        0.335
41   3.42     1.20      0.432          0.061    (  0.157)        0.371
42   3.50     1.30      0.468          0.061    (  0.170)        0.407
43   3.58     1.40      0.504          0.061    (  0.183)        0.443
44   3.67     1.40      0.504          0.061    (  0.183)        0.443
45   3.75     1.50      0.540          0.061    (  0.197)        0.479
46   3.83     1.50      0.540          0.061    (  0.197)        0.479
47   3.92     1.60      0.576          0.061    (  0.210)        0.515
48   4.00     1.60      0.576          0.061    (  0.210)        0.515
49   4.08     1.70      0.612          0.061    (  0.223)        0.551
50   4.17     1.80      0.648          0.061    (  0.236)        0.587
51   4.25     1.90      0.684          0.061    (  0.249)        0.623
52   4.33     2.00      0.720          0.061    (  0.262)        0.659
53   4.42     2.10      0.756          0.061    (  0.275)        0.695
54   4.50     2.10      0.756          0.061    (  0.275)        0.695
55   4.58     2.20      0.792          0.061    (  0.288)        0.731
56   4.67     2.30      0.828          0.061    (  0.301)        0.767
57   4.75     2.40      0.864          0.061    (  0.314)        0.803
58   4.83     2.40      0.864          0.061    (  0.314)        0.803
59   4.92     2.50      0.900          0.061    (  0.328)        0.839
60   5.00     2.60      0.936          0.061    (  0.341)        0.875
61   5.08     3.10      1.116          0.061    (  0.406)        1.055
62   5.17     3.60      1.296          0.061    (  0.472)        1.235
63   5.25     3.90      1.404          0.061    (  0.511)        1.343
64   5.33     4.20      1.512          0.061    (  0.550)        1.451
65   5.42     4.70      1.692          0.061    (  0.616)        1.631
66   5.50     5.60      2.016          0.061    (  0.734)        1.955
67   5.58     1.90      0.684          0.061    (  0.249)        0.623
68   5.67     0.90      0.324          0.061    (  0.118)        0.263
69   5.75     0.60      0.216          0.061    (  0.079)        0.155
70   5.83     0.50      0.180          0.061    (  0.066)        0.119
71   5.92     0.30      0.108       (  0.061)       0.039        0.069
72   6.00     0.20      0.072       (  0.061)       0.026        0.046
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    31.7
     Flood volume = Effective rainfall      2.64(In)
      times area       3.4(Ac.)/[(In)/(Ft.)] =       0.7(Ac.Ft)
     Total soil loss =      0.36(In)
     Total soil loss =     0.100(Ac.Ft)
     Total rainfall =      3.00(In)
     Flood volume =       32111.6 Cubic Feet
     Total soil loss =        4369.5 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      5.245(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0003      0.05  Q         |         |         |         |
  0+10       0.0019      0.23  Q         |         |         |         |
  0+15       0.0044      0.37  VQ        |         |         |         |
  0+20       0.0074      0.43  VQ        |         |         |         |
  0+25       0.0105      0.46  VQ        |         |         |         |
  0+30       0.0139      0.50  VQ        |         |         |         |
  0+35       0.0178      0.56  V Q       |         |         |         |
  0+40       0.0219      0.60  |VQ       |         |         |         |
  0+45       0.0261      0.61  |VQ       |         |         |         |
  0+50       0.0304      0.63  |VQ       |         |         |         |
  0+55       0.0348      0.63  |VQ       |         |         |         |
```



```
    6+50       0.7372      0.00  Q         |         |         |        V|
    6+55       0.7372      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

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

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Study date 02/20/20 File: 8946E2A124100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA A
PROPOSED CONDITION
100 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 3.35(Ac.) = 0.005 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.35(Ac.) = 0.005 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.115 Hr.
Lag time = 6.88 Min.
25% of lag time = 1.72 Min.
40% of lag time = 2.75 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]
3.35	2.25	7.54

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.35	5.25	17.59

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 5.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.350	75.00	0.670

Total Area Entered = 3.35(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.670	0.061	1.000	0.061

Sum (F) = 0.061

Area averaged mean soil loss (F) (In/Hr) = 0.061
Minimum soil loss rate ((In/Hr)) = 0.030
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	72.672	11.317	0.382
2	0.167	145.345	41.430	1.399
3	0.250	218.017	22.240	0.751
4	0.333	290.689	8.779	0.296
5	0.417	363.362	5.330	0.180
6	0.500	436.034	3.485	0.118
7	0.583	508.706	2.385	0.081
8	0.667	581.378	1.800	0.061
9	0.750	654.051	1.274	0.043
10	0.833	726.723	0.866	0.029
11	0.917	799.395	0.727	0.025
12	1.000	872.068	0.369	0.012
			Sum = 100.000	Sum= 3.376

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	0.042	(0.108)	0.015	0.027
2	0.17	0.07	0.042	(0.107)	0.015	0.027
3	0.25	0.07	0.042	(0.107)	0.015	0.027
4	0.33	0.10	0.063	(0.106)	0.023	0.040
5	0.42	0.10	0.063	(0.106)	0.023	0.040
6	0.50	0.10	0.063	(0.105)	0.023	0.040
7	0.58	0.10	0.063	(0.105)	0.023	0.040
8	0.67	0.10	0.063	(0.105)	0.023	0.040
9	0.75	0.10	0.063	(0.104)	0.023	0.040
10	0.83	0.13	0.084	(0.104)	0.031	0.053
11	0.92	0.13	0.084	(0.103)	0.031	0.053
12	1.00	0.13	0.084	(0.103)	0.031	0.053
13	1.08	0.10	0.063	(0.103)	0.023	0.040
14	1.17	0.10	0.063	(0.102)	0.023	0.040
15	1.25	0.10	0.063	(0.102)	0.023	0.040
16	1.33	0.10	0.063	(0.101)	0.023	0.040
17	1.42	0.10	0.063	(0.101)	0.023	0.040
18	1.50	0.10	0.063	(0.101)	0.023	0.040
19	1.58	0.10	0.063	(0.100)	0.023	0.040
20	1.67	0.10	0.063	(0.100)	0.023	0.040
21	1.75	0.10	0.063	(0.099)	0.023	0.040
22	1.83	0.13	0.084	(0.099)	0.031	0.053
23	1.92	0.13	0.084	(0.099)	0.031	0.053
24	2.00	0.13	0.084	(0.098)	0.031	0.053
25	2.08	0.13	0.084	(0.098)	0.031	0.053
26	2.17	0.13	0.084	(0.097)	0.031	0.053
27	2.25	0.13	0.084	(0.097)	0.031	0.053
28	2.33	0.13	0.084	(0.097)	0.031	0.053
29	2.42	0.13	0.084	(0.096)	0.031	0.053
30	2.50	0.13	0.084	(0.096)	0.031	0.053
31	2.58	0.17	0.105	(0.095)	0.038	0.067
32	2.67	0.17	0.105	(0.095)	0.038	0.067
33	2.75	0.17	0.105	(0.095)	0.038	0.067
34	2.83	0.17	0.105	(0.094)	0.038	0.067

35	2.92	0.17	0.105	(0.094)	0.038	0.067
36	3.00	0.17	0.105	(0.093)	0.038	0.067
37	3.08	0.17	0.105	(0.093)	0.038	0.067
38	3.17	0.17	0.105	(0.093)	0.038	0.067
39	3.25	0.17	0.105	(0.092)	0.038	0.067
40	3.33	0.17	0.105	(0.092)	0.038	0.067
41	3.42	0.17	0.105	(0.092)	0.038	0.067
42	3.50	0.17	0.105	(0.091)	0.038	0.067
43	3.58	0.17	0.105	(0.091)	0.038	0.067
44	3.67	0.17	0.105	(0.090)	0.038	0.067
45	3.75	0.17	0.105	(0.090)	0.038	0.067
46	3.83	0.20	0.126	(0.090)	0.046	0.080
47	3.92	0.20	0.126	(0.089)	0.046	0.080
48	4.00	0.20	0.126	(0.089)	0.046	0.080
49	4.08	0.20	0.126	(0.088)	0.046	0.080
50	4.17	0.20	0.126	(0.088)	0.046	0.080
51	4.25	0.20	0.126	(0.088)	0.046	0.080
52	4.33	0.23	0.147	(0.087)	0.054	0.093
53	4.42	0.23	0.147	(0.087)	0.054	0.093
54	4.50	0.23	0.147	(0.087)	0.054	0.093
55	4.58	0.23	0.147	(0.086)	0.054	0.093
56	4.67	0.23	0.147	(0.086)	0.054	0.093
57	4.75	0.23	0.147	(0.086)	0.054	0.093
58	4.83	0.27	0.168	(0.085)	0.061	0.107
59	4.92	0.27	0.168	(0.085)	0.061	0.107
60	5.00	0.27	0.168	(0.084)	0.061	0.107
61	5.08	0.20	0.126	(0.084)	0.046	0.080
62	5.17	0.20	0.126	(0.084)	0.046	0.080
63	5.25	0.20	0.126	(0.083)	0.046	0.080
64	5.33	0.23	0.147	(0.083)	0.054	0.093
65	5.42	0.23	0.147	(0.083)	0.054	0.093
66	5.50	0.23	0.147	(0.082)	0.054	0.093
67	5.58	0.27	0.168	(0.082)	0.061	0.107
68	5.67	0.27	0.168	(0.082)	0.061	0.107
69	5.75	0.27	0.168	(0.081)	0.061	0.107
70	5.83	0.27	0.168	(0.081)	0.061	0.107
71	5.92	0.27	0.168	(0.080)	0.061	0.107
72	6.00	0.27	0.168	(0.080)	0.061	0.107
73	6.08	0.30	0.189	(0.080)	0.069	0.120
74	6.17	0.30	0.189	(0.079)	0.069	0.120
75	6.25	0.30	0.189	(0.079)	0.069	0.120
76	6.33	0.30	0.189	(0.079)	0.069	0.120
77	6.42	0.30	0.189	(0.078)	0.069	0.120
78	6.50	0.30	0.189	(0.078)	0.069	0.120
79	6.58	0.33	0.210	(0.078)	0.076	0.134
80	6.67	0.33	0.210	(0.077)	0.076	0.134
81	6.75	0.33	0.210	(0.077)	0.076	0.134
82	6.83	0.33	0.210	(0.077)	0.076	0.134
83	6.92	0.33	0.210	0.076	(0.076)	0.134
84	7.00	0.33	0.210	0.076	(0.076)	0.134
85	7.08	0.33	0.210	0.076	(0.076)	0.134
86	7.17	0.33	0.210	0.075	(0.076)	0.135
87	7.25	0.33	0.210	0.075	(0.076)	0.135
88	7.33	0.37	0.231	0.074	(0.084)	0.157
89	7.42	0.37	0.231	0.074	(0.084)	0.157
90	7.50	0.37	0.231	0.074	(0.084)	0.157
91	7.58	0.40	0.252	0.073	(0.092)	0.179
92	7.67	0.40	0.252	0.073	(0.092)	0.179
93	7.75	0.40	0.252	0.073	(0.092)	0.179
94	7.83	0.43	0.273	0.072	(0.099)	0.201
95	7.92	0.43	0.273	0.072	(0.099)	0.201
96	8.00	0.43	0.273	0.072	(0.099)	0.201
97	8.08	0.50	0.315	0.071	(0.115)	0.244
98	8.17	0.50	0.315	0.071	(0.115)	0.244
99	8.25	0.50	0.315	0.071	(0.115)	0.244
100	8.33	0.50	0.315	0.070	(0.115)	0.245
101	8.42	0.50	0.315	0.070	(0.115)	0.245
102	8.50	0.50	0.315	0.070	(0.115)	0.245
103	8.58	0.53	0.336	0.069	(0.122)	0.267
104	8.67	0.53	0.336	0.069	(0.122)	0.267

105	8.75	0.53	0.336	0.069	(	0.122)	0.267
106	8.83	0.57	0.357	0.069	(	0.130)	0.288
107	8.92	0.57	0.357	0.068	(	0.130)	0.289
108	9.00	0.57	0.357	0.068	(	0.130)	0.289
109	9.08	0.63	0.399	0.068	(	0.145)	0.331
110	9.17	0.63	0.399	0.067	(	0.145)	0.332
111	9.25	0.63	0.399	0.067	(	0.145)	0.332
112	9.33	0.67	0.420	0.067	(	0.153)	0.353
113	9.42	0.67	0.420	0.066	(	0.153)	0.354
114	9.50	0.67	0.420	0.066	(	0.153)	0.354
115	9.58	0.70	0.441	0.066	(	0.161)	0.375
116	9.67	0.70	0.441	0.065	(	0.161)	0.376
117	9.75	0.70	0.441	0.065	(	0.161)	0.376
118	9.83	0.73	0.462	0.065	(	0.168)	0.397
119	9.92	0.73	0.462	0.064	(	0.168)	0.398
120	10.00	0.73	0.462	0.064	(	0.168)	0.398
121	10.08	0.50	0.315	0.064	(	0.115)	0.251
122	10.17	0.50	0.315	0.063	(	0.115)	0.252
123	10.25	0.50	0.315	0.063	(	0.115)	0.252
124	10.33	0.50	0.315	0.063	(	0.115)	0.252
125	10.42	0.50	0.315	0.063	(	0.115)	0.252
126	10.50	0.50	0.315	0.062	(	0.115)	0.253
127	10.58	0.67	0.420	0.062	(	0.153)	0.358
128	10.67	0.67	0.420	0.062	(	0.153)	0.358
129	10.75	0.67	0.420	0.061	(	0.153)	0.359
130	10.83	0.67	0.420	0.061	(	0.153)	0.359
131	10.92	0.67	0.420	0.061	(	0.153)	0.359
132	11.00	0.67	0.420	0.060	(	0.153)	0.360
133	11.08	0.63	0.399	0.060	(	0.145)	0.339
134	11.17	0.63	0.399	0.060	(	0.145)	0.339
135	11.25	0.63	0.399	0.060	(	0.145)	0.339
136	11.33	0.63	0.399	0.059	(	0.145)	0.340
137	11.42	0.63	0.399	0.059	(	0.145)	0.340
138	11.50	0.63	0.399	0.059	(	0.145)	0.340
139	11.58	0.57	0.357	0.058	(	0.130)	0.299
140	11.67	0.57	0.357	0.058	(	0.130)	0.299
141	11.75	0.57	0.357	0.058	(	0.130)	0.299
142	11.83	0.60	0.378	0.057	(	0.138)	0.321
143	11.92	0.60	0.378	0.057	(	0.138)	0.321
144	12.00	0.60	0.378	0.057	(	0.138)	0.321
145	12.08	0.83	0.525	0.057	(	0.191)	0.468
146	12.17	0.83	0.525	0.056	(	0.191)	0.469
147	12.25	0.83	0.525	0.056	(	0.191)	0.469
148	12.33	0.87	0.546	0.056	(	0.199)	0.490
149	12.42	0.87	0.546	0.055	(	0.199)	0.490
150	12.50	0.87	0.546	0.055	(	0.199)	0.491
151	12.58	0.93	0.588	0.055	(	0.214)	0.533
152	12.67	0.93	0.588	0.055	(	0.214)	0.533
153	12.75	0.93	0.588	0.054	(	0.214)	0.534
154	12.83	0.97	0.609	0.054	(	0.222)	0.555
155	12.92	0.97	0.609	0.054	(	0.222)	0.555
156	13.00	0.97	0.609	0.054	(	0.222)	0.555
157	13.08	1.13	0.714	0.053	(	0.260)	0.661
158	13.17	1.13	0.714	0.053	(	0.260)	0.661
159	13.25	1.13	0.714	0.053	(	0.260)	0.661
160	13.33	1.13	0.714	0.052	(	0.260)	0.662
161	13.42	1.13	0.714	0.052	(	0.260)	0.662
162	13.50	1.13	0.714	0.052	(	0.260)	0.662
163	13.58	0.77	0.483	0.052	(	0.176)	0.431
164	13.67	0.77	0.483	0.051	(	0.176)	0.432
165	13.75	0.77	0.483	0.051	(	0.176)	0.432
166	13.83	0.77	0.483	0.051	(	0.176)	0.432
167	13.92	0.77	0.483	0.051	(	0.176)	0.432
168	14.00	0.77	0.483	0.050	(	0.176)	0.433
169	14.08	0.90	0.567	0.050	(	0.206)	0.517
170	14.17	0.90	0.567	0.050	(	0.206)	0.517
171	14.25	0.90	0.567	0.050	(	0.206)	0.517
172	14.33	0.87	0.546	0.049	(	0.199)	0.497
173	14.42	0.87	0.546	0.049	(	0.199)	0.497
174	14.50	0.87	0.546	0.049	(	0.199)	0.497

175	14.58	0.87	0.546		0.049	(0.199)	0.497
176	14.67	0.87	0.546		0.048	(0.199)	0.498
177	14.75	0.87	0.546		0.048	(0.199)	0.498
178	14.83	0.83	0.525		0.048	(0.191)	0.477
179	14.92	0.83	0.525		0.048	(0.191)	0.477
180	15.00	0.83	0.525		0.047	(0.191)	0.478
181	15.08	0.80	0.504		0.047	(0.183)	0.457
182	15.17	0.80	0.504		0.047	(0.183)	0.457
183	15.25	0.80	0.504		0.047	(0.183)	0.457
184	15.33	0.77	0.483		0.046	(0.176)	0.437
185	15.42	0.77	0.483		0.046	(0.176)	0.437
186	15.50	0.77	0.483		0.046	(0.176)	0.437
187	15.58	0.63	0.399		0.046	(0.145)	0.353
188	15.67	0.63	0.399		0.045	(0.145)	0.354
189	15.75	0.63	0.399		0.045	(0.145)	0.354
190	15.83	0.63	0.399		0.045	(0.145)	0.354
191	15.92	0.63	0.399		0.045	(0.145)	0.354
192	16.00	0.63	0.399		0.045	(0.145)	0.354
193	16.08	0.13	0.084	(0.044)		0.031	0.053
194	16.17	0.13	0.084	(0.044)		0.031	0.053
195	16.25	0.13	0.084	(0.044)		0.031	0.053
196	16.33	0.13	0.084	(0.044)		0.031	0.053
197	16.42	0.13	0.084	(0.043)		0.031	0.053
198	16.50	0.13	0.084	(0.043)		0.031	0.053
199	16.58	0.10	0.063	(0.043)		0.023	0.040
200	16.67	0.10	0.063	(0.043)		0.023	0.040
201	16.75	0.10	0.063	(0.043)		0.023	0.040
202	16.83	0.10	0.063	(0.042)		0.023	0.040
203	16.92	0.10	0.063	(0.042)		0.023	0.040
204	17.00	0.10	0.063	(0.042)		0.023	0.040
205	17.08	0.17	0.105	(0.042)		0.038	0.067
206	17.17	0.17	0.105	(0.041)		0.038	0.067
207	17.25	0.17	0.105	(0.041)		0.038	0.067
208	17.33	0.17	0.105	(0.041)		0.038	0.067
209	17.42	0.17	0.105	(0.041)		0.038	0.067
210	17.50	0.17	0.105	(0.041)		0.038	0.067
211	17.58	0.17	0.105	(0.040)		0.038	0.067
212	17.67	0.17	0.105	(0.040)		0.038	0.067
213	17.75	0.17	0.105	(0.040)		0.038	0.067
214	17.83	0.13	0.084	(0.040)		0.031	0.053
215	17.92	0.13	0.084	(0.040)		0.031	0.053
216	18.00	0.13	0.084	(0.039)		0.031	0.053
217	18.08	0.13	0.084	(0.039)		0.031	0.053
218	18.17	0.13	0.084	(0.039)		0.031	0.053
219	18.25	0.13	0.084	(0.039)		0.031	0.053
220	18.33	0.13	0.084	(0.039)		0.031	0.053
221	18.42	0.13	0.084	(0.039)		0.031	0.053
222	18.50	0.13	0.084	(0.038)		0.031	0.053
223	18.58	0.10	0.063	(0.038)		0.023	0.040
224	18.67	0.10	0.063	(0.038)		0.023	0.040
225	18.75	0.10	0.063	(0.038)		0.023	0.040
226	18.83	0.07	0.042	(0.038)		0.015	0.027
227	18.92	0.07	0.042	(0.037)		0.015	0.027
228	19.00	0.07	0.042	(0.037)		0.015	0.027
229	19.08	0.10	0.063	(0.037)		0.023	0.040
230	19.17	0.10	0.063	(0.037)		0.023	0.040
231	19.25	0.10	0.063	(0.037)		0.023	0.040
232	19.33	0.13	0.084	(0.037)		0.031	0.053
233	19.42	0.13	0.084	(0.036)		0.031	0.053
234	19.50	0.13	0.084	(0.036)		0.031	0.053
235	19.58	0.10	0.063	(0.036)		0.023	0.040
236	19.67	0.10	0.063	(0.036)		0.023	0.040
237	19.75	0.10	0.063	(0.036)		0.023	0.040
238	19.83	0.07	0.042	(0.036)		0.015	0.027
239	19.92	0.07	0.042	(0.035)		0.015	0.027
240	20.00	0.07	0.042	(0.035)		0.015	0.027
241	20.08	0.10	0.063	(0.035)		0.023	0.040
242	20.17	0.10	0.063	(0.035)		0.023	0.040
243	20.25	0.10	0.063	(0.035)		0.023	0.040
244	20.33	0.10	0.063	(0.035)		0.023	0.040

245	20.42	0.10	0.063	(0.034)	0.023	0.040
246	20.50	0.10	0.063	(0.034)	0.023	0.040
247	20.58	0.10	0.063	(0.034)	0.023	0.040
248	20.67	0.10	0.063	(0.034)	0.023	0.040
249	20.75	0.10	0.063	(0.034)	0.023	0.040
250	20.83	0.07	0.042	(0.034)	0.015	0.027
251	20.92	0.07	0.042	(0.034)	0.015	0.027
252	21.00	0.07	0.042	(0.033)	0.015	0.027
253	21.08	0.10	0.063	(0.033)	0.023	0.040
254	21.17	0.10	0.063	(0.033)	0.023	0.040
255	21.25	0.10	0.063	(0.033)	0.023	0.040
256	21.33	0.07	0.042	(0.033)	0.015	0.027
257	21.42	0.07	0.042	(0.033)	0.015	0.027
258	21.50	0.07	0.042	(0.033)	0.015	0.027
259	21.58	0.10	0.063	(0.033)	0.023	0.040
260	21.67	0.10	0.063	(0.032)	0.023	0.040
261	21.75	0.10	0.063	(0.032)	0.023	0.040
262	21.83	0.07	0.042	(0.032)	0.015	0.027
263	21.92	0.07	0.042	(0.032)	0.015	0.027
264	22.00	0.07	0.042	(0.032)	0.015	0.027
265	22.08	0.10	0.063	(0.032)	0.023	0.040
266	22.17	0.10	0.063	(0.032)	0.023	0.040
267	22.25	0.10	0.063	(0.032)	0.023	0.040
268	22.33	0.07	0.042	(0.032)	0.015	0.027
269	22.42	0.07	0.042	(0.032)	0.015	0.027
270	22.50	0.07	0.042	(0.031)	0.015	0.027
271	22.58	0.07	0.042	(0.031)	0.015	0.027
272	22.67	0.07	0.042	(0.031)	0.015	0.027
273	22.75	0.07	0.042	(0.031)	0.015	0.027
274	22.83	0.07	0.042	(0.031)	0.015	0.027
275	22.92	0.07	0.042	(0.031)	0.015	0.027
276	23.00	0.07	0.042	(0.031)	0.015	0.027
277	23.08	0.07	0.042	(0.031)	0.015	0.027
278	23.17	0.07	0.042	(0.031)	0.015	0.027
279	23.25	0.07	0.042	(0.031)	0.015	0.027
280	23.33	0.07	0.042	(0.031)	0.015	0.027
281	23.42	0.07	0.042	(0.031)	0.015	0.027
282	23.50	0.07	0.042	(0.031)	0.015	0.027
283	23.58	0.07	0.042	(0.030)	0.015	0.027
284	23.67	0.07	0.042	(0.030)	0.015	0.027
285	23.75	0.07	0.042	(0.030)	0.015	0.027
286	23.83	0.07	0.042	(0.030)	0.015	0.027
287	23.92	0.07	0.042	(0.030)	0.015	0.027
288	24.00	0.07	0.042	(0.030)	0.015	0.027

(Loss Rate Not Used)

Sum = 100.0 Sum = 50.8

Flood volume = Effective rainfall 4.23(In)
times area 3.4(Ac.)/[(In)/(Ft.)] = 1.2(Ac.Ft)
Total soil loss = 1.02(In)
Total soil loss = 0.284(Ac.Ft)
Total rainfall = 5.25(In)
Flood volume = 51458.2 Cubic Feet
Total soil loss = 12384.0 Cubic Feet

Peak flow rate of this hydrograph = 2.207(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0004	0.05	Q	|	|	|	|
0+15	0.0009	0.07	Q	|	|	|	|
0+20	0.0014	0.08	Q	|	|	|	|
0+25	0.0021	0.10	Q	|	|	|	|

0+30	0.0029	0.12	Q				
0+35	0.0038	0.12	Q				
0+40	0.0047	0.13	Q				
0+45	0.0056	0.13	Q				
0+50	0.0065	0.14	Q				
0+55	0.0076	0.16	Q				
1+ 0	0.0088	0.17	Q				
1+ 5	0.0099	0.17	Q				
1+10	0.0110	0.15	Q				
1+15	0.0119	0.14	Q				
1+20	0.0129	0.14	Q				
1+25	0.0139	0.14	Q				
1+30	0.0148	0.14	Q				
1+35	0.0158	0.14	Q				
1+40	0.0167	0.14	Q				
1+45	0.0176	0.14	Q				
1+50	0.0186	0.14	Q				
1+55	0.0197	0.16	Q				
2+ 0	0.0209	0.17	Q				
2+ 5	0.0221	0.17	Q				
2+10	0.0233	0.18	Q				
2+15	0.0245	0.18	Q				
2+20	0.0257	0.18	Q				
2+25	0.0270	0.18	Q				
2+30	0.0282	0.18	Q				
2+35	0.0295	0.19	Q				
2+40	0.0309	0.20	QV				
2+45	0.0323	0.21	QV				
2+50	0.0338	0.22	QV				
2+55	0.0354	0.22	QV				
3+ 0	0.0369	0.22	QV				
3+ 5	0.0384	0.22	QV				
3+10	0.0400	0.22	QV				
3+15	0.0415	0.22	QV				
3+20	0.0431	0.23	QV				
3+25	0.0446	0.23	QV				
3+30	0.0462	0.23	QV				
3+35	0.0477	0.23	QV				
3+40	0.0493	0.23	QV				
3+45	0.0508	0.23	QV				
3+50	0.0524	0.23	QV				
3+55	0.0542	0.25	QV				
4+ 0	0.0559	0.26	|Q				
4+ 5	0.0578	0.26	|Q				
4+10	0.0596	0.27	|QV				
4+15	0.0614	0.27	|QV				
4+20	0.0633	0.27	|QV				
4+25	0.0653	0.29	|QV				
4+30	0.0674	0.30	|QV				
4+35	0.0695	0.31	|QV				
4+40	0.0717	0.31	|QV				
4+45	0.0738	0.31	|QV				
4+50	0.0760	0.32	|QV				
4+55	0.0784	0.34	|QV				
5+ 0	0.0808	0.35	|QV				
5+ 5	0.0831	0.34	|QV				
5+10	0.0852	0.31	|QV				
5+15	0.0872	0.29	|QV				
5+20	0.0892	0.29	|Q V				
5+25	0.0913	0.30	|Q V				
5+30	0.0934	0.31	|Q V				
5+35	0.0956	0.32	|Q V				
5+40	0.0980	0.34	|Q V				
5+45	0.1004	0.35	|Q V				
5+50	0.1028	0.35	|Q V				
5+55	0.1052	0.35	|Q V				
6+ 0	0.1077	0.36	|Q V				
6+ 5	0.1102	0.36	|Q V				
6+10	0.1128	0.38	|Q V				
6+15	0.1155	0.39	|Q V				

6+20	0.1183	0.40	|Q V	|	|	|	|
6+25	0.1210	0.40	|Q V	|	|	|	|
6+30	0.1238	0.40	|Q V	|	|	|	|
6+35	0.1266	0.41	|Q V	|	|	|	|
6+40	0.1296	0.43	|Q V	|	|	|	|
6+45	0.1326	0.44	|Q V	|	|	|	|
6+50	0.1357	0.44	|Q V	|	|	|	|
6+55	0.1387	0.45	|Q V	|	|	|	|
7+ 0	0.1418	0.45	|Q V	|	|	|	|
7+ 5	0.1449	0.45	|Q V	|	|	|	|
7+10	0.1480	0.45	|Q V	|	|	|	|
7+15	0.1511	0.45	|Q V	|	|	|	|
7+20	0.1543	0.46	|Q V	|	|	|	|
7+25	0.1577	0.49	|Q V	|	|	|	|
7+30	0.1613	0.51	| Q V	|	|	|	|
7+35	0.1649	0.53	| Q V	|	|	|	|
7+40	0.1687	0.56	| Q V	|	|	|	|
7+45	0.1727	0.58	| Q V	|	|	|	|
7+50	0.1768	0.60	| Q V	|	|	|	|
7+55	0.1812	0.63	| Q V	|	|	|	|
8+ 0	0.1857	0.65	| Q V	|	|	|	|
8+ 5	0.1904	0.68	| Q V	|	|	|	|
8+10	0.1955	0.74	| Q V	|	|	|	|
8+15	0.2009	0.78	| Q V	|	|	|	|
8+20	0.2064	0.80	| Q V	|	|	|	|
8+25	0.2119	0.81	| Q V	|	|	|	|
8+30	0.2175	0.81	| Q V	|	|	|	|
8+35	0.2232	0.83	| Q V	|	|	|	|
8+40	0.2291	0.86	| Q V	|	|	|	|
8+45	0.2352	0.88	| Q V	|	|	|	|
8+50	0.2414	0.90	| Q V |	|	|	|	|
8+55	0.2478	0.93	| Q V |	|	|	|	|
9+ 0	0.2543	0.95	| Q V |	|	|	|	|
9+ 5	0.2611	0.98	| Q V |	|	|	|	|
9+10	0.2682	1.04	| Q V|	|	|	|	|
9+15	0.2757	1.08	| Q V|	|	|	|	|
9+20	0.2832	1.10	| Q V|	|	|	|	|
9+25	0.2911	1.14	| Q V|	|	|	|	|
9+30	0.2991	1.16	| Q V	|	|	|	|
9+35	0.3073	1.18	| Q V	|	|	|	|
9+40	0.3157	1.22	| Q V	|	|	|	|
9+45	0.3242	1.24	| Q V	|	|	|	|
9+50	0.3329	1.26	| Q |V	|	|	|	|
9+55	0.3418	1.30	| Q |V	|	|	|	|
10+ 0	0.3509	1.32	| Q |V	|	|	|	|
10+ 5	0.3597	1.27	| Q | V	|	|	|	|
10+10	0.3671	1.07	| Q | V	|	|	|	|
10+15	0.3737	0.97	| Q | V	|	|	|	|
10+20	0.3801	0.93	| Q | V	|	|	|	|
10+25	0.3863	0.90	| Q | V	|	|	|	|
10+30	0.3924	0.89	| Q | V	|	|	|	|
10+35	0.3987	0.92	| Q | V	|	|	|	|
10+40	0.4060	1.06	| Q | V	|	|	|	|
10+45	0.4138	1.13	| Q | V	|	|	|	|
10+50	0.4218	1.16	| Q | V	|	|	|	|
10+55	0.4299	1.17	| Q | V	|	|	|	|
11+ 0	0.4380	1.19	| Q | V	|	|	|	|
11+ 5	0.4462	1.19	| Q | V	|	|	|	|
11+10	0.4542	1.17	| Q | V	|	|	|	|
11+15	0.4622	1.16	| Q | V	|	|	|	|
11+20	0.4701	1.15	| Q | V	|	|	|	|
11+25	0.4781	1.15	| Q | V	|	|	|	|
11+30	0.4860	1.15	| Q | V	|	|	|	|
11+35	0.4938	1.14	| Q | V	|	|	|	|
11+40	0.5013	1.08	| Q | V	|	|	|	|
11+45	0.5085	1.05	| Q | V	|	|	|	|
11+50	0.5156	1.04	| Q | V	|	|	|	|
11+55	0.5230	1.06	| Q | V	|	|	|	|
12+ 0	0.5304	1.08	| Q | V	|	|	|	|
12+ 5	0.5382	1.14	| Q | V	|	|	|	|

12+10	0.5474	1.34	Q	V			
12+15	0.5575	1.46	Q	V			
12+20	0.5679	1.51	Q	V			
12+25	0.5786	1.57	Q	V			
12+30	0.5897	1.60	Q	V			
12+35	0.6009	1.64	Q	V			
12+40	0.6127	1.71	Q	V			
12+45	0.6247	1.75	Q	V			
12+50	0.6370	1.78	Q	V			
12+55	0.6495	1.82	Q	V			
13+ 0	0.6622	1.84	Q	V			
13+ 5	0.6753	1.90	Q	V			
13+10	0.6894	2.05	Q	V			
13+15	0.7041	2.13	Q	V			
13+20	0.7190	2.17	Q	V			
13+25	0.7341	2.19	Q	V			
13+30	0.7493	2.21	Q	V			
13+35	0.7640	2.13	Q	V			
13+40	0.7765	1.81	Q	V			
13+45	0.7878	1.65	Q	V			
13+50	0.7987	1.58	Q	V			
13+55	0.8093	1.54	Q	V			
14+ 0	0.8198	1.52	Q	V			
14+ 5	0.8303	1.53	Q	V			
14+10	0.8416	1.64	Q	V			
14+15	0.8532	1.69	Q	V			
14+20	0.8649	1.70	Q	V			
14+25	0.8765	1.68	Q	V			
14+30	0.8881	1.67	Q	V			
14+35	0.8996	1.68	Q	V			
14+40	0.9112	1.68	Q	V			
14+45	0.9227	1.68	Q	V			
14+50	0.9342	1.67	Q	V			
14+55	0.9456	1.65	Q	V			
15+ 0	0.9568	1.63	Q	V			
15+ 5	0.9679	1.62	Q	V			
15+10	0.9789	1.58	Q	V			
15+15	0.9896	1.57	Q	V			
15+20	1.0003	1.55	Q	V			
15+25	1.0108	1.52	Q	V			
15+30	1.0211	1.50	Q	V			
15+35	1.0311	1.46	Q	V			
15+40	1.0404	1.34	Q	V			
15+45	1.0491	1.27	Q	V			
15+50	1.0577	1.24	Q	V			
15+55	1.0661	1.23	Q	V			
16+ 0	1.0745	1.22	Q	V			
16+ 5	1.0821	1.10	Q	V			
16+10	1.0867	0.67	Q	V			
16+15	1.0897	0.44	Q	V			
16+20	1.0921	0.35	Q	V			
16+25	1.0941	0.29	Q	V			
16+30	1.0959	0.26	Q	V			
16+35	1.0975	0.23	Q	V			
16+40	1.0988	0.19	Q	V			
16+45	1.0999	0.17	Q	V			
16+50	1.1010	0.15	Q	V			
16+55	1.1020	0.14	Q	V			
17+ 0	1.1029	0.14	Q	V			
17+ 5	1.1039	0.15	Q	V			
17+10	1.1052	0.18	Q	V			
17+15	1.1066	0.20	Q	V			
17+20	1.1081	0.21	Q	V			
17+25	1.1096	0.22	Q	V			
17+30	1.1111	0.22	Q	V			
17+35	1.1126	0.22	Q	V			
17+40	1.1141	0.22	Q	V			
17+45	1.1157	0.22	Q	V			
17+50	1.1172	0.22	Q	V			
17+55	1.1186	0.20	Q	V			

18+ 0	1.1199	0.19	Q	|	|	|	V |
18+ 5	1.1212	0.19	Q	|	|	|	V |
18+10	1.1224	0.19	Q	|	|	|	V |
18+15	1.1237	0.18	Q	|	|	|	V |
18+20	1.1250	0.18	Q	|	|	|	V |
18+25	1.1262	0.18	Q	|	|	|	V |
18+30	1.1275	0.18	Q	|	|	|	V |
18+35	1.1287	0.18	Q	|	|	|	V |
18+40	1.1298	0.16	Q	|	|	|	V |
18+45	1.1308	0.15	Q	|	|	|	V |
18+50	1.1317	0.14	Q	|	|	|	V |
18+55	1.1325	0.12	Q	|	|	|	V |
19+ 0	1.1332	0.10	Q	|	|	|	V |
19+ 5	1.1340	0.10	Q	|	|	|	V |
19+10	1.1348	0.12	Q	|	|	|	V |
19+15	1.1357	0.13	Q	|	|	|	V |
19+20	1.1366	0.14	Q	|	|	|	V |
19+25	1.1377	0.16	Q	|	|	|	V |
19+30	1.1388	0.17	Q	|	|	|	V |
19+35	1.1400	0.17	Q	|	|	|	V |
19+40	1.1410	0.15	Q	|	|	|	V |
19+45	1.1420	0.14	Q	|	|	|	V |
19+50	1.1429	0.13	Q	|	|	|	V |
19+55	1.1437	0.11	Q	|	|	|	V |
20+ 0	1.1444	0.10	Q	|	|	|	V |
20+ 5	1.1452	0.10	Q	|	|	|	V |
20+10	1.1460	0.12	Q	|	|	|	V |
20+15	1.1469	0.13	Q	|	|	|	V |
20+20	1.1478	0.13	Q	|	|	|	V |
20+25	1.1487	0.13	Q	|	|	|	V |
20+30	1.1496	0.13	Q	|	|	|	V |
20+35	1.1505	0.13	Q	|	|	|	V |
20+40	1.1514	0.13	Q	|	|	|	V |
20+45	1.1524	0.13	Q	|	|	|	V|
20+50	1.1533	0.13	Q	|	|	|	V|
20+55	1.1540	0.11	Q	|	|	|	V|
21+ 0	1.1547	0.10	Q	|	|	|	V|
21+ 5	1.1554	0.10	Q	|	|	|	V|
21+10	1.1562	0.12	Q	|	|	|	V|
21+15	1.1571	0.13	Q	|	|	|	V|
21+20	1.1580	0.13	Q	|	|	|	V|
21+25	1.1587	0.11	Q	|	|	|	V|
21+30	1.1594	0.10	Q	|	|	|	V|
21+35	1.1601	0.10	Q	|	|	|	V|
21+40	1.1609	0.12	Q	|	|	|	V|
21+45	1.1618	0.13	Q	|	|	|	V|
21+50	1.1626	0.12	Q	|	|	|	V|
21+55	1.1634	0.11	Q	|	|	|	V|
22+ 0	1.1641	0.10	Q	|	|	|	V|
22+ 5	1.1648	0.10	Q	|	|	|	V|
22+10	1.1656	0.12	Q	|	|	|	V|
22+15	1.1664	0.13	Q	|	|	|	V|
22+20	1.1673	0.12	Q	|	|	|	V|
22+25	1.1681	0.11	Q	|	|	|	V|
22+30	1.1687	0.10	Q	|	|	|	V|
22+35	1.1694	0.10	Q	|	|	|	V|
22+40	1.1700	0.09	Q	|	|	|	V|
22+45	1.1707	0.09	Q	|	|	|	V|
22+50	1.1713	0.09	Q	|	|	|	V|
22+55	1.1719	0.09	Q	|	|	|	V|
23+ 0	1.1726	0.09	Q	|	|	|	V|
23+ 5	1.1732	0.09	Q	|	|	|	V|
23+10	1.1738	0.09	Q	|	|	|	V|
23+15	1.1744	0.09	Q	|	|	|	V|
23+20	1.1751	0.09	Q	|	|	|	V|
23+25	1.1757	0.09	Q	|	|	|	V|
23+30	1.1763	0.09	Q	|	|	|	V|
23+35	1.1769	0.09	Q	|	|	|	V|
23+40	1.1775	0.09	Q	|	|	|	V|
23+45	1.1782	0.09	Q	|	|	|	V|

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   23+50       1.1788      0.09  Q         |         |         |        V|
   23+55       1.1794      0.09  Q         |         |         |        V|
   24+ 0       1.1800      0.09  Q         |         |         |        V|
   24+ 5       1.1806      0.08  Q         |         |         |        V|
   24+10       1.1809      0.04  Q         |         |         |        V|
   24+15       1.1810      0.02  Q         |         |         |        V|
   24+20       1.1811      0.01  Q         |         |         |        V|
   24+25       1.1812      0.01  Q         |         |         |        V|
   24+30       1.1812      0.01  Q         |         |         |        V|
   24+35       1.1813      0.00  Q         |         |         |        V|
   24+40       1.1813      0.00  Q         |         |         |        V|
   24+45       1.1813      0.00  Q         |         |         |        V|
   24+50       1.1813      0.00  Q         |         |         |        V|
   24+55       1.1813      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 02/20/20 File: 8946P2B112.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
2 YEAR - 1 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.121 Hr.
Lag time = 7.28 Min.
25% of lag time = 1.82 Min.
40% of lag time = 2.91 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]
3.70	0.55	2.04

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	1.30	4.81

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.700	0.185	1.000	0.185

Sum (F) = 0.185

Area averaged mean soil loss (F) (In/Hr) = 0.185
Minimum soil loss rate ((In/Hr)) = 0.093
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	68.700	10.295	0.384
2	0.167	137.400	39.412	1.470
3	0.250	206.101	23.599	0.880
4	0.333	274.801	9.133	0.341
5	0.417	343.501	5.554	0.207
6	0.500	412.201	3.714	0.138
7	0.583	480.901	2.468	0.092
8	0.667	549.602	1.939	0.072
9	0.750	618.302	1.387	0.052
10	0.833	687.002	0.996	0.037
11	0.917	755.702	0.716	0.027
12	1.000	824.402	0.786	0.029
		Sum = 100.000	Sum=	3.729

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	0.218	(0.185)	0.074	0.144
2	0.17	4.20	0.277	(0.185)	0.094	0.183
3	0.25	4.40	0.290	(0.185)	0.099	0.192
4	0.33	4.80	0.317	(0.185)	0.108	0.209
5	0.42	5.20	0.343	(0.185)	0.117	0.227
6	0.50	6.20	0.409	(0.185)	0.139	0.270
7	0.58	6.80	0.449	(0.185)	0.153	0.296
8	0.67	8.80	0.581	0.185	(0.197)	0.396
9	0.75	13.90	0.917	0.185	(0.312)	0.732
10	0.83	31.40	2.072	0.185	(0.705)	1.887
11	0.92	7.20	0.475	(0.185)	0.162	0.314
12	1.00	3.80	0.251	(0.185)	0.085	0.166
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	5.0

Flood volume = Effective rainfall 0.42(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.13(In)
Total soil loss = 0.041(Ac.Ft)
Total rainfall = 0.55(In)
Flood volume = 5612.1 Cubic Feet
Total soil loss = 1774.7 Cubic Feet

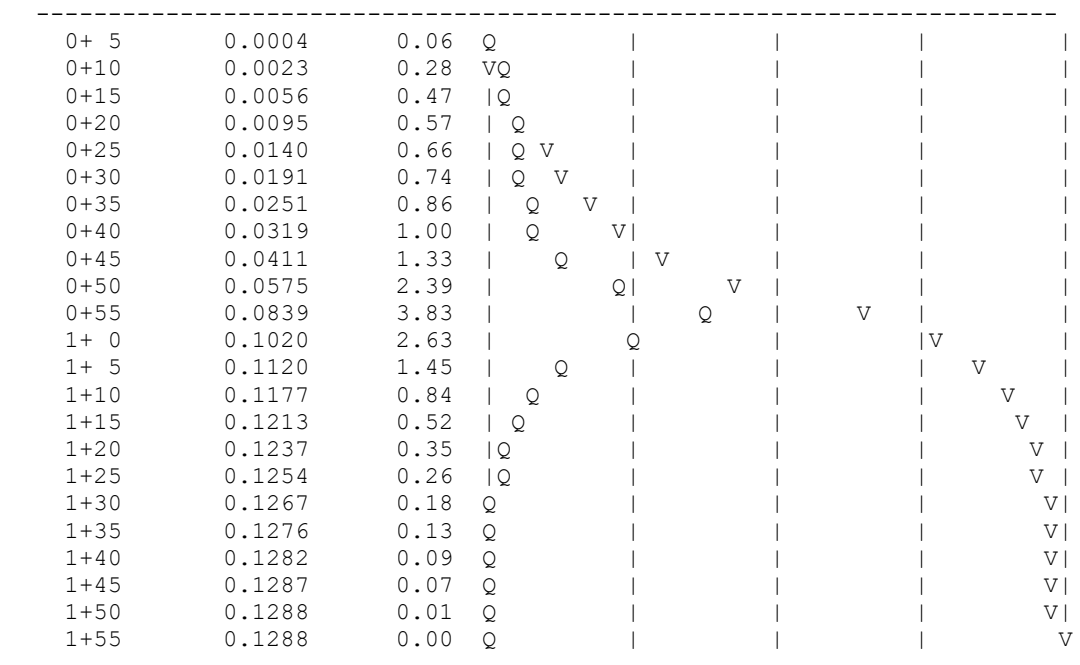
Peak flow rate of this hydrograph = 3.830(CFS)

++

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	2.5	5.0	7.5	10.0



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 02/20/20 File: 8946P2B132.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
2 YEAR - 3 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.121 Hr.
Lag time = 7.28 Min.
25% of lag time = 1.82 Min.
40% of lag time = 2.91 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]
3.70	0.90	3.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	2.25	8.33

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 0.900(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.900(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.700	0.185	1.000	0.185

Sum (F) = 0.185

Area averaged mean soil loss (F) (In/Hr) = 0.185
Minimum soil loss rate ((In/Hr)) = 0.093
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	68.700	10.295	0.384
2	0.167	137.400	39.412	1.470
3	0.250	206.101	23.599	0.880
4	0.333	274.801	9.133	0.341
5	0.417	343.501	5.554	0.207
6	0.500	412.201	3.714	0.138
7	0.583	480.901	2.468	0.092
8	0.667	549.602	1.939	0.072
9	0.750	618.302	1.387	0.052
10	0.833	687.002	0.996	0.037
11	0.917	755.702	0.716	0.027
12	1.000	824.402	0.786	0.029
		Sum = 100.000	Sum=	3.729

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	0.140	(0.185)	0.048	0.093
2	0.17	1.30	0.140	(0.185)	0.048	0.093
3	0.25	1.10	0.119	(0.185)	0.040	0.078
4	0.33	1.50	0.162	(0.185)	0.055	0.107
5	0.42	1.50	0.162	(0.185)	0.055	0.107
6	0.50	1.80	0.194	(0.185)	0.066	0.128
7	0.58	1.50	0.162	(0.185)	0.055	0.107
8	0.67	1.80	0.194	(0.185)	0.066	0.128
9	0.75	1.80	0.194	(0.185)	0.066	0.128
10	0.83	1.50	0.162	(0.185)	0.055	0.107
11	0.92	1.60	0.173	(0.185)	0.059	0.114
12	1.00	1.80	0.194	(0.185)	0.066	0.128
13	1.08	2.20	0.238	(0.185)	0.081	0.157
14	1.17	2.20	0.238	(0.185)	0.081	0.157
15	1.25	2.20	0.238	(0.185)	0.081	0.157
16	1.33	2.00	0.216	(0.185)	0.073	0.143
17	1.42	2.60	0.281	(0.185)	0.095	0.185
18	1.50	2.70	0.292	(0.185)	0.099	0.192
19	1.58	2.40	0.259	(0.185)	0.088	0.171
20	1.67	2.70	0.292	(0.185)	0.099	0.192
21	1.75	3.30	0.356	(0.185)	0.121	0.235
22	1.83	3.10	0.335	(0.185)	0.114	0.221
23	1.92	2.90	0.313	(0.185)	0.106	0.207
24	2.00	3.00	0.324	(0.185)	0.110	0.214
25	2.08	3.10	0.335	(0.185)	0.114	0.221
26	2.17	4.20	0.454	(0.185)	0.154	0.299
27	2.25	5.00	0.540	(0.185)	0.184	0.356
28	2.33	3.50	0.378	(0.185)	0.129	0.249
29	2.42	6.80	0.734	0.185	(0.250)	0.549
30	2.50	7.30	0.788	0.185	(0.268)	0.603
31	2.58	8.20	0.886	0.185	(0.301)	0.700
32	2.67	5.90	0.637	0.185	(0.217)	0.452
33	2.75	2.00	0.216	(0.185)	0.073	0.143
34	2.83	1.80	0.194	(0.185)	0.066	0.128

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35   2.92     1.80      0.194       (  0.185)       0.066        0.128
36   3.00     0.60      0.065       (  0.185)       0.022        0.043
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =     7.4
     Flood volume = Effective rainfall      0.62(In)
      times area       3.7(Ac.)/[(In)/(Ft.)] =       0.2(Ac.Ft)
     Total soil loss =      0.28(In)
     Total soil loss =     0.087(Ac.Ft)
     Total rainfall =      0.90(In)
     Flood volume =        8307.6 Cubic Feet
     Total soil loss =        3780.1 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      2.098(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.04  Q         |         |         |         |
  0+10       0.0014      0.17  Q         |         |         |         |
  0+15       0.0031      0.25  Q         |         |         |         |
  0+20       0.0050      0.27  |Q        |         |         |         |
  0+25       0.0072      0.32  |Q        |         |         |         |
  0+30       0.0097      0.36  |QV       |         |         |         |
  0+35       0.0124      0.40  |QV       |         |         |         |
  0+40       0.0152      0.40  |Q V      |         |         |         |
  0+45       0.0182      0.43  |Q V      |         |         |         |
  0+50       0.0212      0.44  |Q  V     |         |         |         |
  0+55       0.0241      0.43  |Q   V    |         |         |         |
  1+ 0       0.0271      0.43  |Q   V    |         |         |         |
  1+ 5       0.0303      0.46  |Q    V   |         |         |         |
  1+10       0.0339      0.52  | Q    V  |         |         |         |
  1+15       0.0376      0.55  | Q    V  |         |         |         |
  1+20       0.0415      0.56  | Q     V |         |         |         |
  1+25       0.0453      0.56  | Q      V|         |         |         |
  1+30       0.0496      0.62  | Q       V         |         |         |
  1+35       0.0541      0.66  | Q       |V        |         |         |
  1+40       0.0586      0.65  | Q       | V       |         |         |
  1+45       0.0633      0.69  | Q       |  V      |         |         |
  1+50       0.0686      0.77  |  Q      |   V     |         |         |
  1+55       0.0741      0.79  |  Q      |    V    |         |         |
  2+ 0       0.0794      0.78  |  Q      |     V   |         |         |
  2+ 5       0.0848      0.79  |  Q      |      V  |         |         |
  2+10       0.0906      0.83  |  Q      |       V |         |         |
  2+15       0.0973      0.98  |  Q      |         V         |         |
  2+20       0.1048      1.10  |   Q     |         |V        |         |
  2+25       0.1127      1.13  |   Q     |         |  V      |         |
  2+30       0.1232      1.54  |     Q   |         |    V    |         |
  2+35       0.1364      1.91  |      Q  |         |       V |         |
  2+40       0.1508      2.10  |       Q |         |         |V        |
  2+45       0.1630      1.78  |      Q  |         |         |   V     |
  2+50       0.1712      1.18  |   Q     |         |         |    V    |
  2+55       0.1771      0.86  |  Q      |         |         |      V  |
  3+ 0       0.1819      0.69  | Q       |         |         |       V |
  3+ 5       0.1851      0.48  |Q        |         |         |       V |
  3+10       0.1871      0.29  |Q        |         |         |        V|
  3+15       0.1884      0.19  Q         |         |         |        V|
  3+20       0.1893      0.13  Q         |         |         |        V|
  3+25       0.1899      0.09  Q         |         |         |        V|
  3+30       0.1903      0.06  Q         |         |         |        V|
  3+35       0.1905      0.03  Q         |         |         |        V|
  3+40       0.1906      0.01  Q         |         |         |        V|
  3+45       0.1907      0.01  Q         |         |         |        V|
  3+50       0.1907      0.00  Q         |         |         |        V|
  3+55       0.1907      0.00  Q         |         |         |         V
```

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

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Study date 02/20/20 File: 8946P2B162.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
2 YEAR - 6 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.121 Hr.
Lag time = 7.28 Min.
25% of lag time = 1.82 Min.
40% of lag time = 2.91 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]
3.70	1.30	4.81

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	3.00	11.10

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.700	0.185	1.000	0.185

Sum (F) = 0.185

Area averaged mean soil loss (F) (In/Hr) = 0.185
Minimum soil loss rate ((In/Hr)) = 0.093
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	68.700	10.295	0.384
2	0.167	137.400	39.412	1.470
3	0.250	206.101	23.599	0.880
4	0.333	274.801	9.133	0.341
5	0.417	343.501	5.554	0.207
6	0.500	412.201	3.714	0.138
7	0.583	480.901	2.468	0.092
8	0.667	549.602	1.939	0.072
9	0.750	618.302	1.387	0.052
10	0.833	687.002	0.996	0.037
11	0.917	755.702	0.716	0.027
12	1.000	824.402	0.786	0.029
		Sum = 100.000	Sum=	3.729

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	0.078	(0.185)	0.027	0.051
2	0.17	0.60	0.094	(0.185)	0.032	0.062
3	0.25	0.60	0.094	(0.185)	0.032	0.062
4	0.33	0.60	0.094	(0.185)	0.032	0.062
5	0.42	0.60	0.094	(0.185)	0.032	0.062
6	0.50	0.70	0.109	(0.185)	0.037	0.072
7	0.58	0.70	0.109	(0.185)	0.037	0.072
8	0.67	0.70	0.109	(0.185)	0.037	0.072
9	0.75	0.70	0.109	(0.185)	0.037	0.072
10	0.83	0.70	0.109	(0.185)	0.037	0.072
11	0.92	0.70	0.109	(0.185)	0.037	0.072
12	1.00	0.80	0.125	(0.185)	0.042	0.082
13	1.08	0.80	0.125	(0.185)	0.042	0.082
14	1.17	0.80	0.125	(0.185)	0.042	0.082
15	1.25	0.80	0.125	(0.185)	0.042	0.082
16	1.33	0.80	0.125	(0.185)	0.042	0.082
17	1.42	0.80	0.125	(0.185)	0.042	0.082
18	1.50	0.80	0.125	(0.185)	0.042	0.082
19	1.58	0.80	0.125	(0.185)	0.042	0.082
20	1.67	0.80	0.125	(0.185)	0.042	0.082
21	1.75	0.80	0.125	(0.185)	0.042	0.082
22	1.83	0.80	0.125	(0.185)	0.042	0.082
23	1.92	0.80	0.125	(0.185)	0.042	0.082
24	2.00	0.90	0.140	(0.185)	0.048	0.093
25	2.08	0.80	0.125	(0.185)	0.042	0.082
26	2.17	0.90	0.140	(0.185)	0.048	0.093
27	2.25	0.90	0.140	(0.185)	0.048	0.093
28	2.33	0.90	0.140	(0.185)	0.048	0.093
29	2.42	0.90	0.140	(0.185)	0.048	0.093
30	2.50	0.90	0.140	(0.185)	0.048	0.093
31	2.58	0.90	0.140	(0.185)	0.048	0.093
32	2.67	0.90	0.140	(0.185)	0.048	0.093
33	2.75	1.00	0.156	(0.185)	0.053	0.103
34	2.83	1.00	0.156	(0.185)	0.053	0.103

35	2.92	1.00	0.156	(	0.185)	0.053	0.103
36	3.00	1.00	0.156	(	0.185)	0.053	0.103
37	3.08	1.00	0.156	(	0.185)	0.053	0.103
38	3.17	1.10	0.172	(	0.185)	0.058	0.113
39	3.25	1.10	0.172	(	0.185)	0.058	0.113
40	3.33	1.10	0.172	(	0.185)	0.058	0.113
41	3.42	1.20	0.187	(	0.185)	0.064	0.124
42	3.50	1.30	0.203	(	0.185)	0.069	0.134
43	3.58	1.40	0.218	(	0.185)	0.074	0.144
44	3.67	1.40	0.218	(	0.185)	0.074	0.144
45	3.75	1.50	0.234	(	0.185)	0.080	0.154
46	3.83	1.50	0.234	(	0.185)	0.080	0.154
47	3.92	1.60	0.250	(	0.185)	0.085	0.165
48	4.00	1.60	0.250	(	0.185)	0.085	0.165
49	4.08	1.70	0.265	(	0.185)	0.090	0.175
50	4.17	1.80	0.281	(	0.185)	0.095	0.185
51	4.25	1.90	0.296	(	0.185)	0.101	0.196
52	4.33	2.00	0.312	(	0.185)	0.106	0.206
53	4.42	2.10	0.328	(	0.185)	0.111	0.216
54	4.50	2.10	0.328	(	0.185)	0.111	0.216
55	4.58	2.20	0.343	(	0.185)	0.117	0.227
56	4.67	2.30	0.359	(	0.185)	0.122	0.237
57	4.75	2.40	0.374	(	0.185)	0.127	0.247
58	4.83	2.40	0.374	(	0.185)	0.127	0.247
59	4.92	2.50	0.390	(	0.185)	0.133	0.257
60	5.00	2.60	0.406	(	0.185)	0.138	0.268
61	5.08	3.10	0.484	(	0.185)	0.164	0.319
62	5.17	3.60	0.562		0.185	(0.191)	0.376
63	5.25	3.90	0.608		0.185	(0.207)	0.423
64	5.33	4.20	0.655		0.185	(0.223)	0.470
65	5.42	4.70	0.733		0.185	(0.249)	0.548
66	5.50	5.60	0.874		0.185	(0.297)	0.688
67	5.58	1.90	0.296	(	0.185)	0.101	0.196
68	5.67	0.90	0.140	(	0.185)	0.048	0.093
69	5.75	0.60	0.094	(	0.185)	0.032	0.062
70	5.83	0.50	0.078	(	0.185)	0.027	0.051
71	5.92	0.30	0.047	(	0.185)	0.016	0.031
72	6.00	0.20	0.031	(	0.185)	0.011	0.021

(Loss Rate Not Used)

Sum = 100.0 Sum = 10.5

Flood volume = Effective rainfall 0.88(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)
Total soil loss = 0.42(In)
Total soil loss = 0.130(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 11793.1 Cubic Feet
Total soil loss = 5667.0 Cubic Feet

Peak flow rate of this hydrograph = 1.955(CFS)

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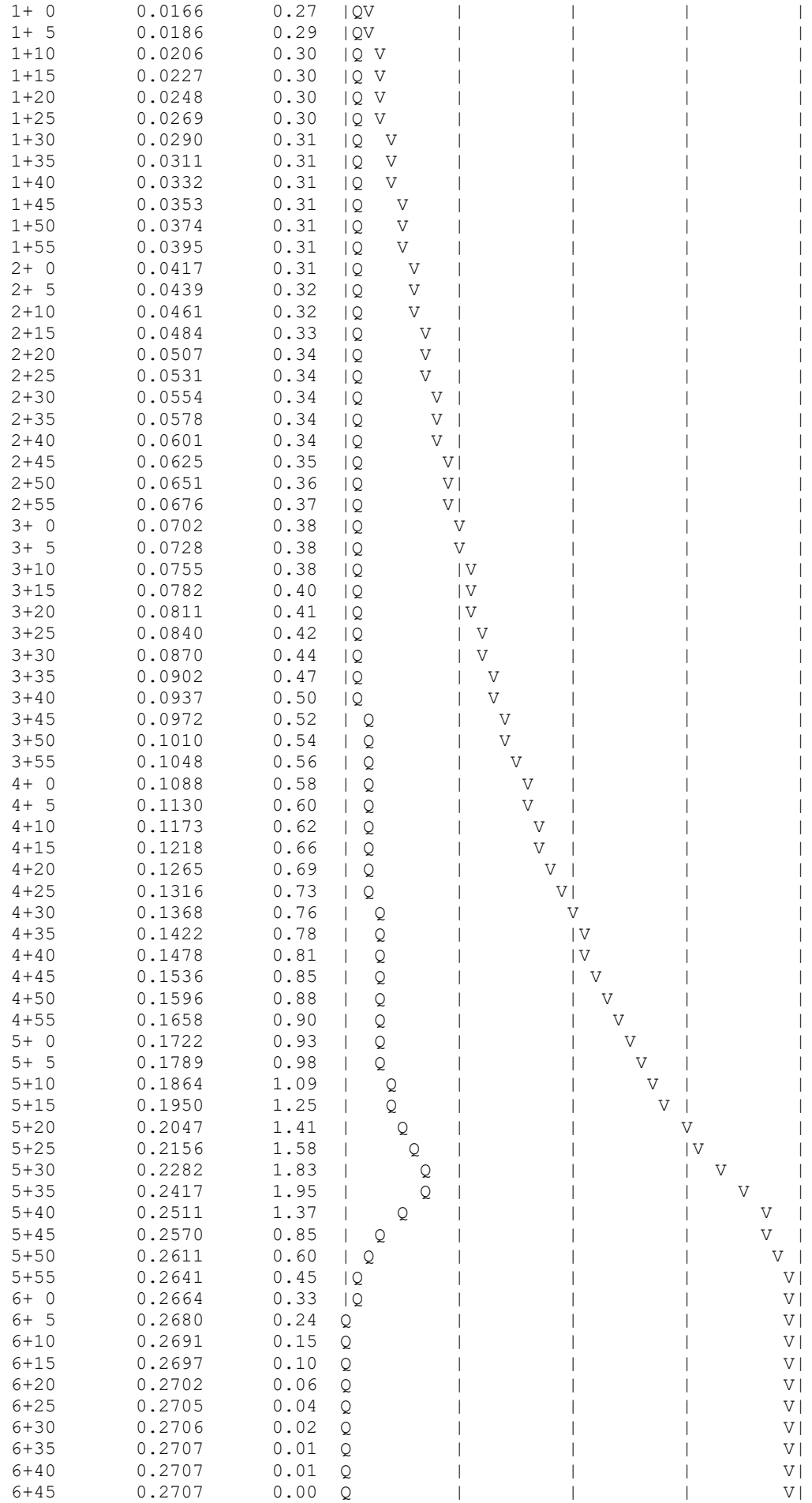
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.02	Q				
0+10	0.0008	0.10	Q				
0+15	0.0019	0.16	Q				
0+20	0.0032	0.19	Q				
0+25	0.0046	0.20	Q				
0+30	0.0061	0.21	Q				
0+35	0.0077	0.24	QV				
0+40	0.0094	0.25	QV				
0+45	0.0112	0.26	|Q				
0+50	0.0130	0.26	|Q				
0+55	0.0148	0.26	|QV				



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    6+50       0.2707      0.00  Q          |          |          |        V|
    6+55       0.2707      0.00  Q          |          |          |         V
-------------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946P2B1242.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
2 YEAR - 24 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.121 Hr.
Lag time = 7.28 Min.
25% of lag time = 1.82 Min.
40% of lag time = 2.91 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]
3.70	2.25	8.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	5.25	19.43

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.700	0.185	1.000	0.185

Sum (F) = 0.185

Area averaged mean soil loss (F) (In/Hr) = 0.185
Minimum soil loss rate ((In/Hr)) = 0.093
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	68.700	10.295	0.384
2	0.167	137.400	39.412	1.470
3	0.250	206.101	23.599	0.880
4	0.333	274.801	9.133	0.341
5	0.417	343.501	5.554	0.207
6	0.500	412.201	3.714	0.138
7	0.583	480.901	2.468	0.092
8	0.667	549.602	1.939	0.072
9	0.750	618.302	1.387	0.052
10	0.833	687.002	0.996	0.037
11	0.917	755.702	0.716	0.027
12	1.000	824.402	0.786	0.029
		Sum = 100.000	Sum=	3.729

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	0.018	(0.328)		0.006	0.012
2	0.17	0.07	0.018	(0.327)		0.006	0.012
3	0.25	0.07	0.018	(0.326)		0.006	0.012
4	0.33	0.10	0.027	(0.325)		0.009	0.018
5	0.42	0.10	0.027	(0.323)		0.009	0.018
6	0.50	0.10	0.027	(0.322)		0.009	0.018
7	0.58	0.10	0.027	(0.321)		0.009	0.018
8	0.67	0.10	0.027	(0.320)		0.009	0.018
9	0.75	0.10	0.027	(0.318)		0.009	0.018
10	0.83	0.13	0.036	(0.317)		0.012	0.024
11	0.92	0.13	0.036	(0.316)		0.012	0.024
12	1.00	0.13	0.036	(0.315)		0.012	0.024
13	1.08	0.10	0.027	(0.313)		0.009	0.018
14	1.17	0.10	0.027	(0.312)		0.009	0.018
15	1.25	0.10	0.027	(0.311)		0.009	0.018
16	1.33	0.10	0.027	(0.310)		0.009	0.018
17	1.42	0.10	0.027	(0.308)		0.009	0.018
18	1.50	0.10	0.027	(0.307)		0.009	0.018
19	1.58	0.10	0.027	(0.306)		0.009	0.018
20	1.67	0.10	0.027	(0.305)		0.009	0.018
21	1.75	0.10	0.027	(0.303)		0.009	0.018
22	1.83	0.13	0.036	(0.302)		0.012	0.024
23	1.92	0.13	0.036	(0.301)		0.012	0.024
24	2.00	0.13	0.036	(0.300)		0.012	0.024
25	2.08	0.13	0.036	(0.299)		0.012	0.024
26	2.17	0.13	0.036	(0.297)		0.012	0.024
27	2.25	0.13	0.036	(0.296)		0.012	0.024
28	2.33	0.13	0.036	(0.295)		0.012	0.024
29	2.42	0.13	0.036	(0.294)		0.012	0.024
30	2.50	0.13	0.036	(0.293)		0.012	0.024
31	2.58	0.17	0.045	(0.291)		0.015	0.030
32	2.67	0.17	0.045	(0.290)		0.015	0.030
33	2.75	0.17	0.045	(0.289)		0.015	0.030
34	2.83	0.17	0.045	(0.288)		0.015	0.030

35	2.92	0.17	0.045	(0.287)	0.015	0.030
36	3.00	0.17	0.045	(0.285)	0.015	0.030
37	3.08	0.17	0.045	(0.284)	0.015	0.030
38	3.17	0.17	0.045	(0.283)	0.015	0.030
39	3.25	0.17	0.045	(0.282)	0.015	0.030
40	3.33	0.17	0.045	(0.281)	0.015	0.030
41	3.42	0.17	0.045	(0.279)	0.015	0.030
42	3.50	0.17	0.045	(0.278)	0.015	0.030
43	3.58	0.17	0.045	(0.277)	0.015	0.030
44	3.67	0.17	0.045	(0.276)	0.015	0.030
45	3.75	0.17	0.045	(0.275)	0.015	0.030
46	3.83	0.20	0.054	(0.274)	0.018	0.036
47	3.92	0.20	0.054	(0.273)	0.018	0.036
48	4.00	0.20	0.054	(0.271)	0.018	0.036
49	4.08	0.20	0.054	(0.270)	0.018	0.036
50	4.17	0.20	0.054	(0.269)	0.018	0.036
51	4.25	0.20	0.054	(0.268)	0.018	0.036
52	4.33	0.23	0.063	(0.267)	0.021	0.042
53	4.42	0.23	0.063	(0.266)	0.021	0.042
54	4.50	0.23	0.063	(0.265)	0.021	0.042
55	4.58	0.23	0.063	(0.263)	0.021	0.042
56	4.67	0.23	0.063	(0.262)	0.021	0.042
57	4.75	0.23	0.063	(0.261)	0.021	0.042
58	4.83	0.27	0.072	(0.260)	0.024	0.048
59	4.92	0.27	0.072	(0.259)	0.024	0.048
60	5.00	0.27	0.072	(0.258)	0.024	0.048
61	5.08	0.20	0.054	(0.257)	0.018	0.036
62	5.17	0.20	0.054	(0.256)	0.018	0.036
63	5.25	0.20	0.054	(0.254)	0.018	0.036
64	5.33	0.23	0.063	(0.253)	0.021	0.042
65	5.42	0.23	0.063	(0.252)	0.021	0.042
66	5.50	0.23	0.063	(0.251)	0.021	0.042
67	5.58	0.27	0.072	(0.250)	0.024	0.048
68	5.67	0.27	0.072	(0.249)	0.024	0.048
69	5.75	0.27	0.072	(0.248)	0.024	0.048
70	5.83	0.27	0.072	(0.247)	0.024	0.048
71	5.92	0.27	0.072	(0.246)	0.024	0.048
72	6.00	0.27	0.072	(0.244)	0.024	0.048
73	6.08	0.30	0.081	(0.243)	0.028	0.053
74	6.17	0.30	0.081	(0.242)	0.028	0.053
75	6.25	0.30	0.081	(0.241)	0.028	0.053
76	6.33	0.30	0.081	(0.240)	0.028	0.053
77	6.42	0.30	0.081	(0.239)	0.028	0.053
78	6.50	0.30	0.081	(0.238)	0.028	0.053
79	6.58	0.33	0.090	(0.237)	0.031	0.059
80	6.67	0.33	0.090	(0.236)	0.031	0.059
81	6.75	0.33	0.090	(0.235)	0.031	0.059
82	6.83	0.33	0.090	(0.234)	0.031	0.059
83	6.92	0.33	0.090	(0.233)	0.031	0.059
84	7.00	0.33	0.090	(0.232)	0.031	0.059
85	7.08	0.33	0.090	(0.231)	0.031	0.059
86	7.17	0.33	0.090	(0.230)	0.031	0.059
87	7.25	0.33	0.090	(0.228)	0.031	0.059
88	7.33	0.37	0.099	(0.227)	0.034	0.065
89	7.42	0.37	0.099	(0.226)	0.034	0.065
90	7.50	0.37	0.099	(0.225)	0.034	0.065
91	7.58	0.40	0.108	(0.224)	0.037	0.071
92	7.67	0.40	0.108	(0.223)	0.037	0.071
93	7.75	0.40	0.108	(0.222)	0.037	0.071
94	7.83	0.43	0.117	(0.221)	0.040	0.077
95	7.92	0.43	0.117	(0.220)	0.040	0.077
96	8.00	0.43	0.117	(0.219)	0.040	0.077
97	8.08	0.50	0.135	(0.218)	0.046	0.089
98	8.17	0.50	0.135	(0.217)	0.046	0.089
99	8.25	0.50	0.135	(0.216)	0.046	0.089
100	8.33	0.50	0.135	(0.215)	0.046	0.089
101	8.42	0.50	0.135	(0.214)	0.046	0.089
102	8.50	0.50	0.135	(0.213)	0.046	0.089
103	8.58	0.53	0.144	(0.212)	0.049	0.095
104	8.67	0.53	0.144	(0.211)	0.049	0.095

105	8.75	0.53	0.144	(0.210)	0.049	0.095
106	8.83	0.57	0.153	(0.209)	0.052	0.101
107	8.92	0.57	0.153	(0.208)	0.052	0.101
108	9.00	0.57	0.153	(0.207)	0.052	0.101
109	9.08	0.63	0.171	(0.206)	0.058	0.113
110	9.17	0.63	0.171	(0.205)	0.058	0.113
111	9.25	0.63	0.171	(0.204)	0.058	0.113
112	9.33	0.67	0.180	(0.203)	0.061	0.119
113	9.42	0.67	0.180	(0.202)	0.061	0.119
114	9.50	0.67	0.180	(0.201)	0.061	0.119
115	9.58	0.70	0.189	(0.200)	0.064	0.125
116	9.67	0.70	0.189	(0.199)	0.064	0.125
117	9.75	0.70	0.189	(0.198)	0.064	0.125
118	9.83	0.73	0.198	(0.197)	0.067	0.131
119	9.92	0.73	0.198	(0.197)	0.067	0.131
120	10.00	0.73	0.198	(0.196)	0.067	0.131
121	10.08	0.50	0.135	(0.195)	0.046	0.089
122	10.17	0.50	0.135	(0.194)	0.046	0.089
123	10.25	0.50	0.135	(0.193)	0.046	0.089
124	10.33	0.50	0.135	(0.192)	0.046	0.089
125	10.42	0.50	0.135	(0.191)	0.046	0.089
126	10.50	0.50	0.135	(0.190)	0.046	0.089
127	10.58	0.67	0.180	(0.189)	0.061	0.119
128	10.67	0.67	0.180	(0.188)	0.061	0.119
129	10.75	0.67	0.180	(0.187)	0.061	0.119
130	10.83	0.67	0.180	(0.186)	0.061	0.119
131	10.92	0.67	0.180	(0.185)	0.061	0.119
132	11.00	0.67	0.180	(0.184)	0.061	0.119
133	11.08	0.63	0.171	(0.184)	0.058	0.113
134	11.17	0.63	0.171	(0.183)	0.058	0.113
135	11.25	0.63	0.171	(0.182)	0.058	0.113
136	11.33	0.63	0.171	(0.181)	0.058	0.113
137	11.42	0.63	0.171	(0.180)	0.058	0.113
138	11.50	0.63	0.171	(0.179)	0.058	0.113
139	11.58	0.57	0.153	(0.178)	0.052	0.101
140	11.67	0.57	0.153	(0.177)	0.052	0.101
141	11.75	0.57	0.153	(0.176)	0.052	0.101
142	11.83	0.60	0.162	(0.176)	0.055	0.107
143	11.92	0.60	0.162	(0.175)	0.055	0.107
144	12.00	0.60	0.162	(0.174)	0.055	0.107
145	12.08	0.83	0.225	(0.173)	0.076	0.148
146	12.17	0.83	0.225	(0.172)	0.076	0.148
147	12.25	0.83	0.225	(0.171)	0.076	0.148
148	12.33	0.87	0.234	(0.170)	0.080	0.154
149	12.42	0.87	0.234	(0.169)	0.080	0.154
150	12.50	0.87	0.234	(0.169)	0.080	0.154
151	12.58	0.93	0.252	(0.168)	0.086	0.166
152	12.67	0.93	0.252	(0.167)	0.086	0.166
153	12.75	0.93	0.252	(0.166)	0.086	0.166
154	12.83	0.97	0.261	(0.165)	0.089	0.172
155	12.92	0.97	0.261	(0.164)	0.089	0.172
156	13.00	0.97	0.261	(0.164)	0.089	0.172
157	13.08	1.13	0.306	(0.163)	0.104	0.202
158	13.17	1.13	0.306	(0.162)	0.104	0.202
159	13.25	1.13	0.306	(0.161)	0.104	0.202
160	13.33	1.13	0.306	(0.160)	0.104	0.202
161	13.42	1.13	0.306	(0.159)	0.104	0.202
162	13.50	1.13	0.306	(0.159)	0.104	0.202
163	13.58	0.77	0.207	(0.158)	0.070	0.137
164	13.67	0.77	0.207	(0.157)	0.070	0.137
165	13.75	0.77	0.207	(0.156)	0.070	0.137
166	13.83	0.77	0.207	(0.155)	0.070	0.137
167	13.92	0.77	0.207	(0.155)	0.070	0.137
168	14.00	0.77	0.207	(0.154)	0.070	0.137
169	14.08	0.90	0.243	(0.153)	0.083	0.160
170	14.17	0.90	0.243	(0.152)	0.083	0.160
171	14.25	0.90	0.243	(0.152)	0.083	0.160
172	14.33	0.87	0.234	(0.151)	0.080	0.154
173	14.42	0.87	0.234	(0.150)	0.080	0.154
174	14.50	0.87	0.234	(0.149)	0.080	0.154

175	14.58	0.87	0.234	(0.148)	0.080	0.154
176	14.67	0.87	0.234	(0.148)	0.080	0.154
177	14.75	0.87	0.234	(0.147)	0.080	0.154
178	14.83	0.83	0.225	(0.146)	0.076	0.148
179	14.92	0.83	0.225	(0.145)	0.076	0.148
180	15.00	0.83	0.225	(0.145)	0.076	0.148
181	15.08	0.80	0.216	(0.144)	0.073	0.143
182	15.17	0.80	0.216	(0.143)	0.073	0.143
183	15.25	0.80	0.216	(0.142)	0.073	0.143
184	15.33	0.77	0.207	(0.142)	0.070	0.137
185	15.42	0.77	0.207	(0.141)	0.070	0.137
186	15.50	0.77	0.207	(0.140)	0.070	0.137
187	15.58	0.63	0.171	(0.140)	0.058	0.113
188	15.67	0.63	0.171	(0.139)	0.058	0.113
189	15.75	0.63	0.171	(0.138)	0.058	0.113
190	15.83	0.63	0.171	(0.137)	0.058	0.113
191	15.92	0.63	0.171	(0.137)	0.058	0.113
192	16.00	0.63	0.171	(0.136)	0.058	0.113
193	16.08	0.13	0.036	(0.135)	0.012	0.024
194	16.17	0.13	0.036	(0.135)	0.012	0.024
195	16.25	0.13	0.036	(0.134)	0.012	0.024
196	16.33	0.13	0.036	(0.133)	0.012	0.024
197	16.42	0.13	0.036	(0.133)	0.012	0.024
198	16.50	0.13	0.036	(0.132)	0.012	0.024
199	16.58	0.10	0.027	(0.131)	0.009	0.018
200	16.67	0.10	0.027	(0.131)	0.009	0.018
201	16.75	0.10	0.027	(0.130)	0.009	0.018
202	16.83	0.10	0.027	(0.129)	0.009	0.018
203	16.92	0.10	0.027	(0.129)	0.009	0.018
204	17.00	0.10	0.027	(0.128)	0.009	0.018
205	17.08	0.17	0.045	(0.127)	0.015	0.030
206	17.17	0.17	0.045	(0.127)	0.015	0.030
207	17.25	0.17	0.045	(0.126)	0.015	0.030
208	17.33	0.17	0.045	(0.125)	0.015	0.030
209	17.42	0.17	0.045	(0.125)	0.015	0.030
210	17.50	0.17	0.045	(0.124)	0.015	0.030
211	17.58	0.17	0.045	(0.124)	0.015	0.030
212	17.67	0.17	0.045	(0.123)	0.015	0.030
213	17.75	0.17	0.045	(0.122)	0.015	0.030
214	17.83	0.13	0.036	(0.122)	0.012	0.024
215	17.92	0.13	0.036	(0.121)	0.012	0.024
216	18.00	0.13	0.036	(0.120)	0.012	0.024
217	18.08	0.13	0.036	(0.120)	0.012	0.024
218	18.17	0.13	0.036	(0.119)	0.012	0.024
219	18.25	0.13	0.036	(0.119)	0.012	0.024
220	18.33	0.13	0.036	(0.118)	0.012	0.024
221	18.42	0.13	0.036	(0.118)	0.012	0.024
222	18.50	0.13	0.036	(0.117)	0.012	0.024
223	18.58	0.10	0.027	(0.116)	0.009	0.018
224	18.67	0.10	0.027	(0.116)	0.009	0.018
225	18.75	0.10	0.027	(0.115)	0.009	0.018
226	18.83	0.07	0.018	(0.115)	0.006	0.012
227	18.92	0.07	0.018	(0.114)	0.006	0.012
228	19.00	0.07	0.018	(0.114)	0.006	0.012
229	19.08	0.10	0.027	(0.113)	0.009	0.018
230	19.17	0.10	0.027	(0.113)	0.009	0.018
231	19.25	0.10	0.027	(0.112)	0.009	0.018
232	19.33	0.13	0.036	(0.112)	0.012	0.024
233	19.42	0.13	0.036	(0.111)	0.012	0.024
234	19.50	0.13	0.036	(0.111)	0.012	0.024
235	19.58	0.10	0.027	(0.110)	0.009	0.018
236	19.67	0.10	0.027	(0.110)	0.009	0.018
237	19.75	0.10	0.027	(0.109)	0.009	0.018
238	19.83	0.07	0.018	(0.109)	0.006	0.012
239	19.92	0.07	0.018	(0.108)	0.006	0.012
240	20.00	0.07	0.018	(0.108)	0.006	0.012
241	20.08	0.10	0.027	(0.107)	0.009	0.018
242	20.17	0.10	0.027	(0.107)	0.009	0.018
243	20.25	0.10	0.027	(0.106)	0.009	0.018
244	20.33	0.10	0.027	(0.106)	0.009	0.018

245	20.42	0.10	0.027	(	0.105)	0.009	0.018
246	20.50	0.10	0.027	(	0.105)	0.009	0.018
247	20.58	0.10	0.027	(	0.104)	0.009	0.018
248	20.67	0.10	0.027	(	0.104)	0.009	0.018
249	20.75	0.10	0.027	(	0.103)	0.009	0.018
250	20.83	0.07	0.018	(	0.103)	0.006	0.012
251	20.92	0.07	0.018	(	0.103)	0.006	0.012
252	21.00	0.07	0.018	(	0.102)	0.006	0.012
253	21.08	0.10	0.027	(	0.102)	0.009	0.018
254	21.17	0.10	0.027	(	0.101)	0.009	0.018
255	21.25	0.10	0.027	(	0.101)	0.009	0.018
256	21.33	0.07	0.018	(	0.101)	0.006	0.012
257	21.42	0.07	0.018	(	0.100)	0.006	0.012
258	21.50	0.07	0.018	(	0.100)	0.006	0.012
259	21.58	0.10	0.027	(	0.100)	0.009	0.018
260	21.67	0.10	0.027	(	0.099)	0.009	0.018
261	21.75	0.10	0.027	(	0.099)	0.009	0.018
262	21.83	0.07	0.018	(	0.098)	0.006	0.012
263	21.92	0.07	0.018	(	0.098)	0.006	0.012
264	22.00	0.07	0.018	(	0.098)	0.006	0.012
265	22.08	0.10	0.027	(	0.097)	0.009	0.018
266	22.17	0.10	0.027	(	0.097)	0.009	0.018
267	22.25	0.10	0.027	(	0.097)	0.009	0.018
268	22.33	0.07	0.018	(	0.097)	0.006	0.012
269	22.42	0.07	0.018	(	0.096)	0.006	0.012
270	22.50	0.07	0.018	(	0.096)	0.006	0.012
271	22.58	0.07	0.018	(	0.096)	0.006	0.012
272	22.67	0.07	0.018	(	0.095)	0.006	0.012
273	22.75	0.07	0.018	(	0.095)	0.006	0.012
274	22.83	0.07	0.018	(	0.095)	0.006	0.012
275	22.92	0.07	0.018	(	0.095)	0.006	0.012
276	23.00	0.07	0.018	(	0.094)	0.006	0.012
277	23.08	0.07	0.018	(	0.094)	0.006	0.012
278	23.17	0.07	0.018	(	0.094)	0.006	0.012
279	23.25	0.07	0.018	(	0.094)	0.006	0.012
280	23.33	0.07	0.018	(	0.094)	0.006	0.012
281	23.42	0.07	0.018	(	0.093)	0.006	0.012
282	23.50	0.07	0.018	(	0.093)	0.006	0.012
283	23.58	0.07	0.018	(	0.093)	0.006	0.012
284	23.67	0.07	0.018	(	0.093)	0.006	0.012
285	23.75	0.07	0.018	(	0.093)	0.006	0.012
286	23.83	0.07	0.018	(	0.093)	0.006	0.012
287	23.92	0.07	0.018	(	0.093)	0.006	0.012
288	24.00	0.07	0.018	(	0.093)	0.006	0.012

(Loss Rate Not Used)

Sum = 100.0 Sum = 17.8

Flood volume = Effective rainfall 1.48(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)
Total soil loss = 0.76(In)
Total soil loss = 0.236(Ac.Ft)
Total rainfall = 2.25(In)
Flood volume = 19944.9 Cubic Feet
Total soil loss = 10274.6 Cubic Feet

Peak flow rate of this hydrograph = 0.744(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0002	0.02	Q	|	|	|	|
0+15	0.0004	0.03	Q	|	|	|	|
0+20	0.0007	0.04	Q	|	|	|	|
0+25	0.0010	0.05	Q	|	|	|	|

0+30	0.0014	0.06	Q	|	|	|	|
0+35	0.0018	0.06	Q	|	|	|	|
0+40	0.0023	0.06	Q	|	|	|	|
0+45	0.0027	0.06	Q	|	|	|	|
0+50	0.0031	0.07	Q	|	|	|	|
0+55	0.0037	0.08	Q	|	|	|	|
1+ 0	0.0042	0.08	Q	|	|	|	|
1+ 5	0.0048	0.08	Q	|	|	|	|
1+10	0.0053	0.07	Q	|	|	|	|
1+15	0.0058	0.07	Q	|	|	|	|
1+20	0.0063	0.07	Q	|	|	|	|
1+25	0.0068	0.07	Q	|	|	|	|
1+30	0.0072	0.07	Q	|	|	|	|
1+35	0.0077	0.07	Q	|	|	|	|
1+40	0.0081	0.07	Q	|	|	|	|
1+45	0.0086	0.07	Q	|	|	|	|
1+50	0.0091	0.07	Q	|	|	|	|
1+55	0.0096	0.08	Q	|	|	|	|
2+ 0	0.0102	0.08	Q	|	|	|	|
2+ 5	0.0108	0.08	Q	|	|	|	|
2+10	0.0114	0.09	Q	|	|	|	|
2+15	0.0120	0.09	QV	|	|	|	|
2+20	0.0126	0.09	QV	|	|	|	|
2+25	0.0132	0.09	QV	|	|	|	|
2+30	0.0138	0.09	QV	|	|	|	|
2+35	0.0144	0.09	QV	|	|	|	|
2+40	0.0151	0.10	QV	|	|	|	|
2+45	0.0158	0.10	QV	|	|	|	|
2+50	0.0165	0.11	QV	|	|	|	|
2+55	0.0173	0.11	QV	|	|	|	|
3+ 0	0.0180	0.11	QV	|	|	|	|
3+ 5	0.0188	0.11	QV	|	|	|	|
3+10	0.0196	0.11	QV	|	|	|	|
3+15	0.0203	0.11	QV	|	|	|	|
3+20	0.0211	0.11	QV	|	|	|	|
3+25	0.0218	0.11	QV	|	|	|	|
3+30	0.0226	0.11	QV	|	|	|	|
3+35	0.0234	0.11	Q V	|	|	|	|
3+40	0.0241	0.11	Q V	|	|	|	|
3+45	0.0249	0.11	Q V	|	|	|	|
3+50	0.0257	0.11	Q V	|	|	|	|
3+55	0.0265	0.12	Q V	|	|	|	|
4+ 0	0.0274	0.13	Q V	|	|	|	|
4+ 5	0.0283	0.13	Q V	|	|	|	|
4+10	0.0292	0.13	Q V	|	|	|	|
4+15	0.0301	0.13	Q V	|	|	|	|
4+20	0.0310	0.13	Q V	|	|	|	|
4+25	0.0320	0.14	Q V	|	|	|	|
4+30	0.0330	0.15	Q V	|	|	|	|
4+35	0.0340	0.15	Q V	|	|	|	|
4+40	0.0351	0.15	Q V	|	|	|	|
4+45	0.0361	0.15	Q V	|	|	|	|
4+50	0.0372	0.16	Q V	|	|	|	|
4+55	0.0384	0.17	Q V	|	|	|	|
5+ 0	0.0395	0.17	Q V	|	|	|	|
5+ 5	0.0407	0.17	Q V	|	|	|	|
5+10	0.0417	0.15	Q V	|	|	|	|
5+15	0.0427	0.14	Q V	|	|	|	|
5+20	0.0437	0.14	Q V	|	|	|	|
5+25	0.0447	0.15	Q V	|	|	|	|
5+30	0.0458	0.15	Q V	|	|	|	|
5+35	0.0468	0.16	Q V	|	|	|	|
5+40	0.0480	0.17	Q V	|	|	|	|
5+45	0.0492	0.17	Q V	|	|	|	|
5+50	0.0503	0.17	Q V	|	|	|	|
5+55	0.0515	0.17	Q V	|	|	|	|
6+ 0	0.0528	0.17	Q V	|	|	|	|
6+ 5	0.0540	0.18	Q V	|	|	|	|
6+10	0.0553	0.19	Q V	|	|	|	|
6+15	0.0566	0.19	Q V	|	|	|	|

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 6+20       0.0579      0.20  Q    V    |         |         |         |
 6+25       0.0593      0.20  Q    V    |         |         |         |
 6+30       0.0607      0.20  Q    V    |         |         |         |
 6+35       0.0620      0.20  Q    V    |         |         |         |
 6+40       0.0635      0.21  Q    V    |         |         |         |
 6+45       0.0650      0.22  Q    V    |         |         |         |
 6+50       0.0665      0.22  Q    V    |         |         |         |
 6+55       0.0680      0.22  Q    V    |         |         |         |
 7+ 0       0.0695      0.22  Q     V   |         |         |         |
 7+ 5       0.0710      0.22  Q     V   |         |         |         |
 7+10       0.0725      0.22  Q     V   |         |         |         |
 7+15       0.0740      0.22  Q     V   |         |         |         |
 7+20       0.0756      0.22  Q     V   |         |         |         |
 7+25       0.0772      0.23  Q     V   |         |         |         |
 7+30       0.0788      0.24  Q     V   |         |         |         |
 7+35       0.0805      0.24  Q      V  |         |         |         |
 7+40       0.0822      0.25  |Q     V  |         |         |         |
 7+45       0.0840      0.26  |Q     V  |         |         |         |
 7+50       0.0858      0.26  |Q     V  |         |         |         |
 7+55       0.0877      0.27  |Q     V  |         |         |         |
 8+ 0       0.0896      0.28  |Q     V  |         |         |         |
 8+ 5       0.0916      0.29  |Q      V |         |         |         |
 8+10       0.0937      0.31  |Q      V |         |         |         |
 8+15       0.0959      0.32  |Q      V |         |         |         |
 8+20       0.0981      0.32  |Q      V |         |         |         |
 8+25       0.1004      0.33  |Q      V |         |         |         |
 8+30       0.1026      0.33  |Q      V |         |         |         |
 8+35       0.1049      0.33  |Q       V|         |         |         |
 8+40       0.1073      0.34  |Q       V|         |         |         |
 8+45       0.1097      0.35  |Q       V|         |         |         |
 8+50       0.1121      0.35  |Q       V|         |         |         |
 8+55       0.1146      0.36  |Q        V         |         |         |
 9+ 0       0.1171      0.37  |Q        V         |         |         |
 9+ 5       0.1197      0.38  |Q        V         |         |         |
 9+10       0.1224      0.40  |Q        V         |         |         |
 9+15       0.1252      0.41  |Q        V         |         |         |
 9+20       0.1281      0.41  |Q        |V        |         |         |
 9+25       0.1310      0.43  |Q        |V        |         |         |
 9+30       0.1340      0.43  |Q        |V        |         |         |
 9+35       0.1370      0.44  |Q        |V        |         |         |
 9+40       0.1401      0.45  |Q        | V       |         |         |
 9+45       0.1433      0.46  |Q        | V       |         |         |
 9+50       0.1465      0.46  |Q        | V       |         |         |
 9+55       0.1497      0.47  |Q        |  V      |         |         |
10+ 0       0.1530      0.48  |Q        |  V      |         |         |
10+ 5       0.1562      0.47  |Q        |  V      |         |         |
10+10       0.1590      0.41  |Q        |  V      |         |         |
10+15       0.1616      0.37  |Q        |   V     |         |         |
10+20       0.1640      0.36  |Q        |   V     |         |         |
10+25       0.1665      0.35  |Q        |   V     |         |         |
10+30       0.1688      0.34  |Q        |   V     |         |         |
10+35       0.1713      0.35  |Q        |   V     |         |         |
10+40       0.1740      0.39  |Q        |    V    |         |         |
10+45       0.1768      0.42  |Q        |    V    |         |         |
10+50       0.1798      0.43  |Q        |    V    |         |         |
10+55       0.1827      0.43  |Q        |    V    |         |         |
11+ 0       0.1857      0.43  |Q        |     V   |         |         |
11+ 5       0.1887      0.43  |Q        |     V   |         |         |
11+10       0.1917      0.43  |Q        |     V   |         |         |
11+15       0.1946      0.42  |Q        |     V   |         |         |
11+20       0.1975      0.42  |Q        |      V  |         |         |
11+25       0.2004      0.42  |Q        |      V  |         |         |
11+30       0.2033      0.42  |Q        |      V  |         |         |
11+35       0.2062      0.42  |Q        |       V |         |         |
11+40       0.2090      0.40  |Q        |       V |         |         |
11+45       0.2116      0.39  |Q        |       V |         |         |
11+50       0.2143      0.39  |Q        |       V |         |         |
11+55       0.2170      0.39  |Q        |       V |         |         |
12+ 0       0.2197      0.40  |Q        |        V|         |         |
12+ 5       0.2226      0.41  |Q        |        V|         |         |
```

12+10	0.2259	0.48	Q		V		
12+15	0.2294	0.51	Q		V		
12+20	0.2330	0.53	Q		V		
12+25	0.2368	0.55	Q		V		
12+30	0.2406	0.56	Q		V		
12+35	0.2445	0.57	Q		V		
12+40	0.2486	0.59	Q		V		
12+45	0.2527	0.60	Q		V		
12+50	0.2570	0.61	Q		V		
12+55	0.2613	0.62	Q		V		
13+ 0	0.2656	0.63	Q		V		
13+ 5	0.2701	0.65	Q		V		
13+10	0.2748	0.69	Q		V		
13+15	0.2798	0.72	Q		V		
13+20	0.2849	0.73	Q		V		
13+25	0.2899	0.74	Q		V		
13+30	0.2951	0.74	Q		V		
13+35	0.3000	0.72	Q		V		
13+40	0.3044	0.63	Q		V		
13+45	0.3083	0.57	Q		V		
13+50	0.3121	0.55	Q		V		
13+55	0.3158	0.54	Q		V		
14+ 0	0.3194	0.53	Q		V		
14+ 5	0.3231	0.53	Q		V		
14+10	0.3270	0.56	Q		V		
14+15	0.3310	0.58	Q		V		
14+20	0.3350	0.58	Q		V		
14+25	0.3390	0.58	Q		V		
14+30	0.3430	0.57	Q		V		
14+35	0.3469	0.57	Q		V		
14+40	0.3509	0.58	Q		V		
14+45	0.3548	0.58	Q		V		
14+50	0.3588	0.57	Q		V		
14+55	0.3627	0.57	Q		V		
15+ 0	0.3666	0.56	Q		V		
15+ 5	0.3704	0.56	Q		V		
15+10	0.3741	0.55	Q		V		
15+15	0.3779	0.54	Q		V		
15+20	0.3815	0.53	Q		V		
15+25	0.3852	0.52	Q		V		
15+30	0.3887	0.52	Q		V		
15+35	0.3922	0.51	Q		V		
15+40	0.3954	0.47	Q		V		
15+45	0.3985	0.45	Q		V		
15+50	0.4015	0.44	Q		V		
15+55	0.4045	0.43	Q		V		
16+ 0	0.4075	0.43	Q		V		
16+ 5	0.4102	0.39	Q		V		
16+10	0.4120	0.26	Q		V		
16+15	0.4132	0.18	Q		V		
16+20	0.4142	0.15	Q		V		
16+25	0.4151	0.13	Q		V		
16+30	0.4159	0.12	Q		V		
16+35	0.4166	0.11	Q		V		
16+40	0.4173	0.09	Q		V		
16+45	0.4178	0.08	Q		V		
16+50	0.4183	0.08	Q		V		
16+55	0.4188	0.07	Q		V		
17+ 0	0.4193	0.07	Q		V		
17+ 5	0.4198	0.07	Q		V		
17+10	0.4204	0.09	Q		V		
17+15	0.4211	0.10	Q		V		
17+20	0.4218	0.10	Q		V		
17+25	0.4225	0.11	Q		V		
17+30	0.4233	0.11	Q		V		
17+35	0.4240	0.11	Q		V		
17+40	0.4248	0.11	Q		V		
17+45	0.4255	0.11	Q		V		
17+50	0.4263	0.11	Q		V		
17+55	0.4270	0.10	Q		V		

18+ 0	0.4276	0.09	Q	|	|	|	V |
18+ 5	0.4282	0.09	Q	|	|	|	V |
18+10	0.4289	0.09	Q	|	|	|	V |
18+15	0.4295	0.09	Q	|	|	|	V |
18+20	0.4301	0.09	Q	|	|	|	V |
18+25	0.4307	0.09	Q	|	|	|	V |
18+30	0.4313	0.09	Q	|	|	|	V |
18+35	0.4319	0.09	Q	|	|	|	V |
18+40	0.4325	0.08	Q	|	|	|	V |
18+45	0.4330	0.07	Q	|	|	|	V |
18+50	0.4334	0.07	Q	|	|	|	V |
18+55	0.4338	0.06	Q	|	|	|	V |
19+ 0	0.4342	0.05	Q	|	|	|	V |
19+ 5	0.4346	0.05	Q	|	|	|	V |
19+10	0.4350	0.06	Q	|	|	|	V |
19+15	0.4354	0.06	Q	|	|	|	V |
19+20	0.4359	0.07	Q	|	|	|	V |
19+25	0.4364	0.08	Q	|	|	|	V |
19+30	0.4369	0.08	Q	|	|	|	V |
19+35	0.4375	0.08	Q	|	|	|	V |
19+40	0.4380	0.07	Q	|	|	|	V |
19+45	0.4385	0.07	Q	|	|	|	V |
19+50	0.4390	0.07	Q	|	|	|	V |
19+55	0.4394	0.06	Q	|	|	|	V |
20+ 0	0.4397	0.05	Q	|	|	|	V |
20+ 5	0.4401	0.05	Q	|	|	|	V |
20+10	0.4405	0.06	Q	|	|	|	V |
20+15	0.4409	0.06	Q	|	|	|	V |
20+20	0.4413	0.06	Q	|	|	|	V |
20+25	0.4418	0.06	Q	|	|	|	V |
20+30	0.4422	0.07	Q	|	|	|	V |
20+35	0.4427	0.07	Q	|	|	|	V |
20+40	0.4431	0.07	Q	|	|	|	V |
20+45	0.4436	0.07	Q	|	|	|	V |
20+50	0.4440	0.06	Q	|	|	|	V |
20+55	0.4444	0.06	Q	|	|	|	V |
21+ 0	0.4448	0.05	Q	|	|	|	V |
21+ 5	0.4451	0.05	Q	|	|	|	V |
21+10	0.4455	0.06	Q	|	|	|	V |
21+15	0.4459	0.06	Q	|	|	|	V |
21+20	0.4464	0.06	Q	|	|	|	V |
21+25	0.4467	0.05	Q	|	|	|	V|
21+30	0.4471	0.05	Q	|	|	|	V|
21+35	0.4474	0.05	Q	|	|	|	V|
21+40	0.4478	0.06	Q	|	|	|	V|
21+45	0.4482	0.06	Q	|	|	|	V|
21+50	0.4487	0.06	Q	|	|	|	V|
21+55	0.4490	0.05	Q	|	|	|	V|
22+ 0	0.4494	0.05	Q	|	|	|	V|
22+ 5	0.4497	0.05	Q	|	|	|	V|
22+10	0.4501	0.06	Q	|	|	|	V|
22+15	0.4505	0.06	Q	|	|	|	V|
22+20	0.4509	0.06	Q	|	|	|	V|
22+25	0.4513	0.05	Q	|	|	|	V|
22+30	0.4516	0.05	Q	|	|	|	V|
22+35	0.4520	0.05	Q	|	|	|	V|
22+40	0.4523	0.05	Q	|	|	|	V|
22+45	0.4526	0.05	Q	|	|	|	V|
22+50	0.4529	0.05	Q	|	|	|	V|
22+55	0.4532	0.05	Q	|	|	|	V|
23+ 0	0.4535	0.04	Q	|	|	|	V|
23+ 5	0.4538	0.04	Q	|	|	|	V|
23+10	0.4542	0.04	Q	|	|	|	V|
23+15	0.4545	0.04	Q	|	|	|	V|
23+20	0.4548	0.04	Q	|	|	|	V|
23+25	0.4551	0.04	Q	|	|	|	V|
23+30	0.4554	0.04	Q	|	|	|	V|
23+35	0.4557	0.04	Q	|	|	|	V|
23+40	0.4560	0.04	Q	|	|	|	V|
23+45	0.4563	0.04	Q	|	|	|	V|

```
   23+50       0.4566      0.04  Q          |          |          |         V|
   23+55       0.4569      0.04  Q          |          |          |         V|
   24+ 0       0.4572      0.04  Q          |          |          |         V|
   24+ 5       0.4575      0.04  Q          |          |          |         V|
   24+10       0.4576      0.02  Q          |          |          |         V|
   24+15       0.4577      0.01  Q          |          |          |         V|
   24+20       0.4578      0.01  Q          |          |          |         V|
   24+25       0.4578      0.01  Q          |          |          |         V|
   24+30       0.4578      0.00  Q          |          |          |         V|
   24+35       0.4578      0.00  Q          |          |          |         V|
   24+40       0.4579      0.00  Q          |          |          |         V|
   24+45       0.4579      0.00  Q          |          |          |         V|
   24+50       0.4579      0.00  Q          |          |          |         V|
   24+55       0.4579      0.00  Q          |          |          |          V
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946P2B115.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
5 YEAR - 1 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.13 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.85 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]
3.70	0.55	2.04

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	1.30	4.81

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.726(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.726(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.700	0.185	1.000	0.185

Sum (F) = 0.185

Area averaged mean soil loss (F) (In/Hr) = 0.185
Minimum soil loss rate ((In/Hr)) = 0.093
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	70.128	10.658	0.397
2	0.167	140.256	40.170	1.498
3	0.250	210.385	23.106	0.862
4	0.333	280.513	8.998	0.336
5	0.417	350.641	5.471	0.204
6	0.500	420.769	3.632	0.135
7	0.583	490.897	2.429	0.091
8	0.667	561.026	1.900	0.071
9	0.750	631.154	1.339	0.050
10	0.833	701.282	0.950	0.035
11	0.917	771.410	0.711	0.027
12	1.000	841.538	0.637	0.024
		Sum = 100.000	Sum=	3.729

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	0.287	(0.185)		0.098	0.190
2	0.17	4.20	0.366	(0.185)		0.124	0.241
3	0.25	4.40	0.383	(0.185)		0.130	0.253
4	0.33	4.80	0.418	(0.185)		0.142	0.276
5	0.42	5.20	0.453	(0.185)		0.154	0.299
6	0.50	6.20	0.540	(0.185)		0.184	0.356
7	0.58	6.80	0.592	0.185	(	0.201)	0.407
8	0.67	8.80	0.766	0.185	(	0.261)	0.581
9	0.75	13.90	1.210	0.185	(	0.412)	1.025
10	0.83	31.40	2.734	0.185	(	0.930)	2.549
11	0.92	7.20	0.627	0.185	(	0.213)	0.442
12	1.00	3.80	0.331	(0.185)		0.113	0.218
	(Loss Rate Not Used)						
Sum =		100.0				Sum =	6.8

Flood volume = Effective rainfall 0.57(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 0.16(In)
Total soil loss = 0.048(Ac.Ft)
Total rainfall = 0.73(In)
Flood volume = 7652.5 Cubic Feet
Total soil loss = 2093.6 Cubic Feet

Peak flow rate of this hydrograph = 5.279(CFS)

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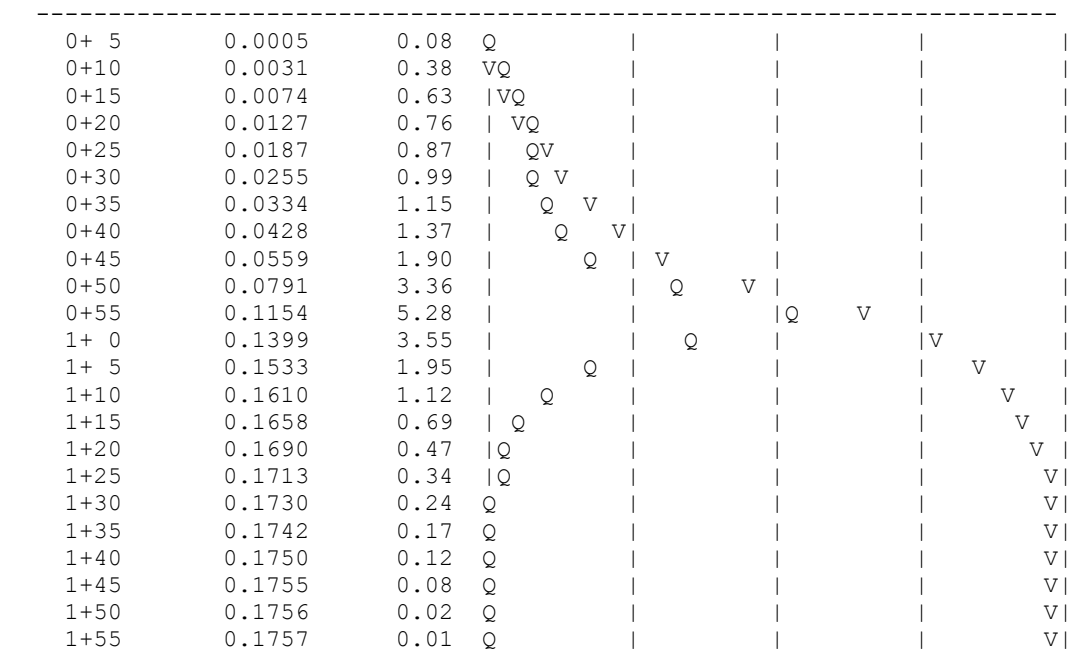
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

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



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 02/20/20 File: 8946P2B135.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
5 YEAR - 3 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.13 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.85 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]
3.70	0.90	3.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	2.25	8.33

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.216(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.216(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.700	0.185	1.000	0.185

Sum (F) = 0.185

Area averaged mean soil loss (F) (In/Hr) = 0.185
Minimum soil loss rate ((In/Hr)) = 0.093
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	70.128	10.658	0.397
2	0.167	140.256	40.170	1.498
3	0.250	210.385	23.106	0.862
4	0.333	280.513	8.998	0.336
5	0.417	350.641	5.471	0.204
6	0.500	420.769	3.632	0.135
7	0.583	490.897	2.429	0.091
8	0.667	561.026	1.900	0.071
9	0.750	631.154	1.339	0.050
10	0.833	701.282	0.950	0.035
11	0.917	771.410	0.711	0.027
12	1.000	841.538	0.637	0.024
		Sum = 100.000	Sum=	3.729

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	0.190	(0.185)		0.065	0.125
2	0.17	1.30	0.190	(0.185)		0.065	0.125
3	0.25	1.10	0.161	(0.185)		0.055	0.106
4	0.33	1.50	0.219	(0.185)		0.074	0.144
5	0.42	1.50	0.219	(0.185)		0.074	0.144
6	0.50	1.80	0.263	(0.185)		0.089	0.173
7	0.58	1.50	0.219	(0.185)		0.074	0.144
8	0.67	1.80	0.263	(0.185)		0.089	0.173
9	0.75	1.80	0.263	(0.185)		0.089	0.173
10	0.83	1.50	0.219	(0.185)		0.074	0.144
11	0.92	1.60	0.234	(0.185)		0.079	0.154
12	1.00	1.80	0.263	(0.185)		0.089	0.173
13	1.08	2.20	0.321	(0.185)		0.109	0.212
14	1.17	2.20	0.321	(0.185)		0.109	0.212
15	1.25	2.20	0.321	(0.185)		0.109	0.212
16	1.33	2.00	0.292	(0.185)		0.099	0.193
17	1.42	2.60	0.379	(0.185)		0.129	0.250
18	1.50	2.70	0.394	(0.185)		0.134	0.260
19	1.58	2.40	0.350	(0.185)		0.119	0.231
20	1.67	2.70	0.394	(0.185)		0.134	0.260
21	1.75	3.30	0.482	(0.185)		0.164	0.318
22	1.83	3.10	0.452	(0.185)		0.154	0.299
23	1.92	2.90	0.423	(0.185)		0.144	0.279
24	2.00	3.00	0.438	(0.185)		0.149	0.289
25	2.08	3.10	0.452	(0.185)		0.154	0.299
26	2.17	4.20	0.613	0.185	(	0.208)	0.428
27	2.25	5.00	0.730	0.185	(	0.248)	0.544
28	2.33	3.50	0.511	(0.185)		0.174	0.337
29	2.42	6.80	0.992	0.185	(	0.337)	0.807
30	2.50	7.30	1.065	0.185	(	0.362)	0.880
31	2.58	8.20	1.197	0.185	(	0.407)	1.012
32	2.67	5.90	0.861	0.185	(	0.293)	0.676
33	2.75	2.00	0.292	(0.185)		0.099	0.193
34	2.83	1.80	0.263	(0.185)		0.089	0.173

```
35   2.92     1.80      0.263       (  0.185)       0.089        0.173
36   3.00     0.60      0.088       (  0.185)       0.030        0.058
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    10.4
     Flood volume = Effective rainfall      0.86(In)
      times area       3.7(Ac.)/[(In)/(Ft.)] =       0.3(Ac.Ft)
     Total soil loss =      0.35(In)
     Total soil loss =     0.108(Ac.Ft)
     Total rainfall =      1.22(In)
     Flood volume =       11614.0 Cubic Feet
     Total soil loss =        4720.5 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      3.057(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0003      0.05  Q         |         |         |         |
  0+10       0.0020      0.24  Q         |         |         |         |
  0+15       0.0043      0.34  VQ        |         |         |         |
  0+20       0.0068      0.37  |Q        |         |         |         |
  0+25       0.0098      0.43  |Q        |         |         |         |
  0+30       0.0132      0.49  |Q        |         |         |         |
  0+35       0.0169      0.54  | Q       |         |         |         |
  0+40       0.0207      0.55  | QV      |         |         |         |
  0+45       0.0247      0.59  | QV      |         |         |         |
  0+50       0.0288      0.60  | Q V     |         |         |         |
  0+55       0.0328      0.57  | Q V     |         |         |         |
  1+ 0       0.0368      0.58  | Q  V    |         |         |         |
  1+ 5       0.0411      0.63  | Q   V   |         |         |         |
  1+10       0.0460      0.70  | Q   V   |         |         |         |
  1+15       0.0511      0.74  | Q    V  |         |         |         |
  1+20       0.0562      0.75  |  Q    V |         |         |         |
  1+25       0.0614      0.76  |  Q     V|         |         |         |
  1+30       0.0672      0.84  |  Q      V         |         |         |
  1+35       0.0733      0.89  |  Q      V         |         |         |
  1+40       0.0794      0.88  |  Q      |V        |         |         |
  1+45       0.0859      0.94  |  Q      | V       |         |         |
  1+50       0.0930      1.04  |   Q     |  V      |         |         |
  1+55       0.1004      1.07  |   Q     |    V    |         |         |
  2+ 0       0.1076      1.05  |   Q     |     V   |         |         |
  2+ 5       0.1149      1.06  |   Q     |      V  |         |         |
  2+10       0.1228      1.14  |   Q     |       V |         |         |
  2+15       0.1323      1.39  |    Q    |        V|         |         |
  2+20       0.1433      1.60  |     Q   |         |V        |         |
  2+25       0.1545      1.62  |     Q   |         |  V      |         |
  2+30       0.1700      2.25  |       Q |         |    V    |         |
  2+35       0.1892      2.79  |         |Q        |       V |         |
  2+40       0.2102      3.06  |         | Q       |         |V        |
  2+45       0.2280      2.59  |         Q         |         |   V     |
  2+50       0.2396      1.68  |     Q   |         |         |    V    |
  2+55       0.2479      1.20  |   Q     |         |         |      V  |
  3+ 0       0.2546      0.96  |  Q      |         |         |       V |
  3+ 5       0.2591      0.66  | Q       |         |         |       V |
  3+10       0.2618      0.40  |Q        |         |         |        V|
  3+15       0.2636      0.25  |Q        |         |         |        V|
  3+20       0.2648      0.18  Q         |         |         |        V|
  3+25       0.2656      0.12  Q         |         |         |        V|
  3+30       0.2661      0.07  Q         |         |         |        V|
  3+35       0.2664      0.04  Q         |         |         |        V|
  3+40       0.2665      0.02  Q         |         |         |        V|
  3+45       0.2666      0.01  Q         |         |         |        V|
  3+50       0.2666      0.01  Q         |         |         |        V|
  3+55       0.2666      0.00  Q         |         |         |         V
```

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

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Study date 02/20/20 File: 8946P2B165.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
5 YEAR - 6 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.13 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.85 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]
3.70	1.30	4.81

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	3.00	11.10

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.698(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.698(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.700	0.185	1.000	0.185

Sum (F) = 0.185

Area averaged mean soil loss (F) (In/Hr) = 0.185
Minimum soil loss rate ((In/Hr)) = 0.093
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	70.128	10.658	0.397
2	0.167	140.256	40.170	1.498
3	0.250	210.385	23.106	0.862
4	0.333	280.513	8.998	0.336
5	0.417	350.641	5.471	0.204
6	0.500	420.769	3.632	0.135
7	0.583	490.897	2.429	0.091
8	0.667	561.026	1.900	0.071
9	0.750	631.154	1.339	0.050
10	0.833	701.282	0.950	0.035
11	0.917	771.410	0.711	0.027
12	1.000	841.538	0.637	0.024
		Sum = 100.000	Sum=	3.729

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	0.102	(0.185)	0.035	0.067
2	0.17	0.60	0.122	(0.185)	0.042	0.081
3	0.25	0.60	0.122	(0.185)	0.042	0.081
4	0.33	0.60	0.122	(0.185)	0.042	0.081
5	0.42	0.60	0.122	(0.185)	0.042	0.081
6	0.50	0.70	0.143	(0.185)	0.048	0.094
7	0.58	0.70	0.143	(0.185)	0.048	0.094
8	0.67	0.70	0.143	(0.185)	0.048	0.094
9	0.75	0.70	0.143	(0.185)	0.048	0.094
10	0.83	0.70	0.143	(0.185)	0.048	0.094
11	0.92	0.70	0.143	(0.185)	0.048	0.094
12	1.00	0.80	0.163	(0.185)	0.055	0.108
13	1.08	0.80	0.163	(0.185)	0.055	0.108
14	1.17	0.80	0.163	(0.185)	0.055	0.108
15	1.25	0.80	0.163	(0.185)	0.055	0.108
16	1.33	0.80	0.163	(0.185)	0.055	0.108
17	1.42	0.80	0.163	(0.185)	0.055	0.108
18	1.50	0.80	0.163	(0.185)	0.055	0.108
19	1.58	0.80	0.163	(0.185)	0.055	0.108
20	1.67	0.80	0.163	(0.185)	0.055	0.108
21	1.75	0.80	0.163	(0.185)	0.055	0.108
22	1.83	0.80	0.163	(0.185)	0.055	0.108
23	1.92	0.80	0.163	(0.185)	0.055	0.108
24	2.00	0.90	0.183	(0.185)	0.062	0.121
25	2.08	0.80	0.163	(0.185)	0.055	0.108
26	2.17	0.90	0.183	(0.185)	0.062	0.121
27	2.25	0.90	0.183	(0.185)	0.062	0.121
28	2.33	0.90	0.183	(0.185)	0.062	0.121
29	2.42	0.90	0.183	(0.185)	0.062	0.121
30	2.50	0.90	0.183	(0.185)	0.062	0.121
31	2.58	0.90	0.183	(0.185)	0.062	0.121
32	2.67	0.90	0.183	(0.185)	0.062	0.121
33	2.75	1.00	0.204	(0.185)	0.069	0.134
34	2.83	1.00	0.204	(0.185)	0.069	0.134

35	2.92	1.00	0.204	(0.185)	0.069	0.134	
36	3.00	1.00	0.204	(0.185)	0.069	0.134	
37	3.08	1.00	0.204	(0.185)	0.069	0.134	
38	3.17	1.10	0.224	(0.185)	0.076	0.148	
39	3.25	1.10	0.224	(0.185)	0.076	0.148	
40	3.33	1.10	0.224	(0.185)	0.076	0.148	
41	3.42	1.20	0.245	(0.185)	0.083	0.161	
42	3.50	1.30	0.265	(0.185)	0.090	0.175	
43	3.58	1.40	0.285	(0.185)	0.097	0.188	
44	3.67	1.40	0.285	(0.185)	0.097	0.188	
45	3.75	1.50	0.306	(0.185)	0.104	0.202	
46	3.83	1.50	0.306	(0.185)	0.104	0.202	
47	3.92	1.60	0.326	(0.185)	0.111	0.215	
48	4.00	1.60	0.326	(0.185)	0.111	0.215	
49	4.08	1.70	0.346	(0.185)	0.118	0.229	
50	4.17	1.80	0.367	(0.185)	0.125	0.242	
51	4.25	1.90	0.387	(0.185)	0.132	0.256	
52	4.33	2.00	0.408	(0.185)	0.139	0.269	
53	4.42	2.10	0.428	(0.185)	0.145	0.282	
54	4.50	2.10	0.428	(0.185)	0.145	0.282	
55	4.58	2.20	0.448	(0.185)	0.152	0.296	
56	4.67	2.30	0.469	(0.185)	0.159	0.309	
57	4.75	2.40	0.489	(0.185)	0.166	0.323	
58	4.83	2.40	0.489	(0.185)	0.166	0.323	
59	4.92	2.50	0.509	(0.185)	0.173	0.336	
60	5.00	2.60	0.530	(0.185)	0.180	0.350	
61	5.08	3.10	0.632	0.185	(0.215)	0.446	
62	5.17	3.60	0.734	0.185	(0.249)	0.548	
63	5.25	3.90	0.795	0.185	(0.270)	0.610	
64	5.33	4.20	0.856	0.185	(0.291)	0.671	
65	5.42	4.70	0.958	0.185	(0.326)	0.773	
66	5.50	5.60	1.141	0.185	(0.388)	0.956	
67	5.58	1.90	0.387	(0.185)	0.132	0.256	
68	5.67	0.90	0.183	(0.185)	0.062	0.121	
69	5.75	0.60	0.122	(0.185)	0.042	0.081	
70	5.83	0.50	0.102	(0.185)	0.035	0.067	
71	5.92	0.30	0.061	(0.185)	0.021	0.040	
72	6.00	0.20	0.041	(0.185)	0.014	0.027	

(Loss Rate Not Used)

Sum = 100.0 Sum = 14.1

Flood volume = Effective rainfall 1.17(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)

Total soil loss = 0.53(In)

Total soil loss = 0.162(Ac.Ft)

Total rainfall = 1.70(In)

Flood volume = 15755.8 Cubic Feet

Total soil loss = 7052.1 Cubic Feet

Peak flow rate of this hydrograph = 2.733(CFS)

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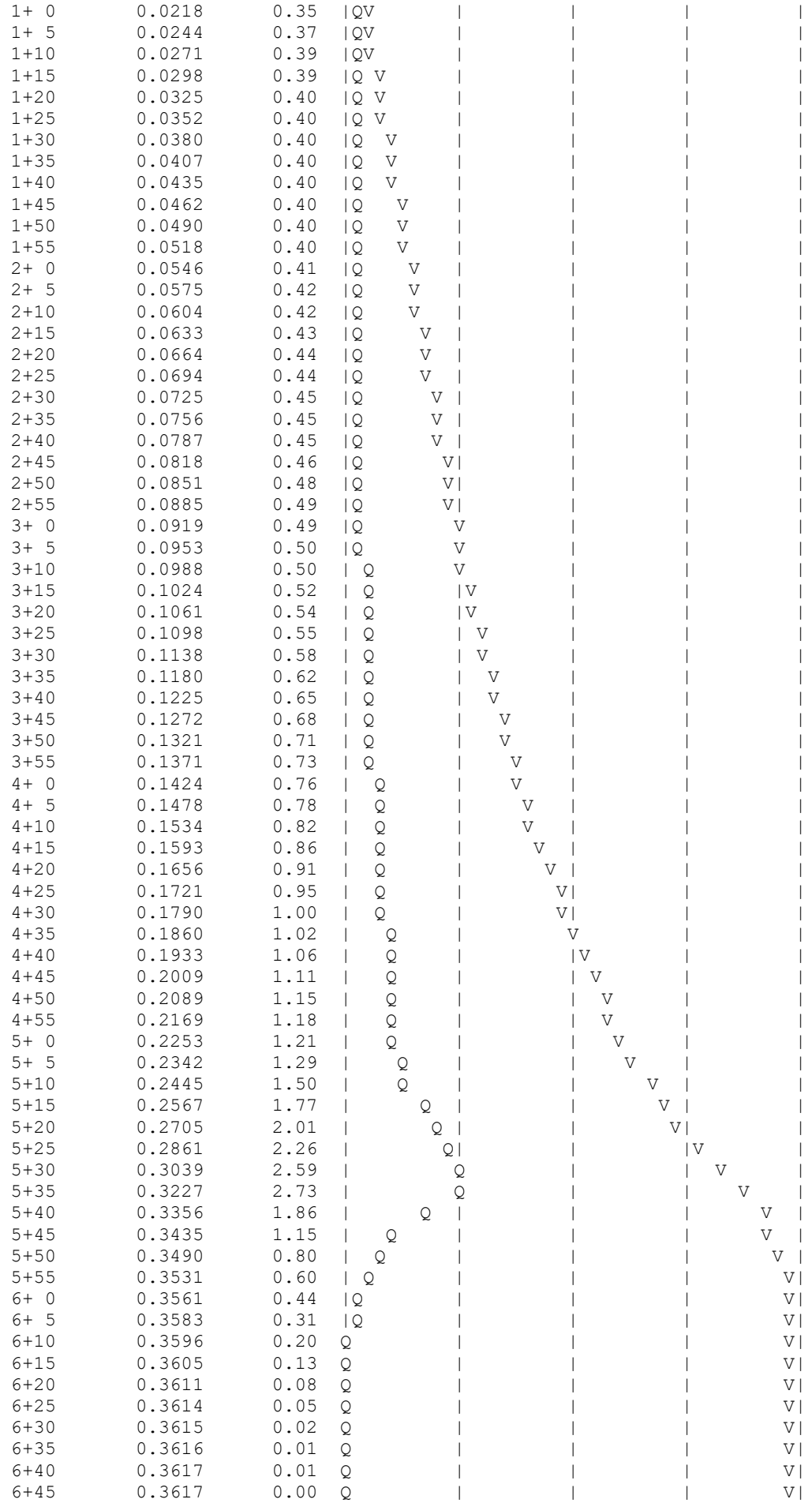
6 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.03	Q				
0+10	0.0011	0.13	Q				
0+15	0.0026	0.21	Q				
0+20	0.0042	0.25	Q				
0+25	0.0061	0.26	VQ				
0+30	0.0080	0.28	VQ				
0+35	0.0101	0.31	|Q				
0+40	0.0124	0.33	|Q				
0+45	0.0147	0.34	|Q				
0+50	0.0170	0.34	|Q				
0+55	0.0194	0.34	|QV				



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    6+50       0.3617      0.00  Q         |         |         |        V|
    6+55       0.3617      0.00  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946P2B1245.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
5 YEAR - 24 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.13 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.85 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]
3.70	2.25	8.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	5.25	19.43

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.953(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.953(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.700	0.185	1.000	0.185

Sum (F) = 0.185

Area averaged mean soil loss (F) (In/Hr) = 0.185
Minimum soil loss rate ((In/Hr)) = 0.093
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	70.128	10.658	0.397
2	0.167	140.256	40.170	1.498
3	0.250	210.385	23.106	0.862
4	0.333	280.513	8.998	0.336
5	0.417	350.641	5.471	0.204
6	0.500	420.769	3.632	0.135
7	0.583	490.897	2.429	0.091
8	0.667	561.026	1.900	0.071
9	0.750	631.154	1.339	0.050
10	0.833	701.282	0.950	0.035
11	0.917	771.410	0.711	0.027
12	1.000	841.538	0.637	0.024
		Sum = 100.000	Sum=	3.729

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	0.024	(0.328)		0.008	0.016
2	0.17	0.07	0.024	(0.327)		0.008	0.016
3	0.25	0.07	0.024	(0.326)		0.008	0.016
4	0.33	0.10	0.035	(0.325)		0.012	0.023
5	0.42	0.10	0.035	(0.323)		0.012	0.023
6	0.50	0.10	0.035	(0.322)		0.012	0.023
7	0.58	0.10	0.035	(0.321)		0.012	0.023
8	0.67	0.10	0.035	(0.320)		0.012	0.023
9	0.75	0.10	0.035	(0.318)		0.012	0.023
10	0.83	0.13	0.047	(0.317)		0.016	0.031
11	0.92	0.13	0.047	(0.316)		0.016	0.031
12	1.00	0.13	0.047	(0.315)		0.016	0.031
13	1.08	0.10	0.035	(0.313)		0.012	0.023
14	1.17	0.10	0.035	(0.312)		0.012	0.023
15	1.25	0.10	0.035	(0.311)		0.012	0.023
16	1.33	0.10	0.035	(0.310)		0.012	0.023
17	1.42	0.10	0.035	(0.308)		0.012	0.023
18	1.50	0.10	0.035	(0.307)		0.012	0.023
19	1.58	0.10	0.035	(0.306)		0.012	0.023
20	1.67	0.10	0.035	(0.305)		0.012	0.023
21	1.75	0.10	0.035	(0.303)		0.012	0.023
22	1.83	0.13	0.047	(0.302)		0.016	0.031
23	1.92	0.13	0.047	(0.301)		0.016	0.031
24	2.00	0.13	0.047	(0.300)		0.016	0.031
25	2.08	0.13	0.047	(0.299)		0.016	0.031
26	2.17	0.13	0.047	(0.297)		0.016	0.031
27	2.25	0.13	0.047	(0.296)		0.016	0.031
28	2.33	0.13	0.047	(0.295)		0.016	0.031
29	2.42	0.13	0.047	(0.294)		0.016	0.031
30	2.50	0.13	0.047	(0.293)		0.016	0.031
31	2.58	0.17	0.059	(0.291)		0.020	0.039
32	2.67	0.17	0.059	(0.290)		0.020	0.039
33	2.75	0.17	0.059	(0.289)		0.020	0.039
34	2.83	0.17	0.059	(0.288)		0.020	0.039

35	2.92	0.17	0.059	(0.287)	0.020	0.039
36	3.00	0.17	0.059	(0.285)	0.020	0.039
37	3.08	0.17	0.059	(0.284)	0.020	0.039
38	3.17	0.17	0.059	(0.283)	0.020	0.039
39	3.25	0.17	0.059	(0.282)	0.020	0.039
40	3.33	0.17	0.059	(0.281)	0.020	0.039
41	3.42	0.17	0.059	(0.279)	0.020	0.039
42	3.50	0.17	0.059	(0.278)	0.020	0.039
43	3.58	0.17	0.059	(0.277)	0.020	0.039
44	3.67	0.17	0.059	(0.276)	0.020	0.039
45	3.75	0.17	0.059	(0.275)	0.020	0.039
46	3.83	0.20	0.071	(0.274)	0.024	0.047
47	3.92	0.20	0.071	(0.273)	0.024	0.047
48	4.00	0.20	0.071	(0.271)	0.024	0.047
49	4.08	0.20	0.071	(0.270)	0.024	0.047
50	4.17	0.20	0.071	(0.269)	0.024	0.047
51	4.25	0.20	0.071	(0.268)	0.024	0.047
52	4.33	0.23	0.083	(0.267)	0.028	0.055
53	4.42	0.23	0.083	(0.266)	0.028	0.055
54	4.50	0.23	0.083	(0.265)	0.028	0.055
55	4.58	0.23	0.083	(0.263)	0.028	0.055
56	4.67	0.23	0.083	(0.262)	0.028	0.055
57	4.75	0.23	0.083	(0.261)	0.028	0.055
58	4.83	0.27	0.094	(0.260)	0.032	0.062
59	4.92	0.27	0.094	(0.259)	0.032	0.062
60	5.00	0.27	0.094	(0.258)	0.032	0.062
61	5.08	0.20	0.071	(0.257)	0.024	0.047
62	5.17	0.20	0.071	(0.256)	0.024	0.047
63	5.25	0.20	0.071	(0.254)	0.024	0.047
64	5.33	0.23	0.083	(0.253)	0.028	0.055
65	5.42	0.23	0.083	(0.252)	0.028	0.055
66	5.50	0.23	0.083	(0.251)	0.028	0.055
67	5.58	0.27	0.094	(0.250)	0.032	0.062
68	5.67	0.27	0.094	(0.249)	0.032	0.062
69	5.75	0.27	0.094	(0.248)	0.032	0.062
70	5.83	0.27	0.094	(0.247)	0.032	0.062
71	5.92	0.27	0.094	(0.246)	0.032	0.062
72	6.00	0.27	0.094	(0.244)	0.032	0.062
73	6.08	0.30	0.106	(0.243)	0.036	0.070
74	6.17	0.30	0.106	(0.242)	0.036	0.070
75	6.25	0.30	0.106	(0.241)	0.036	0.070
76	6.33	0.30	0.106	(0.240)	0.036	0.070
77	6.42	0.30	0.106	(0.239)	0.036	0.070
78	6.50	0.30	0.106	(0.238)	0.036	0.070
79	6.58	0.33	0.118	(0.237)	0.040	0.078
80	6.67	0.33	0.118	(0.236)	0.040	0.078
81	6.75	0.33	0.118	(0.235)	0.040	0.078
82	6.83	0.33	0.118	(0.234)	0.040	0.078
83	6.92	0.33	0.118	(0.233)	0.040	0.078
84	7.00	0.33	0.118	(0.232)	0.040	0.078
85	7.08	0.33	0.118	(0.231)	0.040	0.078
86	7.17	0.33	0.118	(0.230)	0.040	0.078
87	7.25	0.33	0.118	(0.228)	0.040	0.078
88	7.33	0.37	0.130	(0.227)	0.044	0.086
89	7.42	0.37	0.130	(0.226)	0.044	0.086
90	7.50	0.37	0.130	(0.225)	0.044	0.086
91	7.58	0.40	0.142	(0.224)	0.048	0.094
92	7.67	0.40	0.142	(0.223)	0.048	0.094
93	7.75	0.40	0.142	(0.222)	0.048	0.094
94	7.83	0.43	0.154	(0.221)	0.052	0.101
95	7.92	0.43	0.154	(0.220)	0.052	0.101
96	8.00	0.43	0.154	(0.219)	0.052	0.101
97	8.08	0.50	0.177	(0.218)	0.060	0.117
98	8.17	0.50	0.177	(0.217)	0.060	0.117
99	8.25	0.50	0.177	(0.216)	0.060	0.117
100	8.33	0.50	0.177	(0.215)	0.060	0.117
101	8.42	0.50	0.177	(0.214)	0.060	0.117
102	8.50	0.50	0.177	(0.213)	0.060	0.117
103	8.58	0.53	0.189	(0.212)	0.064	0.125
104	8.67	0.53	0.189	(0.211)	0.064	0.125

105	8.75	0.53	0.189	(0.210)	0.064	0.125
106	8.83	0.57	0.201	(0.209)	0.068	0.133
107	8.92	0.57	0.201	(0.208)	0.068	0.133
108	9.00	0.57	0.201	(0.207)	0.068	0.133
109	9.08	0.63	0.224	(0.206)	0.076	0.148
110	9.17	0.63	0.224	(0.205)	0.076	0.148
111	9.25	0.63	0.224	(0.204)	0.076	0.148
112	9.33	0.67	0.236	(0.203)	0.080	0.156
113	9.42	0.67	0.236	(0.202)	0.080	0.156
114	9.50	0.67	0.236	(0.201)	0.080	0.156
115	9.58	0.70	0.248	(0.200)	0.084	0.164
116	9.67	0.70	0.248	(0.199)	0.084	0.164
117	9.75	0.70	0.248	(0.198)	0.084	0.164
118	9.83	0.73	0.260	(0.197)	0.088	0.171
119	9.92	0.73	0.260	(0.197)	0.088	0.171
120	10.00	0.73	0.260	(0.196)	0.088	0.171
121	10.08	0.50	0.177	(0.195)	0.060	0.117
122	10.17	0.50	0.177	(0.194)	0.060	0.117
123	10.25	0.50	0.177	(0.193)	0.060	0.117
124	10.33	0.50	0.177	(0.192)	0.060	0.117
125	10.42	0.50	0.177	(0.191)	0.060	0.117
126	10.50	0.50	0.177	(0.190)	0.060	0.117
127	10.58	0.67	0.236	(0.189)	0.080	0.156
128	10.67	0.67	0.236	(0.188)	0.080	0.156
129	10.75	0.67	0.236	(0.187)	0.080	0.156
130	10.83	0.67	0.236	(0.186)	0.080	0.156
131	10.92	0.67	0.236	(0.185)	0.080	0.156
132	11.00	0.67	0.236	(0.184)	0.080	0.156
133	11.08	0.63	0.224	(0.184)	0.076	0.148
134	11.17	0.63	0.224	(0.183)	0.076	0.148
135	11.25	0.63	0.224	(0.182)	0.076	0.148
136	11.33	0.63	0.224	(0.181)	0.076	0.148
137	11.42	0.63	0.224	(0.180)	0.076	0.148
138	11.50	0.63	0.224	(0.179)	0.076	0.148
139	11.58	0.57	0.201	(0.178)	0.068	0.133
140	11.67	0.57	0.201	(0.177)	0.068	0.133
141	11.75	0.57	0.201	(0.176)	0.068	0.133
142	11.83	0.60	0.213	(0.176)	0.072	0.140
143	11.92	0.60	0.213	(0.175)	0.072	0.140
144	12.00	0.60	0.213	(0.174)	0.072	0.140
145	12.08	0.83	0.295	(0.173)	0.100	0.195
146	12.17	0.83	0.295	(0.172)	0.100	0.195
147	12.25	0.83	0.295	(0.171)	0.100	0.195
148	12.33	0.87	0.307	(0.170)	0.104	0.203
149	12.42	0.87	0.307	(0.169)	0.104	0.203
150	12.50	0.87	0.307	(0.169)	0.104	0.203
151	12.58	0.93	0.331	(0.168)	0.112	0.218
152	12.67	0.93	0.331	(0.167)	0.112	0.218
153	12.75	0.93	0.331	(0.166)	0.112	0.218
154	12.83	0.97	0.343	(0.165)	0.116	0.226
155	12.92	0.97	0.343	(0.164)	0.116	0.226
156	13.00	0.97	0.343	(0.164)	0.116	0.226
157	13.08	1.13	0.402	(0.163)	0.137	0.265
158	13.17	1.13	0.402	(0.162)	0.137	0.265
159	13.25	1.13	0.402	(0.161)	0.137	0.265
160	13.33	1.13	0.402	(0.160)	0.137	0.265
161	13.42	1.13	0.402	(0.159)	0.137	0.265
162	13.50	1.13	0.402	(0.159)	0.137	0.265
163	13.58	0.77	0.272	(0.158)	0.092	0.179
164	13.67	0.77	0.272	(0.157)	0.092	0.179
165	13.75	0.77	0.272	(0.156)	0.092	0.179
166	13.83	0.77	0.272	(0.155)	0.092	0.179
167	13.92	0.77	0.272	(0.155)	0.092	0.179
168	14.00	0.77	0.272	(0.154)	0.092	0.179
169	14.08	0.90	0.319	(0.153)	0.108	0.210
170	14.17	0.90	0.319	(0.152)	0.108	0.210
171	14.25	0.90	0.319	(0.152)	0.108	0.210
172	14.33	0.87	0.307	(0.151)	0.104	0.203
173	14.42	0.87	0.307	(0.150)	0.104	0.203
174	14.50	0.87	0.307	(0.149)	0.104	0.203

175	14.58	0.87	0.307	(0.148)	0.104	0.203
176	14.67	0.87	0.307	(0.148)	0.104	0.203
177	14.75	0.87	0.307	(0.147)	0.104	0.203
178	14.83	0.83	0.295	(0.146)	0.100	0.195
179	14.92	0.83	0.295	(0.145)	0.100	0.195
180	15.00	0.83	0.295	(0.145)	0.100	0.195
181	15.08	0.80	0.283	(0.144)	0.096	0.187
182	15.17	0.80	0.283	(0.143)	0.096	0.187
183	15.25	0.80	0.283	(0.142)	0.096	0.187
184	15.33	0.77	0.272	(0.142)	0.092	0.179
185	15.42	0.77	0.272	(0.141)	0.092	0.179
186	15.50	0.77	0.272	(0.140)	0.092	0.179
187	15.58	0.63	0.224	(0.140)	0.076	0.148
188	15.67	0.63	0.224	(0.139)	0.076	0.148
189	15.75	0.63	0.224	(0.138)	0.076	0.148
190	15.83	0.63	0.224	(0.137)	0.076	0.148
191	15.92	0.63	0.224	(0.137)	0.076	0.148
192	16.00	0.63	0.224	(0.136)	0.076	0.148
193	16.08	0.13	0.047	(0.135)	0.016	0.031
194	16.17	0.13	0.047	(0.135)	0.016	0.031
195	16.25	0.13	0.047	(0.134)	0.016	0.031
196	16.33	0.13	0.047	(0.133)	0.016	0.031
197	16.42	0.13	0.047	(0.133)	0.016	0.031
198	16.50	0.13	0.047	(0.132)	0.016	0.031
199	16.58	0.10	0.035	(0.131)	0.012	0.023
200	16.67	0.10	0.035	(0.131)	0.012	0.023
201	16.75	0.10	0.035	(0.130)	0.012	0.023
202	16.83	0.10	0.035	(0.129)	0.012	0.023
203	16.92	0.10	0.035	(0.129)	0.012	0.023
204	17.00	0.10	0.035	(0.128)	0.012	0.023
205	17.08	0.17	0.059	(0.127)	0.020	0.039
206	17.17	0.17	0.059	(0.127)	0.020	0.039
207	17.25	0.17	0.059	(0.126)	0.020	0.039
208	17.33	0.17	0.059	(0.125)	0.020	0.039
209	17.42	0.17	0.059	(0.125)	0.020	0.039
210	17.50	0.17	0.059	(0.124)	0.020	0.039
211	17.58	0.17	0.059	(0.124)	0.020	0.039
212	17.67	0.17	0.059	(0.123)	0.020	0.039
213	17.75	0.17	0.059	(0.122)	0.020	0.039
214	17.83	0.13	0.047	(0.122)	0.016	0.031
215	17.92	0.13	0.047	(0.121)	0.016	0.031
216	18.00	0.13	0.047	(0.120)	0.016	0.031
217	18.08	0.13	0.047	(0.120)	0.016	0.031
218	18.17	0.13	0.047	(0.119)	0.016	0.031
219	18.25	0.13	0.047	(0.119)	0.016	0.031
220	18.33	0.13	0.047	(0.118)	0.016	0.031
221	18.42	0.13	0.047	(0.118)	0.016	0.031
222	18.50	0.13	0.047	(0.117)	0.016	0.031
223	18.58	0.10	0.035	(0.116)	0.012	0.023
224	18.67	0.10	0.035	(0.116)	0.012	0.023
225	18.75	0.10	0.035	(0.115)	0.012	0.023
226	18.83	0.07	0.024	(0.115)	0.008	0.016
227	18.92	0.07	0.024	(0.114)	0.008	0.016
228	19.00	0.07	0.024	(0.114)	0.008	0.016
229	19.08	0.10	0.035	(0.113)	0.012	0.023
230	19.17	0.10	0.035	(0.113)	0.012	0.023
231	19.25	0.10	0.035	(0.112)	0.012	0.023
232	19.33	0.13	0.047	(0.112)	0.016	0.031
233	19.42	0.13	0.047	(0.111)	0.016	0.031
234	19.50	0.13	0.047	(0.111)	0.016	0.031
235	19.58	0.10	0.035	(0.110)	0.012	0.023
236	19.67	0.10	0.035	(0.110)	0.012	0.023
237	19.75	0.10	0.035	(0.109)	0.012	0.023
238	19.83	0.07	0.024	(0.109)	0.008	0.016
239	19.92	0.07	0.024	(0.108)	0.008	0.016
240	20.00	0.07	0.024	(0.108)	0.008	0.016
241	20.08	0.10	0.035	(0.107)	0.012	0.023
242	20.17	0.10	0.035	(0.107)	0.012	0.023
243	20.25	0.10	0.035	(0.106)	0.012	0.023
244	20.33	0.10	0.035	(0.106)	0.012	0.023

245	20.42	0.10	0.035	(	0.105)	0.012	0.023
246	20.50	0.10	0.035	(	0.105)	0.012	0.023
247	20.58	0.10	0.035	(	0.104)	0.012	0.023
248	20.67	0.10	0.035	(	0.104)	0.012	0.023
249	20.75	0.10	0.035	(	0.103)	0.012	0.023
250	20.83	0.07	0.024	(	0.103)	0.008	0.016
251	20.92	0.07	0.024	(	0.103)	0.008	0.016
252	21.00	0.07	0.024	(	0.102)	0.008	0.016
253	21.08	0.10	0.035	(	0.102)	0.012	0.023
254	21.17	0.10	0.035	(	0.101)	0.012	0.023
255	21.25	0.10	0.035	(	0.101)	0.012	0.023
256	21.33	0.07	0.024	(	0.101)	0.008	0.016
257	21.42	0.07	0.024	(	0.100)	0.008	0.016
258	21.50	0.07	0.024	(	0.100)	0.008	0.016
259	21.58	0.10	0.035	(	0.100)	0.012	0.023
260	21.67	0.10	0.035	(	0.099)	0.012	0.023
261	21.75	0.10	0.035	(	0.099)	0.012	0.023
262	21.83	0.07	0.024	(	0.098)	0.008	0.016
263	21.92	0.07	0.024	(	0.098)	0.008	0.016
264	22.00	0.07	0.024	(	0.098)	0.008	0.016
265	22.08	0.10	0.035	(	0.097)	0.012	0.023
266	22.17	0.10	0.035	(	0.097)	0.012	0.023
267	22.25	0.10	0.035	(	0.097)	0.012	0.023
268	22.33	0.07	0.024	(	0.097)	0.008	0.016
269	22.42	0.07	0.024	(	0.096)	0.008	0.016
270	22.50	0.07	0.024	(	0.096)	0.008	0.016
271	22.58	0.07	0.024	(	0.096)	0.008	0.016
272	22.67	0.07	0.024	(	0.095)	0.008	0.016
273	22.75	0.07	0.024	(	0.095)	0.008	0.016
274	22.83	0.07	0.024	(	0.095)	0.008	0.016
275	22.92	0.07	0.024	(	0.095)	0.008	0.016
276	23.00	0.07	0.024	(	0.094)	0.008	0.016
277	23.08	0.07	0.024	(	0.094)	0.008	0.016
278	23.17	0.07	0.024	(	0.094)	0.008	0.016
279	23.25	0.07	0.024	(	0.094)	0.008	0.016
280	23.33	0.07	0.024	(	0.094)	0.008	0.016
281	23.42	0.07	0.024	(	0.093)	0.008	0.016
282	23.50	0.07	0.024	(	0.093)	0.008	0.016
283	23.58	0.07	0.024	(	0.093)	0.008	0.016
284	23.67	0.07	0.024	(	0.093)	0.008	0.016
285	23.75	0.07	0.024	(	0.093)	0.008	0.016
286	23.83	0.07	0.024	(	0.093)	0.008	0.016
287	23.92	0.07	0.024	(	0.093)	0.008	0.016
288	24.00	0.07	0.024	(	0.093)	0.008	0.016

(Loss Rate Not Used)

Sum = 100.0 Sum = 23.4

Flood volume = Effective rainfall 1.95(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.6(Ac.Ft)
Total soil loss = 1.00(In)
Total soil loss = 0.310(Ac.Ft)
Total rainfall = 2.95(In)
Flood volume = 26173.7 Cubic Feet
Total soil loss = 13483.4 Cubic Feet

Peak flow rate of this hydrograph = 0.977(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01	Q	|	|	|	|
0+10	0.0002	0.03	Q	|	|	|	|
0+15	0.0005	0.04	Q	|	|	|	|
0+20	0.0009	0.05	Q	|	|	|	|
0+25	0.0014	0.07	Q	|	|	|	|

0+30	0.0019	0.08	Q	|	|	|	|
0+35	0.0024	0.08	Q	|	|	|	|
0+40	0.0030	0.08	Q	|	|	|	|
0+45	0.0036	0.08	Q	|	|	|	|
0+50	0.0042	0.09	Q	|	|	|	|
0+55	0.0049	0.10	Q	|	|	|	|
1+ 0	0.0056	0.11	Q	|	|	|	|
1+ 5	0.0063	0.11	Q	|	|	|	|
1+10	0.0070	0.10	Q	|	|	|	|
1+15	0.0076	0.09	Q	|	|	|	|
1+20	0.0083	0.09	Q	|	|	|	|
1+25	0.0089	0.09	Q	|	|	|	|
1+30	0.0095	0.09	Q	|	|	|	|
1+35	0.0101	0.09	Q	|	|	|	|
1+40	0.0107	0.09	Q	|	|	|	|
1+45	0.0113	0.09	Q	|	|	|	|
1+50	0.0119	0.09	Q	|	|	|	|
1+55	0.0127	0.10	Q	|	|	|	|
2+ 0	0.0134	0.11	Q	|	|	|	|
2+ 5	0.0142	0.11	Q	|	|	|	|
2+10	0.0149	0.11	Q	|	|	|	|
2+15	0.0157	0.11	QV	|	|	|	|
2+20	0.0165	0.11	QV	|	|	|	|
2+25	0.0173	0.12	QV	|	|	|	|
2+30	0.0181	0.12	QV	|	|	|	|
2+35	0.0189	0.12	QV	|	|	|	|
2+40	0.0198	0.13	QV	|	|	|	|
2+45	0.0208	0.14	QV	|	|	|	|
2+50	0.0218	0.14	QV	|	|	|	|
2+55	0.0227	0.14	QV	|	|	|	|
3+ 0	0.0237	0.14	QV	|	|	|	|
3+ 5	0.0247	0.14	QV	|	|	|	|
3+10	0.0257	0.14	QV	|	|	|	|
3+15	0.0267	0.14	QV	|	|	|	|
3+20	0.0277	0.15	QV	|	|	|	|
3+25	0.0287	0.15	QV	|	|	|	|
3+30	0.0297	0.15	QV	|	|	|	|
3+35	0.0307	0.15	Q V	|	|	|	|
3+40	0.0317	0.15	Q V	|	|	|	|
3+45	0.0327	0.15	Q V	|	|	|	|
3+50	0.0337	0.15	Q V	|	|	|	|
3+55	0.0348	0.16	Q V	|	|	|	|
4+ 0	0.0360	0.17	Q V	|	|	|	|
4+ 5	0.0371	0.17	Q V	|	|	|	|
4+10	0.0383	0.17	Q V	|	|	|	|
4+15	0.0395	0.17	Q V	|	|	|	|
4+20	0.0407	0.18	Q V	|	|	|	|
4+25	0.0420	0.19	Q V	|	|	|	|
4+30	0.0434	0.20	Q V	|	|	|	|
4+35	0.0447	0.20	Q V	|	|	|	|
4+40	0.0461	0.20	Q V	|	|	|	|
4+45	0.0475	0.20	Q V	|	|	|	|
4+50	0.0489	0.21	Q V	|	|	|	|
4+55	0.0504	0.22	Q V	|	|	|	|
5+ 0	0.0519	0.22	Q V	|	|	|	|
5+ 5	0.0535	0.22	Q V	|	|	|	|
5+10	0.0548	0.20	Q V	|	|	|	|
5+15	0.0561	0.19	Q V	|	|	|	|
5+20	0.0574	0.19	Q V	|	|	|	|
5+25	0.0588	0.19	Q V	|	|	|	|
5+30	0.0601	0.20	Q V	|	|	|	|
5+35	0.0615	0.20	Q V	|	|	|	|
5+40	0.0630	0.22	Q V	|	|	|	|
5+45	0.0646	0.22	Q V	|	|	|	|
5+50	0.0661	0.23	Q V	|	|	|	|
5+55	0.0677	0.23	Q V	|	|	|	|
6+ 0	0.0693	0.23	Q V	|	|	|	|
6+ 5	0.0709	0.23	Q V	|	|	|	|
6+10	0.0726	0.25	Q V	|	|	|	|
6+15	0.0743	0.25	|Q V	|	|	|	|

6+20	0.0761	0.26	Q V				
6+25	0.0779	0.26	Q V				
6+30	0.0797	0.26	Q V				
6+35	0.0815	0.26	Q V				
6+40	0.0834	0.28	Q V				
6+45	0.0853	0.28	Q V				
6+50	0.0873	0.29	Q V				
6+55	0.0893	0.29	Q V				
7+ 0	0.0913	0.29	Q V				
7+ 5	0.0933	0.29	Q V				
7+10	0.0953	0.29	Q V				
7+15	0.0973	0.29	Q V				
7+20	0.0993	0.29	Q V				
7+25	0.1014	0.31	Q V				
7+30	0.1035	0.31	Q V				
7+35	0.1057	0.32	Q V				
7+40	0.1080	0.33	Q V				
7+45	0.1103	0.34	Q V				
7+50	0.1127	0.35	Q V				
7+55	0.1152	0.36	Q V				
8+ 0	0.1177	0.37	Q V				
8+ 5	0.1203	0.38	Q V				
8+10	0.1231	0.40	Q V				
8+15	0.1260	0.42	Q V				
8+20	0.1289	0.42	Q V				
8+25	0.1318	0.43	Q V				
8+30	0.1348	0.43	Q V				
8+35	0.1378	0.44	Q V				
8+40	0.1409	0.45	Q V				
8+45	0.1440	0.46	Q V				
8+50	0.1472	0.46	Q V				
8+55	0.1505	0.48	Q V				
9+ 0	0.1538	0.48	Q V				
9+ 5	0.1573	0.49	Q V				
9+10	0.1608	0.52	Q V				
9+15	0.1645	0.53	Q V				
9+20	0.1683	0.54	Q V				
9+25	0.1721	0.56	Q V				
9+30	0.1760	0.57	Q V				
9+35	0.1800	0.58	Q V				
9+40	0.1841	0.59	Q V				
9+45	0.1882	0.60	Q V				
9+50	0.1924	0.61	Q V				
9+55	0.1966	0.62	Q V				
10+ 0	0.2010	0.63	Q V				
10+ 5	0.2052	0.61	Q V				
10+10	0.2088	0.53	Q V				
10+15	0.2122	0.49	Q V				
10+20	0.2154	0.47	Q V				
10+25	0.2186	0.46	Q V				
10+30	0.2217	0.45	Q V				
10+35	0.2249	0.46	Q V				
10+40	0.2284	0.52	Q V				
10+45	0.2322	0.55	Q V				
10+50	0.2361	0.56	Q V				
10+55	0.2400	0.57	Q V				
11+ 0	0.2439	0.57	Q V				
11+ 5	0.2478	0.57	Q V				
11+10	0.2517	0.56	Q V				
11+15	0.2555	0.56	Q V				
11+20	0.2594	0.56	Q V				
11+25	0.2632	0.56	Q V				
11+30	0.2670	0.55	Q V				
11+35	0.2708	0.55	Q V				
11+40	0.2744	0.52	Q V				
11+45	0.2779	0.51	Q V				
11+50	0.2814	0.51	Q V				
11+55	0.2849	0.52	Q V				
12+ 0	0.2885	0.52	Q V				
12+ 5	0.2923	0.54	Q V				

12+10	0.2966	0.63	Q		V			
12+15	0.3012	0.67	Q		V			
12+20	0.3060	0.69	Q		V			
12+25	0.3109	0.72	Q		V			
12+30	0.3160	0.73	Q		V			
12+35	0.3211	0.75	Q		V			
12+40	0.3265	0.77	Q		V			
12+45	0.3319	0.79	Q		V			
12+50	0.3374	0.80	Q		V			
12+55	0.3431	0.82	Q		V			
13+ 0	0.3488	0.83	Q		V			
13+ 5	0.3547	0.85	Q		V			
13+10	0.3609	0.91	Q		V			
13+15	0.3675	0.95	Q		V			
13+20	0.3741	0.96	Q		V			
13+25	0.3808	0.97	Q		V			
13+30	0.3875	0.98	Q		V			
13+35	0.3940	0.95	Q		V			
13+40	0.3997	0.82	Q		V			
13+45	0.4048	0.75	Q		V			
13+50	0.4098	0.72	Q		V			
13+55	0.4147	0.71	Q		V			
14+ 0	0.4194	0.69	Q		V			
14+ 5	0.4242	0.70	Q		V			
14+10	0.4293	0.74	Q		V			
14+15	0.4346	0.76	Q		V			
14+20	0.4399	0.77	Q		V			
14+25	0.4451	0.76	Q		V			
14+30	0.4503	0.75	Q		V			
14+35	0.4555	0.75	Q		V			
14+40	0.4607	0.76	Q		V			
14+45	0.4659	0.76	Q		V			
14+50	0.4711	0.75	Q		V			
14+55	0.4762	0.74	Q		V			
15+ 0	0.4813	0.74	Q		V			
15+ 5	0.4863	0.73	Q		V			
15+10	0.4912	0.72	Q		V			
15+15	0.4961	0.71	Q		V			
15+20	0.5009	0.70	Q		V			
15+25	0.5056	0.69	Q		V			
15+30	0.5103	0.68	Q		V			
15+35	0.5149	0.66	Q		V			
15+40	0.5191	0.61	Q		V			
15+45	0.5232	0.59	Q		V			
15+50	0.5271	0.57	Q		V			
15+55	0.5310	0.57	Q		V			
16+ 0	0.5349	0.56	Q		V			
16+ 5	0.5384	0.51	Q		V			
16+10	0.5407	0.34	Q		V			
16+15	0.5423	0.23	Q		V			
16+20	0.5437	0.19	Q		V			
16+25	0.5448	0.17	Q		V			
16+30	0.5459	0.15	Q		V			
16+35	0.5468	0.14	Q		V			
16+40	0.5476	0.12	Q		V			
16+45	0.5483	0.10	Q		V			
16+50	0.5490	0.10	Q		V			
16+55	0.5497	0.09	Q		V			
17+ 0	0.5503	0.09	Q		V			
17+ 5	0.5509	0.10	Q		V			
17+10	0.5517	0.12	Q		V			
17+15	0.5526	0.13	Q		V			
17+20	0.5536	0.14	Q		V			
17+25	0.5545	0.14	Q		V			
17+30	0.5555	0.14	Q		V			
17+35	0.5565	0.14	Q		V			
17+40	0.5575	0.14	Q		V			
17+45	0.5585	0.14	Q		V			
17+50	0.5594	0.14	Q		V			
17+55	0.5603	0.13	Q		V			

18+ 0	0.5612	0.12	Q	|	|	|	V |
18+ 5	0.5620	0.12	Q	|	|	|	V |
18+10	0.5628	0.12	Q	|	|	|	V |
18+15	0.5637	0.12	Q	|	|	|	V |
18+20	0.5645	0.12	Q	|	|	|	V |
18+25	0.5653	0.12	Q	|	|	|	V |
18+30	0.5661	0.12	Q	|	|	|	V |
18+35	0.5669	0.11	Q	|	|	|	V |
18+40	0.5676	0.10	Q	|	|	|	V |
18+45	0.5682	0.09	Q	|	|	|	V |
18+50	0.5688	0.09	Q	|	|	|	V |
18+55	0.5694	0.08	Q	|	|	|	V |
19+ 0	0.5698	0.07	Q	|	|	|	V |
19+ 5	0.5703	0.07	Q	|	|	|	V |
19+10	0.5708	0.08	Q	|	|	|	V |
19+15	0.5714	0.08	Q	|	|	|	V |
19+20	0.5720	0.09	Q	|	|	|	V |
19+25	0.5727	0.10	Q	|	|	|	V |
19+30	0.5734	0.11	Q	|	|	|	V |
19+35	0.5742	0.11	Q	|	|	|	V |
19+40	0.5748	0.10	Q	|	|	|	V |
19+45	0.5755	0.09	Q	|	|	|	V |
19+50	0.5761	0.09	Q	|	|	|	V |
19+55	0.5766	0.07	Q	|	|	|	V |
20+ 0	0.5770	0.07	Q	|	|	|	V |
20+ 5	0.5775	0.07	Q	|	|	|	V |
20+10	0.5780	0.08	Q	|	|	|	V |
20+15	0.5786	0.08	Q	|	|	|	V |
20+20	0.5792	0.08	Q	|	|	|	V |
20+25	0.5798	0.09	Q	|	|	|	V |
20+30	0.5804	0.09	Q	|	|	|	V |
20+35	0.5810	0.09	Q	|	|	|	V |
20+40	0.5816	0.09	Q	|	|	|	V |
20+45	0.5822	0.09	Q	|	|	|	V |
20+50	0.5827	0.08	Q	|	|	|	V |
20+55	0.5832	0.07	Q	|	|	|	V |
21+ 0	0.5837	0.07	Q	|	|	|	V |
21+ 5	0.5841	0.07	Q	|	|	|	V |
21+10	0.5847	0.08	Q	|	|	|	V |
21+15	0.5852	0.08	Q	|	|	|	V |
21+20	0.5858	0.08	Q	|	|	|	V |
21+25	0.5863	0.07	Q	|	|	|	V|
21+30	0.5867	0.06	Q	|	|	|	V|
21+35	0.5872	0.07	Q	|	|	|	V|
21+40	0.5877	0.08	Q	|	|	|	V|
21+45	0.5882	0.08	Q	|	|	|	V|
21+50	0.5888	0.08	Q	|	|	|	V|
21+55	0.5893	0.07	Q	|	|	|	V|
22+ 0	0.5897	0.06	Q	|	|	|	V|
22+ 5	0.5902	0.07	Q	|	|	|	V|
22+10	0.5907	0.08	Q	|	|	|	V|
22+15	0.5912	0.08	Q	|	|	|	V|
22+20	0.5918	0.08	Q	|	|	|	V|
22+25	0.5923	0.07	Q	|	|	|	V|
22+30	0.5927	0.06	Q	|	|	|	V|
22+35	0.5931	0.06	Q	|	|	|	V|
22+40	0.5936	0.06	Q	|	|	|	V|
22+45	0.5940	0.06	Q	|	|	|	V|
22+50	0.5944	0.06	Q	|	|	|	V|
22+55	0.5948	0.06	Q	|	|	|	V|
23+ 0	0.5952	0.06	Q	|	|	|	V|
23+ 5	0.5956	0.06	Q	|	|	|	V|
23+10	0.5960	0.06	Q	|	|	|	V|
23+15	0.5964	0.06	Q	|	|	|	V|
23+20	0.5968	0.06	Q	|	|	|	V|
23+25	0.5972	0.06	Q	|	|	|	V|
23+30	0.5976	0.06	Q	|	|	|	V|
23+35	0.5980	0.06	Q	|	|	|	V|
23+40	0.5984	0.06	Q	|	|	|	V|
23+45	0.5988	0.06	Q	|	|	|	V|

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   23+50       0.5992      0.06  Q          |          |          |         V|
   23+55       0.5996      0.06  Q          |          |          |         V|
   24+ 0       0.6000      0.06  Q          |          |          |         V|
   24+ 5       0.6004      0.05  Q          |          |          |         V|
   24+10       0.6006      0.03  Q          |          |          |         V|
   24+15       0.6007      0.02  Q          |          |          |         V|
   24+20       0.6007      0.01  Q          |          |          |         V|
   24+25       0.6008      0.01  Q          |          |          |         V|
   24+30       0.6008      0.00  Q          |          |          |         V|
   24+35       0.6008      0.00  Q          |          |          |         V|
   24+40       0.6008      0.00  Q          |          |          |         V|
   24+45       0.6009      0.00  Q          |          |          |         V|
   24+50       0.6009      0.00  Q          |          |          |         V|
   24+55       0.6009      0.00  Q          |          |          |          V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946P2B1110.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
10 YEAR - 1 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.118 Hr.
Lag time = 7.07 Min.
25% of lag time = 1.77 Min.
40% of lag time = 2.83 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]
3.70	0.55	2.04

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	1.30	4.81

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.859(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.859(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.700	0.112	1.000	0.112

Sum (F) = 0.112

Area averaged mean soil loss (F) (In/Hr) = 0.112
Minimum soil loss rate ((In/Hr)) = 0.056
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	70.723	10.810	0.403
2	0.167	141.447	40.476	1.509
3	0.250	212.170	22.901	0.854
4	0.333	282.893	8.944	0.334
5	0.417	353.617	5.438	0.203
6	0.500	424.340	3.596	0.134
7	0.583	495.064	2.417	0.090
8	0.667	565.787	1.879	0.070
9	0.750	636.510	1.322	0.049
10	0.833	707.234	0.931	0.035
11	0.917	777.957	0.712	0.027
12	1.000	848.680	0.574	0.021
		Sum = 100.000	Sum=	3.729

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	0.340	0.112	(0.116)	0.228
2	0.17	4.20	0.433	0.112	(0.147)	0.321
3	0.25	4.40	0.453	0.112	(0.154)	0.341
4	0.33	4.80	0.495	0.112	(0.168)	0.382
5	0.42	5.20	0.536	0.112	(0.182)	0.424
6	0.50	6.20	0.639	0.112	(0.217)	0.527
7	0.58	6.80	0.701	0.112	(0.238)	0.588
8	0.67	8.80	0.907	0.112	(0.308)	0.794
9	0.75	13.90	1.432	0.112	(0.487)	1.320
10	0.83	31.40	3.235	0.112	(1.100)	3.123
11	0.92	7.20	0.742	0.112	(0.252)	0.630
12	1.00	3.80	0.391	0.112	(0.133)	0.279
	(Loss Rate Not Used)				
Sum =	100.0				Sum = 9.0

Flood volume = Effective rainfall 0.75(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 0.11(In)
Total soil loss = 0.035(Ac.Ft)
Total rainfall = 0.86(In)
Flood volume = 10025.1 Cubic Feet
Total soil loss = 1505.7 Cubic Feet

Peak flow rate of this hydrograph = 6.652(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	2.5	5.0	7.5	10.0

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  ------------------------------------------------------------------------
    0+ 5       0.0006      0.09  Q         |         |         |         |
    0+10       0.0039      0.47  VQ        |         |         |         |
    0+15       0.0095      0.82  |V Q      |         |         |         |
    0+20       0.0165      1.02  | V Q     |         |         |         |
    0+25       0.0248      1.19  |   Q     |         |         |         |
    0+30       0.0343      1.39  |    Q    |         |         |         |
    0+35       0.0457      1.65  |     QV  |         |         |         |
    0+40       0.0593      1.97  |      Q  V         |         |         |
    0+45       0.0773      2.61  |         Q  V      |         |         |
    0+50       0.1074      4.37  |         |      QV |         |         |
    0+55       0.1532      6.65  |         |         |     Q   |         |
    1+ 0       0.1844      4.53  |         |       Q |         | V       |
    1+ 5       0.2017      2.52  |         Q         |         |    V    |
    1+10       0.2116      1.43  |    Q    |         |         |     V   |
    1+15       0.2177      0.88  |  Q      |         |         |      V  |
    1+20       0.2218      0.60  | Q       |         |         |       V |
    1+25       0.2248      0.43  |Q        |         |         |        V|
    1+30       0.2269      0.30  |Q        |         |         |        V|
    1+35       0.2283      0.21  Q         |         |         |        V|
    1+40       0.2293      0.15  Q         |         |         |        V|
    1+45       0.2300      0.09  Q         |         |         |        V|
    1+50       0.2301      0.02  Q         |         |         |        V|
    1+55       0.2301      0.01  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946P2B1310.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
10 YEAR - 3 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.118 Hr.
Lag time = 7.07 Min.
25% of lag time = 1.77 Min.
40% of lag time = 2.83 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]
3.70	0.90	3.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	2.25	8.33

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.455(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.455(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.700	0.112	1.000	0.112

Sum (F) = 0.112

Area averaged mean soil loss (F) (In/Hr) = 0.112
Minimum soil loss rate ((In/Hr)) = 0.056
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	70.723	10.810	0.403
2	0.167	141.447	40.476	1.509
3	0.250	212.170	22.901	0.854
4	0.333	282.893	8.944	0.334
5	0.417	353.617	5.438	0.203
6	0.500	424.340	3.596	0.134
7	0.583	495.064	2.417	0.090
8	0.667	565.787	1.879	0.070
9	0.750	636.510	1.322	0.049
10	0.833	707.234	0.931	0.035
11	0.917	777.957	0.712	0.027
12	1.000	848.680	0.574	0.021
		Sum = 100.000	Sum=	3.729

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	0.227	(0.112)	0.077	0.150
2	0.17	1.30	0.227	(0.112)	0.077	0.150
3	0.25	1.10	0.192	(0.112)	0.065	0.127
4	0.33	1.50	0.262	(0.112)	0.089	0.173
5	0.42	1.50	0.262	(0.112)	0.089	0.173
6	0.50	1.80	0.314	(0.112)	0.107	0.207
7	0.58	1.50	0.262	(0.112)	0.089	0.173
8	0.67	1.80	0.314	(0.112)	0.107	0.207
9	0.75	1.80	0.314	(0.112)	0.107	0.207
10	0.83	1.50	0.262	(0.112)	0.089	0.173
11	0.92	1.60	0.279	(0.112)	0.095	0.184
12	1.00	1.80	0.314	(0.112)	0.107	0.207
13	1.08	2.20	0.384	0.112	(0.131)	0.272
14	1.17	2.20	0.384	0.112	(0.131)	0.272
15	1.25	2.20	0.384	0.112	(0.131)	0.272
16	1.33	2.00	0.349	0.112	(0.119)	0.237
17	1.42	2.60	0.454	0.112	(0.154)	0.342
18	1.50	2.70	0.472	0.112	(0.160)	0.359
19	1.58	2.40	0.419	0.112	(0.143)	0.307
20	1.67	2.70	0.472	0.112	(0.160)	0.359
21	1.75	3.30	0.576	0.112	(0.196)	0.464
22	1.83	3.10	0.541	0.112	(0.184)	0.429
23	1.92	2.90	0.506	0.112	(0.172)	0.394
24	2.00	3.00	0.524	0.112	(0.178)	0.412
25	2.08	3.10	0.541	0.112	(0.184)	0.429
26	2.17	4.20	0.734	0.112	(0.249)	0.621
27	2.25	5.00	0.873	0.112	(0.297)	0.761
28	2.33	3.50	0.611	0.112	(0.208)	0.499
29	2.42	6.80	1.188	0.112	(0.404)	1.075
30	2.50	7.30	1.275	0.112	(0.433)	1.163
31	2.58	8.20	1.432	0.112	(0.487)	1.320
32	2.67	5.90	1.030	0.112	(0.350)	0.918
33	2.75	2.00	0.349	0.112	(0.119)	0.237
34	2.83	1.80	0.314	(0.112)	0.107	0.207

```
35   2.92     1.80      0.314       (  0.112)       0.107        0.207
36   3.00     0.60      0.105       (  0.112)       0.036        0.069
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    13.8
     Flood volume = Effective rainfall      1.15(In)
      times area       3.7(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
     Total soil loss =      0.31(In)
     Total soil loss =     0.095(Ac.Ft)
     Total rainfall =      1.46(In)
     Flood volume =       15403.5 Cubic Feet
     Total soil loss =        4143.7 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      4.061(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0004      0.06  Q         |         |         |         |
  0+10       0.0024      0.29  VQ        |         |         |         |
  0+15       0.0052      0.41  VQ        |         |         |         |
  0+20       0.0082      0.44  VQ        |         |         |         |
  0+25       0.0118      0.52  |VQ       |         |         |         |
  0+30       0.0158      0.59  |VQ       |         |         |         |
  0+35       0.0203      0.65  | Q       |         |         |         |
  0+40       0.0248      0.66  | Q       |         |         |         |
  0+45       0.0296      0.70  | QV      |         |         |         |
  0+50       0.0346      0.72  | QV      |         |         |         |
  0+55       0.0393      0.69  | Q V     |         |         |         |
  1+ 0       0.0441      0.70  | Q V     |         |         |         |
  1+ 5       0.0493      0.76  |  Q V    |         |         |         |
  1+10       0.0554      0.88  |  Q  V   |         |         |         |
  1+15       0.0619      0.94  |  Q  V   |         |         |         |
  1+20       0.0684      0.95  |  Q   V  |         |         |         |
  1+25       0.0750      0.96  |  Q    V |         |         |         |
  1+30       0.0826      1.10  |   Q    V|         |         |         |
  1+35       0.0908      1.19  |   Q     V         |         |         |
  1+40       0.0990      1.18  |   Q     |V        |         |         |
  1+45       0.1078      1.29  |    Q    | V       |         |         |
  1+50       0.1180      1.48  |    Q    |  V      |         |         |
  1+55       0.1284      1.52  |     Q   |   V     |         |         |
  2+ 0       0.1387      1.49  |    Q    |    V    |         |         |
  2+ 5       0.1491      1.51  |     Q   |     V   |         |         |
  2+10       0.1603      1.63  |     Q   |       V |         |         |
  2+15       0.1740      2.00  |      Q  |        V|         |         |
  2+20       0.1897      2.28  |        Q|         |V        |         |
  2+25       0.2056      2.30  |        Q|         |  V      |         |
  2+30       0.2268      3.08  |         | Q       |    V    |         |
  2+35       0.2525      3.73  |         |   Q     |       V |         |
  2+40       0.2805      4.06  |         |     Q   |         |V        |
  2+45       0.3042      3.45  |         |  Q      |         |   V     |
  2+50       0.3194      2.21  |       Q |         |         |     V   |
  2+55       0.3301      1.54  |     Q   |         |         |      V  |
  3+ 0       0.3384      1.22  |   Q     |         |         |       V |
  3+ 5       0.3441      0.83  |  Q      |         |         |       V |
  3+10       0.3476      0.50  | Q       |         |         |        V|
  3+15       0.3498      0.32  |Q        |         |         |        V|
  3+20       0.3514      0.22  Q         |         |         |        V|
  3+25       0.3524      0.15  Q         |         |         |        V|
  3+30       0.3530      0.09  Q         |         |         |        V|
  3+35       0.3533      0.05  Q         |         |         |        V|
  3+40       0.3535      0.02  Q         |         |         |        V|
  3+45       0.3536      0.01  Q         |         |         |        V|
  3+50       0.3536      0.01  Q         |         |         |        V|
  3+55       0.3536      0.00  Q         |         |         |         V
```

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

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Study date 02/20/20 File: 8946P2B1610.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
10 YEAR - 6 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.118 Hr.
Lag time = 7.07 Min.
25% of lag time = 1.77 Min.
40% of lag time = 2.83 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]
3.70	1.30	4.81

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	3.00	11.10

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.999(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.700	0.112	1.000	0.112

Sum (F) = 0.112

Area averaged mean soil loss (F) (In/Hr) = 0.112
Minimum soil loss rate ((In/Hr)) = 0.056
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	70.723	10.810	0.403
2	0.167	141.447	40.476	1.509
3	0.250	212.170	22.901	0.854
4	0.333	282.893	8.944	0.334
5	0.417	353.617	5.438	0.203
6	0.500	424.340	3.596	0.134
7	0.583	495.064	2.417	0.090
8	0.667	565.787	1.879	0.070
9	0.750	636.510	1.322	0.049
10	0.833	707.234	0.931	0.035
11	0.917	777.957	0.712	0.027
12	1.000	848.680	0.574	0.021
		Sum = 100.000	Sum=	3.729

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	0.120	(0.112)		0.041	0.079
2	0.17	0.60	0.144	(0.112)		0.049	0.095
3	0.25	0.60	0.144	(0.112)		0.049	0.095
4	0.33	0.60	0.144	(0.112)		0.049	0.095
5	0.42	0.60	0.144	(0.112)		0.049	0.095
6	0.50	0.70	0.168	(0.112)		0.057	0.111
7	0.58	0.70	0.168	(0.112)		0.057	0.111
8	0.67	0.70	0.168	(0.112)		0.057	0.111
9	0.75	0.70	0.168	(0.112)		0.057	0.111
10	0.83	0.70	0.168	(0.112)		0.057	0.111
11	0.92	0.70	0.168	(0.112)		0.057	0.111
12	1.00	0.80	0.192	(0.112)		0.065	0.127
13	1.08	0.80	0.192	(0.112)		0.065	0.127
14	1.17	0.80	0.192	(0.112)		0.065	0.127
15	1.25	0.80	0.192	(0.112)		0.065	0.127
16	1.33	0.80	0.192	(0.112)		0.065	0.127
17	1.42	0.80	0.192	(0.112)		0.065	0.127
18	1.50	0.80	0.192	(0.112)		0.065	0.127
19	1.58	0.80	0.192	(0.112)		0.065	0.127
20	1.67	0.80	0.192	(0.112)		0.065	0.127
21	1.75	0.80	0.192	(0.112)		0.065	0.127
22	1.83	0.80	0.192	(0.112)		0.065	0.127
23	1.92	0.80	0.192	(0.112)		0.065	0.127
24	2.00	0.90	0.216	(0.112)		0.073	0.143
25	2.08	0.80	0.192	(0.112)		0.065	0.127
26	2.17	0.90	0.216	(0.112)		0.073	0.143
27	2.25	0.90	0.216	(0.112)		0.073	0.143
28	2.33	0.90	0.216	(0.112)		0.073	0.143
29	2.42	0.90	0.216	(0.112)		0.073	0.143
30	2.50	0.90	0.216	(0.112)		0.073	0.143
31	2.58	0.90	0.216	(0.112)		0.073	0.143
32	2.67	0.90	0.216	(0.112)		0.073	0.143
33	2.75	1.00	0.240	(0.112)		0.082	0.158
34	2.83	1.00	0.240	(0.112)		0.082	0.158

35	2.92	1.00	0.240	(0.112)	0.082	0.158	
36	3.00	1.00	0.240	(0.112)	0.082	0.158	
37	3.08	1.00	0.240	(0.112)	0.082	0.158	
38	3.17	1.10	0.264	(0.112)	0.090	0.174	
39	3.25	1.10	0.264	(0.112)	0.090	0.174	
40	3.33	1.10	0.264	(0.112)	0.090	0.174	
41	3.42	1.20	0.288	(0.112)	0.098	0.190	
42	3.50	1.30	0.312	(0.112)	0.106	0.206	
43	3.58	1.40	0.336	0.112	(0.114)	0.224	
44	3.67	1.40	0.336	0.112	(0.114)	0.224	
45	3.75	1.50	0.360	0.112	(0.122)	0.248	
46	3.83	1.50	0.360	0.112	(0.122)	0.248	
47	3.92	1.60	0.384	0.112	(0.131)	0.272	
48	4.00	1.60	0.384	0.112	(0.131)	0.272	
49	4.08	1.70	0.408	0.112	(0.139)	0.296	
50	4.17	1.80	0.432	0.112	(0.147)	0.320	
51	4.25	1.90	0.456	0.112	(0.155)	0.344	
52	4.33	2.00	0.480	0.112	(0.163)	0.368	
53	4.42	2.10	0.504	0.112	(0.171)	0.392	
54	4.50	2.10	0.504	0.112	(0.171)	0.392	
55	4.58	2.20	0.528	0.112	(0.179)	0.416	
56	4.67	2.30	0.552	0.112	(0.188)	0.440	
57	4.75	2.40	0.576	0.112	(0.196)	0.464	
58	4.83	2.40	0.576	0.112	(0.196)	0.464	
59	4.92	2.50	0.600	0.112	(0.204)	0.488	
60	5.00	2.60	0.624	0.112	(0.212)	0.512	
61	5.08	3.10	0.744	0.112	(0.253)	0.632	
62	5.17	3.60	0.864	0.112	(0.294)	0.752	
63	5.25	3.90	0.936	0.112	(0.318)	0.824	
64	5.33	4.20	1.008	0.112	(0.343)	0.896	
65	5.42	4.70	1.128	0.112	(0.383)	1.016	
66	5.50	5.60	1.344	0.112	(0.457)	1.231	
67	5.58	1.90	0.456	0.112	(0.155)	0.344	
68	5.67	0.90	0.216	(0.112)	0.073	0.143	
69	5.75	0.60	0.144	(0.112)	0.049	0.095	
70	5.83	0.50	0.120	(0.112)	0.041	0.079	
71	5.92	0.30	0.072	(0.112)	0.024	0.048	
72	6.00	0.20	0.048	(0.112)	0.016	0.032	

(Loss Rate Not Used)

Sum = 100.0 Sum = 18.1

Flood volume = Effective rainfall 1.51(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)
Total soil loss = 0.49(In)
Total soil loss = 0.152(Ac.Ft)
Total rainfall = 2.00(In)
Flood volume = 20247.1 Cubic Feet
Total soil loss = 6606.5 Cubic Feet

Peak flow rate of this hydrograph = 3.587(CFS)

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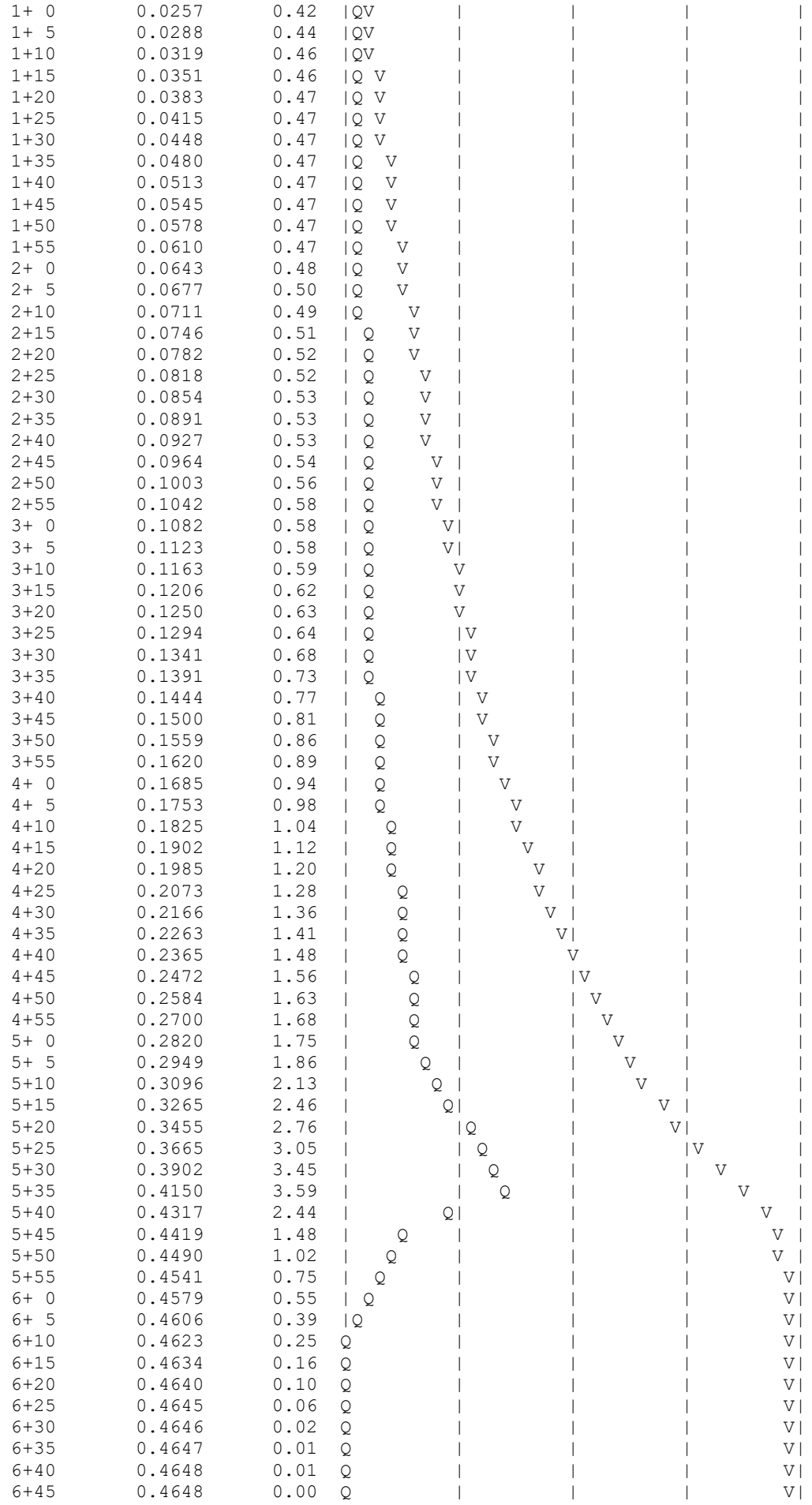
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.03	Q	|	|	|	|
0+10	0.0013	0.16	Q	|	|	|	|
0+15	0.0030	0.25	Q	|	|	|	|
0+20	0.0050	0.29	VQ	|	|	|	|
0+25	0.0072	0.31	VQ	|	|	|	|
0+30	0.0094	0.33	VQ	|	|	|	|
0+35	0.0119	0.36	|Q	|	|	|	|
0+40	0.0146	0.38	|Q	|	|	|	|
0+45	0.0173	0.39	|Q	|	|	|	|
0+50	0.0201	0.40	|Q	|	|	|	|
0+55	0.0229	0.41	|Q	|	|	|	|



```
    6+50       0.4648      0.00  Q          |          |          |         V|
    6+55       0.4648      0.00  Q          |          |          |          V
-------------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946P2B12410.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
10 YEAR - 24 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.118 Hr.
Lag time = 7.07 Min.
25% of lag time = 1.77 Min.
40% of lag time = 2.83 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]
3.70	2.25	8.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	5.25	19.43

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 3.484(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.484(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.700	0.112	1.000	0.112

Sum (F) = 0.112

Area averaged mean soil loss (F) (In/Hr) = 0.112
Minimum soil loss rate ((In/Hr)) = 0.056
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	70.723	10.810	0.403
2	0.167	141.447	40.476	1.509
3	0.250	212.170	22.901	0.854
4	0.333	282.893	8.944	0.334
5	0.417	353.617	5.438	0.203
6	0.500	424.340	3.596	0.134
7	0.583	495.064	2.417	0.090
8	0.667	565.787	1.879	0.070
9	0.750	636.510	1.322	0.049
10	0.833	707.234	0.931	0.035
11	0.917	777.957	0.712	0.027
12	1.000	848.680	0.574	0.021
		Sum = 100.000	Sum=	3.729

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.028	(0.199)	0.009	0.018
2	0.17	0.07	0.028	(0.198)	0.009	0.018
3	0.25	0.07	0.028	(0.197)	0.009	0.018
4	0.33	0.10	0.042	(0.196)	0.014	0.028
5	0.42	0.10	0.042	(0.196)	0.014	0.028
6	0.50	0.10	0.042	(0.195)	0.014	0.028
7	0.58	0.10	0.042	(0.194)	0.014	0.028
8	0.67	0.10	0.042	(0.193)	0.014	0.028
9	0.75	0.10	0.042	(0.193)	0.014	0.028
10	0.83	0.13	0.056	(0.192)	0.019	0.037
11	0.92	0.13	0.056	(0.191)	0.019	0.037
12	1.00	0.13	0.056	(0.190)	0.019	0.037
13	1.08	0.10	0.042	(0.190)	0.014	0.028
14	1.17	0.10	0.042	(0.189)	0.014	0.028
15	1.25	0.10	0.042	(0.188)	0.014	0.028
16	1.33	0.10	0.042	(0.187)	0.014	0.028
17	1.42	0.10	0.042	(0.187)	0.014	0.028
18	1.50	0.10	0.042	(0.186)	0.014	0.028
19	1.58	0.10	0.042	(0.185)	0.014	0.028
20	1.67	0.10	0.042	(0.184)	0.014	0.028
21	1.75	0.10	0.042	(0.184)	0.014	0.028
22	1.83	0.13	0.056	(0.183)	0.019	0.037
23	1.92	0.13	0.056	(0.182)	0.019	0.037
24	2.00	0.13	0.056	(0.181)	0.019	0.037
25	2.08	0.13	0.056	(0.181)	0.019	0.037
26	2.17	0.13	0.056	(0.180)	0.019	0.037
27	2.25	0.13	0.056	(0.179)	0.019	0.037
28	2.33	0.13	0.056	(0.179)	0.019	0.037
29	2.42	0.13	0.056	(0.178)	0.019	0.037
30	2.50	0.13	0.056	(0.177)	0.019	0.037
31	2.58	0.17	0.070	(0.176)	0.024	0.046
32	2.67	0.17	0.070	(0.176)	0.024	0.046
33	2.75	0.17	0.070	(0.175)	0.024	0.046
34	2.83	0.17	0.070	(0.174)	0.024	0.046

35	2.92	0.17	0.070	(0.173)	0.024	0.046
36	3.00	0.17	0.070	(0.173)	0.024	0.046
37	3.08	0.17	0.070	(0.172)	0.024	0.046
38	3.17	0.17	0.070	(0.171)	0.024	0.046
39	3.25	0.17	0.070	(0.171)	0.024	0.046
40	3.33	0.17	0.070	(0.170)	0.024	0.046
41	3.42	0.17	0.070	(0.169)	0.024	0.046
42	3.50	0.17	0.070	(0.168)	0.024	0.046
43	3.58	0.17	0.070	(0.168)	0.024	0.046
44	3.67	0.17	0.070	(0.167)	0.024	0.046
45	3.75	0.17	0.070	(0.166)	0.024	0.046
46	3.83	0.20	0.084	(0.166)	0.028	0.055
47	3.92	0.20	0.084	(0.165)	0.028	0.055
48	4.00	0.20	0.084	(0.164)	0.028	0.055
49	4.08	0.20	0.084	(0.164)	0.028	0.055
50	4.17	0.20	0.084	(0.163)	0.028	0.055
51	4.25	0.20	0.084	(0.162)	0.028	0.055
52	4.33	0.23	0.098	(0.161)	0.033	0.064
53	4.42	0.23	0.098	(0.161)	0.033	0.064
54	4.50	0.23	0.098	(0.160)	0.033	0.064
55	4.58	0.23	0.098	(0.159)	0.033	0.064
56	4.67	0.23	0.098	(0.159)	0.033	0.064
57	4.75	0.23	0.098	(0.158)	0.033	0.064
58	4.83	0.27	0.111	(0.157)	0.038	0.074
59	4.92	0.27	0.111	(0.157)	0.038	0.074
60	5.00	0.27	0.111	(0.156)	0.038	0.074
61	5.08	0.20	0.084	(0.155)	0.028	0.055
62	5.17	0.20	0.084	(0.155)	0.028	0.055
63	5.25	0.20	0.084	(0.154)	0.028	0.055
64	5.33	0.23	0.098	(0.153)	0.033	0.064
65	5.42	0.23	0.098	(0.153)	0.033	0.064
66	5.50	0.23	0.098	(0.152)	0.033	0.064
67	5.58	0.27	0.111	(0.151)	0.038	0.074
68	5.67	0.27	0.111	(0.151)	0.038	0.074
69	5.75	0.27	0.111	(0.150)	0.038	0.074
70	5.83	0.27	0.111	(0.149)	0.038	0.074
71	5.92	0.27	0.111	(0.149)	0.038	0.074
72	6.00	0.27	0.111	(0.148)	0.038	0.074
73	6.08	0.30	0.125	(0.147)	0.043	0.083
74	6.17	0.30	0.125	(0.147)	0.043	0.083
75	6.25	0.30	0.125	(0.146)	0.043	0.083
76	6.33	0.30	0.125	(0.145)	0.043	0.083
77	6.42	0.30	0.125	(0.145)	0.043	0.083
78	6.50	0.30	0.125	(0.144)	0.043	0.083
79	6.58	0.33	0.139	(0.143)	0.047	0.092
80	6.67	0.33	0.139	(0.143)	0.047	0.092
81	6.75	0.33	0.139	(0.142)	0.047	0.092
82	6.83	0.33	0.139	(0.141)	0.047	0.092
83	6.92	0.33	0.139	(0.141)	0.047	0.092
84	7.00	0.33	0.139	(0.140)	0.047	0.092
85	7.08	0.33	0.139	(0.140)	0.047	0.092
86	7.17	0.33	0.139	(0.139)	0.047	0.092
87	7.25	0.33	0.139	(0.138)	0.047	0.092
88	7.33	0.37	0.153	(0.138)	0.052	0.101
89	7.42	0.37	0.153	(0.137)	0.052	0.101
90	7.50	0.37	0.153	(0.136)	0.052	0.101
91	7.58	0.40	0.167	(0.136)	0.057	0.110
92	7.67	0.40	0.167	(0.135)	0.057	0.110
93	7.75	0.40	0.167	(0.135)	0.057	0.110
94	7.83	0.43	0.181	(0.134)	0.062	0.120
95	7.92	0.43	0.181	(0.133)	0.062	0.120
96	8.00	0.43	0.181	(0.133)	0.062	0.120
97	8.08	0.50	0.209	(0.132)	0.071	0.138
98	8.17	0.50	0.209	(0.131)	0.071	0.138
99	8.25	0.50	0.209	(0.131)	0.071	0.138
100	8.33	0.50	0.209	(0.130)	0.071	0.138
101	8.42	0.50	0.209	(0.130)	0.071	0.138
102	8.50	0.50	0.209	(0.129)	0.071	0.138
103	8.58	0.53	0.223	(0.128)	0.076	0.147
104	8.67	0.53	0.223	(0.128)	0.076	0.147

105	8.75	0.53	0.223	(	0.127)	0.076	0.147
106	8.83	0.57	0.237	(	0.127)	0.081	0.156
107	8.92	0.57	0.237	(	0.126)	0.081	0.156
108	9.00	0.57	0.237	(	0.125)	0.081	0.156
109	9.08	0.63	0.265	(	0.125)	0.090	0.175
110	9.17	0.63	0.265	(	0.124)	0.090	0.175
111	9.25	0.63	0.265	(	0.124)	0.090	0.175
112	9.33	0.67	0.279	(	0.123)	0.095	0.184
113	9.42	0.67	0.279	(	0.122)	0.095	0.184
114	9.50	0.67	0.279	(	0.122)	0.095	0.184
115	9.58	0.70	0.293	(	0.121)	0.100	0.193
116	9.67	0.70	0.293	(	0.121)	0.100	0.193
117	9.75	0.70	0.293	(	0.120)	0.100	0.193
118	9.83	0.73	0.307	(	0.120)	0.104	0.202
119	9.92	0.73	0.307	(	0.119)	0.104	0.202
120	10.00	0.73	0.307	(	0.118)	0.104	0.202
121	10.08	0.50	0.209	(	0.118)	0.071	0.138
122	10.17	0.50	0.209	(	0.117)	0.071	0.138
123	10.25	0.50	0.209	(	0.117)	0.071	0.138
124	10.33	0.50	0.209	(	0.116)	0.071	0.138
125	10.42	0.50	0.209	(	0.116)	0.071	0.138
126	10.50	0.50	0.209	(	0.115)	0.071	0.138
127	10.58	0.67	0.279	(	0.114)	0.095	0.184
128	10.67	0.67	0.279	(	0.114)	0.095	0.184
129	10.75	0.67	0.279	(	0.113)	0.095	0.184
130	10.83	0.67	0.279	(	0.113)	0.095	0.184
131	10.92	0.67	0.279	(	0.112)	0.095	0.184
132	11.00	0.67	0.279	(	0.112)	0.095	0.184
133	11.08	0.63	0.265	(	0.111)	0.090	0.175
134	11.17	0.63	0.265	(	0.111)	0.090	0.175
135	11.25	0.63	0.265	(	0.110)	0.090	0.175
136	11.33	0.63	0.265	(	0.109)	0.090	0.175
137	11.42	0.63	0.265	(	0.109)	0.090	0.175
138	11.50	0.63	0.265	(	0.108)	0.090	0.175
139	11.58	0.57	0.237	(	0.108)	0.081	0.156
140	11.67	0.57	0.237	(	0.107)	0.081	0.156
141	11.75	0.57	0.237	(	0.107)	0.081	0.156
142	11.83	0.60	0.251	(	0.106)	0.085	0.166
143	11.92	0.60	0.251	(	0.106)	0.085	0.166
144	12.00	0.60	0.251	(	0.105)	0.085	0.166
145	12.08	0.83	0.348		0.105	(0.118)	0.244
146	12.17	0.83	0.348		0.104	(0.118)	0.244
147	12.25	0.83	0.348		0.104	(0.118)	0.245
148	12.33	0.87	0.362		0.103	(0.123)	0.259
149	12.42	0.87	0.362		0.103	(0.123)	0.260
150	12.50	0.87	0.362		0.102	(0.123)	0.260
151	12.58	0.93	0.390		0.102	(0.133)	0.289
152	12.67	0.93	0.390		0.101	(0.133)	0.289
153	12.75	0.93	0.390		0.101	(0.133)	0.290
154	12.83	0.97	0.404		0.100	(0.137)	0.304
155	12.92	0.97	0.404		0.100	(0.137)	0.305
156	13.00	0.97	0.404		0.099	(0.137)	0.305
157	13.08	1.13	0.474		0.098	(0.161)	0.375
158	13.17	1.13	0.474		0.098	(0.161)	0.376
159	13.25	1.13	0.474		0.098	(0.161)	0.376
160	13.33	1.13	0.474		0.097	(0.161)	0.377
161	13.42	1.13	0.474		0.097	(0.161)	0.377
162	13.50	1.13	0.474		0.096	(0.161)	0.378
163	13.58	0.77	0.321		0.096	(0.109)	0.225
164	13.67	0.77	0.321		0.095	(0.109)	0.225
165	13.75	0.77	0.321		0.095	(0.109)	0.226
166	13.83	0.77	0.321		0.094	(0.109)	0.226
167	13.92	0.77	0.321		0.094	(0.109)	0.227
168	14.00	0.77	0.321		0.093	(0.109)	0.227
169	14.08	0.90	0.376		0.093	(0.128)	0.284
170	14.17	0.90	0.376		0.092	(0.128)	0.284
171	14.25	0.90	0.376		0.092	(0.128)	0.285
172	14.33	0.87	0.362		0.091	(0.123)	0.271
173	14.42	0.87	0.362		0.091	(0.123)	0.272
174	14.50	0.87	0.362		0.090	(0.123)	0.272

175	14.58	0.87	0.362	0.090	(0.123)	0.273
176	14.67	0.87	0.362	0.089	(0.123)	0.273
177	14.75	0.87	0.362	0.089	(0.123)	0.273
178	14.83	0.83	0.348	0.088	(0.118)	0.260
179	14.92	0.83	0.348	0.088	(0.118)	0.260
180	15.00	0.83	0.348	0.088	(0.118)	0.261
181	15.08	0.80	0.334	0.087	(0.114)	0.247
182	15.17	0.80	0.334	0.087	(0.114)	0.248
183	15.25	0.80	0.334	0.086	(0.114)	0.248
184	15.33	0.77	0.321	0.086	(0.109)	0.235
185	15.42	0.77	0.321	0.085	(0.109)	0.235
186	15.50	0.77	0.321	0.085	(0.109)	0.236
187	15.58	0.63	0.265	0.084	(0.090)	0.180
188	15.67	0.63	0.265	0.084	(0.090)	0.181
189	15.75	0.63	0.265	0.084	(0.090)	0.181
190	15.83	0.63	0.265	0.083	(0.090)	0.182
191	15.92	0.63	0.265	0.083	(0.090)	0.182
192	16.00	0.63	0.265	0.082	(0.090)	0.182
193	16.08	0.13	0.056	(0.082)	0.019	0.037
194	16.17	0.13	0.056	(0.081)	0.019	0.037
195	16.25	0.13	0.056	(0.081)	0.019	0.037
196	16.33	0.13	0.056	(0.081)	0.019	0.037
197	16.42	0.13	0.056	(0.080)	0.019	0.037
198	16.50	0.13	0.056	(0.080)	0.019	0.037
199	16.58	0.10	0.042	(0.079)	0.014	0.028
200	16.67	0.10	0.042	(0.079)	0.014	0.028
201	16.75	0.10	0.042	(0.079)	0.014	0.028
202	16.83	0.10	0.042	(0.078)	0.014	0.028
203	16.92	0.10	0.042	(0.078)	0.014	0.028
204	17.00	0.10	0.042	(0.077)	0.014	0.028
205	17.08	0.17	0.070	(0.077)	0.024	0.046
206	17.17	0.17	0.070	(0.077)	0.024	0.046
207	17.25	0.17	0.070	(0.076)	0.024	0.046
208	17.33	0.17	0.070	(0.076)	0.024	0.046
209	17.42	0.17	0.070	(0.076)	0.024	0.046
210	17.50	0.17	0.070	(0.075)	0.024	0.046
211	17.58	0.17	0.070	(0.075)	0.024	0.046
212	17.67	0.17	0.070	(0.074)	0.024	0.046
213	17.75	0.17	0.070	(0.074)	0.024	0.046
214	17.83	0.13	0.056	(0.074)	0.019	0.037
215	17.92	0.13	0.056	(0.073)	0.019	0.037
216	18.00	0.13	0.056	(0.073)	0.019	0.037
217	18.08	0.13	0.056	(0.073)	0.019	0.037
218	18.17	0.13	0.056	(0.072)	0.019	0.037
219	18.25	0.13	0.056	(0.072)	0.019	0.037
220	18.33	0.13	0.056	(0.072)	0.019	0.037
221	18.42	0.13	0.056	(0.071)	0.019	0.037
222	18.50	0.13	0.056	(0.071)	0.019	0.037
223	18.58	0.10	0.042	(0.070)	0.014	0.028
224	18.67	0.10	0.042	(0.070)	0.014	0.028
225	18.75	0.10	0.042	(0.070)	0.014	0.028
226	18.83	0.07	0.028	(0.069)	0.009	0.018
227	18.92	0.07	0.028	(0.069)	0.009	0.018
228	19.00	0.07	0.028	(0.069)	0.009	0.018
229	19.08	0.10	0.042	(0.068)	0.014	0.028
230	19.17	0.10	0.042	(0.068)	0.014	0.028
231	19.25	0.10	0.042	(0.068)	0.014	0.028
232	19.33	0.13	0.056	(0.068)	0.019	0.037
233	19.42	0.13	0.056	(0.067)	0.019	0.037
234	19.50	0.13	0.056	(0.067)	0.019	0.037
235	19.58	0.10	0.042	(0.067)	0.014	0.028
236	19.67	0.10	0.042	(0.066)	0.014	0.028
237	19.75	0.10	0.042	(0.066)	0.014	0.028
238	19.83	0.07	0.028	(0.066)	0.009	0.018
239	19.92	0.07	0.028	(0.065)	0.009	0.018
240	20.00	0.07	0.028	(0.065)	0.009	0.018
241	20.08	0.10	0.042	(0.065)	0.014	0.028
242	20.17	0.10	0.042	(0.065)	0.014	0.028
243	20.25	0.10	0.042	(0.064)	0.014	0.028
244	20.33	0.10	0.042	(0.064)	0.014	0.028

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245  20.42     0.10      0.042       (  0.064)       0.014        0.028
246  20.50     0.10      0.042       (  0.063)       0.014        0.028
247  20.58     0.10      0.042       (  0.063)       0.014        0.028
248  20.67     0.10      0.042       (  0.063)       0.014        0.028
249  20.75     0.10      0.042       (  0.063)       0.014        0.028
250  20.83     0.07      0.028       (  0.062)       0.009        0.018
251  20.92     0.07      0.028       (  0.062)       0.009        0.018
252  21.00     0.07      0.028       (  0.062)       0.009        0.018
253  21.08     0.10      0.042       (  0.062)       0.014        0.028
254  21.17     0.10      0.042       (  0.061)       0.014        0.028
255  21.25     0.10      0.042       (  0.061)       0.014        0.028
256  21.33     0.07      0.028       (  0.061)       0.009        0.018
257  21.42     0.07      0.028       (  0.061)       0.009        0.018
258  21.50     0.07      0.028       (  0.060)       0.009        0.018
259  21.58     0.10      0.042       (  0.060)       0.014        0.028
260  21.67     0.10      0.042       (  0.060)       0.014        0.028
261  21.75     0.10      0.042       (  0.060)       0.014        0.028
262  21.83     0.07      0.028       (  0.060)       0.009        0.018
263  21.92     0.07      0.028       (  0.059)       0.009        0.018
264  22.00     0.07      0.028       (  0.059)       0.009        0.018
265  22.08     0.10      0.042       (  0.059)       0.014        0.028
266  22.17     0.10      0.042       (  0.059)       0.014        0.028
267  22.25     0.10      0.042       (  0.059)       0.014        0.028
268  22.33     0.07      0.028       (  0.058)       0.009        0.018
269  22.42     0.07      0.028       (  0.058)       0.009        0.018
270  22.50     0.07      0.028       (  0.058)       0.009        0.018
271  22.58     0.07      0.028       (  0.058)       0.009        0.018
272  22.67     0.07      0.028       (  0.058)       0.009        0.018
273  22.75     0.07      0.028       (  0.058)       0.009        0.018
274  22.83     0.07      0.028       (  0.057)       0.009        0.018
275  22.92     0.07      0.028       (  0.057)       0.009        0.018
276  23.00     0.07      0.028       (  0.057)       0.009        0.018
277  23.08     0.07      0.028       (  0.057)       0.009        0.018
278  23.17     0.07      0.028       (  0.057)       0.009        0.018
279  23.25     0.07      0.028       (  0.057)       0.009        0.018
280  23.33     0.07      0.028       (  0.057)       0.009        0.018
281  23.42     0.07      0.028       (  0.057)       0.009        0.018
282  23.50     0.07      0.028       (  0.056)       0.009        0.018
283  23.58     0.07      0.028       (  0.056)       0.009        0.018
284  23.67     0.07      0.028       (  0.056)       0.009        0.018
285  23.75     0.07      0.028       (  0.056)       0.009        0.018
286  23.83     0.07      0.028       (  0.056)       0.009        0.018
287  23.92     0.07      0.028       (  0.056)       0.009        0.018
288  24.00     0.07      0.028       (  0.056)       0.009        0.018
            (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    29.0
      Flood volume = Effective rainfall      2.41(In)
       times area       3.7(Ac.)/[(In)/(Ft.)] =       0.7(Ac.Ft)
      Total soil loss =      1.07(In)
      Total soil loss =     0.330(Ac.Ft)
      Total rainfall =      3.48(In)
      Flood volume =       32423.4 Cubic Feet
      Total soil loss =       14372.9 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      1.384(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       0.0003      0.04  Q         |         |         |         |
   0+15       0.0006      0.05  Q         |         |         |         |
   0+20       0.0011      0.06  Q         |         |         |         |
   0+25       0.0016      0.08  Q         |         |         |         |
```

0+30	0.0022	0.09	Q	|	|	|	|
0+35	0.0029	0.09	Q	|	|	|	|
0+40	0.0035	0.10	Q	|	|	|	|
0+45	0.0042	0.10	Q	|	|	|	|
0+50	0.0049	0.10	Q	|	|	|	|
0+55	0.0057	0.12	Q	|	|	|	|
1+ 0	0.0066	0.13	Q	|	|	|	|
1+ 5	0.0075	0.13	Q	|	|	|	|
1+10	0.0083	0.12	Q	|	|	|	|
1+15	0.0090	0.11	Q	|	|	|	|
1+20	0.0098	0.11	Q	|	|	|	|
1+25	0.0105	0.11	Q	|	|	|	|
1+30	0.0112	0.10	Q	|	|	|	|
1+35	0.0119	0.10	Q	|	|	|	|
1+40	0.0127	0.10	Q	|	|	|	|
1+45	0.0134	0.10	Q	|	|	|	|
1+50	0.0141	0.11	Q	|	|	|	|
1+55	0.0149	0.12	Q	|	|	|	|
2+ 0	0.0158	0.13	Q	|	|	|	|
2+ 5	0.0167	0.13	Q	|	|	|	|
2+10	0.0177	0.13	Q	|	|	|	|
2+15	0.0186	0.13	Q	|	|	|	|
2+20	0.0195	0.14	QV	|	|	|	|
2+25	0.0204	0.14	QV	|	|	|	|
2+30	0.0214	0.14	QV	|	|	|	|
2+35	0.0224	0.14	QV	|	|	|	|
2+40	0.0234	0.15	QV	|	|	|	|
2+45	0.0245	0.16	QV	|	|	|	|
2+50	0.0257	0.17	QV	|	|	|	|
2+55	0.0268	0.17	QV	|	|	|	|
3+ 0	0.0280	0.17	QV	|	|	|	|
3+ 5	0.0292	0.17	QV	|	|	|	|
3+10	0.0303	0.17	QV	|	|	|	|
3+15	0.0315	0.17	QV	|	|	|	|
3+20	0.0327	0.17	QV	|	|	|	|
3+25	0.0339	0.17	QV	|	|	|	|
3+30	0.0351	0.17	QV	|	|	|	|
3+35	0.0362	0.17	QV	|	|	|	|
3+40	0.0374	0.17	Q V	|	|	|	|
3+45	0.0386	0.17	Q V	|	|	|	|
3+50	0.0398	0.18	Q V	|	|	|	|
3+55	0.0411	0.19	Q V	|	|	|	|
4+ 0	0.0425	0.20	Q V	|	|	|	|
4+ 5	0.0439	0.20	Q V	|	|	|	|
4+10	0.0452	0.20	Q V	|	|	|	|
4+15	0.0466	0.20	Q V	|	|	|	|
4+20	0.0481	0.21	Q V	|	|	|	|
4+25	0.0496	0.22	Q V	|	|	|	|
4+30	0.0512	0.23	Q V	|	|	|	|
4+35	0.0528	0.23	Q V	|	|	|	|
4+40	0.0544	0.24	Q V	|	|	|	|
4+45	0.0561	0.24	Q V	|	|	|	|
4+50	0.0577	0.24	Q V	|	|	|	|
4+55	0.0595	0.26	|Q V	|	|	|	|
5+ 0	0.0613	0.26	|Q V	|	|	|	|
5+ 5	0.0631	0.26	|Q V	|	|	|	|
5+10	0.0647	0.24	Q V	|	|	|	|
5+15	0.0663	0.22	Q V	|	|	|	|
5+20	0.0678	0.22	Q V	|	|	|	|
5+25	0.0694	0.23	Q V	|	|	|	|
5+30	0.0710	0.24	Q V	|	|	|	|
5+35	0.0726	0.24	Q V	|	|	|	|
5+40	0.0744	0.26	|Q V	|	|	|	|
5+45	0.0762	0.26	|Q V	|	|	|	|
5+50	0.0781	0.27	|Q V	|	|	|	|
5+55	0.0799	0.27	|Q V	|	|	|	|
6+ 0	0.0818	0.27	|Q V	|	|	|	|
6+ 5	0.0837	0.28	|Q V	|	|	|	|
6+10	0.0857	0.29	|Q V	|	|	|	|
6+15	0.0878	0.30	|Q V	|	|	|	|

6+20	0.0899	0.30	Q V				
6+25	0.0919	0.30	Q V				
6+30	0.0941	0.31	Q V				
6+35	0.0962	0.31	Q V				
6+40	0.0984	0.33	Q V				
6+45	0.1007	0.33	Q V				
6+50	0.1031	0.34	Q V				
6+55	0.1054	0.34	Q V				
7+ 0	0.1077	0.34	Q V				
7+ 5	0.1101	0.34	Q V				
7+10	0.1124	0.34	Q V				
7+15	0.1148	0.34	Q V				
7+20	0.1172	0.35	Q V				
7+25	0.1197	0.36	Q V				
7+30	0.1222	0.37	Q V				
7+35	0.1248	0.38	Q V				
7+40	0.1275	0.39	Q V				
7+45	0.1302	0.40	Q V				
7+50	0.1331	0.41	Q V				
7+55	0.1360	0.42	Q V				
8+ 0	0.1390	0.43	Q V				
8+ 5	0.1420	0.45	Q V				
8+10	0.1453	0.48	Q V				
8+15	0.1487	0.49	Q V				
8+20	0.1522	0.50	Q V				
8+25	0.1556	0.51	Q V				
8+30	0.1591	0.51	Q V				
8+35	0.1627	0.51	Q V				
8+40	0.1663	0.53	Q V				
8+45	0.1700	0.54	Q V				
8+50	0.1738	0.55	Q V				
8+55	0.1777	0.56	Q V				
9+ 0	0.1816	0.57	Q V				
9+ 5	0.1856	0.58	Q V				
9+10	0.1899	0.61	Q V				
9+15	0.1942	0.63	Q V				
9+20	0.1986	0.64	Q V				
9+25	0.2032	0.66	Q V				
9+30	0.2078	0.67	Q V				
9+35	0.2125	0.68	Q V				
9+40	0.2173	0.70	Q V				
9+45	0.2222	0.71	Q V				
9+50	0.2271	0.72	Q V				
9+55	0.2321	0.73	Q V				
10+ 0	0.2372	0.74	Q V				
10+ 5	0.2422	0.72	Q V				
10+10	0.2465	0.63	Q V				
10+15	0.2505	0.57	Q V				
10+20	0.2543	0.55	Q V				
10+25	0.2580	0.54	Q V				
10+30	0.2617	0.53	Q V				
10+35	0.2654	0.55	Q V				
10+40	0.2696	0.61	Q V				
10+45	0.2741	0.65	Q V				
10+50	0.2786	0.66	Q V				
10+55	0.2833	0.67	Q V				
11+ 0	0.2879	0.67	Q V				
11+ 5	0.2925	0.67	Q V				
11+10	0.2971	0.66	Q V				
11+15	0.3016	0.66	Q V				
11+20	0.3061	0.66	Q V				
11+25	0.3106	0.65	Q V				
11+30	0.3151	0.65	Q V				
11+35	0.3196	0.65	Q V				
11+40	0.3239	0.62	Q V				
11+45	0.3280	0.60	Q V				
11+50	0.3321	0.60	Q V				
11+55	0.3363	0.61	Q V				
12+ 0	0.3406	0.61	Q V				
12+ 5	0.3450	0.65	Q V				

12+10	0.3503	0.77	Q	V			
12+15	0.3560	0.83	Q	V			
12+20	0.3620	0.87	Q	V			
12+25	0.3682	0.91	Q	V			
12+30	0.3747	0.93	Q	V			
12+35	0.3812	0.96	Q	V			
12+40	0.3882	1.01	Q	V			
12+45	0.3953	1.04	Q	V			
12+50	0.4026	1.06	Q	V			
12+55	0.4102	1.09	Q	V			
13+ 0	0.4178	1.11	Q	V			
13+ 5	0.4257	1.15	Q	V			
13+10	0.4344	1.26	Q	V			
13+15	0.4436	1.33	Q	V			
13+20	0.4529	1.35	Q	V			
13+25	0.4623	1.37	Q	V			
13+30	0.4719	1.38	Q	V			
13+35	0.4810	1.33	Q	V			
13+40	0.4886	1.11	Q	V			
13+45	0.4954	0.98	Q	V			
13+50	0.5018	0.93	Q	V			
13+55	0.5081	0.91	Q	V			
14+ 0	0.5142	0.89	Q	V			
14+ 5	0.5204	0.90	Q	V			
14+10	0.5271	0.98	Q	V			
14+15	0.5341	1.02	Q	V			
14+20	0.5412	1.03	Q	V			
14+25	0.5482	1.01	Q	V			
14+30	0.5551	1.01	Q	V			
14+35	0.5621	1.01	Q	V			
14+40	0.5691	1.01	Q	V			
14+45	0.5761	1.02	Q	V			
14+50	0.5830	1.01	Q	V			
14+55	0.5899	0.99	Q	V			
15+ 0	0.5967	0.98	Q	V			
15+ 5	0.6034	0.98	Q	V			
15+10	0.6099	0.95	Q	V			
15+15	0.6164	0.94	Q	V			
15+20	0.6228	0.93	Q	V			
15+25	0.6291	0.91	Q	V			
15+30	0.6352	0.89	Q	V			
15+35	0.6412	0.87	Q	V			
15+40	0.6466	0.78	Q	V			
15+45	0.6516	0.73	Q	V			
15+50	0.6565	0.71	Q	V			
15+55	0.6613	0.70	Q	V			
16+ 0	0.6661	0.69	Q	V			
16+ 5	0.6705	0.63	Q	V			
16+10	0.6733	0.41	Q	V			
16+15	0.6752	0.28	Q	V			
16+20	0.6768	0.23	Q	V			
16+25	0.6782	0.20	Q	V			
16+30	0.6794	0.18	Q	V			
16+35	0.6806	0.16	Q	V			
16+40	0.6815	0.14	Q	V			
16+45	0.6824	0.12	Q	V			
16+50	0.6832	0.12	Q	V			
16+55	0.6839	0.11	Q	V			
17+ 0	0.6847	0.11	Q	V			
17+ 5	0.6854	0.11	Q	V			
17+10	0.6864	0.14	Q	V			
17+15	0.6875	0.15	Q	V			
17+20	0.6886	0.16	Q	V			
17+25	0.6897	0.16	Q	V			
17+30	0.6908	0.17	Q	V			
17+35	0.6920	0.17	Q	V			
17+40	0.6932	0.17	Q	V			
17+45	0.6943	0.17	Q	V			
17+50	0.6955	0.17	Q	V			
17+55	0.6965	0.15	Q	V			

18+ 0	0.6975	0.15	Q	|	|	|	V |
18+ 5	0.6985	0.14	Q	|	|	|	V |
18+10	0.6995	0.14	Q	|	|	|	V |
18+15	0.7005	0.14	Q	|	|	|	V |
18+20	0.7014	0.14	Q	|	|	|	V |
18+25	0.7024	0.14	Q	|	|	|	V |
18+30	0.7033	0.14	Q	|	|	|	V |
18+35	0.7042	0.13	Q	|	|	|	V |
18+40	0.7051	0.12	Q	|	|	|	V |
18+45	0.7058	0.11	Q	|	|	|	V |
18+50	0.7066	0.11	Q	|	|	|	V |
18+55	0.7072	0.09	Q	|	|	|	V |
19+ 0	0.7077	0.08	Q	|	|	|	V |
19+ 5	0.7083	0.08	Q	|	|	|	V |
19+10	0.7089	0.09	Q	|	|	|	V |
19+15	0.7096	0.10	Q	|	|	|	V |
19+20	0.7103	0.10	Q	|	|	|	V |
19+25	0.7111	0.12	Q	|	|	|	V |
19+30	0.7120	0.13	Q	|	|	|	V |
19+35	0.7128	0.13	Q	|	|	|	V |
19+40	0.7136	0.11	Q	|	|	|	V |
19+45	0.7144	0.11	Q	|	|	|	V |
19+50	0.7151	0.10	Q	|	|	|	V |
19+55	0.7157	0.09	Q	|	|	|	V |
20+ 0	0.7162	0.08	Q	|	|	|	V |
20+ 5	0.7168	0.08	Q	|	|	|	V |
20+10	0.7174	0.09	Q	|	|	|	V |
20+15	0.7181	0.10	Q	|	|	|	V |
20+20	0.7188	0.10	Q	|	|	|	V |
20+25	0.7195	0.10	Q	|	|	|	V |
20+30	0.7202	0.10	Q	|	|	|	V |
20+35	0.7209	0.10	Q	|	|	|	V |
20+40	0.7216	0.10	Q	|	|	|	V |
20+45	0.7223	0.10	Q	|	|	|	V |
20+50	0.7230	0.10	Q	|	|	|	V |
20+55	0.7235	0.09	Q	|	|	|	V |
21+ 0	0.7241	0.08	Q	|	|	|	V |
21+ 5	0.7246	0.08	Q	|	|	|	V |
21+10	0.7252	0.09	Q	|	|	|	V |
21+15	0.7259	0.10	Q	|	|	|	V|
21+20	0.7266	0.10	Q	|	|	|	V|
21+25	0.7271	0.08	Q	|	|	|	V|
21+30	0.7276	0.08	Q	|	|	|	V|
21+35	0.7282	0.08	Q	|	|	|	V|
21+40	0.7288	0.09	Q	|	|	|	V|
21+45	0.7294	0.10	Q	|	|	|	V|
21+50	0.7301	0.09	Q	|	|	|	V|
21+55	0.7307	0.08	Q	|	|	|	V|
22+ 0	0.7312	0.08	Q	|	|	|	V|
22+ 5	0.7317	0.08	Q	|	|	|	V|
22+10	0.7323	0.09	Q	|	|	|	V|
22+15	0.7330	0.10	Q	|	|	|	V|
22+20	0.7336	0.09	Q	|	|	|	V|
22+25	0.7342	0.08	Q	|	|	|	V|
22+30	0.7347	0.08	Q	|	|	|	V|
22+35	0.7352	0.07	Q	|	|	|	V|
22+40	0.7357	0.07	Q	|	|	|	V|
22+45	0.7362	0.07	Q	|	|	|	V|
22+50	0.7367	0.07	Q	|	|	|	V|
22+55	0.7372	0.07	Q	|	|	|	V|
23+ 0	0.7377	0.07	Q	|	|	|	V|
23+ 5	0.7381	0.07	Q	|	|	|	V|
23+10	0.7386	0.07	Q	|	|	|	V|
23+15	0.7391	0.07	Q	|	|	|	V|
23+20	0.7396	0.07	Q	|	|	|	V|
23+25	0.7400	0.07	Q	|	|	|	V|
23+30	0.7405	0.07	Q	|	|	|	V|
23+35	0.7410	0.07	Q	|	|	|	V|
23+40	0.7414	0.07	Q	|	|	|	V|
23+45	0.7419	0.07	Q	|	|	|	V|

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   23+50       0.7424      0.07  Q          |          |          |         V|
   23+55       0.7429      0.07  Q          |          |          |         V|
   24+ 0       0.7433      0.07  Q          |          |          |         V|
   24+ 5       0.7438      0.06  Q          |          |          |         V|
   24+10       0.7440      0.03  Q          |          |          |         V|
   24+15       0.7441      0.02  Q          |          |          |         V|
   24+20       0.7442      0.01  Q          |          |          |         V|
   24+25       0.7442      0.01  Q          |          |          |         V|
   24+30       0.7443      0.01  Q          |          |          |         V|
   24+35       0.7443      0.00  Q          |          |          |         V|
   24+40       0.7443      0.00  Q          |          |          |         V|
   24+45       0.7443      0.00  Q          |          |          |         V|
   24+50       0.7443      0.00  Q          |          |          |         V|
   24+55       0.7443      0.00  Q          |          |          |          V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/20/20 File: 8946P2B11100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
100 YEAR - 1 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.115 Hr.
Lag time = 6.92 Min.
25% of lag time = 1.73 Min.
40% of lag time = 2.77 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]
3.70	0.55	2.04

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	1.30	4.81

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.700	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.028
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	72.275	11.213	0.418
2	0.167	144.550	41.241	1.538
3	0.250	216.826	22.373	0.834
4	0.333	289.101	8.811	0.329
5	0.417	361.376	5.352	0.200
6	0.500	433.651	3.506	0.131
7	0.583	505.927	2.391	0.089
8	0.667	578.202	1.815	0.068
9	0.750	650.477	1.284	0.048
10	0.833	722.752	0.879	0.033
11	0.917	795.027	0.723	0.027
12	1.000	867.303	0.411	0.015
		Sum = 100.000	Sum=	3.729

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	0.515	0.057	(	0.175)	0.458
2	0.17	4.20	0.655	0.057	(	0.223)	0.599
3	0.25	4.40	0.686	0.057	(	0.233)	0.630
4	0.33	4.80	0.749	0.057	(	0.255)	0.692
5	0.42	5.20	0.811	0.057	(	0.276)	0.755
6	0.50	6.20	0.967	0.057	(	0.329)	0.911
7	0.58	6.80	1.061	0.057	(	0.361)	1.004
8	0.67	8.80	1.373	0.057	(	0.467)	1.316
9	0.75	13.90	2.168	0.057	(	0.737)	2.112
10	0.83	31.40	4.898	0.057	(	1.665)	4.842
11	0.92	7.20	1.123	0.057	(	0.382)	1.067
12	1.00	3.80	0.593	0.057	(	0.202)	0.536
		(Loss Rate Not Used)					
Sum =		100.0				Sum =	14.9

Flood volume = Effective rainfall 1.24(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)
Total soil loss = 0.06(In)
Total soil loss = 0.017(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 16700.4 Cubic Feet
Total soil loss = 759.3 Cubic Feet

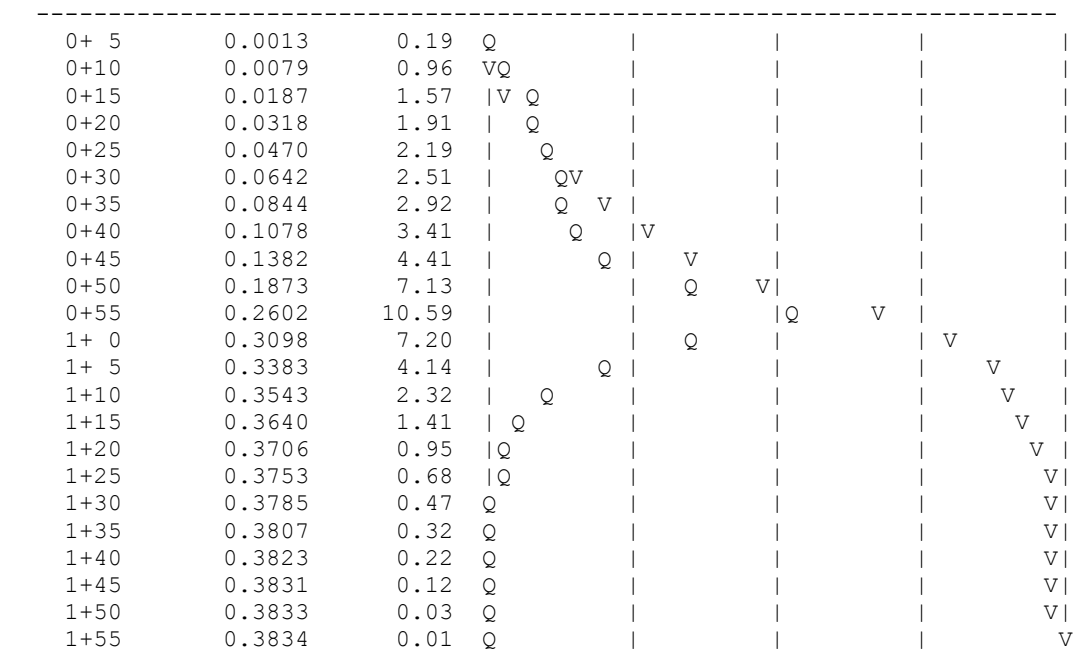
Peak flow rate of this hydrograph = 10.587(CFS)

++

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 10.0 15.0 20.0



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 02/20/20 File: 8946P2B13100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
100 YEAR - 3 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.115 Hr.
Lag time = 6.92 Min.
25% of lag time = 1.73 Min.
40% of lag time = 2.77 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]
3.70	0.90	3.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	2.25	8.33

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.700	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.028
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	72.275	11.213	0.418
2	0.167	144.550	41.241	1.538
3	0.250	216.826	22.373	0.834
4	0.333	289.101	8.811	0.329
5	0.417	361.376	5.352	0.200
6	0.500	433.651	3.506	0.131
7	0.583	505.927	2.391	0.089
8	0.667	578.202	1.815	0.068
9	0.750	650.477	1.284	0.048
10	0.833	722.752	0.879	0.033
11	0.917	795.027	0.723	0.027
12	1.000	867.303	0.411	0.015
		Sum = 100.000	Sum=	3.729

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	0.351	0.057	(	0.119)	0.294
2	0.17	1.30	0.351	0.057	(	0.119)	0.294
3	0.25	1.10	0.297	0.057	(	0.101)	0.240
4	0.33	1.50	0.405	0.057	(	0.138)	0.348
5	0.42	1.50	0.405	0.057	(	0.138)	0.348
6	0.50	1.80	0.486	0.057	(	0.165)	0.429
7	0.58	1.50	0.405	0.057	(	0.138)	0.348
8	0.67	1.80	0.486	0.057	(	0.165)	0.429
9	0.75	1.80	0.486	0.057	(	0.165)	0.429
10	0.83	1.50	0.405	0.057	(	0.138)	0.348
11	0.92	1.60	0.432	0.057	(	0.147)	0.375
12	1.00	1.80	0.486	0.057	(	0.165)	0.429
13	1.08	2.20	0.594	0.057	(	0.202)	0.537
14	1.17	2.20	0.594	0.057	(	0.202)	0.537
15	1.25	2.20	0.594	0.057	(	0.202)	0.537
16	1.33	2.00	0.540	0.057	(	0.184)	0.483
17	1.42	2.60	0.702	0.057	(	0.239)	0.645
18	1.50	2.70	0.729	0.057	(	0.248)	0.672
19	1.58	2.40	0.648	0.057	(	0.220)	0.591
20	1.67	2.70	0.729	0.057	(	0.248)	0.672
21	1.75	3.30	0.891	0.057	(	0.303)	0.834
22	1.83	3.10	0.837	0.057	(	0.285)	0.780
23	1.92	2.90	0.783	0.057	(	0.266)	0.726
24	2.00	3.00	0.810	0.057	(	0.275)	0.753
25	2.08	3.10	0.837	0.057	(	0.285)	0.780
26	2.17	4.20	1.134	0.057	(	0.386)	1.077
27	2.25	5.00	1.350	0.057	(	0.459)	1.293
28	2.33	3.50	0.945	0.057	(	0.321)	0.888
29	2.42	6.80	1.836	0.057	(	0.624)	1.779
30	2.50	7.30	1.971	0.057	(	0.670)	1.914
31	2.58	8.20	2.214	0.057	(	0.753)	2.157
32	2.67	5.90	1.593	0.057	(	0.542)	1.536
33	2.75	2.00	0.540	0.057	(	0.184)	0.483
34	2.83	1.80	0.486	0.057	(	0.165)	0.429

```
35   2.92     1.80      0.486          0.057    (  0.165)        0.429
36   3.00     0.60      0.162       (  0.057)       0.055        0.107
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    25.0
     Flood volume = Effective rainfall      2.08(In)
      times area       3.7(Ac.)/[(In)/(Ft.)] =       0.6(Ac.Ft)
     Total soil loss =      0.17(In)
     Total soil loss =     0.052(Ac.Ft)
     Total rainfall =      2.25(In)
     Flood volume =       27942.9 Cubic Feet
     Total soil loss =        2276.4 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      6.735(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0008      0.12  Q         |         |         |         |
  0+10       0.0048      0.58  V Q       |         |         |         |
  0+15       0.0103      0.80  V  Q      |         |         |         |
  0+20       0.0162      0.86  |V Q      |         |         |         |
  0+25       0.0234      1.04  |V  Q     |         |         |         |
  0+30       0.0315      1.18  |V  Q     |         |         |         |
  0+35       0.0407      1.32  | V  Q    |         |         |         |
  0+40       0.0499      1.34  |  V Q    |         |         |         |
  0+45       0.0598      1.44  |  V Q    |         |         |         |
  0+50       0.0700      1.48  |   VQ    |         |         |         |
  0+55       0.0797      1.40  |   VQ    |         |         |         |
  1+ 0       0.0894      1.42  |    Q    |         |         |         |
  1+ 5       0.1001      1.55  |     Q   |         |         |         |
  1+10       0.1123      1.77  |      Q  |         |         |         |
  1+15       0.1252      1.88  |      Q  |         |         |         |
  1+20       0.1383      1.90  |      QV |         |         |         |
  1+25       0.1515      1.91  |      Q V|         |         |         |
  1+30       0.1662      2.14  |       Q V         |         |         |
  1+35       0.1819      2.28  |        Q|V        |         |         |
  1+40       0.1975      2.26  |        Q| V       |         |         |
  1+45       0.2143      2.43  |        Q|  V      |         |         |
  1+50       0.2330      2.73  |         Q   V     |         |         |
  1+55       0.2522      2.78  |         |Q   V    |         |         |
  2+ 0       0.2711      2.74  |         Q     V   |         |         |
  2+ 5       0.2901      2.77  |         |Q      V |         |         |
  2+10       0.3105      2.96  |         |Q       V|         |         |
  2+15       0.3349      3.54  |         |   Q     V         |         |
  2+20       0.3622      3.97  |         |    Q    | V       |         |
  2+25       0.3898      4.01  |         |     Q   |   V     |         |
  2+30       0.4259      5.23  |         |         Q     V   |         |
  2+35       0.4688      6.24  |         |         |   Q    V|         |
  2+40       0.5152      6.73  |         |         |     Q   | V       |
  2+45       0.5548      5.75  |         |         | Q       |   V     |
  2+50       0.5810      3.81  |         |    Q    |         |     V   |
  2+55       0.6002      2.78  |         |Q        |         |      V  |
  3+ 0       0.6155      2.23  |       Q |         |         |       V |
  3+ 5       0.6255      1.45  |    Q    |         |         |        V|
  3+10       0.6314      0.86  |  Q      |         |         |        V|
  3+15       0.6352      0.55  | Q       |         |         |        V|
  3+20       0.6378      0.37  |Q        |         |         |        V|
  3+25       0.6394      0.24  Q         |         |         |        V|
  3+30       0.6405      0.15  Q         |         |         |        V|
  3+35       0.6410      0.08  Q         |         |         |        V|
  3+40       0.6413      0.04  Q         |         |         |        V|
  3+45       0.6414      0.02  Q         |         |         |        V|
  3+50       0.6415      0.01  Q         |         |         |        V|
  3+55       0.6415      0.00  Q         |         |         |        V|
```

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

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Study date 02/20/20 File: 8946P2B16100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
100 YEAR - 6 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.115 Hr.
Lag time = 6.92 Min.
25% of lag time = 1.73 Min.
40% of lag time = 2.77 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]
3.70	1.30	4.81

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	3.00	11.10

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.700	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.028
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	72.275	11.213	0.418
2	0.167	144.550	41.241	1.538
3	0.250	216.826	22.373	0.834
4	0.333	289.101	8.811	0.329
5	0.417	361.376	5.352	0.200
6	0.500	433.651	3.506	0.131
7	0.583	505.927	2.391	0.089
8	0.667	578.202	1.815	0.068
9	0.750	650.477	1.284	0.048
10	0.833	722.752	0.879	0.033
11	0.917	795.027	0.723	0.027
12	1.000	867.303	0.411	0.015
		Sum = 100.000	Sum=	3.729

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	0.180	0.057	(0.061)	0.123
2	0.17	0.60	0.216	0.057	(0.073)	0.159
3	0.25	0.60	0.216	0.057	(0.073)	0.159
4	0.33	0.60	0.216	0.057	(0.073)	0.159
5	0.42	0.60	0.216	0.057	(0.073)	0.159
6	0.50	0.70	0.252	0.057	(0.086)	0.195
7	0.58	0.70	0.252	0.057	(0.086)	0.195
8	0.67	0.70	0.252	0.057	(0.086)	0.195
9	0.75	0.70	0.252	0.057	(0.086)	0.195
10	0.83	0.70	0.252	0.057	(0.086)	0.195
11	0.92	0.70	0.252	0.057	(0.086)	0.195
12	1.00	0.80	0.288	0.057	(0.098)	0.231
13	1.08	0.80	0.288	0.057	(0.098)	0.231
14	1.17	0.80	0.288	0.057	(0.098)	0.231
15	1.25	0.80	0.288	0.057	(0.098)	0.231
16	1.33	0.80	0.288	0.057	(0.098)	0.231
17	1.42	0.80	0.288	0.057	(0.098)	0.231
18	1.50	0.80	0.288	0.057	(0.098)	0.231
19	1.58	0.80	0.288	0.057	(0.098)	0.231
20	1.67	0.80	0.288	0.057	(0.098)	0.231
21	1.75	0.80	0.288	0.057	(0.098)	0.231
22	1.83	0.80	0.288	0.057	(0.098)	0.231
23	1.92	0.80	0.288	0.057	(0.098)	0.231
24	2.00	0.90	0.324	0.057	(0.110)	0.267
25	2.08	0.80	0.288	0.057	(0.098)	0.231
26	2.17	0.90	0.324	0.057	(0.110)	0.267
27	2.25	0.90	0.324	0.057	(0.110)	0.267
28	2.33	0.90	0.324	0.057	(0.110)	0.267
29	2.42	0.90	0.324	0.057	(0.110)	0.267
30	2.50	0.90	0.324	0.057	(0.110)	0.267
31	2.58	0.90	0.324	0.057	(0.110)	0.267
32	2.67	0.90	0.324	0.057	(0.110)	0.267
33	2.75	1.00	0.360	0.057	(0.122)	0.303
34	2.83	1.00	0.360	0.057	(0.122)	0.303

35	2.92	1.00	0.360	0.057	(0.122)		0.303
36	3.00	1.00	0.360	0.057	(0.122)		0.303
37	3.08	1.00	0.360	0.057	(0.122)		0.303
38	3.17	1.10	0.396	0.057	(0.135)		0.339
39	3.25	1.10	0.396	0.057	(0.135)		0.339
40	3.33	1.10	0.396	0.057	(0.135)		0.339
41	3.42	1.20	0.432	0.057	(0.147)		0.375
42	3.50	1.30	0.468	0.057	(0.159)		0.411
43	3.58	1.40	0.504	0.057	(0.171)		0.447
44	3.67	1.40	0.504	0.057	(0.171)		0.447
45	3.75	1.50	0.540	0.057	(0.184)		0.483
46	3.83	1.50	0.540	0.057	(0.184)		0.483
47	3.92	1.60	0.576	0.057	(0.196)		0.519
48	4.00	1.60	0.576	0.057	(0.196)		0.519
49	4.08	1.70	0.612	0.057	(0.208)		0.555
50	4.17	1.80	0.648	0.057	(0.220)		0.591
51	4.25	1.90	0.684	0.057	(0.233)		0.627
52	4.33	2.00	0.720	0.057	(0.245)		0.663
53	4.42	2.10	0.756	0.057	(0.257)		0.699
54	4.50	2.10	0.756	0.057	(0.257)		0.699
55	4.58	2.20	0.792	0.057	(0.269)		0.735
56	4.67	2.30	0.828	0.057	(0.282)		0.771
57	4.75	2.40	0.864	0.057	(0.294)		0.807
58	4.83	2.40	0.864	0.057	(0.294)		0.807
59	4.92	2.50	0.900	0.057	(0.306)		0.843
60	5.00	2.60	0.936	0.057	(0.318)		0.879
61	5.08	3.10	1.116	0.057	(0.379)		1.059
62	5.17	3.60	1.296	0.057	(0.441)		1.239
63	5.25	3.90	1.404	0.057	(0.477)		1.347
64	5.33	4.20	1.512	0.057	(0.514)		1.455
65	5.42	4.70	1.692	0.057	(0.575)		1.635
66	5.50	5.60	2.016	0.057	(0.685)		1.959
67	5.58	1.90	0.684	0.057	(0.233)		0.627
68	5.67	0.90	0.324	0.057	(0.110)		0.267
69	5.75	0.60	0.216	0.057	(0.073)		0.159
70	5.83	0.50	0.180	0.057	(0.061)		0.123
71	5.92	0.30	0.108	(0.057)	0.037		0.071
72	6.00	0.20	0.072	(0.057)	0.024		0.048

(Loss Rate Not Used)

Sum = 100.0 Sum = 32.0

Flood volume = Effective rainfall 2.67(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 0.8(Ac.Ft)
Total soil loss = 0.33(In)
Total soil loss = 0.103(Ac.Ft)
Total rainfall = 3.00(In)
Flood volume = 35794.5 Cubic Feet
Total soil loss = 4498.0 Cubic Feet

Peak flow rate of this hydrograph = 5.807(CFS)

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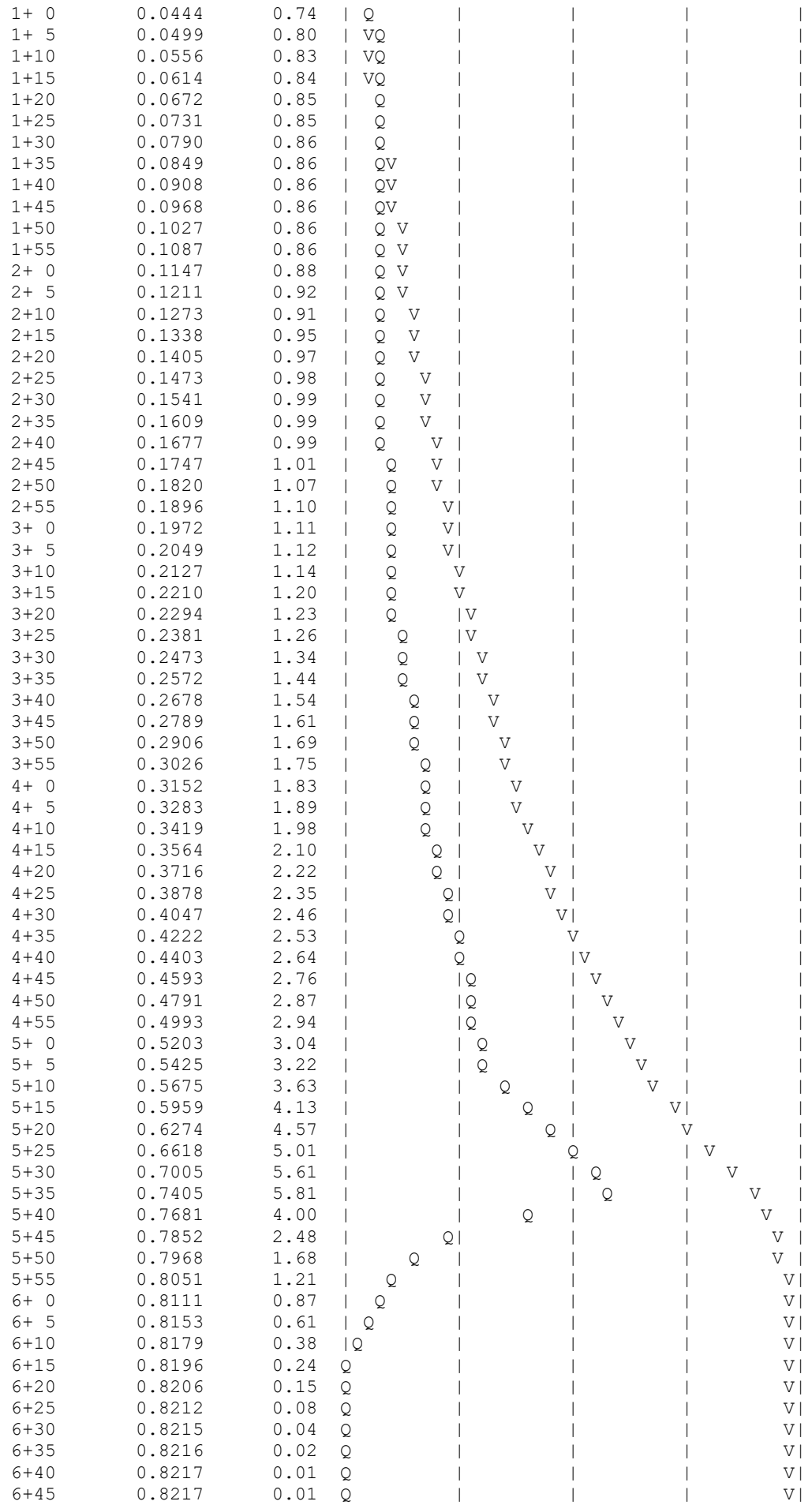
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.05	Q				
0+10	0.0021	0.26	VQ				
0+15	0.0050	0.42	VQ				
0+20	0.0083	0.49	VQ				
0+25	0.0119	0.52	V Q				
0+30	0.0158	0.56	V Q				
0+35	0.0201	0.63	V Q				
0+40	0.0248	0.67	|VQ				
0+45	0.0296	0.69	|VQ				
0+50	0.0344	0.71	|VQ				
0+55	0.0393	0.72	|VQ				



```
    6+50       0.8217      0.00  Q         |         |         |        V|
    6+55       0.8217      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

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

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Study date 02/20/20 File: 8946P2B124100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA B
PROPOSED CONDITION
100 YEAR - 24 HOUR
HRYDOGRAPH

Drainage Area = 3.70(Ac.) = 0.006 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 3.70(Ac.) = 0.006 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.115 Hr.
Lag time = 6.92 Min.
25% of lag time = 1.73 Min.
40% of lag time = 2.77 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	2.25	8.33

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
3.70	5.25	19.43

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 5.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
3.700	75.00	0.700

Total Area Entered = 3.70(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.700	0.057	1.000	0.057

Sum (F) = 0.057

Area averaged mean soil loss (F) (In/Hr) = 0.057
Minimum soil loss rate ((In/Hr)) = 0.028
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.340

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	72.275	11.213	0.418
2	0.167	144.550	41.241	1.538
3	0.250	216.826	22.373	0.834
4	0.333	289.101	8.811	0.329
5	0.417	361.376	5.352	0.200
6	0.500	433.651	3.506	0.131
7	0.583	505.927	2.391	0.089
8	0.667	578.202	1.815	0.068
9	0.750	650.477	1.284	0.048
10	0.833	722.752	0.879	0.033
11	0.917	795.027	0.723	0.027
12	1.000	867.303	0.411	0.015
			Sum = 100.000 Sum=	3.729

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	0.042	(0.100)		0.014	0.028
2	0.17	0.07	0.042	(0.100)		0.014	0.028
3	0.25	0.07	0.042	(0.099)		0.014	0.028
4	0.33	0.10	0.063	(0.099)		0.021	0.042
5	0.42	0.10	0.063	(0.099)		0.021	0.042
6	0.50	0.10	0.063	(0.098)		0.021	0.042
7	0.58	0.10	0.063	(0.098)		0.021	0.042
8	0.67	0.10	0.063	(0.098)		0.021	0.042
9	0.75	0.10	0.063	(0.097)		0.021	0.042
10	0.83	0.13	0.084	(0.097)		0.029	0.055
11	0.92	0.13	0.084	(0.096)		0.029	0.055
12	1.00	0.13	0.084	(0.096)		0.029	0.055
13	1.08	0.10	0.063	(0.096)		0.021	0.042
14	1.17	0.10	0.063	(0.095)		0.021	0.042
15	1.25	0.10	0.063	(0.095)		0.021	0.042
16	1.33	0.10	0.063	(0.094)		0.021	0.042
17	1.42	0.10	0.063	(0.094)		0.021	0.042
18	1.50	0.10	0.063	(0.094)		0.021	0.042
19	1.58	0.10	0.063	(0.093)		0.021	0.042
20	1.67	0.10	0.063	(0.093)		0.021	0.042
21	1.75	0.10	0.063	(0.093)		0.021	0.042
22	1.83	0.13	0.084	(0.092)		0.029	0.055
23	1.92	0.13	0.084	(0.092)		0.029	0.055
24	2.00	0.13	0.084	(0.091)		0.029	0.055
25	2.08	0.13	0.084	(0.091)		0.029	0.055
26	2.17	0.13	0.084	(0.091)		0.029	0.055
27	2.25	0.13	0.084	(0.090)		0.029	0.055
28	2.33	0.13	0.084	(0.090)		0.029	0.055
29	2.42	0.13	0.084	(0.090)		0.029	0.055
30	2.50	0.13	0.084	(0.089)		0.029	0.055
31	2.58	0.17	0.105	(0.089)		0.036	0.069
32	2.67	0.17	0.105	(0.089)		0.036	0.069
33	2.75	0.17	0.105	(0.088)		0.036	0.069
34	2.83	0.17	0.105	(0.088)		0.036	0.069

35	2.92	0.17	0.105	(0.087)	0.036	0.069
36	3.00	0.17	0.105	(0.087)	0.036	0.069
37	3.08	0.17	0.105	(0.087)	0.036	0.069
38	3.17	0.17	0.105	(0.086)	0.036	0.069
39	3.25	0.17	0.105	(0.086)	0.036	0.069
40	3.33	0.17	0.105	(0.086)	0.036	0.069
41	3.42	0.17	0.105	(0.085)	0.036	0.069
42	3.50	0.17	0.105	(0.085)	0.036	0.069
43	3.58	0.17	0.105	(0.085)	0.036	0.069
44	3.67	0.17	0.105	(0.084)	0.036	0.069
45	3.75	0.17	0.105	(0.084)	0.036	0.069
46	3.83	0.20	0.126	(0.084)	0.043	0.083
47	3.92	0.20	0.126	(0.083)	0.043	0.083
48	4.00	0.20	0.126	(0.083)	0.043	0.083
49	4.08	0.20	0.126	(0.082)	0.043	0.083
50	4.17	0.20	0.126	(0.082)	0.043	0.083
51	4.25	0.20	0.126	(0.082)	0.043	0.083
52	4.33	0.23	0.147	(0.081)	0.050	0.097
53	4.42	0.23	0.147	(0.081)	0.050	0.097
54	4.50	0.23	0.147	(0.081)	0.050	0.097
55	4.58	0.23	0.147	(0.080)	0.050	0.097
56	4.67	0.23	0.147	(0.080)	0.050	0.097
57	4.75	0.23	0.147	(0.080)	0.050	0.097
58	4.83	0.27	0.168	(0.079)	0.057	0.111
59	4.92	0.27	0.168	(0.079)	0.057	0.111
60	5.00	0.27	0.168	(0.079)	0.057	0.111
61	5.08	0.20	0.126	(0.078)	0.043	0.083
62	5.17	0.20	0.126	(0.078)	0.043	0.083
63	5.25	0.20	0.126	(0.078)	0.043	0.083
64	5.33	0.23	0.147	(0.077)	0.050	0.097
65	5.42	0.23	0.147	(0.077)	0.050	0.097
66	5.50	0.23	0.147	(0.077)	0.050	0.097
67	5.58	0.27	0.168	(0.076)	0.057	0.111
68	5.67	0.27	0.168	(0.076)	0.057	0.111
69	5.75	0.27	0.168	(0.076)	0.057	0.111
70	5.83	0.27	0.168	(0.075)	0.057	0.111
71	5.92	0.27	0.168	(0.075)	0.057	0.111
72	6.00	0.27	0.168	(0.075)	0.057	0.111
73	6.08	0.30	0.189	(0.074)	0.064	0.125
74	6.17	0.30	0.189	(0.074)	0.064	0.125
75	6.25	0.30	0.189	(0.074)	0.064	0.125
76	6.33	0.30	0.189	(0.073)	0.064	0.125
77	6.42	0.30	0.189	(0.073)	0.064	0.125
78	6.50	0.30	0.189	(0.073)	0.064	0.125
79	6.58	0.33	0.210	(0.072)	0.071	0.139
80	6.67	0.33	0.210	(0.072)	0.071	0.139
81	6.75	0.33	0.210	(0.072)	0.071	0.139
82	6.83	0.33	0.210	0.071	(0.071)	0.139
83	6.92	0.33	0.210	0.071	(0.071)	0.139
84	7.00	0.33	0.210	0.071	(0.071)	0.139
85	7.08	0.33	0.210	0.070	(0.071)	0.140
86	7.17	0.33	0.210	0.070	(0.071)	0.140
87	7.25	0.33	0.210	0.070	(0.071)	0.140
88	7.33	0.37	0.231	0.069	(0.079)	0.162
89	7.42	0.37	0.231	0.069	(0.079)	0.162
90	7.50	0.37	0.231	0.069	(0.079)	0.162
91	7.58	0.40	0.252	0.068	(0.086)	0.184
92	7.67	0.40	0.252	0.068	(0.086)	0.184
93	7.75	0.40	0.252	0.068	(0.086)	0.184
94	7.83	0.43	0.273	0.068	(0.093)	0.205
95	7.92	0.43	0.273	0.067	(0.093)	0.206
96	8.00	0.43	0.273	0.067	(0.093)	0.206
97	8.08	0.50	0.315	0.067	(0.107)	0.248
98	8.17	0.50	0.315	0.066	(0.107)	0.249
99	8.25	0.50	0.315	0.066	(0.107)	0.249
100	8.33	0.50	0.315	0.066	(0.107)	0.249
101	8.42	0.50	0.315	0.065	(0.107)	0.250
102	8.50	0.50	0.315	0.065	(0.107)	0.250
103	8.58	0.53	0.336	0.065	(0.114)	0.271
104	8.67	0.53	0.336	0.064	(0.114)	0.272

105	8.75	0.53	0.336	0.064	(	0.114)	0.272
106	8.83	0.57	0.357	0.064	(	0.121)	0.293
107	8.92	0.57	0.357	0.064	(	0.121)	0.293
108	9.00	0.57	0.357	0.063	(	0.121)	0.294
109	9.08	0.63	0.399	0.063	(	0.136)	0.336
110	9.17	0.63	0.399	0.063	(	0.136)	0.336
111	9.25	0.63	0.399	0.062	(	0.136)	0.337
112	9.33	0.67	0.420	0.062	(	0.143)	0.358
113	9.42	0.67	0.420	0.062	(	0.143)	0.358
114	9.50	0.67	0.420	0.061	(	0.143)	0.359
115	9.58	0.70	0.441	0.061	(	0.150)	0.380
116	9.67	0.70	0.441	0.061	(	0.150)	0.380
117	9.75	0.70	0.441	0.061	(	0.150)	0.380
118	9.83	0.73	0.462	0.060	(	0.157)	0.402
119	9.92	0.73	0.462	0.060	(	0.157)	0.402
120	10.00	0.73	0.462	0.060	(	0.157)	0.402
121	10.08	0.50	0.315	0.059	(	0.107)	0.256
122	10.17	0.50	0.315	0.059	(	0.107)	0.256
123	10.25	0.50	0.315	0.059	(	0.107)	0.256
124	10.33	0.50	0.315	0.059	(	0.107)	0.256
125	10.42	0.50	0.315	0.058	(	0.107)	0.257
126	10.50	0.50	0.315	0.058	(	0.107)	0.257
127	10.58	0.67	0.420	0.058	(	0.143)	0.362
128	10.67	0.67	0.420	0.057	(	0.143)	0.363
129	10.75	0.67	0.420	0.057	(	0.143)	0.363
130	10.83	0.67	0.420	0.057	(	0.143)	0.363
131	10.92	0.67	0.420	0.057	(	0.143)	0.363
132	11.00	0.67	0.420	0.056	(	0.143)	0.364
133	11.08	0.63	0.399	0.056	(	0.136)	0.343
134	11.17	0.63	0.399	0.056	(	0.136)	0.343
135	11.25	0.63	0.399	0.055	(	0.136)	0.344
136	11.33	0.63	0.399	0.055	(	0.136)	0.344
137	11.42	0.63	0.399	0.055	(	0.136)	0.344
138	11.50	0.63	0.399	0.055	(	0.136)	0.344
139	11.58	0.57	0.357	0.054	(	0.121)	0.303
140	11.67	0.57	0.357	0.054	(	0.121)	0.303
141	11.75	0.57	0.357	0.054	(	0.121)	0.303
142	11.83	0.60	0.378	0.054	(	0.129)	0.324
143	11.92	0.60	0.378	0.053	(	0.129)	0.325
144	12.00	0.60	0.378	0.053	(	0.129)	0.325
145	12.08	0.83	0.525	0.053	(	0.178)	0.472
146	12.17	0.83	0.525	0.053	(	0.178)	0.472
147	12.25	0.83	0.525	0.052	(	0.178)	0.473
148	12.33	0.87	0.546	0.052	(	0.186)	0.494
149	12.42	0.87	0.546	0.052	(	0.186)	0.494
150	12.50	0.87	0.546	0.051	(	0.186)	0.495
151	12.58	0.93	0.588	0.051	(	0.200)	0.537
152	12.67	0.93	0.588	0.051	(	0.200)	0.537
153	12.75	0.93	0.588	0.051	(	0.200)	0.537
154	12.83	0.97	0.609	0.050	(	0.207)	0.559
155	12.92	0.97	0.609	0.050	(	0.207)	0.559
156	13.00	0.97	0.609	0.050	(	0.207)	0.559
157	13.08	1.13	0.714	0.050	(	0.243)	0.664
158	13.17	1.13	0.714	0.049	(	0.243)	0.665
159	13.25	1.13	0.714	0.049	(	0.243)	0.665
160	13.33	1.13	0.714	0.049	(	0.243)	0.665
161	13.42	1.13	0.714	0.049	(	0.243)	0.665
162	13.50	1.13	0.714	0.048	(	0.243)	0.666
163	13.58	0.77	0.483	0.048	(	0.164)	0.435
164	13.67	0.77	0.483	0.048	(	0.164)	0.435
165	13.75	0.77	0.483	0.048	(	0.164)	0.435
166	13.83	0.77	0.483	0.047	(	0.164)	0.436
167	13.92	0.77	0.483	0.047	(	0.164)	0.436
168	14.00	0.77	0.483	0.047	(	0.164)	0.436
169	14.08	0.90	0.567	0.047	(	0.193)	0.520
170	14.17	0.90	0.567	0.046	(	0.193)	0.521
171	14.25	0.90	0.567	0.046	(	0.193)	0.521
172	14.33	0.87	0.546	0.046	(	0.186)	0.500
173	14.42	0.87	0.546	0.046	(	0.186)	0.500
174	14.50	0.87	0.546	0.046	(	0.186)	0.500

175	14.58	0.87	0.546	0.045	(0.186)	0.501
176	14.67	0.87	0.546	0.045	(0.186)	0.501
177	14.75	0.87	0.546	0.045	(0.186)	0.501
178	14.83	0.83	0.525	0.045	(0.178)	0.480
179	14.92	0.83	0.525	0.044	(0.178)	0.481
180	15.00	0.83	0.525	0.044	(0.178)	0.481
181	15.08	0.80	0.504	0.044	(0.171)	0.460
182	15.17	0.80	0.504	0.044	(0.171)	0.460
183	15.25	0.80	0.504	0.043	(0.171)	0.461
184	15.33	0.77	0.483	0.043	(0.164)	0.440
185	15.42	0.77	0.483	0.043	(0.164)	0.440
186	15.50	0.77	0.483	0.043	(0.164)	0.440
187	15.58	0.63	0.399	0.043	(0.136)	0.356
188	15.67	0.63	0.399	0.042	(0.136)	0.357
189	15.75	0.63	0.399	0.042	(0.136)	0.357
190	15.83	0.63	0.399	0.042	(0.136)	0.357
191	15.92	0.63	0.399	0.042	(0.136)	0.357
192	16.00	0.63	0.399	0.042	(0.136)	0.357
193	16.08	0.13	0.084	(0.041)	0.029	0.055
194	16.17	0.13	0.084	(0.041)	0.029	0.055
195	16.25	0.13	0.084	(0.041)	0.029	0.055
196	16.33	0.13	0.084	(0.041)	0.029	0.055
197	16.42	0.13	0.084	(0.040)	0.029	0.055
198	16.50	0.13	0.084	(0.040)	0.029	0.055
199	16.58	0.10	0.063	(0.040)	0.021	0.042
200	16.67	0.10	0.063	(0.040)	0.021	0.042
201	16.75	0.10	0.063	(0.040)	0.021	0.042
202	16.83	0.10	0.063	(0.039)	0.021	0.042
203	16.92	0.10	0.063	(0.039)	0.021	0.042
204	17.00	0.10	0.063	(0.039)	0.021	0.042
205	17.08	0.17	0.105	(0.039)	0.036	0.069
206	17.17	0.17	0.105	(0.039)	0.036	0.069
207	17.25	0.17	0.105	(0.038)	0.036	0.069
208	17.33	0.17	0.105	(0.038)	0.036	0.069
209	17.42	0.17	0.105	(0.038)	0.036	0.069
210	17.50	0.17	0.105	(0.038)	0.036	0.069
211	17.58	0.17	0.105	(0.038)	0.036	0.069
212	17.67	0.17	0.105	(0.038)	0.036	0.069
213	17.75	0.17	0.105	(0.037)	0.036	0.069
214	17.83	0.13	0.084	(0.037)	0.029	0.055
215	17.92	0.13	0.084	(0.037)	0.029	0.055
216	18.00	0.13	0.084	(0.037)	0.029	0.055
217	18.08	0.13	0.084	(0.037)	0.029	0.055
218	18.17	0.13	0.084	(0.036)	0.029	0.055
219	18.25	0.13	0.084	(0.036)	0.029	0.055
220	18.33	0.13	0.084	(0.036)	0.029	0.055
221	18.42	0.13	0.084	(0.036)	0.029	0.055
222	18.50	0.13	0.084	(0.036)	0.029	0.055
223	18.58	0.10	0.063	(0.036)	0.021	0.042
224	18.67	0.10	0.063	(0.035)	0.021	0.042
225	18.75	0.10	0.063	(0.035)	0.021	0.042
226	18.83	0.07	0.042	(0.035)	0.014	0.028
227	18.92	0.07	0.042	(0.035)	0.014	0.028
228	19.00	0.07	0.042	(0.035)	0.014	0.028
229	19.08	0.10	0.063	(0.035)	0.021	0.042
230	19.17	0.10	0.063	(0.034)	0.021	0.042
231	19.25	0.10	0.063	(0.034)	0.021	0.042
232	19.33	0.13	0.084	(0.034)	0.029	0.055
233	19.42	0.13	0.084	(0.034)	0.029	0.055
234	19.50	0.13	0.084	(0.034)	0.029	0.055
235	19.58	0.10	0.063	(0.034)	0.021	0.042
236	19.67	0.10	0.063	(0.033)	0.021	0.042
237	19.75	0.10	0.063	(0.033)	0.021	0.042
238	19.83	0.07	0.042	(0.033)	0.014	0.028
239	19.92	0.07	0.042	(0.033)	0.014	0.028
240	20.00	0.07	0.042	(0.033)	0.014	0.028
241	20.08	0.10	0.063	(0.033)	0.021	0.042
242	20.17	0.10	0.063	(0.033)	0.021	0.042
243	20.25	0.10	0.063	(0.032)	0.021	0.042
244	20.33	0.10	0.063	(0.032)	0.021	0.042

245	20.42	0.10	0.063	(0.032)	0.021	0.042
246	20.50	0.10	0.063	(0.032)	0.021	0.042
247	20.58	0.10	0.063	(0.032)	0.021	0.042
248	20.67	0.10	0.063	(0.032)	0.021	0.042
249	20.75	0.10	0.063	(0.032)	0.021	0.042
250	20.83	0.07	0.042	(0.031)	0.014	0.028
251	20.92	0.07	0.042	(0.031)	0.014	0.028
252	21.00	0.07	0.042	(0.031)	0.014	0.028
253	21.08	0.10	0.063	(0.031)	0.021	0.042
254	21.17	0.10	0.063	(0.031)	0.021	0.042
255	21.25	0.10	0.063	(0.031)	0.021	0.042
256	21.33	0.07	0.042	(0.031)	0.014	0.028
257	21.42	0.07	0.042	(0.031)	0.014	0.028
258	21.50	0.07	0.042	(0.030)	0.014	0.028
259	21.58	0.10	0.063	(0.030)	0.021	0.042
260	21.67	0.10	0.063	(0.030)	0.021	0.042
261	21.75	0.10	0.063	(0.030)	0.021	0.042
262	21.83	0.07	0.042	(0.030)	0.014	0.028
263	21.92	0.07	0.042	(0.030)	0.014	0.028
264	22.00	0.07	0.042	(0.030)	0.014	0.028
265	22.08	0.10	0.063	(0.030)	0.021	0.042
266	22.17	0.10	0.063	(0.030)	0.021	0.042
267	22.25	0.10	0.063	(0.030)	0.021	0.042
268	22.33	0.07	0.042	(0.029)	0.014	0.028
269	22.42	0.07	0.042	(0.029)	0.014	0.028
270	22.50	0.07	0.042	(0.029)	0.014	0.028
271	22.58	0.07	0.042	(0.029)	0.014	0.028
272	22.67	0.07	0.042	(0.029)	0.014	0.028
273	22.75	0.07	0.042	(0.029)	0.014	0.028
274	22.83	0.07	0.042	(0.029)	0.014	0.028
275	22.92	0.07	0.042	(0.029)	0.014	0.028
276	23.00	0.07	0.042	(0.029)	0.014	0.028
277	23.08	0.07	0.042	(0.029)	0.014	0.028
278	23.17	0.07	0.042	(0.029)	0.014	0.028
279	23.25	0.07	0.042	(0.029)	0.014	0.028
280	23.33	0.07	0.042	(0.029)	0.014	0.028
281	23.42	0.07	0.042	(0.029)	0.014	0.028
282	23.50	0.07	0.042	(0.028)	0.014	0.028
283	23.58	0.07	0.042	(0.028)	0.014	0.028
284	23.67	0.07	0.042	(0.028)	0.014	0.028
285	23.75	0.07	0.042	(0.028)	0.014	0.028
286	23.83	0.07	0.042	(0.028)	0.014	0.028
287	23.92	0.07	0.042	(0.028)	0.014	0.028
288	24.00	0.07	0.042	(0.028)	0.014	0.028

(Loss Rate Not Used)

Sum = 100.0 Sum = 51.6

Flood volume = Effective rainfall 4.30(In)
times area 3.7(Ac.)/[(In)/(Ft.)] = 1.3(Ac.Ft)
Total soil loss = 0.95(In)
Total soil loss = 0.293(Ac.Ft)
Total rainfall = 5.25(In)
Flood volume = 57751.4 Cubic Feet
Total soil loss = 12760.8 Cubic Feet

Peak flow rate of this hydrograph = 2.450(CFS)

++

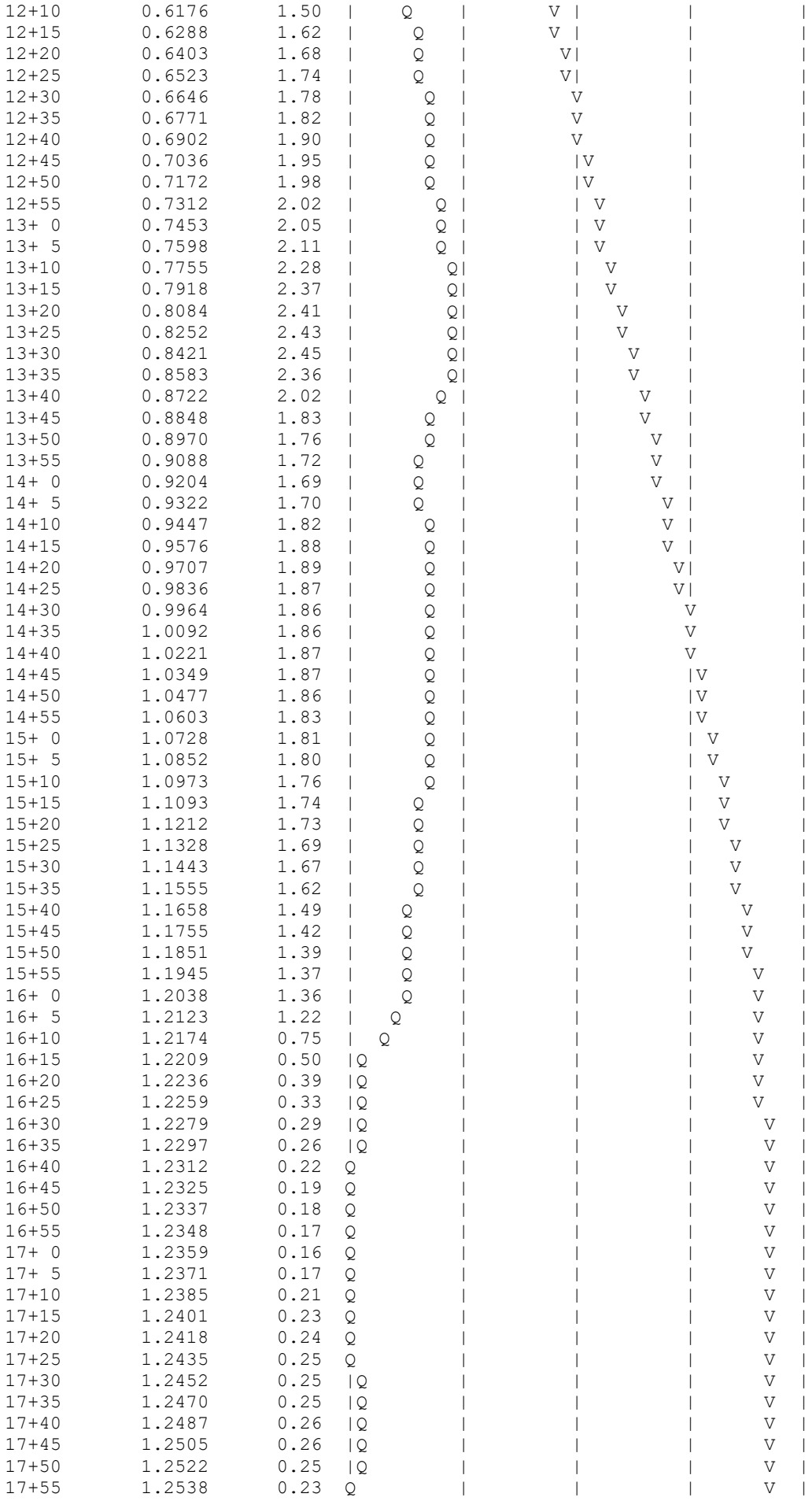
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

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	0.0005	0.05	Q	|	|	|	|
0+15	0.0010	0.08	Q	|	|	|	|
0+20	0.0016	0.09	Q	|	|	|	|
0+25	0.0024	0.12	Q	|	|	|	|

0+30	0.0034	0.13	Q				
0+35	0.0043	0.14	Q				
0+40	0.0053	0.15	Q				
0+45	0.0064	0.15	Q				
0+50	0.0075	0.16	Q				
0+55	0.0087	0.18	Q				
1+ 0	0.0100	0.19	Q				
1+ 5	0.0113	0.19	Q				
1+10	0.0125	0.17	Q				
1+15	0.0137	0.16	Q				
1+20	0.0148	0.16	Q				
1+25	0.0159	0.16	Q				
1+30	0.0170	0.16	Q				
1+35	0.0181	0.16	Q				
1+40	0.0191	0.16	Q				
1+45	0.0202	0.16	Q				
1+50	0.0213	0.16	Q				
1+55	0.0226	0.18	Q				
2+ 0	0.0239	0.19	Q				
2+ 5	0.0253	0.20	Q				
2+10	0.0267	0.20	Q				
2+15	0.0281	0.20	Q				
2+20	0.0295	0.20	Q				
2+25	0.0309	0.21	Q				
2+30	0.0323	0.21	Q				
2+35	0.0338	0.21	QV				
2+40	0.0354	0.23	QV				
2+45	0.0371	0.25	QV				
2+50	0.0388	0.25	|Q				
2+55	0.0405	0.25	|Q				
3+ 0	0.0423	0.25	|Q				
3+ 5	0.0440	0.26	|Q				
3+10	0.0458	0.26	|Q				
3+15	0.0476	0.26	|Q				
3+20	0.0494	0.26	|Q				
3+25	0.0511	0.26	|Q				
3+30	0.0529	0.26	|Q				
3+35	0.0547	0.26	|Q				
3+40	0.0565	0.26	|Q				
3+45	0.0583	0.26	|Q				
3+50	0.0601	0.26	|Q				
3+55	0.0620	0.29	|Q				
4+ 0	0.0641	0.30	|Q				
4+ 5	0.0662	0.30	|Q				
4+10	0.0683	0.30	|QV				
4+15	0.0704	0.31	|QV				
4+20	0.0725	0.31	|QV				
4+25	0.0748	0.34	|QV				
4+30	0.0772	0.35	|QV				
4+35	0.0797	0.35	|QV				
4+40	0.0821	0.36	|QV				
4+45	0.0846	0.36	|QV				
4+50	0.0871	0.37	|QV				
4+55	0.0898	0.39	|QV				
5+ 0	0.0925	0.40	|QV				
5+ 5	0.0952	0.39	|QV				
5+10	0.0977	0.35	|QV				
5+15	0.1000	0.33	|Q V				
5+20	0.1022	0.33	|Q V				
5+25	0.1046	0.35	|Q V				
5+30	0.1071	0.36	|Q V				
5+35	0.1096	0.36	|Q V				
5+40	0.1122	0.39	|Q V				
5+45	0.1150	0.40	|Q V				
5+50	0.1178	0.40	|Q V				
5+55	0.1206	0.41	|Q V				
6+ 0	0.1234	0.41	|Q V				
6+ 5	0.1263	0.42	|Q V				
6+10	0.1293	0.44	|Q V				
6+15	0.1324	0.45	|Q V				

6+20	0.1355	0.46	Q V				
6+25	0.1387	0.46	Q V				
6+30	0.1419	0.46	Q V				
6+35	0.1451	0.47	Q V				
6+40	0.1485	0.49	Q V				
6+45	0.1519	0.50	Q V				
6+50	0.1554	0.51	Q V				
6+55	0.1590	0.51	Q V				
7+ 0	0.1625	0.51	Q V				
7+ 5	0.1661	0.52	Q V				
7+10	0.1696	0.52	Q V				
7+15	0.1732	0.52	Q V				
7+20	0.1769	0.53	Q V				
7+25	0.1807	0.56	Q V				
7+30	0.1848	0.58	Q V				
7+35	0.1889	0.60	Q V				
7+40	0.1933	0.64	Q V				
7+45	0.1978	0.66	Q V				
7+50	0.2025	0.68	Q V				
7+55	0.2074	0.72	Q V				
8+ 0	0.2125	0.74	Q V				
8+ 5	0.2178	0.77	Q V				
8+10	0.2236	0.84	Q V				
8+15	0.2296	0.88	Q V				
8+20	0.2358	0.90	Q V				
8+25	0.2421	0.91	Q V				
8+30	0.2484	0.92	Q V				
8+35	0.2548	0.93	Q V				
8+40	0.2615	0.97	Q V				
8+45	0.2683	0.99	Q V				
8+50	0.2752	1.01	Q V				
8+55	0.2824	1.05	Q V				
9+ 0	0.2898	1.07	Q V				
9+ 5	0.2973	1.10	Q V				
9+10	0.3054	1.17	Q V				
9+15	0.3137	1.21	Q V				
9+20	0.3222	1.23	Q V				
9+25	0.3310	1.28	Q V				
9+30	0.3399	1.30	Q V				
9+35	0.3490	1.32	Q V				
9+40	0.3584	1.36	Q V				
9+45	0.3680	1.39	Q V				
9+50	0.3777	1.41	Q V				
9+55	0.3877	1.45	Q V				
10+ 0	0.3978	1.47	Q V				
10+ 5	0.4076	1.42	Q V				
10+10	0.4159	1.20	Q V				
10+15	0.4233	1.08	Q V				
10+20	0.4305	1.04	Q V				
10+25	0.4375	1.01	Q V				
10+30	0.4443	1.00	Q V				
10+35	0.4514	1.03	Q V				
10+40	0.4596	1.18	Q V				
10+45	0.4683	1.26	Q V				
10+50	0.4772	1.29	Q V				
10+55	0.4862	1.31	Q V				
11+ 0	0.4953	1.33	Q V				
11+ 5	0.5045	1.33	Q V				
11+10	0.5135	1.30	Q V				
11+15	0.5224	1.29	Q V				
11+20	0.5312	1.29	Q V				
11+25	0.5401	1.29	Q V				
11+30	0.5490	1.29	Q V				
11+35	0.5577	1.27	Q V				
11+40	0.5660	1.20	Q V				
11+45	0.5741	1.17	Q V				
11+50	0.5821	1.17	Q V				
11+55	0.5903	1.19	Q V				
12+ 0	0.5986	1.20	Q V				
12+ 5	0.6073	1.27	Q V				



18+ 0	1.2553	0.22	Q	|	|	|	V |
18+ 5	1.2568	0.22	Q	|	|	|	V |
18+10	1.2583	0.21	Q	|	|	|	V |
18+15	1.2597	0.21	Q	|	|	|	V |
18+20	1.2612	0.21	Q	|	|	|	V |
18+25	1.2626	0.21	Q	|	|	|	V |
18+30	1.2641	0.21	Q	|	|	|	V |
18+35	1.2654	0.20	Q	|	|	|	V |
18+40	1.2667	0.18	Q	|	|	|	V |
18+45	1.2678	0.17	Q	|	|	|	V |
18+50	1.2689	0.16	Q	|	|	|	V |
18+55	1.2699	0.13	Q	|	|	|	V |
19+ 0	1.2707	0.12	Q	|	|	|	V |
19+ 5	1.2715	0.12	Q	|	|	|	V |
19+10	1.2725	0.14	Q	|	|	|	V |
19+15	1.2735	0.15	Q	|	|	|	V |
19+20	1.2745	0.16	Q	|	|	|	V |
19+25	1.2758	0.18	Q	|	|	|	V |
19+30	1.2771	0.19	Q	|	|	|	V |
19+35	1.2784	0.19	Q	|	|	|	V |
19+40	1.2796	0.17	Q	|	|	|	V |
19+45	1.2807	0.16	Q	|	|	|	V |
19+50	1.2818	0.15	Q	|	|	|	V |
19+55	1.2827	0.13	Q	|	|	|	V |
20+ 0	1.2835	0.12	Q	|	|	|	V |
20+ 5	1.2843	0.12	Q	|	|	|	V |
20+10	1.2853	0.14	Q	|	|	|	V |
20+15	1.2863	0.15	Q	|	|	|	V |
20+20	1.2873	0.15	Q	|	|	|	V |
20+25	1.2884	0.15	Q	|	|	|	V |
20+30	1.2894	0.15	Q	|	|	|	V |
20+35	1.2905	0.15	Q	|	|	|	V |
20+40	1.2915	0.15	Q	|	|	|	V |
20+45	1.2926	0.15	Q	|	|	|	V |
20+50	1.2936	0.15	Q	|	|	|	V|
20+55	1.2945	0.13	Q	|	|	|	V|
21+ 0	1.2953	0.12	Q	|	|	|	V|
21+ 5	1.2961	0.12	Q	|	|	|	V|
21+10	1.2970	0.14	Q	|	|	|	V|
21+15	1.2980	0.15	Q	|	|	|	V|
21+20	1.2990	0.14	Q	|	|	|	V|
21+25	1.2999	0.12	Q	|	|	|	V|
21+30	1.3007	0.11	Q	|	|	|	V|
21+35	1.3015	0.12	Q	|	|	|	V|
21+40	1.3024	0.13	Q	|	|	|	V|
21+45	1.3034	0.14	Q	|	|	|	V|
21+50	1.3044	0.14	Q	|	|	|	V|
21+55	1.3052	0.12	Q	|	|	|	V|
22+ 0	1.3060	0.11	Q	|	|	|	V|
22+ 5	1.3068	0.12	Q	|	|	|	V|
22+10	1.3077	0.13	Q	|	|	|	V|
22+15	1.3087	0.14	Q	|	|	|	V|
22+20	1.3097	0.14	Q	|	|	|	V|
22+25	1.3106	0.12	Q	|	|	|	V|
22+30	1.3114	0.11	Q	|	|	|	V|
22+35	1.3121	0.11	Q	|	|	|	V|
22+40	1.3129	0.11	Q	|	|	|	V|
22+45	1.3136	0.11	Q	|	|	|	V|
22+50	1.3143	0.11	Q	|	|	|	V|
22+55	1.3150	0.10	Q	|	|	|	V|
23+ 0	1.3158	0.10	Q	|	|	|	V|
23+ 5	1.3165	0.10	Q	|	|	|	V|
23+10	1.3172	0.10	Q	|	|	|	V|
23+15	1.3179	0.10	Q	|	|	|	V|
23+20	1.3186	0.10	Q	|	|	|	V|
23+25	1.3193	0.10	Q	|	|	|	V|
23+30	1.3200	0.10	Q	|	|	|	V|
23+35	1.3207	0.10	Q	|	|	|	V|
23+40	1.3215	0.10	Q	|	|	|	V|
23+45	1.3222	0.10	Q	|	|	|	V|

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   23+50       1.3229      0.10  Q         |         |         |        V|
   23+55       1.3236      0.10  Q         |         |         |        V|
   24+ 0       1.3243      0.10  Q         |         |         |        V|
   24+ 5       1.3249      0.09  Q         |         |         |        V|
   24+10       1.3253      0.05  Q         |         |         |        V|
   24+15       1.3255      0.03  Q         |         |         |        V|
   24+20       1.3256      0.02  Q         |         |         |        V|
   24+25       1.3257      0.01  Q         |         |         |        V|
   24+30       1.3257      0.01  Q         |         |         |        V|
   24+35       1.3257      0.01  Q         |         |         |        V|
   24+40       1.3258      0.00  Q         |         |         |        V|
   24+45       1.3258      0.00  Q         |         |         |        V|
   24+50       1.3258      0.00  Q         |         |         |        V|
   24+55       1.3258      0.00  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/26/20 File: 8946E2A112.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
2 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.123 Hr.
Lag time = 7.37 Min.
25% of lag time = 1.84 Min.
40% of lag time = 2.95 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]
7.63	0.55	4.20

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	1.30	9.92

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	67.844	10.081	0.775
2	0.167	135.689	38.940	2.994
3	0.250	203.533	23.894	1.837
4	0.333	271.378	9.223	0.709
5	0.417	339.222	5.607	0.431
6	0.500	407.067	3.756	0.289
7	0.583	474.911	2.502	0.192
8	0.667	542.756	1.955	0.150
9	0.750	610.600	1.418	0.109
10	0.833	678.444	1.024	0.079
11	0.917	746.289	0.724	0.056
12	1.000	814.133	0.876	0.067
		Sum = 100.000	Sum=	7.690

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	0.218	(0.199)		0.079	0.139
2	0.17	4.20	0.277	(0.199)		0.101	0.176
3	0.25	4.40	0.290	(0.199)		0.106	0.185
4	0.33	4.80	0.317	(0.199)		0.115	0.201
5	0.42	5.20	0.343	(0.199)		0.125	0.218
6	0.50	6.20	0.409	(0.199)		0.149	0.260
7	0.58	6.80	0.449	(0.199)		0.163	0.285
8	0.67	8.80	0.581	0.199	(	0.211)	0.382
9	0.75	13.90	0.917	0.199	(	0.334)	0.719
10	0.83	31.40	2.072	0.199	(	0.754)	1.874
11	0.92	7.20	0.475	(0.199)		0.173	0.302
12	1.00	3.80	0.251	(0.199)		0.091	0.159
	(Loss Rate Not Used)						
Sum =		100.0				Sum =	4.9

Flood volume = Effective rainfall 0.41(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.090(Ac.Ft)
Total rainfall = 0.55(In)
Flood volume = 11311.2 Cubic Feet
Total soil loss = 3921.1 Cubic Feet

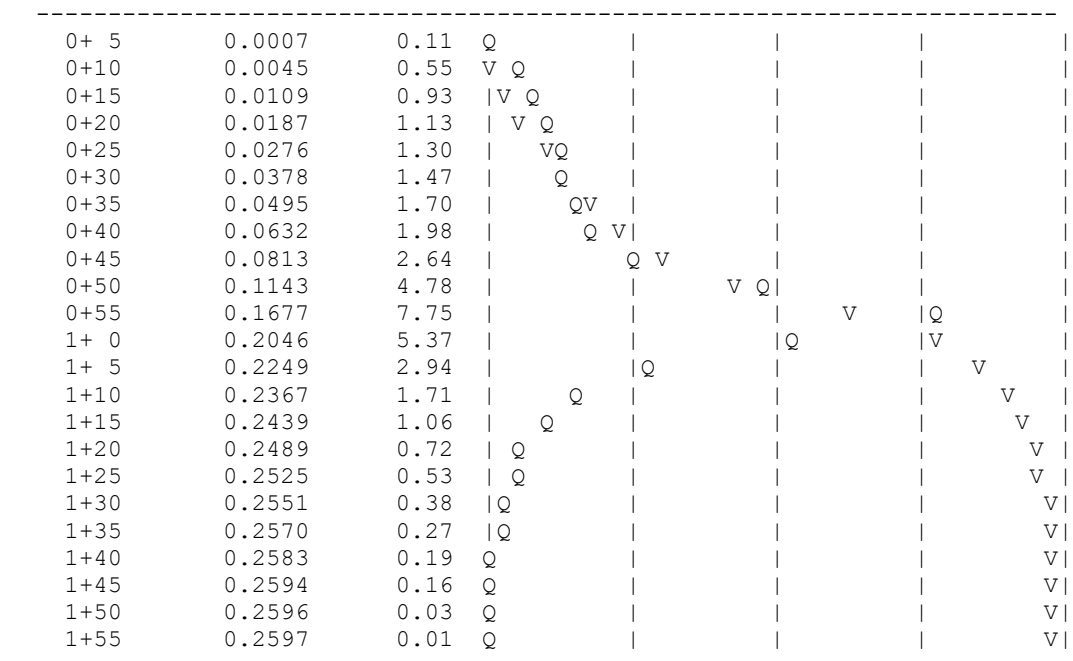
Peak flow rate of this hydrograph = 7.752(CFS)

++

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 2.5 5.0 7.5 10.0



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 02/26/20 File: 8946E2A132.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
2 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.123 Hr.
Lag time = 7.37 Min.
25% of lag time = 1.84 Min.
40% of lag time = 2.95 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]
7.63	0.90	6.87

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	2.25	17.17

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 0.900(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.900(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	67.844	10.081	0.775
2	0.167	135.689	38.940	2.994
3	0.250	203.533	23.894	1.837
4	0.333	271.378	9.223	0.709
5	0.417	339.222	5.607	0.431
6	0.500	407.067	3.756	0.289
7	0.583	474.911	2.502	0.192
8	0.667	542.756	1.955	0.150
9	0.750	610.600	1.418	0.109
10	0.833	678.444	1.024	0.079
11	0.917	746.289	0.724	0.056
12	1.000	814.133	0.876	0.067
		Sum = 100.000	Sum=	7.690

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	0.140	(0.199)	0.051	0.089
2	0.17	1.30	0.140	(0.199)	0.051	0.089
3	0.25	1.10	0.119	(0.199)	0.043	0.076
4	0.33	1.50	0.162	(0.199)	0.059	0.103
5	0.42	1.50	0.162	(0.199)	0.059	0.103
6	0.50	1.80	0.194	(0.199)	0.071	0.124
7	0.58	1.50	0.162	(0.199)	0.059	0.103
8	0.67	1.80	0.194	(0.199)	0.071	0.124
9	0.75	1.80	0.194	(0.199)	0.071	0.124
10	0.83	1.50	0.162	(0.199)	0.059	0.103
11	0.92	1.60	0.173	(0.199)	0.063	0.110
12	1.00	1.80	0.194	(0.199)	0.071	0.124
13	1.08	2.20	0.238	(0.199)	0.086	0.151
14	1.17	2.20	0.238	(0.199)	0.086	0.151
15	1.25	2.20	0.238	(0.199)	0.086	0.151
16	1.33	2.00	0.216	(0.199)	0.079	0.137
17	1.42	2.60	0.281	(0.199)	0.102	0.179
18	1.50	2.70	0.292	(0.199)	0.106	0.185
19	1.58	2.40	0.259	(0.199)	0.094	0.165
20	1.67	2.70	0.292	(0.199)	0.106	0.185
21	1.75	3.30	0.356	(0.199)	0.130	0.227
22	1.83	3.10	0.335	(0.199)	0.122	0.213
23	1.92	2.90	0.313	(0.199)	0.114	0.199
24	2.00	3.00	0.324	(0.199)	0.118	0.206
25	2.08	3.10	0.335	(0.199)	0.122	0.213
26	2.17	4.20	0.454	(0.199)	0.165	0.288
27	2.25	5.00	0.540	(0.199)	0.197	0.343
28	2.33	3.50	0.378	(0.199)	0.138	0.240
29	2.42	6.80	0.734	0.199	(0.267)	0.536
30	2.50	7.30	0.788	0.199	(0.287)	0.590
31	2.58	8.20	0.886	0.199	(0.322)	0.687
32	2.67	5.90	0.637	0.199	(0.232)	0.438
33	2.75	2.00	0.216	(0.199)	0.079	0.137
34	2.83	1.80	0.194	(0.199)	0.071	0.124

```
35   2.92     1.80      0.194       (  0.199)       0.071        0.124
36   3.00     0.60      0.065       (  0.199)       0.024        0.041
            (Loss Rate Not Used)
   Sum =     100.0                                   Sum =     7.2
     Flood volume = Effective rainfall      0.60(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       0.4(Ac.Ft)
     Total soil loss =      0.30(In)
     Total soil loss =     0.192(Ac.Ft)
     Total rainfall =      0.90(In)
     Flood volume =       16577.0 Cubic Feet
     Total soil loss =        8349.4 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      4.218(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0005      0.07  Q         |         |         |         |
  0+10       0.0028      0.34  VQ        |         |         |         |
  0+15       0.0062      0.49  VQ        |         |         |         |
  0+20       0.0098      0.53  |VQ       |         |         |         |
  0+25       0.0142      0.63  |VQ       |         |         |         |
  0+30       0.0191      0.71  | Q       |         |         |         |
  0+35       0.0245      0.79  | VQ      |         |         |         |
  0+40       0.0300      0.80  |  Q      |         |         |         |
  0+45       0.0359      0.86  |  Q      |         |         |         |
  0+50       0.0420      0.88  |  QV     |         |         |         |
  0+55       0.0478      0.84  |  Q V    |         |         |         |
  1+ 0       0.0537      0.85  |  Q V    |         |         |         |
  1+ 5       0.0600      0.92  |  Q  V   |         |         |         |
  1+10       0.0671      1.03  |   Q  V  |         |         |         |
  1+15       0.0746      1.09  |   Q  V  |         |         |         |
  1+20       0.0822      1.10  |   Q   V |         |         |         |
  1+25       0.0898      1.11  |   Q    V|         |         |         |
  1+30       0.0983      1.22  |   Q     V         |         |         |
  1+35       0.1072      1.30  |    Q    |V        |         |         |
  1+40       0.1161      1.30  |    Q    | V       |         |         |
  1+45       0.1256      1.37  |    Q    |  V      |         |         |
  1+50       0.1361      1.53  |     Q   |   V     |         |         |
  1+55       0.1469      1.57  |     Q   |    V    |         |         |
  2+ 0       0.1575      1.54  |     Q   |     V   |         |         |
  2+ 5       0.1683      1.56  |     Q   |      V  |         |         |
  2+10       0.1797      1.65  |     Q   |       V |         |         |
  2+15       0.1930      1.94  |      Q  |         V         |         |
  2+20       0.2080      2.17  |       Q |         |V        |         |
  2+25       0.2235      2.25  |        Q|         |  V      |         |
  2+30       0.2446      3.07  |         | Q       |    V    |         |
  2+35       0.2709      3.82  |         |    Q    |       V |         |
  2+40       0.3000      4.22  |         |     Q   |         |V        |
  2+45       0.3246      3.58  |         |   Q     |         |   V     |
  2+50       0.3410      2.38  |        Q|         |         |    V    |
  2+55       0.3529      1.72  |     Q   |         |         |      V  |
  3+ 0       0.3625      1.39  |    Q    |         |         |       V |
  3+ 5       0.3691      0.96  |  Q      |         |         |       V |
  3+10       0.3731      0.59  | Q       |         |         |        V|
  3+15       0.3757      0.38  |Q        |         |         |        V|
  3+20       0.3776      0.27  |Q        |         |         |        V|
  3+25       0.3788      0.18  Q         |         |         |        V|
  3+30       0.3797      0.12  Q         |         |         |        V|
  3+35       0.3801      0.07  Q         |         |         |        V|
  3+40       0.3803      0.03  Q         |         |         |        V|
  3+45       0.3805      0.02  Q         |         |         |        V|
  3+50       0.3805      0.01  Q         |         |         |        V|
  3+55       0.3806      0.00  Q         |         |         |        V|
```

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

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Study date 02/26/20 File: 8946E2A162.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
2 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.123 Hr.
Lag time = 7.37 Min.
25% of lag time = 1.84 Min.
40% of lag time = 2.95 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]
7.63	1.30	9.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	3.00	22.89

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.300(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.300(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	67.844	10.081	0.775
2	0.167	135.689	38.940	2.994
3	0.250	203.533	23.894	1.837
4	0.333	271.378	9.223	0.709
5	0.417	339.222	5.607	0.431
6	0.500	407.067	3.756	0.289
7	0.583	474.911	2.502	0.192
8	0.667	542.756	1.955	0.150
9	0.750	610.600	1.418	0.109
10	0.833	678.444	1.024	0.079
11	0.917	746.289	0.724	0.056
12	1.000	814.133	0.876	0.067
		Sum = 100.000	Sum=	7.690

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	0.078	(0.199)	0.028	0.050
2	0.17	0.60	0.094	(0.199)	0.034	0.060
3	0.25	0.60	0.094	(0.199)	0.034	0.060
4	0.33	0.60	0.094	(0.199)	0.034	0.060
5	0.42	0.60	0.094	(0.199)	0.034	0.060
6	0.50	0.70	0.109	(0.199)	0.040	0.069
7	0.58	0.70	0.109	(0.199)	0.040	0.069
8	0.67	0.70	0.109	(0.199)	0.040	0.069
9	0.75	0.70	0.109	(0.199)	0.040	0.069
10	0.83	0.70	0.109	(0.199)	0.040	0.069
11	0.92	0.70	0.109	(0.199)	0.040	0.069
12	1.00	0.80	0.125	(0.199)	0.045	0.079
13	1.08	0.80	0.125	(0.199)	0.045	0.079
14	1.17	0.80	0.125	(0.199)	0.045	0.079
15	1.25	0.80	0.125	(0.199)	0.045	0.079
16	1.33	0.80	0.125	(0.199)	0.045	0.079
17	1.42	0.80	0.125	(0.199)	0.045	0.079
18	1.50	0.80	0.125	(0.199)	0.045	0.079
19	1.58	0.80	0.125	(0.199)	0.045	0.079
20	1.67	0.80	0.125	(0.199)	0.045	0.079
21	1.75	0.80	0.125	(0.199)	0.045	0.079
22	1.83	0.80	0.125	(0.199)	0.045	0.079
23	1.92	0.80	0.125	(0.199)	0.045	0.079
24	2.00	0.90	0.140	(0.199)	0.051	0.089
25	2.08	0.80	0.125	(0.199)	0.045	0.079
26	2.17	0.90	0.140	(0.199)	0.051	0.089
27	2.25	0.90	0.140	(0.199)	0.051	0.089
28	2.33	0.90	0.140	(0.199)	0.051	0.089
29	2.42	0.90	0.140	(0.199)	0.051	0.089
30	2.50	0.90	0.140	(0.199)	0.051	0.089
31	2.58	0.90	0.140	(0.199)	0.051	0.089
32	2.67	0.90	0.140	(0.199)	0.051	0.089
33	2.75	1.00	0.156	(0.199)	0.057	0.099
34	2.83	1.00	0.156	(0.199)	0.057	0.099

35	2.92	1.00	0.156	(	0.199)	0.057	0.099
36	3.00	1.00	0.156	(	0.199)	0.057	0.099
37	3.08	1.00	0.156	(	0.199)	0.057	0.099
38	3.17	1.10	0.172	(	0.199)	0.062	0.109
39	3.25	1.10	0.172	(	0.199)	0.062	0.109
40	3.33	1.10	0.172	(	0.199)	0.062	0.109
41	3.42	1.20	0.187	(	0.199)	0.068	0.119
42	3.50	1.30	0.203	(	0.199)	0.074	0.129
43	3.58	1.40	0.218	(	0.199)	0.079	0.139
44	3.67	1.40	0.218	(	0.199)	0.079	0.139
45	3.75	1.50	0.234	(	0.199)	0.085	0.149
46	3.83	1.50	0.234	(	0.199)	0.085	0.149
47	3.92	1.60	0.250	(	0.199)	0.091	0.159
48	4.00	1.60	0.250	(	0.199)	0.091	0.159
49	4.08	1.70	0.265	(	0.199)	0.097	0.169
50	4.17	1.80	0.281	(	0.199)	0.102	0.179
51	4.25	1.90	0.296	(	0.199)	0.108	0.189
52	4.33	2.00	0.312	(	0.199)	0.114	0.198
53	4.42	2.10	0.328	(	0.199)	0.119	0.208
54	4.50	2.10	0.328	(	0.199)	0.119	0.208
55	4.58	2.20	0.343	(	0.199)	0.125	0.218
56	4.67	2.30	0.359	(	0.199)	0.131	0.228
57	4.75	2.40	0.374	(	0.199)	0.136	0.238
58	4.83	2.40	0.374	(	0.199)	0.136	0.238
59	4.92	2.50	0.390	(	0.199)	0.142	0.248
60	5.00	2.60	0.406	(	0.199)	0.148	0.258
61	5.08	3.10	0.484	(	0.199)	0.176	0.308
62	5.17	3.60	0.562		0.199	(0.204)	0.363
63	5.25	3.90	0.608		0.199	(0.221)	0.410
64	5.33	4.20	0.655		0.199	(0.238)	0.456
65	5.42	4.70	0.733		0.199	(0.267)	0.534
66	5.50	5.60	0.874		0.199	(0.318)	0.675
67	5.58	1.90	0.296	(	0.199)	0.108	0.189
68	5.67	0.90	0.140	(	0.199)	0.051	0.089
69	5.75	0.60	0.094	(	0.199)	0.034	0.060
70	5.83	0.50	0.078	(	0.199)	0.028	0.050
71	5.92	0.30	0.047	(	0.199)	0.017	0.030
72	6.00	0.20	0.031	(	0.199)	0.011	0.020

(Loss Rate Not Used)

Sum = 100.0 Sum = 10.2

Flood volume = Effective rainfall 0.85(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)

Total soil loss = 0.45(In)
Total soil loss = 0.287(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 23489.0 Cubic Feet
Total soil loss = 12516.1 Cubic Feet

Peak flow rate of this hydrograph = 3.928(CFS)

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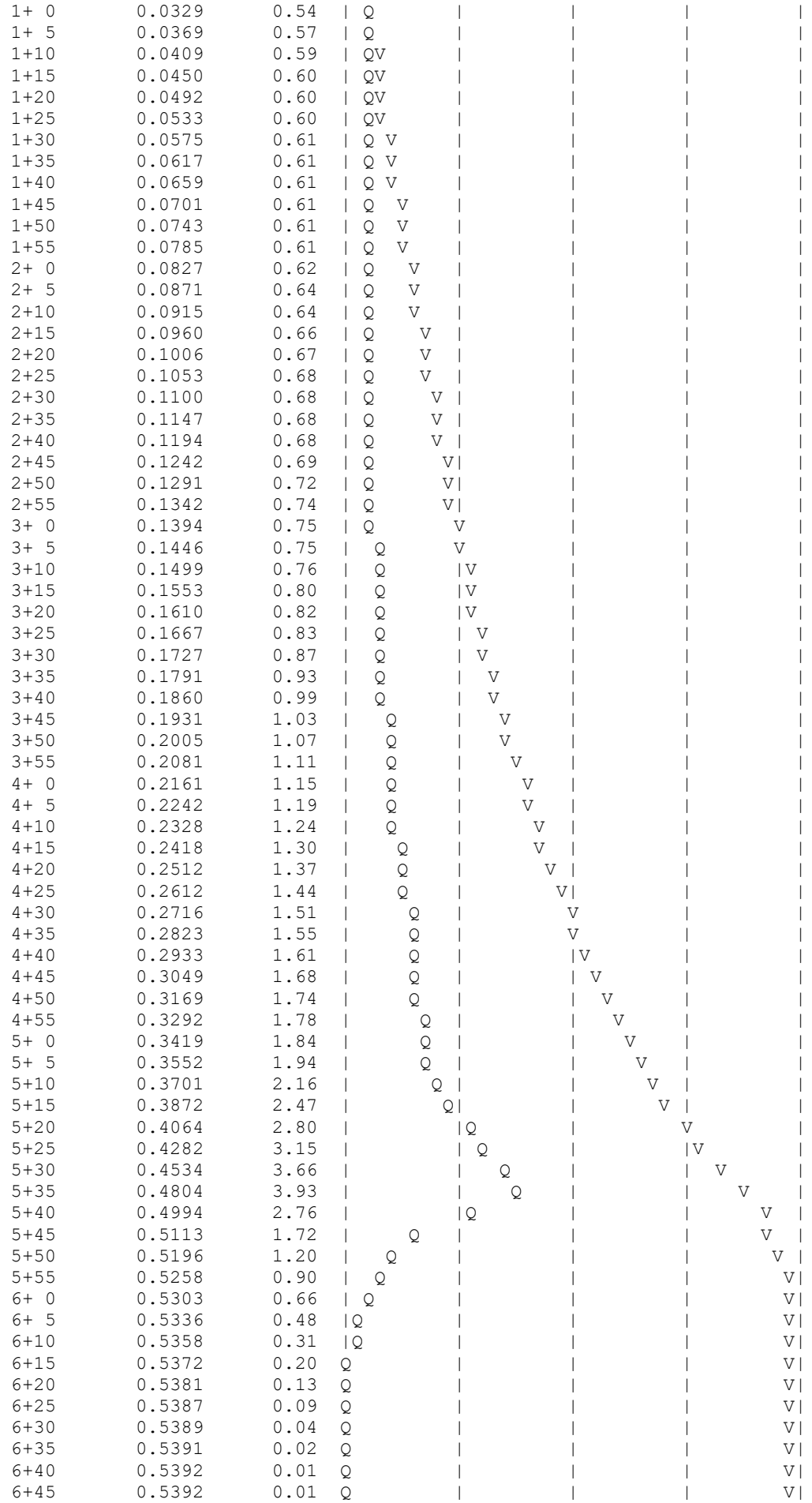
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0003	0.04	Q				
0+10	0.0016	0.19	Q				
0+15	0.0038	0.32	VQ				
0+20	0.0063	0.37	VQ				
0+25	0.0091	0.40	VQ				
0+30	0.0120	0.42	VQ				
0+35	0.0152	0.47	|Q				
0+40	0.0186	0.49	|Q				
0+45	0.0221	0.51	|VQ				
0+50	0.0256	0.52	|VQ				
0+55	0.0292	0.52	| Q				



```
    6+50       0.5392      0.00  Q         |         |         |        V|
    6+55       0.5392      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

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

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Study date 02/26/20 File: 8946E2A1242.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
2 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.123 Hr.
Lag time = 7.37 Min.
25% of lag time = 1.84 Min.
40% of lag time = 2.95 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]
7.63	2.25	17.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	5.25	40.06

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	67.844	10.081	0.775
2	0.167	135.689	38.940	2.994
3	0.250	203.533	23.894	1.837
4	0.333	271.378	9.223	0.709
5	0.417	339.222	5.607	0.431
6	0.500	407.067	3.756	0.289
7	0.583	474.911	2.502	0.192
8	0.667	542.756	1.955	0.150
9	0.750	610.600	1.418	0.109
10	0.833	678.444	1.024	0.079
11	0.917	746.289	0.724	0.056
12	1.000	814.133	0.876	0.067
			Sum = 100.000 Sum=	7.690

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	0.018	(0.352)	0.007	0.011
2	0.17	0.07	0.018	(0.351)	0.007	0.011
3	0.25	0.07	0.018	(0.350)	0.007	0.011
4	0.33	0.10	0.027	(0.348)	0.010	0.017
5	0.42	0.10	0.027	(0.347)	0.010	0.017
6	0.50	0.10	0.027	(0.346)	0.010	0.017
7	0.58	0.10	0.027	(0.344)	0.010	0.017
8	0.67	0.10	0.027	(0.343)	0.010	0.017
9	0.75	0.10	0.027	(0.341)	0.010	0.017
10	0.83	0.13	0.036	(0.340)	0.013	0.023
11	0.92	0.13	0.036	(0.339)	0.013	0.023
12	1.00	0.13	0.036	(0.337)	0.013	0.023
13	1.08	0.10	0.027	(0.336)	0.010	0.017
14	1.17	0.10	0.027	(0.335)	0.010	0.017
15	1.25	0.10	0.027	(0.333)	0.010	0.017
16	1.33	0.10	0.027	(0.332)	0.010	0.017
17	1.42	0.10	0.027	(0.331)	0.010	0.017
18	1.50	0.10	0.027	(0.330)	0.010	0.017
19	1.58	0.10	0.027	(0.328)	0.010	0.017
20	1.67	0.10	0.027	(0.327)	0.010	0.017
21	1.75	0.10	0.027	(0.326)	0.010	0.017
22	1.83	0.13	0.036	(0.324)	0.013	0.023
23	1.92	0.13	0.036	(0.323)	0.013	0.023
24	2.00	0.13	0.036	(0.322)	0.013	0.023
25	2.08	0.13	0.036	(0.320)	0.013	0.023
26	2.17	0.13	0.036	(0.319)	0.013	0.023
27	2.25	0.13	0.036	(0.318)	0.013	0.023
28	2.33	0.13	0.036	(0.316)	0.013	0.023
29	2.42	0.13	0.036	(0.315)	0.013	0.023
30	2.50	0.13	0.036	(0.314)	0.013	0.023
31	2.58	0.17	0.045	(0.313)	0.016	0.029
32	2.67	0.17	0.045	(0.311)	0.016	0.029
33	2.75	0.17	0.045	(0.310)	0.016	0.029
34	2.83	0.17	0.045	(0.309)	0.016	0.029

35	2.92	0.17	0.045	(0.307)	0.016	0.029
36	3.00	0.17	0.045	(0.306)	0.016	0.029
37	3.08	0.17	0.045	(0.305)	0.016	0.029
38	3.17	0.17	0.045	(0.304)	0.016	0.029
39	3.25	0.17	0.045	(0.302)	0.016	0.029
40	3.33	0.17	0.045	(0.301)	0.016	0.029
41	3.42	0.17	0.045	(0.300)	0.016	0.029
42	3.50	0.17	0.045	(0.299)	0.016	0.029
43	3.58	0.17	0.045	(0.297)	0.016	0.029
44	3.67	0.17	0.045	(0.296)	0.016	0.029
45	3.75	0.17	0.045	(0.295)	0.016	0.029
46	3.83	0.20	0.054	(0.294)	0.020	0.034
47	3.92	0.20	0.054	(0.292)	0.020	0.034
48	4.00	0.20	0.054	(0.291)	0.020	0.034
49	4.08	0.20	0.054	(0.290)	0.020	0.034
50	4.17	0.20	0.054	(0.289)	0.020	0.034
51	4.25	0.20	0.054	(0.287)	0.020	0.034
52	4.33	0.23	0.063	(0.286)	0.023	0.040
53	4.42	0.23	0.063	(0.285)	0.023	0.040
54	4.50	0.23	0.063	(0.284)	0.023	0.040
55	4.58	0.23	0.063	(0.283)	0.023	0.040
56	4.67	0.23	0.063	(0.281)	0.023	0.040
57	4.75	0.23	0.063	(0.280)	0.023	0.040
58	4.83	0.27	0.072	(0.279)	0.026	0.046
59	4.92	0.27	0.072	(0.278)	0.026	0.046
60	5.00	0.27	0.072	(0.277)	0.026	0.046
61	5.08	0.20	0.054	(0.275)	0.020	0.034
62	5.17	0.20	0.054	(0.274)	0.020	0.034
63	5.25	0.20	0.054	(0.273)	0.020	0.034
64	5.33	0.23	0.063	(0.272)	0.023	0.040
65	5.42	0.23	0.063	(0.271)	0.023	0.040
66	5.50	0.23	0.063	(0.269)	0.023	0.040
67	5.58	0.27	0.072	(0.268)	0.026	0.046
68	5.67	0.27	0.072	(0.267)	0.026	0.046
69	5.75	0.27	0.072	(0.266)	0.026	0.046
70	5.83	0.27	0.072	(0.265)	0.026	0.046
71	5.92	0.27	0.072	(0.263)	0.026	0.046
72	6.00	0.27	0.072	(0.262)	0.026	0.046
73	6.08	0.30	0.081	(0.261)	0.029	0.052
74	6.17	0.30	0.081	(0.260)	0.029	0.052
75	6.25	0.30	0.081	(0.259)	0.029	0.052
76	6.33	0.30	0.081	(0.258)	0.029	0.052
77	6.42	0.30	0.081	(0.257)	0.029	0.052
78	6.50	0.30	0.081	(0.255)	0.029	0.052
79	6.58	0.33	0.090	(0.254)	0.033	0.057
80	6.67	0.33	0.090	(0.253)	0.033	0.057
81	6.75	0.33	0.090	(0.252)	0.033	0.057
82	6.83	0.33	0.090	(0.251)	0.033	0.057
83	6.92	0.33	0.090	(0.250)	0.033	0.057
84	7.00	0.33	0.090	(0.249)	0.033	0.057
85	7.08	0.33	0.090	(0.247)	0.033	0.057
86	7.17	0.33	0.090	(0.246)	0.033	0.057
87	7.25	0.33	0.090	(0.245)	0.033	0.057
88	7.33	0.37	0.099	(0.244)	0.036	0.063
89	7.42	0.37	0.099	(0.243)	0.036	0.063
90	7.50	0.37	0.099	(0.242)	0.036	0.063
91	7.58	0.40	0.108	(0.241)	0.039	0.069
92	7.67	0.40	0.108	(0.240)	0.039	0.069
93	7.75	0.40	0.108	(0.238)	0.039	0.069
94	7.83	0.43	0.117	(0.237)	0.043	0.074
95	7.92	0.43	0.117	(0.236)	0.043	0.074
96	8.00	0.43	0.117	(0.235)	0.043	0.074
97	8.08	0.50	0.135	(0.234)	0.049	0.086
98	8.17	0.50	0.135	(0.233)	0.049	0.086
99	8.25	0.50	0.135	(0.232)	0.049	0.086
100	8.33	0.50	0.135	(0.231)	0.049	0.086
101	8.42	0.50	0.135	(0.230)	0.049	0.086
102	8.50	0.50	0.135	(0.229)	0.049	0.086
103	8.58	0.53	0.144	(0.228)	0.052	0.092
104	8.67	0.53	0.144	(0.227)	0.052	0.092

105	8.75	0.53	0.144	(0.225)	0.052	0.092
106	8.83	0.57	0.153	(0.224)	0.056	0.097
107	8.92	0.57	0.153	(0.223)	0.056	0.097
108	9.00	0.57	0.153	(0.222)	0.056	0.097
109	9.08	0.63	0.171	(0.221)	0.062	0.109
110	9.17	0.63	0.171	(0.220)	0.062	0.109
111	9.25	0.63	0.171	(0.219)	0.062	0.109
112	9.33	0.67	0.180	(0.218)	0.066	0.114
113	9.42	0.67	0.180	(0.217)	0.066	0.114
114	9.50	0.67	0.180	(0.216)	0.066	0.114
115	9.58	0.70	0.189	(0.215)	0.069	0.120
116	9.67	0.70	0.189	(0.214)	0.069	0.120
117	9.75	0.70	0.189	(0.213)	0.069	0.120
118	9.83	0.73	0.198	(0.212)	0.072	0.126
119	9.92	0.73	0.198	(0.211)	0.072	0.126
120	10.00	0.73	0.198	(0.210)	0.072	0.126
121	10.08	0.50	0.135	(0.209)	0.049	0.086
122	10.17	0.50	0.135	(0.208)	0.049	0.086
123	10.25	0.50	0.135	(0.207)	0.049	0.086
124	10.33	0.50	0.135	(0.206)	0.049	0.086
125	10.42	0.50	0.135	(0.205)	0.049	0.086
126	10.50	0.50	0.135	(0.204)	0.049	0.086
127	10.58	0.67	0.180	(0.203)	0.066	0.114
128	10.67	0.67	0.180	(0.202)	0.066	0.114
129	10.75	0.67	0.180	(0.201)	0.066	0.114
130	10.83	0.67	0.180	(0.200)	0.066	0.114
131	10.92	0.67	0.180	(0.199)	0.066	0.114
132	11.00	0.67	0.180	(0.198)	0.066	0.114
133	11.08	0.63	0.171	(0.197)	0.062	0.109
134	11.17	0.63	0.171	(0.196)	0.062	0.109
135	11.25	0.63	0.171	(0.195)	0.062	0.109
136	11.33	0.63	0.171	(0.194)	0.062	0.109
137	11.42	0.63	0.171	(0.193)	0.062	0.109
138	11.50	0.63	0.171	(0.192)	0.062	0.109
139	11.58	0.57	0.153	(0.191)	0.056	0.097
140	11.67	0.57	0.153	(0.190)	0.056	0.097
141	11.75	0.57	0.153	(0.189)	0.056	0.097
142	11.83	0.60	0.162	(0.188)	0.059	0.103
143	11.92	0.60	0.162	(0.187)	0.059	0.103
144	12.00	0.60	0.162	(0.186)	0.059	0.103
145	12.08	0.83	0.225	(0.186)	0.082	0.143
146	12.17	0.83	0.225	(0.185)	0.082	0.143
147	12.25	0.83	0.225	(0.184)	0.082	0.143
148	12.33	0.87	0.234	(0.183)	0.085	0.149
149	12.42	0.87	0.234	(0.182)	0.085	0.149
150	12.50	0.87	0.234	(0.181)	0.085	0.149
151	12.58	0.93	0.252	(0.180)	0.092	0.160
152	12.67	0.93	0.252	(0.179)	0.092	0.160
153	12.75	0.93	0.252	(0.178)	0.092	0.160
154	12.83	0.97	0.261	(0.177)	0.095	0.166
155	12.92	0.97	0.261	(0.176)	0.095	0.166
156	13.00	0.97	0.261	(0.176)	0.095	0.166
157	13.08	1.13	0.306	(0.175)	0.111	0.195
158	13.17	1.13	0.306	(0.174)	0.111	0.195
159	13.25	1.13	0.306	(0.173)	0.111	0.195
160	13.33	1.13	0.306	(0.172)	0.111	0.195
161	13.42	1.13	0.306	(0.171)	0.111	0.195
162	13.50	1.13	0.306	(0.170)	0.111	0.195
163	13.58	0.77	0.207	(0.169)	0.075	0.132
164	13.67	0.77	0.207	(0.168)	0.075	0.132
165	13.75	0.77	0.207	(0.168)	0.075	0.132
166	13.83	0.77	0.207	(0.167)	0.075	0.132
167	13.92	0.77	0.207	(0.166)	0.075	0.132
168	14.00	0.77	0.207	(0.165)	0.075	0.132
169	14.08	0.90	0.243	(0.164)	0.088	0.155
170	14.17	0.90	0.243	(0.163)	0.088	0.155
171	14.25	0.90	0.243	(0.163)	0.088	0.155
172	14.33	0.87	0.234	(0.162)	0.085	0.149
173	14.42	0.87	0.234	(0.161)	0.085	0.149
174	14.50	0.87	0.234	(0.160)	0.085	0.149

175	14.58	0.87	0.234	(0.159)	0.085	0.149
176	14.67	0.87	0.234	(0.158)	0.085	0.149
177	14.75	0.87	0.234	(0.158)	0.085	0.149
178	14.83	0.83	0.225	(0.157)	0.082	0.143
179	14.92	0.83	0.225	(0.156)	0.082	0.143
180	15.00	0.83	0.225	(0.155)	0.082	0.143
181	15.08	0.80	0.216	(0.154)	0.079	0.137
182	15.17	0.80	0.216	(0.154)	0.079	0.137
183	15.25	0.80	0.216	(0.153)	0.079	0.137
184	15.33	0.77	0.207	(0.152)	0.075	0.132
185	15.42	0.77	0.207	(0.151)	0.075	0.132
186	15.50	0.77	0.207	(0.151)	0.075	0.132
187	15.58	0.63	0.171	(0.150)	0.062	0.109
188	15.67	0.63	0.171	(0.149)	0.062	0.109
189	15.75	0.63	0.171	(0.148)	0.062	0.109
190	15.83	0.63	0.171	(0.147)	0.062	0.109
191	15.92	0.63	0.171	(0.147)	0.062	0.109
192	16.00	0.63	0.171	(0.146)	0.062	0.109
193	16.08	0.13	0.036	(0.145)	0.013	0.023
194	16.17	0.13	0.036	(0.144)	0.013	0.023
195	16.25	0.13	0.036	(0.144)	0.013	0.023
196	16.33	0.13	0.036	(0.143)	0.013	0.023
197	16.42	0.13	0.036	(0.142)	0.013	0.023
198	16.50	0.13	0.036	(0.142)	0.013	0.023
199	16.58	0.10	0.027	(0.141)	0.010	0.017
200	16.67	0.10	0.027	(0.140)	0.010	0.017
201	16.75	0.10	0.027	(0.139)	0.010	0.017
202	16.83	0.10	0.027	(0.139)	0.010	0.017
203	16.92	0.10	0.027	(0.138)	0.010	0.017
204	17.00	0.10	0.027	(0.137)	0.010	0.017
205	17.08	0.17	0.045	(0.137)	0.016	0.029
206	17.17	0.17	0.045	(0.136)	0.016	0.029
207	17.25	0.17	0.045	(0.135)	0.016	0.029
208	17.33	0.17	0.045	(0.135)	0.016	0.029
209	17.42	0.17	0.045	(0.134)	0.016	0.029
210	17.50	0.17	0.045	(0.133)	0.016	0.029
211	17.58	0.17	0.045	(0.133)	0.016	0.029
212	17.67	0.17	0.045	(0.132)	0.016	0.029
213	17.75	0.17	0.045	(0.131)	0.016	0.029
214	17.83	0.13	0.036	(0.131)	0.013	0.023
215	17.92	0.13	0.036	(0.130)	0.013	0.023
216	18.00	0.13	0.036	(0.129)	0.013	0.023
217	18.08	0.13	0.036	(0.129)	0.013	0.023
218	18.17	0.13	0.036	(0.128)	0.013	0.023
219	18.25	0.13	0.036	(0.127)	0.013	0.023
220	18.33	0.13	0.036	(0.127)	0.013	0.023
221	18.42	0.13	0.036	(0.126)	0.013	0.023
222	18.50	0.13	0.036	(0.126)	0.013	0.023
223	18.58	0.10	0.027	(0.125)	0.010	0.017
224	18.67	0.10	0.027	(0.124)	0.010	0.017
225	18.75	0.10	0.027	(0.124)	0.010	0.017
226	18.83	0.07	0.018	(0.123)	0.007	0.011
227	18.92	0.07	0.018	(0.123)	0.007	0.011
228	19.00	0.07	0.018	(0.122)	0.007	0.011
229	19.08	0.10	0.027	(0.121)	0.010	0.017
230	19.17	0.10	0.027	(0.121)	0.010	0.017
231	19.25	0.10	0.027	(0.120)	0.010	0.017
232	19.33	0.13	0.036	(0.120)	0.013	0.023
233	19.42	0.13	0.036	(0.119)	0.013	0.023
234	19.50	0.13	0.036	(0.119)	0.013	0.023
235	19.58	0.10	0.027	(0.118)	0.010	0.017
236	19.67	0.10	0.027	(0.117)	0.010	0.017
237	19.75	0.10	0.027	(0.117)	0.010	0.017
238	19.83	0.07	0.018	(0.116)	0.007	0.011
239	19.92	0.07	0.018	(0.116)	0.007	0.011
240	20.00	0.07	0.018	(0.115)	0.007	0.011
241	20.08	0.10	0.027	(0.115)	0.010	0.017
242	20.17	0.10	0.027	(0.114)	0.010	0.017
243	20.25	0.10	0.027	(0.114)	0.010	0.017
244	20.33	0.10	0.027	(0.113)	0.010	0.017

245	20.42	0.10	0.027	(	0.113)	0.010	0.017
246	20.50	0.10	0.027	(	0.112)	0.010	0.017
247	20.58	0.10	0.027	(	0.112)	0.010	0.017
248	20.67	0.10	0.027	(	0.111)	0.010	0.017
249	20.75	0.10	0.027	(	0.111)	0.010	0.017
250	20.83	0.07	0.018	(	0.111)	0.007	0.011
251	20.92	0.07	0.018	(	0.110)	0.007	0.011
252	21.00	0.07	0.018	(	0.110)	0.007	0.011
253	21.08	0.10	0.027	(	0.109)	0.010	0.017
254	21.17	0.10	0.027	(	0.109)	0.010	0.017
255	21.25	0.10	0.027	(	0.108)	0.010	0.017
256	21.33	0.07	0.018	(	0.108)	0.007	0.011
257	21.42	0.07	0.018	(	0.108)	0.007	0.011
258	21.50	0.07	0.018	(	0.107)	0.007	0.011
259	21.58	0.10	0.027	(	0.107)	0.010	0.017
260	21.67	0.10	0.027	(	0.106)	0.010	0.017
261	21.75	0.10	0.027	(	0.106)	0.010	0.017
262	21.83	0.07	0.018	(	0.106)	0.007	0.011
263	21.92	0.07	0.018	(	0.105)	0.007	0.011
264	22.00	0.07	0.018	(	0.105)	0.007	0.011
265	22.08	0.10	0.027	(	0.105)	0.010	0.017
266	22.17	0.10	0.027	(	0.104)	0.010	0.017
267	22.25	0.10	0.027	(	0.104)	0.010	0.017
268	22.33	0.07	0.018	(	0.104)	0.007	0.011
269	22.42	0.07	0.018	(	0.103)	0.007	0.011
270	22.50	0.07	0.018	(	0.103)	0.007	0.011
271	22.58	0.07	0.018	(	0.103)	0.007	0.011
272	22.67	0.07	0.018	(	0.102)	0.007	0.011
273	22.75	0.07	0.018	(	0.102)	0.007	0.011
274	22.83	0.07	0.018	(	0.102)	0.007	0.011
275	22.92	0.07	0.018	(	0.102)	0.007	0.011
276	23.00	0.07	0.018	(	0.101)	0.007	0.011
277	23.08	0.07	0.018	(	0.101)	0.007	0.011
278	23.17	0.07	0.018	(	0.101)	0.007	0.011
279	23.25	0.07	0.018	(	0.101)	0.007	0.011
280	23.33	0.07	0.018	(	0.100)	0.007	0.011
281	23.42	0.07	0.018	(	0.100)	0.007	0.011
282	23.50	0.07	0.018	(	0.100)	0.007	0.011
283	23.58	0.07	0.018	(	0.100)	0.007	0.011
284	23.67	0.07	0.018	(	0.100)	0.007	0.011
285	23.75	0.07	0.018	(	0.100)	0.007	0.011
286	23.83	0.07	0.018	(	0.100)	0.007	0.011
287	23.92	0.07	0.018	(	0.099)	0.007	0.011
288	24.00	0.07	0.018	(	0.099)	0.007	0.011

(Loss Rate Not Used)

Sum = 100.0 Sum = 17.2

Flood volume = Effective rainfall 1.43(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.9(Ac.Ft)
Total soil loss = 0.82(In)
Total soil loss = 0.521(Ac.Ft)
Total rainfall = 2.25(In)
Flood volume = 39633.7 Cubic Feet
Total soil loss = 22683.4 Cubic Feet

Peak flow rate of this hydrograph = 1.477(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0004	0.04	Q	|	|	|	|
0+15	0.0008	0.06	Q	|	|	|	|
0+20	0.0013	0.08	Q	|	|	|	|
0+25	0.0020	0.10	Q	|	|	|	|

0+30	0.0028	0.11	Q	|	|	|	|
0+35	0.0036	0.12	Q	|	|	|	|
0+40	0.0045	0.12	Q	|	|	|	|
0+45	0.0053	0.13	Q	|	|	|	|
0+50	0.0062	0.13	Q	|	|	|	|
0+55	0.0073	0.15	Q	|	|	|	|
1+ 0	0.0084	0.16	Q	|	|	|	|
1+ 5	0.0095	0.16	Q	|	|	|	|
1+10	0.0105	0.15	Q	|	|	|	|
1+15	0.0115	0.14	Q	|	|	|	|
1+20	0.0125	0.14	Q	|	|	|	|
1+25	0.0134	0.14	Q	|	|	|	|
1+30	0.0143	0.13	Q	|	|	|	|
1+35	0.0152	0.13	Q	|	|	|	|
1+40	0.0162	0.13	Q	|	|	|	|
1+45	0.0171	0.13	Q	|	|	|	|
1+50	0.0180	0.14	Q	|	|	|	|
1+55	0.0191	0.15	Q	|	|	|	|
2+ 0	0.0202	0.16	Q	|	|	|	|
2+ 5	0.0214	0.17	Q	|	|	|	|
2+10	0.0226	0.17	Q	|	|	|	|
2+15	0.0237	0.17	QV	|	|	|	|
2+20	0.0249	0.17	QV	|	|	|	|
2+25	0.0261	0.17	QV	|	|	|	|
2+30	0.0273	0.17	QV	|	|	|	|
2+35	0.0286	0.18	QV	|	|	|	|
2+40	0.0299	0.20	QV	|	|	|	|
2+45	0.0314	0.21	QV	|	|	|	|
2+50	0.0328	0.21	QV	|	|	|	|
2+55	0.0343	0.21	QV	|	|	|	|
3+ 0	0.0358	0.22	QV	|	|	|	|
3+ 5	0.0373	0.22	QV	|	|	|	|
3+10	0.0388	0.22	QV	|	|	|	|
3+15	0.0403	0.22	QV	|	|	|	|
3+20	0.0418	0.22	QV	|	|	|	|
3+25	0.0433	0.22	QV	|	|	|	|
3+30	0.0449	0.22	QV	|	|	|	|
3+35	0.0464	0.22	Q V	|	|	|	|
3+40	0.0479	0.22	Q V	|	|	|	|
3+45	0.0494	0.22	Q V	|	|	|	|
3+50	0.0510	0.22	Q V	|	|	|	|
3+55	0.0526	0.24	Q V	|	|	|	|
4+ 0	0.0544	0.25	|QV	|	|	|	|
4+ 5	0.0561	0.26	|QV	|	|	|	|
4+10	0.0579	0.26	|QV	|	|	|	|
4+15	0.0597	0.26	|QV	|	|	|	|
4+20	0.0615	0.27	|QV	|	|	|	|
4+25	0.0635	0.28	|QV	|	|	|	|
4+30	0.0655	0.30	|QV	|	|	|	|
4+35	0.0676	0.30	|QV	|	|	|	|
4+40	0.0697	0.30	|Q V	|	|	|	|
4+45	0.0718	0.30	|Q V	|	|	|	|
4+50	0.0739	0.31	|Q V	|	|	|	|
4+55	0.0762	0.33	|Q V	|	|	|	|
5+ 0	0.0785	0.34	|Q V	|	|	|	|
5+ 5	0.0808	0.33	|Q V	|	|	|	|
5+10	0.0829	0.30	|Q V	|	|	|	|
5+15	0.0849	0.28	|Q V	|	|	|	|
5+20	0.0868	0.28	|Q V	|	|	|	|
5+25	0.0888	0.29	|Q V	|	|	|	|
5+30	0.0909	0.30	|Q V	|	|	|	|
5+35	0.0930	0.31	|Q V	|	|	|	|
5+40	0.0953	0.33	|Q V	|	|	|	|
5+45	0.0976	0.34	|Q V	|	|	|	|
5+50	0.1000	0.34	|Q V	|	|	|	|
5+55	0.1024	0.35	|Q V	|	|	|	|
6+ 0	0.1048	0.35	|Q V	|	|	|	|
6+ 5	0.1072	0.35	|Q V	|	|	|	|
6+10	0.1098	0.37	|Q V	|	|	|	|
6+15	0.1124	0.38	|Q V	|	|	|	|

6+20	0.1151	0.39	|Q V |	|	|	|
6+25	0.1178	0.39	|Q V |	|	|	|
6+30	0.1205	0.39	|Q V |	|	|	|
6+35	0.1232	0.40	|Q V |	|	|	|
6+40	0.1261	0.42	|Q V |	|	|	|
6+45	0.1290	0.43	|Q V |	|	|	|
6+50	0.1320	0.43	|Q V |	|	|	|
6+55	0.1350	0.43	|Q V |	|	|	|
7+ 0	0.1380	0.44	|Q V |	|	|	|
7+ 5	0.1410	0.44	|Q V |	|	|	|
7+10	0.1440	0.44	|Q V |	|	|	|
7+15	0.1470	0.44	|Q V |	|	|	|
7+20	0.1501	0.44	|Q V |	|	|	|
7+25	0.1533	0.46	|Q V |	|	|	|
7+30	0.1565	0.47	|Q V |	|	|	|
7+35	0.1599	0.48	|Q V |	|	|	|
7+40	0.1633	0.50	| Q V |	|	|	|
7+45	0.1668	0.51	| Q V |	|	|	|
7+50	0.1704	0.52	| Q V |	|	|	|
7+55	0.1742	0.54	| Q V |	|	|	|
8+ 0	0.1780	0.56	| Q V |	|	|	|
8+ 5	0.1819	0.57	| Q V |	|	|	|
8+10	0.1861	0.61	| Q V |	|	|	|
8+15	0.1905	0.63	| Q V |	|	|	|
8+20	0.1949	0.64	| Q V |	|	|	|
8+25	0.1993	0.65	| Q V |	|	|	|
8+30	0.2038	0.65	| Q V |	|	|	|
8+35	0.2084	0.66	| Q V|	|	|	|
8+40	0.2130	0.68	| Q V|	|	|	|
8+45	0.2178	0.69	| Q V|	|	|	|
8+50	0.2226	0.70	| Q V|	|	|	|
8+55	0.2276	0.72	| Q V |	|	|	|
9+ 0	0.2326	0.73	| Q V |	|	|	|
9+ 5	0.2378	0.75	| Q V |	|	|	|
9+10	0.2432	0.78	| Q V |	|	|	|
9+15	0.2487	0.81	| Q V |	|	|	|
9+20	0.2544	0.82	| Q |V |	|	|	|
9+25	0.2602	0.85	| Q |V |	|	|	|
9+30	0.2661	0.86	| Q |V |	|	|	|
9+35	0.2721	0.87	| Q |V |	|	|	|
9+40	0.2783	0.89	| Q | V |	|	|	|
9+45	0.2845	0.91	| Q | V |	|	|	|
9+50	0.2909	0.92	| Q | V |	|	|	|
9+55	0.2973	0.94	| Q | V |	|	|	|
10+ 0	0.3039	0.95	| Q | V |	|	|	|
10+ 5	0.3103	0.93	| Q | V |	|	|	|
10+10	0.3158	0.81	| Q | V |	|	|	|
10+15	0.3209	0.74	| Q | V |	|	|	|
10+20	0.3258	0.71	| Q | V |	|	|	|
10+25	0.3306	0.70	| Q | V |	|	|	|
10+30	0.3353	0.69	| Q | V |	|	|	|
10+35	0.3402	0.70	| Q | V |	|	|	|
10+40	0.3455	0.78	| Q | V |	|	|	|
10+45	0.3513	0.83	| Q | V |	|	|	|
10+50	0.3571	0.85	| Q | V |	|	|	|
10+55	0.3630	0.86	| Q | V |	|	|	|
11+ 0	0.3689	0.86	| Q | V |	|	|	|
11+ 5	0.3749	0.86	| Q | V |	|	|	|
11+10	0.3807	0.85	| Q | V |	|	|	|
11+15	0.3865	0.84	| Q | V |	|	|	|
11+20	0.3923	0.84	| Q | V |	|	|	|
11+25	0.3981	0.84	| Q | V |	|	|	|
11+30	0.4039	0.84	| Q | V |	|	|	|
11+35	0.4096	0.83	| Q | V |	|	|	|
11+40	0.4151	0.80	| Q | V |	|	|	|
11+45	0.4204	0.77	| Q | V |	|	|	|
11+50	0.4257	0.77	| Q | V |	|	|	|
11+55	0.4311	0.78	| Q | V |	|	|	|
12+ 0	0.4365	0.79	| Q | V|	|	|	|
12+ 5	0.4422	0.82	| Q | V|	|	|	|

12+10	0.4487	0.94	Q	V			
12+15	0.4557	1.02	Q	V			
12+20	0.4629	1.05	Q	V			
12+25	0.4704	1.08	Q	V			
12+30	0.4780	1.11	Q	V			
12+35	0.4857	1.13	Q	V			
12+40	0.4938	1.17	Q	V			
12+45	0.5020	1.20	Q	V			
12+50	0.5104	1.21	Q	V			
12+55	0.5189	1.24	Q	V			
13+ 0	0.5276	1.26	Q	V			
13+ 5	0.5364	1.29	Q	V			
13+10	0.5459	1.38	Q	V			
13+15	0.5558	1.43	Q	V			
13+20	0.5658	1.45	Q	V			
13+25	0.5759	1.47	Q	V			
13+30	0.5861	1.48	Q	V			
13+35	0.5960	1.43	Q	V			
13+40	0.6046	1.25	Q	V			
13+45	0.6124	1.14	Q	V			
13+50	0.6199	1.10	Q	V			
13+55	0.6273	1.07	Q	V			
14+ 0	0.6346	1.05	Q	V			
14+ 5	0.6419	1.06	Q	V			
14+10	0.6496	1.12	Q	V			
14+15	0.6575	1.15	Q	V			
14+20	0.6655	1.16	Q	V			
14+25	0.6734	1.15	Q	V			
14+30	0.6813	1.14	Q	V			
14+35	0.6892	1.14	Q	V			
14+40	0.6971	1.14	Q	V			
14+45	0.7049	1.14	Q	V			
14+50	0.7128	1.14	Q	V			
14+55	0.7205	1.12	Q	V			
15+ 0	0.7282	1.11	Q	V			
15+ 5	0.7358	1.11	Q	V			
15+10	0.7433	1.09	Q	V			
15+15	0.7507	1.07	Q	V			
15+20	0.7580	1.06	Q	V			
15+25	0.7652	1.04	Q	V			
15+30	0.7723	1.03	Q	V			
15+35	0.7792	1.01	Q	V			
15+40	0.7856	0.93	Q	V			
15+45	0.7917	0.89	Q	V			
15+50	0.7977	0.87	Q	V			
15+55	0.8037	0.86	Q	V			
16+ 0	0.8095	0.85	Q	V			
16+ 5	0.8149	0.78	Q	V			
16+10	0.8185	0.52	Q	V			
16+15	0.8210	0.36	Q	V			
16+20	0.8230	0.30	Q	V			
16+25	0.8248	0.26	Q	V			
16+30	0.8264	0.23	Q	V			
16+35	0.8279	0.21	Q	V			
16+40	0.8291	0.18	Q	V			
16+45	0.8302	0.16	Q	V			
16+50	0.8313	0.15	Q	V			
16+55	0.8323	0.14	Q	V			
17+ 0	0.8332	0.14	Q	V			
17+ 5	0.8342	0.14	Q	V			
17+10	0.8354	0.18	Q	V			
17+15	0.8368	0.20	Q	V			
17+20	0.8382	0.21	Q	V			
17+25	0.8396	0.21	Q	V			
17+30	0.8411	0.21	Q	V			
17+35	0.8426	0.21	Q	V			
17+40	0.8441	0.22	Q	V			
17+45	0.8456	0.22	Q	V			
17+50	0.8470	0.21	Q	V			
17+55	0.8484	0.20	Q	V			

18+ 0	0.8497	0.19	Q	|	|	|	V |
18+ 5	0.8510	0.18	Q	|	|	|	V |
18+10	0.8522	0.18	Q	|	|	|	V |
18+15	0.8534	0.18	Q	|	|	|	V |
18+20	0.8547	0.18	Q	|	|	|	V |
18+25	0.8559	0.18	Q	|	|	|	V |
18+30	0.8571	0.18	Q	|	|	|	V |
18+35	0.8583	0.17	Q	|	|	|	V |
18+40	0.8594	0.15	Q	|	|	|	V |
18+45	0.8604	0.14	Q	|	|	|	V |
18+50	0.8613	0.14	Q	|	|	|	V |
18+55	0.8621	0.12	Q	|	|	|	V |
19+ 0	0.8628	0.10	Q	|	|	|	V |
19+ 5	0.8635	0.10	Q	|	|	|	V |
19+10	0.8643	0.12	Q	|	|	|	V |
19+15	0.8652	0.13	Q	|	|	|	V |
19+20	0.8661	0.13	Q	|	|	|	V |
19+25	0.8671	0.15	Q	|	|	|	V |
19+30	0.8683	0.16	Q	|	|	|	V |
19+35	0.8694	0.16	Q	|	|	|	V |
19+40	0.8704	0.15	Q	|	|	|	V |
19+45	0.8713	0.14	Q	|	|	|	V |
19+50	0.8723	0.13	Q	|	|	|	V |
19+55	0.8730	0.11	Q	|	|	|	V |
20+ 0	0.8737	0.10	Q	|	|	|	V |
20+ 5	0.8744	0.10	Q	|	|	|	V |
20+10	0.8752	0.12	Q	|	|	|	V |
20+15	0.8761	0.13	Q	|	|	|	V |
20+20	0.8770	0.13	Q	|	|	|	V |
20+25	0.8779	0.13	Q	|	|	|	V |
20+30	0.8788	0.13	Q	|	|	|	V |
20+35	0.8797	0.13	Q	|	|	|	V |
20+40	0.8806	0.13	Q	|	|	|	V |
20+45	0.8815	0.13	Q	|	|	|	V |
20+50	0.8823	0.13	Q	|	|	|	V |
20+55	0.8831	0.11	Q	|	|	|	V |
21+ 0	0.8838	0.10	Q	|	|	|	V |
21+ 5	0.8845	0.10	Q	|	|	|	V |
21+10	0.8853	0.12	Q	|	|	|	V |
21+15	0.8861	0.12	Q	|	|	|	V |
21+20	0.8870	0.12	Q	|	|	|	V |
21+25	0.8877	0.11	Q	|	|	|	V|
21+30	0.8884	0.10	Q	|	|	|	V|
21+35	0.8891	0.10	Q	|	|	|	V|
21+40	0.8898	0.11	Q	|	|	|	V|
21+45	0.8907	0.12	Q	|	|	|	V|
21+50	0.8915	0.12	Q	|	|	|	V|
21+55	0.8923	0.11	Q	|	|	|	V|
22+ 0	0.8929	0.10	Q	|	|	|	V|
22+ 5	0.8936	0.10	Q	|	|	|	V|
22+10	0.8944	0.11	Q	|	|	|	V|
22+15	0.8952	0.12	Q	|	|	|	V|
22+20	0.8961	0.12	Q	|	|	|	V|
22+25	0.8968	0.11	Q	|	|	|	V|
22+30	0.8975	0.10	Q	|	|	|	V|
22+35	0.8981	0.09	Q	|	|	|	V|
22+40	0.8988	0.09	Q	|	|	|	V|
22+45	0.8994	0.09	Q	|	|	|	V|
22+50	0.9000	0.09	Q	|	|	|	V|
22+55	0.9006	0.09	Q	|	|	|	V|
23+ 0	0.9012	0.09	Q	|	|	|	V|
23+ 5	0.9018	0.09	Q	|	|	|	V|
23+10	0.9025	0.09	Q	|	|	|	V|
23+15	0.9031	0.09	Q	|	|	|	V|
23+20	0.9037	0.09	Q	|	|	|	V|
23+25	0.9043	0.09	Q	|	|	|	V|
23+30	0.9049	0.09	Q	|	|	|	V|
23+35	0.9055	0.09	Q	|	|	|	V|
23+40	0.9061	0.09	Q	|	|	|	V|
23+45	0.9067	0.09	Q	|	|	|	V|

23+50	0.9073	0.09	Q				V
23+55	0.9079	0.09	Q				V
24+ 0	0.9085	0.09	Q				V
24+ 5	0.9091	0.08	Q				V
24+10	0.9094	0.04	Q				V
24+15	0.9095	0.02	Q				V
24+20	0.9096	0.02	Q				V
24+25	0.9097	0.01	Q				V
24+30	0.9098	0.01	Q				V
24+35	0.9098	0.01	Q				V
24+40	0.9098	0.00	Q				V
24+45	0.9098	0.00	Q				V
24+50	0.9099	0.00	Q				V
24+55	0.9099	0.00	Q				V

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

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
5 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.120 Hr.
Lag time = 7.21 Min.
25% of lag time = 1.80 Min.
40% of lag time = 2.88 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]
7.63	0.55	4.20

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	1.30	9.92

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.726(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.726(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	69.348	10.459	0.804
2	0.167	138.696	39.760	3.057
3	0.250	208.044	23.376	1.797
4	0.333	277.392	9.070	0.697
5	0.417	346.740	5.515	0.424
6	0.500	416.088	3.679	0.283
7	0.583	485.436	2.448	0.188
8	0.667	554.783	1.923	0.148
9	0.750	624.131	1.364	0.105
10	0.833	693.479	0.975	0.075
11	0.917	762.827	0.713	0.055
12	1.000	832.175	0.718	0.055
		Sum = 100.000	Sum=	7.690

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	0.287	(0.199)	0.105	0.183
2	0.17	4.20	0.366	(0.199)	0.133	0.233
3	0.25	4.40	0.383	(0.199)	0.139	0.244
4	0.33	4.80	0.418	(0.199)	0.152	0.266
5	0.42	5.20	0.453	(0.199)	0.165	0.288
6	0.50	6.20	0.540	(0.199)	0.197	0.343
7	0.58	6.80	0.592	0.199	(0.216)	0.393
8	0.67	8.80	0.766	0.199	(0.279)	0.568
9	0.75	13.90	1.210	0.199	(0.441)	1.012
10	0.83	31.40	2.734	0.199	(0.995)	2.535
11	0.92	7.20	0.627	0.199	(0.228)	0.428
12	1.00	3.80	0.331	(0.199)	0.120	0.210
	(Loss Rate Not Used)					
Sum =	100.0				Sum =	6.7

Flood volume = Effective rainfall 0.56(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.4(Ac.Ft)
Total soil loss = 0.17(In)
Total soil loss = 0.106(Ac.Ft)
Total rainfall = 0.73(In)
Flood volume = 15470.2 Cubic Feet
Total soil loss = 4627.1 Cubic Feet

Peak flow rate of this hydrograph = 10.726(CFS)

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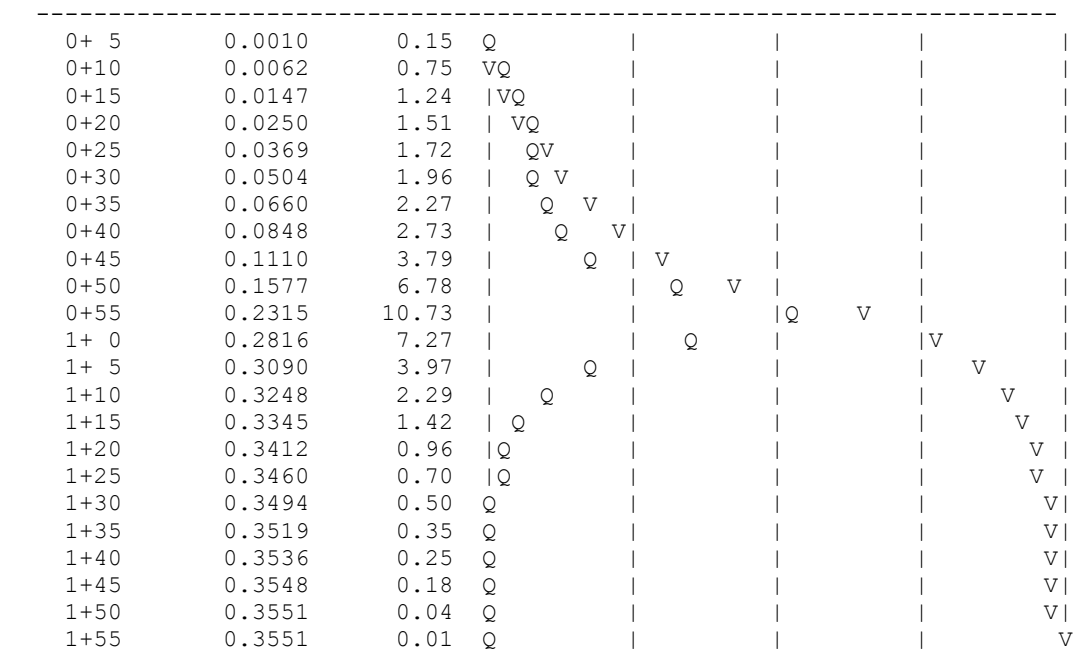
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m) Volume Ac.Ft Q(CFS) 0 5.0 10.0 15.0 20.0



0+ 5	0.0010	0.15	Q			
0+10	0.0062	0.75	VQ			
0+15	0.0147	1.24	|VQ			
0+20	0.0250	1.51	| VQ			
0+25	0.0369	1.72	| QV			
0+30	0.0504	1.96	| Q V			
0+35	0.0660	2.27	| Q V			
0+40	0.0848	2.73	| Q V|			
0+45	0.1110	3.79	| Q | V			
0+50	0.1577	6.78	| | Q V |			
0+55	0.2315	10.73	| | |Q V |			
1+ 0	0.2816	7.27	| | Q | |V			
1+ 5	0.3090	3.97	| Q | | | V			
1+10	0.3248	2.29	| Q | | | V |			
1+15	0.3345	1.42	| Q | | | V |			
1+20	0.3412	0.96	|Q | | | V |			
1+25	0.3460	0.70	|Q | | | V |			
1+30	0.3494	0.50	Q | | | V|			
1+35	0.3519	0.35	Q | | | V|			
1+40	0.3536	0.25	Q | | | V|			
1+45	0.3548	0.18	Q | | | V|			
1+50	0.3551	0.04	Q | | | V|			
1+55	0.3551	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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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
5 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.120 Hr.
Lag time = 7.21 Min.
25% of lag time = 1.80 Min.
40% of lag time = 2.88 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]
7.63	0.90	6.87

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	2.25	17.17

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.216(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.216(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	69.348	10.459	0.804
2	0.167	138.696	39.760	3.057
3	0.250	208.044	23.376	1.797
4	0.333	277.392	9.070	0.697
5	0.417	346.740	5.515	0.424
6	0.500	416.088	3.679	0.283
7	0.583	485.436	2.448	0.188
8	0.667	554.783	1.923	0.148
9	0.750	624.131	1.364	0.105
10	0.833	693.479	0.975	0.075
11	0.917	762.827	0.713	0.055
12	1.000	832.175	0.718	0.055
		Sum = 100.000	Sum=	7.690

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	0.190	(0.199)		0.069	0.121
2	0.17	1.30	0.190	(0.199)		0.069	0.121
3	0.25	1.10	0.161	(0.199)		0.058	0.102
4	0.33	1.50	0.219	(0.199)		0.080	0.139
5	0.42	1.50	0.219	(0.199)		0.080	0.139
6	0.50	1.80	0.263	(0.199)		0.096	0.167
7	0.58	1.50	0.219	(0.199)		0.080	0.139
8	0.67	1.80	0.263	(0.199)		0.096	0.167
9	0.75	1.80	0.263	(0.199)		0.096	0.167
10	0.83	1.50	0.219	(0.199)		0.080	0.139
11	0.92	1.60	0.234	(0.199)		0.085	0.149
12	1.00	1.80	0.263	(0.199)		0.096	0.167
13	1.08	2.20	0.321	(0.199)		0.117	0.204
14	1.17	2.20	0.321	(0.199)		0.117	0.204
15	1.25	2.20	0.321	(0.199)		0.117	0.204
16	1.33	2.00	0.292	(0.199)		0.106	0.186
17	1.42	2.60	0.379	(0.199)		0.138	0.241
18	1.50	2.70	0.394	(0.199)		0.143	0.251
19	1.58	2.40	0.350	(0.199)		0.127	0.223
20	1.67	2.70	0.394	(0.199)		0.143	0.251
21	1.75	3.30	0.482	(0.199)		0.175	0.306
22	1.83	3.10	0.452	(0.199)		0.165	0.288
23	1.92	2.90	0.423	(0.199)		0.154	0.269
24	2.00	3.00	0.438	(0.199)		0.159	0.278
25	2.08	3.10	0.452	(0.199)		0.165	0.288
26	2.17	4.20	0.613	0.199	(	0.223)	0.414
27	2.25	5.00	0.730	0.199	(	0.266)	0.531
28	2.33	3.50	0.511	(0.199)		0.186	0.325
29	2.42	6.80	0.992	0.199	(	0.361)	0.794
30	2.50	7.30	1.065	0.199	(	0.388)	0.867
31	2.58	8.20	1.197	0.199	(	0.436)	0.998
32	2.67	5.90	0.861	0.199	(	0.313)	0.662
33	2.75	2.00	0.292	(0.199)		0.106	0.186
34	2.83	1.80	0.263	(0.199)		0.096	0.167

```
35   2.92     1.80      0.263       (  0.199)       0.096        0.167
36   3.00     0.60      0.088       (  0.199)       0.032        0.056
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    10.1
     Flood volume = Effective rainfall      0.84(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       0.5(Ac.Ft)
     Total soil loss =      0.38(In)
     Total soil loss =     0.239(Ac.Ft)
     Total rainfall =      1.22(In)
     Flood volume =       23256.4 Cubic Feet
     Total soil loss =       10427.6 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      6.189(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0007      0.10  Q         |         |         |         |
  0+10       0.0039      0.47  VQ        |         |         |         |
  0+15       0.0085      0.67  V Q       |         |         |         |
  0+20       0.0135      0.73  |VQ       |         |         |         |
  0+25       0.0194      0.86  |V Q      |         |         |         |
  0+30       0.0260      0.97  |V Q      |         |         |         |
  0+35       0.0334      1.07  | V Q     |         |         |         |
  0+40       0.0409      1.09  |  VQ     |         |         |         |
  0+45       0.0489      1.16  |  VQ     |         |         |         |
  0+50       0.0571      1.19  |   Q     |         |         |         |
  0+55       0.0650      1.14  |   Q     |         |         |         |
  1+ 0       0.0729      1.15  |   QV    |         |         |         |
  1+ 5       0.0815      1.25  |   Q V   |         |         |         |
  1+10       0.0911      1.39  |    QV   |         |         |         |
  1+15       0.1013      1.47  |    Q V  |         |         |         |
  1+20       0.1115      1.49  |    Q  V |         |         |         |
  1+25       0.1219      1.50  |     Q  V|         |         |         |
  1+30       0.1333      1.66  |     Q  V|         |         |         |
  1+35       0.1454      1.76  |      Q  V         |         |         |
  1+40       0.1575      1.75  |      Q  |V        |         |         |
  1+45       0.1703      1.86  |      Q  | V       |         |         |
  1+50       0.1846      2.07  |       Q |  V      |         |         |
  1+55       0.1991      2.12  |       Q |   V     |         |         |
  2+ 0       0.2135      2.09  |       Q |    V    |         |         |
  2+ 5       0.2281      2.11  |       Q |      V  |         |         |
  2+10       0.2436      2.26  |        Q|       V |         |         |
  2+15       0.2626      2.76  |         |Q       V|         |         |
  2+20       0.2846      3.20  |         | Q       |V        |         |
  2+25       0.3070      3.25  |         | Q       |  V      |         |
  2+30       0.3380      4.51  |         |       Q |    V    |         |
  2+35       0.3768      5.63  |         |         | Q     V |         |
  2+40       0.4194      6.19  |         |         |   Q     |V        |
  2+45       0.4556      5.25  |         |         Q         |   V     |
  2+50       0.4791      3.42  |         |  Q      |         |    V    |
  2+55       0.4958      2.43  |        Q|         |         |      V  |
  3+ 0       0.5092      1.94  |      Q  |         |         |       V |
  3+ 5       0.5183      1.33  |    Q    |         |         |       V |
  3+10       0.5239      0.81  |  Q      |         |         |        V|
  3+15       0.5275      0.52  | Q       |         |         |        V|
  3+20       0.5300      0.37  |Q        |         |         |        V|
  3+25       0.5317      0.24  Q         |         |         |        V|
  3+30       0.5328      0.16  Q         |         |         |        V|
  3+35       0.5334      0.09  Q         |         |         |        V|
  3+40       0.5336      0.04  Q         |         |         |        V|
  3+45       0.5338      0.02  Q         |         |         |        V|
  3+50       0.5339      0.01  Q         |         |         |        V|
  3+55       0.5339      0.00  Q         |         |         |         V
```

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

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Study date 02/26/20 File: 8946E2A165.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
5 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.120 Hr.
Lag time = 7.21 Min.
25% of lag time = 1.80 Min.
40% of lag time = 2.88 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]
7.63	1.30	9.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	3.00	22.89

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.698(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.698(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	69.348	10.459	0.804
2	0.167	138.696	39.760	3.057
3	0.250	208.044	23.376	1.797
4	0.333	277.392	9.070	0.697
5	0.417	346.740	5.515	0.424
6	0.500	416.088	3.679	0.283
7	0.583	485.436	2.448	0.188
8	0.667	554.783	1.923	0.148
9	0.750	624.131	1.364	0.105
10	0.833	693.479	0.975	0.075
11	0.917	762.827	0.713	0.055
12	1.000	832.175	0.718	0.055
		Sum = 100.000	Sum=	7.690

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	0.102	(0.199)	0.037	0.065
2	0.17	0.60	0.122	(0.199)	0.045	0.078
3	0.25	0.60	0.122	(0.199)	0.045	0.078
4	0.33	0.60	0.122	(0.199)	0.045	0.078
5	0.42	0.60	0.122	(0.199)	0.045	0.078
6	0.50	0.70	0.143	(0.199)	0.052	0.091
7	0.58	0.70	0.143	(0.199)	0.052	0.091
8	0.67	0.70	0.143	(0.199)	0.052	0.091
9	0.75	0.70	0.143	(0.199)	0.052	0.091
10	0.83	0.70	0.143	(0.199)	0.052	0.091
11	0.92	0.70	0.143	(0.199)	0.052	0.091
12	1.00	0.80	0.163	(0.199)	0.059	0.104
13	1.08	0.80	0.163	(0.199)	0.059	0.104
14	1.17	0.80	0.163	(0.199)	0.059	0.104
15	1.25	0.80	0.163	(0.199)	0.059	0.104
16	1.33	0.80	0.163	(0.199)	0.059	0.104
17	1.42	0.80	0.163	(0.199)	0.059	0.104
18	1.50	0.80	0.163	(0.199)	0.059	0.104
19	1.58	0.80	0.163	(0.199)	0.059	0.104
20	1.67	0.80	0.163	(0.199)	0.059	0.104
21	1.75	0.80	0.163	(0.199)	0.059	0.104
22	1.83	0.80	0.163	(0.199)	0.059	0.104
23	1.92	0.80	0.163	(0.199)	0.059	0.104
24	2.00	0.90	0.183	(0.199)	0.067	0.117
25	2.08	0.80	0.163	(0.199)	0.059	0.104
26	2.17	0.90	0.183	(0.199)	0.067	0.117
27	2.25	0.90	0.183	(0.199)	0.067	0.117
28	2.33	0.90	0.183	(0.199)	0.067	0.117
29	2.42	0.90	0.183	(0.199)	0.067	0.117
30	2.50	0.90	0.183	(0.199)	0.067	0.117
31	2.58	0.90	0.183	(0.199)	0.067	0.117
32	2.67	0.90	0.183	(0.199)	0.067	0.117
33	2.75	1.00	0.204	(0.199)	0.074	0.130
34	2.83	1.00	0.204	(0.199)	0.074	0.130

35	2.92	1.00	0.204	(0.199)	0.074	0.130	
36	3.00	1.00	0.204	(0.199)	0.074	0.130	
37	3.08	1.00	0.204	(0.199)	0.074	0.130	
38	3.17	1.10	0.224	(0.199)	0.082	0.143	
39	3.25	1.10	0.224	(0.199)	0.082	0.143	
40	3.33	1.10	0.224	(0.199)	0.082	0.143	
41	3.42	1.20	0.245	(0.199)	0.089	0.156	
42	3.50	1.30	0.265	(0.199)	0.096	0.168	
43	3.58	1.40	0.285	(0.199)	0.104	0.181	
44	3.67	1.40	0.285	(0.199)	0.104	0.181	
45	3.75	1.50	0.306	(0.199)	0.111	0.194	
46	3.83	1.50	0.306	(0.199)	0.111	0.194	
47	3.92	1.60	0.326	(0.199)	0.119	0.207	
48	4.00	1.60	0.326	(0.199)	0.119	0.207	
49	4.08	1.70	0.346	(0.199)	0.126	0.220	
50	4.17	1.80	0.367	(0.199)	0.134	0.233	
51	4.25	1.90	0.387	(0.199)	0.141	0.246	
52	4.33	2.00	0.408	(0.199)	0.148	0.259	
53	4.42	2.10	0.428	(0.199)	0.156	0.272	
54	4.50	2.10	0.428	(0.199)	0.156	0.272	
55	4.58	2.20	0.448	(0.199)	0.163	0.285	
56	4.67	2.30	0.469	(0.199)	0.171	0.298	
57	4.75	2.40	0.489	(0.199)	0.178	0.311	
58	4.83	2.40	0.489	(0.199)	0.178	0.311	
59	4.92	2.50	0.509	(0.199)	0.185	0.324	
60	5.00	2.60	0.530	(0.199)	0.193	0.337	
61	5.08	3.10	0.632	0.199	(0.230)	0.433	
62	5.17	3.60	0.734	0.199	(0.267)	0.535	
63	5.25	3.90	0.795	0.199	(0.289)	0.596	
64	5.33	4.20	0.856	0.199	(0.312)	0.657	
65	5.42	4.70	0.958	0.199	(0.349)	0.759	
66	5.50	5.60	1.141	0.199	(0.415)	0.942	
67	5.58	1.90	0.387	(0.199)	0.141	0.246	
68	5.67	0.90	0.183	(0.199)	0.067	0.117	
69	5.75	0.60	0.122	(0.199)	0.045	0.078	
70	5.83	0.50	0.102	(0.199)	0.037	0.065	
71	5.92	0.30	0.061	(0.199)	0.022	0.039	
72	6.00	0.20	0.041	(0.199)	0.015	0.026	

(Loss Rate Not Used)

Sum = 100.0 Sum = 13.6

Flood volume = Effective rainfall 1.14(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)

Total soil loss = 0.56(In)

Total soil loss = 0.358(Ac.Ft)

Total rainfall = 1.70(In)

Flood volume = 31458.0 Cubic Feet

Total soil loss = 15575.1 Cubic Feet

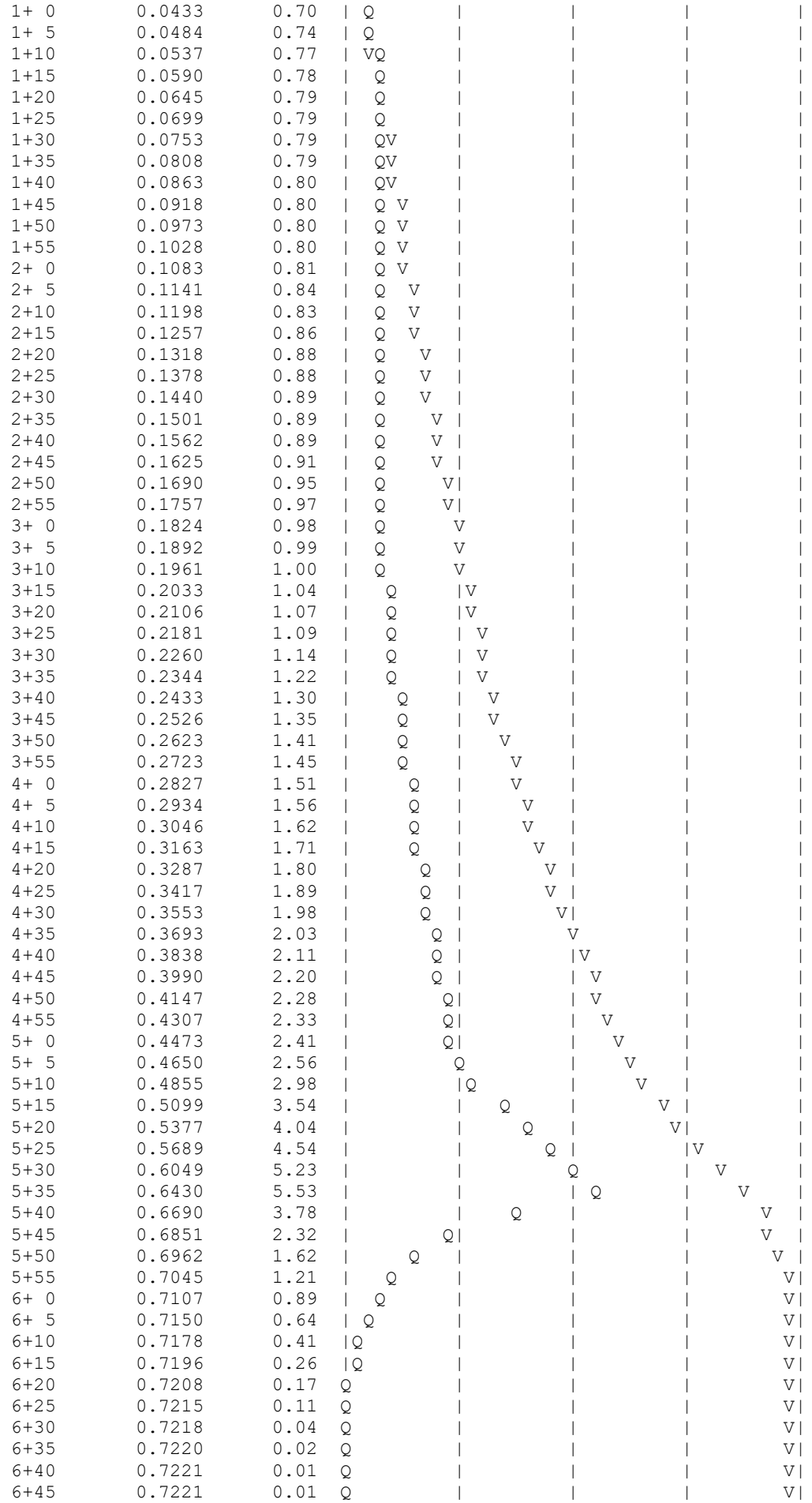
Peak flow rate of this hydrograph = 5.531(CFS)

++

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	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.05	Q				
0+10	0.0022	0.26	VQ				
0+15	0.0050	0.42	VQ				
0+20	0.0084	0.49	VQ				
0+25	0.0120	0.52	V Q				
0+30	0.0158	0.56	V Q				
0+35	0.0200	0.61	|VQ				
0+40	0.0245	0.65	|VQ				
0+45	0.0290	0.66	|VQ				
0+50	0.0337	0.68	|VQ				
0+55	0.0384	0.68	| Q				



```
    6+50       0.7222      0.00  Q         |         |         |        V|
    6+55       0.7222      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

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

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Study date 02/26/20 File: 8946E2A1245.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
5 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.120 Hr.
Lag time = 7.21 Min.
25% of lag time = 1.80 Min.
40% of lag time = 2.88 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]
7.63	2.25	17.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	5.25	40.06

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 2.953(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.953(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	57.0	0.501	0.670	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	69.348	10.459	0.804
2	0.167	138.696	39.760	3.057
3	0.250	208.044	23.376	1.797
4	0.333	277.392	9.070	0.697
5	0.417	346.740	5.515	0.424
6	0.500	416.088	3.679	0.283
7	0.583	485.436	2.448	0.188
8	0.667	554.783	1.923	0.148
9	0.750	624.131	1.364	0.105
10	0.833	693.479	0.975	0.075
11	0.917	762.827	0.713	0.055
12	1.000	832.175	0.718	0.055
			Sum = 100.000 Sum=	7.690

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	0.024	(0.352)		0.009	0.015
2	0.17	0.07	0.024	(0.351)		0.009	0.015
3	0.25	0.07	0.024	(0.350)		0.009	0.015
4	0.33	0.10	0.035	(0.348)		0.013	0.023
5	0.42	0.10	0.035	(0.347)		0.013	0.023
6	0.50	0.10	0.035	(0.346)		0.013	0.023
7	0.58	0.10	0.035	(0.344)		0.013	0.023
8	0.67	0.10	0.035	(0.343)		0.013	0.023
9	0.75	0.10	0.035	(0.341)		0.013	0.023
10	0.83	0.13	0.047	(0.340)		0.017	0.030
11	0.92	0.13	0.047	(0.339)		0.017	0.030
12	1.00	0.13	0.047	(0.337)		0.017	0.030
13	1.08	0.10	0.035	(0.336)		0.013	0.023
14	1.17	0.10	0.035	(0.335)		0.013	0.023
15	1.25	0.10	0.035	(0.333)		0.013	0.023
16	1.33	0.10	0.035	(0.332)		0.013	0.023
17	1.42	0.10	0.035	(0.331)		0.013	0.023
18	1.50	0.10	0.035	(0.330)		0.013	0.023
19	1.58	0.10	0.035	(0.328)		0.013	0.023
20	1.67	0.10	0.035	(0.327)		0.013	0.023
21	1.75	0.10	0.035	(0.326)		0.013	0.023
22	1.83	0.13	0.047	(0.324)		0.017	0.030
23	1.92	0.13	0.047	(0.323)		0.017	0.030
24	2.00	0.13	0.047	(0.322)		0.017	0.030
25	2.08	0.13	0.047	(0.320)		0.017	0.030
26	2.17	0.13	0.047	(0.319)		0.017	0.030
27	2.25	0.13	0.047	(0.318)		0.017	0.030
28	2.33	0.13	0.047	(0.316)		0.017	0.030
29	2.42	0.13	0.047	(0.315)		0.017	0.030
30	2.50	0.13	0.047	(0.314)		0.017	0.030
31	2.58	0.17	0.059	(0.313)		0.021	0.038
32	2.67	0.17	0.059	(0.311)		0.021	0.038
33	2.75	0.17	0.059	(0.310)		0.021	0.038
34	2.83	0.17	0.059	(0.309)		0.021	0.038

35	2.92	0.17	0.059	(0.307)	0.021	0.038
36	3.00	0.17	0.059	(0.306)	0.021	0.038
37	3.08	0.17	0.059	(0.305)	0.021	0.038
38	3.17	0.17	0.059	(0.304)	0.021	0.038
39	3.25	0.17	0.059	(0.302)	0.021	0.038
40	3.33	0.17	0.059	(0.301)	0.021	0.038
41	3.42	0.17	0.059	(0.300)	0.021	0.038
42	3.50	0.17	0.059	(0.299)	0.021	0.038
43	3.58	0.17	0.059	(0.297)	0.021	0.038
44	3.67	0.17	0.059	(0.296)	0.021	0.038
45	3.75	0.17	0.059	(0.295)	0.021	0.038
46	3.83	0.20	0.071	(0.294)	0.026	0.045
47	3.92	0.20	0.071	(0.292)	0.026	0.045
48	4.00	0.20	0.071	(0.291)	0.026	0.045
49	4.08	0.20	0.071	(0.290)	0.026	0.045
50	4.17	0.20	0.071	(0.289)	0.026	0.045
51	4.25	0.20	0.071	(0.287)	0.026	0.045
52	4.33	0.23	0.083	(0.286)	0.030	0.053
53	4.42	0.23	0.083	(0.285)	0.030	0.053
54	4.50	0.23	0.083	(0.284)	0.030	0.053
55	4.58	0.23	0.083	(0.283)	0.030	0.053
56	4.67	0.23	0.083	(0.281)	0.030	0.053
57	4.75	0.23	0.083	(0.280)	0.030	0.053
58	4.83	0.27	0.094	(0.279)	0.034	0.060
59	4.92	0.27	0.094	(0.278)	0.034	0.060
60	5.00	0.27	0.094	(0.277)	0.034	0.060
61	5.08	0.20	0.071	(0.275)	0.026	0.045
62	5.17	0.20	0.071	(0.274)	0.026	0.045
63	5.25	0.20	0.071	(0.273)	0.026	0.045
64	5.33	0.23	0.083	(0.272)	0.030	0.053
65	5.42	0.23	0.083	(0.271)	0.030	0.053
66	5.50	0.23	0.083	(0.269)	0.030	0.053
67	5.58	0.27	0.094	(0.268)	0.034	0.060
68	5.67	0.27	0.094	(0.267)	0.034	0.060
69	5.75	0.27	0.094	(0.266)	0.034	0.060
70	5.83	0.27	0.094	(0.265)	0.034	0.060
71	5.92	0.27	0.094	(0.263)	0.034	0.060
72	6.00	0.27	0.094	(0.262)	0.034	0.060
73	6.08	0.30	0.106	(0.261)	0.039	0.068
74	6.17	0.30	0.106	(0.260)	0.039	0.068
75	6.25	0.30	0.106	(0.259)	0.039	0.068
76	6.33	0.30	0.106	(0.258)	0.039	0.068
77	6.42	0.30	0.106	(0.257)	0.039	0.068
78	6.50	0.30	0.106	(0.255)	0.039	0.068
79	6.58	0.33	0.118	(0.254)	0.043	0.075
80	6.67	0.33	0.118	(0.253)	0.043	0.075
81	6.75	0.33	0.118	(0.252)	0.043	0.075
82	6.83	0.33	0.118	(0.251)	0.043	0.075
83	6.92	0.33	0.118	(0.250)	0.043	0.075
84	7.00	0.33	0.118	(0.249)	0.043	0.075
85	7.08	0.33	0.118	(0.247)	0.043	0.075
86	7.17	0.33	0.118	(0.246)	0.043	0.075
87	7.25	0.33	0.118	(0.245)	0.043	0.075
88	7.33	0.37	0.130	(0.244)	0.047	0.083
89	7.42	0.37	0.130	(0.243)	0.047	0.083
90	7.50	0.37	0.130	(0.242)	0.047	0.083
91	7.58	0.40	0.142	(0.241)	0.052	0.090
92	7.67	0.40	0.142	(0.240)	0.052	0.090
93	7.75	0.40	0.142	(0.238)	0.052	0.090
94	7.83	0.43	0.154	(0.237)	0.056	0.098
95	7.92	0.43	0.154	(0.236)	0.056	0.098
96	8.00	0.43	0.154	(0.235)	0.056	0.098
97	8.08	0.50	0.177	(0.234)	0.064	0.113
98	8.17	0.50	0.177	(0.233)	0.064	0.113
99	8.25	0.50	0.177	(0.232)	0.064	0.113
100	8.33	0.50	0.177	(0.231)	0.064	0.113
101	8.42	0.50	0.177	(0.230)	0.064	0.113
102	8.50	0.50	0.177	(0.229)	0.064	0.113
103	8.58	0.53	0.189	(0.228)	0.069	0.120
104	8.67	0.53	0.189	(0.227)	0.069	0.120

105	8.75	0.53	0.189	(0.225)	0.069	0.120
106	8.83	0.57	0.201	(0.224)	0.073	0.128
107	8.92	0.57	0.201	(0.223)	0.073	0.128
108	9.00	0.57	0.201	(0.222)	0.073	0.128
109	9.08	0.63	0.224	(0.221)	0.082	0.143
110	9.17	0.63	0.224	(0.220)	0.082	0.143
111	9.25	0.63	0.224	(0.219)	0.082	0.143
112	9.33	0.67	0.236	(0.218)	0.086	0.150
113	9.42	0.67	0.236	(0.217)	0.086	0.150
114	9.50	0.67	0.236	(0.216)	0.086	0.150
115	9.58	0.70	0.248	(0.215)	0.090	0.158
116	9.67	0.70	0.248	(0.214)	0.090	0.158
117	9.75	0.70	0.248	(0.213)	0.090	0.158
118	9.83	0.73	0.260	(0.212)	0.095	0.165
119	9.92	0.73	0.260	(0.211)	0.095	0.165
120	10.00	0.73	0.260	(0.210)	0.095	0.165
121	10.08	0.50	0.177	(0.209)	0.064	0.113
122	10.17	0.50	0.177	(0.208)	0.064	0.113
123	10.25	0.50	0.177	(0.207)	0.064	0.113
124	10.33	0.50	0.177	(0.206)	0.064	0.113
125	10.42	0.50	0.177	(0.205)	0.064	0.113
126	10.50	0.50	0.177	(0.204)	0.064	0.113
127	10.58	0.67	0.236	(0.203)	0.086	0.150
128	10.67	0.67	0.236	(0.202)	0.086	0.150
129	10.75	0.67	0.236	(0.201)	0.086	0.150
130	10.83	0.67	0.236	(0.200)	0.086	0.150
131	10.92	0.67	0.236	(0.199)	0.086	0.150
132	11.00	0.67	0.236	(0.198)	0.086	0.150
133	11.08	0.63	0.224	(0.197)	0.082	0.143
134	11.17	0.63	0.224	(0.196)	0.082	0.143
135	11.25	0.63	0.224	(0.195)	0.082	0.143
136	11.33	0.63	0.224	(0.194)	0.082	0.143
137	11.42	0.63	0.224	(0.193)	0.082	0.143
138	11.50	0.63	0.224	(0.192)	0.082	0.143
139	11.58	0.57	0.201	(0.191)	0.073	0.128
140	11.67	0.57	0.201	(0.190)	0.073	0.128
141	11.75	0.57	0.201	(0.189)	0.073	0.128
142	11.83	0.60	0.213	(0.188)	0.077	0.135
143	11.92	0.60	0.213	(0.187)	0.077	0.135
144	12.00	0.60	0.213	(0.186)	0.077	0.135
145	12.08	0.83	0.295	(0.186)	0.107	0.188
146	12.17	0.83	0.295	(0.185)	0.107	0.188
147	12.25	0.83	0.295	(0.184)	0.107	0.188
148	12.33	0.87	0.307	(0.183)	0.112	0.195
149	12.42	0.87	0.307	(0.182)	0.112	0.195
150	12.50	0.87	0.307	(0.181)	0.112	0.195
151	12.58	0.93	0.331	(0.180)	0.120	0.210
152	12.67	0.93	0.331	(0.179)	0.120	0.210
153	12.75	0.93	0.331	(0.178)	0.120	0.210
154	12.83	0.97	0.343	(0.177)	0.125	0.218
155	12.92	0.97	0.343	(0.176)	0.125	0.218
156	13.00	0.97	0.343	(0.176)	0.125	0.218
157	13.08	1.13	0.402	(0.175)	0.146	0.255
158	13.17	1.13	0.402	(0.174)	0.146	0.255
159	13.25	1.13	0.402	(0.173)	0.146	0.255
160	13.33	1.13	0.402	(0.172)	0.146	0.255
161	13.42	1.13	0.402	(0.171)	0.146	0.255
162	13.50	1.13	0.402	(0.170)	0.146	0.255
163	13.58	0.77	0.272	(0.169)	0.099	0.173
164	13.67	0.77	0.272	(0.168)	0.099	0.173
165	13.75	0.77	0.272	(0.168)	0.099	0.173
166	13.83	0.77	0.272	(0.167)	0.099	0.173
167	13.92	0.77	0.272	(0.166)	0.099	0.173
168	14.00	0.77	0.272	(0.165)	0.099	0.173
169	14.08	0.90	0.319	(0.164)	0.116	0.203
170	14.17	0.90	0.319	(0.163)	0.116	0.203
171	14.25	0.90	0.319	(0.163)	0.116	0.203
172	14.33	0.87	0.307	(0.162)	0.112	0.195
173	14.42	0.87	0.307	(0.161)	0.112	0.195
174	14.50	0.87	0.307	(0.160)	0.112	0.195

175	14.58	0.87	0.307	(0.159)	0.112	0.195
176	14.67	0.87	0.307	(0.158)	0.112	0.195
177	14.75	0.87	0.307	(0.158)	0.112	0.195
178	14.83	0.83	0.295	(0.157)	0.107	0.188
179	14.92	0.83	0.295	(0.156)	0.107	0.188
180	15.00	0.83	0.295	(0.155)	0.107	0.188
181	15.08	0.80	0.283	(0.154)	0.103	0.180
182	15.17	0.80	0.283	(0.154)	0.103	0.180
183	15.25	0.80	0.283	(0.153)	0.103	0.180
184	15.33	0.77	0.272	(0.152)	0.099	0.173
185	15.42	0.77	0.272	(0.151)	0.099	0.173
186	15.50	0.77	0.272	(0.151)	0.099	0.173
187	15.58	0.63	0.224	(0.150)	0.082	0.143
188	15.67	0.63	0.224	(0.149)	0.082	0.143
189	15.75	0.63	0.224	(0.148)	0.082	0.143
190	15.83	0.63	0.224	(0.147)	0.082	0.143
191	15.92	0.63	0.224	(0.147)	0.082	0.143
192	16.00	0.63	0.224	(0.146)	0.082	0.143
193	16.08	0.13	0.047	(0.145)	0.017	0.030
194	16.17	0.13	0.047	(0.144)	0.017	0.030
195	16.25	0.13	0.047	(0.144)	0.017	0.030
196	16.33	0.13	0.047	(0.143)	0.017	0.030
197	16.42	0.13	0.047	(0.142)	0.017	0.030
198	16.50	0.13	0.047	(0.142)	0.017	0.030
199	16.58	0.10	0.035	(0.141)	0.013	0.023
200	16.67	0.10	0.035	(0.140)	0.013	0.023
201	16.75	0.10	0.035	(0.139)	0.013	0.023
202	16.83	0.10	0.035	(0.139)	0.013	0.023
203	16.92	0.10	0.035	(0.138)	0.013	0.023
204	17.00	0.10	0.035	(0.137)	0.013	0.023
205	17.08	0.17	0.059	(0.137)	0.021	0.038
206	17.17	0.17	0.059	(0.136)	0.021	0.038
207	17.25	0.17	0.059	(0.135)	0.021	0.038
208	17.33	0.17	0.059	(0.135)	0.021	0.038
209	17.42	0.17	0.059	(0.134)	0.021	0.038
210	17.50	0.17	0.059	(0.133)	0.021	0.038
211	17.58	0.17	0.059	(0.133)	0.021	0.038
212	17.67	0.17	0.059	(0.132)	0.021	0.038
213	17.75	0.17	0.059	(0.131)	0.021	0.038
214	17.83	0.13	0.047	(0.131)	0.017	0.030
215	17.92	0.13	0.047	(0.130)	0.017	0.030
216	18.00	0.13	0.047	(0.129)	0.017	0.030
217	18.08	0.13	0.047	(0.129)	0.017	0.030
218	18.17	0.13	0.047	(0.128)	0.017	0.030
219	18.25	0.13	0.047	(0.127)	0.017	0.030
220	18.33	0.13	0.047	(0.127)	0.017	0.030
221	18.42	0.13	0.047	(0.126)	0.017	0.030
222	18.50	0.13	0.047	(0.126)	0.017	0.030
223	18.58	0.10	0.035	(0.125)	0.013	0.023
224	18.67	0.10	0.035	(0.124)	0.013	0.023
225	18.75	0.10	0.035	(0.124)	0.013	0.023
226	18.83	0.07	0.024	(0.123)	0.009	0.015
227	18.92	0.07	0.024	(0.123)	0.009	0.015
228	19.00	0.07	0.024	(0.122)	0.009	0.015
229	19.08	0.10	0.035	(0.121)	0.013	0.023
230	19.17	0.10	0.035	(0.121)	0.013	0.023
231	19.25	0.10	0.035	(0.120)	0.013	0.023
232	19.33	0.13	0.047	(0.120)	0.017	0.030
233	19.42	0.13	0.047	(0.119)	0.017	0.030
234	19.50	0.13	0.047	(0.119)	0.017	0.030
235	19.58	0.10	0.035	(0.118)	0.013	0.023
236	19.67	0.10	0.035	(0.117)	0.013	0.023
237	19.75	0.10	0.035	(0.117)	0.013	0.023
238	19.83	0.07	0.024	(0.116)	0.009	0.015
239	19.92	0.07	0.024	(0.116)	0.009	0.015
240	20.00	0.07	0.024	(0.115)	0.009	0.015
241	20.08	0.10	0.035	(0.115)	0.013	0.023
242	20.17	0.10	0.035	(0.114)	0.013	0.023
243	20.25	0.10	0.035	(0.114)	0.013	0.023
244	20.33	0.10	0.035	(0.113)	0.013	0.023

245	20.42	0.10	0.035	(	0.113)	0.013	0.023
246	20.50	0.10	0.035	(	0.112)	0.013	0.023
247	20.58	0.10	0.035	(	0.112)	0.013	0.023
248	20.67	0.10	0.035	(	0.111)	0.013	0.023
249	20.75	0.10	0.035	(	0.111)	0.013	0.023
250	20.83	0.07	0.024	(	0.111)	0.009	0.015
251	20.92	0.07	0.024	(	0.110)	0.009	0.015
252	21.00	0.07	0.024	(	0.110)	0.009	0.015
253	21.08	0.10	0.035	(	0.109)	0.013	0.023
254	21.17	0.10	0.035	(	0.109)	0.013	0.023
255	21.25	0.10	0.035	(	0.108)	0.013	0.023
256	21.33	0.07	0.024	(	0.108)	0.009	0.015
257	21.42	0.07	0.024	(	0.108)	0.009	0.015
258	21.50	0.07	0.024	(	0.107)	0.009	0.015
259	21.58	0.10	0.035	(	0.107)	0.013	0.023
260	21.67	0.10	0.035	(	0.106)	0.013	0.023
261	21.75	0.10	0.035	(	0.106)	0.013	0.023
262	21.83	0.07	0.024	(	0.106)	0.009	0.015
263	21.92	0.07	0.024	(	0.105)	0.009	0.015
264	22.00	0.07	0.024	(	0.105)	0.009	0.015
265	22.08	0.10	0.035	(	0.105)	0.013	0.023
266	22.17	0.10	0.035	(	0.104)	0.013	0.023
267	22.25	0.10	0.035	(	0.104)	0.013	0.023
268	22.33	0.07	0.024	(	0.104)	0.009	0.015
269	22.42	0.07	0.024	(	0.103)	0.009	0.015
270	22.50	0.07	0.024	(	0.103)	0.009	0.015
271	22.58	0.07	0.024	(	0.103)	0.009	0.015
272	22.67	0.07	0.024	(	0.102)	0.009	0.015
273	22.75	0.07	0.024	(	0.102)	0.009	0.015
274	22.83	0.07	0.024	(	0.102)	0.009	0.015
275	22.92	0.07	0.024	(	0.102)	0.009	0.015
276	23.00	0.07	0.024	(	0.101)	0.009	0.015
277	23.08	0.07	0.024	(	0.101)	0.009	0.015
278	23.17	0.07	0.024	(	0.101)	0.009	0.015
279	23.25	0.07	0.024	(	0.101)	0.009	0.015
280	23.33	0.07	0.024	(	0.100)	0.009	0.015
281	23.42	0.07	0.024	(	0.100)	0.009	0.015
282	23.50	0.07	0.024	(	0.100)	0.009	0.015
283	23.58	0.07	0.024	(	0.100)	0.009	0.015
284	23.67	0.07	0.024	(	0.100)	0.009	0.015
285	23.75	0.07	0.024	(	0.100)	0.009	0.015
286	23.83	0.07	0.024	(	0.100)	0.009	0.015
287	23.92	0.07	0.024	(	0.099)	0.009	0.015
288	24.00	0.07	0.024	(	0.099)	0.009	0.015

(Loss Rate Not Used)

Sum = 100.0 Sum = 22.5

Flood volume = Effective rainfall 1.88(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 1.2(Ac.Ft)
Total soil loss = 1.07(In)
Total soil loss = 0.683(Ac.Ft)
Total rainfall = 2.95(In)
Flood volume = 52011.2 Cubic Feet
Total soil loss = 29767.4 Cubic Feet

Peak flow rate of this hydrograph = 1.940(CFS)

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

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0005	0.06	Q	|	|	|	|
0+15	0.0011	0.09	Q	|	|	|	|
0+20	0.0018	0.10	Q	|	|	|	|
0+25	0.0027	0.13	Q	|	|	|	|

0+30	0.0037	0.15	Q	|	|	|	|
0+35	0.0048	0.16	Q	|	|	|	|
0+40	0.0059	0.16	Q	|	|	|	|
0+45	0.0070	0.17	Q	|	|	|	|
0+50	0.0082	0.17	Q	|	|	|	|
0+55	0.0096	0.20	Q	|	|	|	|
1+ 0	0.0111	0.21	Q	|	|	|	|
1+ 5	0.0126	0.21	Q	|	|	|	|
1+10	0.0139	0.19	Q	|	|	|	|
1+15	0.0152	0.18	Q	|	|	|	|
1+20	0.0164	0.18	Q	|	|	|	|
1+25	0.0176	0.18	Q	|	|	|	|
1+30	0.0189	0.18	Q	|	|	|	|
1+35	0.0201	0.18	Q	|	|	|	|
1+40	0.0213	0.18	Q	|	|	|	|
1+45	0.0225	0.17	Q	|	|	|	|
1+50	0.0237	0.18	Q	|	|	|	|
1+55	0.0251	0.20	Q	|	|	|	|
2+ 0	0.0266	0.22	Q	|	|	|	|
2+ 5	0.0281	0.22	Q	|	|	|	|
2+10	0.0297	0.22	Q	|	|	|	|
2+15	0.0312	0.23	QV	|	|	|	|
2+20	0.0328	0.23	QV	|	|	|	|
2+25	0.0344	0.23	QV	|	|	|	|
2+30	0.0360	0.23	QV	|	|	|	|
2+35	0.0376	0.24	QV	|	|	|	|
2+40	0.0394	0.26	|Q	|	|	|	|
2+45	0.0413	0.27	|Q	|	|	|	|
2+50	0.0432	0.28	|Q	|	|	|	|
2+55	0.0451	0.28	|Q	|	|	|	|
3+ 0	0.0471	0.28	|Q	|	|	|	|
3+ 5	0.0490	0.29	|Q	|	|	|	|
3+10	0.0510	0.29	|Q	|	|	|	|
3+15	0.0530	0.29	|Q	|	|	|	|
3+20	0.0550	0.29	|Q	|	|	|	|
3+25	0.0570	0.29	|Q	|	|	|	|
3+30	0.0590	0.29	|Q	|	|	|	|
3+35	0.0610	0.29	|QV	|	|	|	|
3+40	0.0629	0.29	|QV	|	|	|	|
3+45	0.0649	0.29	|QV	|	|	|	|
3+50	0.0670	0.29	|QV	|	|	|	|
3+55	0.0692	0.32	|QV	|	|	|	|
4+ 0	0.0714	0.33	|QV	|	|	|	|
4+ 5	0.0738	0.34	|QV	|	|	|	|
4+10	0.0761	0.34	|QV	|	|	|	|
4+15	0.0785	0.34	|QV	|	|	|	|
4+20	0.0809	0.35	|QV	|	|	|	|
4+25	0.0834	0.37	|QV	|	|	|	|
4+30	0.0861	0.39	|QV	|	|	|	|
4+35	0.0888	0.39	|QV	|	|	|	|
4+40	0.0916	0.40	|Q V	|	|	|	|
4+45	0.0943	0.40	|Q V	|	|	|	|
4+50	0.0971	0.41	|Q V	|	|	|	|
4+55	0.1001	0.43	|Q V	|	|	|	|
5+ 0	0.1032	0.45	|Q V	|	|	|	|
5+ 5	0.1062	0.44	|Q V	|	|	|	|
5+10	0.1089	0.40	|Q V	|	|	|	|
5+15	0.1115	0.37	|Q V	|	|	|	|
5+20	0.1140	0.37	|Q V	|	|	|	|
5+25	0.1167	0.39	|Q V	|	|	|	|
5+30	0.1194	0.40	|Q V	|	|	|	|
5+35	0.1222	0.41	|Q V	|	|	|	|
5+40	0.1252	0.43	|Q V	|	|	|	|
5+45	0.1283	0.45	|Q V	|	|	|	|
5+50	0.1314	0.45	|Q V	|	|	|	|
5+55	0.1345	0.45	|Q V	|	|	|	|
6+ 0	0.1376	0.46	|Q V	|	|	|	|
6+ 5	0.1408	0.46	|Q V	|	|	|	|
6+10	0.1442	0.49	|Q V	|	|	|	|
6+15	0.1477	0.50	| Q V	|	|	|	|

6+20	0.1512	0.51	Q V				
6+25	0.1547	0.51	Q V				
6+30	0.1582	0.52	Q V				
6+35	0.1619	0.52	Q V				
6+40	0.1656	0.55	Q V				
6+45	0.1695	0.56	Q V				
6+50	0.1734	0.57	Q V				
6+55	0.1773	0.57	Q V				
7+ 0	0.1813	0.57	Q V				
7+ 5	0.1852	0.57	Q V				
7+10	0.1892	0.58	Q V				
7+15	0.1932	0.58	Q V				
7+20	0.1972	0.58	Q V				
7+25	0.2014	0.61	Q V				
7+30	0.2056	0.62	Q V				
7+35	0.2100	0.63	Q V				
7+40	0.2145	0.66	Q V				
7+45	0.2191	0.67	Q V				
7+50	0.2239	0.69	Q V				
7+55	0.2288	0.71	Q V				
8+ 0	0.2338	0.73	Q V				
8+ 5	0.2390	0.75	Q V				
8+10	0.2445	0.80	Q V				
8+15	0.2502	0.83	Q V				
8+20	0.2560	0.84	Q V				
8+25	0.2619	0.85	Q V				
8+30	0.2678	0.86	Q V				
8+35	0.2737	0.87	Q V				
8+40	0.2799	0.89	Q V				
8+45	0.2861	0.91	Q V				
8+50	0.2924	0.92	Q V				
8+55	0.2989	0.95	Q V				
9+ 0	0.3056	0.96	Q V				
9+ 5	0.3123	0.98	Q V				
9+10	0.3194	1.03	Q V				
9+15	0.3267	1.06	Q V				
9+20	0.3342	1.08	Q V				
9+25	0.3418	1.11	Q V				
9+30	0.3496	1.13	Q V				
9+35	0.3575	1.14	Q V				
9+40	0.3656	1.17	Q V				
9+45	0.3738	1.19	Q V				
9+50	0.3821	1.20	Q V				
9+55	0.3906	1.23	Q V				
10+ 0	0.3992	1.25	Q V				
10+ 5	0.4075	1.21	Q V				
10+10	0.4148	1.06	Q V				
10+15	0.4215	0.97	Q V				
10+20	0.4279	0.93	Q V				
10+25	0.4342	0.91	Q V				
10+30	0.4404	0.90	Q V				
10+35	0.4467	0.92	Q V				
10+40	0.4538	1.03	Q V				
10+45	0.4613	1.09	Q V				
10+50	0.4689	1.11	Q V				
10+55	0.4767	1.12	Q V				
11+ 0	0.4845	1.13	Q V				
11+ 5	0.4923	1.13	Q V				
11+10	0.5000	1.12	Q V				
11+15	0.5076	1.11	Q V				
11+20	0.5152	1.10	Q V				
11+25	0.5228	1.10	Q V				
11+30	0.5304	1.10	Q V				
11+35	0.5379	1.09	Q V				
11+40	0.5451	1.04	Q V				
11+45	0.5521	1.01	Q V				
11+50	0.5590	1.01	Q V				
11+55	0.5661	1.03	Q V				
12+ 0	0.5732	1.03	Q V				
12+ 5	0.5806	1.08	Q V				

12+10	0.5892	1.24	| Q |	| V|	|	|	|
12+15	0.5984	1.34	| Q |	| V |	|	|	|
12+20	0.6079	1.38	| Q |	| V |	|	|	|
12+25	0.6177	1.42	| Q |	| V |	|	|	|
12+30	0.6277	1.45	| Q |	| |V |	|	|	|
12+35	0.6379	1.48	| Q |	| |V |	|	|	|
12+40	0.6485	1.54	| Q |	| |V |	|	|	|
12+45	0.6593	1.57	| Q |	| | V |	|	|	|
12+50	0.6703	1.60	| Q |	| | V |	|	|	|
12+55	0.6815	1.63	| Q |	| | V |	|	|	|
13+ 0	0.6929	1.65	| Q |	| | V |	|	|	|
13+ 5	0.7045	1.69	| Q |	| | V |	|	|	|
13+10	0.7170	1.81	| Q |	| | V |	|	|	|
13+15	0.7299	1.88	| Q |	| | V |	|	|	|
13+20	0.7431	1.91	| Q |	| | V |	|	|	|
13+25	0.7564	1.93	| Q |	| | V |	|	|	|
13+30	0.7697	1.94	| Q |	| | V |	|	|	|
13+35	0.7827	1.88	| Q |	| | V |	|	|	|
13+40	0.7939	1.63	| Q |	| | V |	|	|	|
13+45	0.8042	1.49	| Q |	| | V |	|	|	|
13+50	0.8141	1.44	| Q |	| | V |	|	|	|
13+55	0.8237	1.40	| Q |	| | V |	|	|	|
14+ 0	0.8332	1.38	| Q |	| | V |	|	|	|
14+ 5	0.8428	1.39	| Q |	| | V |	|	|	|
14+10	0.8529	1.47	| Q |	| | V |	|	|	|
14+15	0.8634	1.51	| Q |	| | V |	|	|	|
14+20	0.8738	1.52	| Q |	| | V|	|	|	|
14+25	0.8842	1.51	| Q |	| | V|	|	|	|
14+30	0.8946	1.50	| Q |	| | V|	|	|	|
14+35	0.9049	1.50	| Q |	| | V |	|	|	|
14+40	0.9152	1.50	| Q |	| | V |	|	|	|
14+45	0.9256	1.50	| Q |	| | |V |	|	|	|
14+50	0.9359	1.50	| Q |	| | |V |	|	|	|
14+55	0.9460	1.47	| Q |	| | |V |	|	|	|
15+ 0	0.9561	1.46	| Q |	| | | V |	|	|	|
15+ 5	0.9661	1.45	| Q |	| | | V |	|	|	|
15+10	0.9759	1.42	| Q |	| | | V |	|	|	|
15+15	0.9856	1.41	| Q |	| | | | V |	|	|	|
15+20	0.9952	1.39	| Q |	| | | | V |	|	|	|
15+25	1.0046	1.37	| Q |	| | | | V |	|	|	|
15+30	1.0139	1.35	| Q |	| | | | V |	|	|	|
15+35	1.0230	1.32	| Q |	| | | | | V |	|	|
15+40	1.0314	1.22	| Q |	| | | | | V |	|	|
15+45	1.0394	1.17	| Q |	| | | | | V |	|	|
15+50	1.0473	1.14	| Q |	| | | | | | V |	|
15+55	1.0550	1.13	| Q |	| | | | | | V |	|
16+ 0	1.0627	1.12	| Q |	| | | | | | V |	|
16+ 5	1.0698	1.02	| Q |	| | | | | | V |	|
16+10	1.0744	0.67	| Q |	| | | | | | V |	|
16+15	1.0776	0.47	|Q |	| | | | | | | V |
16+20	1.0803	0.38	|Q |	| | | | | | | V |
16+25	1.0826	0.34	|Q |	| | | | | | | V |
16+30	1.0846	0.30	|Q |	| | | | | | | V |
16+35	1.0865	0.27	|Q |	| | | | | | | V |
16+40	1.0882	0.23	Q |	| | | | | | | V |
16+45	1.0896	0.21	Q |	| | | | | | | V |
16+50	1.0909	0.20	Q |	| | | | | | | V |
16+55	1.0922	0.19	Q |	| | | | | | | V |
17+ 0	1.0935	0.18	Q |	| | | | | | | V |
17+ 5	1.0948	0.19	Q |	| | | | | | | V |
17+10	1.0964	0.23	Q |	| | | | | | | V |
17+15	1.0982	0.26	|Q |	| | | | | | | V |
17+20	1.1000	0.27	|Q |	| | | | | | | V |
17+25	1.1019	0.28	|Q |	| | | | | | | V |
17+30	1.1038	0.28	|Q |	| | | | | | | V |
17+35	1.1058	0.28	|Q |	| | | | | | | | V |
17+40	1.1077	0.28	|Q |	| | | | | | | | V |
17+45	1.1097	0.29	|Q |	| | | | | | | | V |
17+50	1.1116	0.28	|Q |	| | | | | | | | V |
17+55	1.1134	0.26	|Q |	| | | | | | | | V |

18+ 0	1.1151	0.25	Q	|	|	|	V |
18+ 5	1.1168	0.24	Q	|	|	|	V |
18+10	1.1184	0.24	Q	|	|	|	V |
18+15	1.1201	0.24	Q	|	|	|	V |
18+20	1.1217	0.23	Q	|	|	|	V |
18+25	1.1233	0.23	Q	|	|	|	V |
18+30	1.1249	0.23	Q	|	|	|	V |
18+35	1.1264	0.23	Q	|	|	|	V |
18+40	1.1278	0.20	Q	|	|	|	V |
18+45	1.1291	0.19	Q	|	|	|	V |
18+50	1.1304	0.18	Q	|	|	|	V |
18+55	1.1314	0.15	Q	|	|	|	V |
19+ 0	1.1323	0.14	Q	|	|	|	V |
19+ 5	1.1333	0.13	Q	|	|	|	V |
19+10	1.1343	0.15	Q	|	|	|	V |
19+15	1.1354	0.16	Q	|	|	|	V |
19+20	1.1366	0.17	Q	|	|	|	V |
19+25	1.1380	0.20	Q	|	|	|	V |
19+30	1.1395	0.21	Q	|	|	|	V |
19+35	1.1409	0.21	Q	|	|	|	V |
19+40	1.1423	0.19	Q	|	|	|	V |
19+45	1.1435	0.18	Q	|	|	|	V |
19+50	1.1447	0.17	Q	|	|	|	V |
19+55	1.1457	0.15	Q	|	|	|	V |
20+ 0	1.1467	0.13	Q	|	|	|	V |
20+ 5	1.1476	0.13	Q	|	|	|	V |
20+10	1.1486	0.15	Q	|	|	|	V |
20+15	1.1498	0.16	Q	|	|	|	V |
20+20	1.1509	0.17	Q	|	|	|	V |
20+25	1.1521	0.17	Q	|	|	|	V |
20+30	1.1533	0.17	Q	|	|	|	V |
20+35	1.1544	0.17	Q	|	|	|	V |
20+40	1.1556	0.17	Q	|	|	|	V |
20+45	1.1568	0.17	Q	|	|	|	V |
20+50	1.1580	0.17	Q	|	|	|	V |
20+55	1.1589	0.14	Q	|	|	|	V |
21+ 0	1.1598	0.13	Q	|	|	|	V |
21+ 5	1.1607	0.13	Q	|	|	|	V |
21+10	1.1618	0.15	Q	|	|	|	V |
21+15	1.1629	0.16	Q	|	|	|	V |
21+20	1.1640	0.16	Q	|	|	|	V |
21+25	1.1650	0.14	Q	|	|	|	V|
21+30	1.1659	0.13	Q	|	|	|	V|
21+35	1.1668	0.13	Q	|	|	|	V|
21+40	1.1678	0.15	Q	|	|	|	V|
21+45	1.1689	0.16	Q	|	|	|	V|
21+50	1.1700	0.16	Q	|	|	|	V|
21+55	1.1710	0.14	Q	|	|	|	V|
22+ 0	1.1718	0.13	Q	|	|	|	V|
22+ 5	1.1727	0.13	Q	|	|	|	V|
22+10	1.1738	0.15	Q	|	|	|	V|
22+15	1.1749	0.16	Q	|	|	|	V|
22+20	1.1760	0.16	Q	|	|	|	V|
22+25	1.1769	0.14	Q	|	|	|	V|
22+30	1.1778	0.13	Q	|	|	|	V|
22+35	1.1786	0.12	Q	|	|	|	V|
22+40	1.1795	0.12	Q	|	|	|	V|
22+45	1.1803	0.12	Q	|	|	|	V|
22+50	1.1811	0.12	Q	|	|	|	V|
22+55	1.1819	0.12	Q	|	|	|	V|
23+ 0	1.1827	0.12	Q	|	|	|	V|
23+ 5	1.1835	0.12	Q	|	|	|	V|
23+10	1.1843	0.12	Q	|	|	|	V|
23+15	1.1851	0.12	Q	|	|	|	V|
23+20	1.1859	0.12	Q	|	|	|	V|
23+25	1.1867	0.12	Q	|	|	|	V|
23+30	1.1875	0.12	Q	|	|	|	V|
23+35	1.1883	0.12	Q	|	|	|	V|
23+40	1.1891	0.12	Q	|	|	|	V|
23+45	1.1899	0.12	Q	|	|	|	V|

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   23+50       1.1907      0.12  Q         |         |         |        V|
   23+55       1.1915      0.12  Q         |         |         |        V|
   24+ 0       1.1923      0.12  Q         |         |         |        V|
   24+ 5       1.1930      0.10  Q         |         |         |        V|
   24+10       1.1934      0.06  Q         |         |         |        V|
   24+15       1.1936      0.03  Q         |         |         |        V|
   24+20       1.1937      0.02  Q         |         |         |        V|
   24+25       1.1938      0.01  Q         |         |         |        V|
   24+30       1.1939      0.01  Q         |         |         |        V|
   24+35       1.1939      0.01  Q         |         |         |        V|
   24+40       1.1940      0.00  Q         |         |         |        V|
   24+45       1.1940      0.00  Q         |         |         |        V|
   24+50       1.1940      0.00  Q         |         |         |        V|
   24+55       1.1940      0.00  Q         |         |         |        V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/26/20 File: 8946E2A1110.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
10 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.14 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.86 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]
7.63	0.55	4.20

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	1.30	9.92

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(In)

Point rain (area averaged) = 0.859(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.858(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.670	0.120	1.000	0.120

Sum (F) = 0.120

Area averaged mean soil loss (F) (In/Hr) = 0.120
Minimum soil loss rate ((In/Hr)) = 0.060
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.028	10.632	0.818
2	0.167	140.056	40.118	3.085
3	0.250	210.084	23.140	1.779
4	0.333	280.112	9.007	0.693
5	0.417	350.140	5.476	0.421
6	0.500	420.168	3.638	0.280
7	0.583	490.196	2.431	0.187
8	0.667	560.224	1.903	0.146
9	0.750	630.252	1.342	0.103
10	0.833	700.280	0.953	0.073
11	0.917	770.308	0.711	0.055
12	1.000	840.336	0.647	0.050
		Sum = 100.000	Sum=	7.690

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	0.340	0.120	(0.124)	0.220
2	0.17	4.20	0.433	0.120	(0.157)	0.312
3	0.25	4.40	0.453	0.120	(0.165)	0.333
4	0.33	4.80	0.494	0.120	(0.180)	0.374
5	0.42	5.20	0.536	0.120	(0.195)	0.415
6	0.50	6.20	0.639	0.120	(0.232)	0.518
7	0.58	6.80	0.701	0.120	(0.255)	0.580
8	0.67	8.80	0.907	0.120	(0.330)	0.786
9	0.75	13.90	1.432	0.120	(0.521)	1.312
10	0.83	31.40	3.235	0.120	(1.177)	3.115
11	0.92	7.20	0.742	0.120	(0.270)	0.621
12	1.00	3.80	0.391	0.120	(0.142)	0.271
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	8.9

Flood volume = Effective rainfall 0.74(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)
Total soil loss = 0.12(In)
Total soil loss = 0.076(Ac.Ft)
Total rainfall = 0.86(In)
Flood volume = 20446.0 Cubic Feet
Total soil loss = 3331.7 Cubic Feet

Peak flow rate of this hydrograph = 13.593(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	10.0	15.0	20.0

0+ 5	0.0012	0.18	Q	|	|	|	|
0+10	0.0077	0.93	VQ	|	|	|	|
0+15	0.0189	1.63	|V Q	|	|	|	|
0+20	0.0329	2.04	| V Q	|	|	|	|
0+25	0.0494	2.40	| Q	|	|	|	|
0+30	0.0687	2.80	| Q	|	|	|	|
0+35	0.0917	3.34	| QV	|	|	|	|
0+40	0.1192	3.99	| Q V	|	|	|	|
0+45	0.1557	5.30	| Q V	|	|	|	|
0+50	0.2170	8.90	| | QV	|	|	|	|
0+55	0.3106	13.59	| | | VQ	|	|	|	|
1+ 0	0.3749	9.34	| | Q	|	|	|V	|
1+ 5	0.4105	5.16	| Q	|	|	| V	|
1+10	0.4308	2.95	| Q	|	|	| V	|
1+15	0.4433	1.82	| Q	|	|	| V	|
1+20	0.4518	1.24	| Q	|	|	| V	|
1+25	0.4580	0.90	|Q	|	|	| V	|
1+30	0.4623	0.63	|Q	|	|	| V	|
1+35	0.4654	0.44	Q	|	|	| V	|
1+40	0.4675	0.31	Q	|	|	| V	|
1+45	0.4690	0.21	Q	|	|	| V	|
1+50	0.4693	0.05	Q	|	|	| V	|
1+55	0.4694	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 02/26/20 File: 8946E2A1310.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
10 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.14 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.86 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]
7.63	0.90	6.87

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	2.25	17.17

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 1.455(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.455(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.670	0.120	1.000	0.120

Sum (F) = 0.120

Area averaged mean soil loss (F) (In/Hr) = 0.120
Minimum soil loss rate ((In/Hr)) = 0.060
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.028	10.632	0.818
2	0.167	140.056	40.118	3.085
3	0.250	210.084	23.140	1.779
4	0.333	280.112	9.007	0.693
5	0.417	350.140	5.476	0.421
6	0.500	420.168	3.638	0.280
7	0.583	490.196	2.431	0.187
8	0.667	560.224	1.903	0.146
9	0.750	630.252	1.342	0.103
10	0.833	700.280	0.953	0.073
11	0.917	770.308	0.711	0.055
12	1.000	840.336	0.647	0.050
		Sum = 100.000	Sum=	7.690

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	0.227	(0.120)		0.083	0.144
2	0.17	1.30	0.227	(0.120)		0.083	0.144
3	0.25	1.10	0.192	(0.120)		0.070	0.122
4	0.33	1.50	0.262	(0.120)		0.095	0.167
5	0.42	1.50	0.262	(0.120)		0.095	0.167
6	0.50	1.80	0.314	(0.120)		0.114	0.200
7	0.58	1.50	0.262	(0.120)		0.095	0.167
8	0.67	1.80	0.314	(0.120)		0.114	0.200
9	0.75	1.80	0.314	(0.120)		0.114	0.200
10	0.83	1.50	0.262	(0.120)		0.095	0.167
11	0.92	1.60	0.279	(0.120)		0.102	0.178
12	1.00	1.80	0.314	(0.120)		0.114	0.200
13	1.08	2.20	0.384	0.120	(	0.140)	0.264
14	1.17	2.20	0.384	0.120	(	0.140)	0.264
15	1.25	2.20	0.384	0.120	(	0.140)	0.264
16	1.33	2.00	0.349	0.120	(	0.127)	0.229
17	1.42	2.60	0.454	0.120	(	0.165)	0.334
18	1.50	2.70	0.472	0.120	(	0.172)	0.351
19	1.58	2.40	0.419	0.120	(	0.153)	0.299
20	1.67	2.70	0.472	0.120	(	0.172)	0.351
21	1.75	3.30	0.576	0.120	(	0.210)	0.456
22	1.83	3.10	0.541	0.120	(	0.197)	0.421
23	1.92	2.90	0.506	0.120	(	0.184)	0.386
24	2.00	3.00	0.524	0.120	(	0.191)	0.404
25	2.08	3.10	0.541	0.120	(	0.197)	0.421
26	2.17	4.20	0.733	0.120	(	0.267)	0.613
27	2.25	5.00	0.873	0.120	(	0.318)	0.753
28	2.33	3.50	0.611	0.120	(	0.222)	0.491
29	2.42	6.80	1.188	0.120	(	0.432)	1.067
30	2.50	7.30	1.275	0.120	(	0.464)	1.155
31	2.58	8.20	1.432	0.120	(	0.521)	1.312
32	2.67	5.90	1.030	0.120	(	0.375)	0.910
33	2.75	2.00	0.349	0.120	(	0.127)	0.229
34	2.83	1.80	0.314	(0.120)		0.114	0.200

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35   2.92     1.80      0.314       (  0.120)       0.114        0.200
36   3.00     0.60      0.105       (  0.120)       0.038        0.067
            (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    13.5
     Flood volume = Effective rainfall      1.12(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       0.7(Ac.Ft)
     Total soil loss =      0.33(In)
     Total soil loss =     0.210(Ac.Ft)
     Total rainfall =      1.46(In)
     Flood volume =       31147.7 Cubic Feet
     Total soil loss =        9161.1 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      8.298(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0008      0.12  Q         |         |         |         |
  0+10       0.0047      0.56  V Q       |         |         |         |
  0+15       0.0102      0.80  V  Q      |         |         |         |
  0+20       0.0162      0.87  V  Q      |         |         |         |
  0+25       0.0233      1.03  |V  Q     |         |         |         |
  0+30       0.0313      1.16  |V  Q     |         |         |         |
  0+35       0.0401      1.28  | V  Q    |         |         |         |
  0+40       0.0491      1.30  | V  Q    |         |         |         |
  0+45       0.0587      1.39  |  V Q    |         |         |         |
  0+50       0.0685      1.43  |  V Q    |         |         |         |
  0+55       0.0780      1.37  |   VQ    |         |         |         |
  1+ 0       0.0875      1.38  |   VQ    |         |         |         |
  1+ 5       0.0979      1.51  |    VQ   |         |         |         |
  1+10       0.1099      1.75  |     Q   |         |         |         |
  1+15       0.1228      1.88  |     VQ  |         |         |         |
  1+20       0.1359      1.90  |      Q  |         |         |         |
  1+25       0.1491      1.91  |      QV |         |         |         |
  1+30       0.1643      2.21  |       QV|         |         |         |
  1+35       0.1808      2.40  |        QV         |         |         |
  1+40       0.1971      2.38  |        Q|V        |         |         |
  1+45       0.2150      2.59  |         Q V       |         |         |
  1+50       0.2354      2.97  |         |Q V      |         |         |
  1+55       0.2565      3.06  |         | Q V     |         |         |
  2+ 0       0.2772      3.00  |         | Q  V    |         |         |
  2+ 5       0.2982      3.05  |         | Q   V   |         |         |
  2+10       0.3208      3.29  |         |  Q   V  |         |         |
  2+15       0.3487      4.04  |         |     Q  V|         |         |
  2+20       0.3805      4.63  |         |       Q |V        |         |
  2+25       0.4128      4.68  |         |       Q |  V      |         |
  2+30       0.4559      6.25  |         |         |    Q    |         |
  2+35       0.5083      7.62  |         |         |       V Q         |
  2+40       0.5655      8.30  |         |         |         |V Q      |
  2+45       0.6141      7.06  |         |         |       Q |   V     |
  2+50       0.6453      4.52  |         |       Q |         |     V   |
  2+55       0.6669      3.13  |         | Q       |         |      V  |
  3+ 0       0.6839      2.47  |         |Q|       |         |       V |
  3+ 5       0.6955      1.68  |     Q   |         |         |       V |
  3+10       0.7025      1.03  |   Q     |         |         |        V|
  3+15       0.7071      0.67  | Q       |         |         |        V|
  3+20       0.7103      0.46  |Q        |         |         |        V|
  3+25       0.7124      0.30  |Q        |         |         |        V|
  3+30       0.7137      0.19  Q         |         |         |        V|
  3+35       0.7145      0.10  Q         |         |         |        V|
  3+40       0.7148      0.04  Q         |         |         |        V|
  3+45       0.7149      0.03  Q         |         |         |        V|
  3+50       0.7150      0.01  Q         |         |         |        V|
  3+55       0.7151      0.00  Q         |         |         |         V
```

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

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Study date 02/26/20 File: 8946E2A1610.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
10 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.14 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.86 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]
7.63	1.30	9.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	3.00	22.89

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.999(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.670	0.120	1.000	0.120

Sum (F) = 0.120

Area averaged mean soil loss (F) (In/Hr) = 0.120
Minimum soil loss rate ((In/Hr)) = 0.060
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.028	10.632	0.818
2	0.167	140.056	40.118	3.085
3	0.250	210.084	23.140	1.779
4	0.333	280.112	9.007	0.693
5	0.417	350.140	5.476	0.421
6	0.500	420.168	3.638	0.280
7	0.583	490.196	2.431	0.187
8	0.667	560.224	1.903	0.146
9	0.750	630.252	1.342	0.103
10	0.833	700.280	0.953	0.073
11	0.917	770.308	0.711	0.055
12	1.000	840.336	0.647	0.050
		Sum = 100.000	Sum=	7.690

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	0.120	(0.120)		0.044	0.076
2	0.17	0.60	0.144	(0.120)		0.052	0.092
3	0.25	0.60	0.144	(0.120)		0.052	0.092
4	0.33	0.60	0.144	(0.120)		0.052	0.092
5	0.42	0.60	0.144	(0.120)		0.052	0.092
6	0.50	0.70	0.168	(0.120)		0.061	0.107
7	0.58	0.70	0.168	(0.120)		0.061	0.107
8	0.67	0.70	0.168	(0.120)		0.061	0.107
9	0.75	0.70	0.168	(0.120)		0.061	0.107
10	0.83	0.70	0.168	(0.120)		0.061	0.107
11	0.92	0.70	0.168	(0.120)		0.061	0.107
12	1.00	0.80	0.192	(0.120)		0.070	0.122
13	1.08	0.80	0.192	(0.120)		0.070	0.122
14	1.17	0.80	0.192	(0.120)		0.070	0.122
15	1.25	0.80	0.192	(0.120)		0.070	0.122
16	1.33	0.80	0.192	(0.120)		0.070	0.122
17	1.42	0.80	0.192	(0.120)		0.070	0.122
18	1.50	0.80	0.192	(0.120)		0.070	0.122
19	1.58	0.80	0.192	(0.120)		0.070	0.122
20	1.67	0.80	0.192	(0.120)		0.070	0.122
21	1.75	0.80	0.192	(0.120)		0.070	0.122
22	1.83	0.80	0.192	(0.120)		0.070	0.122
23	1.92	0.80	0.192	(0.120)		0.070	0.122
24	2.00	0.90	0.216	(0.120)		0.079	0.137
25	2.08	0.80	0.192	(0.120)		0.070	0.122
26	2.17	0.90	0.216	(0.120)		0.079	0.137
27	2.25	0.90	0.216	(0.120)		0.079	0.137
28	2.33	0.90	0.216	(0.120)		0.079	0.137
29	2.42	0.90	0.216	(0.120)		0.079	0.137
30	2.50	0.90	0.216	(0.120)		0.079	0.137
31	2.58	0.90	0.216	(0.120)		0.079	0.137
32	2.67	0.90	0.216	(0.120)		0.079	0.137
33	2.75	1.00	0.240	(0.120)		0.087	0.153
34	2.83	1.00	0.240	(0.120)		0.087	0.153

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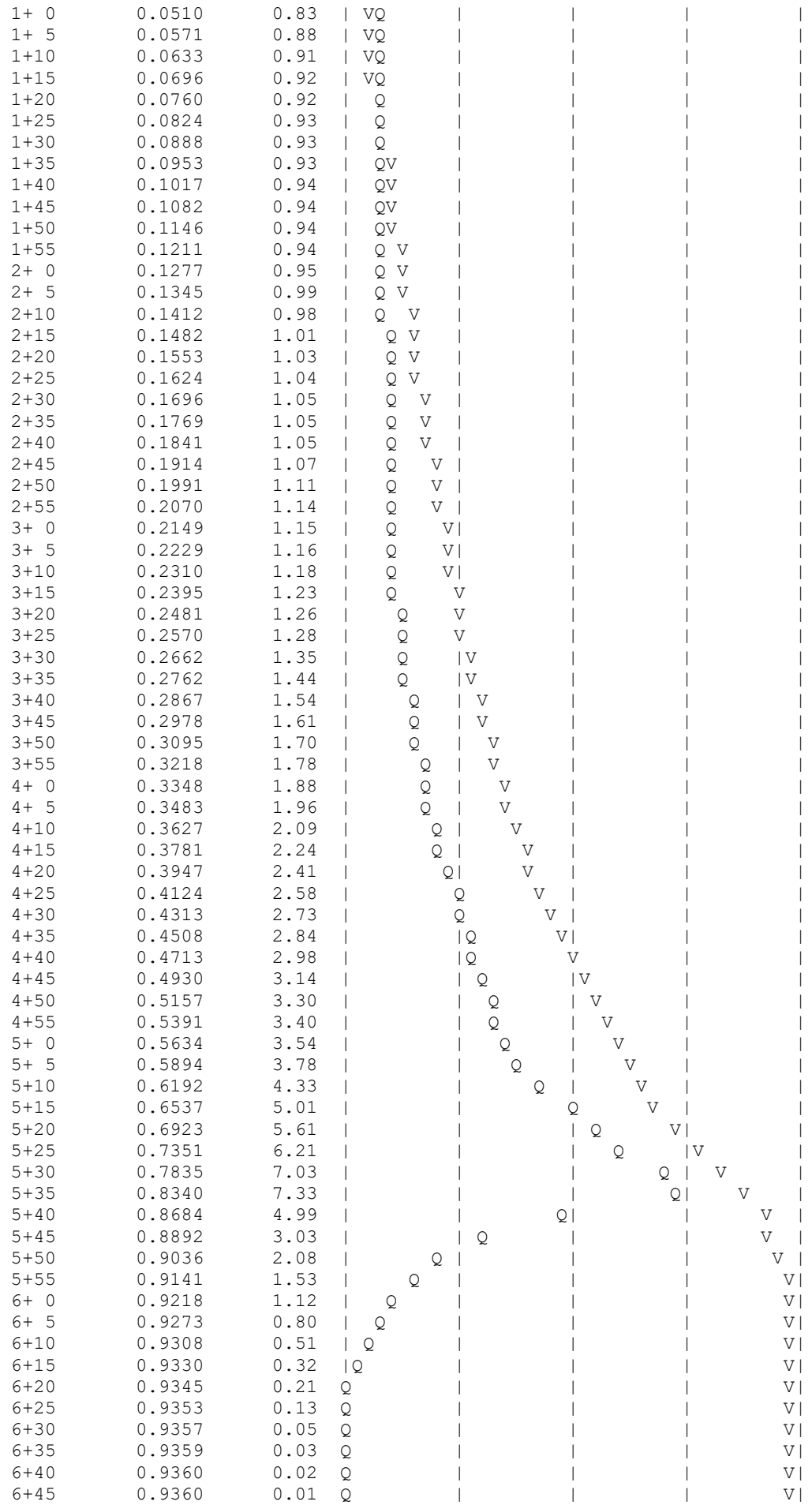
35   2.92     1.00      0.240       (  0.120)       0.087        0.153
36   3.00     1.00      0.240       (  0.120)       0.087        0.153
37   3.08     1.00      0.240       (  0.120)       0.087        0.153
38   3.17     1.10      0.264       (  0.120)       0.096        0.168
39   3.25     1.10      0.264       (  0.120)       0.096        0.168
40   3.33     1.10      0.264       (  0.120)       0.096        0.168
41   3.42     1.20      0.288       (  0.120)       0.105        0.183
42   3.50     1.30      0.312       (  0.120)       0.114        0.198
43   3.58     1.40      0.336          0.120    (  0.122)        0.216
44   3.67     1.40      0.336          0.120    (  0.122)        0.216
45   3.75     1.50      0.360          0.120    (  0.131)        0.240
46   3.83     1.50      0.360          0.120    (  0.131)        0.240
47   3.92     1.60      0.384          0.120    (  0.140)        0.264
48   4.00     1.60      0.384          0.120    (  0.140)        0.264
49   4.08     1.70      0.408          0.120    (  0.148)        0.288
50   4.17     1.80      0.432          0.120    (  0.157)        0.312
51   4.25     1.90      0.456          0.120    (  0.166)        0.336
52   4.33     2.00      0.480          0.120    (  0.175)        0.360
53   4.42     2.10      0.504          0.120    (  0.183)        0.384
54   4.50     2.10      0.504          0.120    (  0.183)        0.384
55   4.58     2.20      0.528          0.120    (  0.192)        0.408
56   4.67     2.30      0.552          0.120    (  0.201)        0.432
57   4.75     2.40      0.576          0.120    (  0.210)        0.456
58   4.83     2.40      0.576          0.120    (  0.210)        0.456
59   4.92     2.50      0.600          0.120    (  0.218)        0.480
60   5.00     2.60      0.624          0.120    (  0.227)        0.504
61   5.08     3.10      0.744          0.120    (  0.271)        0.623
62   5.17     3.60      0.864          0.120    (  0.314)        0.743
63   5.25     3.90      0.936          0.120    (  0.341)        0.815
64   5.33     4.20      1.008          0.120    (  0.367)        0.887
65   5.42     4.70      1.128          0.120    (  0.410)        1.007
66   5.50     5.60      1.344          0.120    (  0.489)        1.223
67   5.58     1.90      0.456          0.120    (  0.166)        0.336
68   5.67     0.90      0.216       (  0.120)       0.079        0.137
69   5.75     0.60      0.144       (  0.120)       0.052        0.092
70   5.83     0.50      0.120       (  0.120)       0.044        0.076
71   5.92     0.30      0.072       (  0.120)       0.026        0.046
72   6.00     0.20      0.048       (  0.120)       0.017        0.031
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    17.7
     Flood volume = Effective rainfall      1.47(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       0.9(Ac.Ft)
     Total soil loss =      0.53(In)
     Total soil loss =     0.335(Ac.Ft)
     Total rainfall =      2.00(In)
     Flood volume =       40775.0 Cubic Feet
     Total soil loss =       14600.6 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      7.330(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        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0004      0.06  Q         |         |         |         |
  0+10       0.0026      0.31  VQ        |         |         |         |
  0+15       0.0060      0.49  VQ        |         |         |         |
  0+20       0.0099      0.57  V Q       |         |         |         |
  0+25       0.0142      0.62  V Q       |         |         |         |
  0+30       0.0187      0.66  V Q       |         |         |         |
  0+35       0.0236      0.72  |VQ       |         |         |         |
  0+40       0.0289      0.76  |V Q      |         |         |         |
  0+45       0.0343      0.78  |V Q      |         |         |         |
  0+50       0.0398      0.80  |V Q      |         |         |         |
  0+55       0.0454      0.81  |V Q      |         |         |         |
```



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    6+50       0.9361      0.00  Q         |         |         |        V|
    6+55       0.9361      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/26/20 File: 8946E2A12410.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
10 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.119 Hr.
Lag time = 7.14 Min.
25% of lag time = 1.78 Min.
40% of lag time = 2.86 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]
7.63	2.25	17.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	5.25	40.06

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 3.484(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.484(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	75.0	0.303	0.670	0.120	1.000	0.120

Sum (F) = 0.120

Area averaged mean soil loss (F) (In/Hr) = 0.120
Minimum soil loss rate ((In/Hr)) = 0.060
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	70.028	10.632	0.818
2	0.167	140.056	40.118	3.085
3	0.250	210.084	23.140	1.779
4	0.333	280.112	9.007	0.693
5	0.417	350.140	5.476	0.421
6	0.500	420.168	3.638	0.280
7	0.583	490.196	2.431	0.187
8	0.667	560.224	1.903	0.146
9	0.750	630.252	1.342	0.103
10	0.833	700.280	0.953	0.073
11	0.917	770.308	0.711	0.055
12	1.000	840.336	0.647	0.050
		Sum = 100.000	Sum=	7.690

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

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.028	(0.213)	0.010	0.018
2	0.17	0.07	0.028	(0.212)	0.010	0.018
3	0.25	0.07	0.028	(0.212)	0.010	0.018
4	0.33	0.10	0.042	(0.211)	0.015	0.027
5	0.42	0.10	0.042	(0.210)	0.015	0.027
6	0.50	0.10	0.042	(0.209)	0.015	0.027
7	0.58	0.10	0.042	(0.208)	0.015	0.027
8	0.67	0.10	0.042	(0.208)	0.015	0.027
9	0.75	0.10	0.042	(0.207)	0.015	0.027
10	0.83	0.13	0.056	(0.206)	0.020	0.035
11	0.92	0.13	0.056	(0.205)	0.020	0.035
12	1.00	0.13	0.056	(0.204)	0.020	0.035
13	1.08	0.10	0.042	(0.203)	0.015	0.027
14	1.17	0.10	0.042	(0.203)	0.015	0.027
15	1.25	0.10	0.042	(0.202)	0.015	0.027
16	1.33	0.10	0.042	(0.201)	0.015	0.027
17	1.42	0.10	0.042	(0.200)	0.015	0.027
18	1.50	0.10	0.042	(0.199)	0.015	0.027
19	1.58	0.10	0.042	(0.199)	0.015	0.027
20	1.67	0.10	0.042	(0.198)	0.015	0.027
21	1.75	0.10	0.042	(0.197)	0.015	0.027
22	1.83	0.13	0.056	(0.196)	0.020	0.035
23	1.92	0.13	0.056	(0.195)	0.020	0.035
24	2.00	0.13	0.056	(0.195)	0.020	0.035
25	2.08	0.13	0.056	(0.194)	0.020	0.035
26	2.17	0.13	0.056	(0.193)	0.020	0.035
27	2.25	0.13	0.056	(0.192)	0.020	0.035
28	2.33	0.13	0.056	(0.192)	0.020	0.035
29	2.42	0.13	0.056	(0.191)	0.020	0.035
30	2.50	0.13	0.056	(0.190)	0.020	0.035
31	2.58	0.17	0.070	(0.189)	0.025	0.044
32	2.67	0.17	0.070	(0.188)	0.025	0.044
33	2.75	0.17	0.070	(0.188)	0.025	0.044
34	2.83	0.17	0.070	(0.187)	0.025	0.044

35	2.92	0.17	0.070	(0.186)	0.025	0.044
36	3.00	0.17	0.070	(0.185)	0.025	0.044
37	3.08	0.17	0.070	(0.185)	0.025	0.044
38	3.17	0.17	0.070	(0.184)	0.025	0.044
39	3.25	0.17	0.070	(0.183)	0.025	0.044
40	3.33	0.17	0.070	(0.182)	0.025	0.044
41	3.42	0.17	0.070	(0.182)	0.025	0.044
42	3.50	0.17	0.070	(0.181)	0.025	0.044
43	3.58	0.17	0.070	(0.180)	0.025	0.044
44	3.67	0.17	0.070	(0.179)	0.025	0.044
45	3.75	0.17	0.070	(0.178)	0.025	0.044
46	3.83	0.20	0.084	(0.178)	0.030	0.053
47	3.92	0.20	0.084	(0.177)	0.030	0.053
48	4.00	0.20	0.084	(0.176)	0.030	0.053
49	4.08	0.20	0.084	(0.175)	0.030	0.053
50	4.17	0.20	0.084	(0.175)	0.030	0.053
51	4.25	0.20	0.084	(0.174)	0.030	0.053
52	4.33	0.23	0.098	(0.173)	0.036	0.062
53	4.42	0.23	0.098	(0.173)	0.036	0.062
54	4.50	0.23	0.098	(0.172)	0.036	0.062
55	4.58	0.23	0.098	(0.171)	0.036	0.062
56	4.67	0.23	0.098	(0.170)	0.036	0.062
57	4.75	0.23	0.098	(0.170)	0.036	0.062
58	4.83	0.27	0.111	(0.169)	0.041	0.071
59	4.92	0.27	0.111	(0.168)	0.041	0.071
60	5.00	0.27	0.111	(0.167)	0.041	0.071
61	5.08	0.20	0.084	(0.167)	0.030	0.053
62	5.17	0.20	0.084	(0.166)	0.030	0.053
63	5.25	0.20	0.084	(0.165)	0.030	0.053
64	5.33	0.23	0.098	(0.164)	0.036	0.062
65	5.42	0.23	0.098	(0.164)	0.036	0.062
66	5.50	0.23	0.098	(0.163)	0.036	0.062
67	5.58	0.27	0.111	(0.162)	0.041	0.071
68	5.67	0.27	0.111	(0.162)	0.041	0.071
69	5.75	0.27	0.111	(0.161)	0.041	0.071
70	5.83	0.27	0.111	(0.160)	0.041	0.071
71	5.92	0.27	0.111	(0.159)	0.041	0.071
72	6.00	0.27	0.111	(0.159)	0.041	0.071
73	6.08	0.30	0.125	(0.158)	0.046	0.080
74	6.17	0.30	0.125	(0.157)	0.046	0.080
75	6.25	0.30	0.125	(0.157)	0.046	0.080
76	6.33	0.30	0.125	(0.156)	0.046	0.080
77	6.42	0.30	0.125	(0.155)	0.046	0.080
78	6.50	0.30	0.125	(0.155)	0.046	0.080
79	6.58	0.33	0.139	(0.154)	0.051	0.089
80	6.67	0.33	0.139	(0.153)	0.051	0.089
81	6.75	0.33	0.139	(0.152)	0.051	0.089
82	6.83	0.33	0.139	(0.152)	0.051	0.089
83	6.92	0.33	0.139	(0.151)	0.051	0.089
84	7.00	0.33	0.139	(0.150)	0.051	0.089
85	7.08	0.33	0.139	(0.150)	0.051	0.089
86	7.17	0.33	0.139	(0.149)	0.051	0.089
87	7.25	0.33	0.139	(0.148)	0.051	0.089
88	7.33	0.37	0.153	(0.148)	0.056	0.098
89	7.42	0.37	0.153	(0.147)	0.056	0.098
90	7.50	0.37	0.153	(0.146)	0.056	0.098
91	7.58	0.40	0.167	(0.146)	0.061	0.106
92	7.67	0.40	0.167	(0.145)	0.061	0.106
93	7.75	0.40	0.167	(0.144)	0.061	0.106
94	7.83	0.43	0.181	(0.144)	0.066	0.115
95	7.92	0.43	0.181	(0.143)	0.066	0.115
96	8.00	0.43	0.181	(0.142)	0.066	0.115
97	8.08	0.50	0.209	(0.142)	0.076	0.133
98	8.17	0.50	0.209	(0.141)	0.076	0.133
99	8.25	0.50	0.209	(0.140)	0.076	0.133
100	8.33	0.50	0.209	(0.140)	0.076	0.133
101	8.42	0.50	0.209	(0.139)	0.076	0.133
102	8.50	0.50	0.209	(0.138)	0.076	0.133
103	8.58	0.53	0.223	(0.138)	0.081	0.142
104	8.67	0.53	0.223	(0.137)	0.081	0.142

105	8.75	0.53	0.223	(	0.136)	0.081	0.142
106	8.83	0.57	0.237	(	0.136)	0.086	0.151
107	8.92	0.57	0.237	(	0.135)	0.086	0.151
108	9.00	0.57	0.237	(	0.135)	0.086	0.151
109	9.08	0.63	0.265	(	0.134)	0.096	0.168
110	9.17	0.63	0.265	(	0.133)	0.096	0.168
111	9.25	0.63	0.265	(	0.133)	0.096	0.168
112	9.33	0.67	0.279	(	0.132)	0.101	0.177
113	9.42	0.67	0.279	(	0.131)	0.101	0.177
114	9.50	0.67	0.279	(	0.131)	0.101	0.177
115	9.58	0.70	0.293	(	0.130)	0.107	0.186
116	9.67	0.70	0.293	(	0.130)	0.107	0.186
117	9.75	0.70	0.293	(	0.129)	0.107	0.186
118	9.83	0.73	0.307	(	0.128)	0.112	0.195
119	9.92	0.73	0.307	(	0.128)	0.112	0.195
120	10.00	0.73	0.307	(	0.127)	0.112	0.195
121	10.08	0.50	0.209	(	0.126)	0.076	0.133
122	10.17	0.50	0.209	(	0.126)	0.076	0.133
123	10.25	0.50	0.209	(	0.125)	0.076	0.133
124	10.33	0.50	0.209	(	0.125)	0.076	0.133
125	10.42	0.50	0.209	(	0.124)	0.076	0.133
126	10.50	0.50	0.209	(	0.123)	0.076	0.133
127	10.58	0.67	0.279	(	0.123)	0.101	0.177
128	10.67	0.67	0.279	(	0.122)	0.101	0.177
129	10.75	0.67	0.279	(	0.122)	0.101	0.177
130	10.83	0.67	0.279	(	0.121)	0.101	0.177
131	10.92	0.67	0.279	(	0.120)	0.101	0.177
132	11.00	0.67	0.279	(	0.120)	0.101	0.177
133	11.08	0.63	0.265	(	0.119)	0.096	0.168
134	11.17	0.63	0.265	(	0.119)	0.096	0.168
135	11.25	0.63	0.265	(	0.118)	0.096	0.168
136	11.33	0.63	0.265	(	0.117)	0.096	0.168
137	11.42	0.63	0.265	(	0.117)	0.096	0.168
138	11.50	0.63	0.265	(	0.116)	0.096	0.168
139	11.58	0.57	0.237	(	0.116)	0.086	0.151
140	11.67	0.57	0.237	(	0.115)	0.086	0.151
141	11.75	0.57	0.237	(	0.115)	0.086	0.151
142	11.83	0.60	0.251	(	0.114)	0.091	0.160
143	11.92	0.60	0.251	(	0.113)	0.091	0.160
144	12.00	0.60	0.251	(	0.113)	0.091	0.160
145	12.08	0.83	0.348	0.112	(	0.127)	0.236
146	12.17	0.83	0.348	0.112	(	0.127)	0.237
147	12.25	0.83	0.348	0.111	(	0.127)	0.237
148	12.33	0.87	0.362	0.111	(	0.132)	0.252
149	12.42	0.87	0.362	0.110	(	0.132)	0.252
150	12.50	0.87	0.362	0.109	(	0.132)	0.253
151	12.58	0.93	0.390	0.109	(	0.142)	0.281
152	12.67	0.93	0.390	0.108	(	0.142)	0.282
153	12.75	0.93	0.390	0.108	(	0.142)	0.282
154	12.83	0.97	0.404	0.107	(	0.147)	0.297
155	12.92	0.97	0.404	0.107	(	0.147)	0.297
156	13.00	0.97	0.404	0.106	(	0.147)	0.298
157	13.08	1.13	0.474	0.106	(	0.172)	0.368
158	13.17	1.13	0.474	0.105	(	0.172)	0.369
159	13.25	1.13	0.474	0.105	(	0.172)	0.369
160	13.33	1.13	0.474	0.104	(	0.172)	0.370
161	13.42	1.13	0.474	0.104	(	0.172)	0.370
162	13.50	1.13	0.474	0.103	(	0.172)	0.371
163	13.58	0.77	0.321	0.103	(	0.117)	0.218
164	13.67	0.77	0.321	0.102	(	0.117)	0.219
165	13.75	0.77	0.321	0.101	(	0.117)	0.219
166	13.83	0.77	0.321	0.101	(	0.117)	0.220
167	13.92	0.77	0.321	0.100	(	0.117)	0.220
168	14.00	0.77	0.321	0.100	(	0.117)	0.221
169	14.08	0.90	0.376	0.099	(	0.137)	0.277
170	14.17	0.90	0.376	0.099	(	0.137)	0.277
171	14.25	0.90	0.376	0.098	(	0.137)	0.278
172	14.33	0.87	0.362	0.098	(	0.132)	0.264
173	14.42	0.87	0.362	0.097	(	0.132)	0.265
174	14.50	0.87	0.362	0.097	(	0.132)	0.265

175	14.58	0.87	0.362		0.096	(	0.132)	0.266
176	14.67	0.87	0.362		0.096	(	0.132)	0.266
177	14.75	0.87	0.362		0.095	(	0.132)	0.267
178	14.83	0.83	0.348		0.095	(	0.127)	0.253
179	14.92	0.83	0.348		0.094	(	0.127)	0.254
180	15.00	0.83	0.348		0.094	(	0.127)	0.254
181	15.08	0.80	0.334		0.093	(	0.122)	0.241
182	15.17	0.80	0.334		0.093	(	0.122)	0.241
183	15.25	0.80	0.334		0.093	(	0.122)	0.242
184	15.33	0.77	0.321		0.092	(	0.117)	0.229
185	15.42	0.77	0.321		0.092	(	0.117)	0.229
186	15.50	0.77	0.321		0.091	(	0.117)	0.229
187	15.58	0.63	0.265		0.091	(	0.096)	0.174
188	15.67	0.63	0.265		0.090	(	0.096)	0.175
189	15.75	0.63	0.265		0.090	(	0.096)	0.175
190	15.83	0.63	0.265		0.089	(	0.096)	0.176
191	15.92	0.63	0.265		0.089	(	0.096)	0.176
192	16.00	0.63	0.265		0.088	(	0.096)	0.176
193	16.08	0.13	0.056	(	0.088)		0.020	0.035
194	16.17	0.13	0.056	(	0.087)		0.020	0.035
195	16.25	0.13	0.056	(	0.087)		0.020	0.035
196	16.33	0.13	0.056	(	0.087)		0.020	0.035
197	16.42	0.13	0.056	(	0.086)		0.020	0.035
198	16.50	0.13	0.056	(	0.086)		0.020	0.035
199	16.58	0.10	0.042	(	0.085)		0.015	0.027
200	16.67	0.10	0.042	(	0.085)		0.015	0.027
201	16.75	0.10	0.042	(	0.084)		0.015	0.027
202	16.83	0.10	0.042	(	0.084)		0.015	0.027
203	16.92	0.10	0.042	(	0.084)		0.015	0.027
204	17.00	0.10	0.042	(	0.083)		0.015	0.027
205	17.08	0.17	0.070	(	0.083)		0.025	0.044
206	17.17	0.17	0.070	(	0.082)		0.025	0.044
207	17.25	0.17	0.070	(	0.082)		0.025	0.044
208	17.33	0.17	0.070	(	0.081)		0.025	0.044
209	17.42	0.17	0.070	(	0.081)		0.025	0.044
210	17.50	0.17	0.070	(	0.081)		0.025	0.044
211	17.58	0.17	0.070	(	0.080)		0.025	0.044
212	17.67	0.17	0.070	(	0.080)		0.025	0.044
213	17.75	0.17	0.070	(	0.079)		0.025	0.044
214	17.83	0.13	0.056	(	0.079)		0.020	0.035
215	17.92	0.13	0.056	(	0.079)		0.020	0.035
216	18.00	0.13	0.056	(	0.078)		0.020	0.035
217	18.08	0.13	0.056	(	0.078)		0.020	0.035
218	18.17	0.13	0.056	(	0.077)		0.020	0.035
219	18.25	0.13	0.056	(	0.077)		0.020	0.035
220	18.33	0.13	0.056	(	0.077)		0.020	0.035
221	18.42	0.13	0.056	(	0.076)		0.020	0.035
222	18.50	0.13	0.056	(	0.076)		0.020	0.035
223	18.58	0.10	0.042	(	0.076)		0.015	0.027
224	18.67	0.10	0.042	(	0.075)		0.015	0.027
225	18.75	0.10	0.042	(	0.075)		0.015	0.027
226	18.83	0.07	0.028	(	0.075)		0.010	0.018
227	18.92	0.07	0.028	(	0.074)		0.010	0.018
228	19.00	0.07	0.028	(	0.074)		0.010	0.018
229	19.08	0.10	0.042	(	0.073)		0.015	0.027
230	19.17	0.10	0.042	(	0.073)		0.015	0.027
231	19.25	0.10	0.042	(	0.073)		0.015	0.027
232	19.33	0.13	0.056	(	0.072)		0.020	0.035
233	19.42	0.13	0.056	(	0.072)		0.020	0.035
234	19.50	0.13	0.056	(	0.072)		0.020	0.035
235	19.58	0.10	0.042	(	0.071)		0.015	0.027
236	19.67	0.10	0.042	(	0.071)		0.015	0.027
237	19.75	0.10	0.042	(	0.071)		0.015	0.027
238	19.83	0.07	0.028	(	0.070)		0.010	0.018
239	19.92	0.07	0.028	(	0.070)		0.010	0.018
240	20.00	0.07	0.028	(	0.070)		0.010	0.018
241	20.08	0.10	0.042	(	0.070)		0.015	0.027
242	20.17	0.10	0.042	(	0.069)		0.015	0.027
243	20.25	0.10	0.042	(	0.069)		0.015	0.027
244	20.33	0.10	0.042	(	0.069)		0.015	0.027

245	20.42	0.10	0.042	(	0.068)	0.015	0.027
246	20.50	0.10	0.042	(	0.068)	0.015	0.027
247	20.58	0.10	0.042	(	0.068)	0.015	0.027
248	20.67	0.10	0.042	(	0.067)	0.015	0.027
249	20.75	0.10	0.042	(	0.067)	0.015	0.027
250	20.83	0.07	0.028	(	0.067)	0.010	0.018
251	20.92	0.07	0.028	(	0.067)	0.010	0.018
252	21.00	0.07	0.028	(	0.066)	0.010	0.018
253	21.08	0.10	0.042	(	0.066)	0.015	0.027
254	21.17	0.10	0.042	(	0.066)	0.015	0.027
255	21.25	0.10	0.042	(	0.066)	0.015	0.027
256	21.33	0.07	0.028	(	0.065)	0.010	0.018
257	21.42	0.07	0.028	(	0.065)	0.010	0.018
258	21.50	0.07	0.028	(	0.065)	0.010	0.018
259	21.58	0.10	0.042	(	0.065)	0.015	0.027
260	21.67	0.10	0.042	(	0.064)	0.015	0.027
261	21.75	0.10	0.042	(	0.064)	0.015	0.027
262	21.83	0.07	0.028	(	0.064)	0.010	0.018
263	21.92	0.07	0.028	(	0.064)	0.010	0.018
264	22.00	0.07	0.028	(	0.064)	0.010	0.018
265	22.08	0.10	0.042	(	0.063)	0.015	0.027
266	22.17	0.10	0.042	(	0.063)	0.015	0.027
267	22.25	0.10	0.042	(	0.063)	0.015	0.027
268	22.33	0.07	0.028	(	0.063)	0.010	0.018
269	22.42	0.07	0.028	(	0.063)	0.010	0.018
270	22.50	0.07	0.028	(	0.062)	0.010	0.018
271	22.58	0.07	0.028	(	0.062)	0.010	0.018
272	22.67	0.07	0.028	(	0.062)	0.010	0.018
273	22.75	0.07	0.028	(	0.062)	0.010	0.018
274	22.83	0.07	0.028	(	0.062)	0.010	0.018
275	22.92	0.07	0.028	(	0.061)	0.010	0.018
276	23.00	0.07	0.028	(	0.061)	0.010	0.018
277	23.08	0.07	0.028	(	0.061)	0.010	0.018
278	23.17	0.07	0.028	(	0.061)	0.010	0.018
279	23.25	0.07	0.028	(	0.061)	0.010	0.018
280	23.33	0.07	0.028	(	0.061)	0.010	0.018
281	23.42	0.07	0.028	(	0.061)	0.010	0.018
282	23.50	0.07	0.028	(	0.061)	0.010	0.018
283	23.58	0.07	0.028	(	0.060)	0.010	0.018
284	23.67	0.07	0.028	(	0.060)	0.010	0.018
285	23.75	0.07	0.028	(	0.060)	0.010	0.018
286	23.83	0.07	0.028	(	0.060)	0.010	0.018
287	23.92	0.07	0.028	(	0.060)	0.010	0.018
288	24.00	0.07	0.028	(	0.060)	0.010	0.018

(Loss Rate Not Used)

Sum = 100.0 Sum = 28.1

Flood volume = Effective rainfall 2.34(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 1.5(Ac.Ft)
Total soil loss = 1.15(In)
Total soil loss = 0.729(Ac.Ft)
Total rainfall = 3.48(In)
Flood volume = 64744.9 Cubic Feet
Total soil loss = 31755.9 Cubic Feet

Peak flow rate of this hydrograph = 2.799(CFS)

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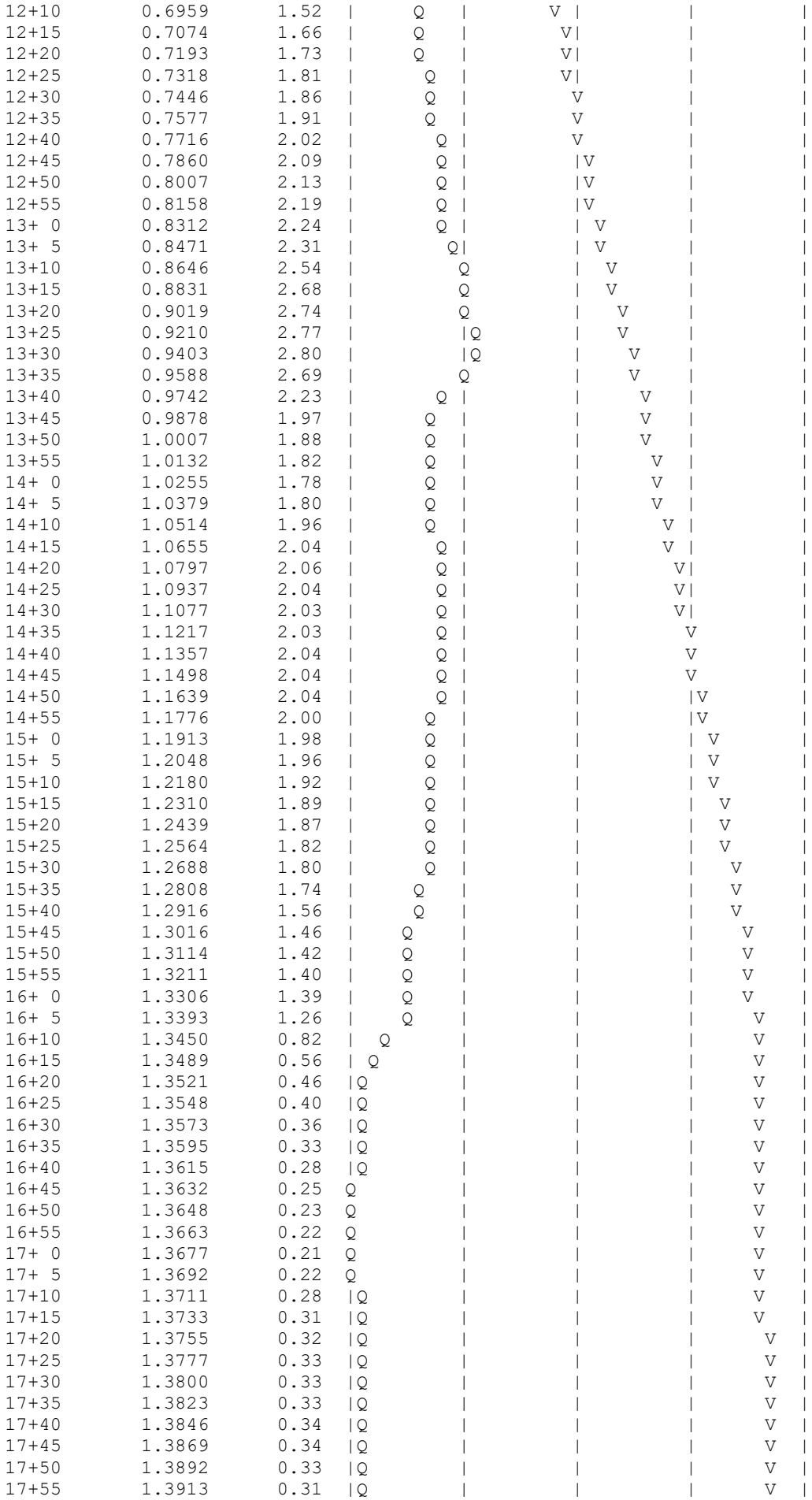
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0006	0.07	Q	|	|	|	|
0+15	0.0013	0.10	Q	|	|	|	|
0+20	0.0021	0.12	Q	|	|	|	|
0+25	0.0032	0.16	Q	|	|	|	|

0+30	0.0044	0.18	Q				
0+35	0.0057	0.19	Q				
0+40	0.0070	0.19	Q				
0+45	0.0083	0.20	Q				
0+50	0.0097	0.21	Q				
0+55	0.0114	0.24	Q				
1+ 0	0.0131	0.25	VQ				
1+ 5	0.0149	0.25	VQ				
1+10	0.0164	0.23	Q				
1+15	0.0179	0.22	Q				
1+20	0.0194	0.21	Q				
1+25	0.0208	0.21	Q				
1+30	0.0223	0.21	Q				
1+35	0.0237	0.21	Q				
1+40	0.0251	0.21	Q				
1+45	0.0265	0.21	Q				
1+50	0.0280	0.21	Q				
1+55	0.0297	0.24	Q				
2+ 0	0.0314	0.25	VQ				
2+ 5	0.0332	0.26	VQ				
2+10	0.0350	0.26	VQ				
2+15	0.0369	0.27	VQ				
2+20	0.0387	0.27	|Q				
2+25	0.0406	0.27	|Q				
2+30	0.0425	0.27	|Q				
2+35	0.0444	0.28	|Q				
2+40	0.0465	0.31	|Q				
2+45	0.0487	0.32	|Q				
2+50	0.0510	0.33	|Q				
2+55	0.0533	0.33	|Q				
3+ 0	0.0556	0.34	|Q				
3+ 5	0.0579	0.34	|Q				
3+10	0.0603	0.34	|Q				
3+15	0.0626	0.34	|Q				
3+20	0.0649	0.34	|Q				
3+25	0.0673	0.34	|Q				
3+30	0.0696	0.34	|Q				
3+35	0.0720	0.34	|Q				
3+40	0.0743	0.34	|QV				
3+45	0.0767	0.34	|QV				
3+50	0.0791	0.35	|QV				
3+55	0.0817	0.38	|QV				
4+ 0	0.0844	0.39	|QV				
4+ 5	0.0871	0.40	|QV				
4+10	0.0899	0.40	|QV				
4+15	0.0926	0.40	|QV				
4+20	0.0955	0.41	|QV				
4+25	0.0985	0.44	|QV				
4+30	0.1017	0.46	|QV				
4+35	0.1049	0.46	|QV				
4+40	0.1081	0.47	|QV				
4+45	0.1113	0.47	|QV				
4+50	0.1147	0.48	|Q V				
4+55	0.1182	0.51	| QV				
5+ 0	0.1218	0.53	| QV				
5+ 5	0.1254	0.52	| QV				
5+10	0.1286	0.47	|Q V				
5+15	0.1316	0.44	|Q V				
5+20	0.1346	0.44	|Q V				
5+25	0.1378	0.46	|Q V				
5+30	0.1410	0.47	|Q V				
5+35	0.1443	0.48	|Q V				
5+40	0.1478	0.51	| QV				
5+45	0.1514	0.53	| Q V				
5+50	0.1551	0.53	| Q V				
5+55	0.1588	0.54	| Q V				
6+ 0	0.1625	0.54	| Q V				
6+ 5	0.1663	0.55	| Q V				
6+10	0.1702	0.58	| Q V				
6+15	0.1743	0.59	| Q V				

6+20	0.1785	0.60	Q V				
6+25	0.1826	0.61	Q V				
6+30	0.1868	0.61	Q V				
6+35	0.1911	0.62	Q V				
6+40	0.1955	0.65	Q V				
6+45	0.2001	0.66	Q V				
6+50	0.2047	0.67	Q V				
6+55	0.2093	0.67	Q V				
7+ 0	0.2140	0.68	Q V				
7+ 5	0.2187	0.68	Q V				
7+10	0.2233	0.68	Q V				
7+15	0.2280	0.68	Q V				
7+20	0.2328	0.69	Q V				
7+25	0.2377	0.72	Q V				
7+30	0.2427	0.73	Q V				
7+35	0.2479	0.75	Q V				
7+40	0.2532	0.78	Q V				
7+45	0.2587	0.80	Q V				
7+50	0.2643	0.81	Q V				
7+55	0.2701	0.84	Q V				
8+ 0	0.2760	0.86	Q V				
8+ 5	0.2821	0.88	Q V				
8+10	0.2886	0.94	Q V				
8+15	0.2954	0.98	Q V				
8+20	0.3022	0.99	Q V				
8+25	0.3091	1.00	Q V				
8+30	0.3161	1.01	Q V				
8+35	0.3231	1.02	Q V				
8+40	0.3304	1.05	Q V				
8+45	0.3378	1.07	Q V				
8+50	0.3452	1.08	Q V				
8+55	0.3529	1.12	Q V				
9+ 0	0.3607	1.14	Q V				
9+ 5	0.3687	1.16	Q V				
9+10	0.3771	1.22	Q V				
9+15	0.3857	1.25	Q V				
9+20	0.3945	1.27	Q V				
9+25	0.4035	1.31	Q V				
9+30	0.4127	1.33	Q V				
9+35	0.4220	1.35	Q V				
9+40	0.4316	1.39	Q V				
9+45	0.4413	1.41	Q V				
9+50	0.4511	1.42	Q V				
9+55	0.4611	1.46	Q V				
10+ 0	0.4712	1.48	Q V				
10+ 5	0.4811	1.43	Q V				
10+10	0.4897	1.25	Q V				
10+15	0.4975	1.14	Q V				
10+20	0.5051	1.10	Q V				
10+25	0.5125	1.08	Q V				
10+30	0.5198	1.06	Q V				
10+35	0.5273	1.08	Q V				
10+40	0.5357	1.21	Q V				
10+45	0.5445	1.29	Q V				
10+50	0.5535	1.31	Q V				
10+55	0.5627	1.33	Q V				
11+ 0	0.5719	1.34	Q V				
11+ 5	0.5811	1.34	Q V				
11+10	0.5902	1.32	Q V				
11+15	0.5992	1.31	Q V				
11+20	0.6081	1.30	Q V				
11+25	0.6171	1.30	Q V				
11+30	0.6261	1.30	Q V				
11+35	0.6349	1.28	Q V				
11+40	0.6434	1.23	Q V				
11+45	0.6516	1.20	Q V				
11+50	0.6598	1.19	Q V				
11+55	0.6681	1.21	Q V				
12+ 0	0.6766	1.22	Q V				
12+ 5	0.6854	1.29	Q V				



18+ 0	1.3933	0.29	|Q	|	|	|	V |
18+ 5	1.3953	0.28	|Q	|	|	|	V |
18+10	1.3972	0.28	|Q	|	|	|	V |
18+15	1.3991	0.28	|Q	|	|	|	V |
18+20	1.4010	0.28	|Q	|	|	|	V |
18+25	1.4029	0.28	|Q	|	|	|	V |
18+30	1.4048	0.27	|Q	|	|	|	V |
18+35	1.4066	0.27	|Q	|	|	|	V |
18+40	1.4083	0.24	Q	|	|	|	V |
18+45	1.4098	0.22	Q	|	|	|	V |
18+50	1.4112	0.21	Q	|	|	|	V |
18+55	1.4125	0.18	Q	|	|	|	V |
19+ 0	1.4136	0.16	Q	|	|	|	V |
19+ 5	1.4147	0.16	Q	|	|	|	V |
19+10	1.4159	0.18	Q	|	|	|	V |
19+15	1.4173	0.19	Q	|	|	|	V |
19+20	1.4187	0.20	Q	|	|	|	V |
19+25	1.4203	0.23	Q	|	|	|	V |
19+30	1.4220	0.25	|Q	|	|	|	V |
19+35	1.4237	0.25	|Q	|	|	|	V |
19+40	1.4253	0.23	Q	|	|	|	V |
19+45	1.4268	0.22	Q	|	|	|	V |
19+50	1.4282	0.20	Q	|	|	|	V |
19+55	1.4294	0.17	Q	|	|	|	V |
20+ 0	1.4305	0.16	Q	|	|	|	V |
20+ 5	1.4316	0.16	Q	|	|	|	V |
20+10	1.4328	0.18	Q	|	|	|	V |
20+15	1.4342	0.19	Q	|	|	|	V |
20+20	1.4355	0.20	Q	|	|	|	V |
20+25	1.4369	0.20	Q	|	|	|	V |
20+30	1.4383	0.20	Q	|	|	|	V |
20+35	1.4397	0.20	Q	|	|	|	V |
20+40	1.4411	0.20	Q	|	|	|	V |
20+45	1.4425	0.20	Q	|	|	|	V |
20+50	1.4438	0.20	Q	|	|	|	V |
20+55	1.4450	0.17	Q	|	|	|	V |
21+ 0	1.4460	0.15	Q	|	|	|	V |
21+ 5	1.4471	0.16	Q	|	|	|	V |
21+10	1.4483	0.18	Q	|	|	|	V |
21+15	1.4497	0.19	Q	|	|	|	V|
21+20	1.4510	0.19	Q	|	|	|	V|
21+25	1.4521	0.16	Q	|	|	|	V|
21+30	1.4531	0.15	Q	|	|	|	V|
21+35	1.4542	0.15	Q	|	|	|	V|
21+40	1.4554	0.18	Q	|	|	|	V|
21+45	1.4567	0.19	Q	|	|	|	V|
21+50	1.4580	0.19	Q	|	|	|	V|
21+55	1.4591	0.16	Q	|	|	|	V|
22+ 0	1.4602	0.15	Q	|	|	|	V|
22+ 5	1.4612	0.15	Q	|	|	|	V|
22+10	1.4625	0.18	Q	|	|	|	V|
22+15	1.4638	0.19	Q	|	|	|	V|
22+20	1.4651	0.19	Q	|	|	|	V|
22+25	1.4662	0.16	Q	|	|	|	V|
22+30	1.4672	0.15	Q	|	|	|	V|
22+35	1.4682	0.15	Q	|	|	|	V|
22+40	1.4692	0.14	Q	|	|	|	V|
22+45	1.4702	0.14	Q	|	|	|	V|
22+50	1.4711	0.14	Q	|	|	|	V|
22+55	1.4721	0.14	Q	|	|	|	V|
23+ 0	1.4730	0.14	Q	|	|	|	V|
23+ 5	1.4740	0.14	Q	|	|	|	V|
23+10	1.4749	0.14	Q	|	|	|	V|
23+15	1.4759	0.14	Q	|	|	|	V|
23+20	1.4768	0.14	Q	|	|	|	V|
23+25	1.4777	0.14	Q	|	|	|	V|
23+30	1.4787	0.14	Q	|	|	|	V|
23+35	1.4796	0.14	Q	|	|	|	V|
23+40	1.4806	0.14	Q	|	|	|	V|
23+45	1.4815	0.14	Q	|	|	|	V|

```
   23+50       1.4824      0.14  Q         |         |         |        V|
   23+55       1.4834      0.14  Q         |         |         |        V|
   24+ 0       1.4843      0.14  Q         |         |         |        V|
   24+ 5       1.4852      0.12  Q         |         |         |        V|
   24+10       1.4856      0.07  Q         |         |         |        V|
   24+15       1.4859      0.04  Q         |         |         |        V|
   24+20       1.4860      0.02  Q         |         |         |        V|
   24+25       1.4861      0.02  Q         |         |         |        V|
   24+30       1.4862      0.01  Q         |         |         |        V|
   24+35       1.4863      0.01  Q         |         |         |        V|
   24+40       1.4863      0.00  Q         |         |         |        V|
   24+45       1.4863      0.00  Q         |         |         |        V|
   24+50       1.4863      0.00  Q         |         |         |        V|
   24+55       1.4863      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/26/20 File: 8946E2A11100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
100 YEAR - 1 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.116 Hr.
Lag time = 6.93 Min.
25% of lag time = 1.73 Min.
40% of lag time = 2.77 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]
7.63	0.55	4.20

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	1.30	9.92

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.300(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 %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.670	0.061	1.000	0.061

Sum (F) = 0.061

Area averaged mean soil loss (F) (In/Hr) = 0.061
Minimum soil loss rate ((In/Hr)) = 0.030
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	72.150	11.180	0.860
2	0.167	144.300	41.181	3.167
3	0.250	216.450	22.415	1.724
4	0.333	288.600	8.822	0.678
5	0.417	360.750	5.359	0.412
6	0.500	432.900	3.513	0.270
7	0.583	505.051	2.393	0.184
8	0.667	577.201	1.820	0.140
9	0.750	649.351	1.287	0.099
10	0.833	721.501	0.883	0.068
11	0.917	793.651	0.722	0.055
12	1.000	865.801	0.424	0.033
		Sum = 100.000	Sum=	7.690

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	0.515	0.061	(	0.187)	0.454
2	0.17	4.20	0.655	0.061	(	0.238)	0.594
3	0.25	4.40	0.686	0.061	(	0.250)	0.626
4	0.33	4.80	0.749	0.061	(	0.273)	0.688
5	0.42	5.20	0.811	0.061	(	0.295)	0.750
6	0.50	6.20	0.967	0.061	(	0.352)	0.906
7	0.58	6.80	1.061	0.061	(	0.386)	1.000
8	0.67	8.80	1.373	0.061	(	0.500)	1.312
9	0.75	13.90	2.168	0.061	(	0.789)	2.108
10	0.83	31.40	4.898	0.061	(	1.783)	4.837
11	0.92	7.20	1.123	0.061	(	0.409)	1.062
12	1.00	3.80	0.593	0.061	(	0.216)	0.532
		(Loss Rate Not Used)					
Sum =		100.0				Sum =	14.9

Flood volume = Effective rainfall 1.24(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 0.8(Ac.Ft)
Total soil loss = 0.06(In)
Total soil loss = 0.039(Ac.Ft)
Total rainfall = 1.30(In)
Flood volume = 34323.3 Cubic Feet
Total soil loss = 1680.1 Cubic Feet

Peak flow rate of this hydrograph = 21.785(CFS)

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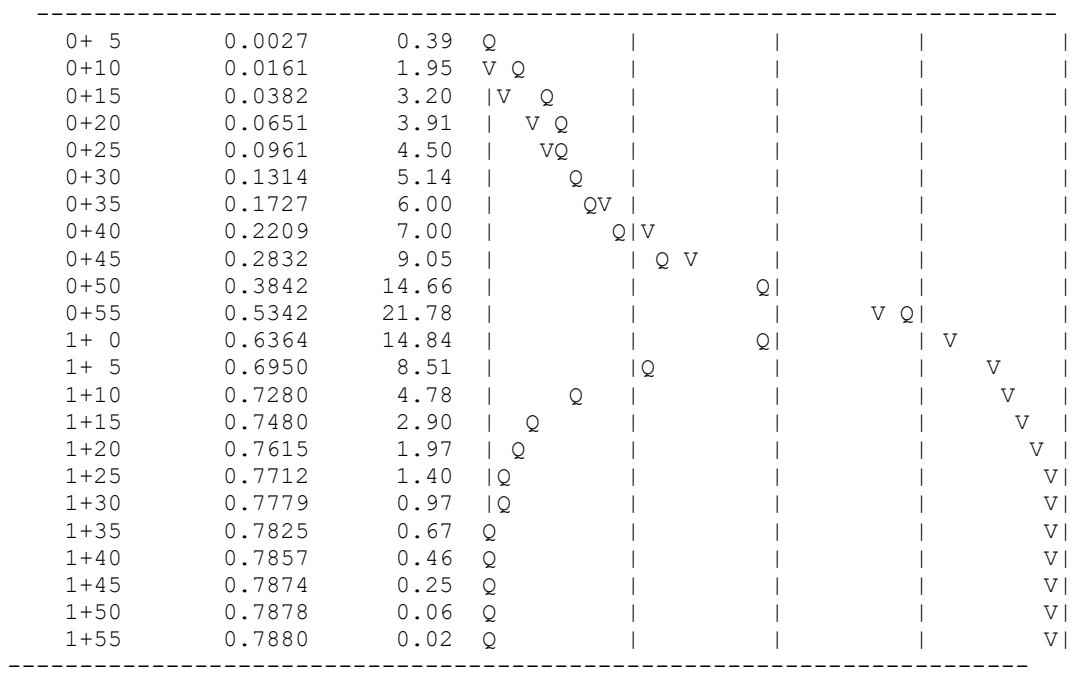
1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5	30.0



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 02/26/20 File: 8946E2A13100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
100 YEAR - 3 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.116 Hr.
Lag time = 6.93 Min.
25% of lag time = 1.73 Min.
40% of lag time = 2.77 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]
7.63	0.90	6.87

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	2.25	17.17

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.900(In)
Area Averaged 100-Year Rainfall = 2.250(In)

Point rain (area averaged) = 2.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.670	0.061	1.000	0.061

Sum (F) = 0.061

Area averaged mean soil loss (F) (In/Hr) = 0.061
Minimum soil loss rate ((In/Hr)) = 0.030
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	72.150	11.180	0.860
2	0.167	144.300	41.181	3.167
3	0.250	216.450	22.415	1.724
4	0.333	288.600	8.822	0.678
5	0.417	360.750	5.359	0.412
6	0.500	432.900	3.513	0.270
7	0.583	505.051	2.393	0.184
8	0.667	577.201	1.820	0.140
9	0.750	649.351	1.287	0.099
10	0.833	721.501	0.883	0.068
11	0.917	793.651	0.722	0.055
12	1.000	865.801	0.424	0.033
			Sum = 100.000 Sum=	7.690

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	0.351	0.061	(0.128)	0.290
2	0.17	1.30	0.351	0.061	(0.128)	0.290
3	0.25	1.10	0.297	0.061	(0.108)	0.236
4	0.33	1.50	0.405	0.061	(0.147)	0.344
5	0.42	1.50	0.405	0.061	(0.147)	0.344
6	0.50	1.80	0.486	0.061	(0.177)	0.425
7	0.58	1.50	0.405	0.061	(0.147)	0.344
8	0.67	1.80	0.486	0.061	(0.177)	0.425
9	0.75	1.80	0.486	0.061	(0.177)	0.425
10	0.83	1.50	0.405	0.061	(0.147)	0.344
11	0.92	1.60	0.432	0.061	(0.157)	0.371
12	1.00	1.80	0.486	0.061	(0.177)	0.425
13	1.08	2.20	0.594	0.061	(0.216)	0.533
14	1.17	2.20	0.594	0.061	(0.216)	0.533
15	1.25	2.20	0.594	0.061	(0.216)	0.533
16	1.33	2.00	0.540	0.061	(0.197)	0.479
17	1.42	2.60	0.702	0.061	(0.256)	0.641
18	1.50	2.70	0.729	0.061	(0.265)	0.668
19	1.58	2.40	0.648	0.061	(0.236)	0.587
20	1.67	2.70	0.729	0.061	(0.265)	0.668
21	1.75	3.30	0.891	0.061	(0.324)	0.830
22	1.83	3.10	0.837	0.061	(0.305)	0.776
23	1.92	2.90	0.783	0.061	(0.285)	0.722
24	2.00	3.00	0.810	0.061	(0.295)	0.749
25	2.08	3.10	0.837	0.061	(0.305)	0.776
26	2.17	4.20	1.134	0.061	(0.413)	1.073
27	2.25	5.00	1.350	0.061	(0.491)	1.289
28	2.33	3.50	0.945	0.061	(0.344)	0.884
29	2.42	6.80	1.836	0.061	(0.668)	1.775
30	2.50	7.30	1.971	0.061	(0.717)	1.910
31	2.58	8.20	2.214	0.061	(0.806)	2.153
32	2.67	5.90	1.593	0.061	(0.580)	1.532
33	2.75	2.00	0.540	0.061	(0.197)	0.479
34	2.83	1.80	0.486	0.061	(0.177)	0.425

```
35   2.92     1.80      0.486          0.061    (  0.177)        0.425
36   3.00     0.60      0.162       (  0.061)       0.059        0.103
            (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    24.8
     Flood volume = Effective rainfall      2.07(In)
      times area       7.6(Ac.)/[(In)/(Ft.)] =       1.3(Ac.Ft)
     Total soil loss =      0.18(In)
     Total soil loss =     0.116(Ac.Ft)
     Total rainfall =      2.25(In)
     Flood volume =       57279.4 Cubic Feet
     Total soil loss =        5036.5 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     13.852(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       0.0017      0.25  Q         |         |         |         |
  0+10       0.0098      1.17  V Q       |         |         |         |
  0+15       0.0210      1.62  V  Q      |         |         |         |
  0+20       0.0330      1.74  |V Q      |         |         |         |
  0+25       0.0475      2.11  |V  Q     |         |         |         |
  0+30       0.0641      2.41  |V  Q     |         |         |         |
  0+35       0.0827      2.70  | V  Q    |         |         |         |
  0+40       0.1015      2.72  |  V Q    |         |         |         |
  0+45       0.1217      2.94  |  V Q    |         |         |         |
  0+50       0.1426      3.02  |   V Q   |         |         |         |
  0+55       0.1623      2.86  |   VQ    |         |         |         |
  1+ 0       0.1822      2.90  |    Q    |         |         |         |
  1+ 5       0.2041      3.17  |     Q   |         |         |         |
  1+10       0.2289      3.61  |     VQ  |         |         |         |
  1+15       0.2553      3.83  |      Q  |         |         |         |
  1+20       0.2821      3.88  |      QV |         |         |         |
  1+25       0.3090      3.91  |      Q V|         |         |         |
  1+30       0.3392      4.39  |       Q V         |         |         |
  1+35       0.3714      4.67  |        Q|V        |         |         |
  1+40       0.4033      4.64  |        Q| V       |         |         |
  1+45       0.4376      4.98  |        Q|  V      |         |         |
  1+50       0.4761      5.59  |         |Q  V     |         |         |
  1+55       0.5154      5.71  |         |Q   V    |         |         |
  2+ 0       0.5540      5.61  |         |Q    V   |         |         |
  2+ 5       0.5932      5.68  |         |Q      V |         |         |
  2+10       0.6350      6.07  |         | Q      V|         |         |
  2+15       0.6850      7.27  |         |   Q     V         |         |
  2+20       0.7411      8.15  |         |     Q   | V       |         |
  2+25       0.7978      8.23  |         |     Q   |   V     |         |
  2+30       0.8718     10.75  |         |         |Q    V   |         |
  2+35       0.9602     12.83  |         |         |    Q   V|         |
  2+40       1.0556     13.85  |         |         |      Q  | V       |
  2+45       1.1370     11.83  |         |         |  Q      |   V     |
  2+50       1.1909      7.82  |         |    Q    |         |     V   |
  2+55       1.2302      5.70  |         |Q        |         |      V  |
  3+ 0       1.2617      4.57  |         Q|        |         |       V |
  3+ 5       1.2821      2.97  |    Q     |        |         |        V|
  3+10       1.2942      1.76  |  Q       |        |         |        V|
  3+15       1.3020      1.13  | Q        |        |         |        V|
  3+20       1.3073      0.76  |Q         |        |         |        V|
  3+25       1.3107      0.50  Q          |        |         |        V|
  3+30       1.3128      0.31  Q          |        |         |        V|
  3+35       1.3140      0.16  Q          |        |         |        V|
  3+40       1.3145      0.08  Q          |        |         |        V|
  3+45       1.3148      0.04  Q          |        |         |        V|
  3+50       1.3149      0.02  Q          |        |         |        V|
  3+55       1.3150      0.00  Q          |        |         |         V
```

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

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Study date 02/26/20 File: 8946E2A16100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
100 YEAR - 6 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.116 Hr.
Lag time = 6.93 Min.
25% of lag time = 1.73 Min.
40% of lag time = 2.77 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]
7.63	1.30	9.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	3.00	22.89

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.300(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.670	0.061	1.000	0.061

Sum (F) = 0.061

Area averaged mean soil loss (F) (In/Hr) = 0.061
Minimum soil loss rate ((In/Hr)) = 0.030
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	72.150	11.180	0.860
2	0.167	144.300	41.181	3.167
3	0.250	216.450	22.415	1.724
4	0.333	288.600	8.822	0.678
5	0.417	360.750	5.359	0.412
6	0.500	432.900	3.513	0.270
7	0.583	505.051	2.393	0.184
8	0.667	577.201	1.820	0.140
9	0.750	649.351	1.287	0.099
10	0.833	721.501	0.883	0.068
11	0.917	793.651	0.722	0.055
12	1.000	865.801	0.424	0.033
			Sum = 100.000 Sum=	7.690

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	0.180	0.061	(0.066)	0.119
2	0.17	0.60	0.216	0.061	(0.079)	0.155
3	0.25	0.60	0.216	0.061	(0.079)	0.155
4	0.33	0.60	0.216	0.061	(0.079)	0.155
5	0.42	0.60	0.216	0.061	(0.079)	0.155
6	0.50	0.70	0.252	0.061	(0.092)	0.191
7	0.58	0.70	0.252	0.061	(0.092)	0.191
8	0.67	0.70	0.252	0.061	(0.092)	0.191
9	0.75	0.70	0.252	0.061	(0.092)	0.191
10	0.83	0.70	0.252	0.061	(0.092)	0.191
11	0.92	0.70	0.252	0.061	(0.092)	0.191
12	1.00	0.80	0.288	0.061	(0.105)	0.227
13	1.08	0.80	0.288	0.061	(0.105)	0.227
14	1.17	0.80	0.288	0.061	(0.105)	0.227
15	1.25	0.80	0.288	0.061	(0.105)	0.227
16	1.33	0.80	0.288	0.061	(0.105)	0.227
17	1.42	0.80	0.288	0.061	(0.105)	0.227
18	1.50	0.80	0.288	0.061	(0.105)	0.227
19	1.58	0.80	0.288	0.061	(0.105)	0.227
20	1.67	0.80	0.288	0.061	(0.105)	0.227
21	1.75	0.80	0.288	0.061	(0.105)	0.227
22	1.83	0.80	0.288	0.061	(0.105)	0.227
23	1.92	0.80	0.288	0.061	(0.105)	0.227
24	2.00	0.90	0.324	0.061	(0.118)	0.263
25	2.08	0.80	0.288	0.061	(0.105)	0.227
26	2.17	0.90	0.324	0.061	(0.118)	0.263
27	2.25	0.90	0.324	0.061	(0.118)	0.263
28	2.33	0.90	0.324	0.061	(0.118)	0.263
29	2.42	0.90	0.324	0.061	(0.118)	0.263
30	2.50	0.90	0.324	0.061	(0.118)	0.263
31	2.58	0.90	0.324	0.061	(0.118)	0.263
32	2.67	0.90	0.324	0.061	(0.118)	0.263
33	2.75	1.00	0.360	0.061	(0.131)	0.299
34	2.83	1.00	0.360	0.061	(0.131)	0.299

35	2.92	1.00	0.360	0.061	(0.131)		0.299
36	3.00	1.00	0.360	0.061	(0.131)		0.299
37	3.08	1.00	0.360	0.061	(0.131)		0.299
38	3.17	1.10	0.396	0.061	(0.144)		0.335
39	3.25	1.10	0.396	0.061	(0.144)		0.335
40	3.33	1.10	0.396	0.061	(0.144)		0.335
41	3.42	1.20	0.432	0.061	(0.157)		0.371
42	3.50	1.30	0.468	0.061	(0.170)		0.407
43	3.58	1.40	0.504	0.061	(0.183)		0.443
44	3.67	1.40	0.504	0.061	(0.183)		0.443
45	3.75	1.50	0.540	0.061	(0.197)		0.479
46	3.83	1.50	0.540	0.061	(0.197)		0.479
47	3.92	1.60	0.576	0.061	(0.210)		0.515
48	4.00	1.60	0.576	0.061	(0.210)		0.515
49	4.08	1.70	0.612	0.061	(0.223)		0.551
50	4.17	1.80	0.648	0.061	(0.236)		0.587
51	4.25	1.90	0.684	0.061	(0.249)		0.623
52	4.33	2.00	0.720	0.061	(0.262)		0.659
53	4.42	2.10	0.756	0.061	(0.275)		0.695
54	4.50	2.10	0.756	0.061	(0.275)		0.695
55	4.58	2.20	0.792	0.061	(0.288)		0.731
56	4.67	2.30	0.828	0.061	(0.301)		0.767
57	4.75	2.40	0.864	0.061	(0.314)		0.803
58	4.83	2.40	0.864	0.061	(0.314)		0.803
59	4.92	2.50	0.900	0.061	(0.328)		0.839
60	5.00	2.60	0.936	0.061	(0.341)		0.875
61	5.08	3.10	1.116	0.061	(0.406)		1.055
62	5.17	3.60	1.296	0.061	(0.472)		1.235
63	5.25	3.90	1.404	0.061	(0.511)		1.343
64	5.33	4.20	1.512	0.061	(0.550)		1.451
65	5.42	4.70	1.692	0.061	(0.616)		1.631
66	5.50	5.60	2.016	0.061	(0.734)		1.955
67	5.58	1.90	0.684	0.061	(0.249)		0.623
68	5.67	0.90	0.324	0.061	(0.118)		0.263
69	5.75	0.60	0.216	0.061	(0.079)		0.155
70	5.83	0.50	0.180	0.061	(0.066)		0.119
71	5.92	0.30	0.108	(0.061)	0.039		0.069
72	6.00	0.20	0.072	(0.061)	0.026		0.046

(Loss Rate Not Used)

Sum = 100.0 Sum = 31.7

Flood volume = Effective rainfall 2.64(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 1.7(Ac.Ft)

Total soil loss = 0.36(In)

Total soil loss = 0.228(Ac.Ft)

Total rainfall = 3.00(In)

Flood volume = 73136.5 Cubic Feet

Total soil loss = 9952.0 Cubic Feet

Peak flow rate of this hydrograph = 11.941(CFS)

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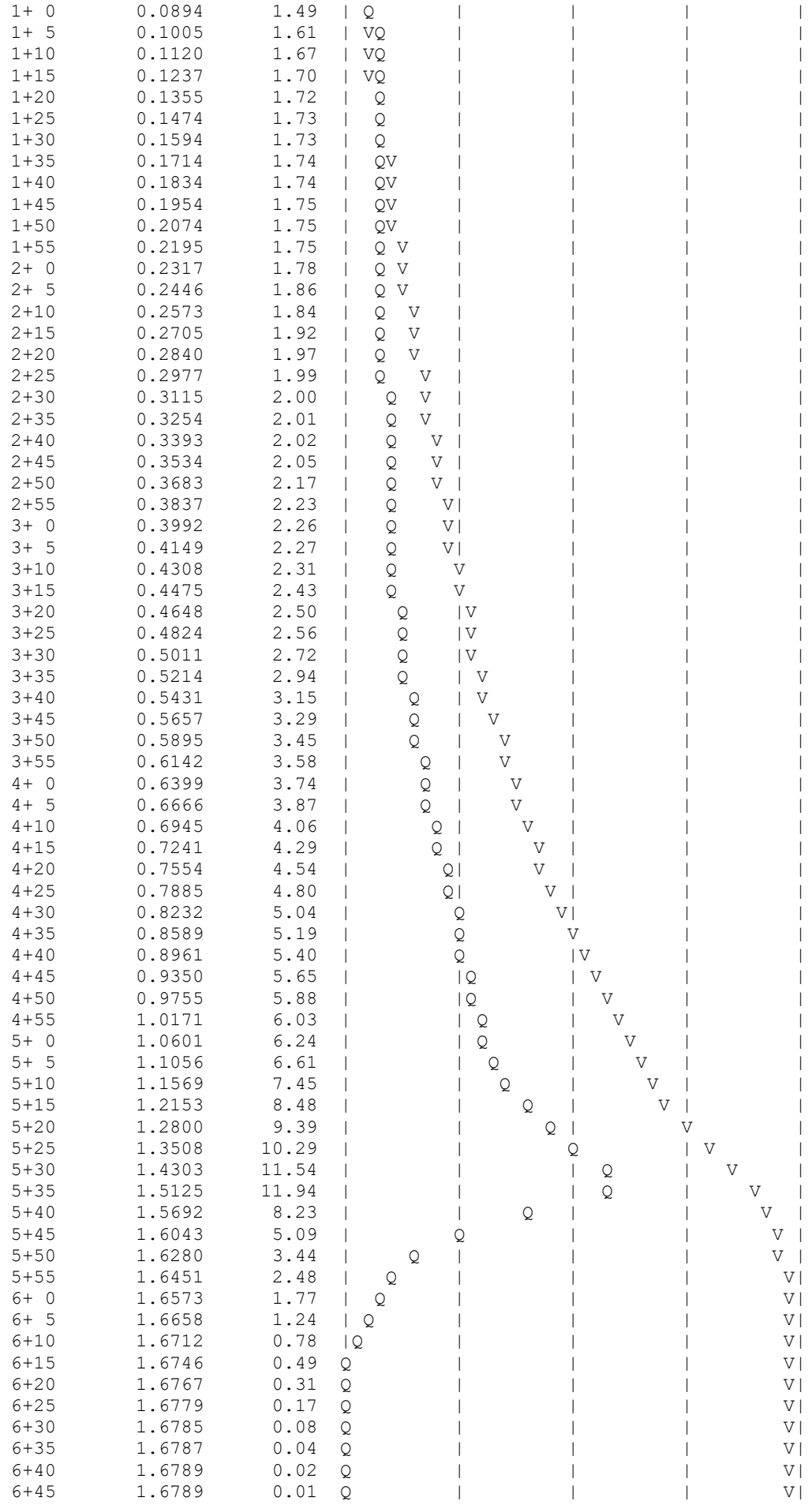
6 - H O U R S T O R M

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	5.0	10.0	15.0	20.0
0+ 5	0.0007	0.10	Q	|	|	|	|
0+10	0.0042	0.51	VQ	|	|	|	|
0+15	0.0100	0.83	VQ	|	|	|	|
0+20	0.0167	0.97	VQ	|	|	|	|
0+25	0.0239	1.05	V Q	|	|	|	|
0+30	0.0316	1.13	V Q	|	|	|	|
0+35	0.0404	1.27	V Q	|	|	|	|
0+40	0.0498	1.36	|VQ	|	|	|	|
0+45	0.0594	1.40	|VQ	|	|	|	|
0+50	0.0692	1.43	|VQ	|	|	|	|
0+55	0.0792	1.44	|VQ	|	|	|	|



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    6+50       1.6790      0.00  Q         |         |         |        V|
    6+55       1.6790      0.00  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/26/20 File: 8946E2A124100.out

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

Program License Serial Number 6310

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

English Units used in output format

AREA C
PROPOSED CONDITION
100 YEAR - 24 HOUR
HYDROGRAPH

Drainage Area = 7.63(Ac.) = 0.012 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 7.63(Ac.) = 0.012 Sq. Mi.
USER Entry of lag time in hours
Lag time = 0.116 Hr.
Lag time = 6.93 Min.
25% of lag time = 1.73 Min.
40% of lag time = 2.77 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	2.25	17.17

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
7.63	5.25	40.06

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.250(In)
Area Averaged 100-Year Rainfall = 5.250(In)

Point rain (area averaged) = 5.250(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
7.630	75.00	0.670

Total Area Entered = 7.63(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
75.0	88.0	0.153	0.670	0.061	1.000	0.061

Sum (F) = 0.061

Area averaged mean soil loss (F) (In/Hr) = 0.061
Minimum soil loss rate ((In/Hr)) = 0.030
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.364

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	72.150	11.180	0.860
2	0.167	144.300	41.181	3.167
3	0.250	216.450	22.415	1.724
4	0.333	288.600	8.822	0.678
5	0.417	360.750	5.359	0.412
6	0.500	432.900	3.513	0.270
7	0.583	505.051	2.393	0.184
8	0.667	577.201	1.820	0.140
9	0.750	649.351	1.287	0.099
10	0.833	721.501	0.883	0.068
11	0.917	793.651	0.722	0.055
12	1.000	865.801	0.424	0.033
			Sum = 100.000 Sum=	7.690

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	0.042	(0.108)	0.015	0.027
2	0.17	0.07	0.042	(0.107)	0.015	0.027
3	0.25	0.07	0.042	(0.107)	0.015	0.027
4	0.33	0.10	0.063	(0.106)	0.023	0.040
5	0.42	0.10	0.063	(0.106)	0.023	0.040
6	0.50	0.10	0.063	(0.105)	0.023	0.040
7	0.58	0.10	0.063	(0.105)	0.023	0.040
8	0.67	0.10	0.063	(0.105)	0.023	0.040
9	0.75	0.10	0.063	(0.104)	0.023	0.040
10	0.83	0.13	0.084	(0.104)	0.031	0.053
11	0.92	0.13	0.084	(0.103)	0.031	0.053
12	1.00	0.13	0.084	(0.103)	0.031	0.053
13	1.08	0.10	0.063	(0.103)	0.023	0.040
14	1.17	0.10	0.063	(0.102)	0.023	0.040
15	1.25	0.10	0.063	(0.102)	0.023	0.040
16	1.33	0.10	0.063	(0.101)	0.023	0.040
17	1.42	0.10	0.063	(0.101)	0.023	0.040
18	1.50	0.10	0.063	(0.101)	0.023	0.040
19	1.58	0.10	0.063	(0.100)	0.023	0.040
20	1.67	0.10	0.063	(0.100)	0.023	0.040
21	1.75	0.10	0.063	(0.099)	0.023	0.040
22	1.83	0.13	0.084	(0.099)	0.031	0.053
23	1.92	0.13	0.084	(0.099)	0.031	0.053
24	2.00	0.13	0.084	(0.098)	0.031	0.053
25	2.08	0.13	0.084	(0.098)	0.031	0.053
26	2.17	0.13	0.084	(0.097)	0.031	0.053
27	2.25	0.13	0.084	(0.097)	0.031	0.053
28	2.33	0.13	0.084	(0.097)	0.031	0.053
29	2.42	0.13	0.084	(0.096)	0.031	0.053
30	2.50	0.13	0.084	(0.096)	0.031	0.053
31	2.58	0.17	0.105	(0.095)	0.038	0.067
32	2.67	0.17	0.105	(0.095)	0.038	0.067
33	2.75	0.17	0.105	(0.095)	0.038	0.067
34	2.83	0.17	0.105	(0.094)	0.038	0.067

35	2.92	0.17	0.105	(0.094)	0.038	0.067
36	3.00	0.17	0.105	(0.093)	0.038	0.067
37	3.08	0.17	0.105	(0.093)	0.038	0.067
38	3.17	0.17	0.105	(0.093)	0.038	0.067
39	3.25	0.17	0.105	(0.092)	0.038	0.067
40	3.33	0.17	0.105	(0.092)	0.038	0.067
41	3.42	0.17	0.105	(0.092)	0.038	0.067
42	3.50	0.17	0.105	(0.091)	0.038	0.067
43	3.58	0.17	0.105	(0.091)	0.038	0.067
44	3.67	0.17	0.105	(0.090)	0.038	0.067
45	3.75	0.17	0.105	(0.090)	0.038	0.067
46	3.83	0.20	0.126	(0.090)	0.046	0.080
47	3.92	0.20	0.126	(0.089)	0.046	0.080
48	4.00	0.20	0.126	(0.089)	0.046	0.080
49	4.08	0.20	0.126	(0.088)	0.046	0.080
50	4.17	0.20	0.126	(0.088)	0.046	0.080
51	4.25	0.20	0.126	(0.088)	0.046	0.080
52	4.33	0.23	0.147	(0.087)	0.054	0.093
53	4.42	0.23	0.147	(0.087)	0.054	0.093
54	4.50	0.23	0.147	(0.087)	0.054	0.093
55	4.58	0.23	0.147	(0.086)	0.054	0.093
56	4.67	0.23	0.147	(0.086)	0.054	0.093
57	4.75	0.23	0.147	(0.086)	0.054	0.093
58	4.83	0.27	0.168	(0.085)	0.061	0.107
59	4.92	0.27	0.168	(0.085)	0.061	0.107
60	5.00	0.27	0.168	(0.084)	0.061	0.107
61	5.08	0.20	0.126	(0.084)	0.046	0.080
62	5.17	0.20	0.126	(0.084)	0.046	0.080
63	5.25	0.20	0.126	(0.083)	0.046	0.080
64	5.33	0.23	0.147	(0.083)	0.054	0.093
65	5.42	0.23	0.147	(0.083)	0.054	0.093
66	5.50	0.23	0.147	(0.082)	0.054	0.093
67	5.58	0.27	0.168	(0.082)	0.061	0.107
68	5.67	0.27	0.168	(0.082)	0.061	0.107
69	5.75	0.27	0.168	(0.081)	0.061	0.107
70	5.83	0.27	0.168	(0.081)	0.061	0.107
71	5.92	0.27	0.168	(0.080)	0.061	0.107
72	6.00	0.27	0.168	(0.080)	0.061	0.107
73	6.08	0.30	0.189	(0.080)	0.069	0.120
74	6.17	0.30	0.189	(0.079)	0.069	0.120
75	6.25	0.30	0.189	(0.079)	0.069	0.120
76	6.33	0.30	0.189	(0.079)	0.069	0.120
77	6.42	0.30	0.189	(0.078)	0.069	0.120
78	6.50	0.30	0.189	(0.078)	0.069	0.120
79	6.58	0.33	0.210	(0.078)	0.076	0.134
80	6.67	0.33	0.210	(0.077)	0.076	0.134
81	6.75	0.33	0.210	(0.077)	0.076	0.134
82	6.83	0.33	0.210	(0.077)	0.076	0.134
83	6.92	0.33	0.210	0.076	(0.076)	0.134
84	7.00	0.33	0.210	0.076	(0.076)	0.134
85	7.08	0.33	0.210	0.076	(0.076)	0.134
86	7.17	0.33	0.210	0.075	(0.076)	0.135
87	7.25	0.33	0.210	0.075	(0.076)	0.135
88	7.33	0.37	0.231	0.074	(0.084)	0.157
89	7.42	0.37	0.231	0.074	(0.084)	0.157
90	7.50	0.37	0.231	0.074	(0.084)	0.157
91	7.58	0.40	0.252	0.073	(0.092)	0.179
92	7.67	0.40	0.252	0.073	(0.092)	0.179
93	7.75	0.40	0.252	0.073	(0.092)	0.179
94	7.83	0.43	0.273	0.072	(0.099)	0.201
95	7.92	0.43	0.273	0.072	(0.099)	0.201
96	8.00	0.43	0.273	0.072	(0.099)	0.201
97	8.08	0.50	0.315	0.071	(0.115)	0.244
98	8.17	0.50	0.315	0.071	(0.115)	0.244
99	8.25	0.50	0.315	0.071	(0.115)	0.244
100	8.33	0.50	0.315	0.070	(0.115)	0.245
101	8.42	0.50	0.315	0.070	(0.115)	0.245
102	8.50	0.50	0.315	0.070	(0.115)	0.245
103	8.58	0.53	0.336	0.069	(0.122)	0.267
104	8.67	0.53	0.336	0.069	(0.122)	0.267

105	8.75	0.53	0.336	0.069	(	0.122)	0.267
106	8.83	0.57	0.357	0.069	(	0.130)	0.288
107	8.92	0.57	0.357	0.068	(	0.130)	0.289
108	9.00	0.57	0.357	0.068	(	0.130)	0.289
109	9.08	0.63	0.399	0.068	(	0.145)	0.331
110	9.17	0.63	0.399	0.067	(	0.145)	0.332
111	9.25	0.63	0.399	0.067	(	0.145)	0.332
112	9.33	0.67	0.420	0.067	(	0.153)	0.353
113	9.42	0.67	0.420	0.066	(	0.153)	0.354
114	9.50	0.67	0.420	0.066	(	0.153)	0.354
115	9.58	0.70	0.441	0.066	(	0.161)	0.375
116	9.67	0.70	0.441	0.065	(	0.161)	0.376
117	9.75	0.70	0.441	0.065	(	0.161)	0.376
118	9.83	0.73	0.462	0.065	(	0.168)	0.397
119	9.92	0.73	0.462	0.064	(	0.168)	0.398
120	10.00	0.73	0.462	0.064	(	0.168)	0.398
121	10.08	0.50	0.315	0.064	(	0.115)	0.251
122	10.17	0.50	0.315	0.063	(	0.115)	0.252
123	10.25	0.50	0.315	0.063	(	0.115)	0.252
124	10.33	0.50	0.315	0.063	(	0.115)	0.252
125	10.42	0.50	0.315	0.063	(	0.115)	0.252
126	10.50	0.50	0.315	0.062	(	0.115)	0.253
127	10.58	0.67	0.420	0.062	(	0.153)	0.358
128	10.67	0.67	0.420	0.062	(	0.153)	0.358
129	10.75	0.67	0.420	0.061	(	0.153)	0.359
130	10.83	0.67	0.420	0.061	(	0.153)	0.359
131	10.92	0.67	0.420	0.061	(	0.153)	0.359
132	11.00	0.67	0.420	0.060	(	0.153)	0.360
133	11.08	0.63	0.399	0.060	(	0.145)	0.339
134	11.17	0.63	0.399	0.060	(	0.145)	0.339
135	11.25	0.63	0.399	0.060	(	0.145)	0.339
136	11.33	0.63	0.399	0.059	(	0.145)	0.340
137	11.42	0.63	0.399	0.059	(	0.145)	0.340
138	11.50	0.63	0.399	0.059	(	0.145)	0.340
139	11.58	0.57	0.357	0.058	(	0.130)	0.299
140	11.67	0.57	0.357	0.058	(	0.130)	0.299
141	11.75	0.57	0.357	0.058	(	0.130)	0.299
142	11.83	0.60	0.378	0.057	(	0.138)	0.321
143	11.92	0.60	0.378	0.057	(	0.138)	0.321
144	12.00	0.60	0.378	0.057	(	0.138)	0.321
145	12.08	0.83	0.525	0.057	(	0.191)	0.468
146	12.17	0.83	0.525	0.056	(	0.191)	0.469
147	12.25	0.83	0.525	0.056	(	0.191)	0.469
148	12.33	0.87	0.546	0.056	(	0.199)	0.490
149	12.42	0.87	0.546	0.055	(	0.199)	0.490
150	12.50	0.87	0.546	0.055	(	0.199)	0.491
151	12.58	0.93	0.588	0.055	(	0.214)	0.533
152	12.67	0.93	0.588	0.055	(	0.214)	0.533
153	12.75	0.93	0.588	0.054	(	0.214)	0.534
154	12.83	0.97	0.609	0.054	(	0.222)	0.555
155	12.92	0.97	0.609	0.054	(	0.222)	0.555
156	13.00	0.97	0.609	0.054	(	0.222)	0.555
157	13.08	1.13	0.714	0.053	(	0.260)	0.661
158	13.17	1.13	0.714	0.053	(	0.260)	0.661
159	13.25	1.13	0.714	0.053	(	0.260)	0.661
160	13.33	1.13	0.714	0.052	(	0.260)	0.661
161	13.42	1.13	0.714	0.052	(	0.260)	0.662
162	13.50	1.13	0.714	0.052	(	0.260)	0.662
163	13.58	0.77	0.483	0.052	(	0.176)	0.431
164	13.67	0.77	0.483	0.051	(	0.176)	0.432
165	13.75	0.77	0.483	0.051	(	0.176)	0.432
166	13.83	0.77	0.483	0.051	(	0.176)	0.432
167	13.92	0.77	0.483	0.051	(	0.176)	0.432
168	14.00	0.77	0.483	0.050	(	0.176)	0.433
169	14.08	0.90	0.567	0.050	(	0.206)	0.517
170	14.17	0.90	0.567	0.050	(	0.206)	0.517
171	14.25	0.90	0.567	0.050	(	0.206)	0.517
172	14.33	0.87	0.546	0.049	(	0.199)	0.497
173	14.42	0.87	0.546	0.049	(	0.199)	0.497
174	14.50	0.87	0.546	0.049	(	0.199)	0.497

175	14.58	0.87	0.546		0.049	(0.199)	0.497
176	14.67	0.87	0.546		0.048	(0.199)	0.498
177	14.75	0.87	0.546		0.048	(0.199)	0.498
178	14.83	0.83	0.525		0.048	(0.191)	0.477
179	14.92	0.83	0.525		0.048	(0.191)	0.477
180	15.00	0.83	0.525		0.047	(0.191)	0.478
181	15.08	0.80	0.504		0.047	(0.183)	0.457
182	15.17	0.80	0.504		0.047	(0.183)	0.457
183	15.25	0.80	0.504		0.047	(0.183)	0.457
184	15.33	0.77	0.483		0.046	(0.176)	0.437
185	15.42	0.77	0.483		0.046	(0.176)	0.437
186	15.50	0.77	0.483		0.046	(0.176)	0.437
187	15.58	0.63	0.399		0.046	(0.145)	0.353
188	15.67	0.63	0.399		0.045	(0.145)	0.354
189	15.75	0.63	0.399		0.045	(0.145)	0.354
190	15.83	0.63	0.399		0.045	(0.145)	0.354
191	15.92	0.63	0.399		0.045	(0.145)	0.354
192	16.00	0.63	0.399		0.045	(0.145)	0.354
193	16.08	0.13	0.084	(0.044)		0.031	0.053
194	16.17	0.13	0.084	(0.044)		0.031	0.053
195	16.25	0.13	0.084	(0.044)		0.031	0.053
196	16.33	0.13	0.084	(0.044)		0.031	0.053
197	16.42	0.13	0.084	(0.043)		0.031	0.053
198	16.50	0.13	0.084	(0.043)		0.031	0.053
199	16.58	0.10	0.063	(0.043)		0.023	0.040
200	16.67	0.10	0.063	(0.043)		0.023	0.040
201	16.75	0.10	0.063	(0.043)		0.023	0.040
202	16.83	0.10	0.063	(0.042)		0.023	0.040
203	16.92	0.10	0.063	(0.042)		0.023	0.040
204	17.00	0.10	0.063	(0.042)		0.023	0.040
205	17.08	0.17	0.105	(0.042)		0.038	0.067
206	17.17	0.17	0.105	(0.041)		0.038	0.067
207	17.25	0.17	0.105	(0.041)		0.038	0.067
208	17.33	0.17	0.105	(0.041)		0.038	0.067
209	17.42	0.17	0.105	(0.041)		0.038	0.067
210	17.50	0.17	0.105	(0.041)		0.038	0.067
211	17.58	0.17	0.105	(0.040)		0.038	0.067
212	17.67	0.17	0.105	(0.040)		0.038	0.067
213	17.75	0.17	0.105	(0.040)		0.038	0.067
214	17.83	0.13	0.084	(0.040)		0.031	0.053
215	17.92	0.13	0.084	(0.040)		0.031	0.053
216	18.00	0.13	0.084	(0.039)		0.031	0.053
217	18.08	0.13	0.084	(0.039)		0.031	0.053
218	18.17	0.13	0.084	(0.039)		0.031	0.053
219	18.25	0.13	0.084	(0.039)		0.031	0.053
220	18.33	0.13	0.084	(0.039)		0.031	0.053
221	18.42	0.13	0.084	(0.039)		0.031	0.053
222	18.50	0.13	0.084	(0.038)		0.031	0.053
223	18.58	0.10	0.063	(0.038)		0.023	0.040
224	18.67	0.10	0.063	(0.038)		0.023	0.040
225	18.75	0.10	0.063	(0.038)		0.023	0.040
226	18.83	0.07	0.042	(0.038)		0.015	0.027
227	18.92	0.07	0.042	(0.037)		0.015	0.027
228	19.00	0.07	0.042	(0.037)		0.015	0.027
229	19.08	0.10	0.063	(0.037)		0.023	0.040
230	19.17	0.10	0.063	(0.037)		0.023	0.040
231	19.25	0.10	0.063	(0.037)		0.023	0.040
232	19.33	0.13	0.084	(0.037)		0.031	0.053
233	19.42	0.13	0.084	(0.036)		0.031	0.053
234	19.50	0.13	0.084	(0.036)		0.031	0.053
235	19.58	0.10	0.063	(0.036)		0.023	0.040
236	19.67	0.10	0.063	(0.036)		0.023	0.040
237	19.75	0.10	0.063	(0.036)		0.023	0.040
238	19.83	0.07	0.042	(0.036)		0.015	0.027
239	19.92	0.07	0.042	(0.035)		0.015	0.027
240	20.00	0.07	0.042	(0.035)		0.015	0.027
241	20.08	0.10	0.063	(0.035)		0.023	0.040
242	20.17	0.10	0.063	(0.035)		0.023	0.040
243	20.25	0.10	0.063	(0.035)		0.023	0.040
244	20.33	0.10	0.063	(0.035)		0.023	0.040

245	20.42	0.10	0.063	(0.034)	0.023	0.040
246	20.50	0.10	0.063	(0.034)	0.023	0.040
247	20.58	0.10	0.063	(0.034)	0.023	0.040
248	20.67	0.10	0.063	(0.034)	0.023	0.040
249	20.75	0.10	0.063	(0.034)	0.023	0.040
250	20.83	0.07	0.042	(0.034)	0.015	0.027
251	20.92	0.07	0.042	(0.034)	0.015	0.027
252	21.00	0.07	0.042	(0.033)	0.015	0.027
253	21.08	0.10	0.063	(0.033)	0.023	0.040
254	21.17	0.10	0.063	(0.033)	0.023	0.040
255	21.25	0.10	0.063	(0.033)	0.023	0.040
256	21.33	0.07	0.042	(0.033)	0.015	0.027
257	21.42	0.07	0.042	(0.033)	0.015	0.027
258	21.50	0.07	0.042	(0.033)	0.015	0.027
259	21.58	0.10	0.063	(0.033)	0.023	0.040
260	21.67	0.10	0.063	(0.032)	0.023	0.040
261	21.75	0.10	0.063	(0.032)	0.023	0.040
262	21.83	0.07	0.042	(0.032)	0.015	0.027
263	21.92	0.07	0.042	(0.032)	0.015	0.027
264	22.00	0.07	0.042	(0.032)	0.015	0.027
265	22.08	0.10	0.063	(0.032)	0.023	0.040
266	22.17	0.10	0.063	(0.032)	0.023	0.040
267	22.25	0.10	0.063	(0.032)	0.023	0.040
268	22.33	0.07	0.042	(0.032)	0.015	0.027
269	22.42	0.07	0.042	(0.032)	0.015	0.027
270	22.50	0.07	0.042	(0.031)	0.015	0.027
271	22.58	0.07	0.042	(0.031)	0.015	0.027
272	22.67	0.07	0.042	(0.031)	0.015	0.027
273	22.75	0.07	0.042	(0.031)	0.015	0.027
274	22.83	0.07	0.042	(0.031)	0.015	0.027
275	22.92	0.07	0.042	(0.031)	0.015	0.027
276	23.00	0.07	0.042	(0.031)	0.015	0.027
277	23.08	0.07	0.042	(0.031)	0.015	0.027
278	23.17	0.07	0.042	(0.031)	0.015	0.027
279	23.25	0.07	0.042	(0.031)	0.015	0.027
280	23.33	0.07	0.042	(0.031)	0.015	0.027
281	23.42	0.07	0.042	(0.031)	0.015	0.027
282	23.50	0.07	0.042	(0.031)	0.015	0.027
283	23.58	0.07	0.042	(0.030)	0.015	0.027
284	23.67	0.07	0.042	(0.030)	0.015	0.027
285	23.75	0.07	0.042	(0.030)	0.015	0.027
286	23.83	0.07	0.042	(0.030)	0.015	0.027
287	23.92	0.07	0.042	(0.030)	0.015	0.027
288	24.00	0.07	0.042	(0.030)	0.015	0.027

(Loss Rate Not Used)

Sum = 100.0 Sum = 50.8

Flood volume = Effective rainfall 4.23(In)
times area 7.6(Ac.)/[(In)/(Ft.)] = 2.7(Ac.Ft)
Total soil loss = 1.02(In)
Total soil loss = 0.648(Ac.Ft)
Total rainfall = 5.25(In)
Flood volume = 117200.7 Cubic Feet
Total soil loss = 28205.8 Cubic Feet

Peak flow rate of this hydrograph = 5.025(CFS)

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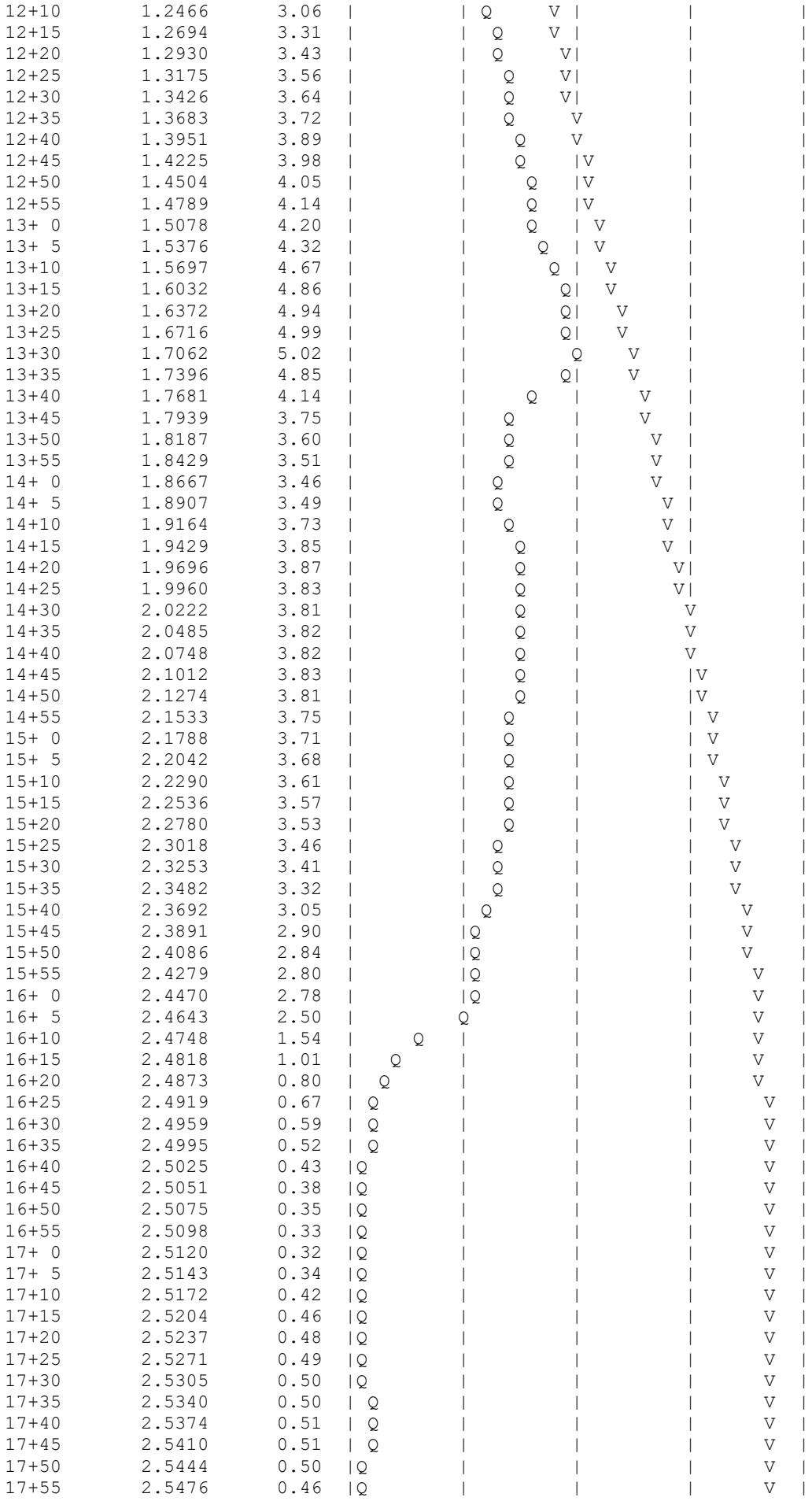
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.02	Q	|	|	|	|
0+10	0.0009	0.11	Q	|	|	|	|
0+15	0.0020	0.15	Q	|	|	|	|
0+20	0.0032	0.18	Q	|	|	|	|
0+25	0.0048	0.24	Q	|	|	|	|

0+30	0.0067	0.27	VQ				
0+35	0.0086	0.28	VQ				
0+40	0.0106	0.29	VQ				
0+45	0.0127	0.30	VQ				
0+50	0.0148	0.31	VQ				
0+55	0.0173	0.36	VQ				
1+ 0	0.0199	0.38	VQ				
1+ 5	0.0225	0.38	VQ				
1+10	0.0249	0.35	VQ				
1+15	0.0272	0.33	VQ				
1+20	0.0294	0.32	VQ				
1+25	0.0315	0.32	VQ				
1+30	0.0337	0.31	VQ				
1+35	0.0359	0.31	VQ				
1+40	0.0380	0.31	VQ				
1+45	0.0401	0.31	VQ				
1+50	0.0424	0.32	VQ				
1+55	0.0448	0.36	VQ				
2+ 0	0.0475	0.39	VQ				
2+ 5	0.0502	0.39	VQ				
2+10	0.0530	0.40	VQ				
2+15	0.0557	0.40	VQ				
2+20	0.0585	0.41	VQ				
2+25	0.0613	0.41	VQ				
2+30	0.0642	0.41	VQ				
2+35	0.0671	0.42	VQ				
2+40	0.0703	0.46	|Q				
2+45	0.0736	0.49	|Q				
2+50	0.0770	0.50	|Q				
2+55	0.0805	0.50	|VQ				
3+ 0	0.0840	0.51	|VQ				
3+ 5	0.0875	0.51	|VQ				
3+10	0.0910	0.51	|VQ				
3+15	0.0945	0.51	|VQ				
3+20	0.0981	0.51	|VQ				
3+25	0.1016	0.51	|VQ				
3+30	0.1051	0.51	|VQ				
3+35	0.1087	0.51	|VQ				
3+40	0.1122	0.51	|VQ				
3+45	0.1158	0.51	|VQ				
3+50	0.1194	0.53	|VQ				
3+55	0.1233	0.57	|VQ				
4+ 0	0.1273	0.59	|VQ				
4+ 5	0.1315	0.60	|VQ				
4+10	0.1356	0.61	| Q				
4+15	0.1398	0.61	| Q				
4+20	0.1441	0.62	| Q				
4+25	0.1487	0.67	| Q				
4+30	0.1535	0.69	| Q				
4+35	0.1583	0.70	| Q				
4+40	0.1632	0.71	| Q				
4+45	0.1681	0.71	| Q				
4+50	0.1731	0.73	| Q				
4+55	0.1784	0.77	| VQ				
5+ 0	0.1838	0.79	| VQ				
5+ 5	0.1892	0.78	| VQ				
5+10	0.1941	0.70	| Q				
5+15	0.1986	0.66	| Q				
5+20	0.2031	0.66	| QV				
5+25	0.2079	0.69	| QV				
5+30	0.2128	0.71	| QV				
5+35	0.2177	0.72	| QV				
5+40	0.2230	0.77	| Q				
5+45	0.2285	0.79	| Q				
5+50	0.2340	0.80	| Q				
5+55	0.2396	0.81	| Q				
6+ 0	0.2452	0.81	| Q				
6+ 5	0.2509	0.83	| Q				
6+10	0.2569	0.87	| Q				
6+15	0.2630	0.90	| Q				

6+20	0.2693	0.91	QV				
6+25	0.2756	0.91	QV				
6+30	0.2819	0.92	QV				
6+35	0.2883	0.93	QV				
6+40	0.2950	0.98	QV				
6+45	0.3019	1.00	QV				
6+50	0.3089	1.01	Q				
6+55	0.3159	1.02	Q				
7+ 0	0.3229	1.02	Q				
7+ 5	0.3299	1.03	Q				
7+10	0.3370	1.03	QV				
7+15	0.3441	1.03	QV				
7+20	0.3514	1.05	QV				
7+25	0.3592	1.12	QV				
7+30	0.3672	1.16	QV				
7+35	0.3754	1.20	QV				
7+40	0.3842	1.28	Q				
7+45	0.3933	1.32	Q				
7+50	0.4027	1.36	Q				
7+55	0.4126	1.44	QV				
8+ 0	0.4228	1.49	QV				
8+ 5	0.4334	1.54	Q				
8+10	0.4451	1.69	Q				
8+15	0.4573	1.78	VQ				
8+20	0.4698	1.81	VQ				
8+25	0.4825	1.84	Q				
8+30	0.4952	1.85	Q				
8+35	0.5082	1.88	Q				
8+40	0.5217	1.96	Q				
8+45	0.5355	2.00	VQ				
8+50	0.5496	2.04	Q				
8+55	0.5642	2.12	Q				
9+ 0	0.5791	2.17	Q				
9+ 5	0.5944	2.22	Q				
9+10	0.6107	2.37	Q				
9+15	0.6276	2.45	Q				
9+20	0.6449	2.51	VQ				
9+25	0.6628	2.60	VQ				
9+30	0.6810	2.65	Q				
9+35	0.6996	2.69	Q				
9+40	0.7187	2.78	VQ				
9+45	0.7382	2.83	VQ				
9+50	0.7580	2.87	Q				
9+55	0.7783	2.95	Q				
10+ 0	0.7990	3.00	VQ				
10+ 5	0.8189	2.90	QV				
10+10	0.8357	2.45	Q	V			
10+15	0.8509	2.20	Q	V			
10+20	0.8654	2.11	Q	V			
10+25	0.8796	2.06	Q	V			
10+30	0.8935	2.02	Q	V			
10+35	0.9079	2.09	Q	V			
10+40	0.9245	2.40	Q	V			
10+45	0.9422	2.57	Q	V			
10+50	0.9604	2.64	Q	V			
10+55	0.9788	2.67	Q	V			
11+ 0	0.9974	2.70	Q	V			
11+ 5	1.0160	2.70	Q	V			
11+10	1.0343	2.65	Q	V			
11+15	1.0524	2.63	Q	V			
11+20	1.0705	2.63	Q	V			
11+25	1.0886	2.63	Q	V			
11+30	1.1067	2.63	Q	V			
11+35	1.1245	2.59	Q	V			
11+40	1.1414	2.45	Q	V			
11+45	1.1578	2.38	Q	V			
11+50	1.1742	2.37	Q	V			
11+55	1.1908	2.42	Q	V			
12+ 0	1.2077	2.45	Q	V			
12+ 5	1.2255	2.58	Q	V			



18+ 0	2.5506	0.44	|Q	|	|	|	V |
18+ 5	2.5535	0.43	|Q	|	|	|	V |
18+10	2.5564	0.42	|Q	|	|	|	V |
18+15	2.5593	0.42	|Q	|	|	|	V |
18+20	2.5622	0.42	|Q	|	|	|	V |
18+25	2.5650	0.41	|Q	|	|	|	V |
18+30	2.5679	0.41	|Q	|	|	|	V |
18+35	2.5706	0.40	|Q	|	|	|	V |
18+40	2.5731	0.36	|Q	|	|	|	V |
18+45	2.5754	0.33	|Q	|	|	|	V |
18+50	2.5776	0.31	|Q	|	|	|	V |
18+55	2.5794	0.27	|Q	|	|	|	V |
19+ 0	2.5810	0.24	Q	|	|	|	V |
19+ 5	2.5827	0.24	Q	|	|	|	V |
19+10	2.5846	0.27	|Q	|	|	|	V |
19+15	2.5866	0.29	|Q	|	|	|	V |
19+20	2.5887	0.31	|Q	|	|	|	V |
19+25	2.5912	0.35	|Q	|	|	|	V |
19+30	2.5938	0.38	|Q	|	|	|	V |
19+35	2.5964	0.38	|Q	|	|	|	V |
19+40	2.5987	0.34	|Q	|	|	|	V |
19+45	2.6010	0.32	|Q	|	|	|	V |
19+50	2.6031	0.31	|Q	|	|	|	V |
19+55	2.6049	0.26	|Q	|	|	|	V |
20+ 0	2.6065	0.24	Q	|	|	|	V |
20+ 5	2.6082	0.24	Q	|	|	|	V |
20+10	2.6100	0.27	|Q	|	|	|	V |
20+15	2.6121	0.29	|Q	|	|	|	V |
20+20	2.6141	0.30	|Q	|	|	|	V |
20+25	2.6162	0.30	|Q	|	|	|	V |
20+30	2.6183	0.30	|Q	|	|	|	V |
20+35	2.6204	0.30	|Q	|	|	|	V |
20+40	2.6225	0.31	|Q	|	|	|	V |
20+45	2.6246	0.31	|Q	|	|	|	V|
20+50	2.6266	0.30	|Q	|	|	|	V|
20+55	2.6284	0.25	|Q	|	|	|	V|
21+ 0	2.6300	0.23	Q	|	|	|	V|
21+ 5	2.6316	0.23	Q	|	|	|	V|
21+10	2.6334	0.27	|Q	|	|	|	V|
21+15	2.6354	0.29	|Q	|	|	|	V|
21+20	2.6374	0.29	|Q	|	|	|	V|
21+25	2.6391	0.25	Q	|	|	|	V|
21+30	2.6406	0.23	Q	|	|	|	V|
21+35	2.6422	0.23	Q	|	|	|	V|
21+40	2.6441	0.27	|Q	|	|	|	V|
21+45	2.6460	0.29	|Q	|	|	|	V|
21+50	2.6480	0.28	|Q	|	|	|	V|
21+55	2.6497	0.25	Q	|	|	|	V|
22+ 0	2.6513	0.23	Q	|	|	|	V|
22+ 5	2.6528	0.23	Q	|	|	|	V|
22+10	2.6547	0.27	|Q	|	|	|	V|
22+15	2.6567	0.29	|Q	|	|	|	V|
22+20	2.6586	0.28	|Q	|	|	|	V|
22+25	2.6603	0.25	Q	|	|	|	V|
22+30	2.6619	0.23	Q	|	|	|	V|
22+35	2.6634	0.22	Q	|	|	|	V|
22+40	2.6648	0.21	Q	|	|	|	V|
22+45	2.6663	0.21	Q	|	|	|	V|
22+50	2.6677	0.21	Q	|	|	|	V|
22+55	2.6692	0.21	Q	|	|	|	V|
23+ 0	2.6706	0.21	Q	|	|	|	V|
23+ 5	2.6720	0.21	Q	|	|	|	V|
23+10	2.6735	0.21	Q	|	|	|	V|
23+15	2.6749	0.21	Q	|	|	|	V|
23+20	2.6763	0.21	Q	|	|	|	V|
23+25	2.6777	0.21	Q	|	|	|	V|
23+30	2.6791	0.21	Q	|	|	|	V|
23+35	2.6805	0.21	Q	|	|	|	V|
23+40	2.6819	0.21	Q	|	|	|	V|
23+45	2.6834	0.21	Q	|	|	|	V|

23+50	2.6848	0.21	Q				V
23+55	2.6862	0.21	Q				V
24+ 0	2.6876	0.21	Q				V
24+ 5	2.6889	0.18	Q				V
24+10	2.6895	0.10	Q				V
24+15	2.6899	0.05	Q				V
24+20	2.6901	0.03	Q				V
24+25	2.6903	0.02	Q				V
24+30	2.6904	0.02	Q				V
24+35	2.6905	0.01	Q				V
24+40	2.6905	0.01	Q				V
24+45	2.6905	0.00	Q				V
24+50	2.6906	0.00	Q				V
24+55	2.6906	0.00	Q				V

Area A – Detention Pond Written Calcs

Storage Provided in Pipes

Segment #1

$Size\ of\ Pipe = 5'$

$Length\ of\ Pipe = 164'$

$$Volume = \left(\frac{\pi}{4}(5')^2\right)(164')$$

$$Volume = 3{,}221\ ft^3$$

Segment #2

$Size\ of\ Pipe = 5'$

$Length\ of\ Pipe = 412'$

$$Volume = \left(\frac{\pi}{4}(5')^2\right)(412')$$

$$Volume = 8{,}093\ ft^3$$

Storage Provided in Pond

$Basin\ Bottom\ Area: 1{,}987\ ft^2$

$Basin\ Top\ Area: 2{,}266\ ft^2$

$Perimeter\ of\ Pond = 423\ ft$

$Depth\ of\ Media + Rock\ Bed = 5'$

$Void\ Space = 0.3$

$Height\ of\ Riser\ Pipe = 0.667ft$

$$Volume\ Below\ Ground = (1{,}987ft^2)(5.0ft)(0.3)$$

$$Volume\ Below\ Ground = 2{,}981ft^3$$

$$Volume\ Above\ Ground = \left((1{,}987ft^2)(0.667ft)\right) \times \left(\frac{1}{2}(2.67ft)(0.667ft)\right)(423ft)$$

$$Volume\ Above\ Ground = 1{,}703ft^3$$

Total Storage Provided

$$Total\ Storage\ Volume\ Provided = 3{,}221ft^3 + 8{,}093ft^3 + 2{,}981ft^3 + 1{,}703ft^3$$

$$Total\ Storage\ Volume\ Provided = 15{,}997ft^3$$

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond A - Segment #1

Pond Data

UG Chambers -Invert elev. = 1142.80 ft, Rise x Span = 5.00 x 5.00 ft, Barrel Len = 82.00 ft, No. Barrels = 2, Slope = 0.30%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1142.80	n/a	0	0
0.52	1143.32	n/a	123	123
1.05	1143.85	n/a	289	412
1.57	1144.37	n/a	365	777
2.10	1144.90	n/a	407	1,184
2.62	1145.42	n/a	427	1,611
3.15	1145.95	n/a	427	2,038
3.67	1146.47	n/a	407	2,445
4.20	1147.00	n/a	365	2,809
4.72	1147.52	n/a	289	3,098
5.25	1148.05	n/a	122	3,221

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1142.80	---	---	---	---	---	---	---	---	---	---	0.000
0.52	123	1143.32	---	---	---	---	---	---	---	---	---	---	0.000
1.05	412	1143.85	---	---	---	---	---	---	---	---	---	---	0.000
1.57	777	1144.37	---	---	---	---	---	---	---	---	---	---	0.000
2.10	1,184	1144.90	---	---	---	---	---	---	---	---	---	---	0.000
2.62	1,611	1145.42	---	---	---	---	---	---	---	---	---	---	0.000
3.15	2,038	1145.95	---	---	---	---	---	---	---	---	---	---	0.000
3.67	2,445	1146.47	---	---	---	---	---	---	---	---	---	---	0.000
4.20	2,809	1147.00	---	---	---	---	---	---	---	---	---	---	0.000
4.72	3,098	1147.52	---	---	---	---	---	---	---	---	---	---	0.000
5.25	3,221	1148.05	---	---	---	---	---	---	---	---	---	---	0.000

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond A - Segment #2

Pond Data

UG Chambers -Invert elev. = 1143.20 ft, Rise x Span = 5.00 x 5.00 ft, Barrel Len = 105.00 ft, No. Barrels = 4, Slope = 0.30%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1143.20	n/a	0	0
0.53	1143.73	n/a	286	286
1.06	1144.26	n/a	736	1,022
1.59	1144.79	n/a	942	1,964
2.13	1145.33	n/a	1,055	3,019
2.66	1145.86	n/a	1,106	4,125
3.19	1146.39	n/a	1,108	5,233
3.72	1146.92	n/a	1,054	6,287
4.25	1147.45	n/a	940	7,227
4.78	1147.98	n/a	736	7,963
5.32	1148.51	n/a	285	8,248

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1143.20	---	---	---	---	---	---	---	---	---	---	0.000
0.53	286	1143.73	---	---	---	---	---	---	---	---	---	---	0.000
1.06	1,022	1144.26	---	---	---	---	---	---	---	---	---	---	0.000
1.59	1,964	1144.79	---	---	---	---	---	---	---	---	---	---	0.000
2.13	3,019	1145.33	---	---	---	---	---	---	---	---	---	---	0.000
2.66	4,125	1145.86	---	---	---	---	---	---	---	---	---	---	0.000
3.19	5,233	1146.39	---	---	---	---	---	---	---	---	---	---	0.000
3.72	6,287	1146.92	---	---	---	---	---	---	---	---	---	---	0.000
4.25	7,227	1147.45	---	---	---	---	---	---	---	---	---	---	0.000
4.78	7,963	1147.98	---	---	---	---	---	---	---	---	---	---	0.000
5.32	8,248	1148.51	---	---	---	---	---	---	---	---	---	---	0.000

Pond A - Stage Storage Calculations

Segment #1		
Stage	***Incremental Storage (ft ^{3})***	***Total Storage (ft3)***
1142.8	0	0
1143.32	123	123
1143.85	289	412
1144.37	365	777
1144.9	407	1184
1145.42	427	1611
1145.95	427	2038
1146.47	407	2445
1147	365	2810
1147.52	289	3099
1148.05	122	3221

Segment #2		
Stage	***Incremental Storage (ft3)***	***Total Storage (ft3)***
1142.8	0	0
1143.32	65	65
1143.85	388	453
1144.37	779	1231
1144.9	965	2196
1145.42	1064	3260
1145.95	1106	4366
1146.47	1100	5466
1147	1037	6503
1147.52	913	7416
1148.05	676	8093

Above Ground Basin Characteristics	
Basin Bottom Area (ft^2)	1987
Basin Top Area (ft2)	2266

Storage Provided by Biopond		
Stage	***Incremental Storage (ft ^{3})***	***Total Storage (ft3)***
1143.5	0	0
1143.85	209	209
1144.37	310	519
1144.9	316	835
1145.42	310	1145
1145.95	316	1460
1146.47	310	1770
1147	316	2086
1147.52	310	2396
1148.05	316	2712
1148.5	268	2981
1149.17	1703	4683

Total Storage Provided		
Stage	***Incremental Storage (ft ^{3})***	***Total Storage (ft3)***
1142.8	0	0
1143.32	188	188
1143.85	886	1073
1144.37	1454	2527
1144.9	1688	4215
1145.42	1801	6016
1145.95	1849	7865
1146.47	1817	9682
1147	1718	11399
1147.52	1512	12911
1148.05	1114	14026
1148.5	268	14294
1149.17	1703	15997

Pond Report

Pond No. 1 - Pond A

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1142.80	n/a	0	0
0.52	1143.32	n/a	188	188
1.05	1143.85	n/a	886	1,073
1.57	1144.37	n/a	1,454	2,527
2.10	1144.90	n/a	1,688	4,215
2.62	1145.42	n/a	1,801	6,016
3.15	1145.95	n/a	1,849	7,865
3.67	1146.47	n/a	1,817	9,682
4.20	1147.00	n/a	1,718	11,399
4.72	1147.52	n/a	1,512	12,911
5.25	1148.05	n/a	1,114	14,026
5.70	1148.50	n/a	268	14,294
6.37	1149.17	n/a	1,703	15,997

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 1.80	3.40	1.50	0.00
Span (in)	= 1.80	3.40	46.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 1142.80	1146.57	1147.44	0.00
Length (ft)	= 1.00	1.00	0.00	0.00
Slope (%)	= 1.00	1.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

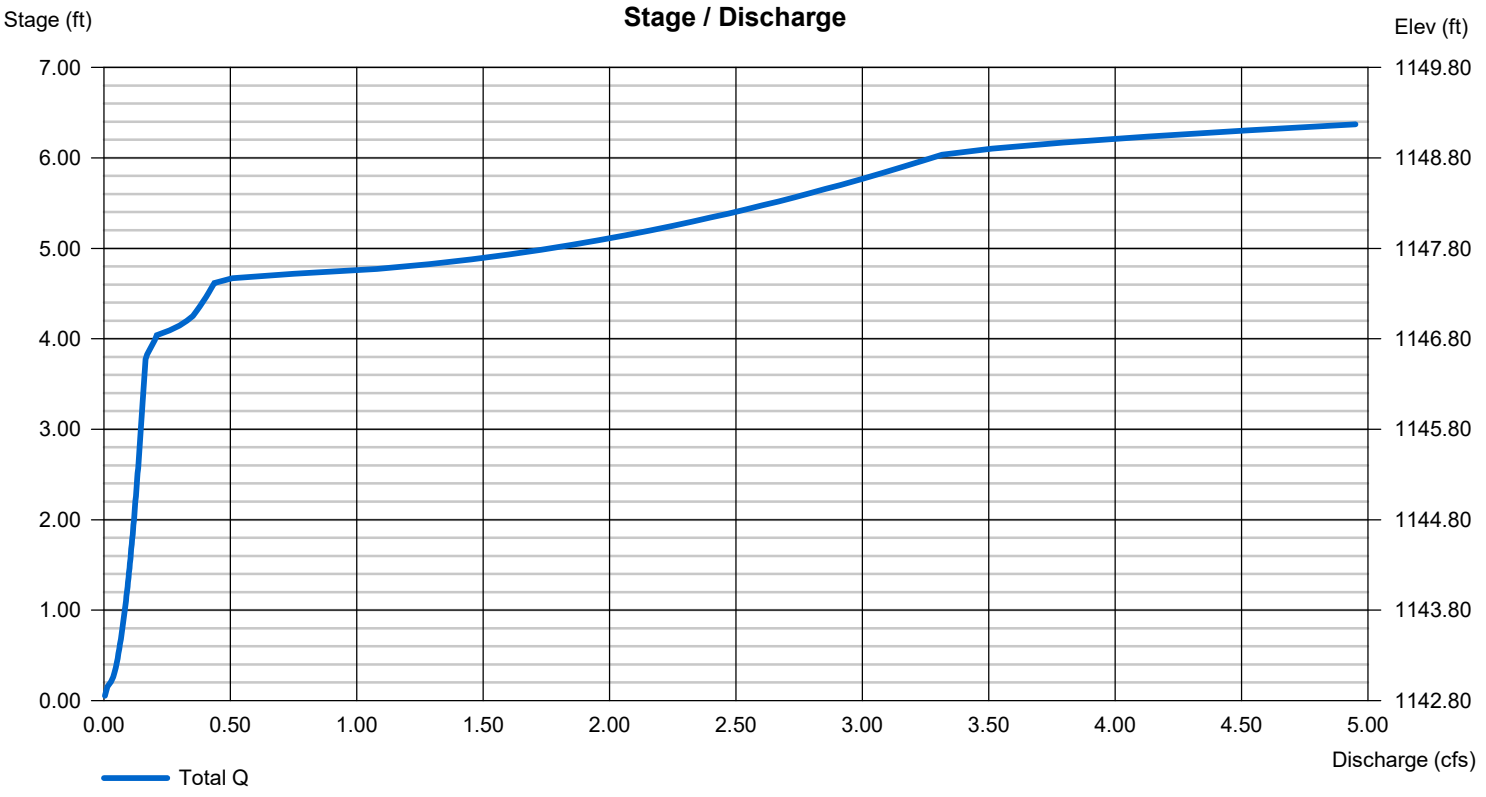
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 1.94	0.00	0.00	0.00
Crest El. (ft)	= 1148.83	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	3.430	5	60	4,965	------	------	------	Area A 2-year 1 hr
2	Manual	1.860	5	165	7,278	------	------	------	Area A 2-year 3 hr
3	Manual	1.730	5	340	10,329	------	------	------	Area A 2-year 6 hr
4	Manual	0.650	5	815	17,391	------	------	------	Area A 2-year 24 hr
5	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 1 hr
6	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 3 hr
7	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 6 hr
8	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 24 hr
9	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 1 hr
10	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 3 hr
11	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 6 hr
12	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 24 hr
13	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 1 hr
14	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 3 hr
15	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 6 hr
16	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 24 hr
17	Reservoir	0.123	5	100	4,959	1	1144.96	4,425	Pond A 2-year 1hr
18	Reservoir	0.137	5	200	7,272	2	1145.45	6,120	Pond A 2-year 3 hr
19	Reservoir	0.151	5	375	10,323	3	1146.02	8,114	Pond A 2-year 6 hr
20	Reservoir	0.165	5	980	17,385	4	1146.59	10,057	Pond A 2-year 24 hr
21	Reservoir	0.000	5	n/a	0	5	1142.80	0.000	Pond A 5-year 1hr
22	Reservoir	0.000	5	n/a	0	6	1142.80	0.000	Pond A 5-year 3 hr
23	Reservoir	0.000	5	n/a	0	7	1142.80	0.000	Pond A 5-year 6 hr
24	Reservoir	0.000	5	n/a	0	8	1142.80	0.000	Pond A 5-year 24 hr
25	Reservoir	0.000	5	n/a	0	9	1142.80	0.000	Pond A 10-year 1hr
26	Reservoir	0.000	5	n/a	0	10	1142.80	0.000	Pond A 10-year 3 hr
27	Reservoir	0.000	5	n/a	0	11	1142.80	0.000	Pond A 10-year 6 hr
28	Reservoir	0.000	5	n/a	0	12	1142.80	0.000	Pond A 10-year 24 hr
29	Reservoir	0.000	5	n/a	0	13	1142.80	0.000	Pond A 100-year 1hr
30	Reservoir	0.000	5	n/a	0	14	1142.80	0.000	Pond A 100-year 3 hr
31	Reservoir	0.000	5	n/a	0	15	1142.80	0.000	Pond A 100-year 6 hr
32	Reservoir	0.000	5	n/a	0	16	1142.80	0.000	Pond A 100-year 24 hr

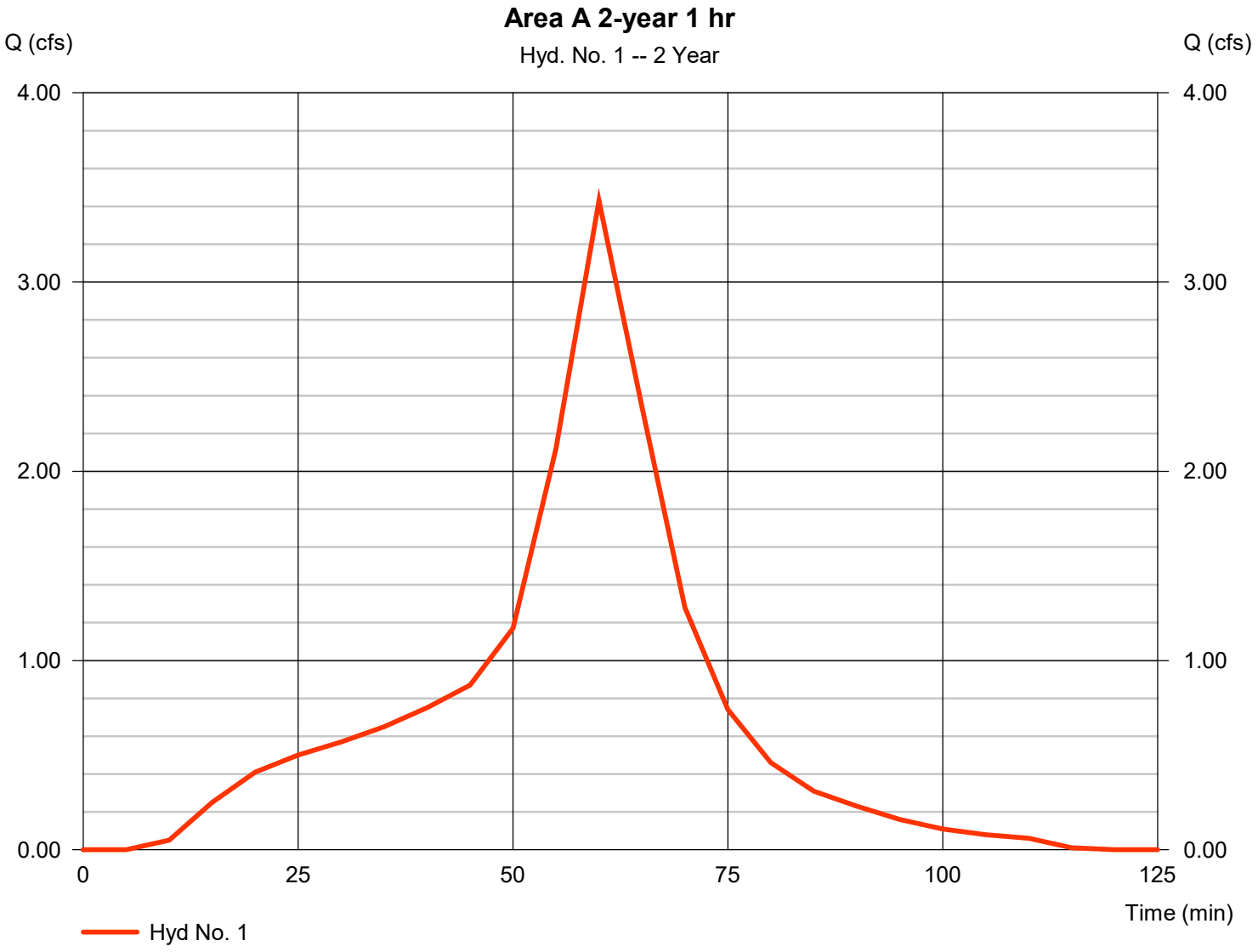
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 1

Area A 2-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 3.430 cfs
Storm frequency	= 2 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 4,965 cuft



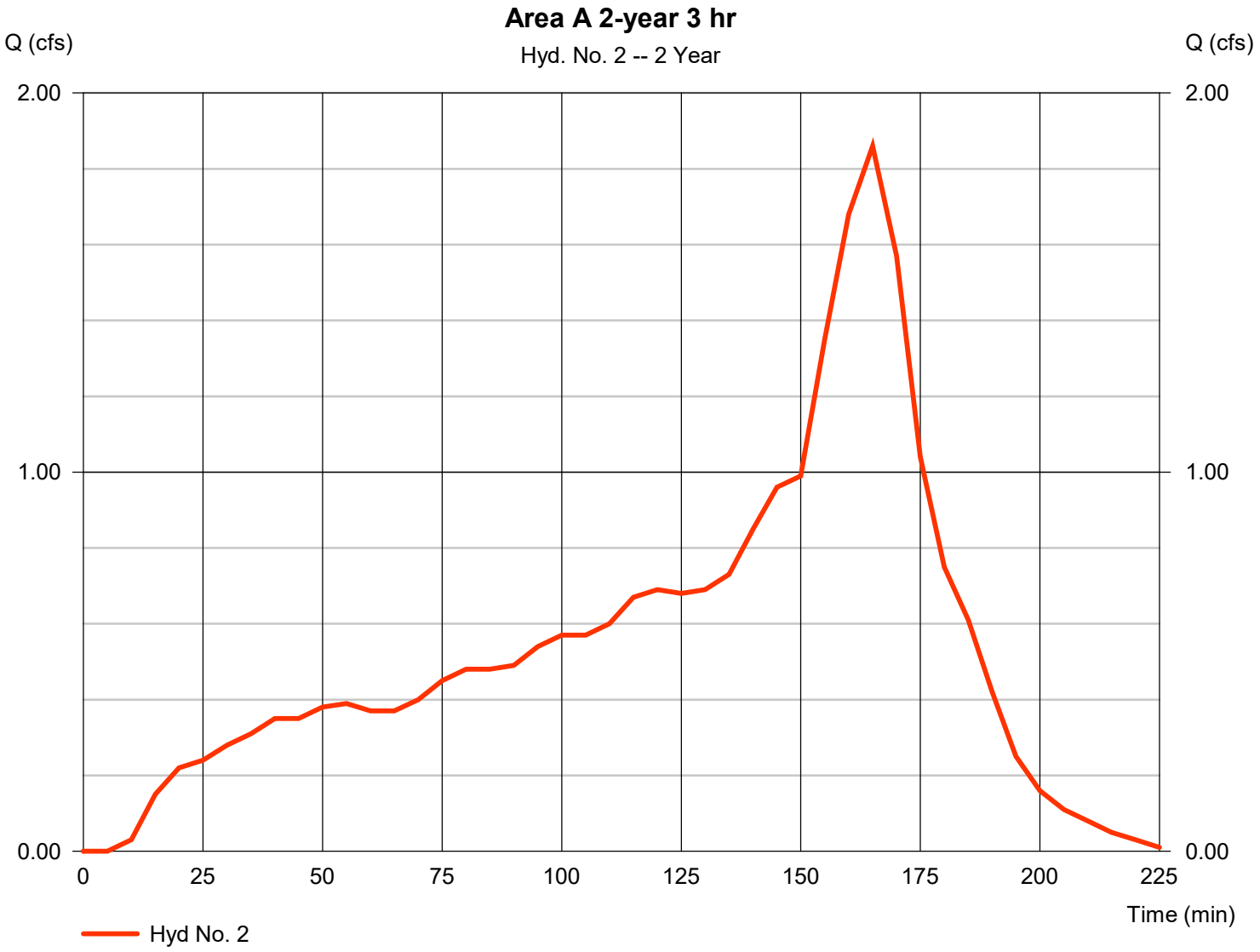
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 2

Area A 2-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 1.860 cfs
Storm frequency	= 2 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 7,278 cuft



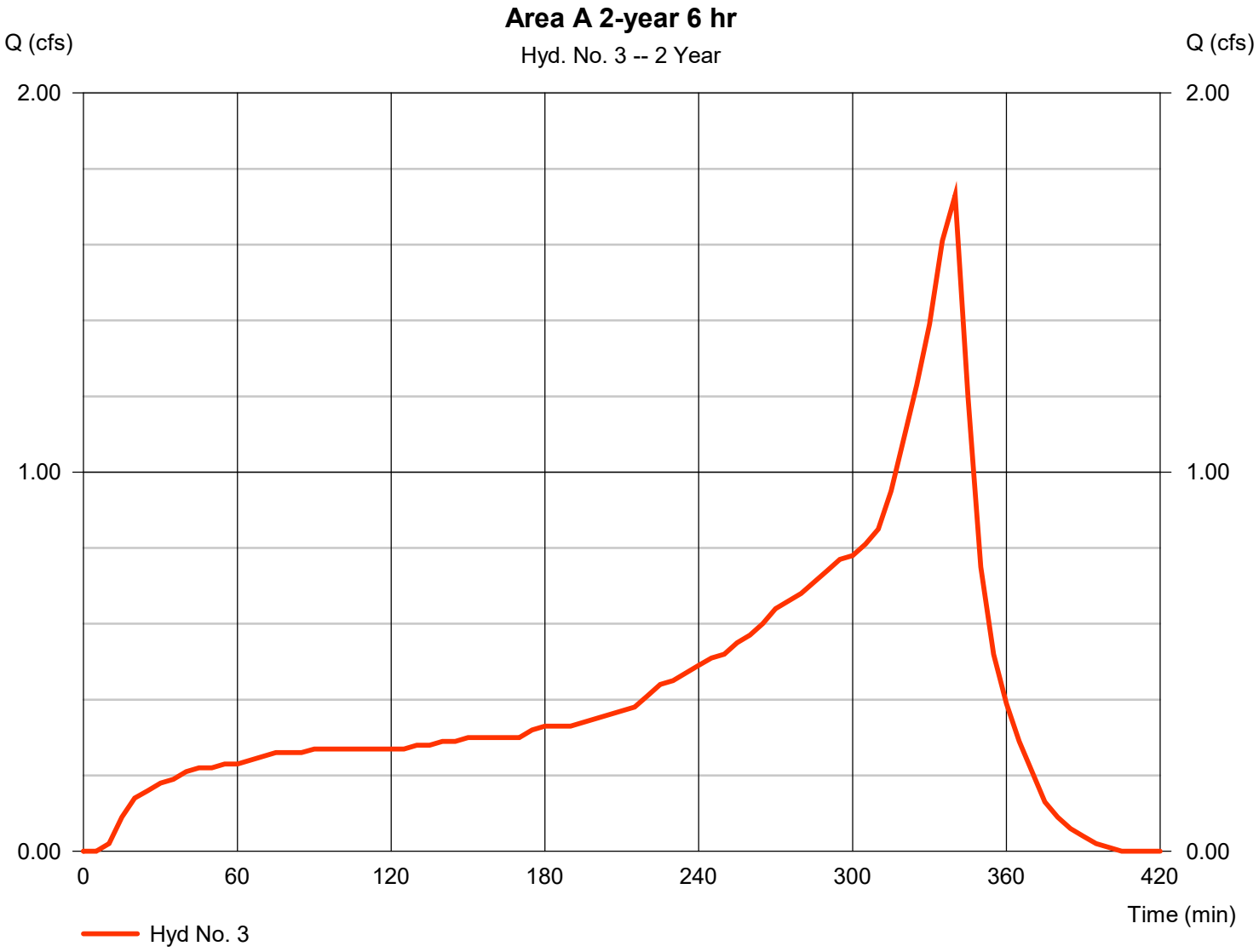
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 3

Area A 2-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 1.730 cfs
Storm frequency	= 2 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 10,329 cuft



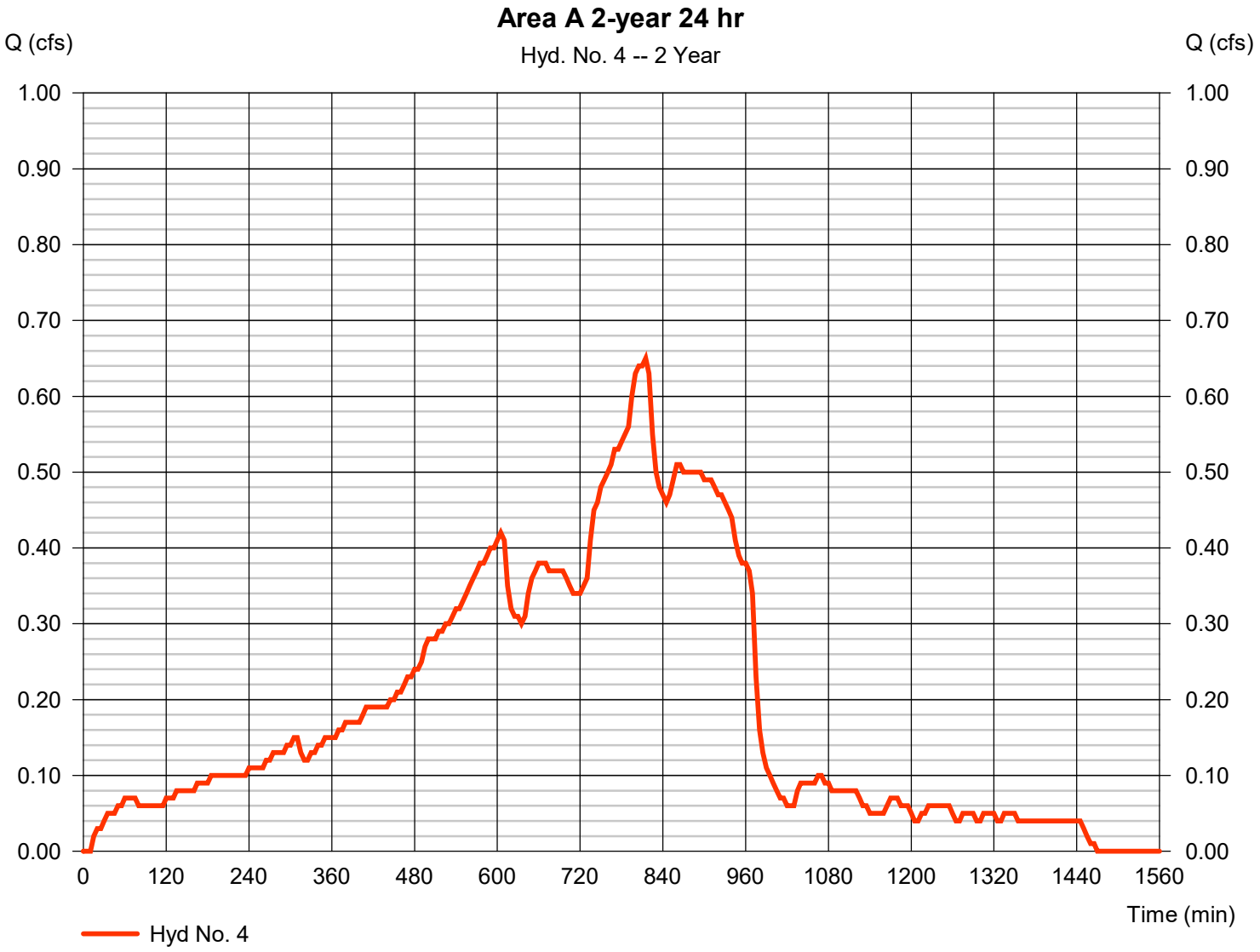
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 4

Area A 2-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 0.650 cfs
Storm frequency	= 2 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 17,391 cuft



Hydrograph Report

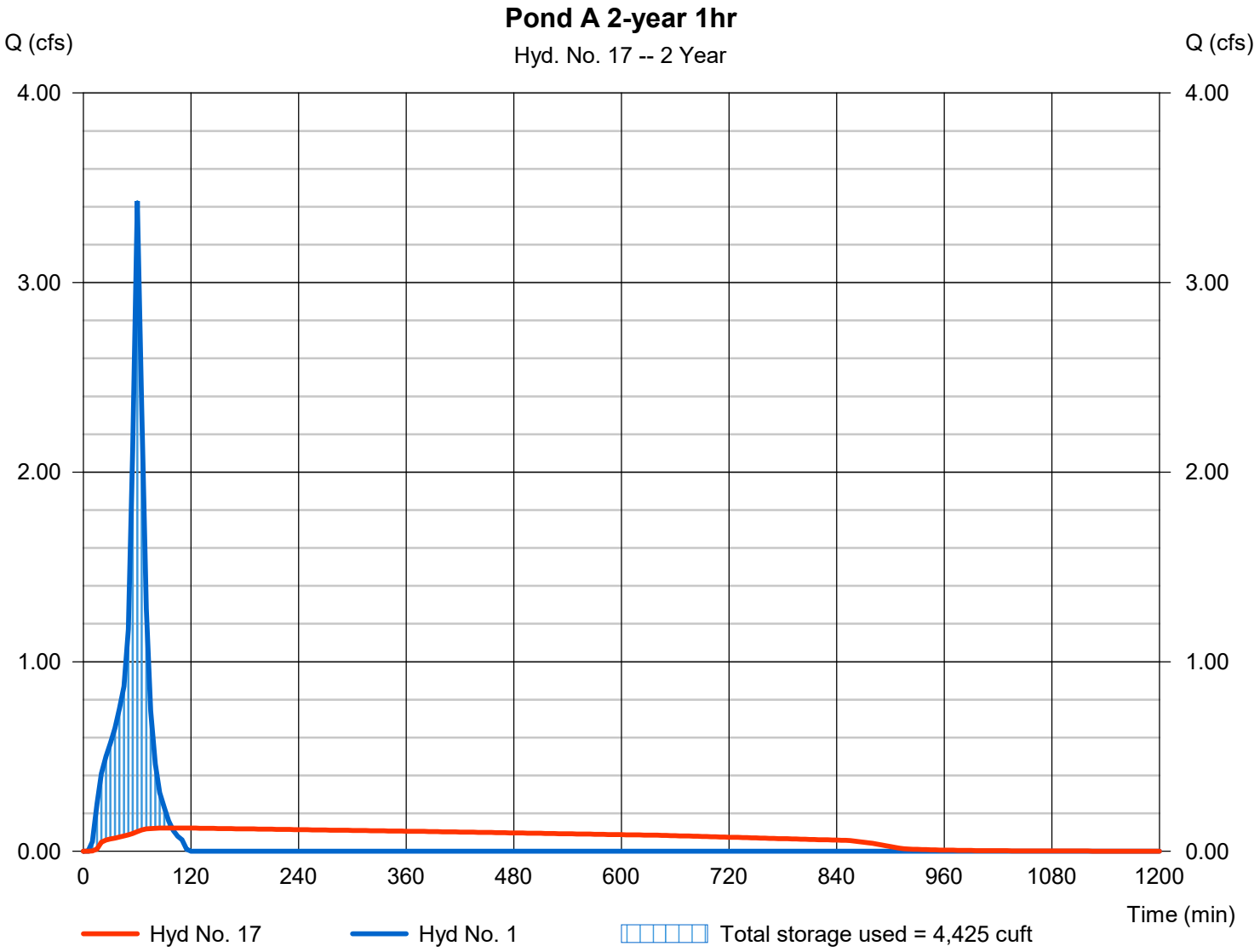
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 17

Pond A 2-year 1hr

Hydrograph type	= Reservoir	Peak discharge	= 0.123 cfs
Storm frequency	= 2 yrs	Time to peak	= 100 min
Time interval	= 5 min	Hyd. volume	= 4,959 cuft
Inflow hyd. No.	= 1 - Area A 2-year 1 hr	Max. Elevation	= 1144.96 ft
Reservoir name	= Pond A	Max. Storage	= 4,425 cuft

Storage Indication method used.



Hydrograph Report

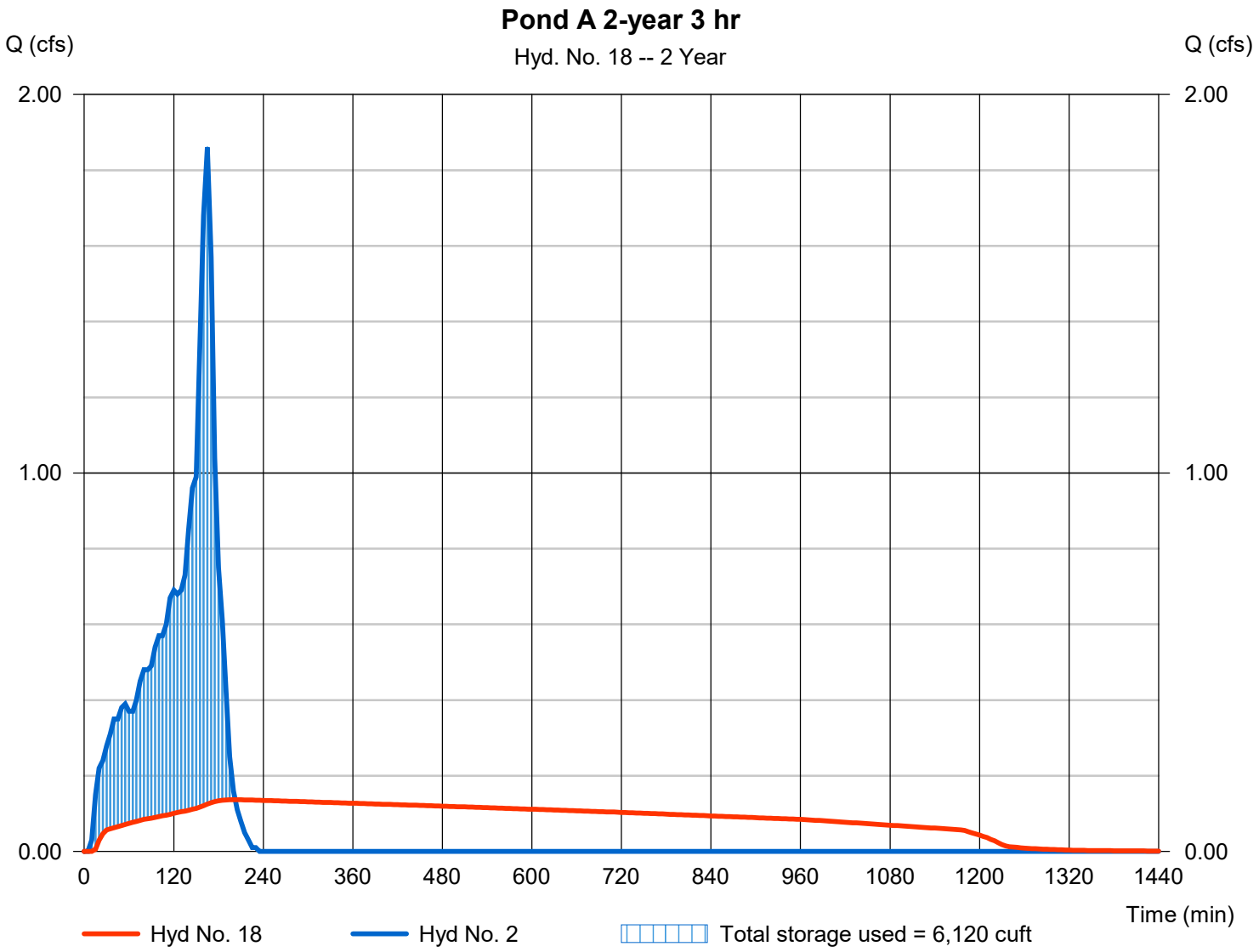
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 18

Pond A 2-year 3 hr

Hydrograph type	= Reservoir	Peak discharge	= 0.137 cfs
Storm frequency	= 2 yrs	Time to peak	= 200 min
Time interval	= 5 min	Hyd. volume	= 7,272 cuft
Inflow hyd. No.	= 2 - Area A 2-year 3 hr	Max. Elevation	= 1145.45 ft
Reservoir name	= Pond A	Max. Storage	= 6,120 cuft

Storage Indication method used.



Hydrograph Report

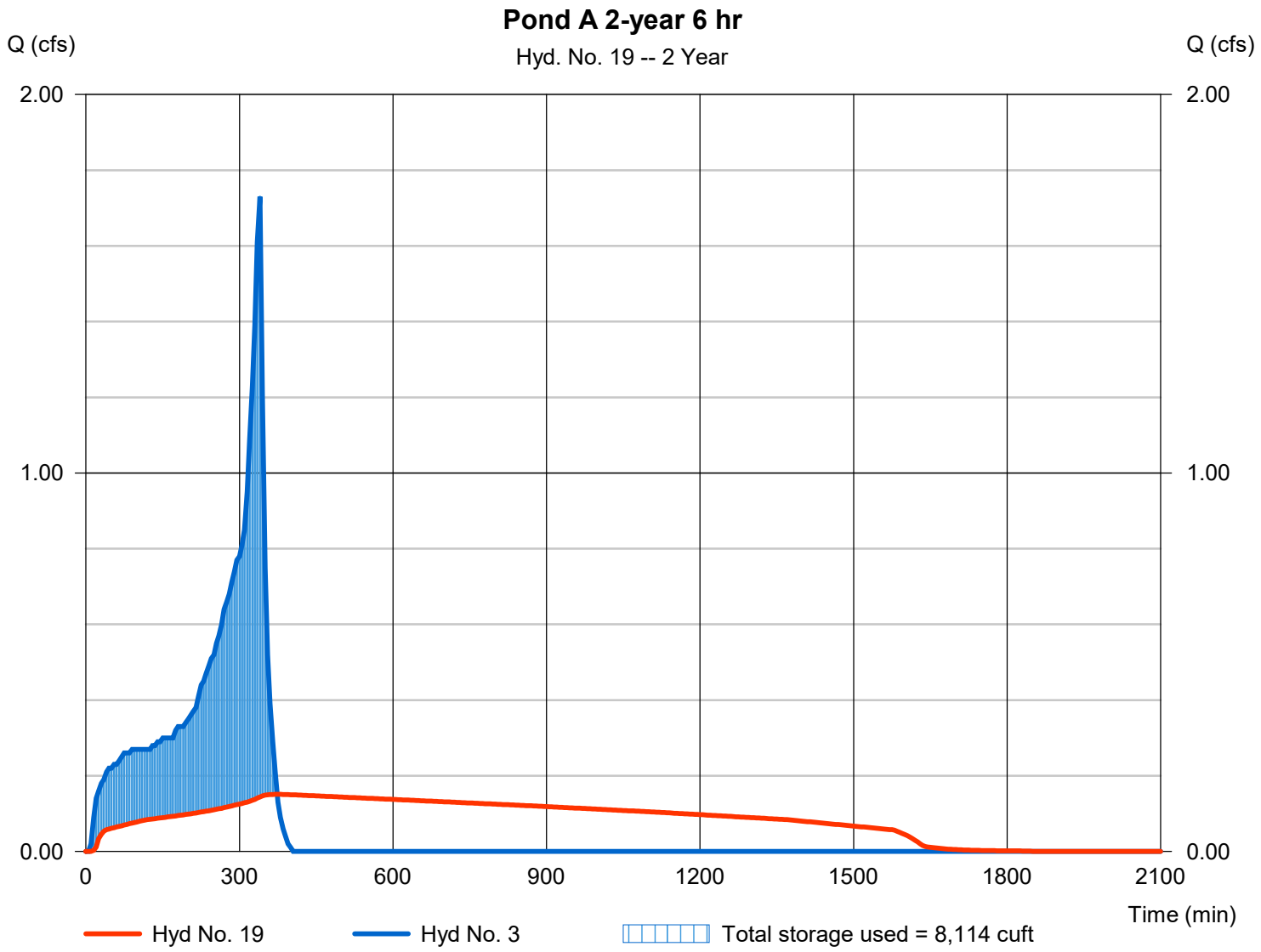
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 19

Pond A 2-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.151 cfs
Storm frequency	=	2 yrs	Time to peak	=	375 min
Time interval	=	5 min	Hyd. volume	=	10,323 cuft
Inflow hyd. No.	=	3 - Area A 2-year 6 hr	Max. Elevation	=	1146.02 ft
Reservoir name	=	Pond A	Max. Storage	=	8,114 cuft

Storage Indication method used.



Hydrograph Report

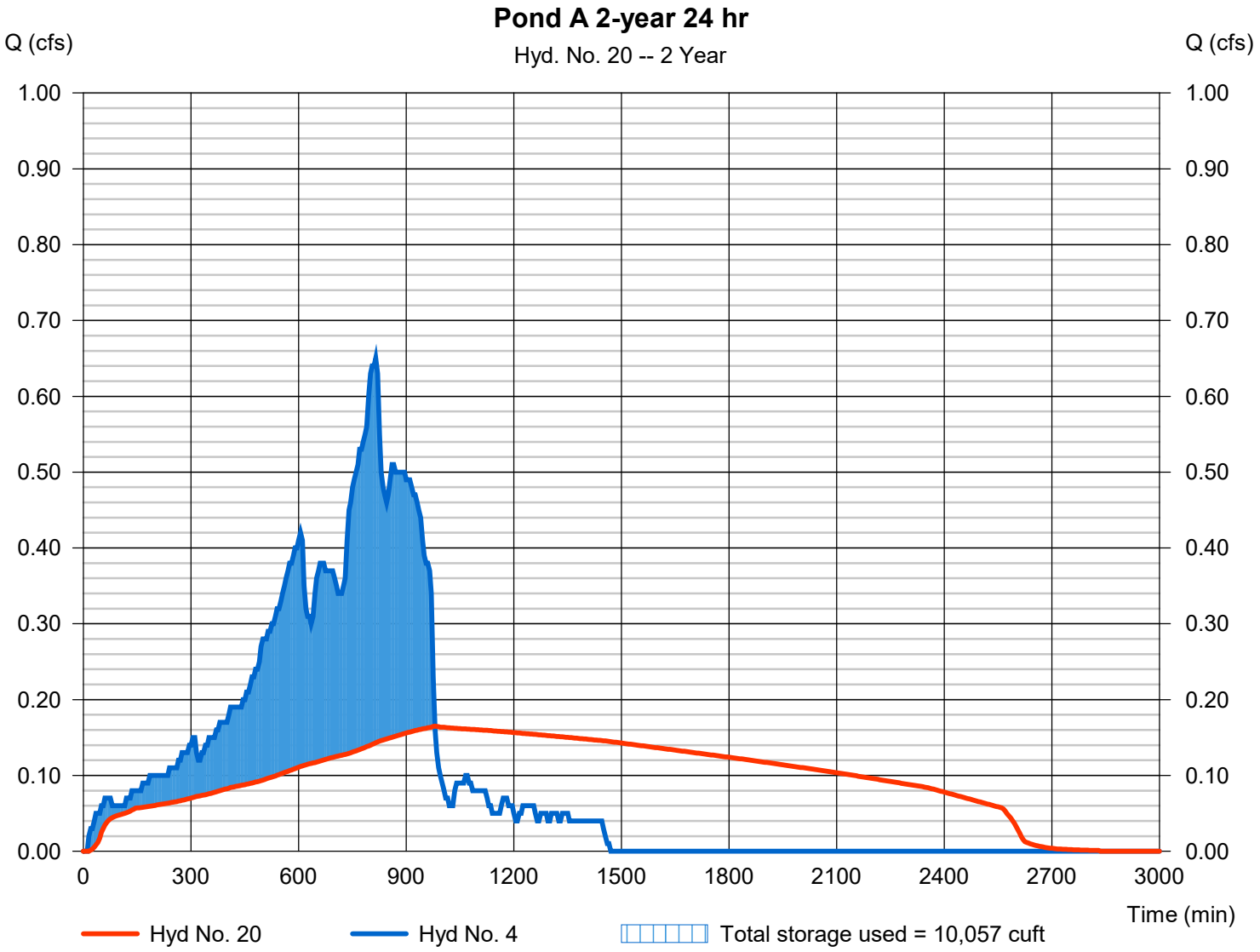
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 20

Pond A 2-year 24 hr

Hydrograph type	= Reservoir	Peak discharge	= 0.165 cfs
Storm frequency	= 2 yrs	Time to peak	= 980 min
Time interval	= 5 min	Hyd. volume	= 17,385 cuft
Inflow hyd. No.	= 4 - Area A 2-year 24 hr	Max. Elevation	= 1146.59 ft
Reservoir name	= Pond A	Max. Storage	= 10,057 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 1 hr
2	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 3 hr
3	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 6 hr
4	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 24 hr
5	Manual	4.740	5	60	6,786	------	------	------	Area A 5-year 1 hr
6	Manual	2.720	5	165	10,218	------	------	------	Area A 5-year 3 hr
7	Manual	2.430	5	340	13,815	------	------	------	Area A 5-year 6 hr
8	Manual	0.850	5	810	22,845	------	------	------	Area A 5-year 24 hr
9	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 1 hr
10	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 3 hr
11	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 6 hr
12	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 24 hr
13	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 1 hr
14	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 3 hr
15	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 6 hr
16	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 24 hr
17	Reservoir	0.000	5	n/a	0	1	1142.80	0.000	Pond A 2-year 1hr
18	Reservoir	0.000	5	n/a	0	2	1142.80	0.000	Pond A 2-year 3 hr
19	Reservoir	0.000	5	n/a	0	3	1142.80	0.000	Pond A 2-year 6 hr
20	Reservoir	0.000	5	n/a	0	4	1142.80	0.000	Pond A 2-year 24 hr
21	Reservoir	0.137	5	100	6,780	5	1145.47	6,176	Pond A 5-year 1hr
22	Reservoir	0.156	5	205	10,212	6	1146.25	8,907	Pond A 5-year 3 hr
23	Reservoir	0.294	5	370	13,809	7	1146.94	11,211	Pond A 5-year 6 hr
24	Reservoir	0.438	5	970	22,839	8	1147.42	12,613	Pond A 5-year 24 hr
25	Reservoir	0.000	5	n/a	0	9	1142.80	0.000	Pond A 10-year 1hr
26	Reservoir	0.000	5	n/a	0	10	1142.80	0.000	Pond A 10-year 3 hr
27	Reservoir	0.000	5	n/a	0	11	1142.80	0.000	Pond A 10-year 6 hr
28	Reservoir	0.000	5	n/a	0	12	1142.80	0.000	Pond A 10-year 24 hr
29	Reservoir	0.000	5	n/a	0	13	1142.80	0.000	Pond A 100-year 1hr
30	Reservoir	0.000	5	n/a	0	14	1142.80	0.000	Pond A 100-year 3 hr
31	Reservoir	0.000	5	n/a	0	15	1142.80	0.000	Pond A 100-year 6 hr
32	Reservoir	0.000	5	n/a	0	16	1142.80	0.000	Pond A 100-year 24 hr

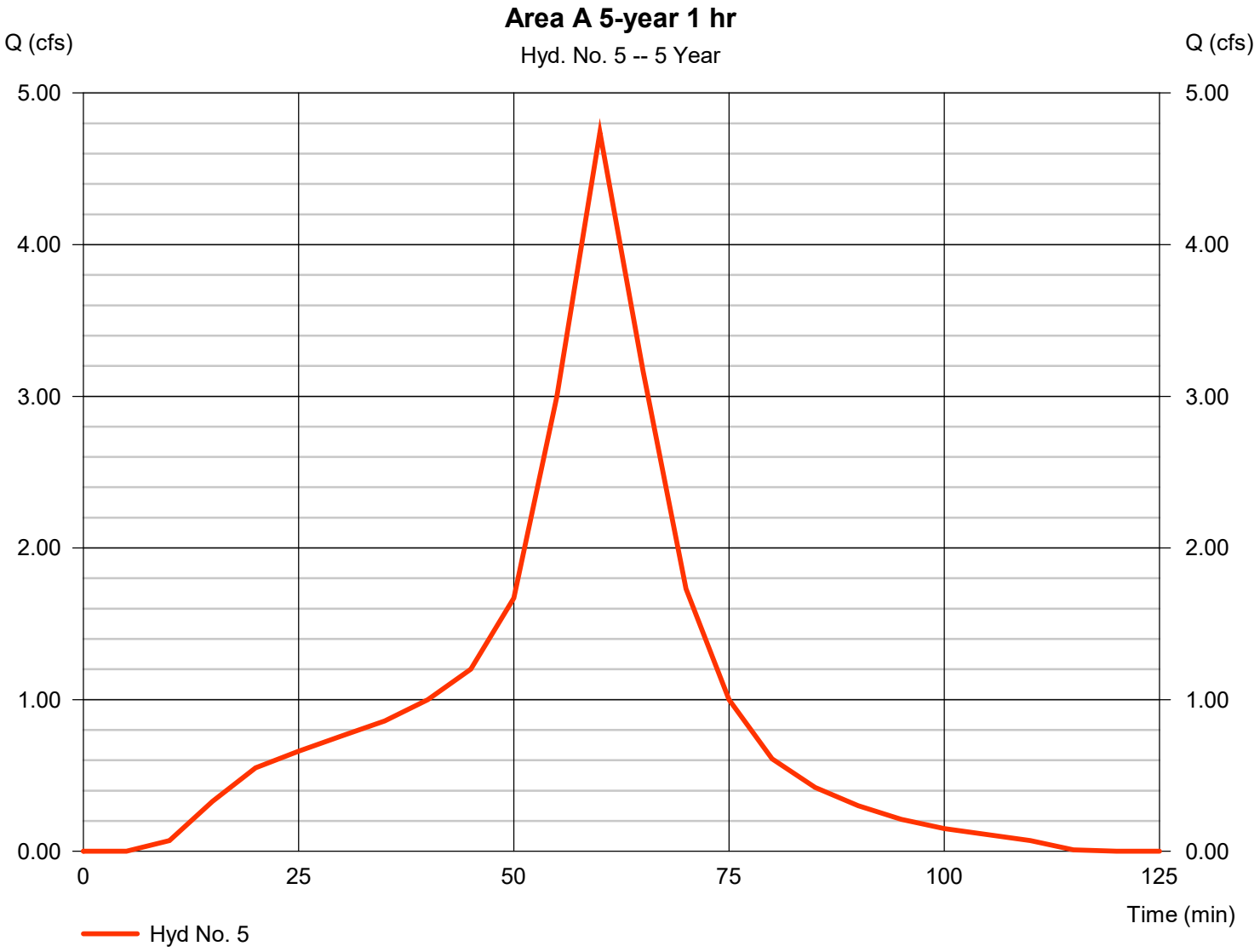
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 5

Area A 5-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 4.740 cfs
Storm frequency	= 5 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 6,786 cuft



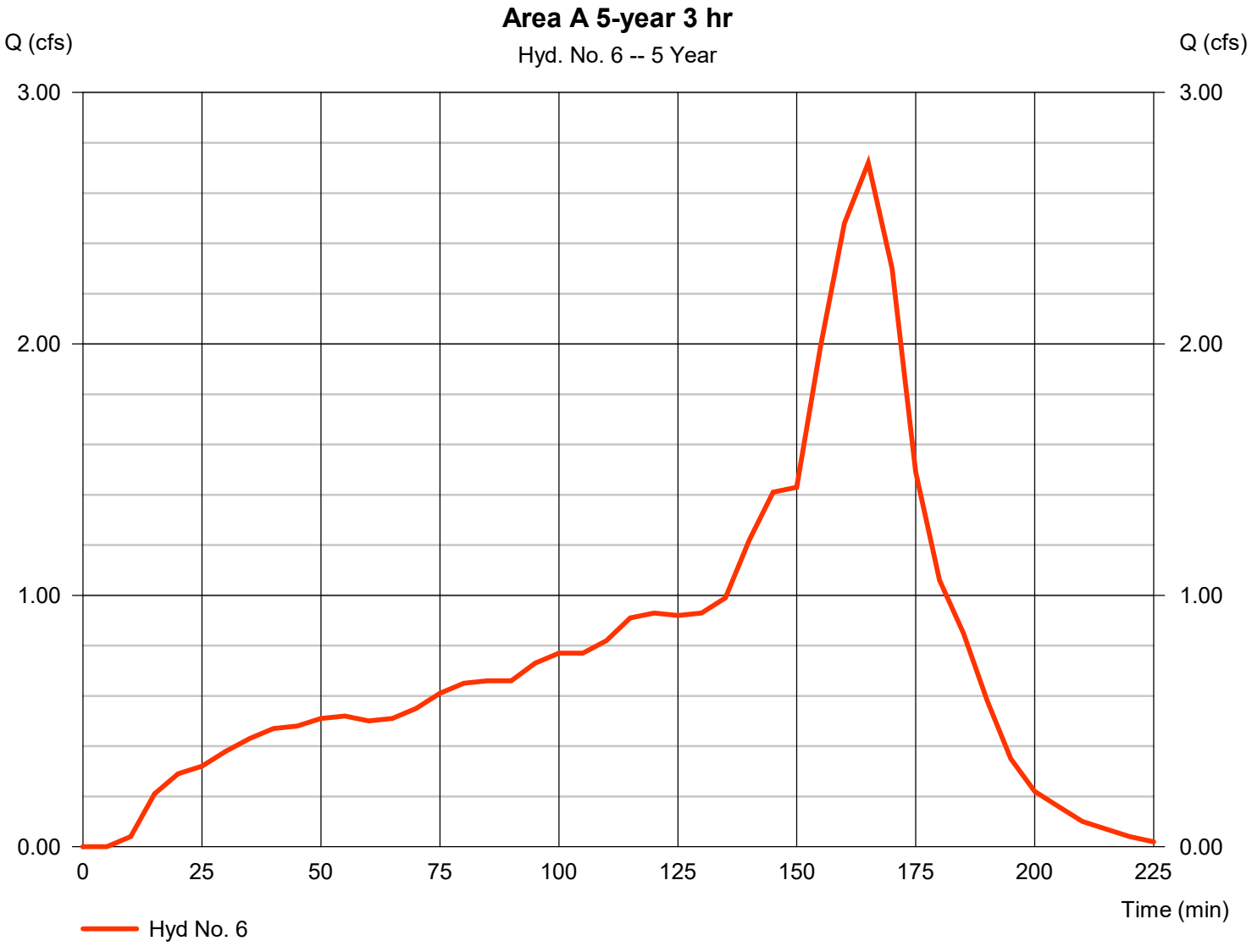
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 6

Area A 5-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 2.720 cfs
Storm frequency	= 5 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 10,218 cuft



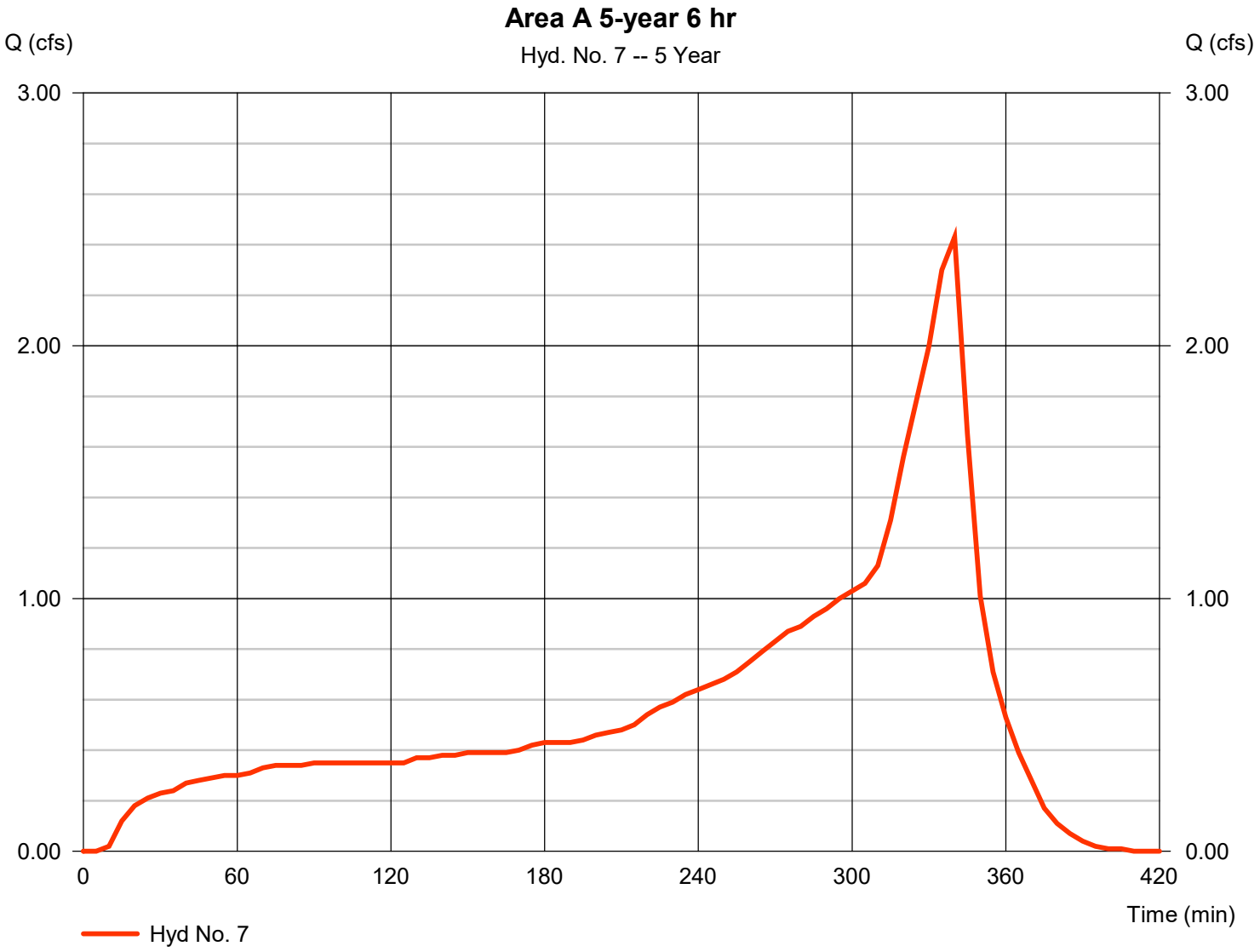
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 7

Area A 5-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 2.430 cfs
Storm frequency	= 5 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 13,815 cuft



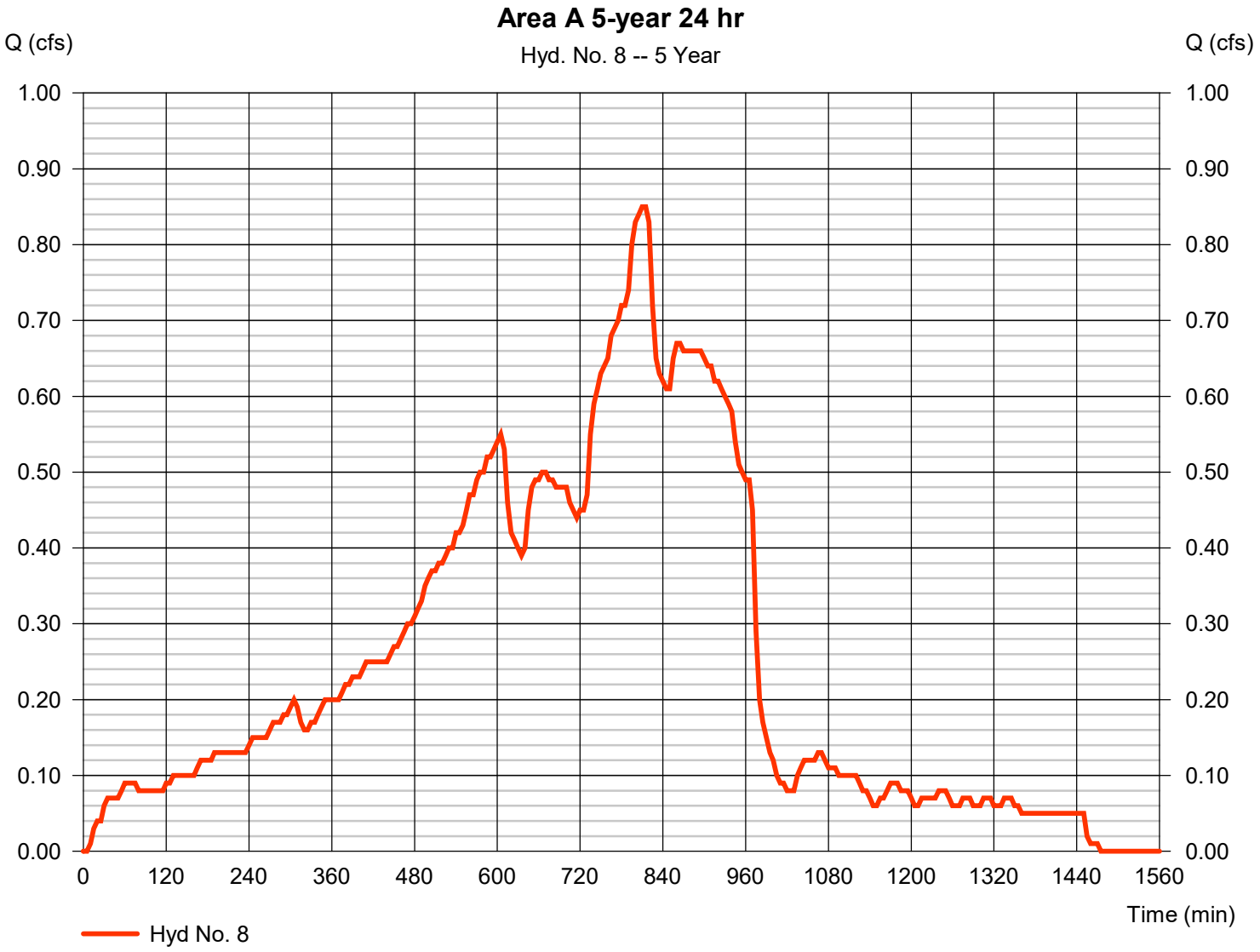
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 8

Area A 5-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 0.850 cfs
Storm frequency	= 5 yrs	Time to peak	= 810 min
Time interval	= 5 min	Hyd. volume	= 22,845 cuft



Hydrograph Report

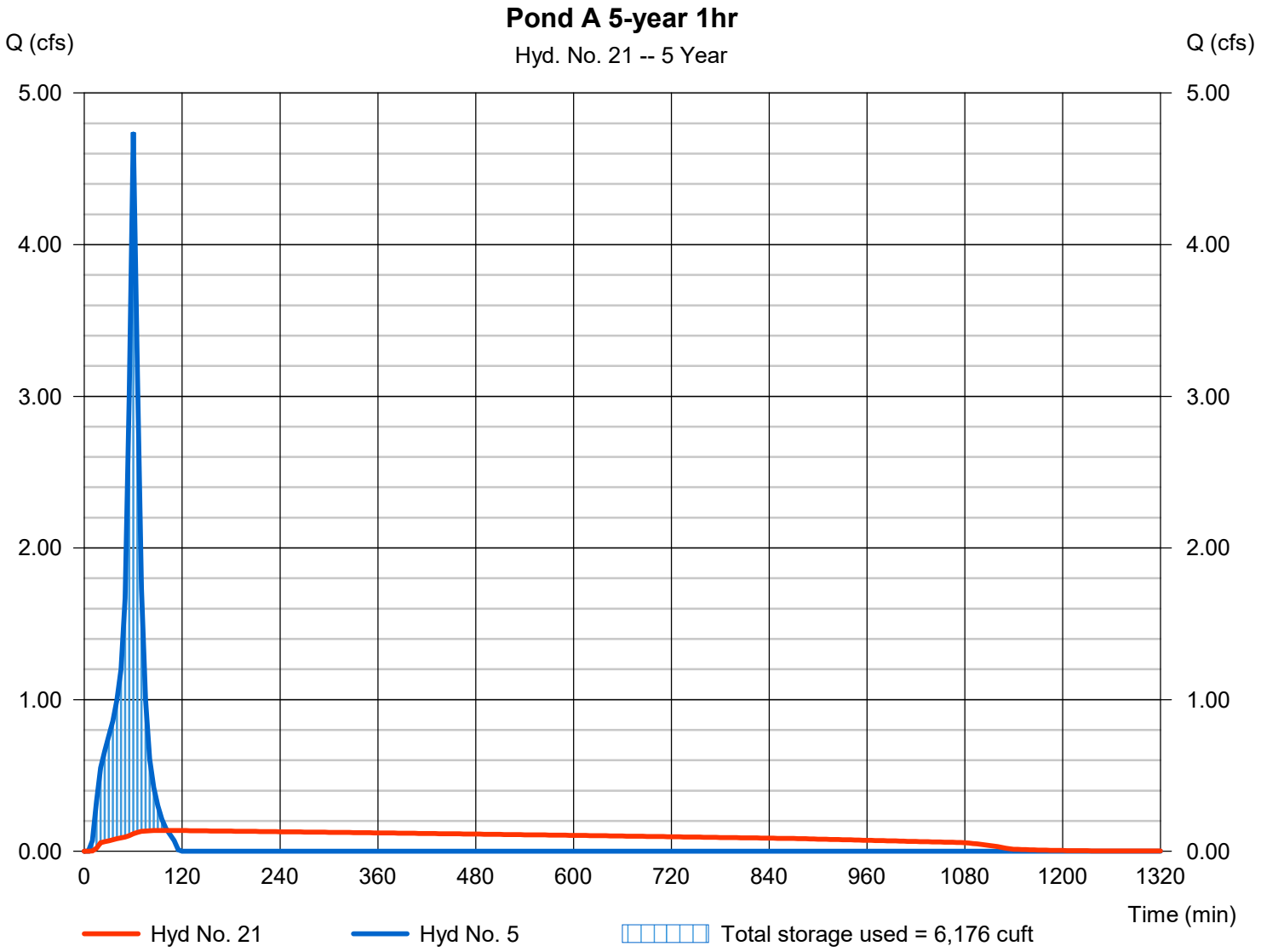
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 21

Pond A 5-year 1hr

Hydrograph type	= Reservoir	Peak discharge	= 0.137 cfs
Storm frequency	= 5 yrs	Time to peak	= 100 min
Time interval	= 5 min	Hyd. volume	= 6,780 cuft
Inflow hyd. No.	= 5 - Area A 5-year 1 hr	Max. Elevation	= 1145.47 ft
Reservoir name	= Pond A	Max. Storage	= 6,176 cuft

Storage Indication method used.



Hydrograph Report

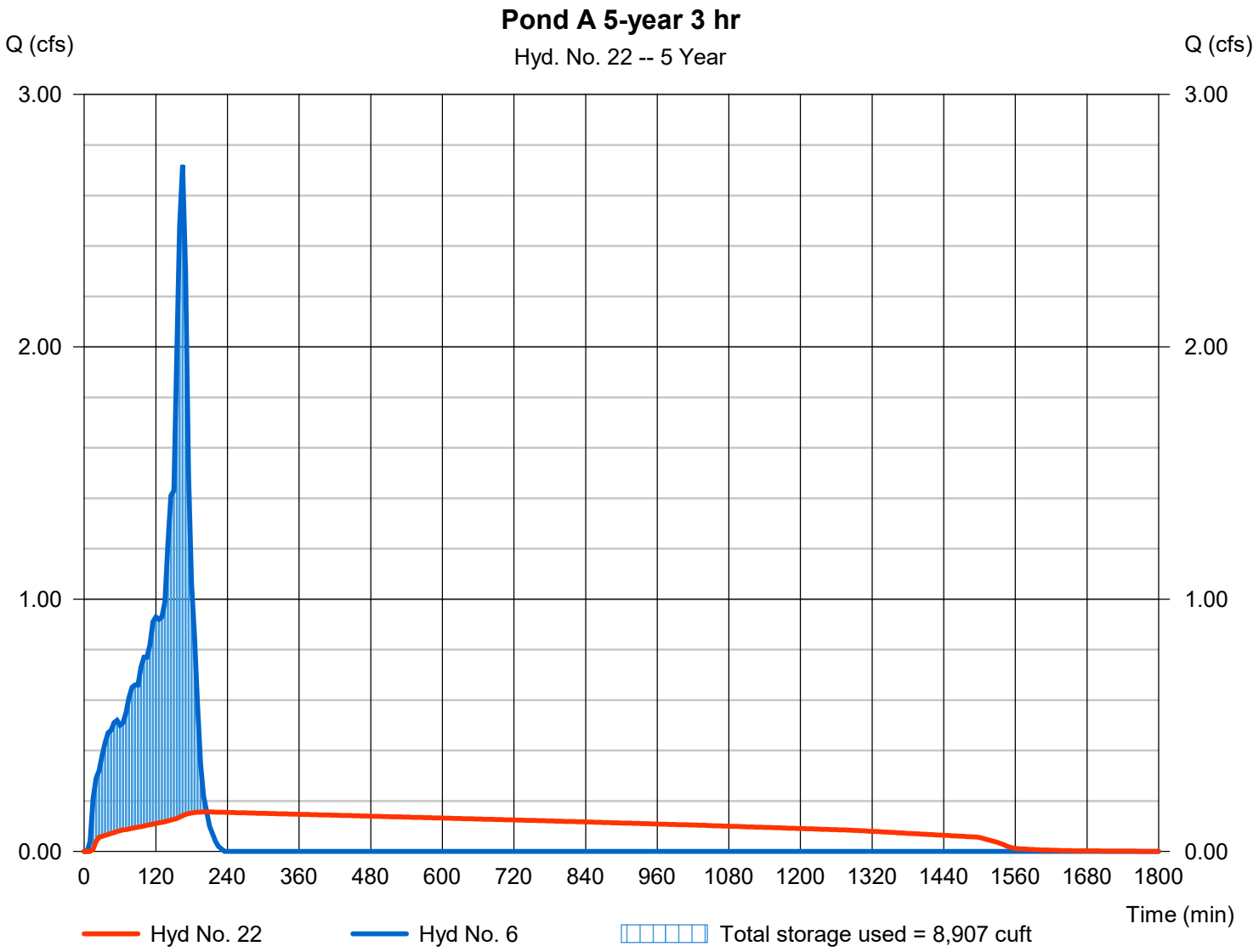
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 22

Pond A 5-year 3 hr

Hydrograph type	= Reservoir	Peak discharge	= 0.156 cfs
Storm frequency	= 5 yrs	Time to peak	= 205 min
Time interval	= 5 min	Hyd. volume	= 10,212 cuft
Inflow hyd. No.	= 6 - Area A 5-year 3 hr	Max. Elevation	= 1146.25 ft
Reservoir name	= Pond A	Max. Storage	= 8,907 cuft

Storage Indication method used.



Hydrograph Report

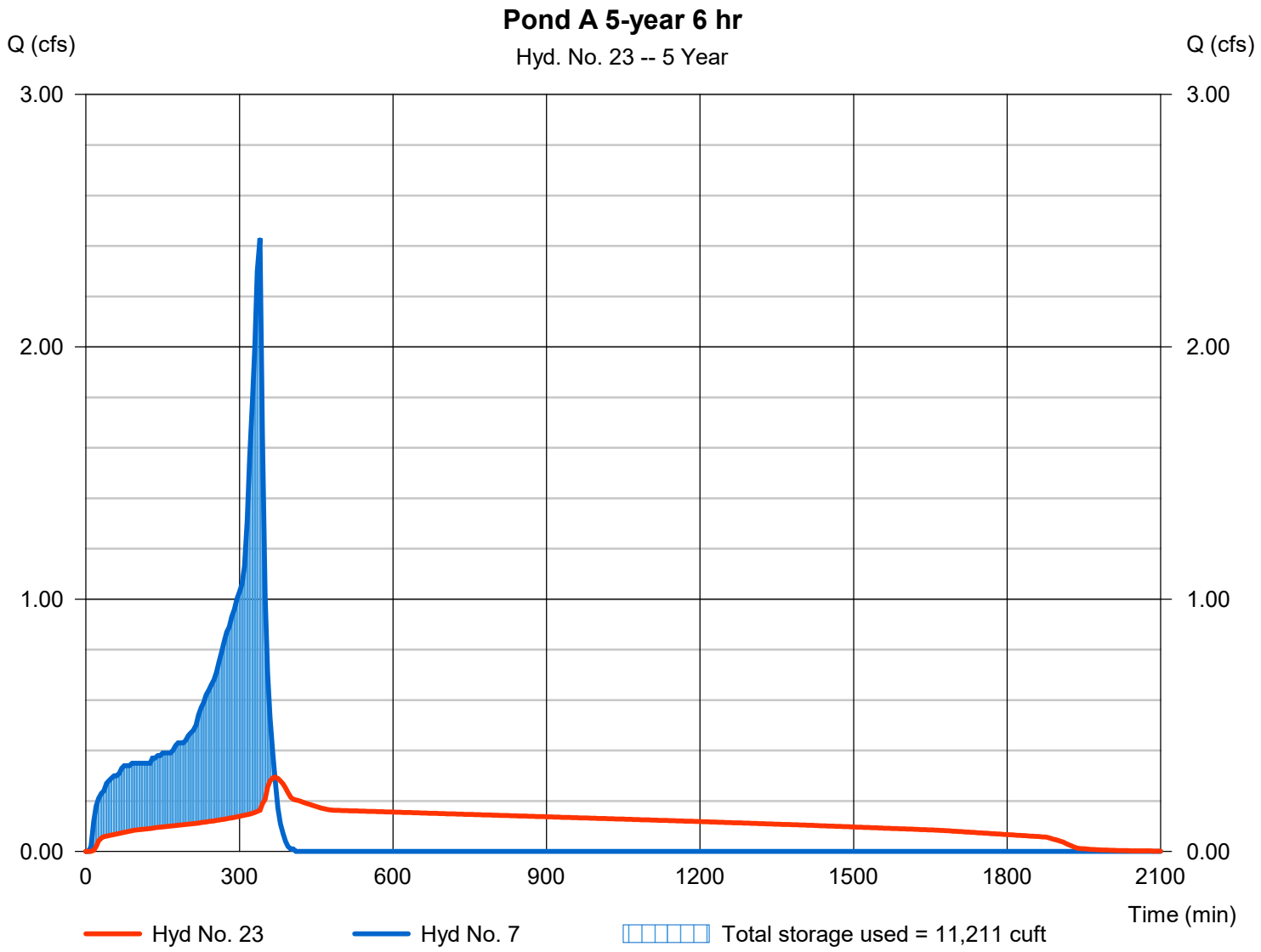
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 23

Pond A 5-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.294 cfs
Storm frequency	=	5 yrs	Time to peak	=	370 min
Time interval	=	5 min	Hyd. volume	=	13,809 cuft
Inflow hyd. No.	=	7 - Area A 5-year 6 hr	Max. Elevation	=	1146.94 ft
Reservoir name	=	Pond A	Max. Storage	=	11,211 cuft

Storage Indication method used.



Hydrograph Report

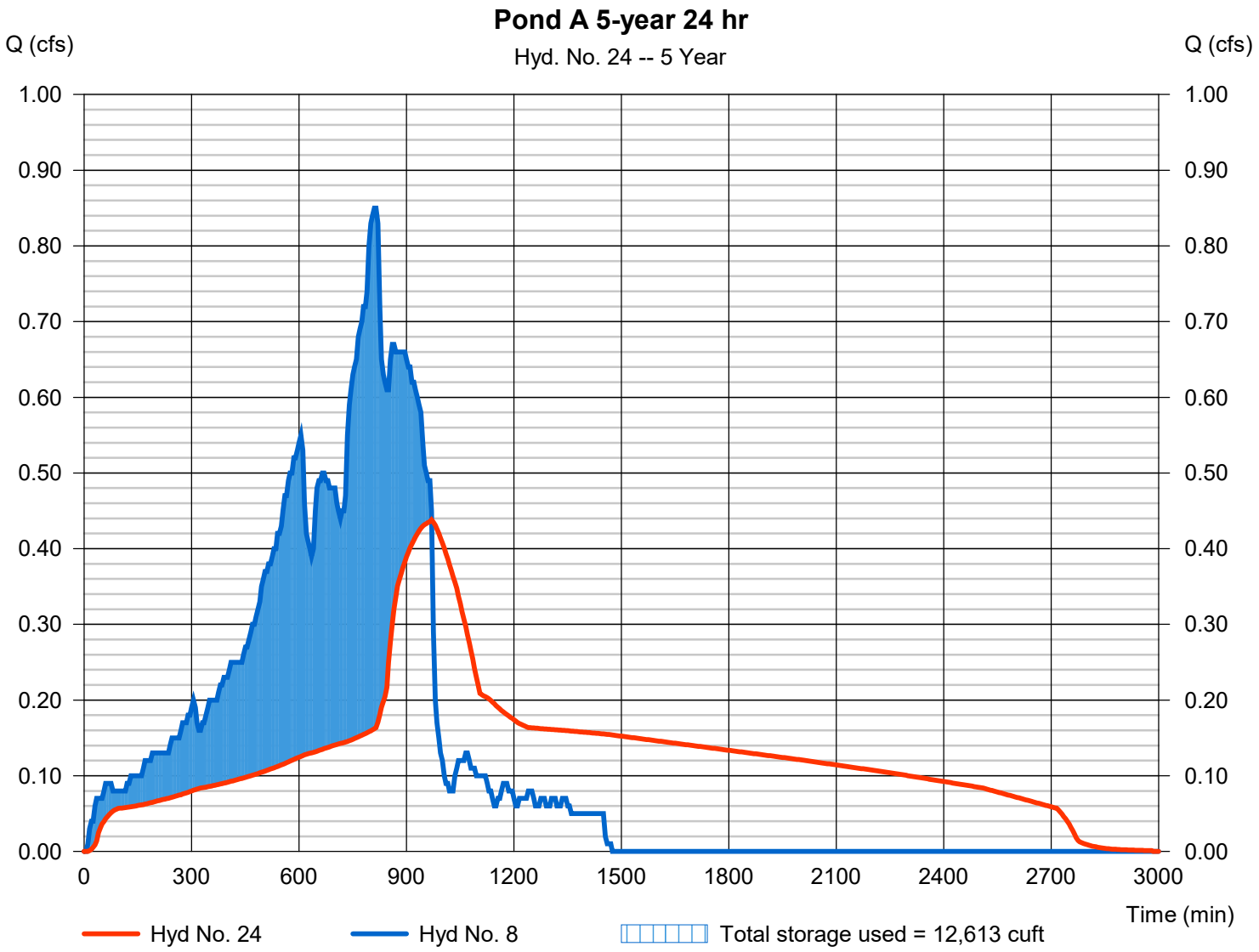
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 24

Pond A 5-year 24 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.438 cfs
Storm frequency	=	5 yrs	Time to peak	=	970 min
Time interval	=	5 min	Hyd. volume	=	22,839 cuft
Inflow hyd. No.	=	8 - Area A 5-year 24 hr	Max. Elevation	=	1147.42 ft
Reservoir name	=	Pond A	Max. Storage	=	12,613 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 1 hr
2	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 3 hr
3	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 6 hr
4	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 24 hr
5	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 1 hr
6	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 3 hr
7	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 6 hr
8	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 24 hr
9	Manual	6.000	5	60	8,982	------	------	------	Area A 10-year 1 hr
10	Manual	3.650	5	165	13,680	------	------	------	Area A 10-year 3 hr
11	Manual	3.220	5	340	17,898	------	------	------	Area A 10-year 6 hr
12	Manual	1.230	5	815	28,434	------	------	------	Area A 10-year 24 hr
13	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 1 hr
14	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 3 hr
15	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 6 hr
16	Manual	0.000	5	n/a	0	------	------	------	Area A 100-year 24 hr
17	Reservoir	0.000	5	n/a	0	1	1142.80	0.000	Pond A 2-year 1hr
18	Reservoir	0.000	5	n/a	0	2	1142.80	0.000	Pond A 2-year 3 hr
19	Reservoir	0.000	5	n/a	0	3	1142.80	0.000	Pond A 2-year 6 hr
20	Reservoir	0.000	5	n/a	0	4	1142.80	0.000	Pond A 2-year 24 hr
21	Reservoir	0.000	5	n/a	0	5	1142.80	0.000	Pond A 5-year 1hr
22	Reservoir	0.000	5	n/a	0	6	1142.80	0.000	Pond A 5-year 3 hr
23	Reservoir	0.000	5	n/a	0	7	1142.80	0.000	Pond A 5-year 6 hr
24	Reservoir	0.000	5	n/a	0	8	1142.80	0.000	Pond A 5-year 24 hr
25	Reservoir	0.152	5	105	8,976	9	1146.07	8,297	Pond A 10-year 1hr
26	Reservoir	0.385	5	195	13,674	10	1147.19	11,928	Pond A 10-year 3 hr
27	Reservoir	1.713	5	350	17,892	11	1147.81	13,455	Pond A 10-year 6 hr
28	Reservoir	0.898	5	890	28,428	12	1147.54	12,961	Pond A 10-year 24 hr
29	Reservoir	0.000	5	n/a	0	13	1142.80	0.000	Pond A 100-year 1hr
30	Reservoir	0.000	5	n/a	0	14	1142.80	0.000	Pond A 100-year 3 hr
31	Reservoir	0.000	5	n/a	0	15	1142.80	0.000	Pond A 100-year 6 hr
32	Reservoir	0.000	5	n/a	0	16	1142.80	0.000	Pond A 100-year 24 hr

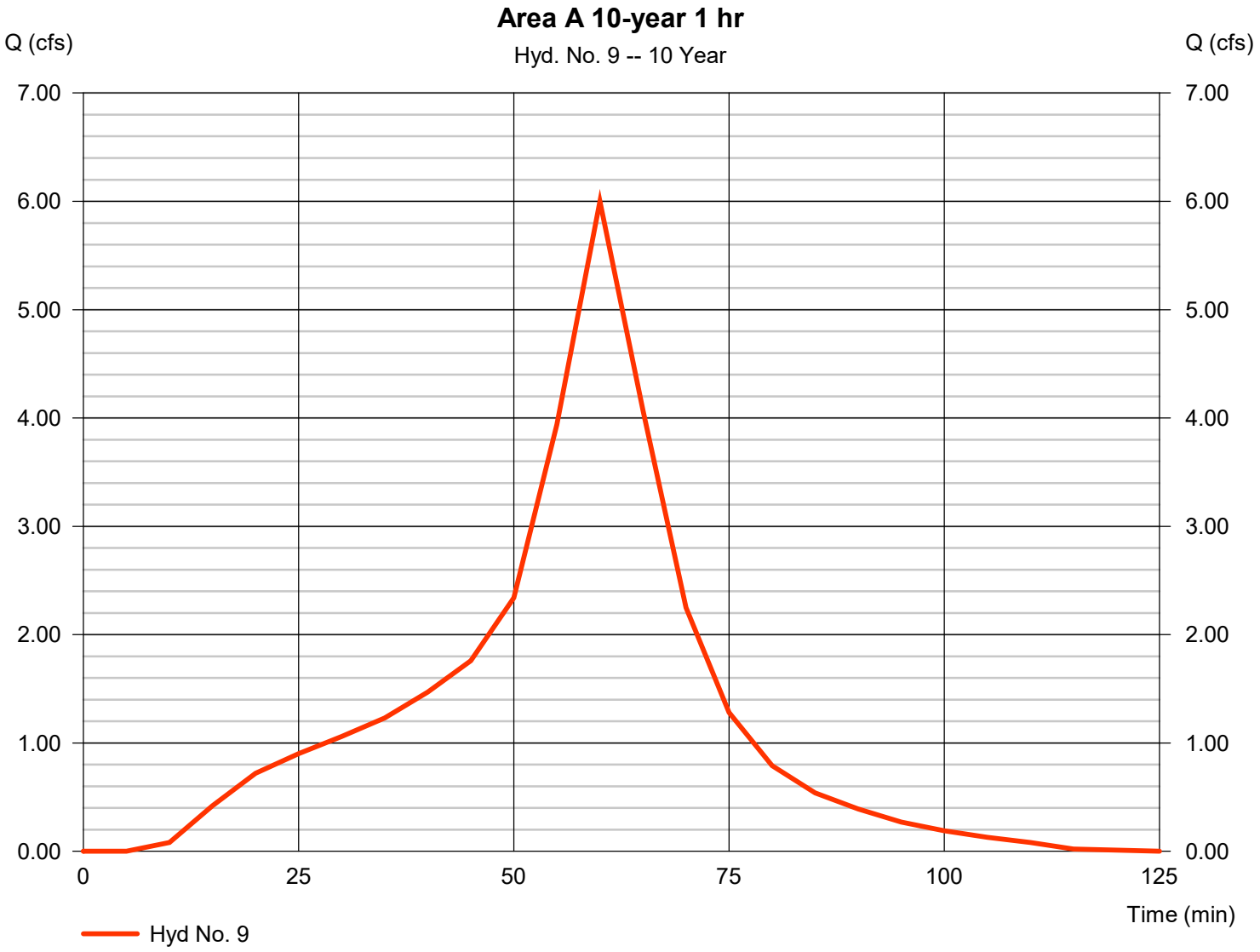
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 9

Area A 10-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 6.000 cfs
Storm frequency	= 10 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 8,982 cuft



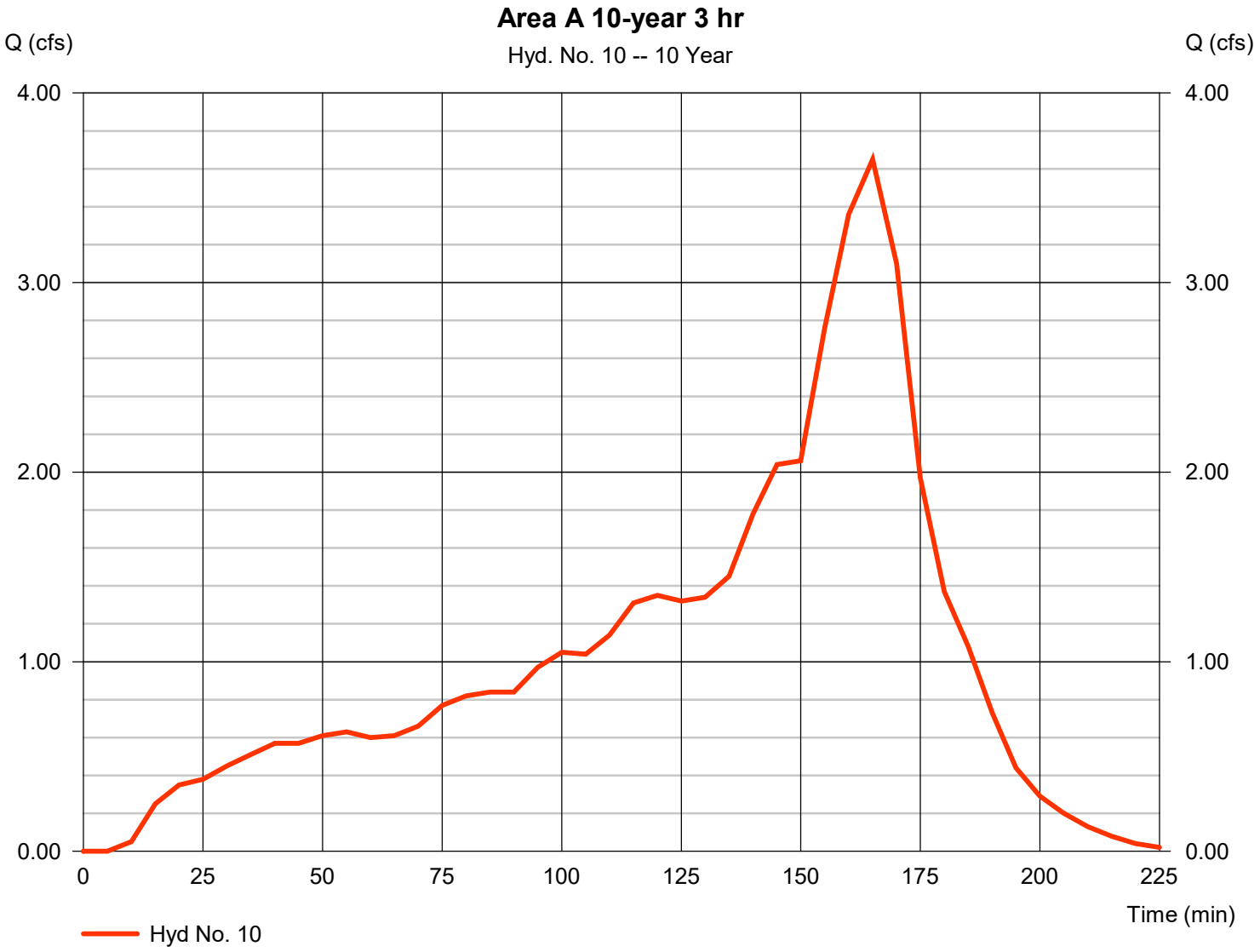
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 10

Area A 10-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 3.650 cfs
Storm frequency	= 10 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 13,680 cuft



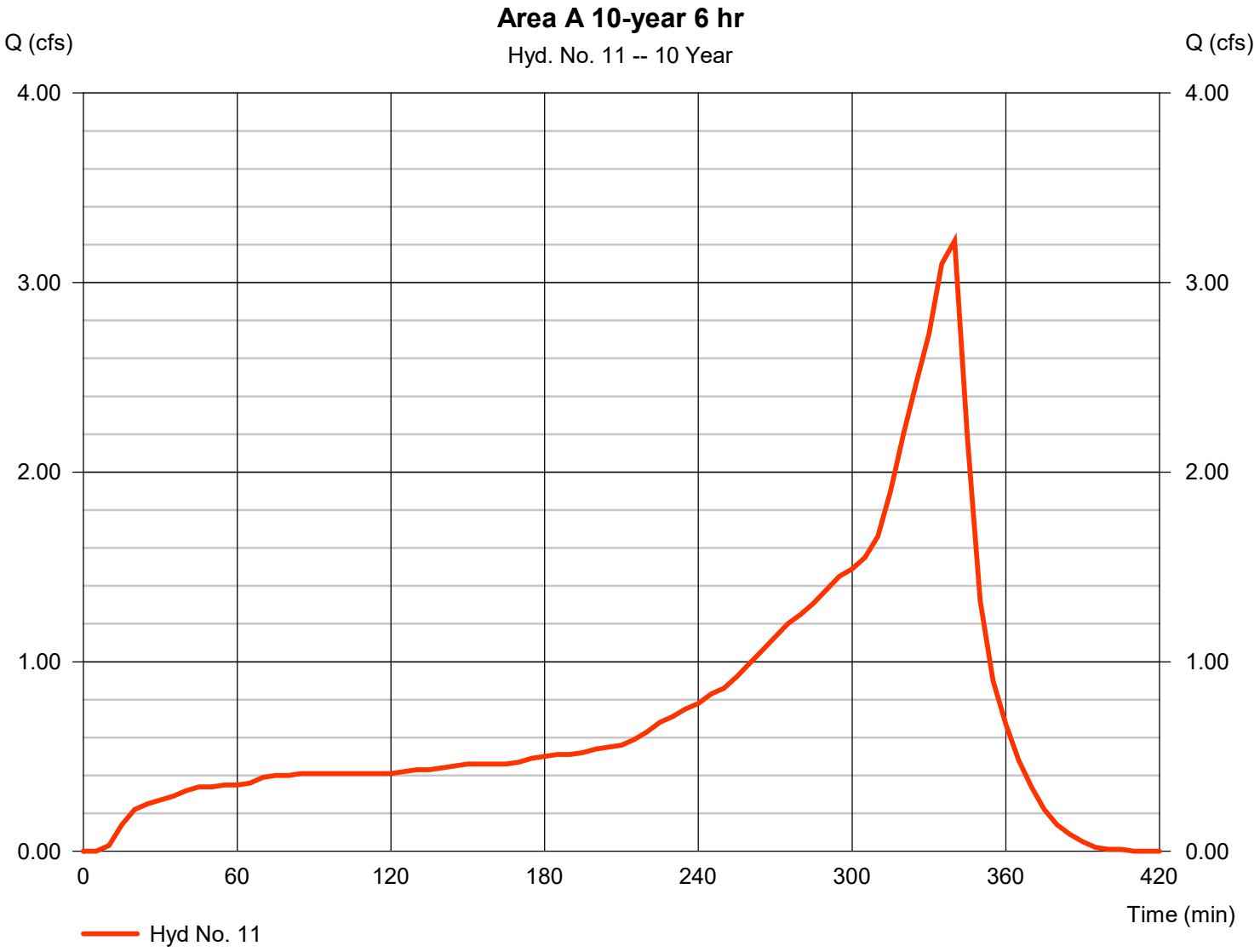
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 11

Area A 10-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 3.220 cfs
Storm frequency	= 10 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 17,898 cuft



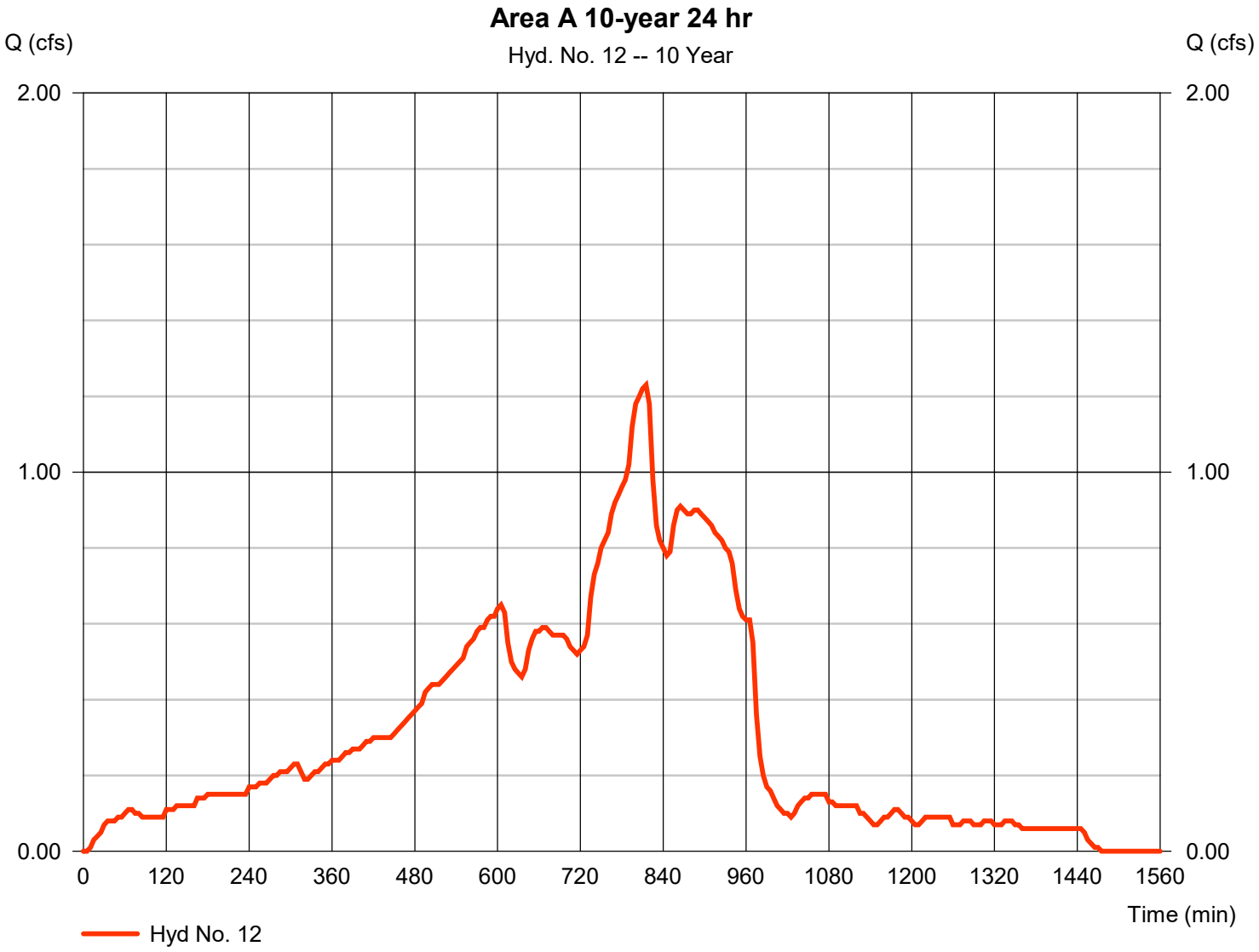
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 12

Area A 10-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 1.230 cfs
Storm frequency	= 10 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 28,434 cuft



Hydrograph Report

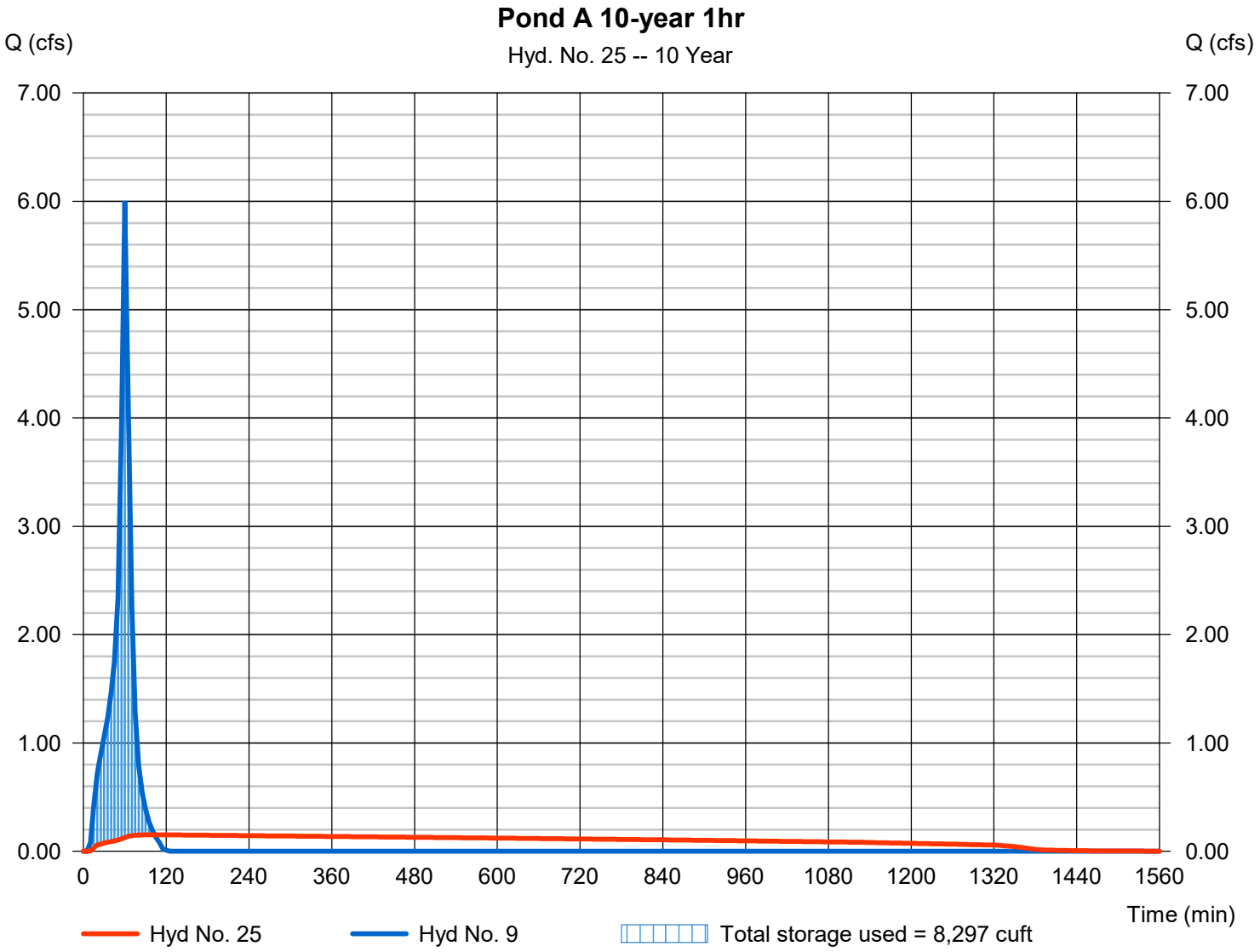
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 25

Pond A 10-year 1hr

Hydrograph type	= Reservoir	Peak discharge	= 0.152 cfs
Storm frequency	= 10 yrs	Time to peak	= 105 min
Time interval	= 5 min	Hyd. volume	= 8,976 cuft
Inflow hyd. No.	= 9 - Area A 10-year 1 hr	Max. Elevation	= 1146.07 ft
Reservoir name	= Pond A	Max. Storage	= 8,297 cuft

Storage Indication method used.



Hydrograph Report

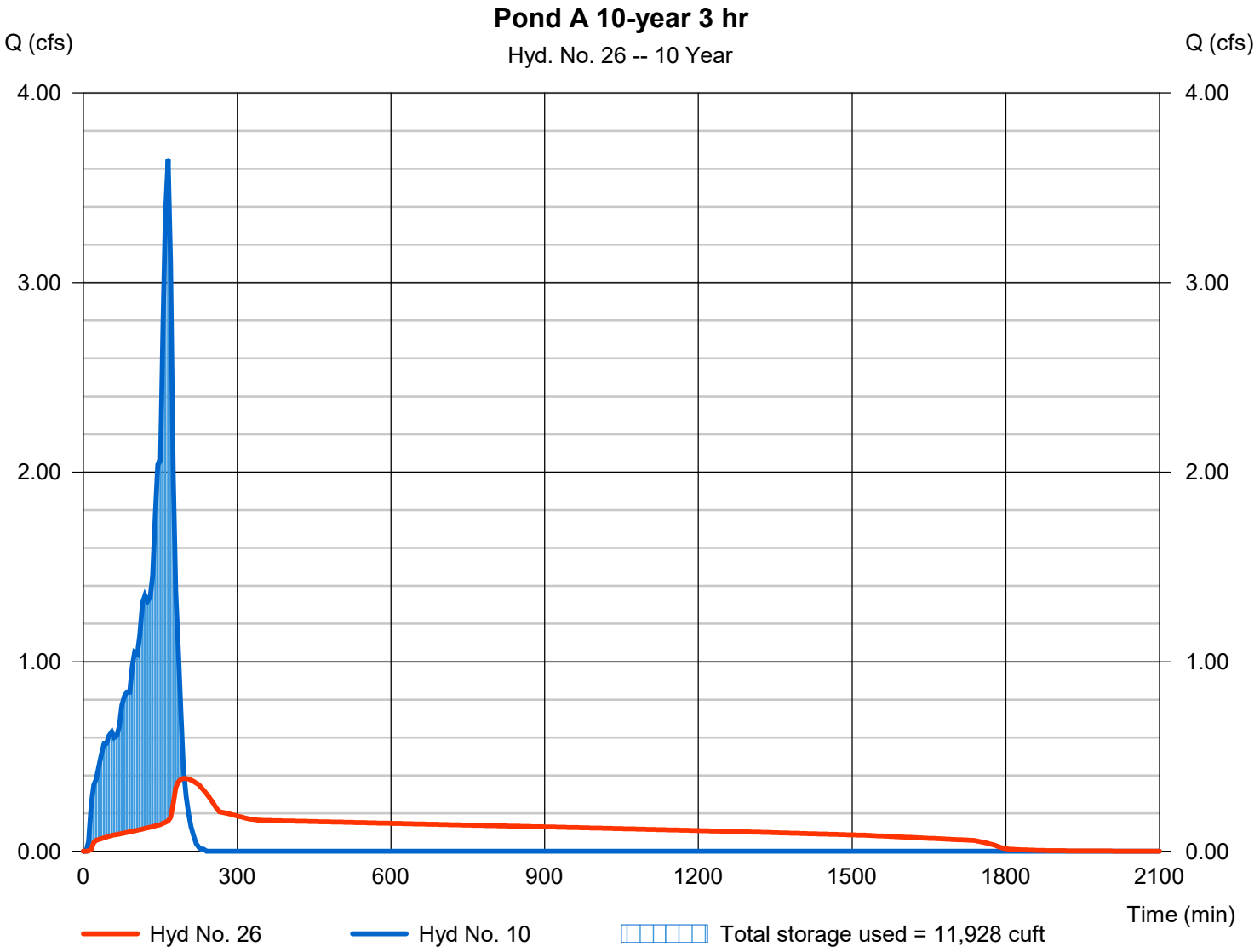
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 26

Pond A 10-year 3 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.385 cfs
Storm frequency	=	10 yrs	Time to peak	=	195 min
Time interval	=	5 min	Hyd. volume	=	13,674 cuft
Inflow hyd. No.	=	10 - Area A 10-year 3 hr	Max. Elevation	=	1147.19 ft
Reservoir name	=	Pond A	Max. Storage	=	11,928 cuft

Storage Indication method used.



Hydrograph Report

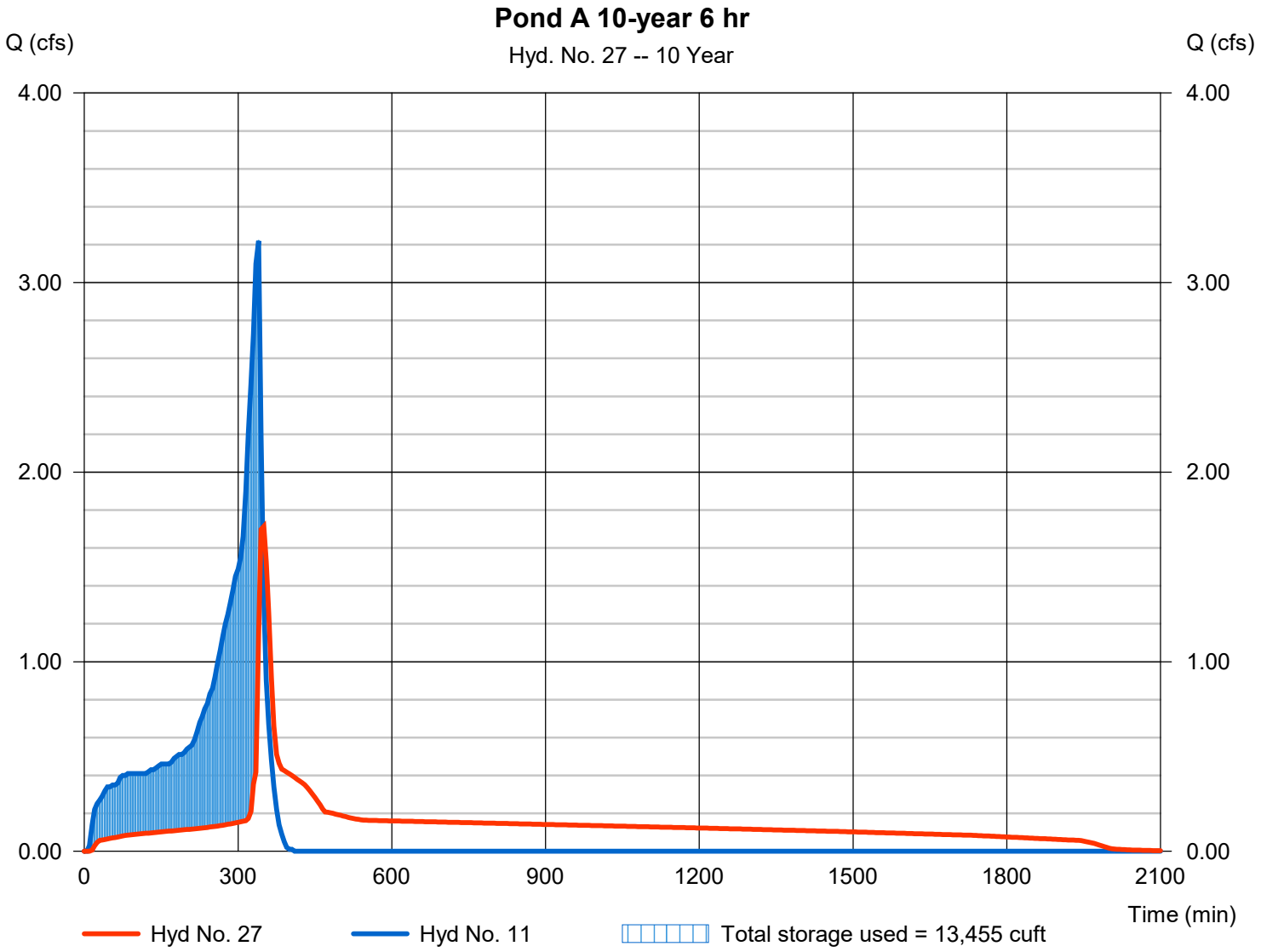
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 27

Pond A 10-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	1.713 cfs
Storm frequency	=	10 yrs	Time to peak	=	350 min
Time interval	=	5 min	Hyd. volume	=	17,892 cuft
Inflow hyd. No.	=	11 - Area A 10-year 6 hr	Max. Elevation	=	1147.81 ft
Reservoir name	=	Pond A	Max. Storage	=	13,455 cuft

Storage Indication method used.



Hydrograph Report

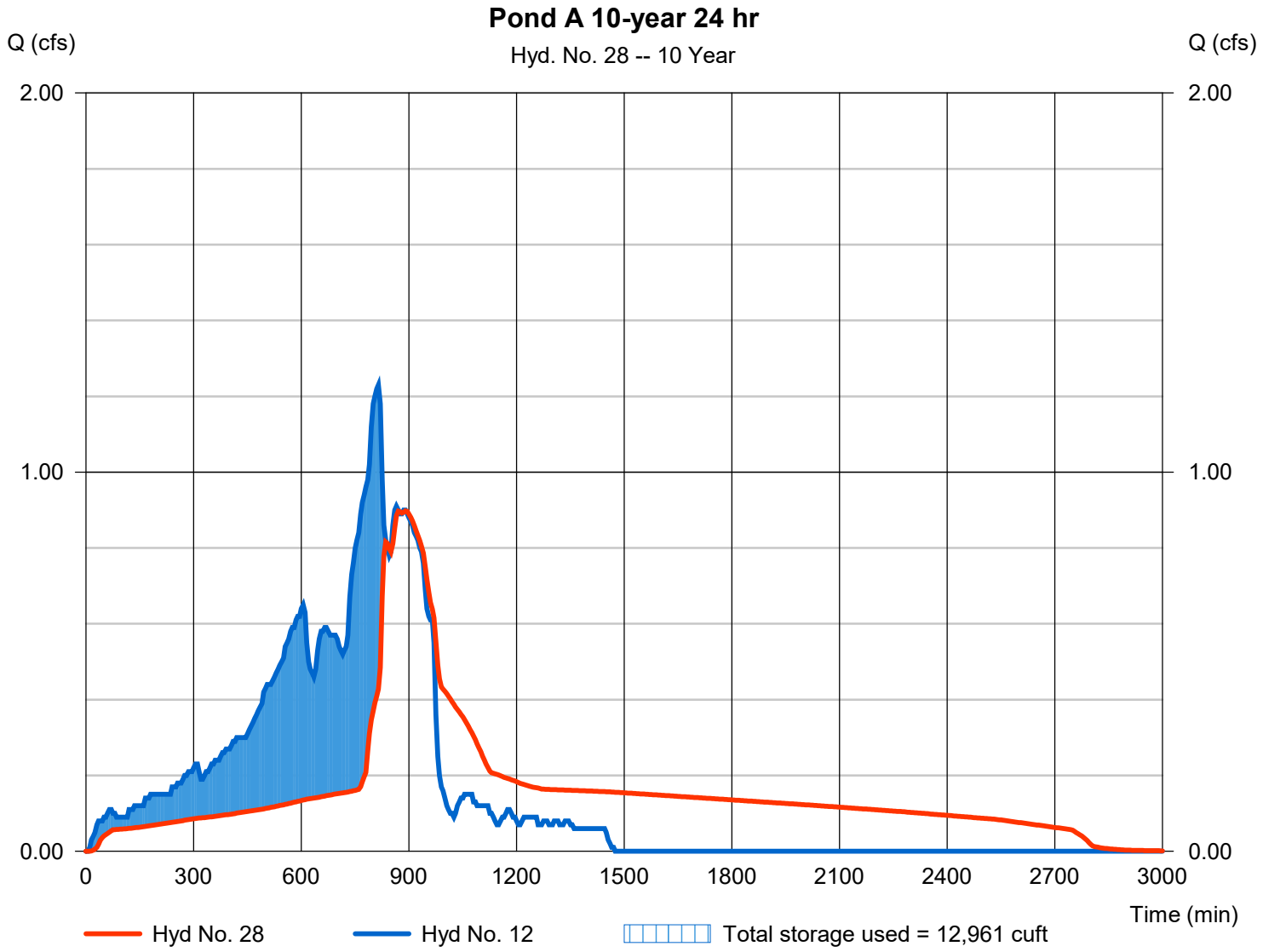
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 28

Pond A 10-year 24 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.898 cfs
Storm frequency	=	10 yrs	Time to peak	=	890 min
Time interval	=	5 min	Hyd. volume	=	28,428 cuft
Inflow hyd. No.	=	12 - Area A 10-year 24 hr	Max. Elevation	=	1147.54 ft
Reservoir name	=	Pond A	Max. Storage	=	12,961 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 1 hr
2	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 3 hr
3	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 6 hr
4	Manual	0.000	5	n/a	0	------	------	------	Area A 2-year 24 hr
5	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 1 hr
6	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 3 hr
7	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 6 hr
8	Manual	0.000	5	n/a	0	------	------	------	Area A 5-year 24 hr
9	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 1 hr
10	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 3 hr
11	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 6 hr
12	Manual	0.000	5	n/a	0	------	------	------	Area A 10-year 24 hr
13	Manual	9.590	5	60	15,072	------	------	------	Area A 100-year 1 hr
14	Manual	6.090	5	165	25,155	------	------	------	Area A 100-year 3 hr
15	Manual	5.240	5	340	32,109	------	------	------	Area A 100-year 6 hr
16	Manual	2.210	5	815	51,468	------	------	------	Area A 100-year 24 hr
17	Reservoir	0.000	5	n/a	0	1	1142.80	0.000	Pond A 2-year 1hr
18	Reservoir	0.000	5	n/a	0	2	1142.80	0.000	Pond A 2-year 3 hr
19	Reservoir	0.000	5	n/a	0	3	1142.80	0.000	Pond A 2-year 6 hr
20	Reservoir	0.000	5	n/a	0	4	1142.80	0.000	Pond A 2-year 24 hr
21	Reservoir	0.000	5	n/a	0	5	1142.80	0.000	Pond A 5-year 1hr
22	Reservoir	0.000	5	n/a	0	6	1142.80	0.000	Pond A 5-year 3 hr
23	Reservoir	0.000	5	n/a	0	7	1142.80	0.000	Pond A 5-year 6 hr
24	Reservoir	0.000	5	n/a	0	8	1142.80	0.000	Pond A 5-year 24 hr
25	Reservoir	0.000	5	n/a	0	9	1142.80	0.000	Pond A 10-year 1hr
26	Reservoir	0.000	5	n/a	0	10	1142.80	0.000	Pond A 10-year 3 hr
27	Reservoir	0.000	5	n/a	0	11	1142.80	0.000	Pond A 10-year 6 hr
28	Reservoir	0.000	5	n/a	0	12	1142.80	0.000	Pond A 10-year 24 hr
29	Reservoir	1.304	5	80	15,066	13	1147.64	13,146	Pond A 100-year 1hr
30	Reservoir	4.723	5	170	25,149	14	1149.16	15,907	Pond A 100-year 3 hr
31	Reservoir	4.408	5	345	32,103	15	1149.13	15,776	Pond A 100-year 6 hr
32	Reservoir	2.086	5	820	51,462	16	1147.96	13,831	Pond A 100-year 24 hr

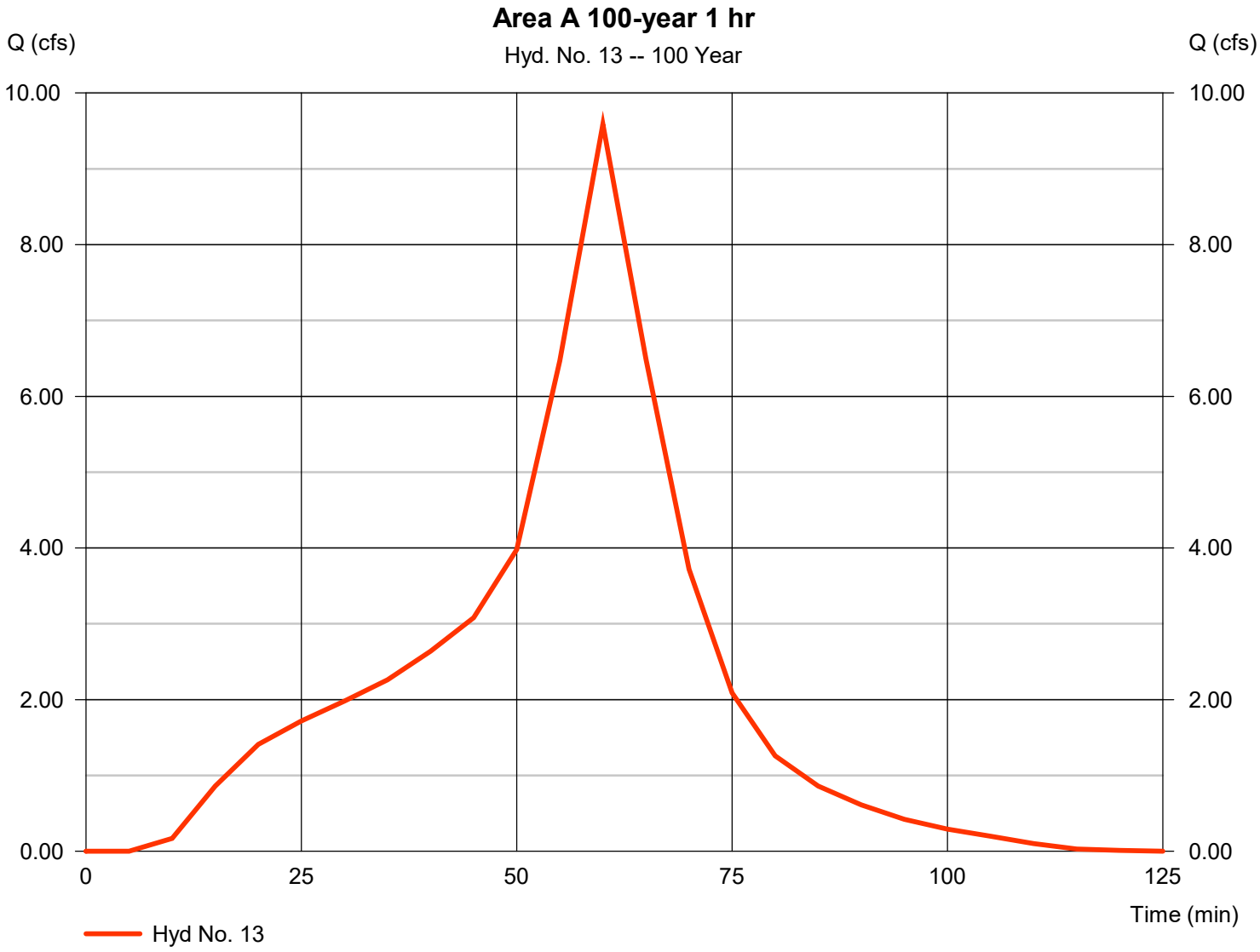
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 13

Area A 100-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 9.590 cfs
Storm frequency	= 100 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 15,072 cuft



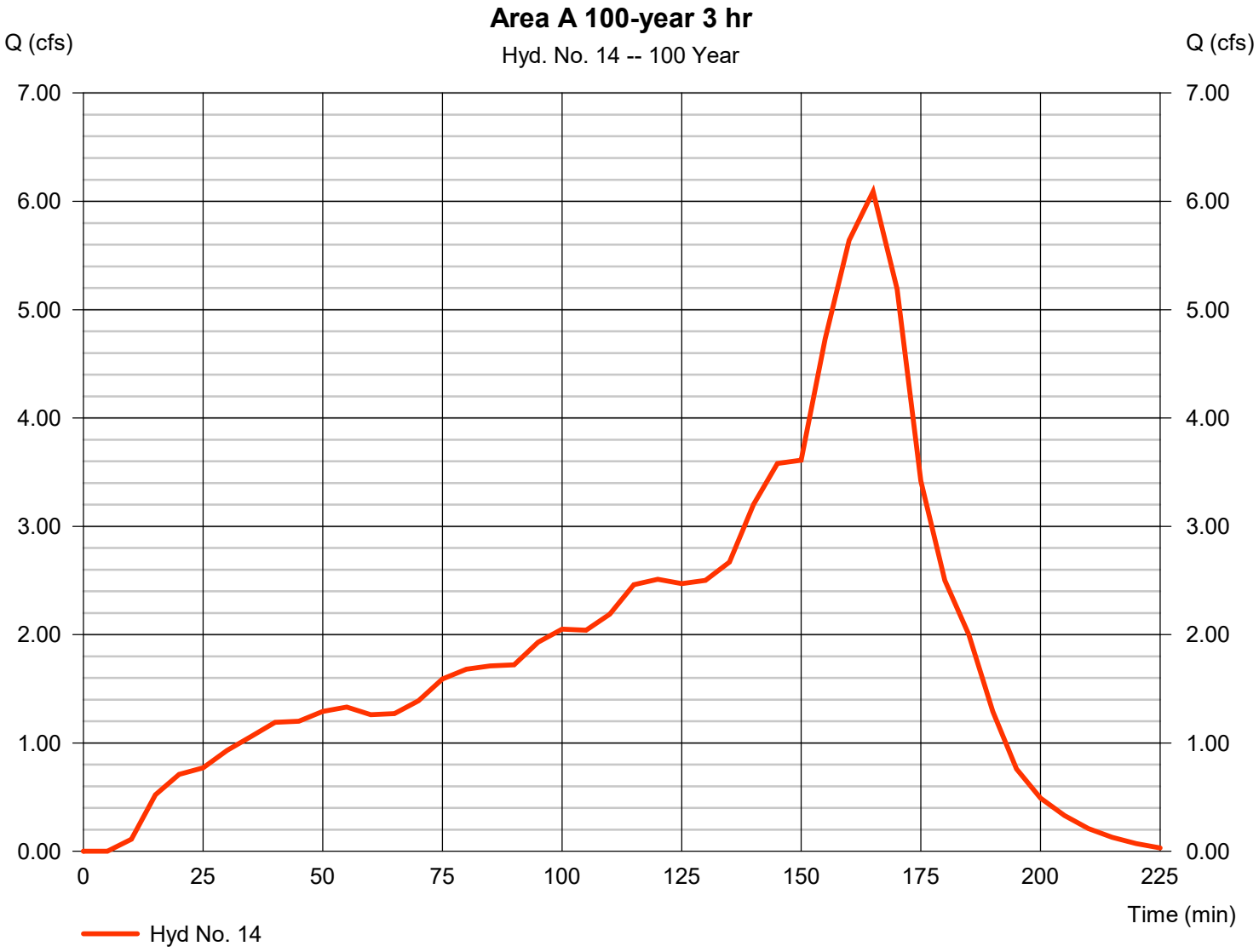
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 14

Area A 100-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 6.090 cfs
Storm frequency	= 100 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 25,155 cuft



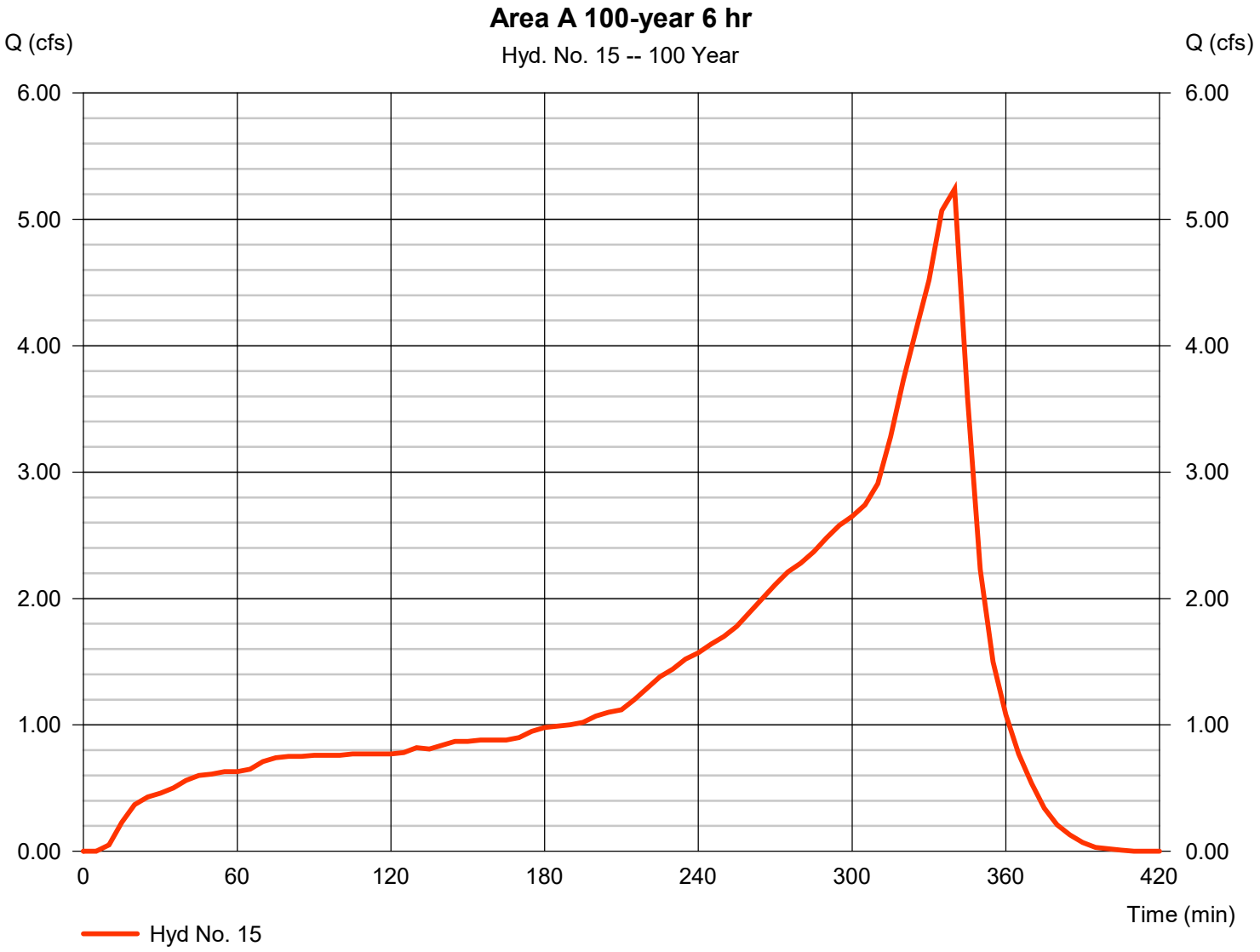
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 15

Area A 100-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 5.240 cfs
Storm frequency	= 100 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 32,109 cuft



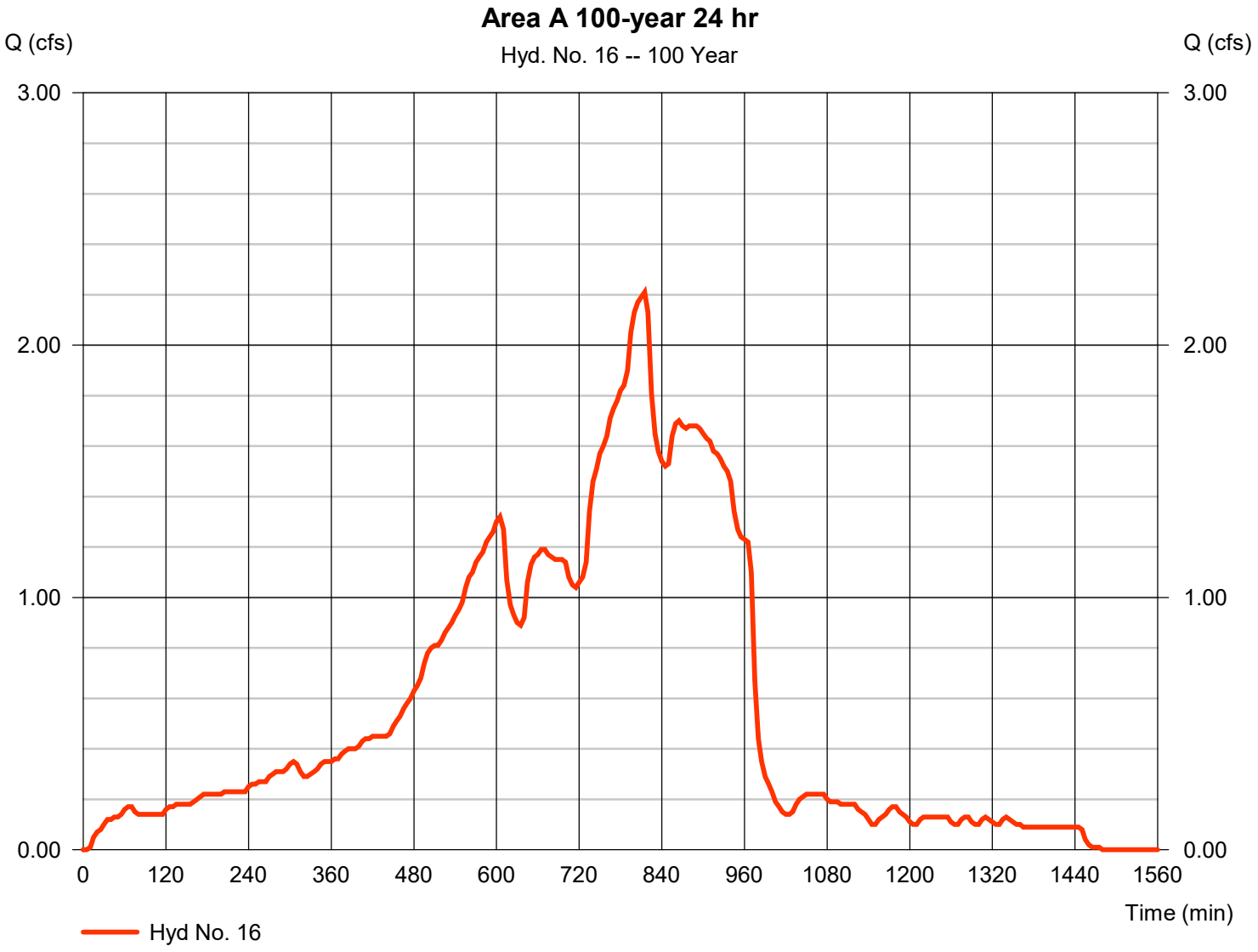
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 16

Area A 100-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 2.210 cfs
Storm frequency	= 100 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 51,468 cuft



Hydrograph Report

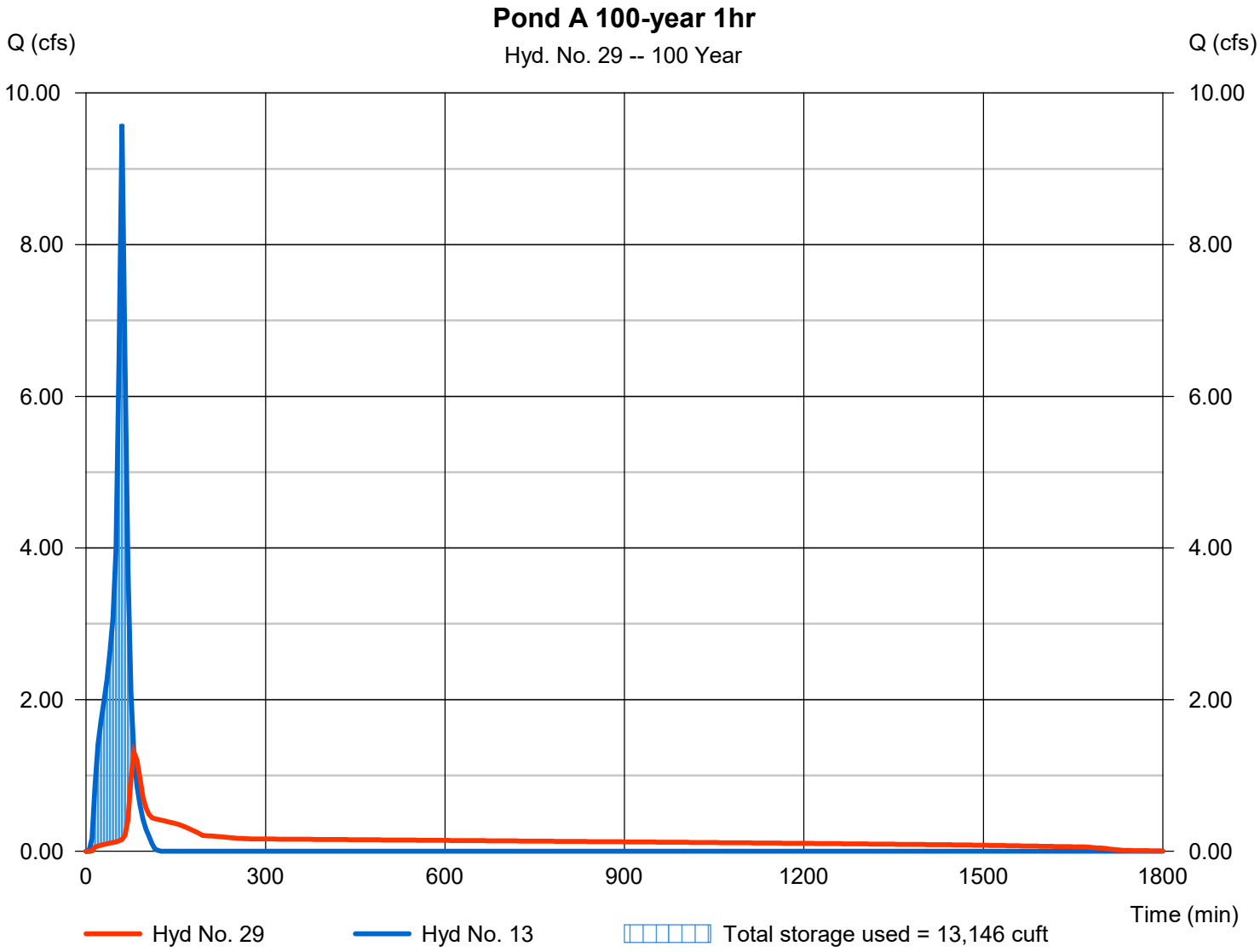
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 29

Pond A 100-year 1hr

Hydrograph type	= Reservoir	Peak discharge	= 1.304 cfs
Storm frequency	= 100 yrs	Time to peak	= 80 min
Time interval	= 5 min	Hyd. volume	= 15,066 cuft
Inflow hyd. No.	= 13 - Area A 100-year 1 hr	Max. Elevation	= 1147.64 ft
Reservoir name	= Pond A	Max. Storage	= 13,146 cuft

Storage Indication method used.



Hydrograph Report

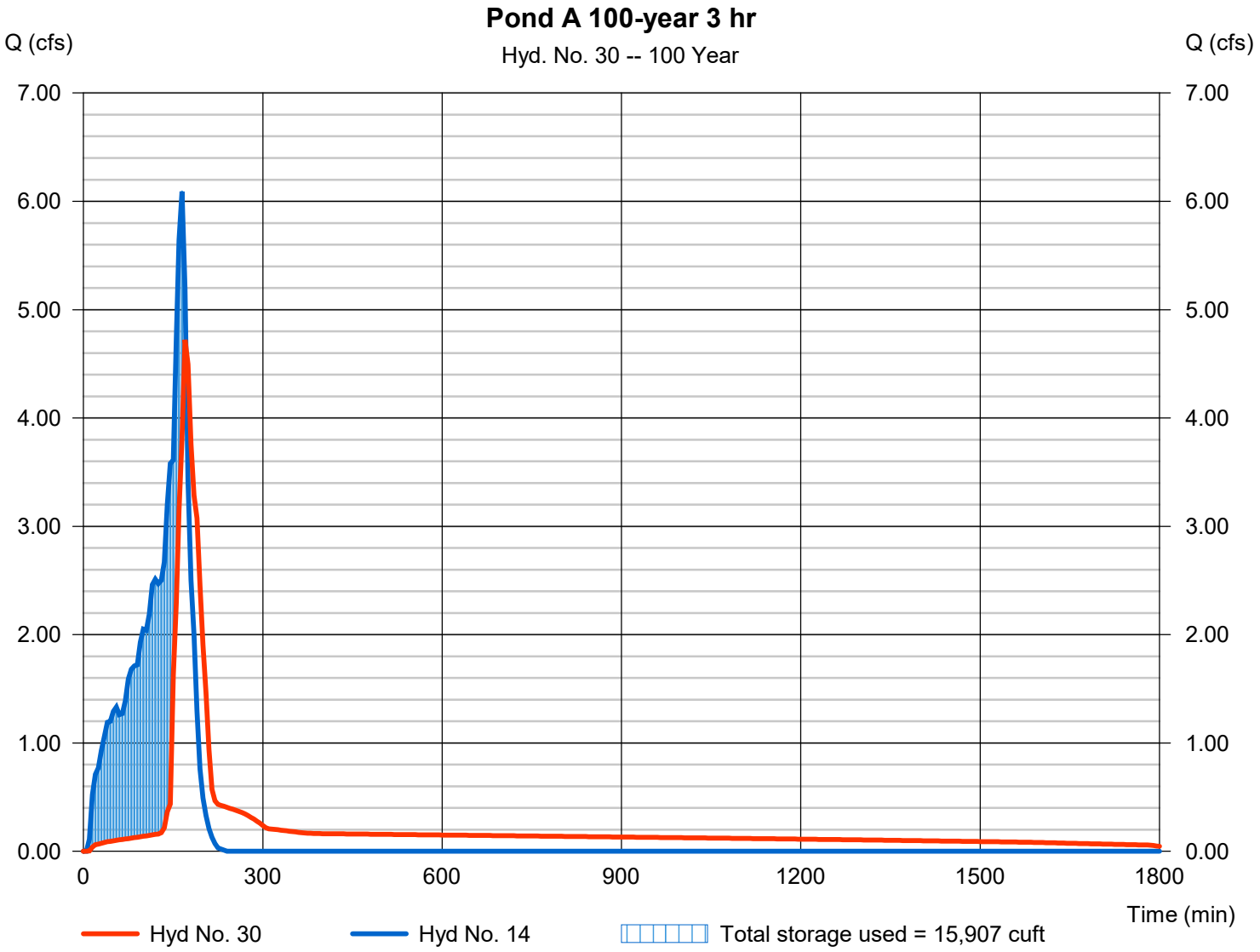
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 30

Pond A 100-year 3 hr

Hydrograph type	= Reservoir	Peak discharge	= 4.723 cfs
Storm frequency	= 100 yrs	Time to peak	= 170 min
Time interval	= 5 min	Hyd. volume	= 25,149 cuft
Inflow hyd. No.	= 14 - Area A 100-year 3 hr	Max. Elevation	= 1149.16 ft
Reservoir name	= Pond A	Max. Storage	= 15,907 cuft

Storage Indication method used.



Hydrograph Report

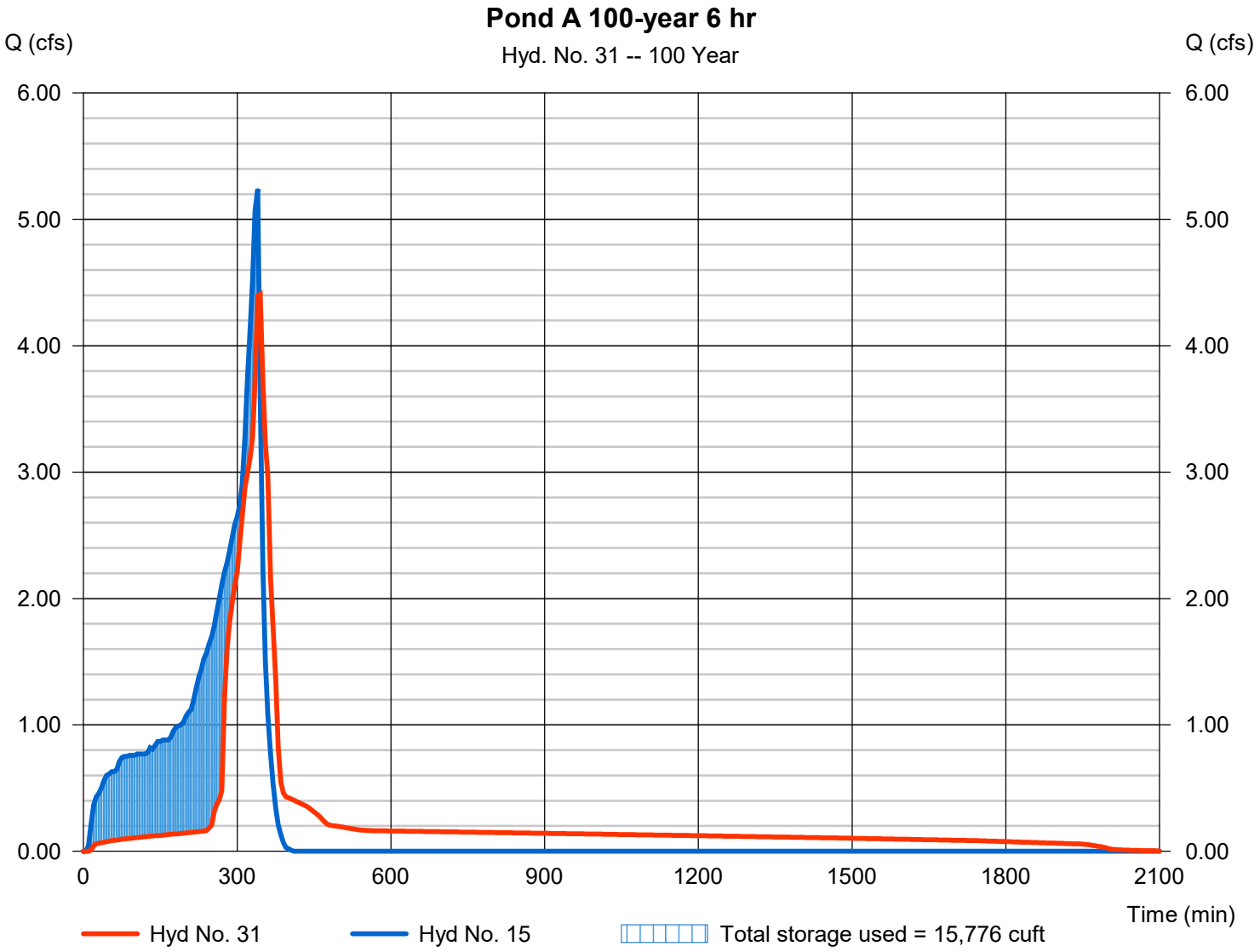
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 31

Pond A 100-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	4.408 cfs
Storm frequency	=	100 yrs	Time to peak	=	345 min
Time interval	=	5 min	Hyd. volume	=	32,103 cuft
Inflow hyd. No.	=	15 - Area A 100-year 6 hr	Max. Elevation	=	1149.13 ft
Reservoir name	=	Pond A	Max. Storage	=	15,776 cuft

Storage Indication method used.



Hydrograph Report

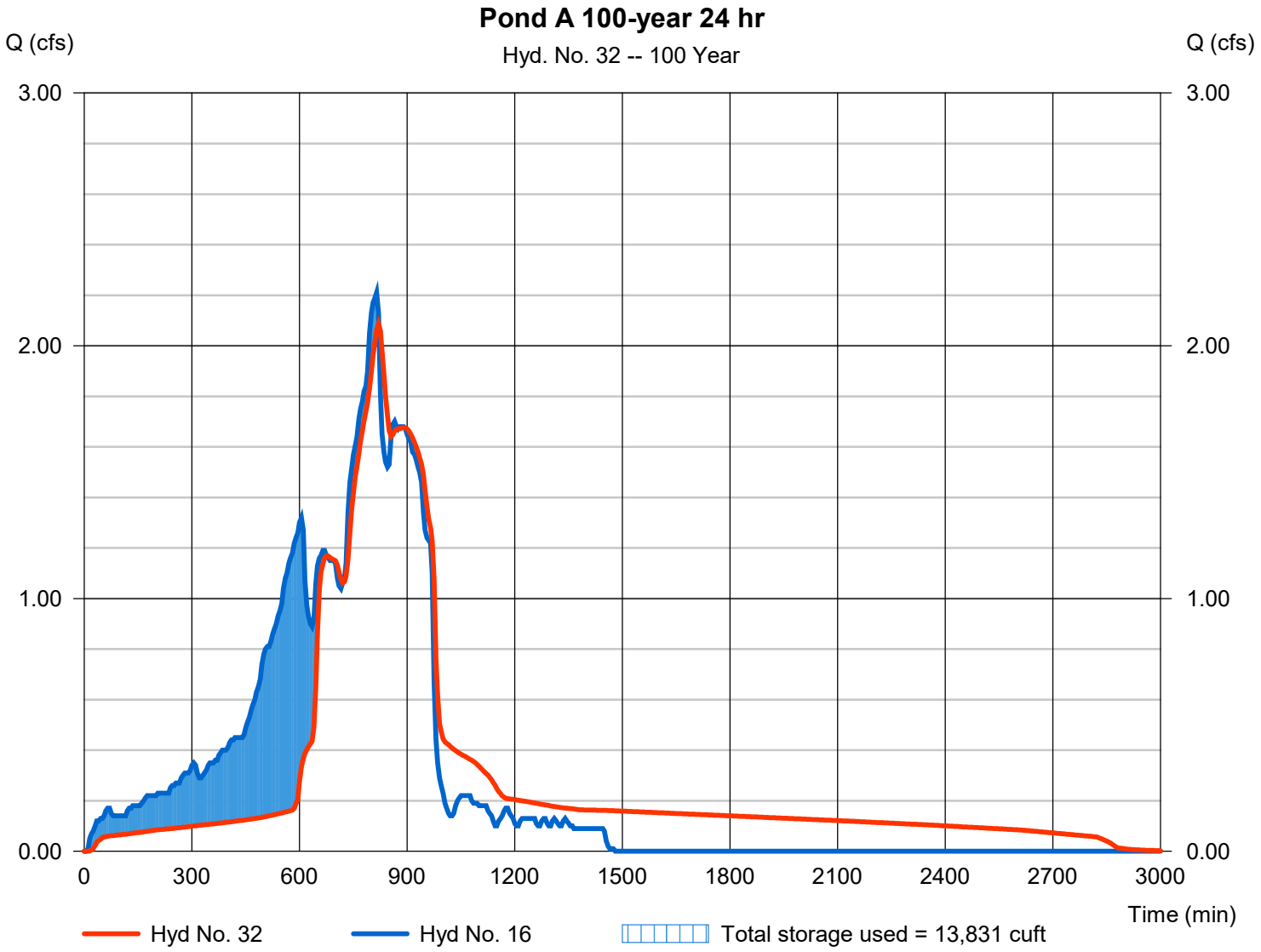
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 32

Pond A 100-year 24 hr

Hydrograph type	=	Reservoir	Peak discharge	=	2.086 cfs
Storm frequency	=	100 yrs	Time to peak	=	820 min
Time interval	=	5 min	Hyd. volume	=	51,462 cuft
Inflow hyd. No.	=	16 - Area A 100-year 24 hr	Max. Elevation	=	1147.96 ft
Reservoir name	=	Pond A	Max. Storage	=	13,831 cuft

Storage Indication method used.



Area B – Detention Pond Written Calcs

Storage Provided in Pipes

Segment #1

$Size\ of\ Pipe = 5'$

$Length\ of\ Pipe = 80'$

$$Volume = \left(\frac{\pi}{4}(5')^2\right)(80')$$

$$Volume = 1{,}571\ ft^3$$

Segment #2

$Size\ of\ Pipe = 5'$

$Length\ of\ Pipe = 111'$

$$Volume = \left(\frac{\pi}{4}(5')^2\right)(111')$$

$$Volume = 2{,}180\ ft^3$$

Segment #3

$Size\ of\ Pipe = 3'$

$Length\ of\ Pipe = 143.3'$

$$Volume = \left(\frac{\pi}{4}(3')^2\right)(143.3')$$

$$Volume = 1{,}013\ ft^3$$

Segment #4

$Size\ of\ Pipe = 5'$

$Length\ of\ Pipe = 692'$

$$Volume = \left(\frac{\pi}{4}(5')^2\right)(692')$$

$$Volume = 13{,}590\ ft^3$$

Storage Provided in Pond

$Basin\ Bottom\ Area: 1{,}675\ ft^2$

$Basin\ Top\ Area: 2{,}381\ ft^2$

$Perimeter\ of\ Pond = 175\ ft$

$Depth\ of\ Media + Rock\ Bed = 4.5'$

$Void\ Space = 0.3$

$Height\ of\ Riser\ Pipe = 0.833ft$

$$Volume\ Below\ Ground = (1{,}675ft^2)(4.5ft)(0.3)$$

$$Volume\ Below\ Ground = 2{,}261ft^3$$

$$Volume\ Above\ Ground = \left((1{,}675ft^2)(0.833ft)\right) \times \left(\frac{1}{2}(3.33ft)(0.833ft)\right)(175ft)$$

$$Volume\ Above\ Ground = 1{,}638ft^3$$

$$\underline{Total\ Storage\ Provided}$$

$$Total\ Storage\ Volume\ Provided = 1{,}571\ ft^3 + 2{,}180ft^3 + 1{,}013ft^3 + 13{,}590ft^3 + 2{,}261ft^3 + 1{,}638ft^3$$

$$Total\ Storage\ Volume\ Provided = 22{,}253ft^3$$

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond B - Segment #1

Pond Data

UG Chambers -Invert elev. = 1142.60 ft, Rise x Span = 5.00 x 5.00 ft, Barrel Len = 40.00 ft, No. Barrels = 2, Slope = 0.30%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1142.60	n/a	0	0
0.51	1143.11	n/a	71	71
1.02	1143.62	n/a	142	213
1.54	1144.14	n/a	175	388
2.05	1144.65	n/a	195	582
2.56	1145.16	n/a	203	786
3.07	1145.67	n/a	204	989
3.58	1146.18	n/a	194	1,184
4.10	1146.70	n/a	175	1,359
4.61	1147.21	n/a	142	1,501
5.12	1147.72	n/a	71	1,571

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1142.60	---	---	---	---	---	---	---	---	---	---	0.000
0.51	71	1143.11	---	---	---	---	---	---	---	---	---	---	0.000
1.02	213	1143.62	---	---	---	---	---	---	---	---	---	---	0.000
1.54	388	1144.14	---	---	---	---	---	---	---	---	---	---	0.000
2.05	582	1144.65	---	---	---	---	---	---	---	---	---	---	0.000
2.56	786	1145.16	---	---	---	---	---	---	---	---	---	---	0.000
3.07	989	1145.67	---	---	---	---	---	---	---	---	---	---	0.000
3.58	1,184	1146.18	---	---	---	---	---	---	---	---	---	---	0.000
4.10	1,359	1146.70	---	---	---	---	---	---	---	---	---	---	0.000
4.61	1,501	1147.21	---	---	---	---	---	---	---	---	---	---	0.000
5.12	1,571	1147.72	---	---	---	---	---	---	---	---	---	---	0.000

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond B - Segment #2

Pond Data

UG Chambers -Invert elev. = 1142.70 ft, Rise x Span = 5.00 x 5.00 ft, Barrel Len = 37.00 ft, No. Barrels = 3, Slope = 0.30%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1142.70	n/a	0	0
0.51	1143.21	n/a	99	99
1.02	1143.72	n/a	197	296
1.53	1144.23	n/a	243	539
2.04	1144.74	n/a	269	809
2.56	1145.26	n/a	282	1,090
3.07	1145.77	n/a	282	1,372
3.58	1146.28	n/a	270	1,642
4.09	1146.79	n/a	243	1,884
4.60	1147.30	n/a	196	2,081
5.11	1147.81	n/a	99	2,180

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1142.70	---	---	---	---	---	---	---	---	---	---	0.000
0.51	99	1143.21	---	---	---	---	---	---	---	---	---	---	0.000
1.02	296	1143.72	---	---	---	---	---	---	---	---	---	---	0.000
1.53	539	1144.23	---	---	---	---	---	---	---	---	---	---	0.000
2.04	809	1144.74	---	---	---	---	---	---	---	---	---	---	0.000
2.56	1,090	1145.26	---	---	---	---	---	---	---	---	---	---	0.000
3.07	1,372	1145.77	---	---	---	---	---	---	---	---	---	---	0.000
3.58	1,642	1146.28	---	---	---	---	---	---	---	---	---	---	0.000
4.09	1,884	1146.79	---	---	---	---	---	---	---	---	---	---	0.000
4.60	2,081	1147.30	---	---	---	---	---	---	---	---	---	---	0.000
5.11	2,180	1147.81	---	---	---	---	---	---	---	---	---	---	0.000

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond B - Segment #3

Pond Data

UG Chambers -Invert elev. = 1142.80 ft, Rise x Span = 3.00 x 3.00 ft, Barrel Len = 143.30 ft, No. Barrels = 1, Slope = 0.20%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1142.80	n/a	0	0
0.33	1143.13	n/a	28	28
0.66	1143.46	n/a	89	117
0.99	1143.79	n/a	117	234
1.31	1144.11	n/a	133	367
1.64	1144.44	n/a	140	507
1.97	1144.77	n/a	140	647
2.30	1145.10	n/a	133	779
2.63	1145.43	n/a	117	897
2.96	1145.76	n/a	88	985
3.29	1146.09	n/a	28	1,013

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1142.80	---	---	---	---	---	---	---	---	---	---	0.000
0.33	28	1143.13	---	---	---	---	---	---	---	---	---	---	0.000
0.66	117	1143.46	---	---	---	---	---	---	---	---	---	---	0.000
0.99	234	1143.79	---	---	---	---	---	---	---	---	---	---	0.000
1.31	367	1144.11	---	---	---	---	---	---	---	---	---	---	0.000
1.64	507	1144.44	---	---	---	---	---	---	---	---	---	---	0.000
1.97	647	1144.77	---	---	---	---	---	---	---	---	---	---	0.000
2.30	779	1145.10	---	---	---	---	---	---	---	---	---	---	0.000
2.63	897	1145.43	---	---	---	---	---	---	---	---	---	---	0.000
2.96	985	1145.76	---	---	---	---	---	---	---	---	---	---	0.000
3.29	1,013	1146.09	---	---	---	---	---	---	---	---	---	---	0.000

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond B - Segment #4

Pond Data

UG Chambers -Invert elev. = 1143.10 ft, Rise x Span = 5.00 x 5.00 ft, Barrel Len = 86.50 ft, No. Barrels = 8, Slope = 0.30%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1143.10	n/a	0	0
0.53	1143.63	n/a	509	509
1.05	1144.15	n/a	1,218	1,727
1.58	1144.68	n/a	1,543	3,270
2.10	1145.20	n/a	1,721	4,991
2.63	1145.73	n/a	1,806	6,797
3.16	1146.26	n/a	1,806	8,602
3.68	1146.78	n/a	1,723	10,326
4.21	1147.31	n/a	1,539	11,865
4.73	1147.83	n/a	1,217	13,082
5.26	1148.36	n/a	508	13,590

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1143.10	---	---	---	---	---	---	---	---	---	---	0.000
0.53	509	1143.63	---	---	---	---	---	---	---	---	---	---	0.000
1.05	1,727	1144.15	---	---	---	---	---	---	---	---	---	---	0.000
1.58	3,270	1144.68	---	---	---	---	---	---	---	---	---	---	0.000
2.10	4,991	1145.20	---	---	---	---	---	---	---	---	---	---	0.000
2.63	6,797	1145.73	---	---	---	---	---	---	---	---	---	---	0.000
3.16	8,602	1146.26	---	---	---	---	---	---	---	---	---	---	0.000
3.68	10,326	1146.78	---	---	---	---	---	---	---	---	---	---	0.000
4.21	11,865	1147.31	---	---	---	---	---	---	---	---	---	---	0.000
4.73	13,082	1147.83	---	---	---	---	---	---	---	---	---	---	0.000
5.26	13,590	1148.36	---	---	---	---	---	---	---	---	---	---	0.000

Pond B - Stage Storage Calculations

Segment #1		
Stage	***Incrimental Storage (ft ^{3})***	***Total Storage (ft3)***
1142.6	0	0
1143.11	71	71
1143.62	142	213
1144.14	175	388
1144.65	195	583
1145.16	203	786
1145.67	203	989
1146.18	194	1183
1146.7	175	1358
1147.21	142	1500
1147.72	71	1571
1148.28	0	1571

Segment #2		
Stage	***Incrimental Storage (ft3)***	***Total Storage (ft3)***
1142.7	0	0
1143.11	80	80
1143.62	178	257
1144.14	235	496
1144.65	264	761
1145.16	280	1036
1145.67	282	1317
1146.18	272	1589
1146.7	248	1842
1147.21	204	2046
1147.72	116	2163
1148.28	0	2181

Segment #3		
Stage	***Incrimental Storage (ft ^{3})***	***Total Storage (ft3)***
1142.8	0	0
1143.11	26	26
1143.62	103	174
1144.14	134	380
1144.65	140	596
1145.16	130	801
1145.67	96	961
1146.18	52	1013
1146.7	0	1013
1147.21	0	1013
1147.72	0	1013
1148.28	0	1013

Segment #4		
Stage	***Incrimental Storage (ft ^{3})***	***Total Storage (ft3)***
1142.8	0	0
1143.1	0	0
1143.62	499	499
1144.14	1204	1704
1144.65	1525	3183
1145.16	1707	4859
1145.67	1796	6593
1146.18	1806	8330
1146.7	1736	10061
1147.21	1574	11575
1147.72	1285	12825
1148.28	765	13590

Storage Provided by Biopond		
Stage	*Incrimental Storage (ft^3)*	*Total Storage (ft3)*
1143	0	0
1143.11	55	55
1143.62	256	312
1144.14	261	573
1144.65	256	829
1145.16	256	1085
1145.67	256	1342
1146.18	256	1598
1146.7	261	1859
1147.21	256	2116
1147.72	514	2630
1148.28	1181	3810

Above Ground Basin Characteristics	
Basin Bottom Area (ft^2)	1675
Basin Top Area (ft^2)	2381

Total Storage Provided		
Stage	*Incrimental Storage (ft^3)*	*Total Storage (ft3)*
1142.6	0	0
1143.11	232	232
1143.62	1178	1455
1144.14	2009	3540
1144.65	2380	5951
1145.16	2576	8567
1145.67	2634	11201
1146.18	2581	13713
1146.7	2420	16133
1147.21	2176	18250
1147.72	1986	20201
1148.28	1946	22165

Pond Report

Pond No. 1 - Pond B

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1142.60	n/a	0	0
0.51	1143.11	n/a	232	232
1.02	1143.62	n/a	1,223	1,455
1.54	1144.14	n/a	2,085	3,540
2.05	1144.65	n/a	2,411	5,951
2.56	1145.16	n/a	2,616	8,567
3.07	1145.67	n/a	2,634	11,201
3.58	1146.18	n/a	2,512	13,713
4.10	1146.70	n/a	2,420	16,133
4.61	1147.21	n/a	2,117	18,250
5.12	1147.72	n/a	1,951	20,201
5.68	1148.28	n/a	1,964	22,165

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 1.90	2.00	2.00	0.00
Span (in)	= 1.90	5.00	37.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 1142.60	1145.96	1146.70	0.00
Length (ft)	= 1.00	1.00	1.00	0.00
Slope (%)	= 1.00	1.00	1.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

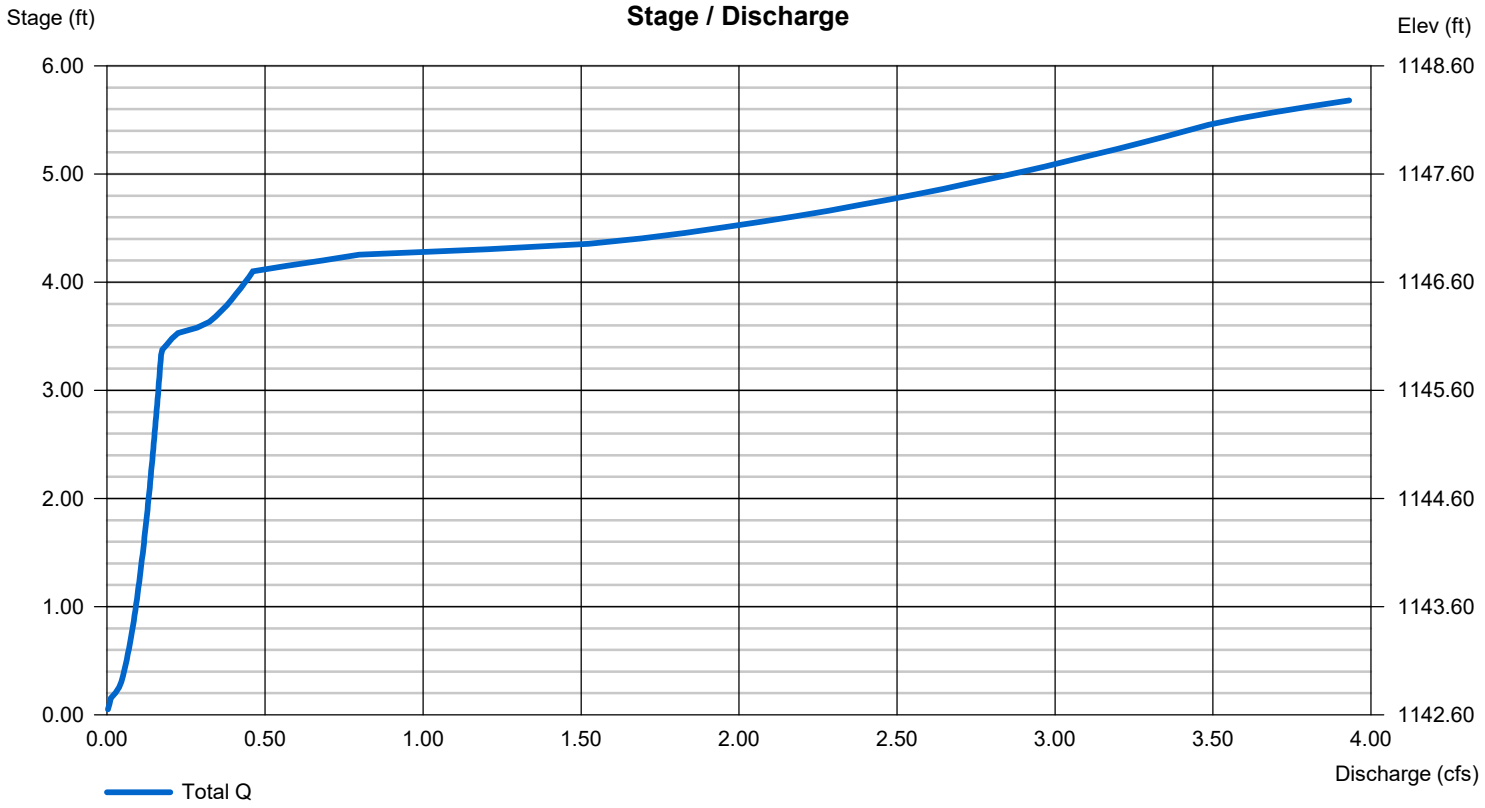
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.49	0.00	0.00	0.00
Crest El. (ft)	= 1148.05	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

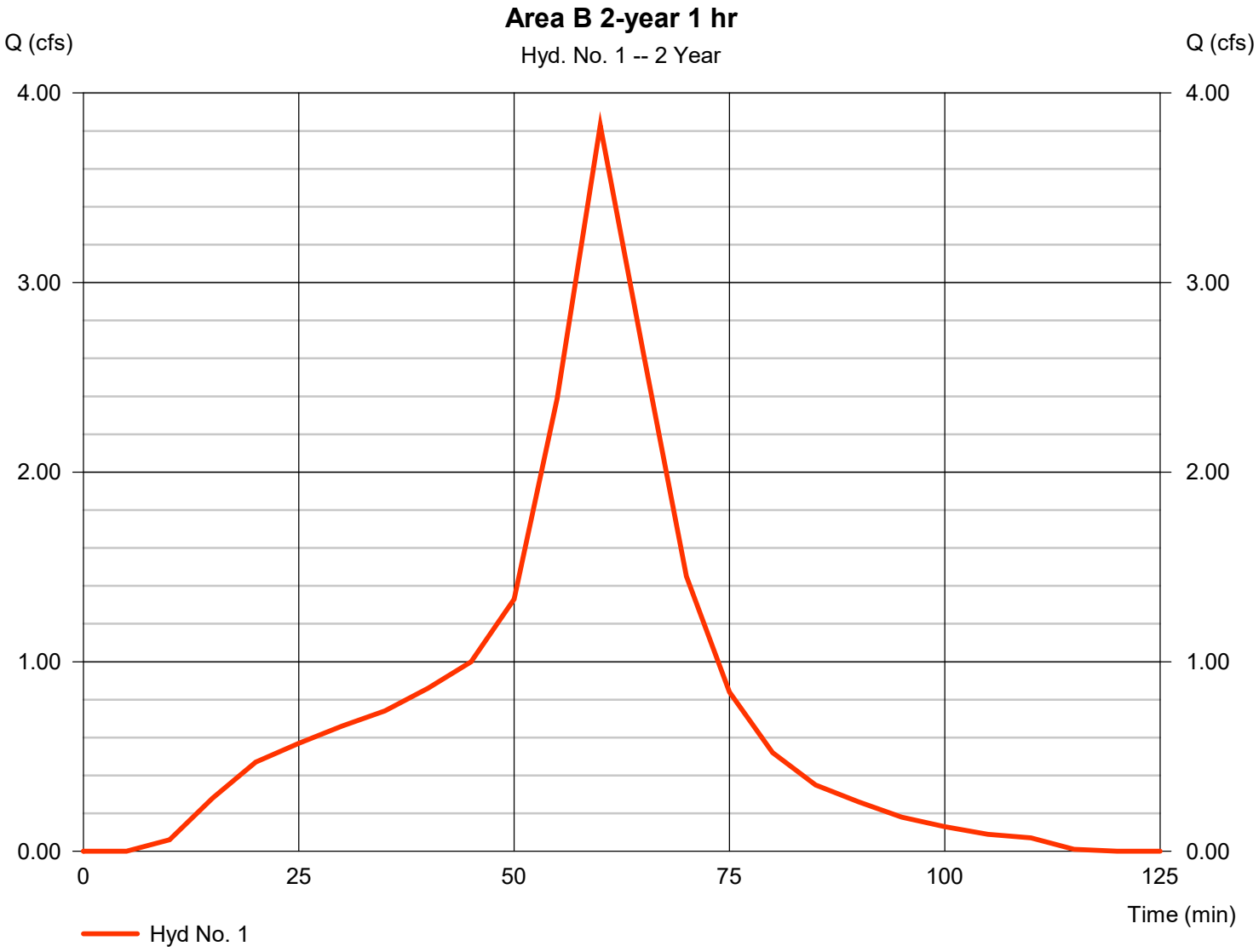
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	3.830	5	60	5,616	------	------	------	Area B 2-year 1 hr
2	Manual	2.100	5	165	8,319	------	------	------	Area B 2-year 3 hr
3	Manual	1.950	5	340	11,802	------	------	------	Area B 2-year 6 hr
4	Manual	0.740	5	810	19,935	------	------	------	Area B 2-year 24 hr
5	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 1 hr
6	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 3 hr
7	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 6 hr
8	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 24 hr
9	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 1 hr
10	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 3 hr
11	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 6 hr
12	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 24 hr
13	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 1 hr
14	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 3 hr
15	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 6 hr
16	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 24 hr
18	Reservoir	0.126	5	100	5,609	1	1144.46	5,048	Pond B 2-year 1hr
19	Reservoir	0.140	5	205	8,311	2	1144.88	7,103	Pond B 2-year 3 hr
20	Reservoir	0.155	5	375	11,795	3	1145.34	9,483	Pond B 2-year 6 hr
21	Reservoir	0.169	5	980	19,927	4	1145.84	12,059	Pond B 2-year 24 hr
22	Reservoir	0.000	5	n/a	0	5	1142.60	0.000	Pond B 5-year 1 hr
23	Reservoir	0.000	5	n/a	0	6	1142.60	0.000	Pond B 5-year 3 hr
24	Reservoir	0.000	5	n/a	0	7	1142.60	0.000	Pond B 5-year 6 hr
25	Reservoir	0.000	5	n/a	0	8	1142.60	0.000	Pond B 5-year 24 hr
26	Reservoir	0.000	5	n/a	0	9	1142.60	0.000	Pond B 10-year 1 hr
27	Reservoir	0.000	5	n/a	0	10	1142.60	0.000	Pond B 10-year 3 hr
28	Reservoir	0.000	5	n/a	0	11	1142.60	0.000	Pond B 10-year 6 hr
29	Reservoir	0.000	5	n/a	0	12	1142.60	0.000	Pond B 10-year 24 hr
30	Reservoir	0.000	5	n/a	0	13	1142.60	0.000	Pond B 100-year 1hr
31	Reservoir	0.000	5	n/a	0	14	1142.60	0.000	Pond B 100-year 3 hr
32	Reservoir	0.000	5	n/a	0	15	1142.60	0.000	Pond B 100-year 6 hr
33	Reservoir	0.000	5	n/a	0	16	1142.60	0.000	Pond B 100-year 24 hr

Hydrograph Report

Hyd. No. 1

Area B 2-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 3.830 cfs
Storm frequency	= 2 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 5,616 cuft

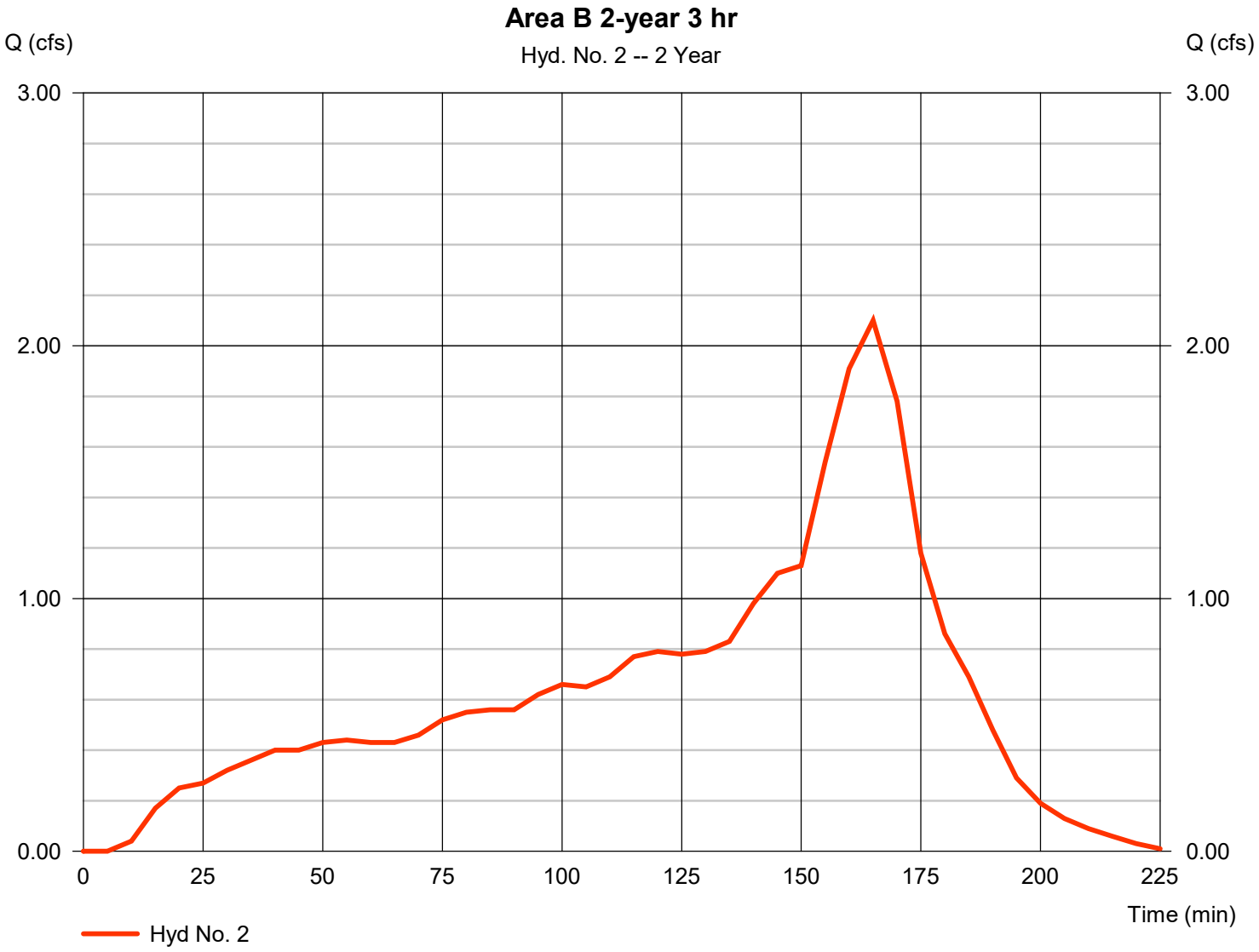


Hydrograph Report

Hyd. No. 2

Area B 2-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 2.100 cfs
Storm frequency	= 2 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 8,319 cuft

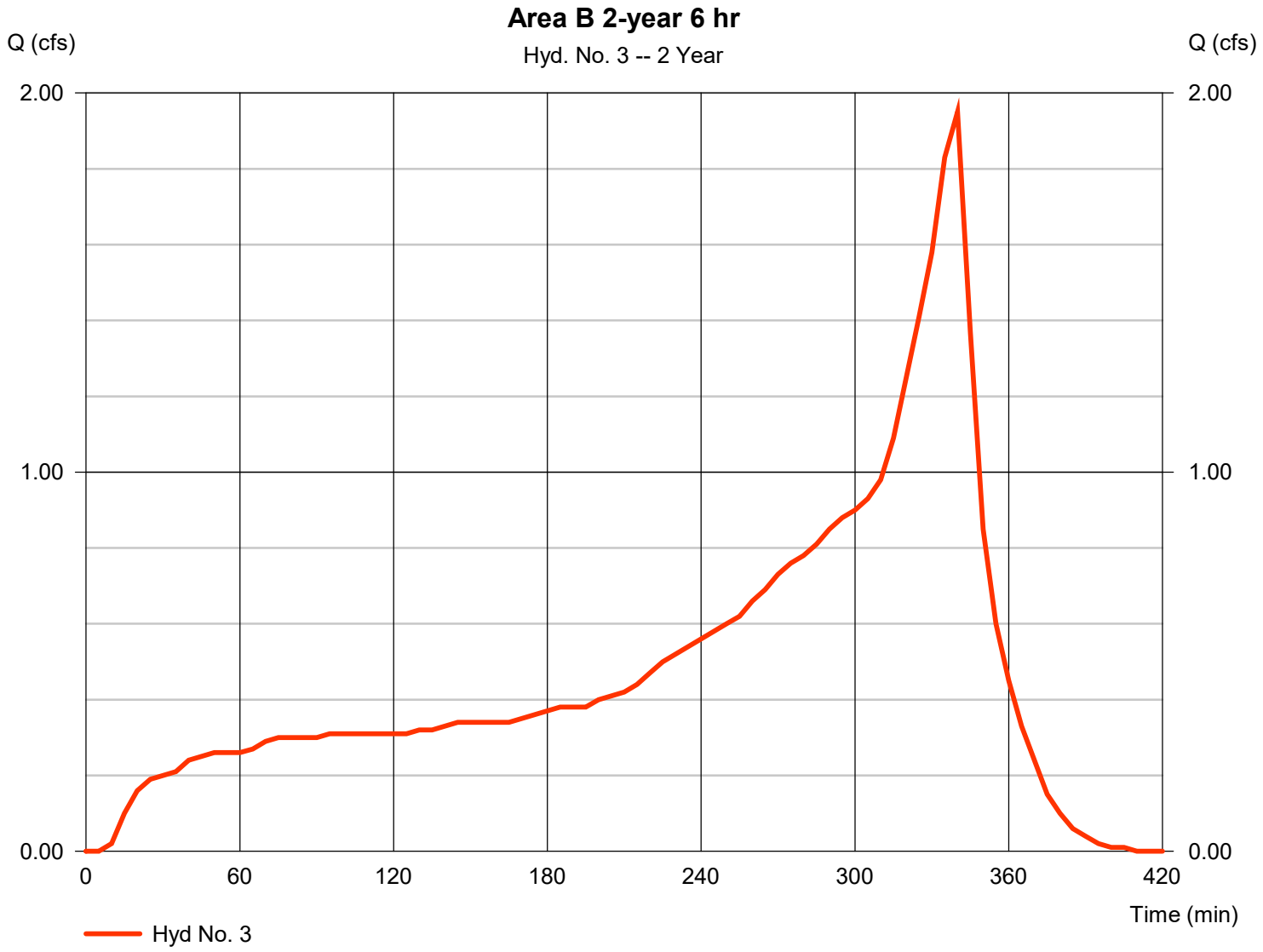


Hydrograph Report

Hyd. No. 3

Area B 2-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 1.950 cfs
Storm frequency	= 2 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 11,802 cuft

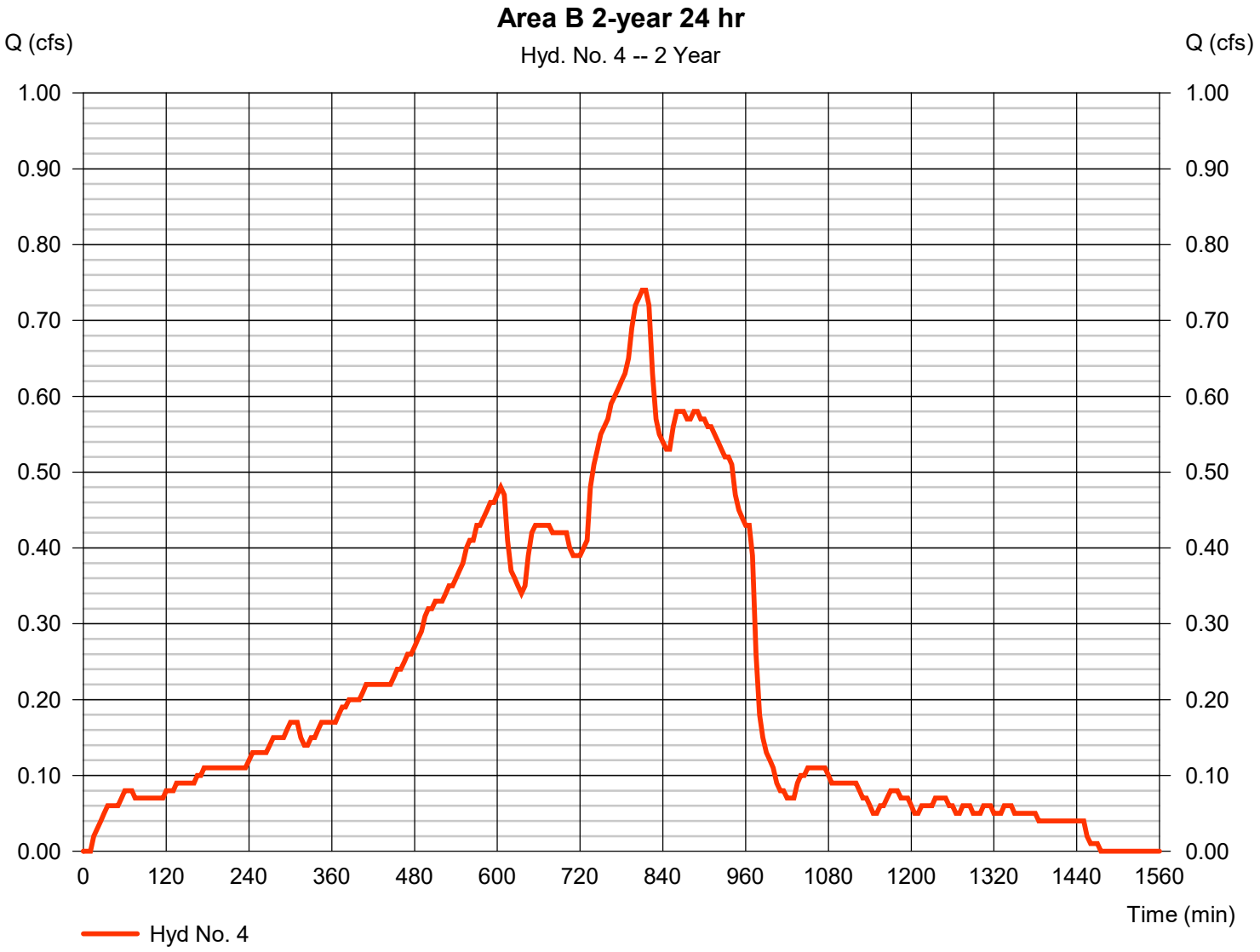


Hydrograph Report

Hyd. No. 4

Area B 2-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 0.740 cfs
Storm frequency	= 2 yrs	Time to peak	= 810 min
Time interval	= 5 min	Hyd. volume	= 19,935 cuft



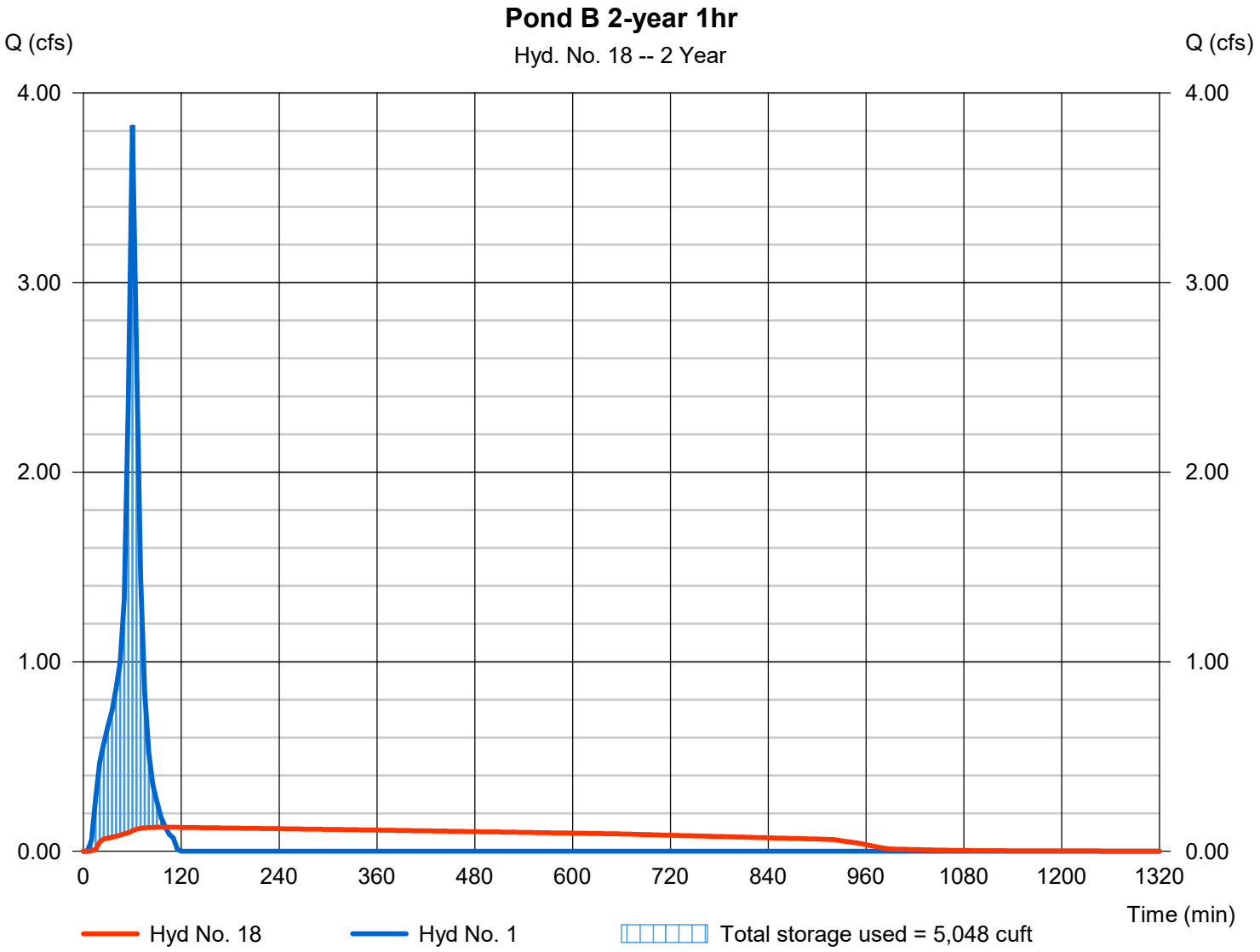
Hydrograph Report

Hyd. No. 18

Pond B 2-year 1hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.126 cfs
Storm frequency	=	2 yrs	Time to peak	=	100 min
Time interval	=	5 min	Hyd. volume	=	5,609 cuft
Inflow hyd. No.	=	1 - Area B 2-year 1 hr	Max. Elevation	=	1144.46 ft
Reservoir name	=	Pond B	Max. Storage	=	5,048 cuft

Storage Indication method used.



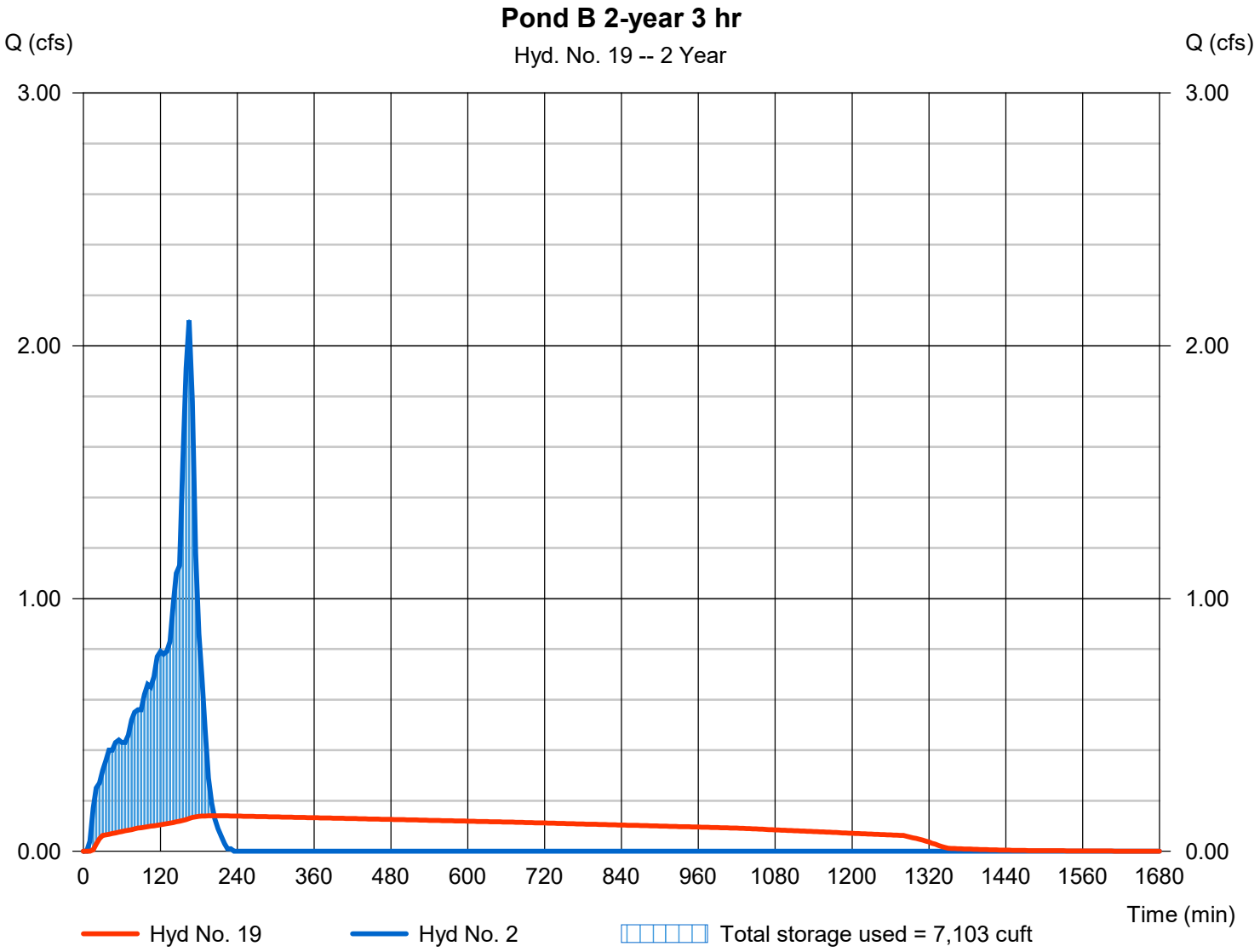
Hydrograph Report

Hyd. No. 19

Pond B 2-year 3 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.140 cfs
Storm frequency	=	2 yrs	Time to peak	=	205 min
Time interval	=	5 min	Hyd. volume	=	8,311 cuft
Inflow hyd. No.	=	2 - Area B 2-year 3 hr	Max. Elevation	=	1144.88 ft
Reservoir name	=	Pond B	Max. Storage	=	7,103 cuft

Storage Indication method used.



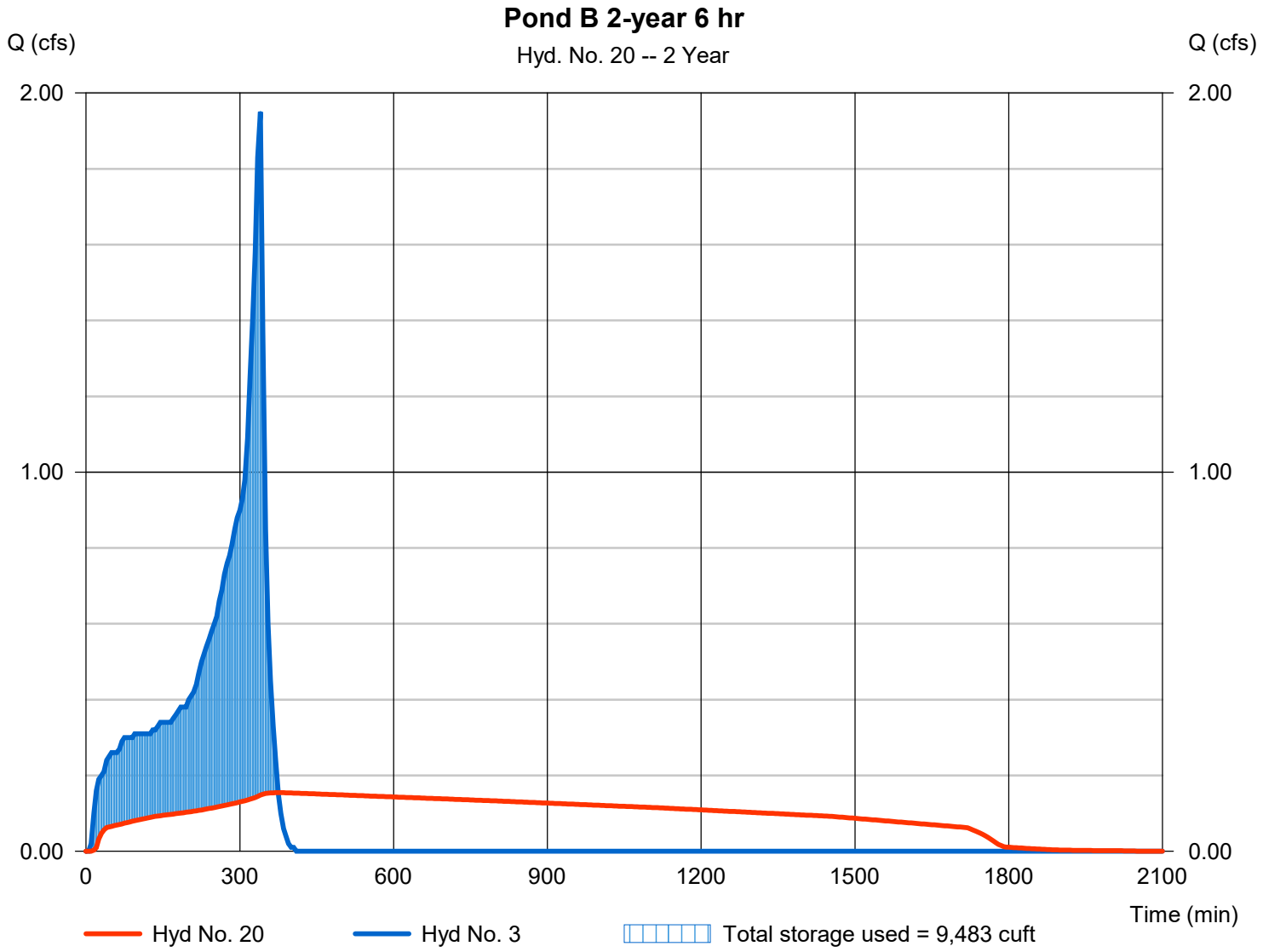
Hydrograph Report

Hyd. No. 20

Pond B 2-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.155 cfs
Storm frequency	=	2 yrs	Time to peak	=	375 min
Time interval	=	5 min	Hyd. volume	=	11,795 cuft
Inflow hyd. No.	=	3 - Area B 2-year 6 hr	Max. Elevation	=	1145.34 ft
Reservoir name	=	Pond B	Max. Storage	=	9,483 cuft

Storage Indication method used.



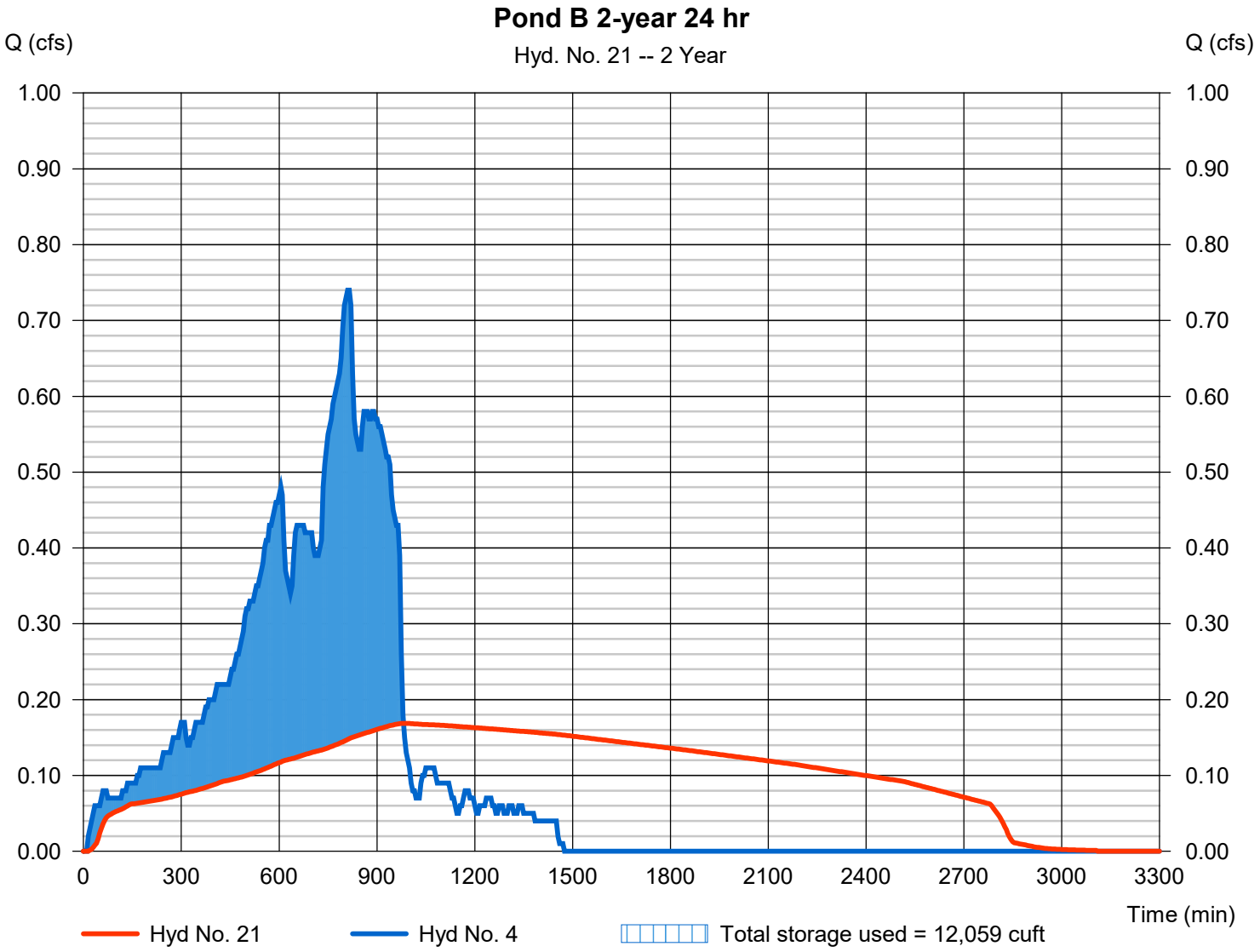
Hydrograph Report

Hyd. No. 21

Pond B 2-year 24 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.169 cfs
Storm frequency	=	2 yrs	Time to peak	=	980 min
Time interval	=	5 min	Hyd. volume	=	19,927 cuft
Inflow hyd. No.	=	4 - Area B 2-year 24 hr	Max. Elevation	=	1145.84 ft
Reservoir name	=	Pond B	Max. Storage	=	12,059 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

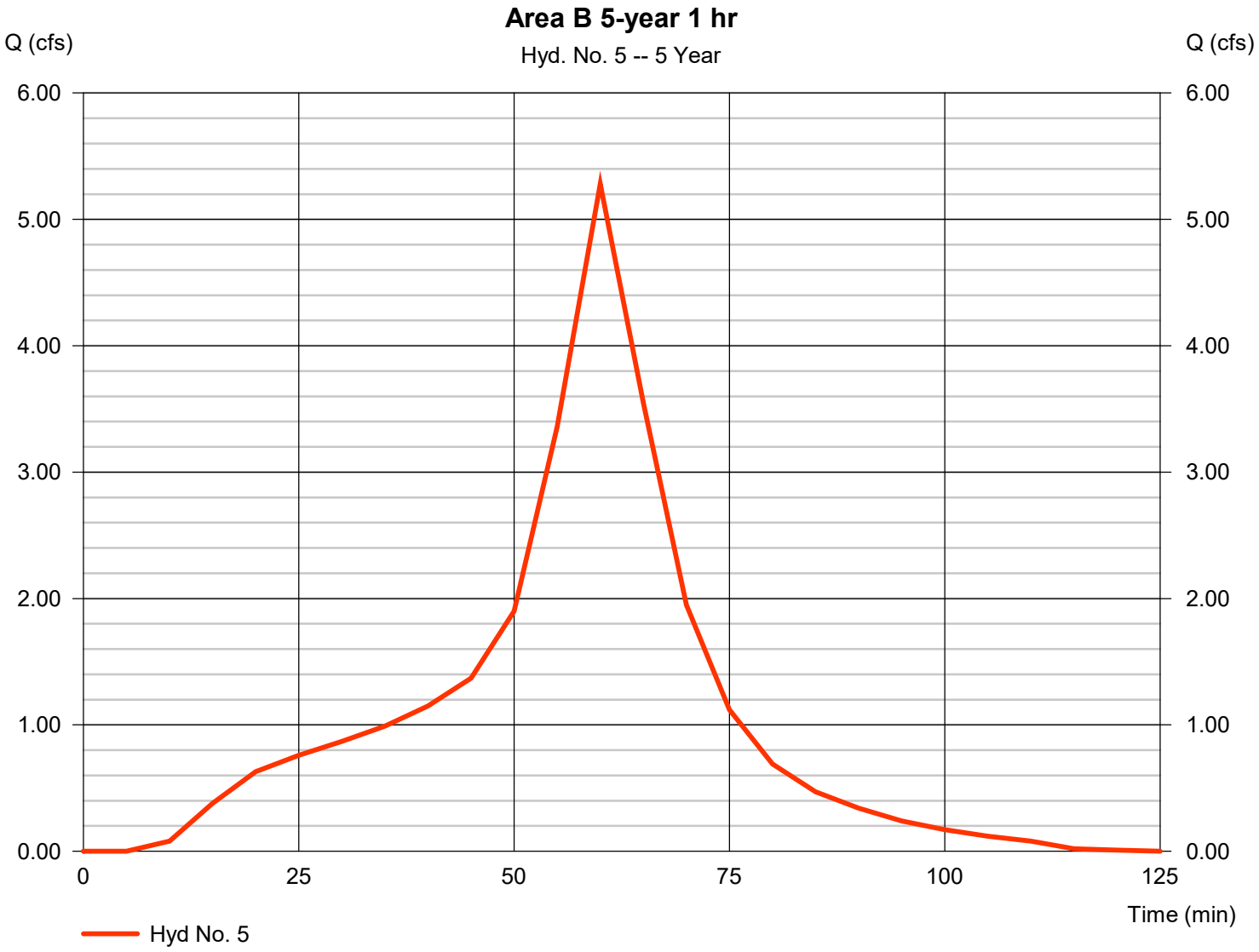
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 1 hr
2	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 3 hr
3	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 6 hr
4	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 24 hr
5	Manual	5.280	5	60	7,659	------	------	------	Area B 5-year 1 hr
6	Manual	3.060	5	165	11,622	------	------	------	Area B 5-year 3 hr
7	Manual	2.730	5	340	15,765	------	------	------	Area B 5-year 6 hr
8	Manual	0.980	5	815	26,211	------	------	------	Area B 5-year 24 hr
9	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 1 hr
10	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 3 hr
11	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 6 hr
12	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 24 hr
13	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 1 hr
14	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 3 hr
15	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 6 hr
16	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 24 hr
18	Reservoir	0.000	5	n/a	0	1	1142.60	0.000	Pond B 2-year 1hr
19	Reservoir	0.000	5	n/a	0	2	1142.60	0.000	Pond B 2-year 3 hr
20	Reservoir	0.000	5	n/a	0	3	1142.60	0.000	Pond B 2-year 6 hr
21	Reservoir	0.000	5	n/a	0	4	1142.60	0.000	Pond B 2-year 24 hr
22	Reservoir	0.140	5	105	7,651	5	1144.86	7,018	Pond B 5-year 1 hr
23	Reservoir	0.159	5	205	11,615	6	1145.49	10,254	Pond B 5-year 3 hr
24	Reservoir	0.203	5	375	15,758	7	1146.07	13,168	Pond B 5-year 6 hr
25	Reservoir	0.432	5	970	26,203	8	1146.58	15,564	Pond B 5-year 24 hr
26	Reservoir	0.000	5	n/a	0	9	1142.60	0.000	Pond B 10-year 1 hr
27	Reservoir	0.000	5	n/a	0	10	1142.60	0.000	Pond B 10-year 3 hr
28	Reservoir	0.000	5	n/a	0	11	1142.60	0.000	Pond B 10-year 6 hr
29	Reservoir	0.000	5	n/a	0	12	1142.60	0.000	Pond B 10-year 24 hr
30	Reservoir	0.000	5	n/a	0	13	1142.60	0.000	Pond B 100-year 1hr
31	Reservoir	0.000	5	n/a	0	14	1142.60	0.000	Pond B 100-year 3 hr
32	Reservoir	0.000	5	n/a	0	15	1142.60	0.000	Pond B 100-year 6 hr
33	Reservoir	0.000	5	n/a	0	16	1142.60	0.000	Pond B 100-year 24 hr

Hydrograph Report

Hyd. No. 5

Area B 5-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 5.280 cfs
Storm frequency	= 5 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 7,659 cuft

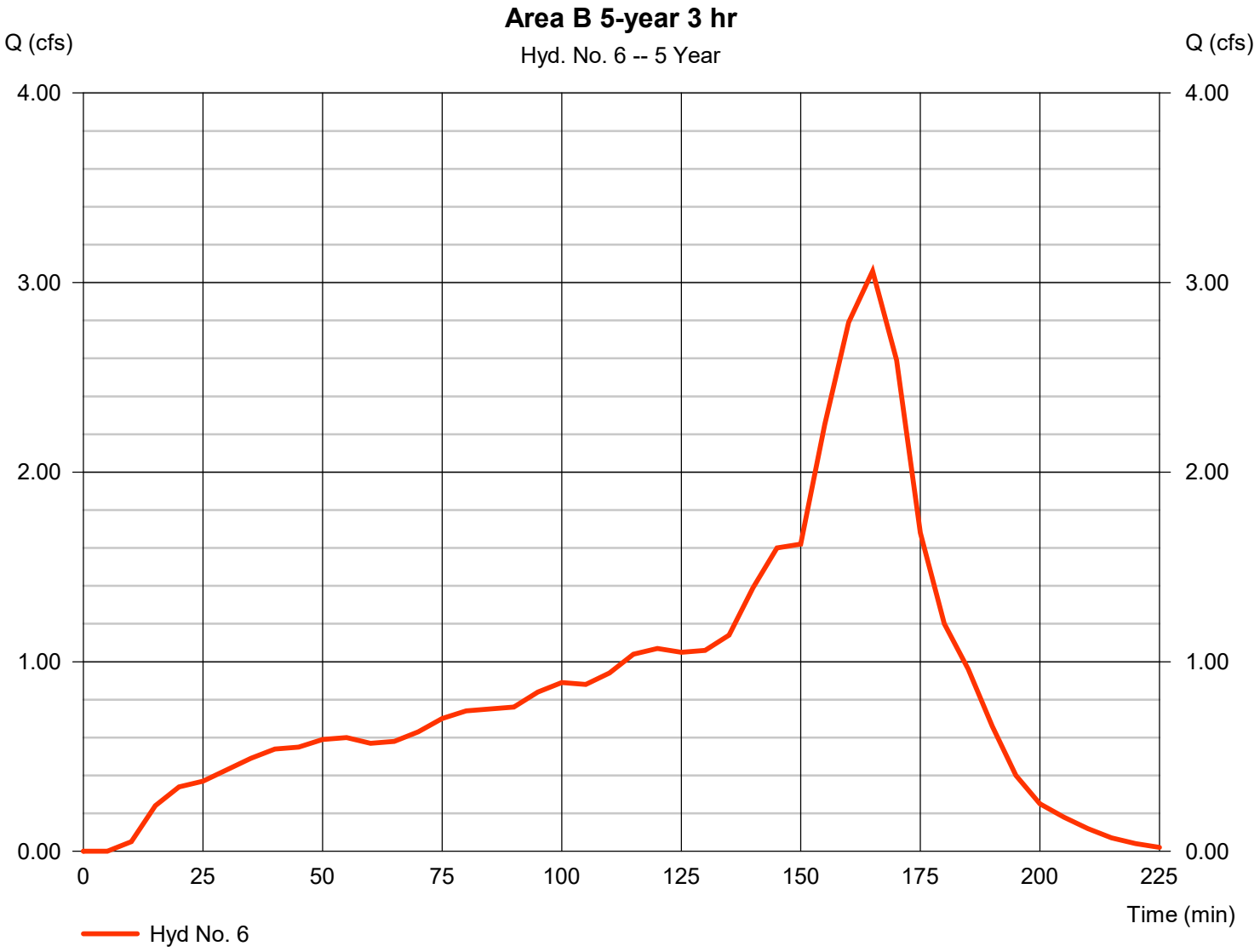


Hydrograph Report

Hyd. No. 6

Area B 5-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 3.060 cfs
Storm frequency	= 5 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 11,622 cuft

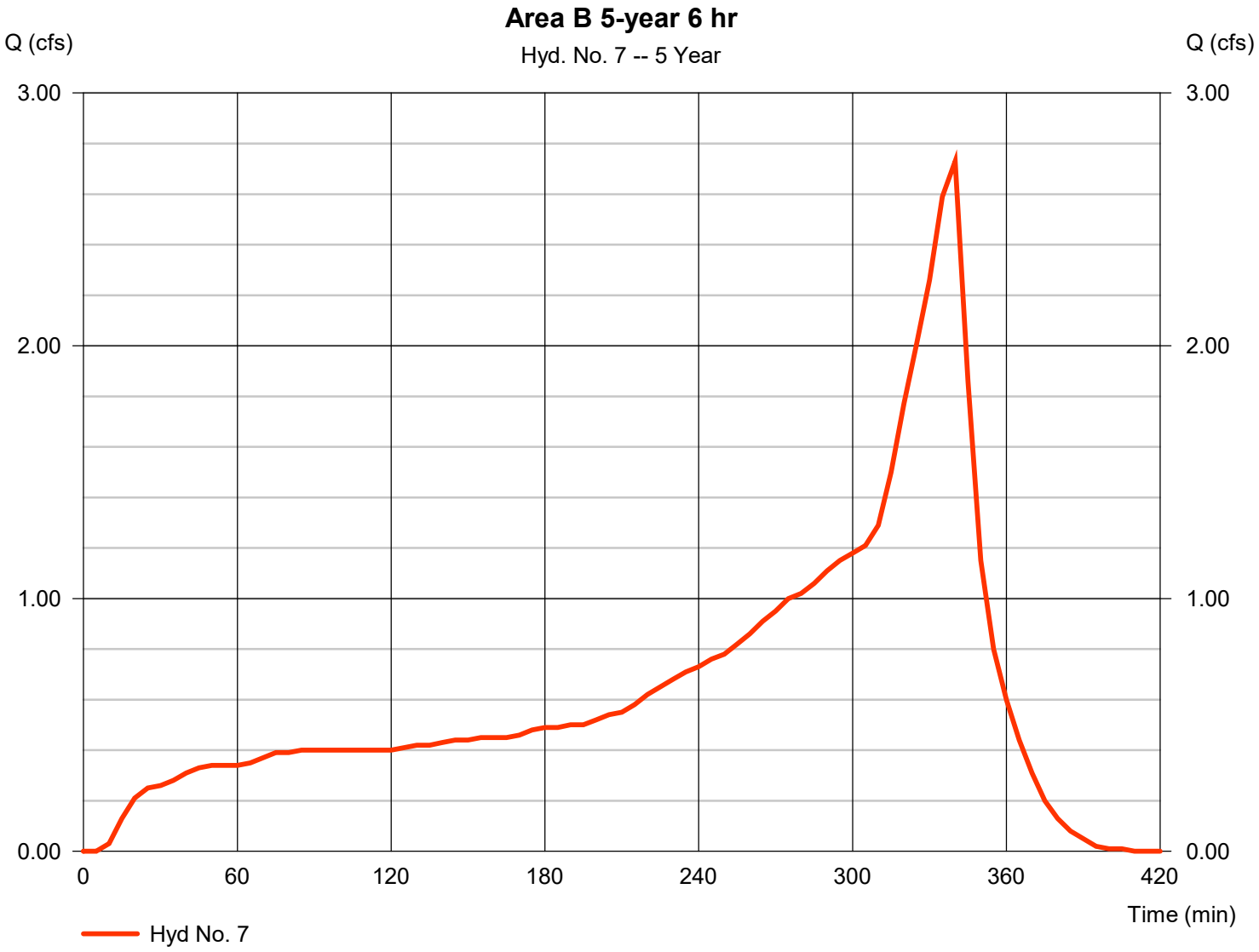


Hydrograph Report

Hyd. No. 7

Area B 5-year 6 hr

Hydrograph type	=	Manual	Peak discharge	=	2.730 cfs
Storm frequency	=	5 yrs	Time to peak	=	340 min
Time interval	=	5 min	Hyd. volume	=	15,765 cuft

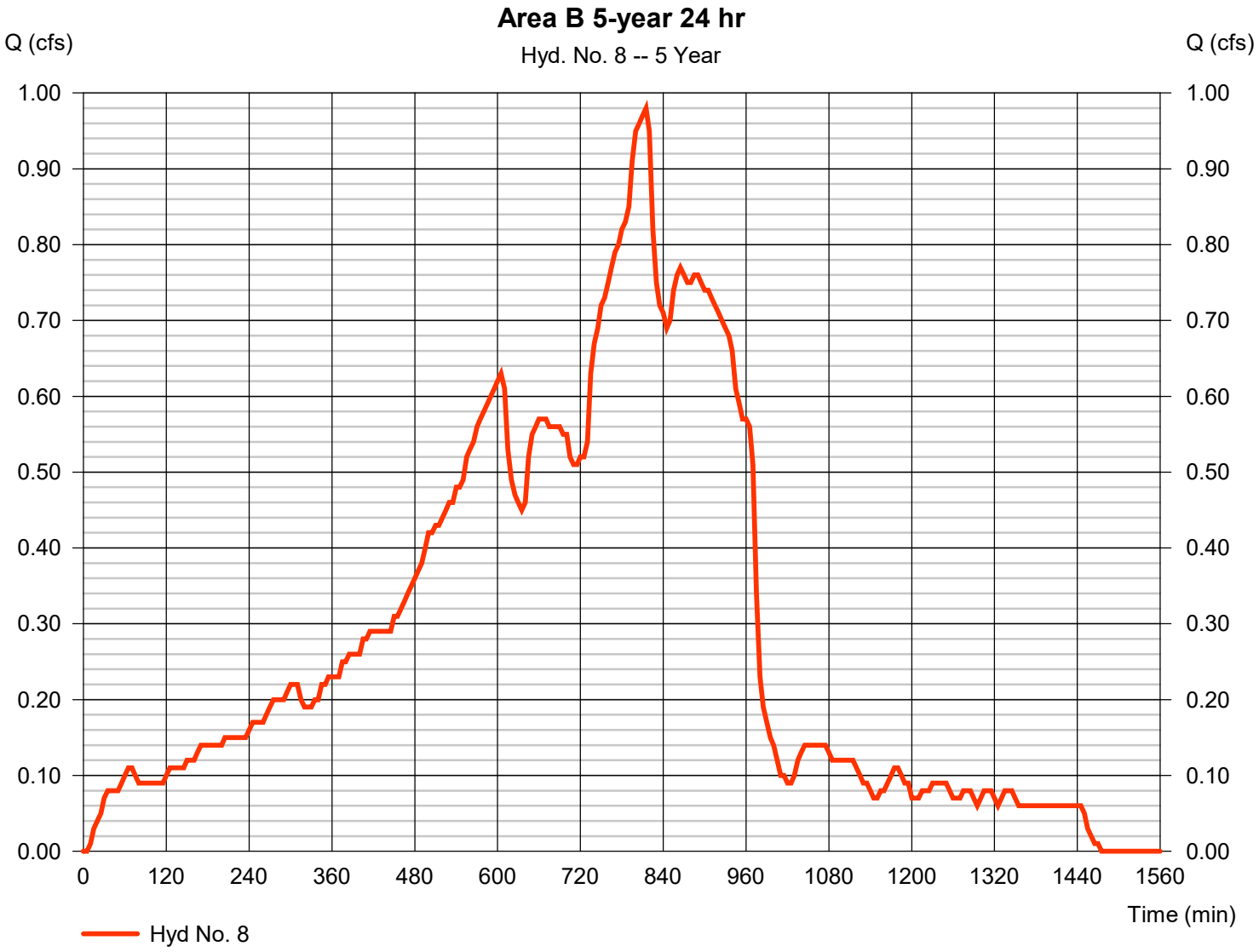


Hydrograph Report

Hyd. No. 8

Area B 5-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 0.980 cfs
Storm frequency	= 5 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 26,211 cuft



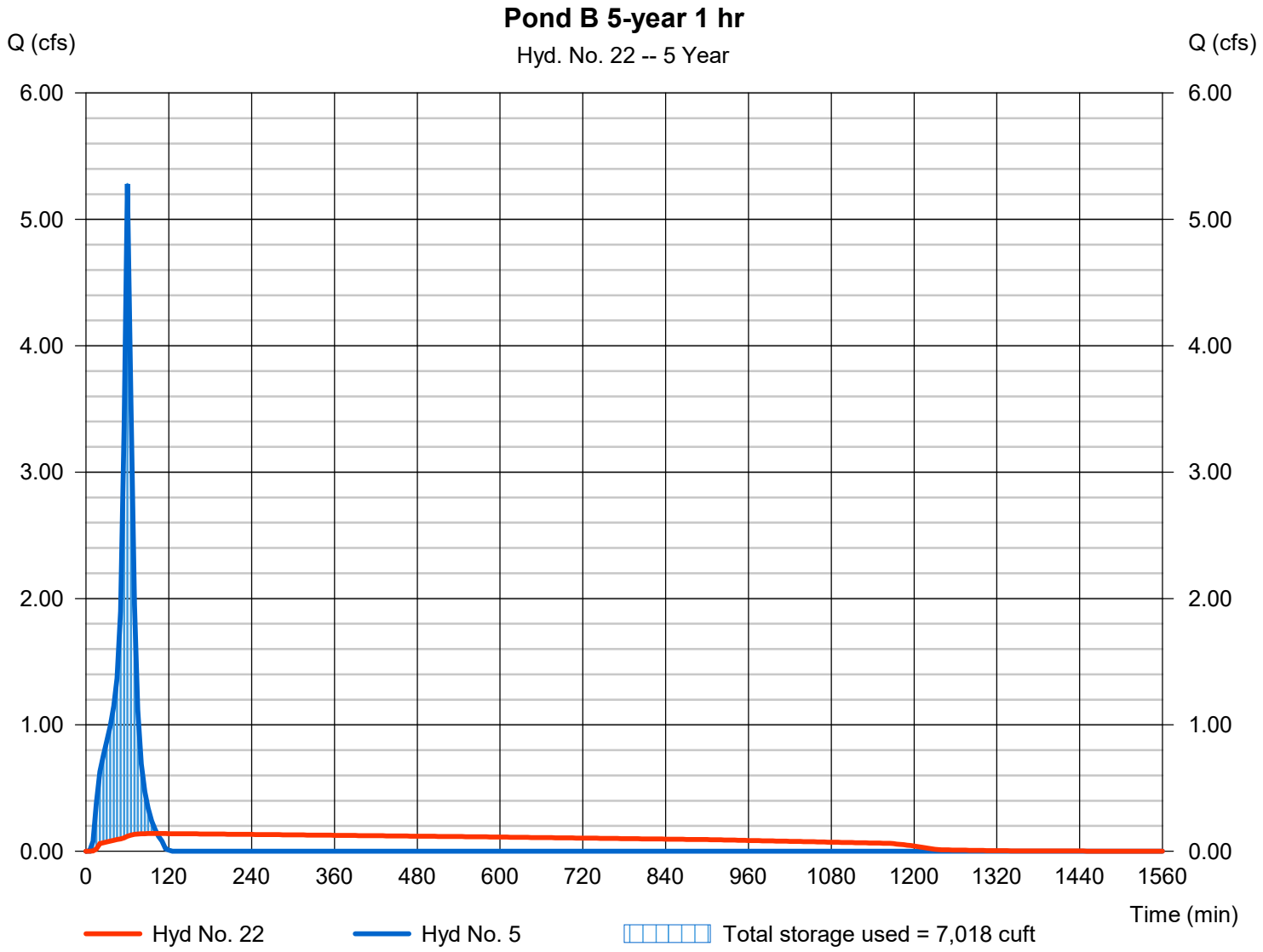
Hydrograph Report

Hyd. No. 22

Pond B 5-year 1 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.140 cfs
Storm frequency	=	5 yrs	Time to peak	=	105 min
Time interval	=	5 min	Hyd. volume	=	7,651 cuft
Inflow hyd. No.	=	5 - Area B 5-year 1 hr	Max. Elevation	=	1144.86 ft
Reservoir name	=	Pond B	Max. Storage	=	7,018 cuft

Storage Indication method used.



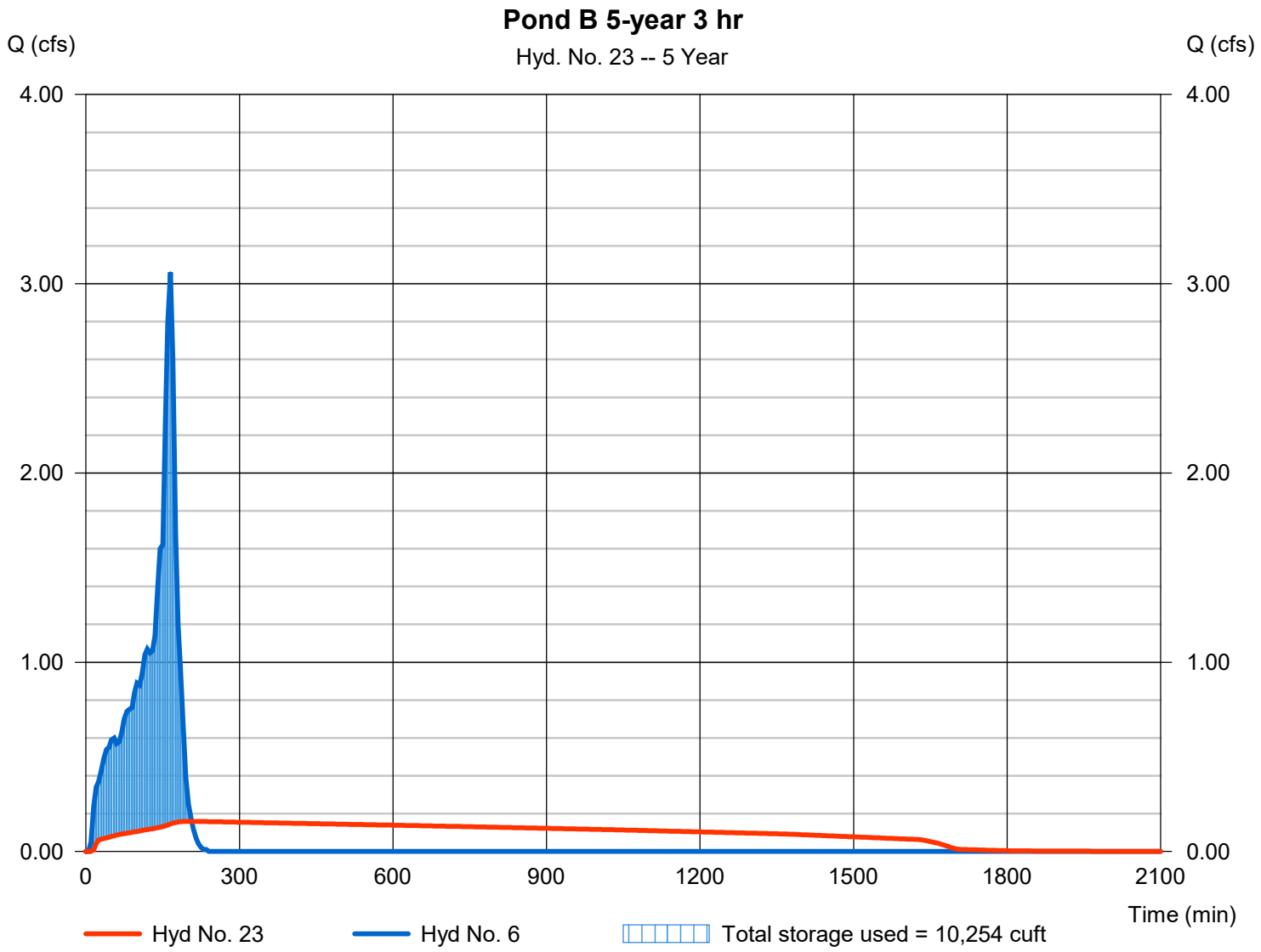
Hydrograph Report

Hyd. No. 23

Pond B 5-year 3 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.159 cfs
Storm frequency	=	5 yrs	Time to peak	=	205 min
Time interval	=	5 min	Hyd. volume	=	11,615 cuft
Inflow hyd. No.	=	6 - Area B 5-year 3 hr	Max. Elevation	=	1145.49 ft
Reservoir name	=	Pond B	Max. Storage	=	10,254 cuft

Storage Indication method used.



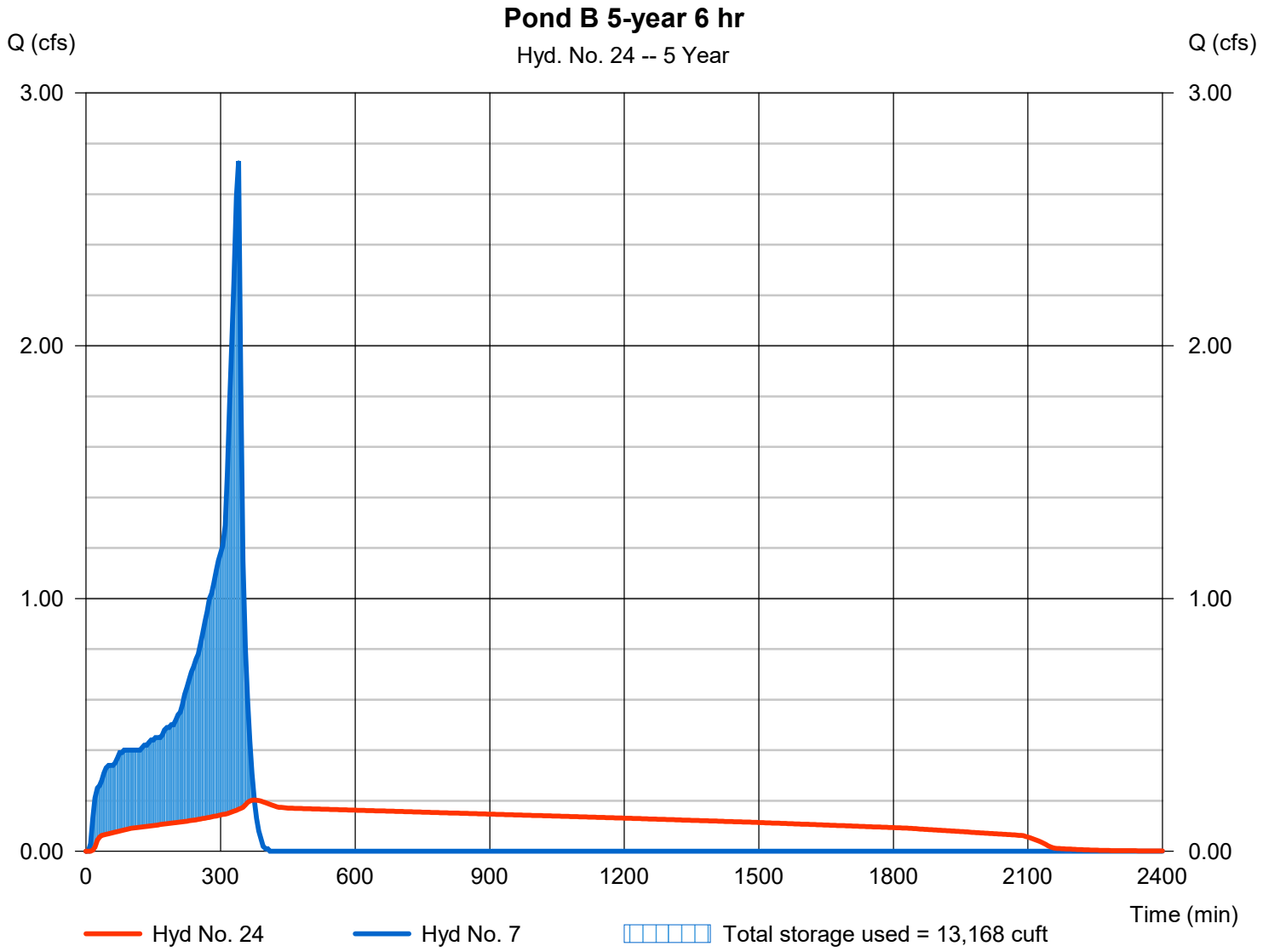
Hydrograph Report

Hyd. No. 24

Pond B 5-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.203 cfs
Storm frequency	=	5 yrs	Time to peak	=	375 min
Time interval	=	5 min	Hyd. volume	=	15,758 cuft
Inflow hyd. No.	=	7 - Area B 5-year 6 hr	Max. Elevation	=	1146.07 ft
Reservoir name	=	Pond B	Max. Storage	=	13,168 cuft

Storage Indication method used.



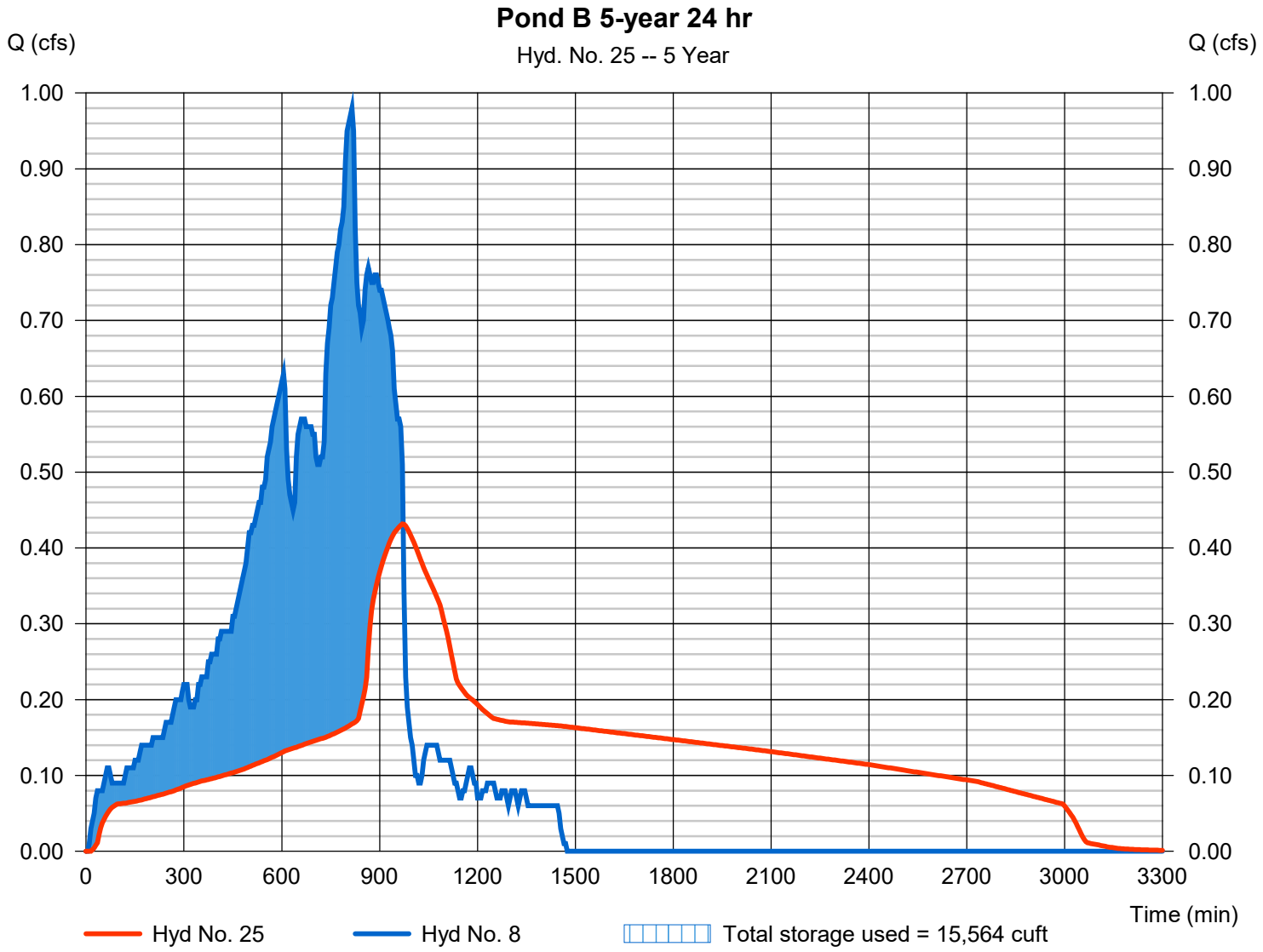
Hydrograph Report

Hyd. No. 25

Pond B 5-year 24 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.432 cfs
Storm frequency	=	5 yrs	Time to peak	=	970 min
Time interval	=	5 min	Hyd. volume	=	26,203 cuft
Inflow hyd. No.	=	8 - Area B 5-year 24 hr	Max. Elevation	=	1146.58 ft
Reservoir name	=	Pond B	Max. Storage	=	15,564 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

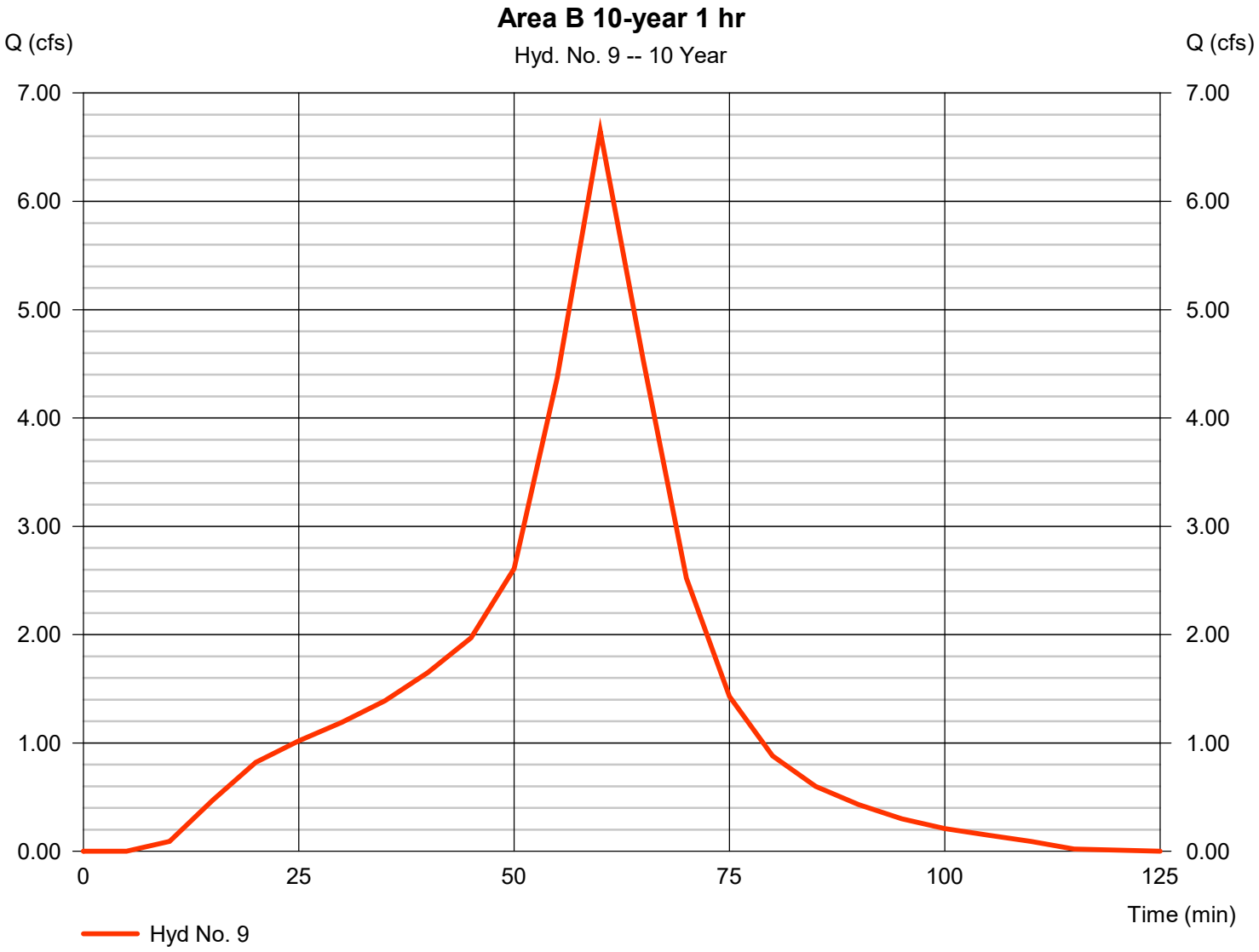
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 1 hr
2	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 3 hr
3	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 6 hr
4	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 24 hr
5	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 1 hr
6	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 3 hr
7	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 6 hr
8	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 24 hr
9	Manual	6.650	5	60	10,020	------	------	------	Area B 10-year 1 hr
10	Manual	4.060	5	165	15,414	------	------	------	Area B 10-year 3 hr
11	Manual	3.590	5	340	20,247	------	------	------	Area B 10-year 6 hr
12	Manual	1.380	5	815	32,433	------	------	------	Area B 10-year 24 hr
13	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 1 hr
14	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 3 hr
15	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 6 hr
16	Manual	0.000	5	n/a	0	------	------	------	Area B 100-year 24 hr
18	Reservoir	0.000	5	n/a	0	1	1142.60	0.000	Pond B 2-year 1hr
19	Reservoir	0.000	5	n/a	0	2	1142.60	0.000	Pond B 2-year 3 hr
20	Reservoir	0.000	5	n/a	0	3	1142.60	0.000	Pond B 2-year 6 hr
21	Reservoir	0.000	5	n/a	0	4	1142.60	0.000	Pond B 2-year 24 hr
22	Reservoir	0.000	5	n/a	0	5	1142.60	0.000	Pond B 5-year 1 hr
23	Reservoir	0.000	5	n/a	0	6	1142.60	0.000	Pond B 5-year 3 hr
24	Reservoir	0.000	5	n/a	0	7	1142.60	0.000	Pond B 5-year 6 hr
25	Reservoir	0.000	5	n/a	0	8	1142.60	0.000	Pond B 5-year 24 hr
26	Reservoir	0.154	5	105	10,012	9	1145.31	9,316	Pond B 10-year 1 hr
27	Reservoir	0.296	5	200	15,406	10	1146.20	13,785	Pond B 10-year 3 hr
28	Reservoir	0.731	5	360	20,240	11	1146.82	16,646	Pond B 10-year 6 hr
29	Reservoir	0.991	5	900	32,426	12	1146.88	16,868	Pond B 10-year 24 hr
30	Reservoir	0.000	5	n/a	0	13	1142.60	0.000	Pond B 100-year 1hr
31	Reservoir	0.000	5	n/a	0	14	1142.60	0.000	Pond B 100-year 3 hr
32	Reservoir	0.000	5	n/a	0	15	1142.60	0.000	Pond B 100-year 6 hr
33	Reservoir	0.000	5	n/a	0	16	1142.60	0.000	Pond B 100-year 24 hr

Hydrograph Report

Hyd. No. 9

Area B 10-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 6.650 cfs
Storm frequency	= 10 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 10,020 cuft

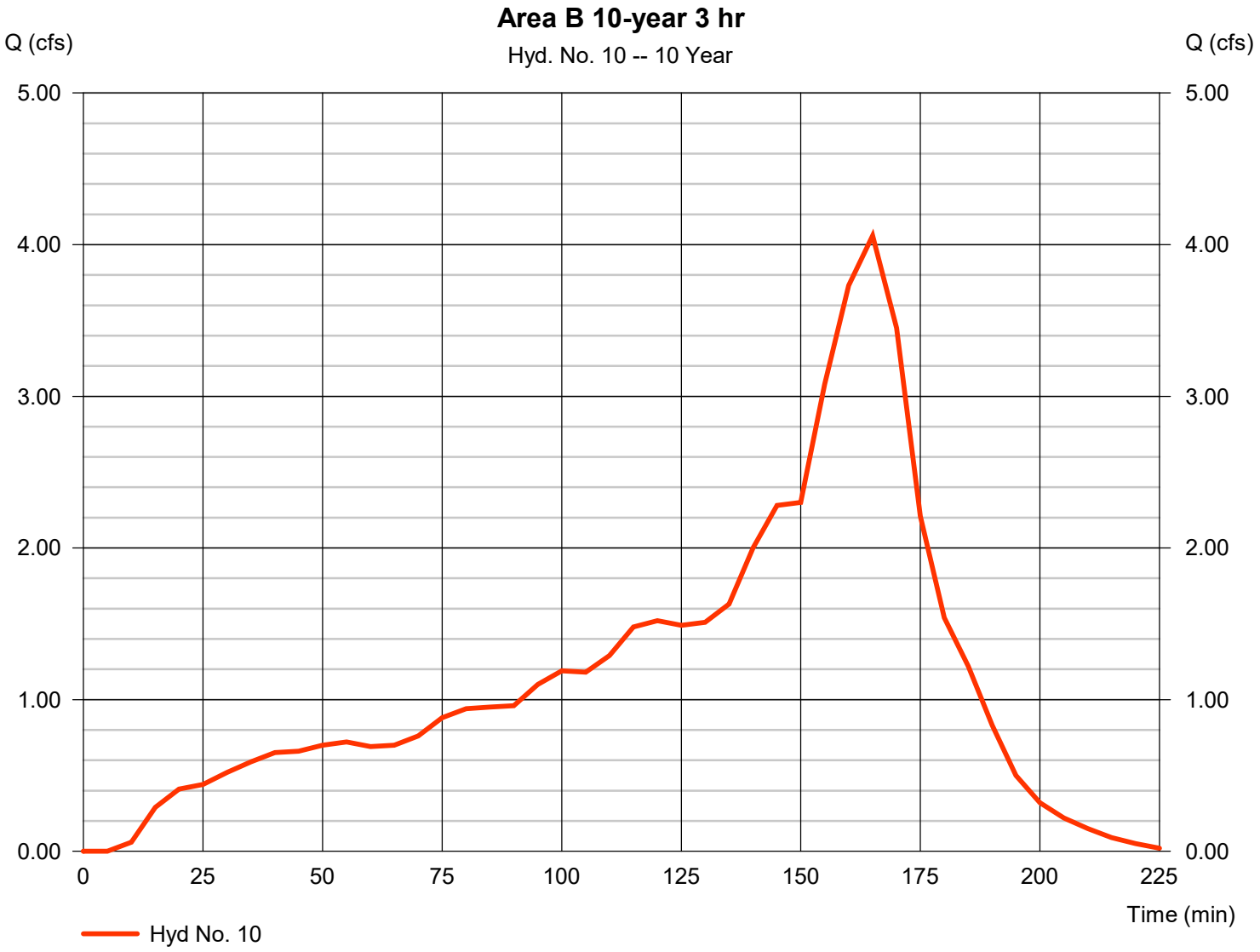


Hydrograph Report

Hyd. No. 10

Area B 10-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 4.060 cfs
Storm frequency	= 10 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 15,414 cuft

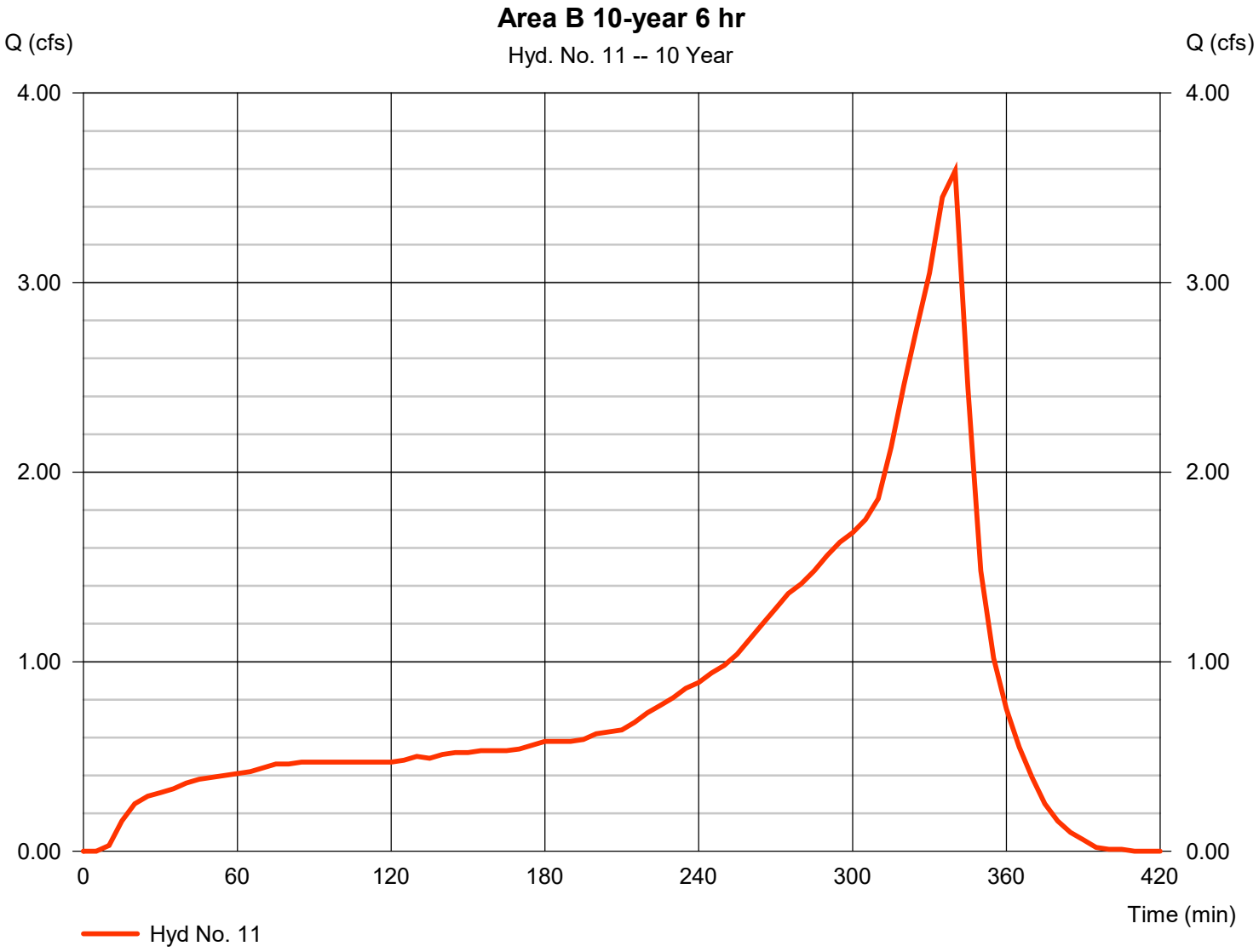


Hydrograph Report

Hyd. No. 11

Area B 10-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 3.590 cfs
Storm frequency	= 10 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 20,247 cuft

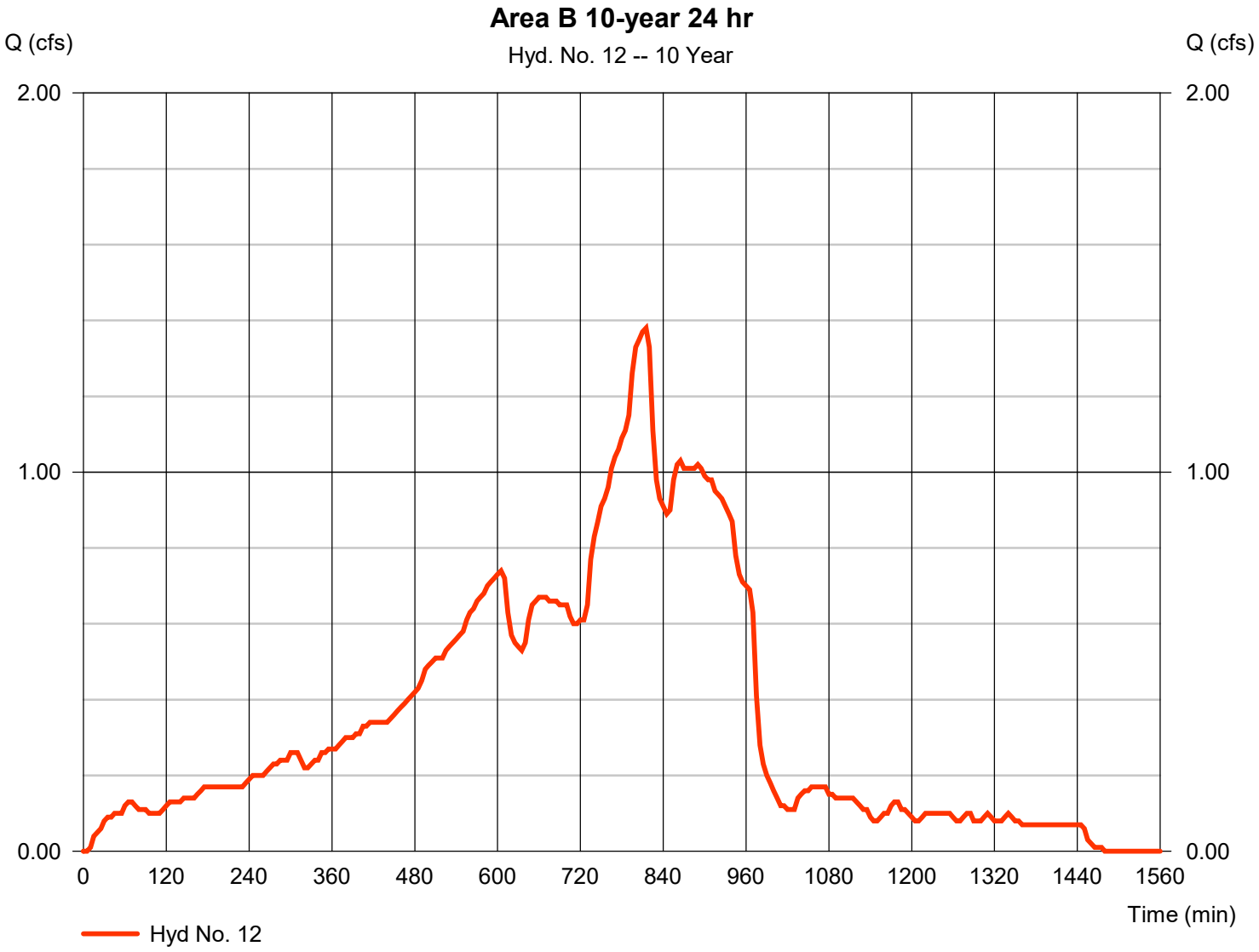


Hydrograph Report

Hyd. No. 12

Area B 10-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 1.380 cfs
Storm frequency	= 10 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 32,433 cuft



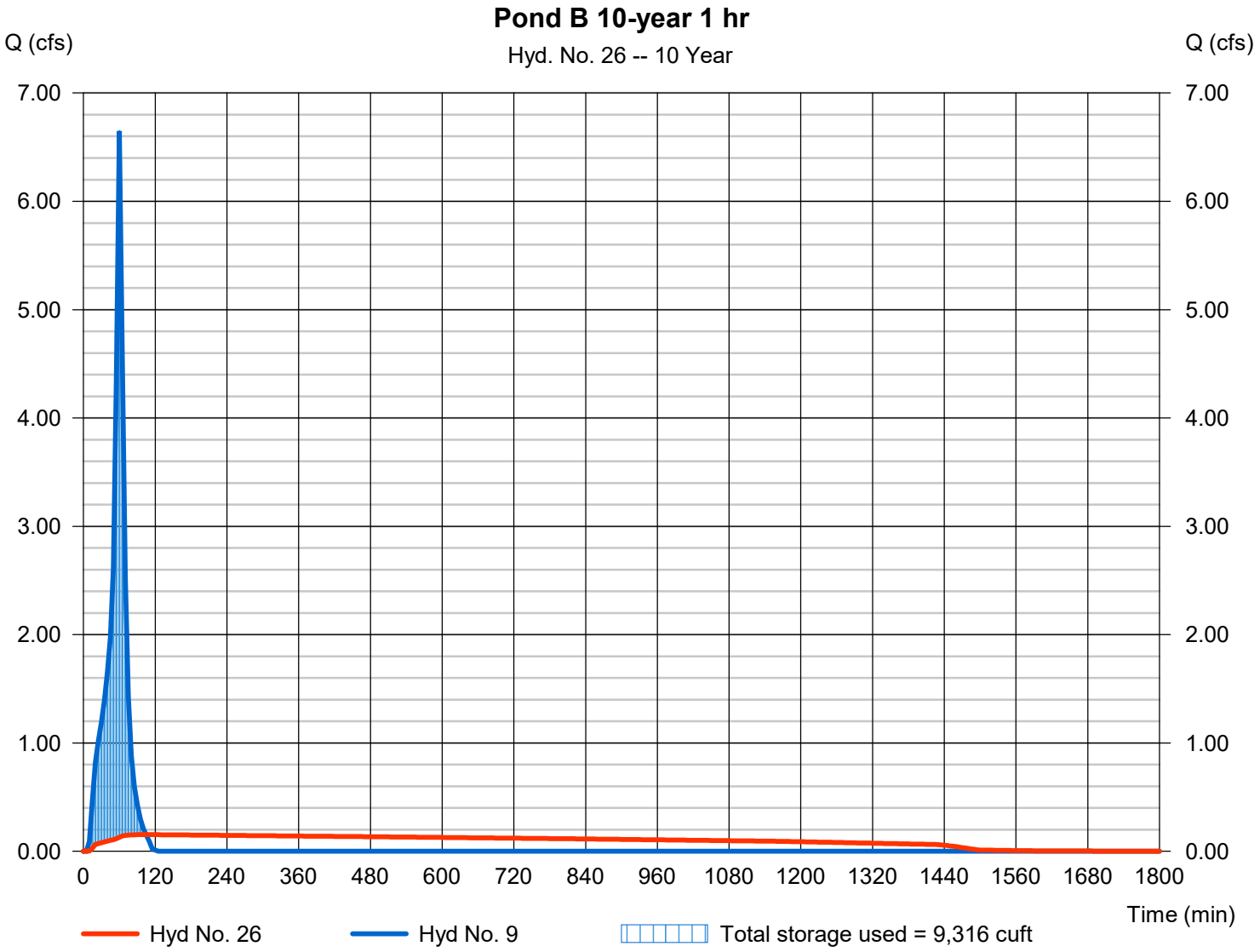
Hydrograph Report

Hyd. No. 26

Pond B 10-year 1 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.154 cfs
Storm frequency	=	10 yrs	Time to peak	=	105 min
Time interval	=	5 min	Hyd. volume	=	10,012 cuft
Inflow hyd. No.	=	9 - Area B 10-year 1 hr	Max. Elevation	=	1145.31 ft
Reservoir name	=	Pond B	Max. Storage	=	9,316 cuft

Storage Indication method used.



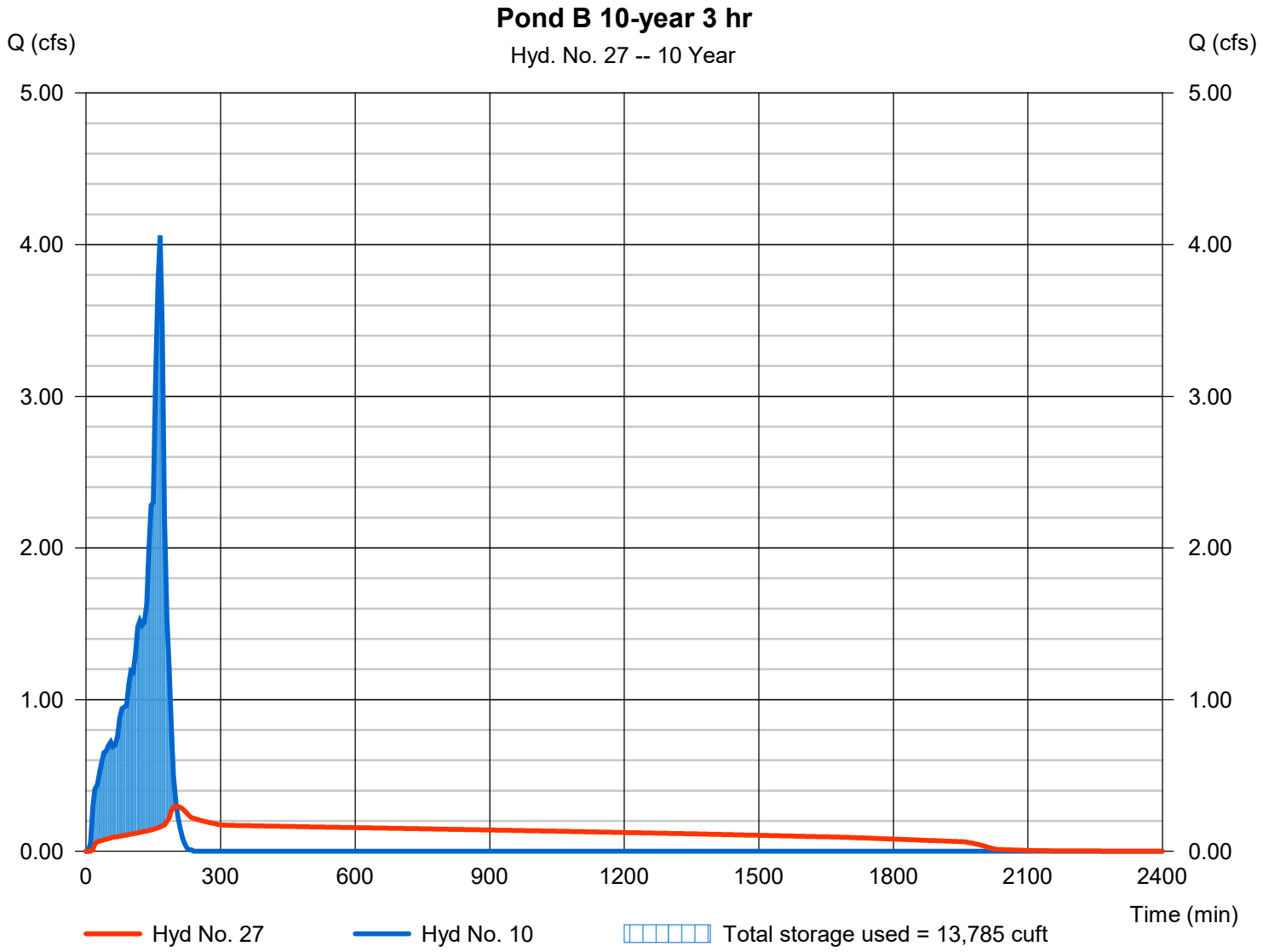
Hydrograph Report

Hyd. No. 27

Pond B 10-year 3 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.296 cfs
Storm frequency	=	10 yrs	Time to peak	=	200 min
Time interval	=	5 min	Hyd. volume	=	15,406 cuft
Inflow hyd. No.	=	10 - Area B 10-year 3 hr	Max. Elevation	=	1146.20 ft
Reservoir name	=	Pond B	Max. Storage	=	13,785 cuft

Storage Indication method used.



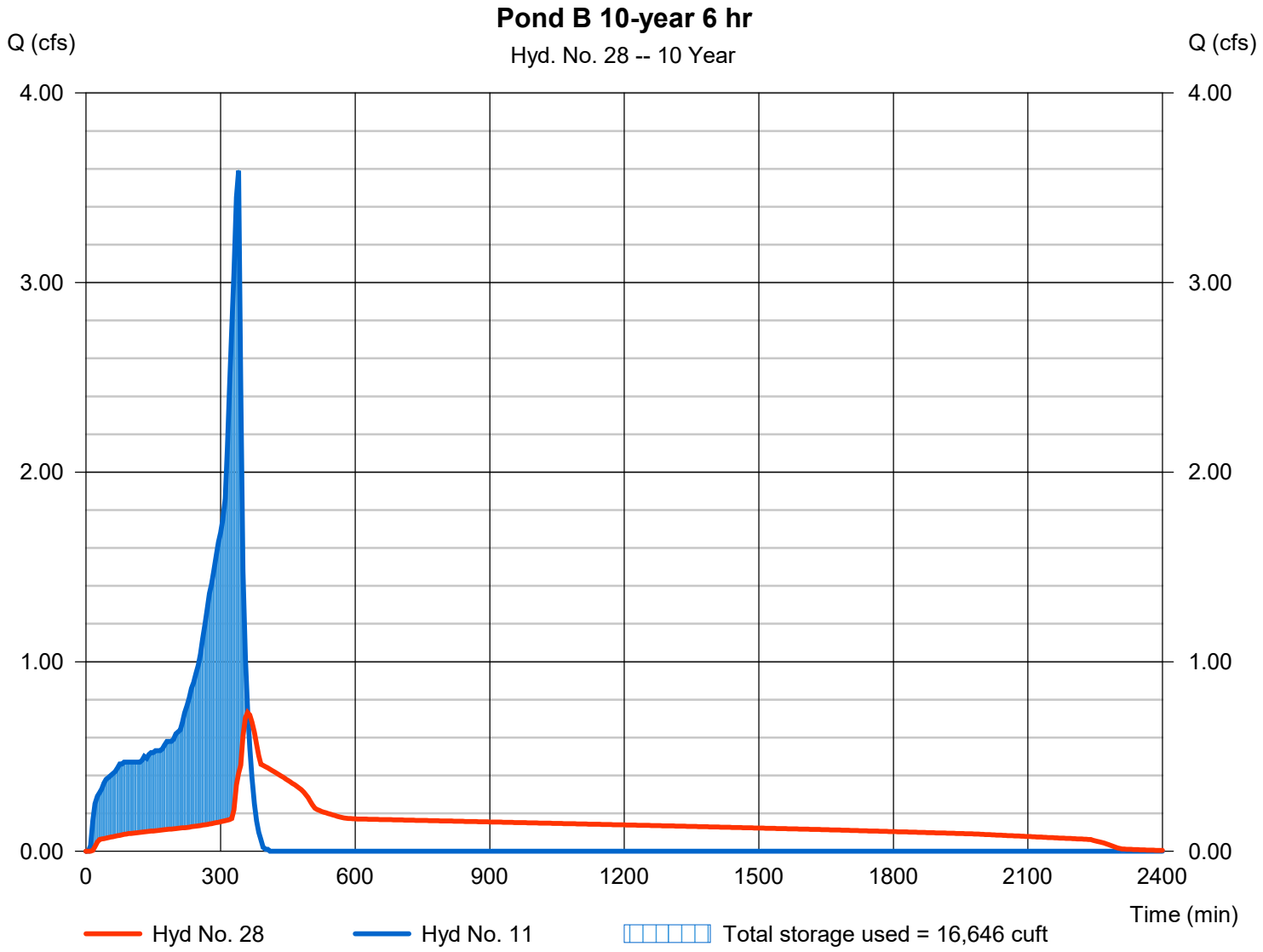
Hydrograph Report

Hyd. No. 28

Pond B 10-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.731 cfs
Storm frequency	=	10 yrs	Time to peak	=	360 min
Time interval	=	5 min	Hyd. volume	=	20,240 cuft
Inflow hyd. No.	=	11 - Area B 10-year 6 hr	Max. Elevation	=	1146.82 ft
Reservoir name	=	Pond B	Max. Storage	=	16,646 cuft

Storage Indication method used.



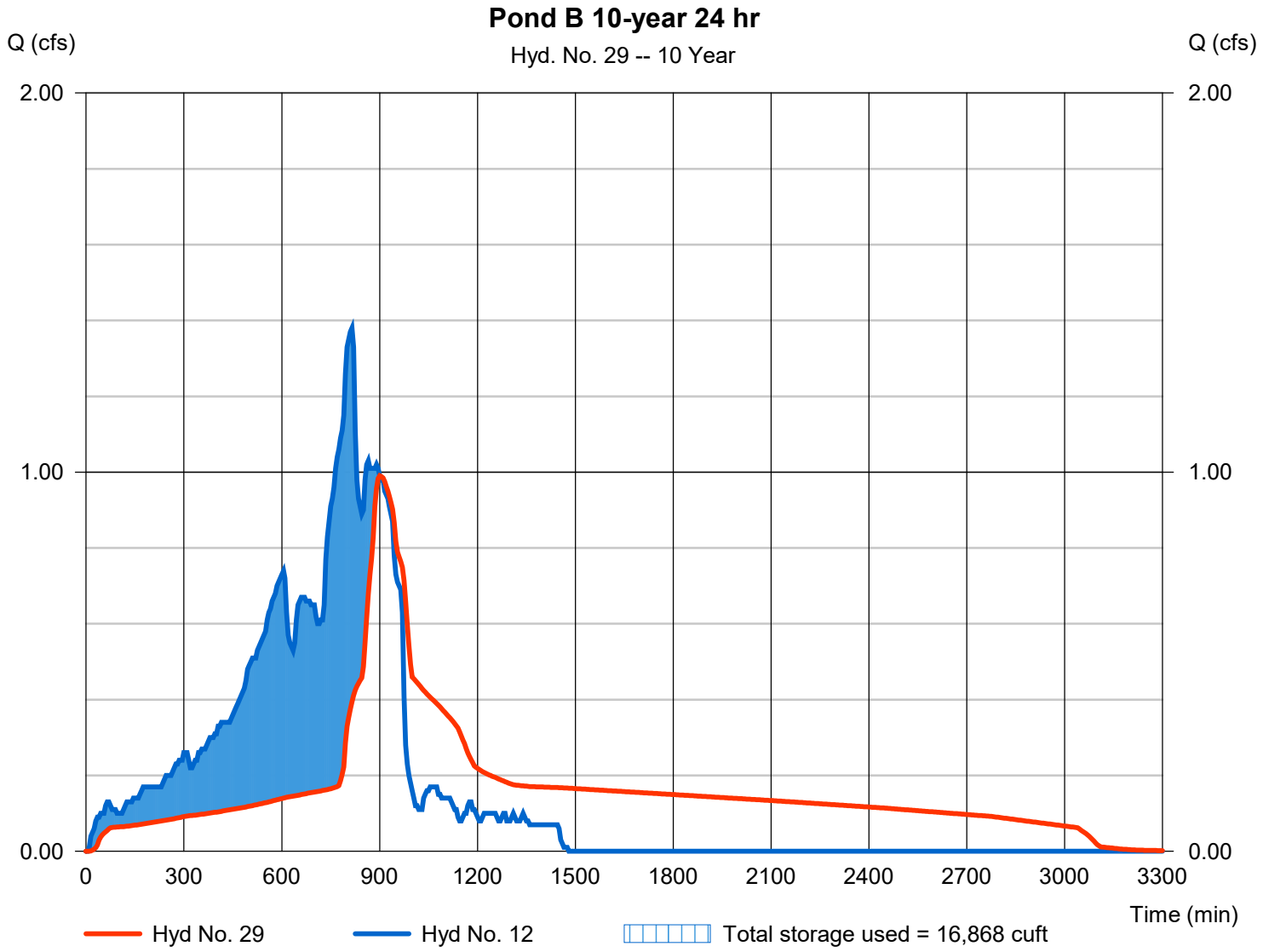
Hydrograph Report

Hyd. No. 29

Pond B 10-year 24 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.991 cfs
Storm frequency	=	10 yrs	Time to peak	=	900 min
Time interval	=	5 min	Hyd. volume	=	32,426 cuft
Inflow hyd. No.	=	12 - Area B 10-year 24 hr	Max. Elevation	=	1146.88 ft
Reservoir name	=	Pond B	Max. Storage	=	16,868 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

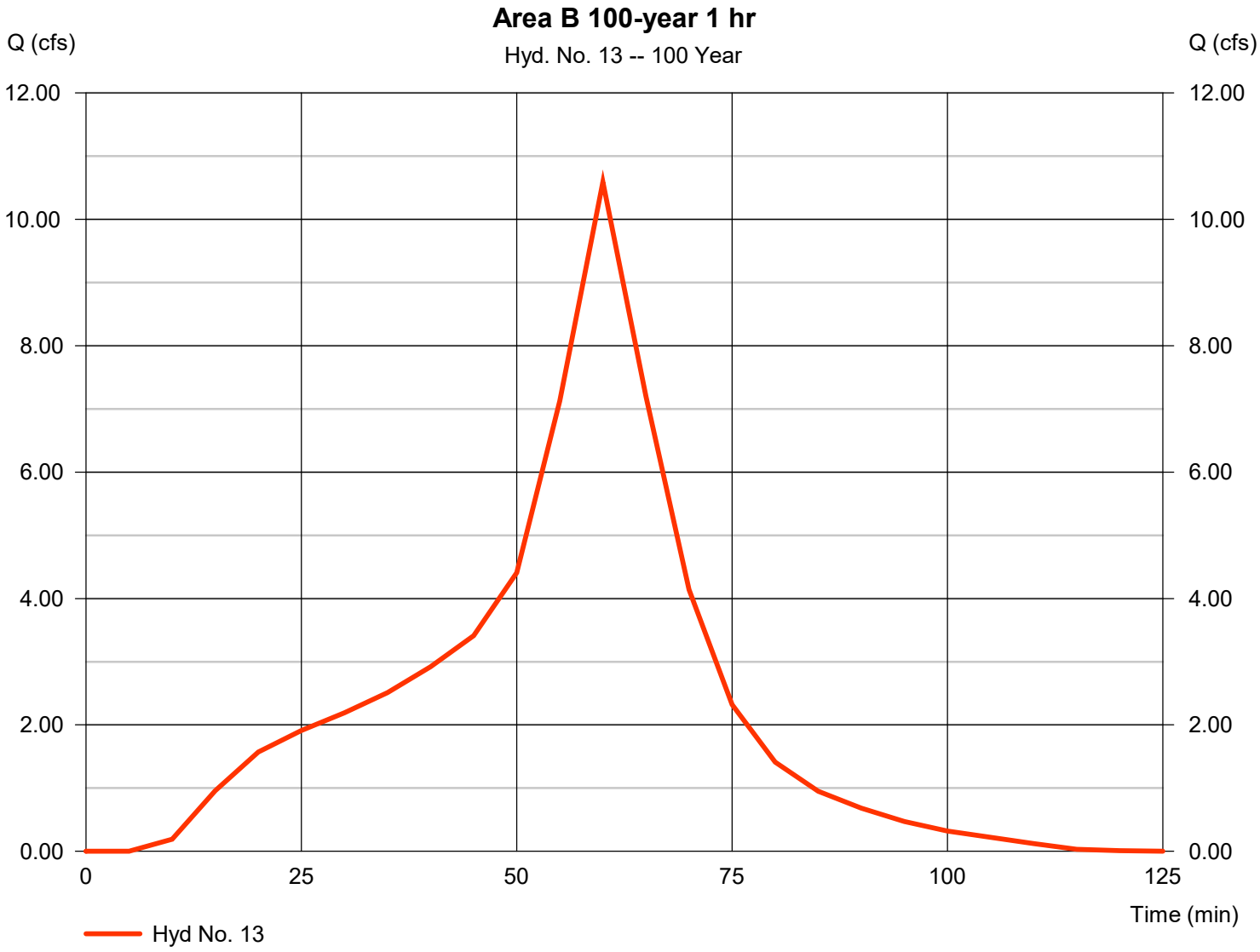
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 1 hr
2	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 3 hr
3	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 6 hr
4	Manual	0.000	5	n/a	0	------	------	------	Area B 2-year 24 hr
5	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 1 hr
6	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 3 hr
7	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 6 hr
8	Manual	0.000	5	n/a	0	------	------	------	Area B 5-year 24 hr
9	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 1 hr
10	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 3 hr
11	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 6 hr
12	Manual	0.000	5	n/a	0	------	------	------	Area B 10-year 24 hr
13	Manual	10.59	5	60	16,698	------	------	------	Area B 100-year 1 hr
14	Manual	6.730	5	165	27,942	------	------	------	Area B 100-year 3 hr
15	Manual	5.810	5	340	35,805	------	------	------	Area B 100-year 6 hr
16	Manual	2.450	5	815	57,747	------	------	------	Area B 100-year 24 hr
18	Reservoir	0.000	5	n/a	0	1	1142.60	0.000	Pond B 2-year 1hr
19	Reservoir	0.000	5	n/a	0	2	1142.60	0.000	Pond B 2-year 3 hr
20	Reservoir	0.000	5	n/a	0	3	1142.60	0.000	Pond B 2-year 6 hr
21	Reservoir	0.000	5	n/a	0	4	1142.60	0.000	Pond B 2-year 24 hr
22	Reservoir	0.000	5	n/a	0	5	1142.60	0.000	Pond B 5-year 1 hr
23	Reservoir	0.000	5	n/a	0	6	1142.60	0.000	Pond B 5-year 3 hr
24	Reservoir	0.000	5	n/a	0	7	1142.60	0.000	Pond B 5-year 6 hr
25	Reservoir	0.000	5	n/a	0	8	1142.60	0.000	Pond B 5-year 24 hr
26	Reservoir	0.000	5	n/a	0	9	1142.60	0.000	Pond B 10-year 1 hr
27	Reservoir	0.000	5	n/a	0	10	1142.60	0.000	Pond B 10-year 3 hr
28	Reservoir	0.000	5	n/a	0	11	1142.60	0.000	Pond B 10-year 6 hr
29	Reservoir	0.000	5	n/a	0	12	1142.60	0.000	Pond B 10-year 24 hr
30	Reservoir	0.424	5	95	16,691	13	1146.55	15,418	Pond B 100-year 1hr
31	Reservoir	3.217	5	180	27,934	14	1147.87	20,647	Pond B 100-year 3 hr
32	Reservoir	3.740	5	345	35,797	15	1148.20	21,860	Pond B 100-year 6 hr
33	Reservoir	2.192	5	820	57,740	16	1147.22	18,275	Pond B 100-year 24 hr

Hydrograph Report

Hyd. No. 13

Area B 100-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 10.59 cfs
Storm frequency	= 100 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 16,698 cuft

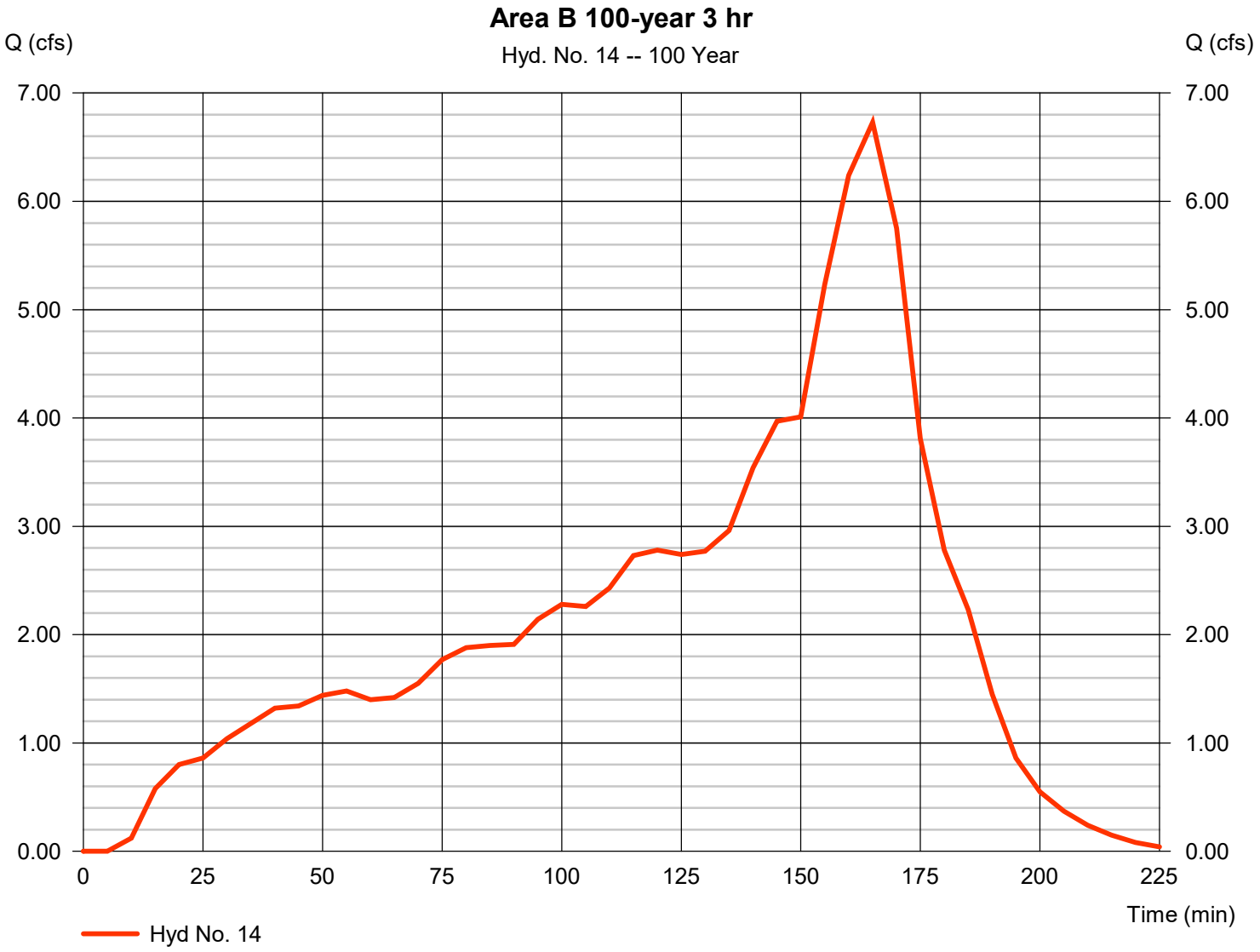


Hydrograph Report

Hyd. No. 14

Area B 100-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 6.730 cfs
Storm frequency	= 100 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 27,942 cuft

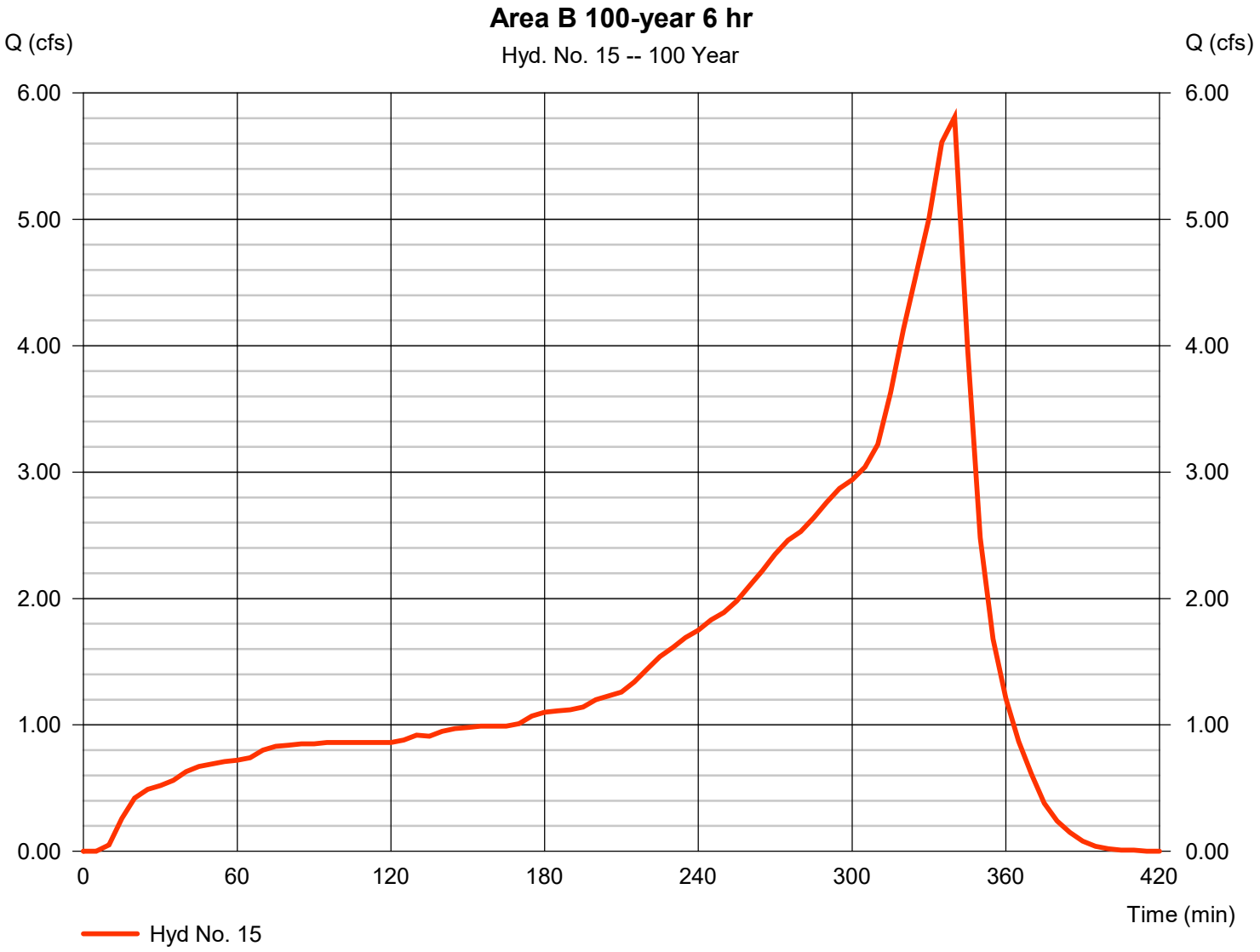


Hydrograph Report

Hyd. No. 15

Area B 100-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 5.810 cfs
Storm frequency	= 100 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 35,805 cuft

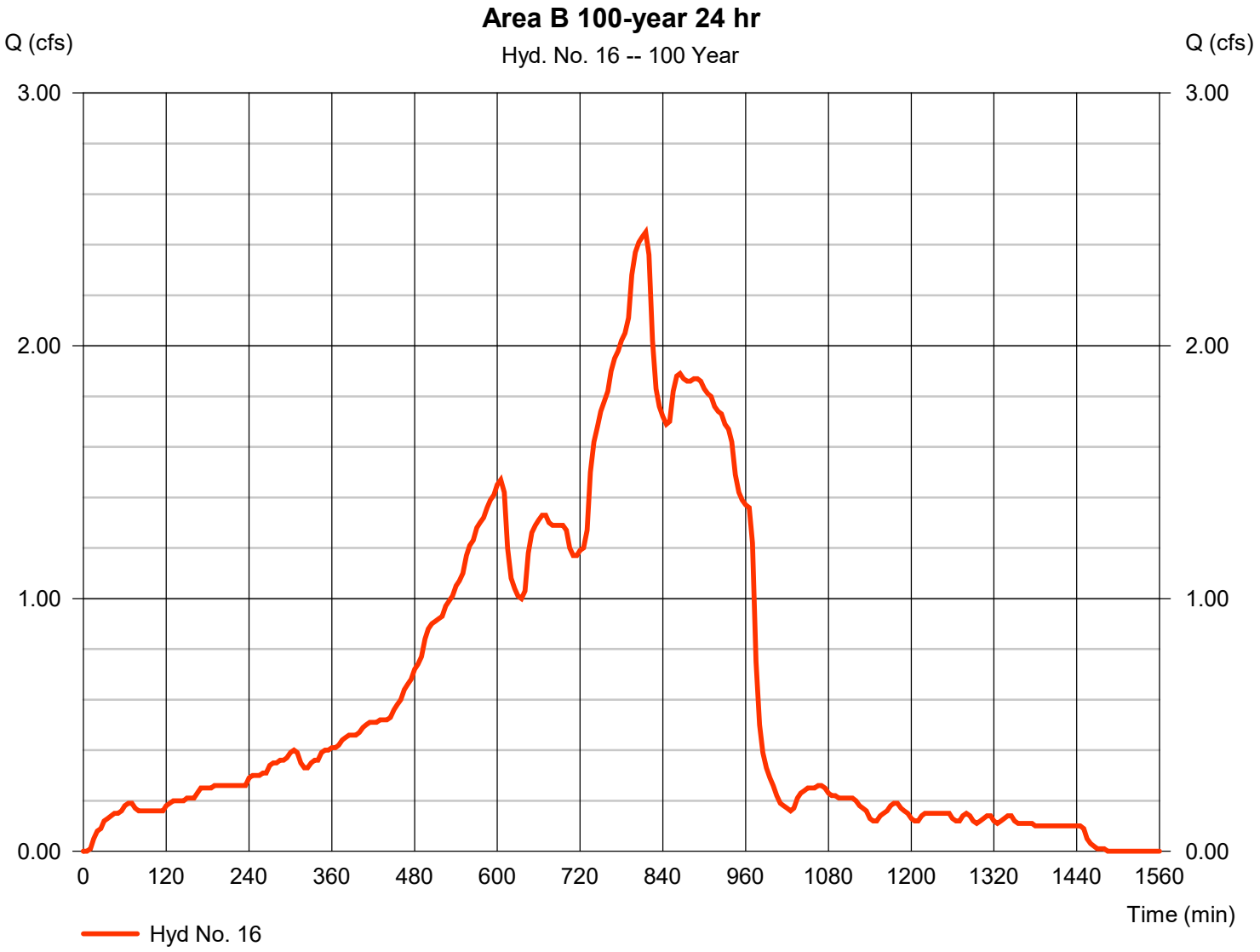


Hydrograph Report

Hyd. No. 16

Area B 100-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 2.450 cfs
Storm frequency	= 100 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 57,747 cuft



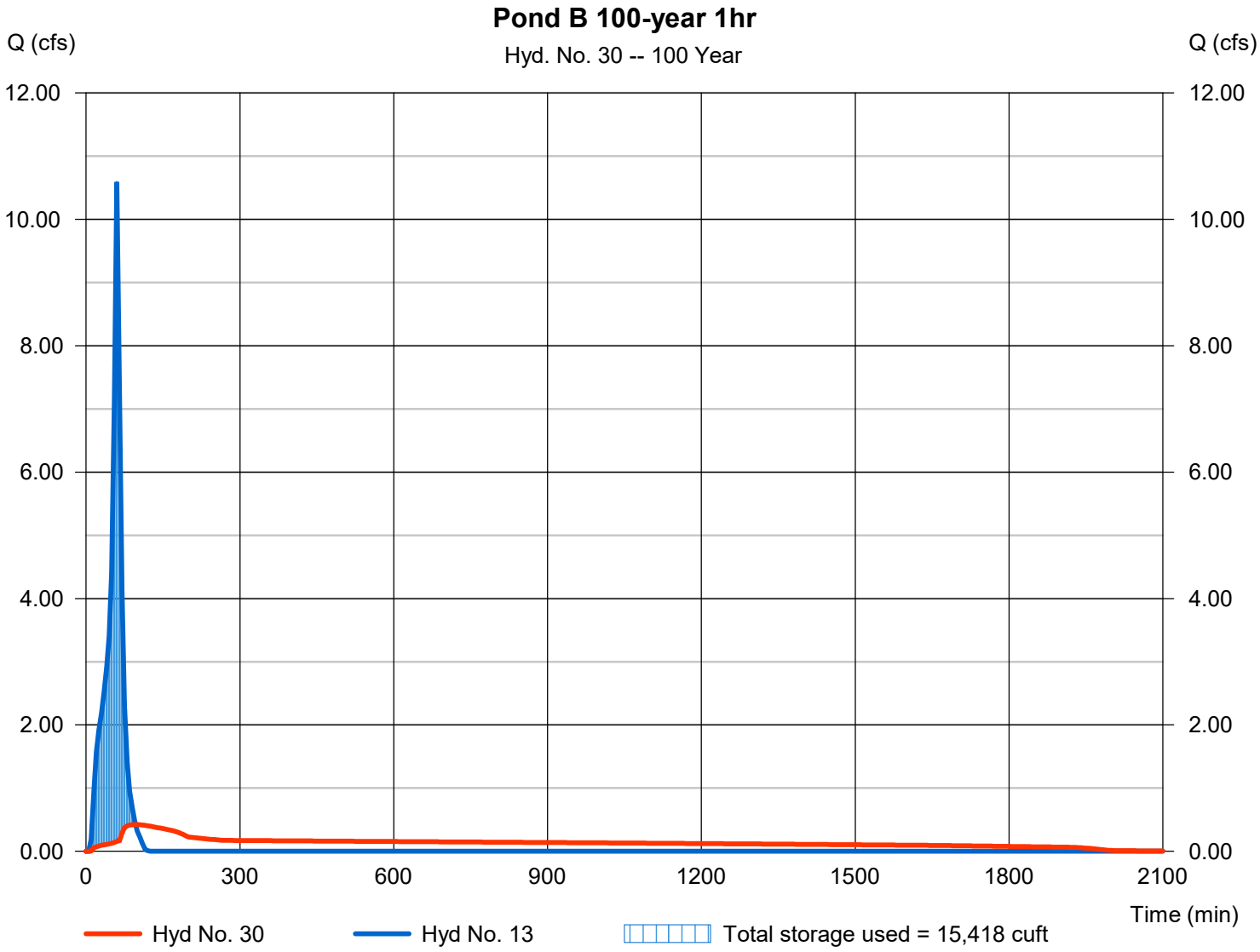
Hydrograph Report

Hyd. No. 30

Pond B 100-year 1hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.424 cfs
Storm frequency	=	100 yrs	Time to peak	=	95 min
Time interval	=	5 min	Hyd. volume	=	16,691 cuft
Inflow hyd. No.	=	13 - Area B 100-year 1 hr	Max. Elevation	=	1146.55 ft
Reservoir name	=	Pond B	Max. Storage	=	15,418 cuft

Storage Indication method used.



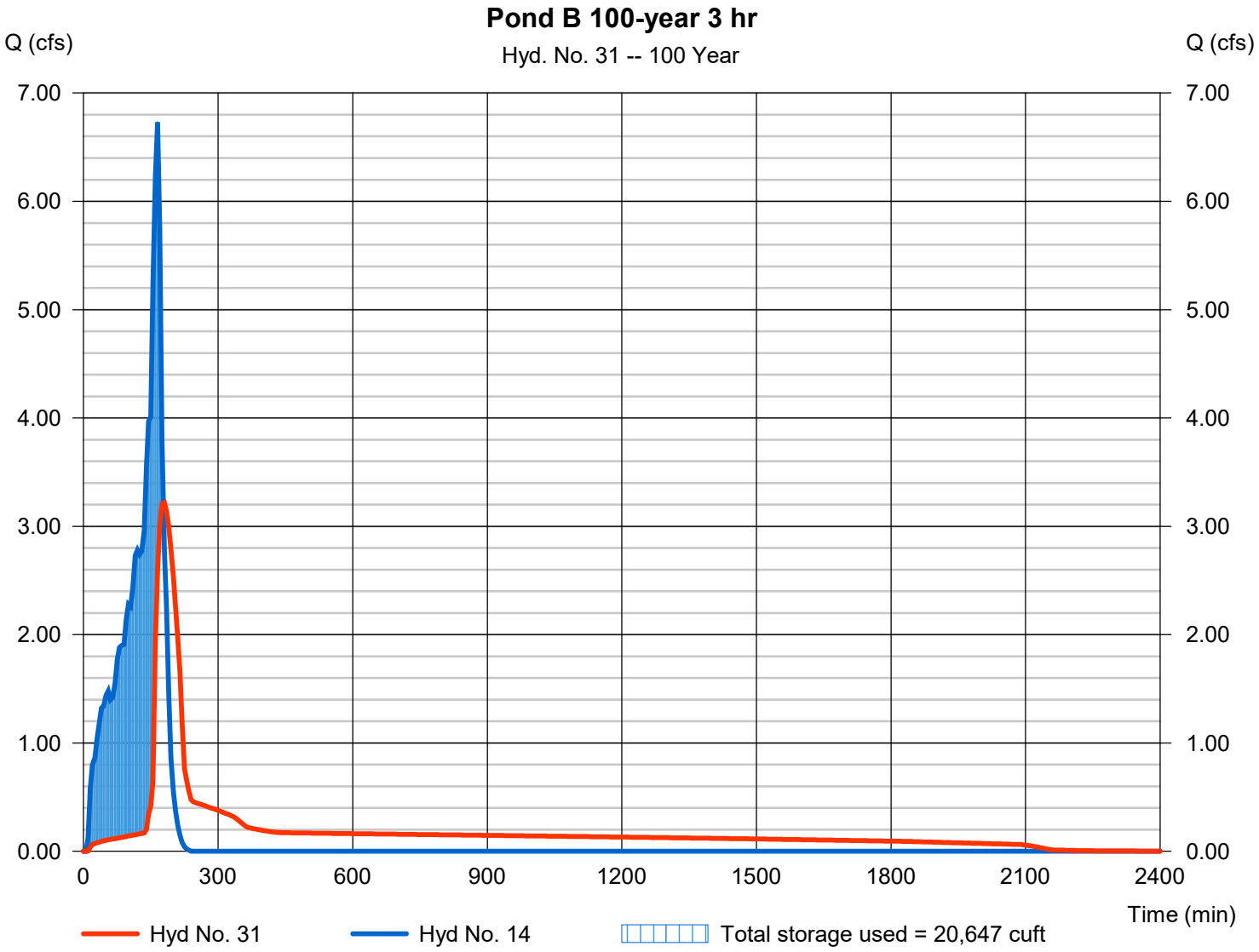
Hydrograph Report

Hyd. No. 31

Pond B 100-year 3 hr

Hydrograph type	=	Reservoir	Peak discharge	=	3.217 cfs
Storm frequency	=	100 yrs	Time to peak	=	180 min
Time interval	=	5 min	Hyd. volume	=	27,934 cuft
Inflow hyd. No.	=	14 - Area B 100-year 3 hr	Max. Elevation	=	1147.87 ft
Reservoir name	=	Pond B	Max. Storage	=	20,647 cuft

Storage Indication method used.



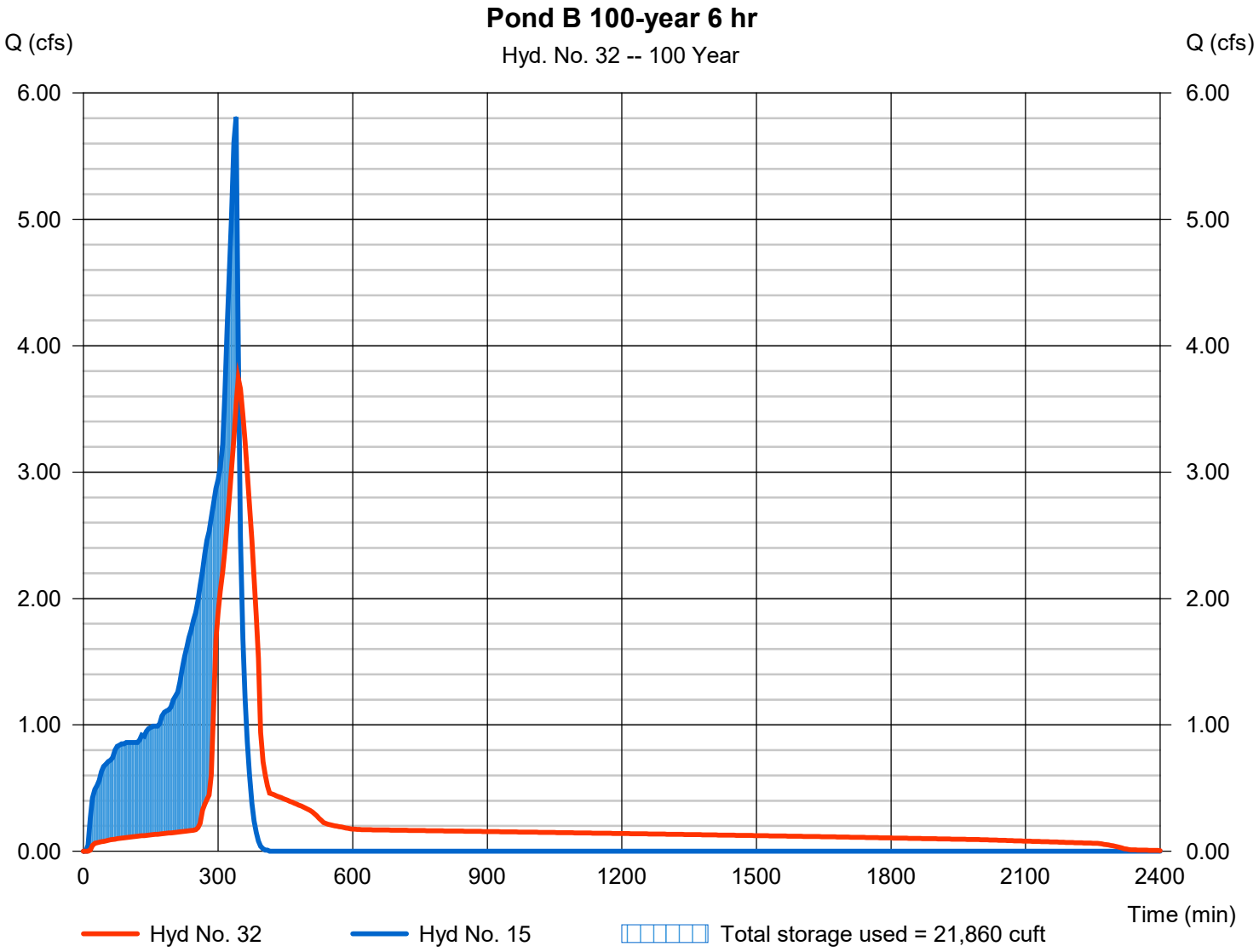
Hydrograph Report

Hyd. No. 32

Pond B 100-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	3.740 cfs
Storm frequency	=	100 yrs	Time to peak	=	345 min
Time interval	=	5 min	Hyd. volume	=	35,797 cuft
Inflow hyd. No.	=	15 - Area B 100-year 6 hr	Max. Elevation	=	1148.20 ft
Reservoir name	=	Pond B	Max. Storage	=	21,860 cuft

Storage Indication method used.



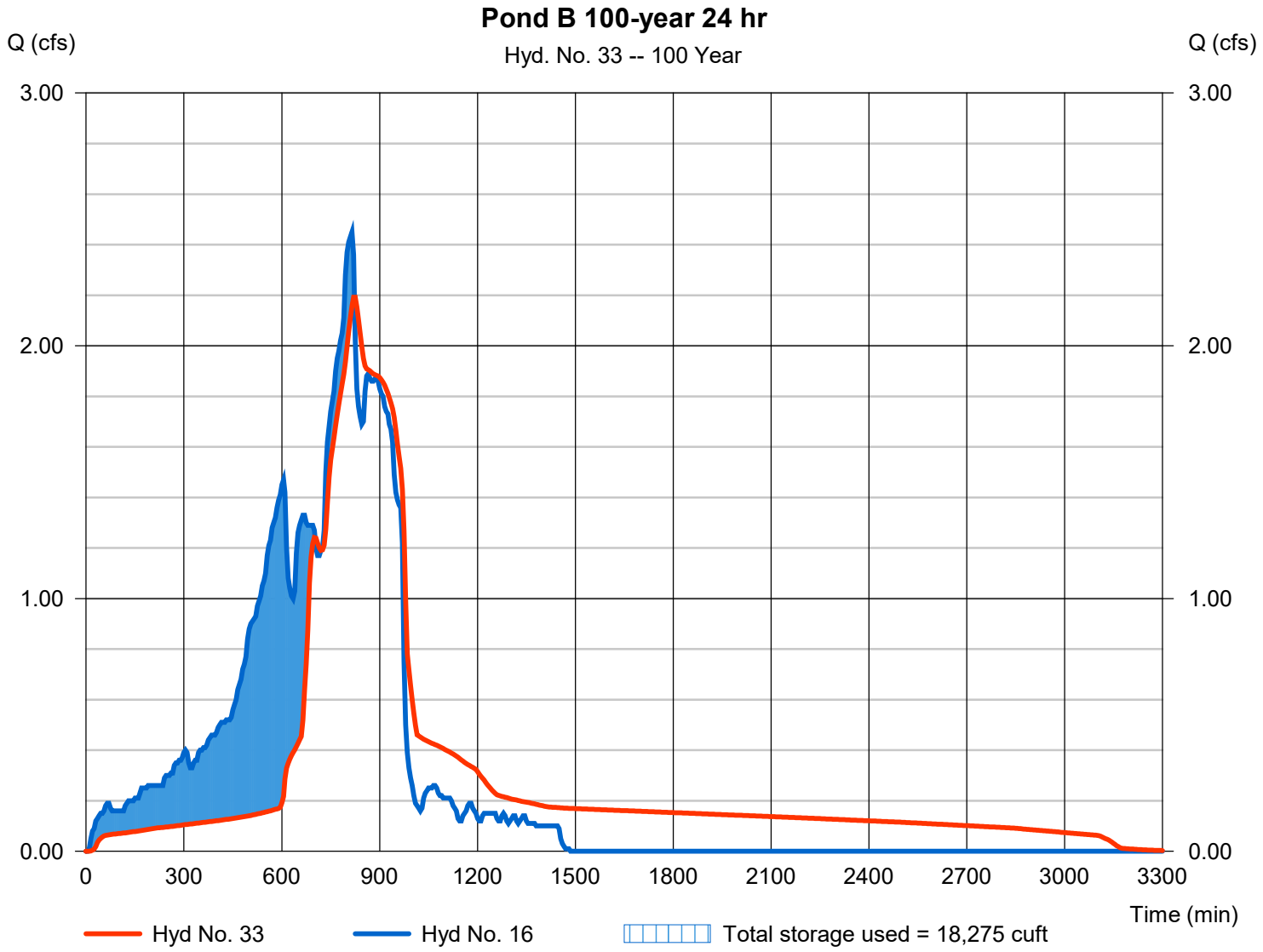
Hydrograph Report

Hyd. No. 33

Pond B 100-year 24 hr

Hydrograph type	=	Reservoir	Peak discharge	=	2.192 cfs
Storm frequency	=	100 yrs	Time to peak	=	820 min
Time interval	=	5 min	Hyd. volume	=	57,740 cuft
Inflow hyd. No.	=	16 - Area B 100-year 24 hr	Max. Elevation	=	1147.22 ft
Reservoir name	=	Pond B	Max. Storage	=	18,275 cuft

Storage Indication method used.



Area C – Detention Pond Written Calcs

Storage Provided in Pipes

Segment #1

$Size\ of\ Pipe = 3.5'$

$Length\ of\ Pipe = 438'$

$$Volume = \left(\frac{\pi}{4}(3.5')^2\right)(438')$$

$$Volume = 4{,}215\ ft^3$$

Segment #2

$Size\ of\ Pipe = 4'$

$Length\ of\ Pipe = 144'$

$$Volume = \left(\frac{\pi}{4}(4')^2\right)(144')$$

$$Volume = 1{,}810\ ft^3$$

Segment #3

$Size\ of\ Pipe = 4'$

$Length\ of\ Pipe = 680'$

$$Volume = \left(\frac{\pi}{4}(4')^2\right)(680')$$

$$Volume = 8{,}547\ ft^3$$

Segment #4

$Size\ of\ Pipe = 4'$

$Length\ of\ Pipe = 1{,}135'$

$$Volume = \left(\frac{\pi}{4}(4')^2\right)(1{,}135')$$

$$Volume = 14{,}266\ ft^3$$

Segment #5

$Size\ of\ Pipe = 3.5'$

$Length\ of\ Pipe = 335'$

$$Volume = \left(\frac{\pi}{4}(3.5')^2\right)(335')$$

$$Volume = 3{,}226\ ft^3$$

Storage Provided in Pond

$Basin\ Bottom\ Area: 3{,}700\ ft^2$

$Basin\ Top\ Area: 5{,}028\ ft^2$

$Perimeter\ of\ Pond = 332\ ft$

$Depth\ of\ Media + Rock\ Bed = 4.5'$

$Void\ Space = 0.3$

$Height\ of\ Riser\ Pipe = 1.0\ ft$

$$Volume\ Below\ Ground = (3{,}700ft^2)(4.5ft)(0.3)$$

$$Volume\ Below\ Ground = 4{,}995ft^3$$

$$Volume\ Above\ Ground = \left((3{,}700ft^2)(1.0ft)\right) \times \left(\frac{1}{2}(4.0ft)(1.0ft)\right)(332ft)$$

$$Volume\ Above\ Ground = 4{,}364ft^3$$

<u>*Total Storage Provided*</u>

$$Total\ Volume\ Provided = 4{,}215\ ft^3 + 1{,}810\ ft^3 + 8{,}547\ ft^3 + 14{,}266\ ft^3 + 3{,}226\ ft^3 + 4{,}995ft^3 + 4{,}364ft^3$$

$$Total\ Storage\ Volume\ Provided = 41{,}421ft^3$$

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond C - Segment #1

Pond Data

UG Chambers -Invert elev. = 1143.40 ft, Rise x Span = 3.50 x 3.50 ft, Barrel Len = 438.00 ft, No. Barrels = 1, Slope = 0.30%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1143.40	n/a	0	0
0.48	1143.88	n/a	58	58
0.96	1144.36	n/a	219	277
1.44	1144.84	n/a	478	755
1.93	1145.33	n/a	643	1,398
2.41	1145.81	n/a	709	2,108
2.89	1146.29	n/a	710	2,818
3.37	1146.77	n/a	642	3,460
3.85	1147.25	n/a	478	3,938
4.33	1147.73	n/a	218	4,157
4.81	1148.21	n/a	58	4,215

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1143.40	---	---	---	---	---	---	---	---	---	---	0.000
0.48	58	1143.88	---	---	---	---	---	---	---	---	---	---	0.000
0.96	277	1144.36	---	---	---	---	---	---	---	---	---	---	0.000
1.44	755	1144.84	---	---	---	---	---	---	---	---	---	---	0.000
1.93	1,398	1145.33	---	---	---	---	---	---	---	---	---	---	0.000
2.41	2,108	1145.81	---	---	---	---	---	---	---	---	---	---	0.000
2.89	2,818	1146.29	---	---	---	---	---	---	---	---	---	---	0.000
3.37	3,460	1146.77	---	---	---	---	---	---	---	---	---	---	0.000
3.85	3,938	1147.25	---	---	---	---	---	---	---	---	---	---	0.000
4.33	4,157	1147.73	---	---	---	---	---	---	---	---	---	---	0.000
4.81	4,215	1148.21	---	---	---	---	---	---	---	---	---	---	0.000

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond C - Segment #2

Pond Data

UG Chambers -Invert elev. = 1144.10 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 48.00 ft, No. Barrels = 3, Slope = 0.40%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1144.10	n/a	0	0
0.42	1144.52	n/a	70	70
0.84	1144.94	n/a	162	232
1.26	1145.36	n/a	205	437
1.68	1145.78	n/a	229	666
2.10	1146.20	n/a	240	905
2.52	1146.62	n/a	240	1,145
2.93	1147.03	n/a	228	1,373
3.35	1147.45	n/a	205	1,578
3.77	1147.87	n/a	162	1,740
4.19	1148.29	n/a	69	1,810

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1144.10	---	---	---	---	---	---	---	---	---	---	0.000
0.42	70	1144.52	---	---	---	---	---	---	---	---	---	---	0.000
0.84	232	1144.94	---	---	---	---	---	---	---	---	---	---	0.000
1.26	437	1145.36	---	---	---	---	---	---	---	---	---	---	0.000
1.68	666	1145.78	---	---	---	---	---	---	---	---	---	---	0.000
2.10	905	1146.20	---	---	---	---	---	---	---	---	---	---	0.000
2.52	1,145	1146.62	---	---	---	---	---	---	---	---	---	---	0.000
2.93	1,373	1147.03	---	---	---	---	---	---	---	---	---	---	0.000
3.35	1,578	1147.45	---	---	---	---	---	---	---	---	---	---	0.000
3.77	1,740	1147.87	---	---	---	---	---	---	---	---	---	---	0.000
4.19	1,810	1148.29	---	---	---	---	---	---	---	---	---	---	0.000

Pond Report

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Pond No. 1 - Segment #3

Pond Data

UG Chambers -Invert elev. = 1144.30 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 136.00 ft, No. Barrels = 5, Slope = 0.37%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1144.30	n/a	0	0
0.45	1144.75	n/a	194	194
0.90	1145.20	n/a	721	915
1.35	1145.65	n/a	1,002	1,917
1.80	1146.10	n/a	1,146	3,064
2.25	1146.55	n/a	1,211	4,274
2.70	1147.00	n/a	1,211	5,485
3.15	1147.45	n/a	1,146	6,631
3.60	1147.90	n/a	1,002	7,633
4.05	1148.35	n/a	721	8,353
4.50	1148.80	n/a	193	8,547

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1144.30	---	---	---	---	---	---	---	---	---	---	0.000
0.45	194	1144.75	---	---	---	---	---	---	---	---	---	---	0.000
0.90	915	1145.20	---	---	---	---	---	---	---	---	---	---	0.000
1.35	1,917	1145.65	---	---	---	---	---	---	---	---	---	---	0.000
1.80	3,064	1146.10	---	---	---	---	---	---	---	---	---	---	0.000
2.25	4,274	1146.55	---	---	---	---	---	---	---	---	---	---	0.000
2.70	5,485	1147.00	---	---	---	---	---	---	---	---	---	---	0.000
3.15	6,631	1147.45	---	---	---	---	---	---	---	---	---	---	0.000
3.60	7,633	1147.90	---	---	---	---	---	---	---	---	---	---	0.000
4.05	8,353	1148.35	---	---	---	---	---	---	---	---	---	---	0.000
4.50	8,547	1148.80	---	---	---	---	---	---	---	---	---	---	0.000

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond C - Segment #4

Pond Data

UG Chambers -Invert elev. = 1144.40 ft, Rise x Span = 4.00 x 4.00 ft, Barrel Len = 227.00 ft, No. Barrels = 5, Slope = 0.30%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1144.40	n/a	0	0
0.47	1144.87	n/a	247	247
0.94	1145.34	n/a	1,126	1,373
1.40	1145.80	n/a	1,695	3,068
1.87	1146.27	n/a	1,973	5,041
2.34	1146.74	n/a	2,094	7,134
2.81	1147.21	n/a	2,097	9,232
3.28	1147.68	n/a	1,971	11,203
3.74	1148.14	n/a	1,691	12,894
4.21	1148.61	n/a	1,125	14,019
4.68	1149.08	n/a	247	14,266

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1144.40	---	---	---	---	---	---	---	---	---	---	0.000
0.47	247	1144.87	---	---	---	---	---	---	---	---	---	---	0.000
0.94	1,373	1145.34	---	---	---	---	---	---	---	---	---	---	0.000
1.40	3,068	1145.80	---	---	---	---	---	---	---	---	---	---	0.000
1.87	5,041	1146.27	---	---	---	---	---	---	---	---	---	---	0.000
2.34	7,134	1146.74	---	---	---	---	---	---	---	---	---	---	0.000
2.81	9,232	1147.21	---	---	---	---	---	---	---	---	---	---	0.000
3.28	11,203	1147.68	---	---	---	---	---	---	---	---	---	---	0.000
3.74	12,894	1148.14	---	---	---	---	---	---	---	---	---	---	0.000
4.21	14,019	1148.61	---	---	---	---	---	---	---	---	---	---	0.000
4.68	14,266	1149.08	---	---	---	---	---	---	---	---	---	---	0.000

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Thursday, 02 / 27 / 2020

Pond No. 1 - Pond C - Segment #5

Pond Data

UG Chambers -Invert elev. = 1145.20 ft, Rise x Span = 3.50 x 3.50 ft, Barrel Len = 55.88 ft, No. Barrels = 6, Slope = 0.36%, Headers = No

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1145.20	n/a	0	0
0.37	1145.57	n/a	116	116
0.74	1145.94	n/a	289	405
1.11	1146.31	n/a	368	772
1.48	1146.68	n/a	411	1,183
1.85	1147.05	n/a	431	1,614
2.22	1147.42	n/a	431	2,044
2.59	1147.79	n/a	411	2,456
2.96	1148.16	n/a	367	2,822
3.33	1148.53	n/a	288	3,110
3.70	1148.90	n/a	116	3,226

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	1145.20	---	---	---	---	---	---	---	---	---	---	0.000
0.37	116	1145.57	---	---	---	---	---	---	---	---	---	---	0.000
0.74	405	1145.94	---	---	---	---	---	---	---	---	---	---	0.000
1.11	772	1146.31	---	---	---	---	---	---	---	---	---	---	0.000
1.48	1,183	1146.68	---	---	---	---	---	---	---	---	---	---	0.000
1.85	1,614	1147.05	---	---	---	---	---	---	---	---	---	---	0.000
2.22	2,044	1147.42	---	---	---	---	---	---	---	---	---	---	0.000
2.59	2,456	1147.79	---	---	---	---	---	---	---	---	---	---	0.000
2.96	2,822	1148.16	---	---	---	---	---	---	---	---	---	---	0.000
3.33	3,110	1148.53	---	---	---	---	---	---	---	---	---	---	0.000
3.70	3,226	1148.90	---	---	---	---	---	---	---	---	---	---	0.000

Pond C - Stage Storage Calculations

Segment #1		
Stage	***Incrimental Storage (ft^3)***	***Total Storage (ft3)***
1143.4	0	0
1143.88	58	58
1144.36	219	277
1144.84	478	755
1145.33	643	1398
1145.81	709	2107
1146.29	710	2817
1146.77	642	3459
1147.25	478	3937
1147.73	218	4155
1148.21	58	4213
1148.6	0	4213
1149.07	0	4213

Segment #2		
Stage	***Incrimental Storage (ft^3)***	***Total Storage (ft3)***
1143.4	0	0
1143.87	0	0
1144.34	40	40
1144.8	131	178
1145.27	196	393
1145.74	227	644
1146.21	240	912
1146.68	238	1180
1147.14	222	1435
1147.61	189	1657
1148.08	116	1822
1148.6	69	1861
1149.07	0	1811

Segment #3		
Stage	***Incrimental Storage (ft^3)***	***Total Storage (ft3)***
1143.4	0	0
1143.87	0	0
1144.34	17	17
1144.8	253	274
1145.27	765	1071
1145.74	1031	2146
1146.21	1162	3359
1146.68	1211	4624
1147.14	1191	5842
1147.61	1094	6987
1148.08	889	7920
1148.6	428	8461
1149.07	428	8549

Segment #4		
Stage	***Incrimental Storage (ft^3)***	***Total Storage (ft3)***
1143.4	0	0
1143.87	0	0
1144.34	0	0
1144.8	210	210
1145.27	995	1205
1145.74	1621	2847
1146.21	1938	4789
1146.68	2079	6868
1147.14	2097	8920
1147.61	1990	10909
1148.08	1728	12673
1148.6	1137	13995
1149.07	266	14261

Segment #5		
Stage	Incrimental Storage (ft^3)	Total Storage (ft3)
1143.4	0	0
1143.87	0	0
1144.34	0	0
1144.8	0	0
1145.27	22	22
1145.74	195	249
1146.21	347	674
1146.68	411	1184
1147.14	431	1720
1147.61	421	2257
1148.08	377	2745
1148.6	255	3134
1149.07	94	3228

Storage Provided by Biopond		
Stage	Incrimental Storage (ft^3)	Total Storage (ft3)
1143.4	0	0
1143.87	411	411
1144.34	522	932
1144.8	511	1443
1145.27	522	1965
1145.74	522	2486
1146.21	522	3008
1146.68	522	3530
1147.14	511	4040
1147.61	522	4562
1148.08	433	4995
1148.6	2220	7215
1149.07	2144	9359

Total Storage Provided		
Stage	Incrimental Storage (ft^3)	Total Storage (ft3)
1143.4	0	0
1143.87	469	469
1144.34	798	1267
1144.8	1583	2860
1145.27	3142	6054
1145.74	4304	10479
1146.21	4918	15559
1146.68	5102	20845
1147.14	4929	25894
1147.61	4433	30528
1148.08	3599	34368
1148.6	4110	38879
1149.07	2932	41421

Above Ground Basin Characteristics	
Basin Bottom Area (ft2)	3700
Basin Top Area (ft2)	5028

Pond Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 — Monday, 03 / 2 / 2020

Pond No. 1 - Pond C

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1143.40	n/a	0	0
0.47	1143.87	n/a	469	469
0.94	1144.34	n/a	798	1,267
1.40	1144.80	n/a	1,594	2,860
1.87	1145.27	n/a	3,194	6,054
2.34	1145.74	n/a	4,426	10,479
2.81	1146.21	n/a	5,079	15,559
3.28	1146.68	n/a	5,286	20,845
3.74	1147.14	n/a	5,049	25,894
4.21	1147.61	n/a	4,634	30,528
4.68	1148.08	n/a	3,841	34,368
5.20	1148.60	n/a	4,510	38,879
5.67	1149.07	n/a	2,542	41,421

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 2.73	5.73	3.00	0.00
Span (in)	= 2.73	5.73	48.00	0.00
No. Barrels	= 1	1	1	0
Invert El. (ft)	= 1143.40	1146.85	1147.58	0.00
Length (ft)	= 1.00	1.00	1.00	0.00
Slope (%)	= 1.00	1.00	1.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

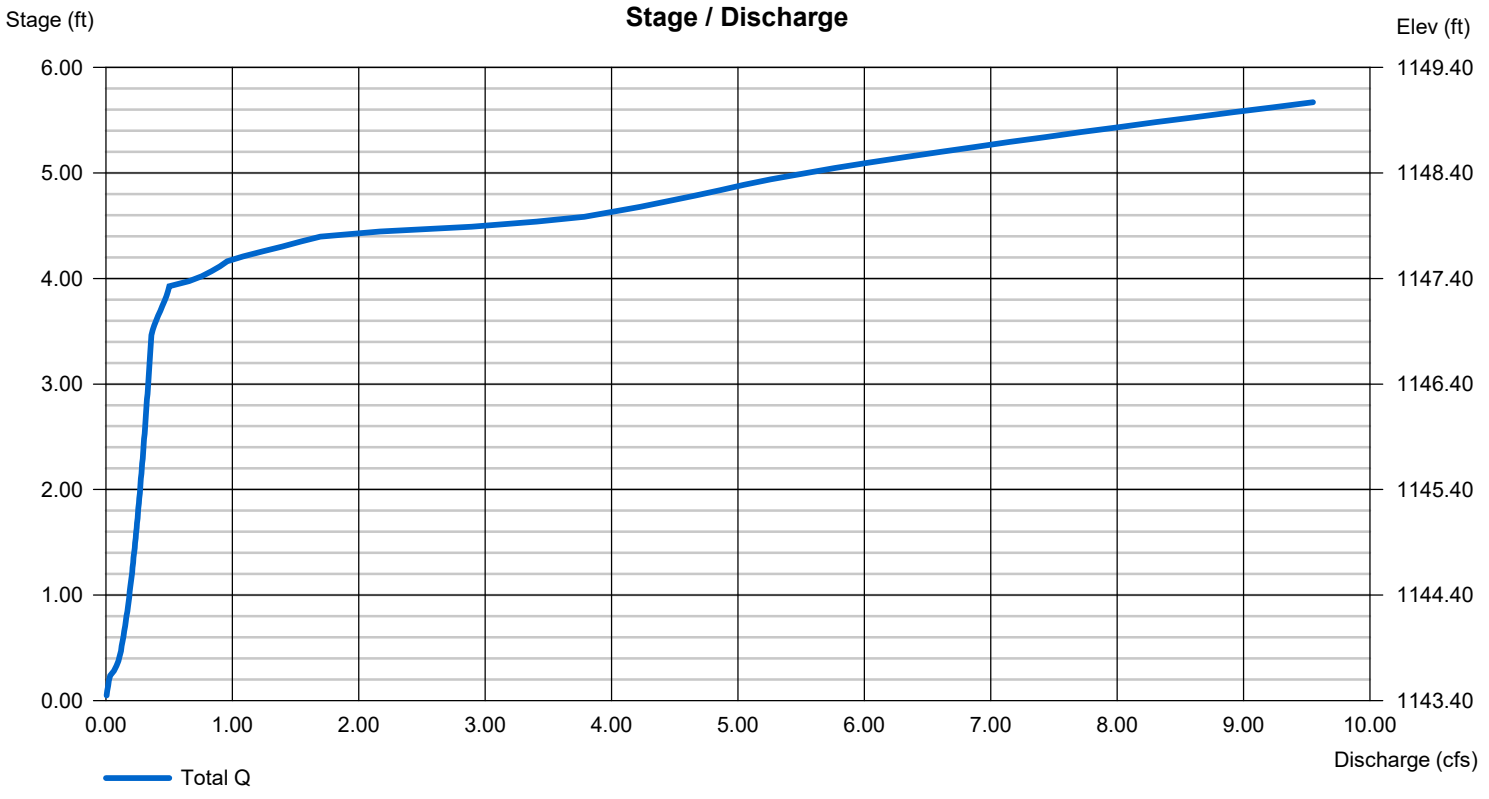
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 1.00	0.00	0.00	0.00
Crest El. (ft)	= 1148.30	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	7.750	5	60	11,313	------	------	------	Area C 2-year 1 hr
2	Manual	4.220	5	165	16,575	------	------	------	Area C 2-year 3 hr
3	Manual	3.930	5	340	23,478	------	------	------	Area C 2-year 6 hr
4	Manual	1.480	5	815	39,618	------	------	------	Area C 2-year 24 hr
5	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 1 hr
6	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 3 hr
7	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 6 hr
8	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 24 hr
9	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 1 hr
10	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 3 hr
11	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 6 hr
12	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 24 hr
13	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 1 hr
14	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 3 hr
15	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 6 hr
16	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 24 hr
18	Reservoir	0.289	5	100	11,299	1	1145.69	10,018	Pond C 2-year 1hr
19	Reservoir	0.312	5	205	16,561	2	1146.05	13,815	Pond C 2-year 3 hr
20	Reservoir	0.335	5	375	23,464	3	1146.45	18,229	Pond C 2-year 6 hr
21	Reservoir	0.357	5	980	39,604	4	1146.84	22,644	Pond C 2-year 24 hr
22	Reservoir	0.000	5	n/a	0	5	1143.40	0.000	Pond C 5-year 1 hr
23	Reservoir	0.000	5	n/a	0	6	1143.40	0.000	Pond C 5-year 3 hr
24	Reservoir	0.000	5	n/a	0	7	1143.40	0.000	Pond C 5-year 6 hr
25	Reservoir	0.000	5	n/a	0	8	1143.40	0.000	Pond C 5-year 24 hr
26	Reservoir	0.000	5	n/a	0	9	1143.40	0.000	Pond C 10-year 1 hr
27	Reservoir	0.000	5	n/a	0	10	1143.40	0.000	Pond C 10-year 3 hr
28	Reservoir	0.000	5	n/a	0	11	1143.40	0.000	Pond C 10-year 6 hr
29	Reservoir	0.000	5	n/a	0	12	1143.40	0.000	Pond C 10-year 24 hr
30	Reservoir	0.000	5	n/a	0	13	1143.40	0.000	Pond C 100-year 1 hr
31	Reservoir	0.000	5	n/a	0	14	1143.40	0.000	Pond C 100-year 3 hr
32	Reservoir	0.000	5	n/a	0	15	1143.40	0.000	Pond C 100-year 6 hr
33	Reservoir	0.000	5	n/a	0	16	1143.40	0.000	Pond C 100-year 24 hr

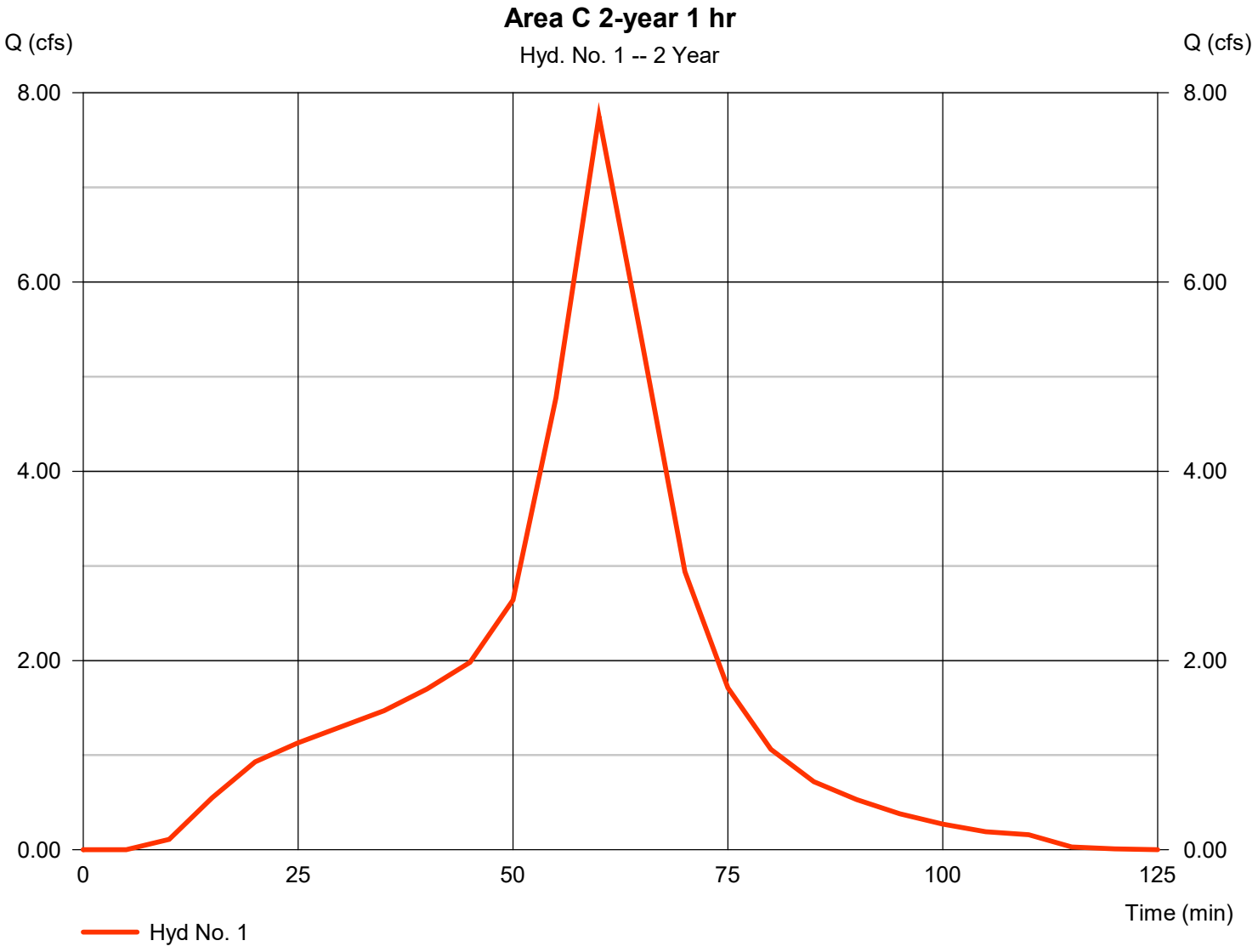
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 1

Area C 2-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 7.750 cfs
Storm frequency	= 2 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 11,313 cuft



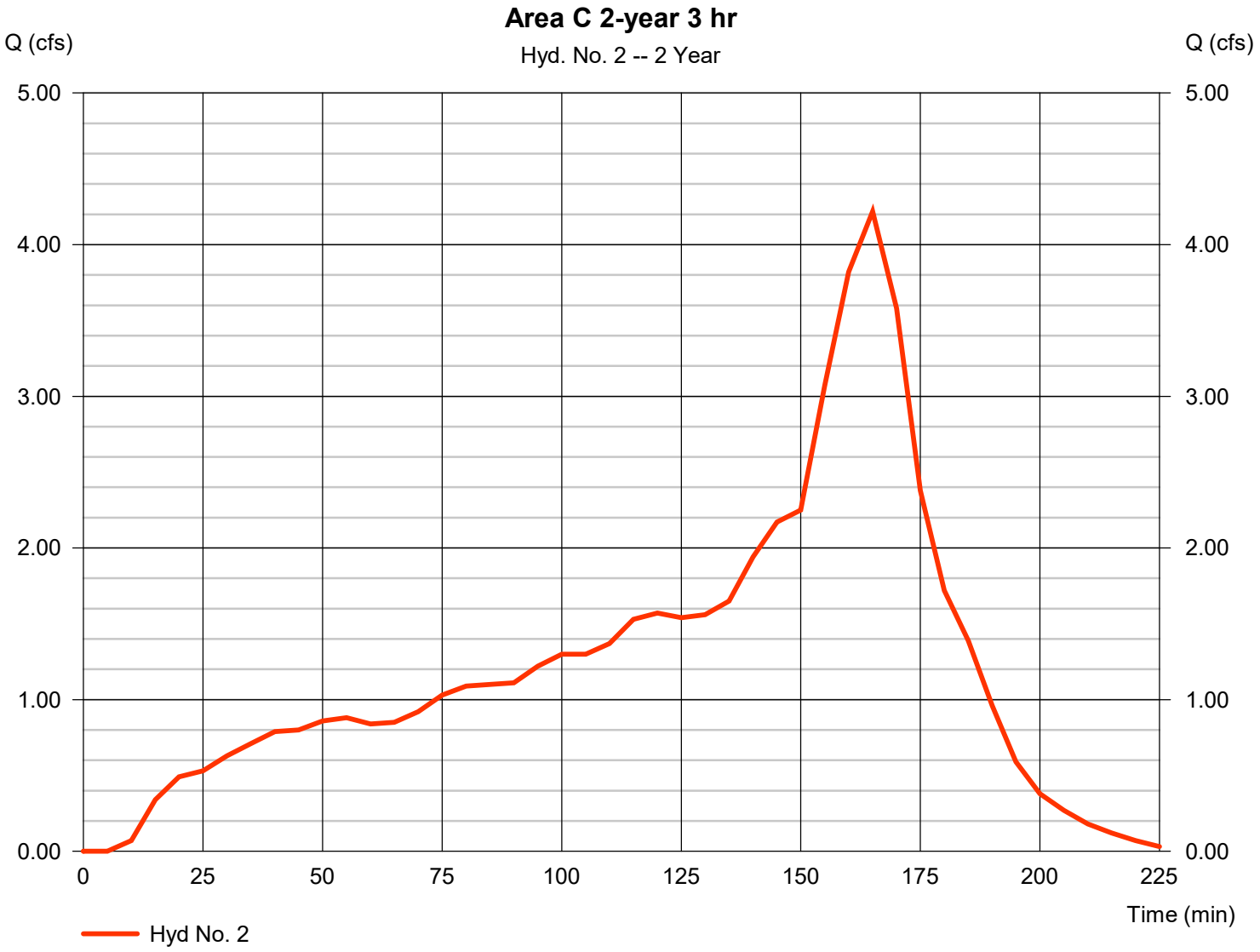
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 2

Area C 2-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 4.220 cfs
Storm frequency	= 2 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 16,575 cuft



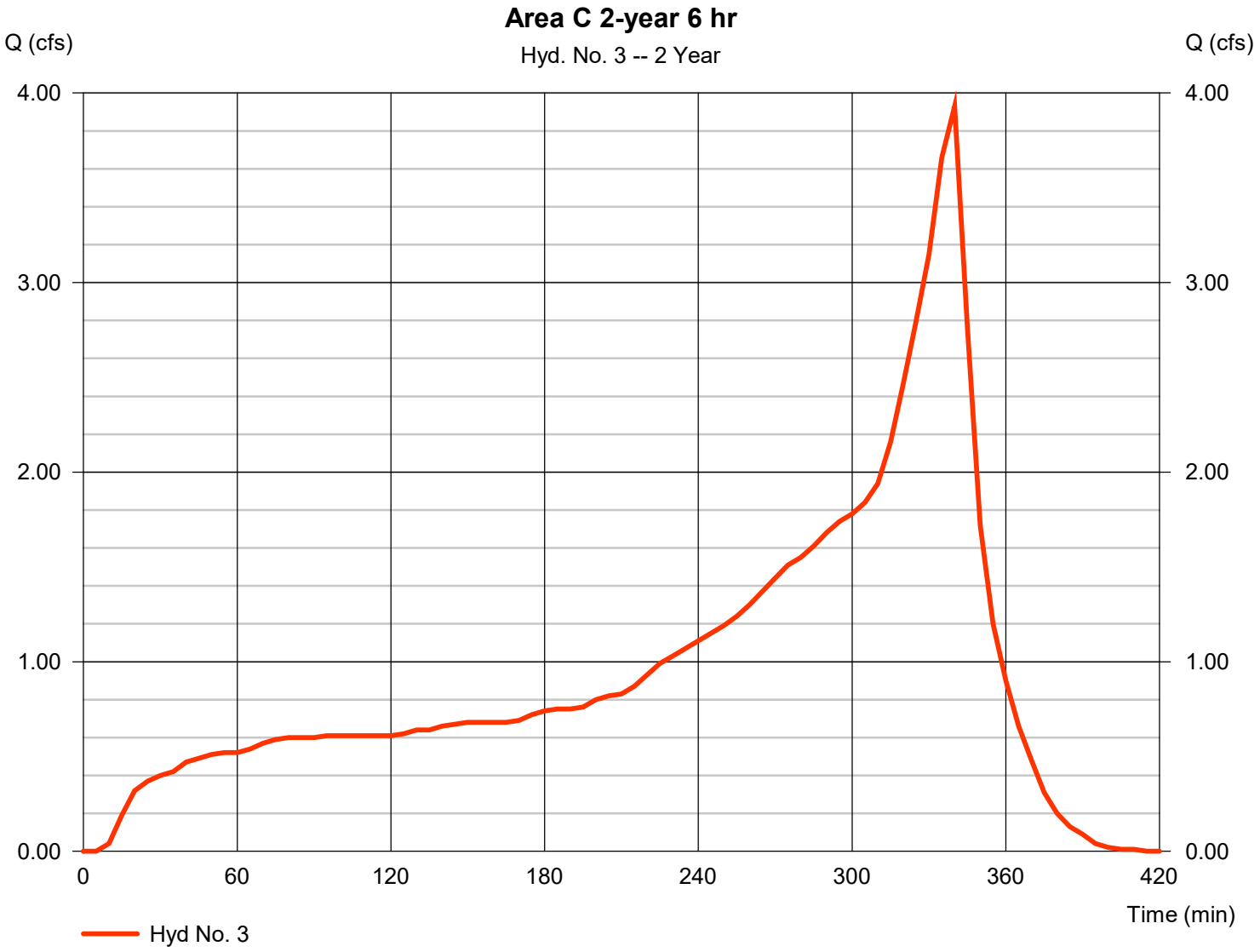
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 3

Area C 2-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 3.930 cfs
Storm frequency	= 2 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 23,478 cuft



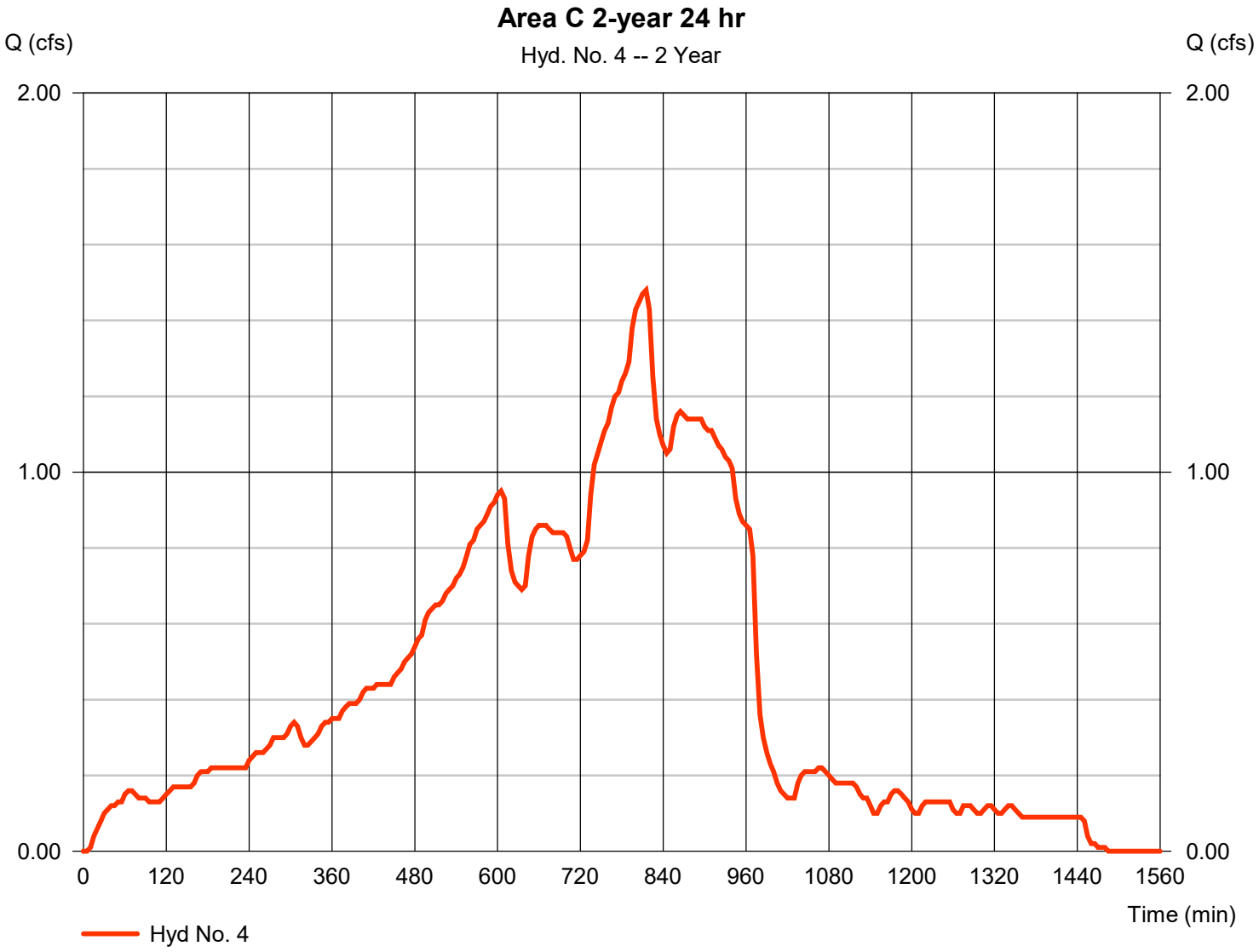
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 4

Area C 2-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 1.480 cfs
Storm frequency	= 2 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 39,618 cuft



Hydrograph Report

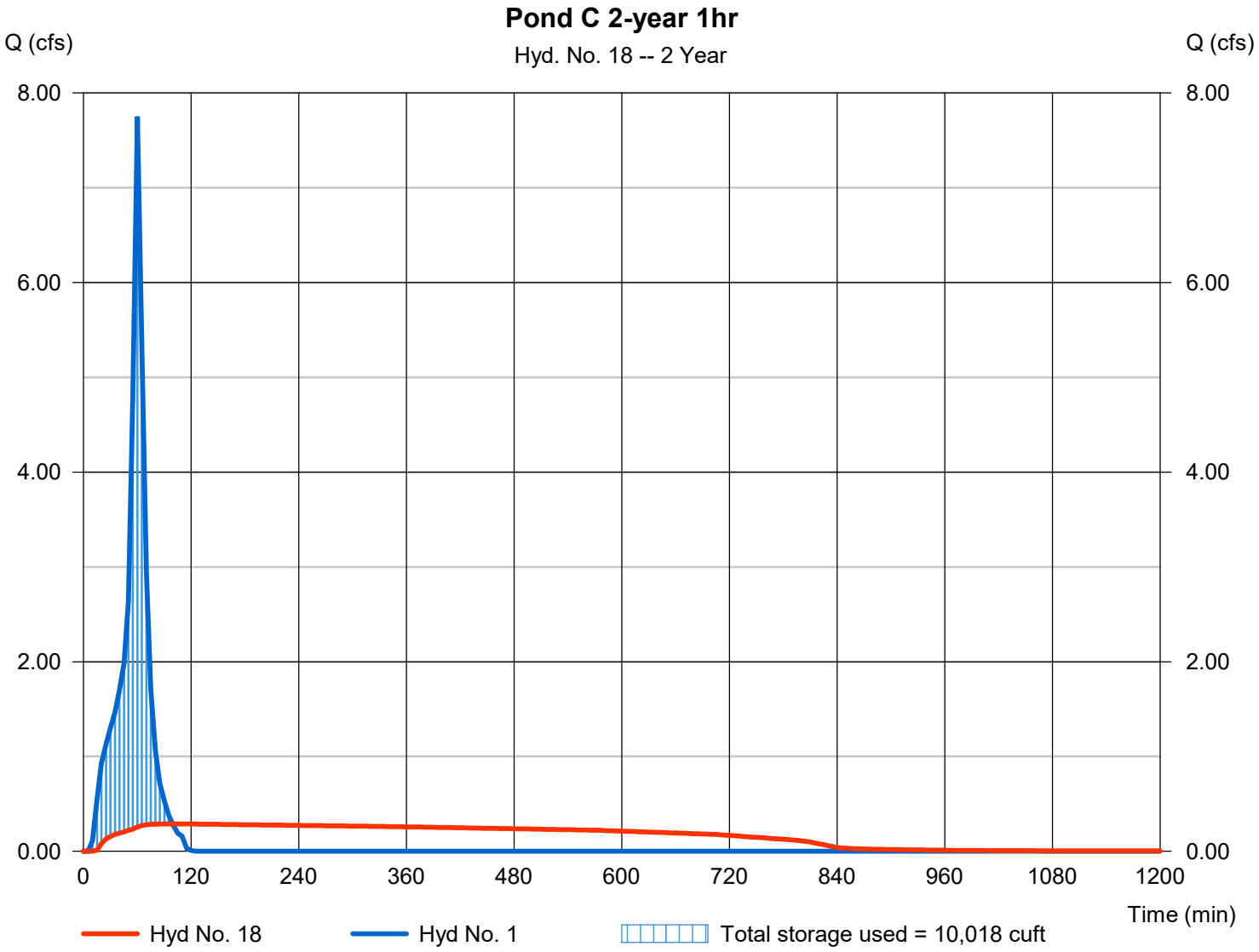
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 18

Pond C 2-year 1hr

Hydrograph type	= Reservoir	Peak discharge	= 0.289 cfs
Storm frequency	= 2 yrs	Time to peak	= 100 min
Time interval	= 5 min	Hyd. volume	= 11,299 cuft
Inflow hyd. No.	= 1 - Area C 2-year 1 hr	Max. Elevation	= 1145.69 ft
Reservoir name	= Pond C	Max. Storage	= 10,018 cuft

Storage Indication method used.



Hydrograph Report

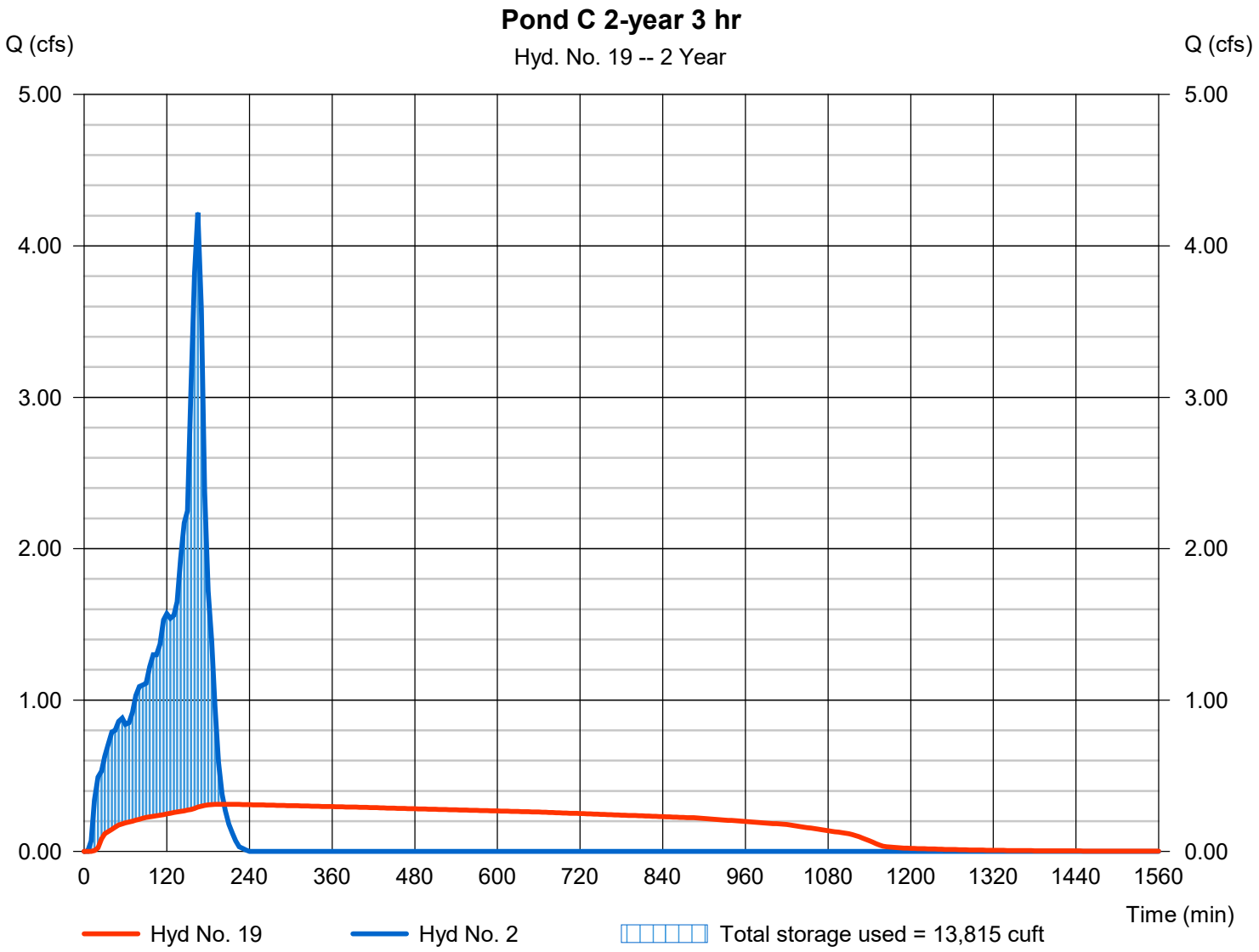
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 19

Pond C 2-year 3 hr

Hydrograph type	= Reservoir	Peak discharge	= 0.312 cfs
Storm frequency	= 2 yrs	Time to peak	= 205 min
Time interval	= 5 min	Hyd. volume	= 16,561 cuft
Inflow hyd. No.	= 2 - Area C 2-year 3 hr	Max. Elevation	= 1146.05 ft
Reservoir name	= Pond C	Max. Storage	= 13,815 cuft

Storage Indication method used.



Hydrograph Report

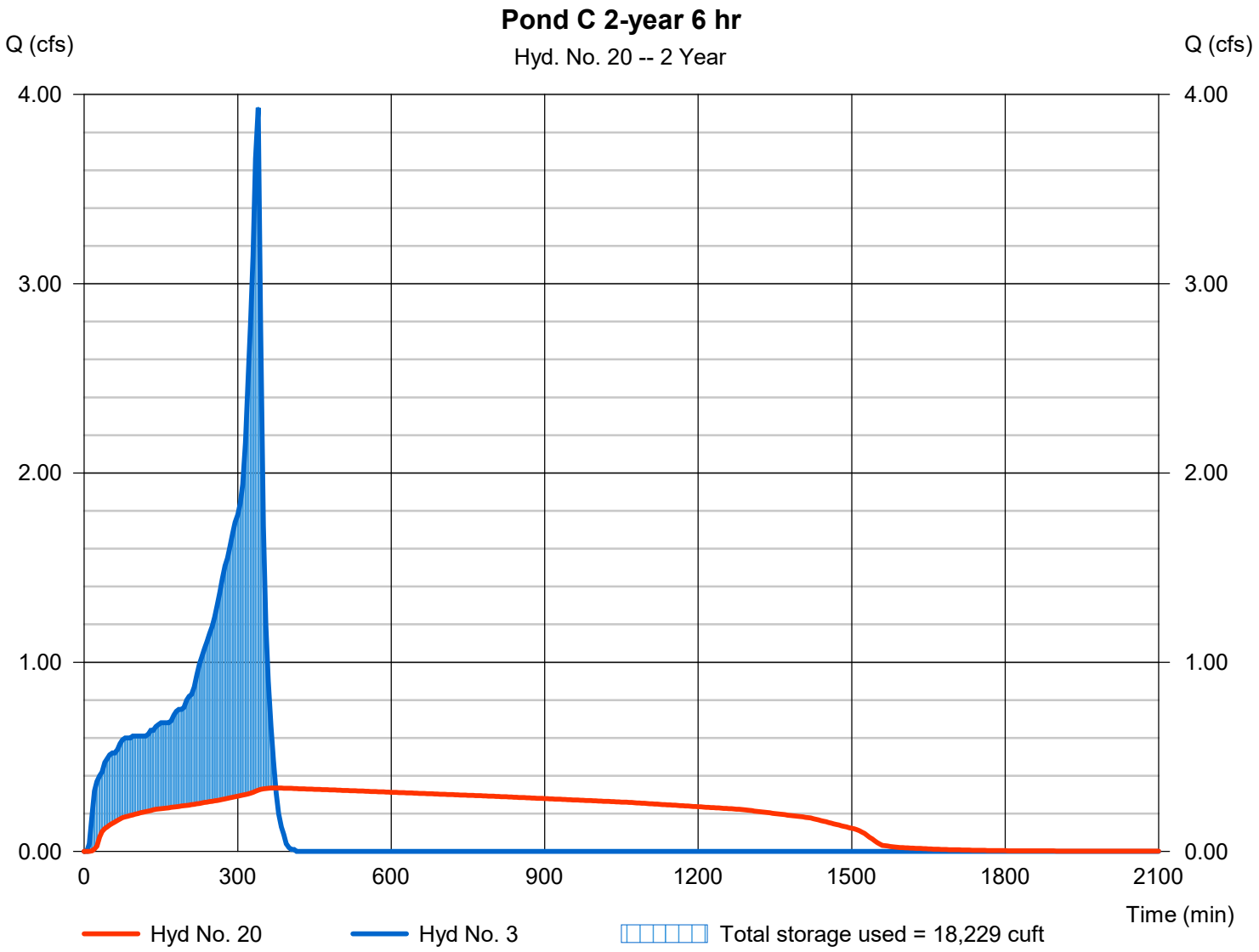
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 20

Pond C 2-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.335 cfs
Storm frequency	=	2 yrs	Time to peak	=	375 min
Time interval	=	5 min	Hyd. volume	=	23,464 cuft
Inflow hyd. No.	=	3 - Area C 2-year 6 hr	Max. Elevation	=	1146.45 ft
Reservoir name	=	Pond C	Max. Storage	=	18,229 cuft

Storage Indication method used.



Hydrograph Report

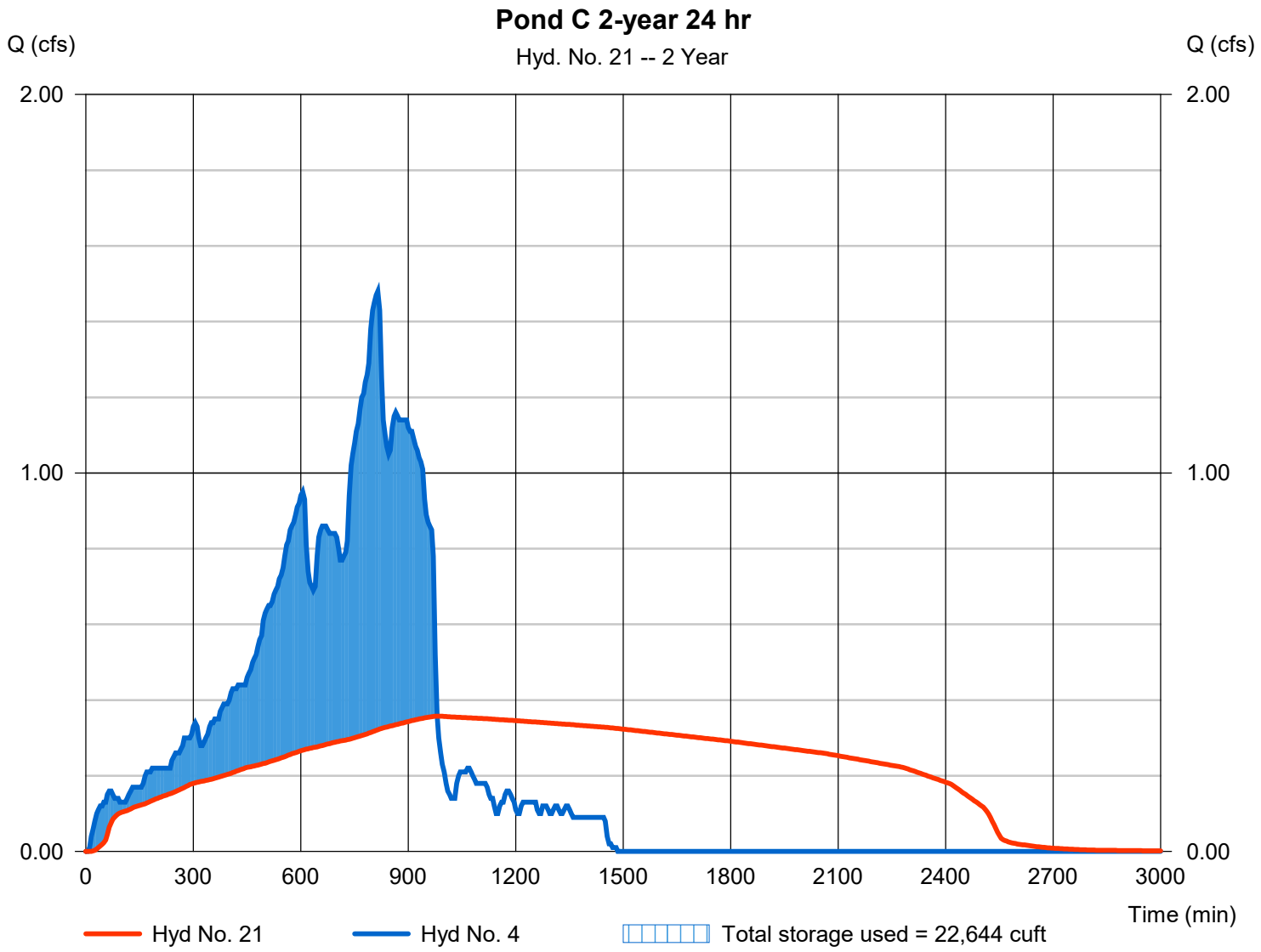
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 21

Pond C 2-year 24 hr

Hydrograph type	= Reservoir	Peak discharge	= 0.357 cfs
Storm frequency	= 2 yrs	Time to peak	= 980 min
Time interval	= 5 min	Hyd. volume	= 39,604 cuft
Inflow hyd. No.	= 4 - Area C 2-year 24 hr	Max. Elevation	= 1146.84 ft
Reservoir name	= Pond C	Max. Storage	= 22,644 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 1 hr
2	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 3 hr
3	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 6 hr
4	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 24 hr
5	Manual	10.73	5	60	15,471	------	------	------	Area C 5-year 1 hr
6	Manual	6.190	5	165	23,265	------	------	------	Area C 5-year 3 hr
7	Manual	5.530	5	340	31,473	------	------	------	Area C 5-year 6 hr
8	Manual	1.940	5	815	52,011	------	------	------	Area C 5-year 24 hr
9	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 1 hr
10	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 3 hr
11	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 6 hr
12	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 24 hr
13	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 1 hr
14	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 3 hr
15	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 6 hr
16	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 24 hr
18	Reservoir	0.000	5	n/a	0	1	1143.40	0.000	Pond C 2-year 1hr
19	Reservoir	0.000	5	n/a	0	2	1143.40	0.000	Pond C 2-year 3 hr
20	Reservoir	0.000	5	n/a	0	3	1143.40	0.000	Pond C 2-year 6 hr
21	Reservoir	0.000	5	n/a	0	4	1143.40	0.000	Pond C 2-year 24 hr
22	Reservoir	0.313	5	100	15,457	5	1146.07	14,032	Pond C 5-year 1 hr
23	Reservoir	0.345	5	205	23,251	6	1146.62	20,195	Pond C 5-year 3 hr
24	Reservoir	0.437	5	375	31,459	7	1147.12	25,622	Pond C 5-year 6 hr
25	Reservoir	0.943	5	970	51,997	8	1147.55	29,937	Pond C 5-year 24 hr
26	Reservoir	0.000	5	n/a	0	9	1143.40	0.000	Pond C 10-year 1 hr
27	Reservoir	0.000	5	n/a	0	10	1143.40	0.000	Pond C 10-year 3 hr
28	Reservoir	0.000	5	n/a	0	11	1143.40	0.000	Pond C 10-year 6 hr
29	Reservoir	0.000	5	n/a	0	12	1143.40	0.000	Pond C 10-year 24 hr
30	Reservoir	0.000	5	n/a	0	13	1143.40	0.000	Pond C 100-year 1 hr
31	Reservoir	0.000	5	n/a	0	14	1143.40	0.000	Pond C 100-year 3 hr
32	Reservoir	0.000	5	n/a	0	15	1143.40	0.000	Pond C 100-year 6 hr
33	Reservoir	0.000	5	n/a	0	16	1143.40	0.000	Pond C 100-year 24 hr

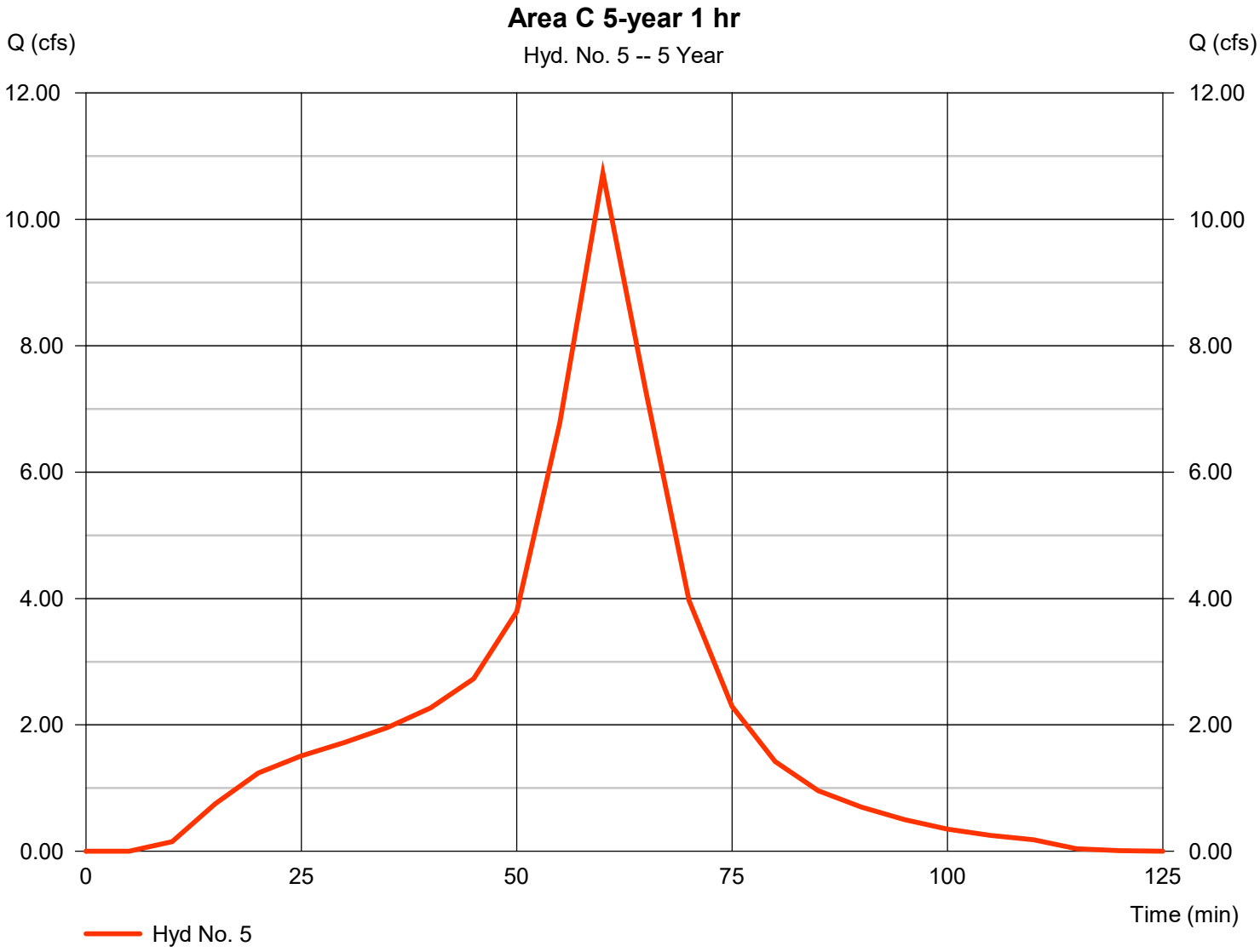
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 5

Area C 5-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 10.73 cfs
Storm frequency	= 5 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 15,471 cuft



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 6

Area C 5-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 6.190 cfs
Storm frequency	= 5 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 23,265 cuft

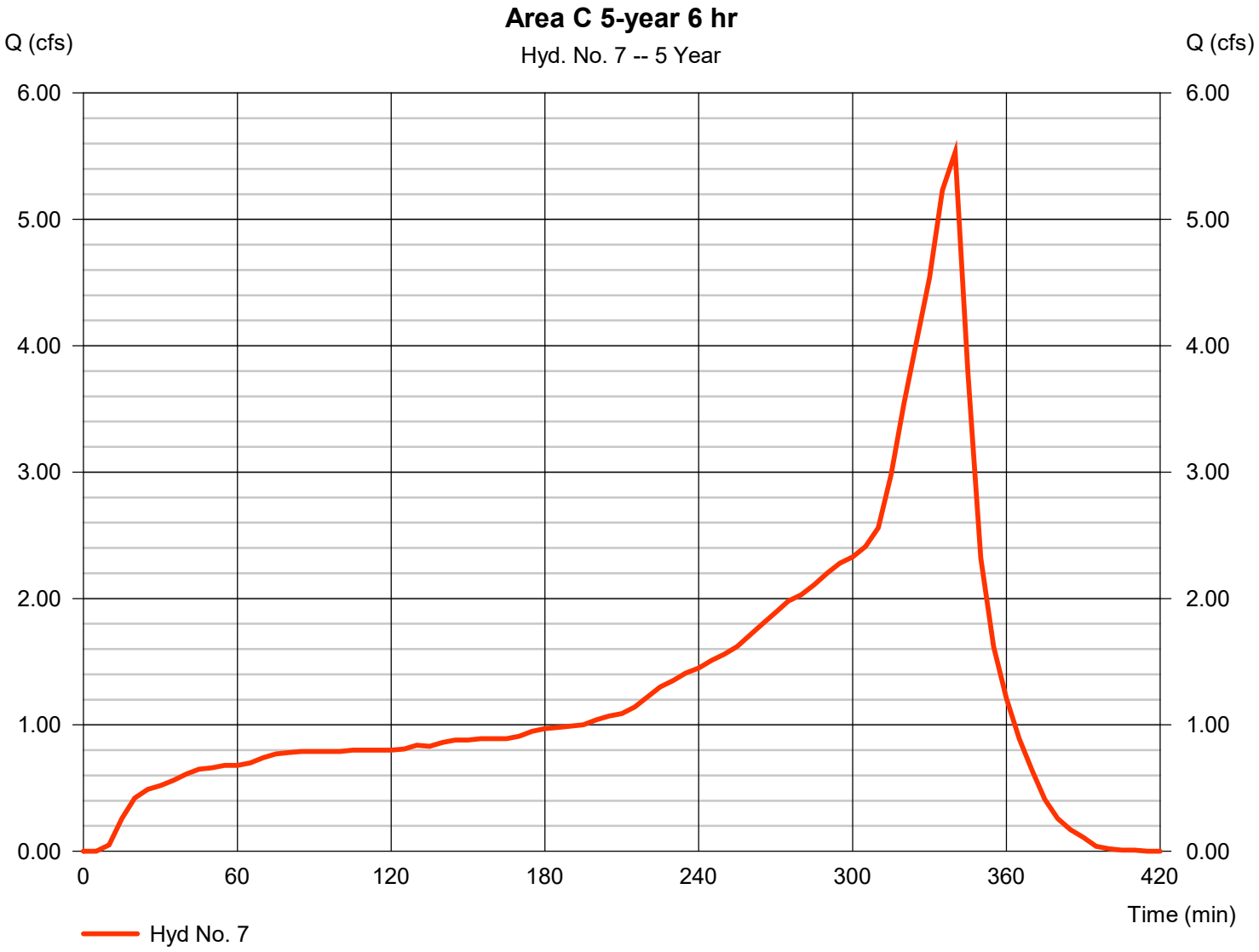
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 7

Area C 5-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 5.530 cfs
Storm frequency	= 5 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 31,473 cuft



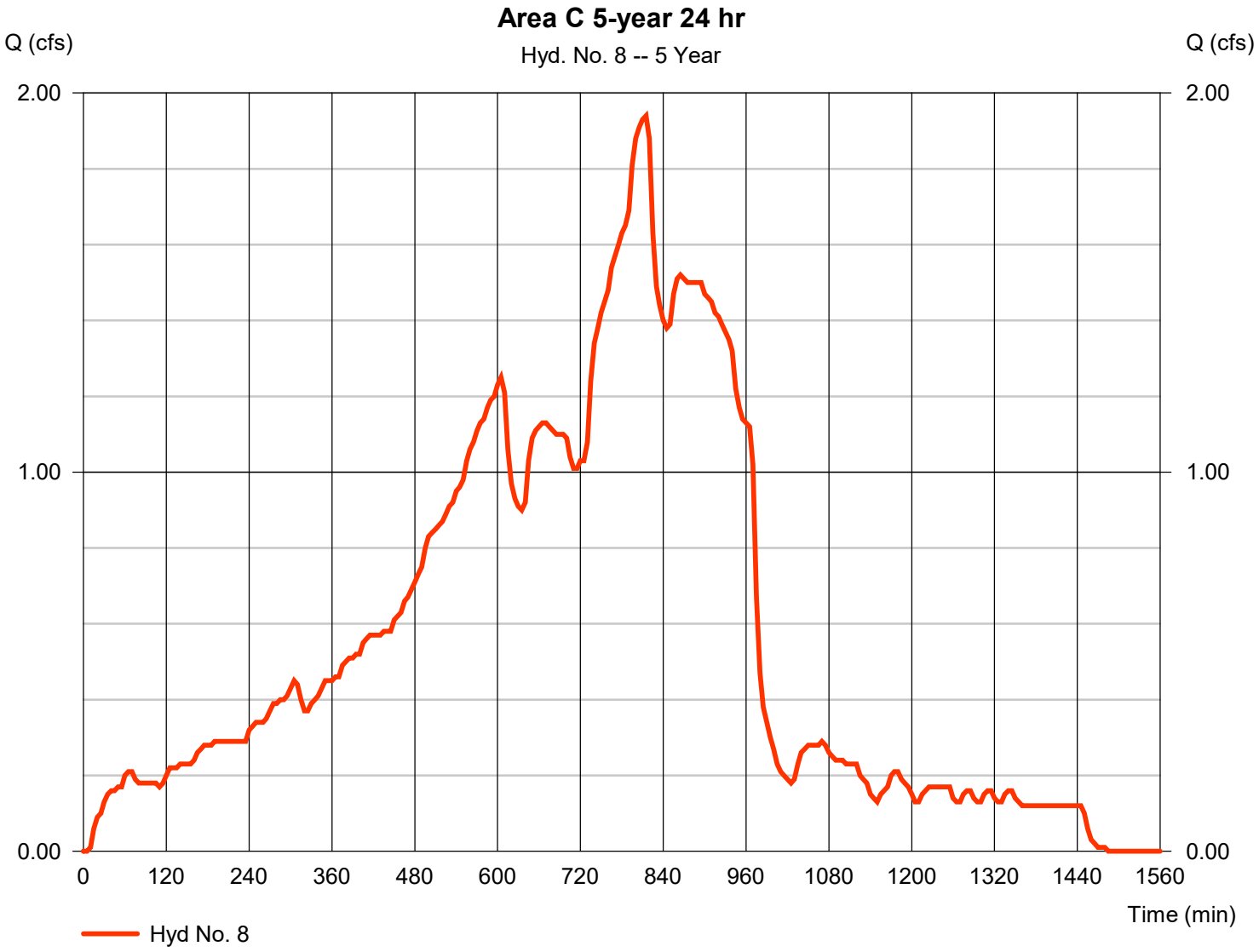
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 8

Area C 5-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 1.940 cfs
Storm frequency	= 5 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 52,011 cuft



Hydrograph Report

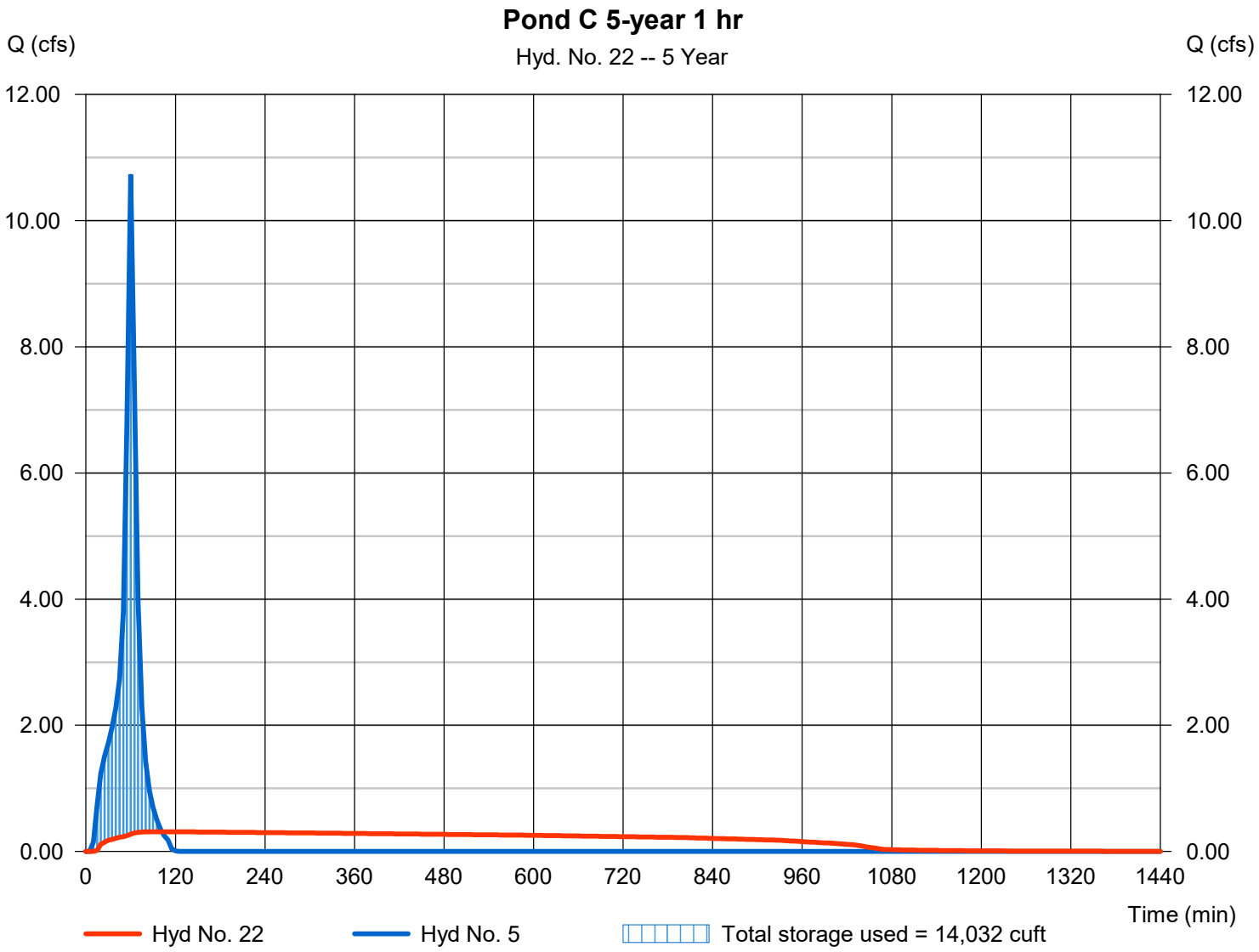
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 22

Pond C 5-year 1 hr

Hydrograph type	= Reservoir	Peak discharge	= 0.313 cfs
Storm frequency	= 5 yrs	Time to peak	= 100 min
Time interval	= 5 min	Hyd. volume	= 15,457 cuft
Inflow hyd. No.	= 5 - Area C 5-year 1 hr	Max. Elevation	= 1146.07 ft
Reservoir name	= Pond C	Max. Storage	= 14,032 cuft

Storage Indication method used.



Hydrograph Report

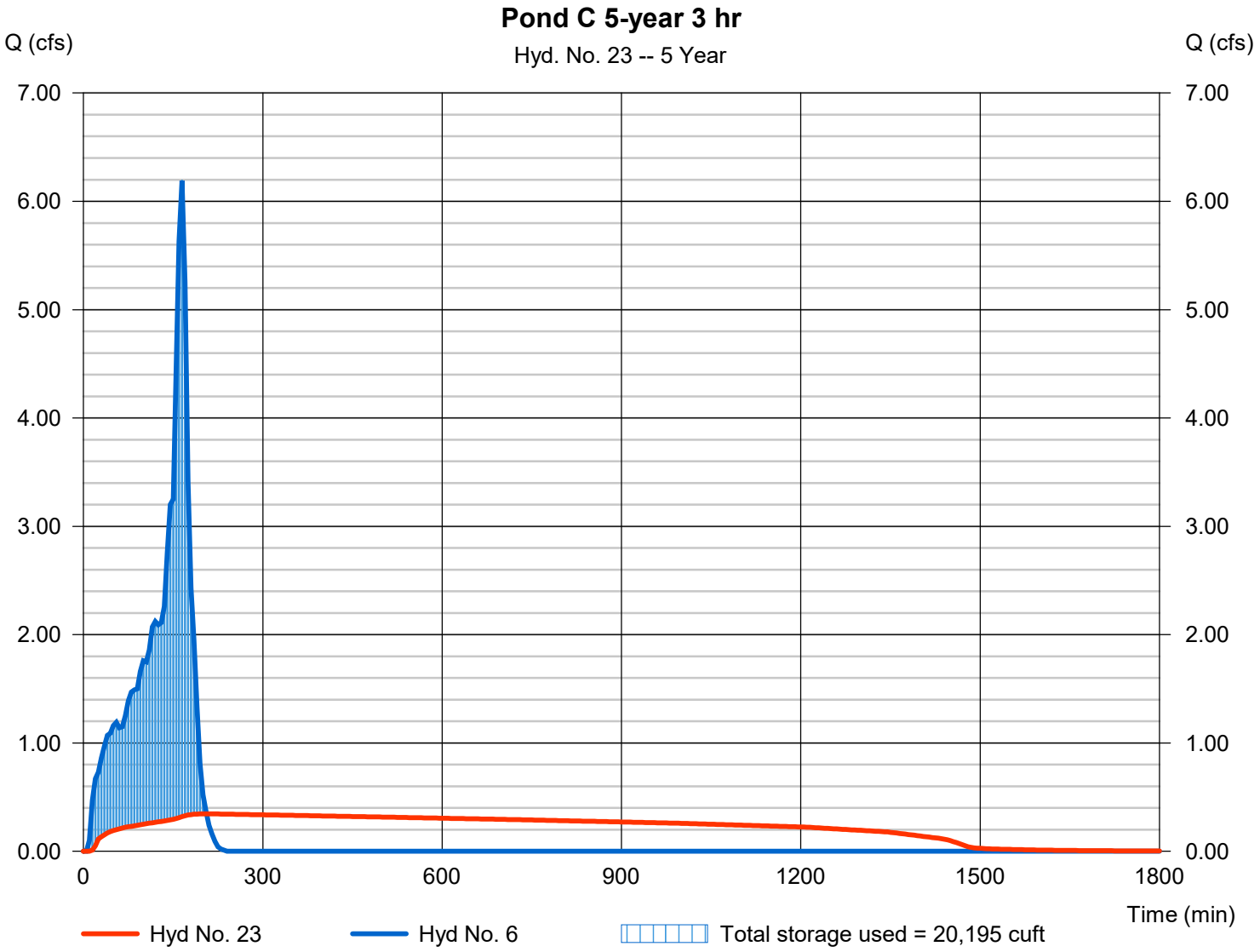
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 23

Pond C 5-year 3 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.345 cfs
Storm frequency	=	5 yrs	Time to peak	=	205 min
Time interval	=	5 min	Hyd. volume	=	23,251 cuft
Inflow hyd. No.	=	6 - Area C 5-year 3 hr	Max. Elevation	=	1146.62 ft
Reservoir name	=	Pond C	Max. Storage	=	20,195 cuft

Storage Indication method used.



Hydrograph Report

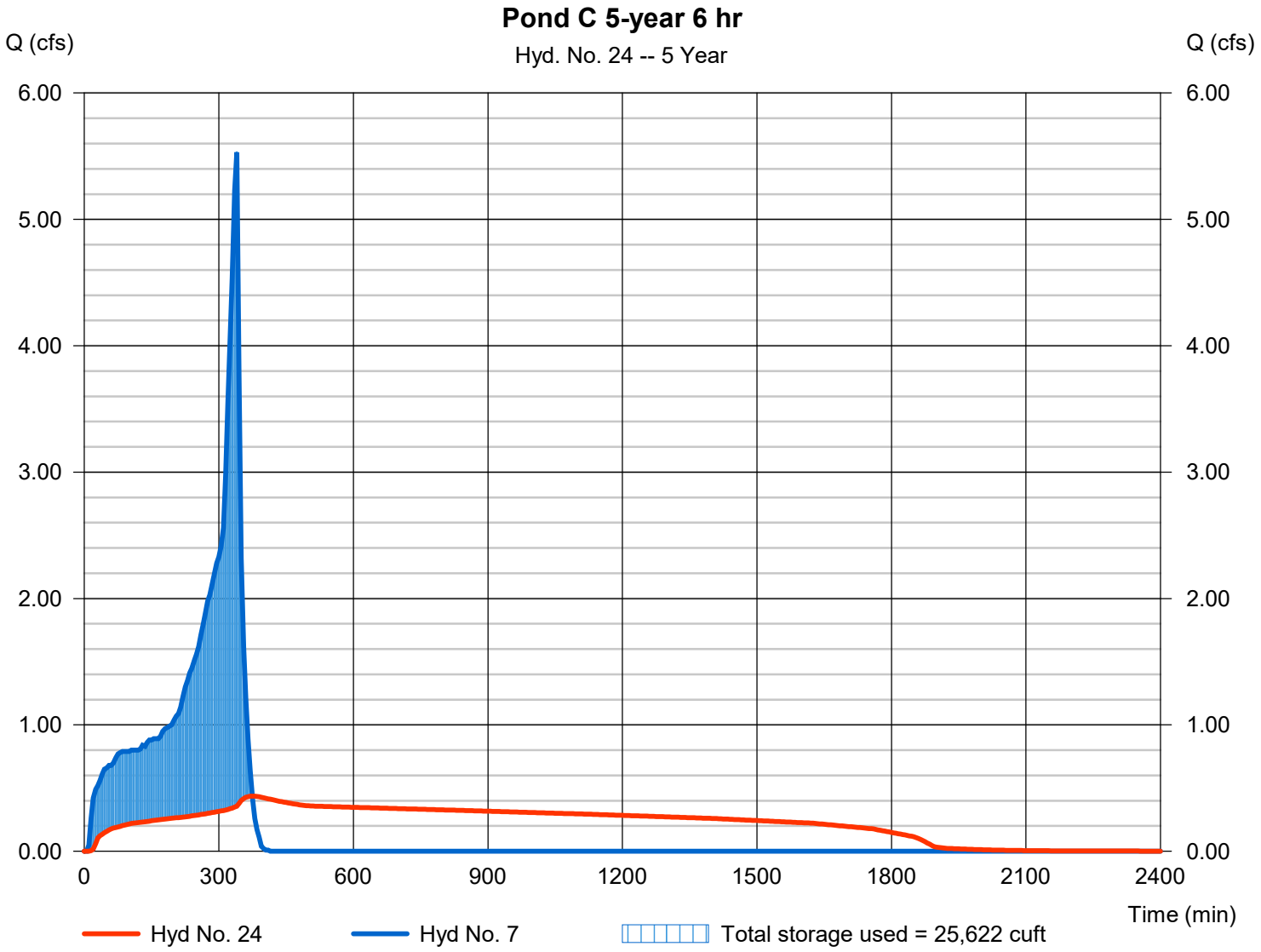
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 24

Pond C 5-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.437 cfs
Storm frequency	=	5 yrs	Time to peak	=	375 min
Time interval	=	5 min	Hyd. volume	=	31,459 cuft
Inflow hyd. No.	=	7 - Area C 5-year 6 hr	Max. Elevation	=	1147.12 ft
Reservoir name	=	Pond C	Max. Storage	=	25,622 cuft

Storage Indication method used.



Hydrograph Report

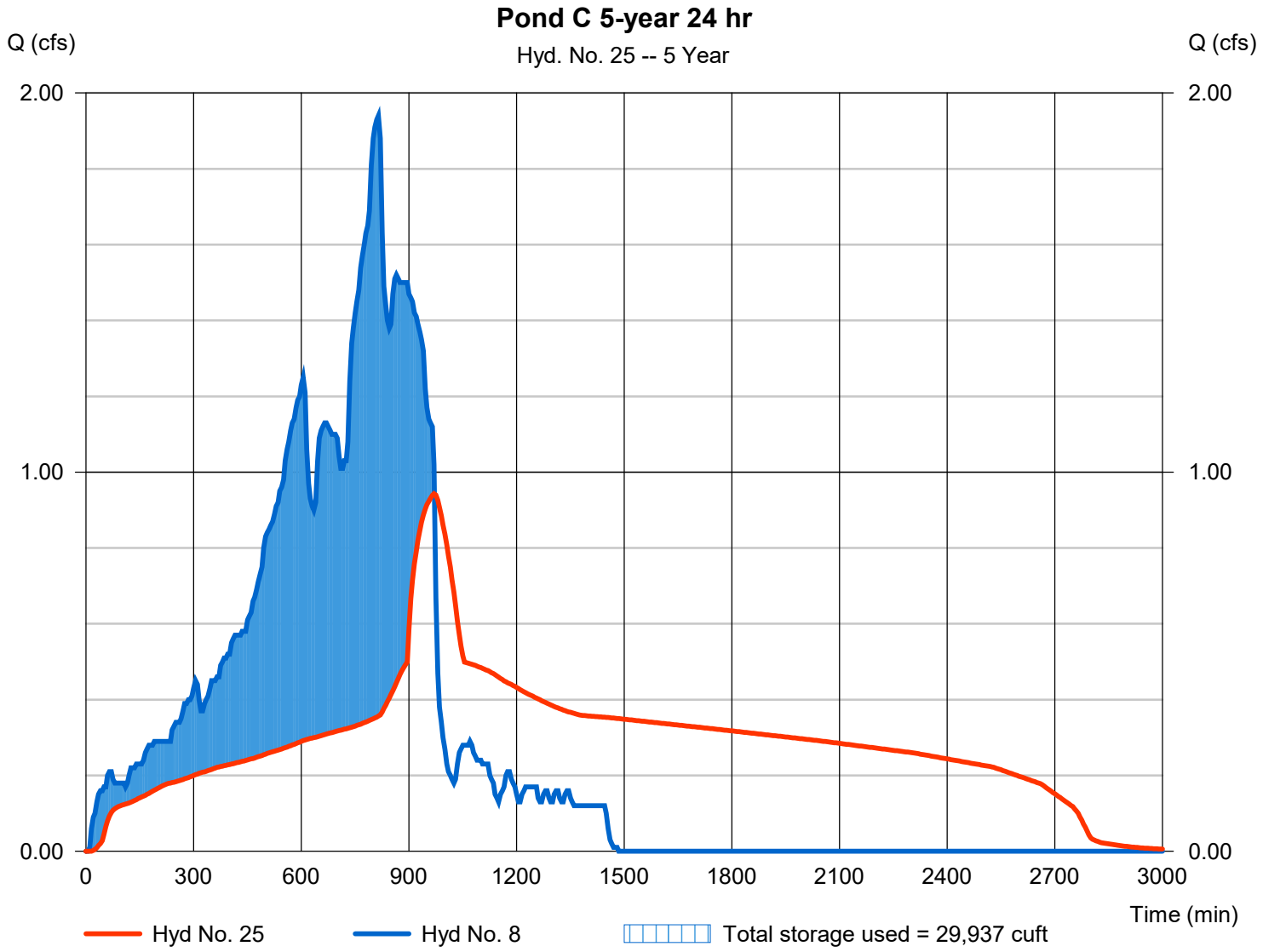
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 25

Pond C 5-year 24 hr

Hydrograph type	= Reservoir	Peak discharge	= 0.943 cfs
Storm frequency	= 5 yrs	Time to peak	= 970 min
Time interval	= 5 min	Hyd. volume	= 51,997 cuft
Inflow hyd. No.	= 8 - Area C 5-year 24 hr	Max. Elevation	= 1147.55 ft
Reservoir name	= Pond C	Max. Storage	= 29,937 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 1 hr
2	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 3 hr
3	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 6 hr
4	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 24 hr
5	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 1 hr
6	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 3 hr
7	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 6 hr
8	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 24 hr
9	Manual	13.59	5	60	20,448	------	------	------	Area C 10-year 1 hr
10	Manual	8.300	5	165	31,140	------	------	------	Area C 10-year 3 hr
11	Manual	7.330	5	340	40,788	------	------	------	Area C 10-year 6 hr
12	Manual	2.800	5	815	64,764	------	------	------	Area C 10-year 24 hr
13	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 1 hr
14	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 3 hr
15	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 6 hr
16	Manual	0.000	5	n/a	0	------	------	------	Area C 100-year 24 hr
18	Reservoir	0.000	5	n/a	0	1	1143.40	0.000	Pond C 2-year 1hr
19	Reservoir	0.000	5	n/a	0	2	1143.40	0.000	Pond C 2-year 3 hr
20	Reservoir	0.000	5	n/a	0	3	1143.40	0.000	Pond C 2-year 6 hr
21	Reservoir	0.000	5	n/a	0	4	1143.40	0.000	Pond C 2-year 24 hr
22	Reservoir	0.000	5	n/a	0	5	1143.40	0.000	Pond C 5-year 1 hr
23	Reservoir	0.000	5	n/a	0	6	1143.40	0.000	Pond C 5-year 3 hr
24	Reservoir	0.000	5	n/a	0	7	1143.40	0.000	Pond C 5-year 6 hr
25	Reservoir	0.000	5	n/a	0	8	1143.40	0.000	Pond C 5-year 24 hr
26	Reservoir	0.338	5	105	20,434	9	1146.51	18,873	Pond C 10-year 1 hr
27	Reservoir	0.496	5	205	31,126	10	1147.31	27,614	Pond C 10-year 3 hr
28	Reservoir	2.088	5	355	40,774	11	1147.84	32,385	Pond C 10-year 6 hr
29	Reservoir	1.951	5	910	64,750	12	1147.82	32,273	Pond C 10-year 24 hr
30	Reservoir	0.000	5	n/a	0	13	1143.40	0.000	Pond C 100-year 1 hr
31	Reservoir	0.000	5	n/a	0	14	1143.40	0.000	Pond C 100-year 3 hr
32	Reservoir	0.000	5	n/a	0	15	1143.40	0.000	Pond C 100-year 6 hr
33	Reservoir	0.000	5	n/a	0	16	1143.40	0.000	Pond C 100-year 24 hr

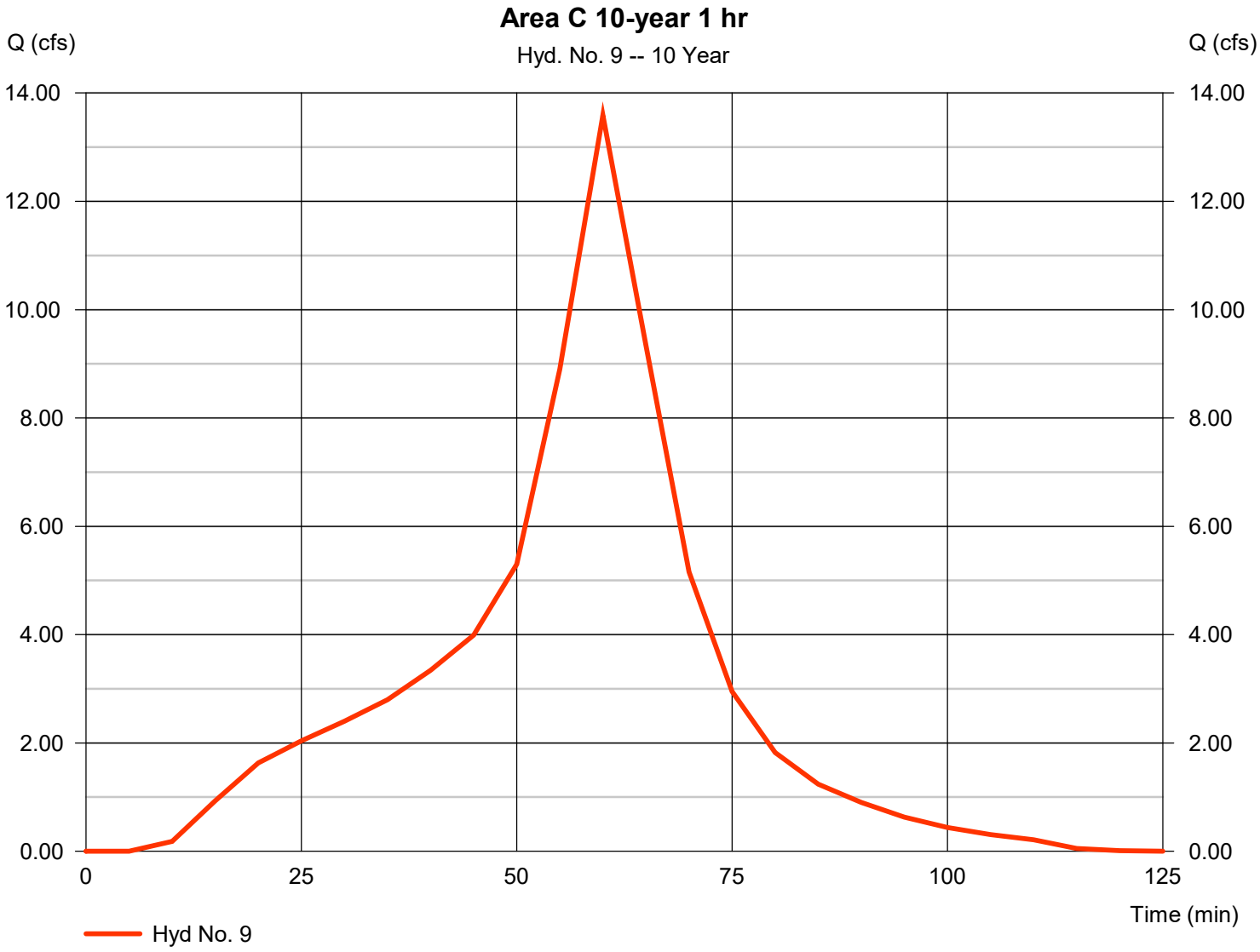
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 9

Area C 10-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 13.59 cfs
Storm frequency	= 10 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 20,448 cuft



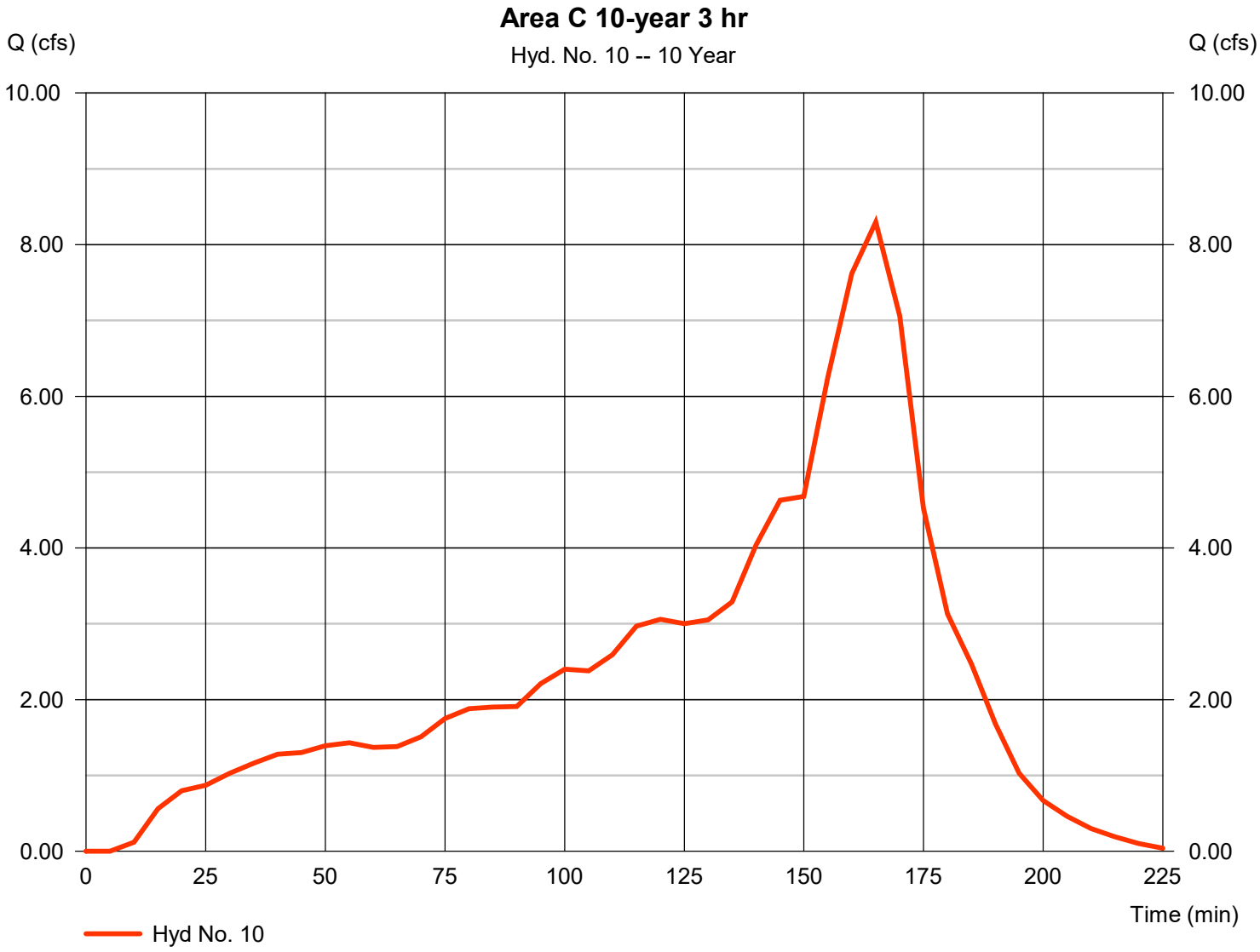
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 10

Area C 10-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 8.300 cfs
Storm frequency	= 10 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 31,140 cuft



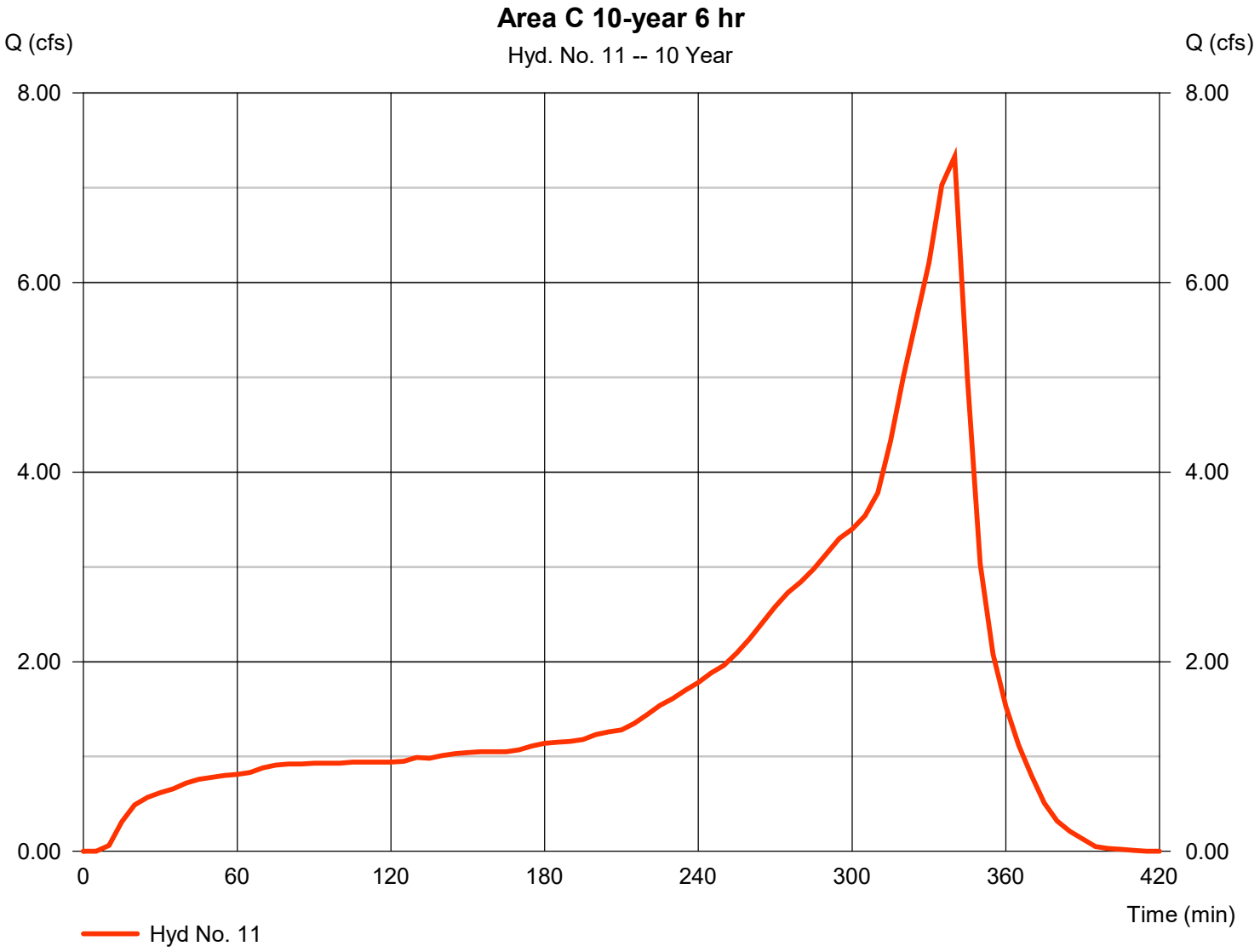
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 11

Area C 10-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 7.330 cfs
Storm frequency	= 10 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 40,788 cuft



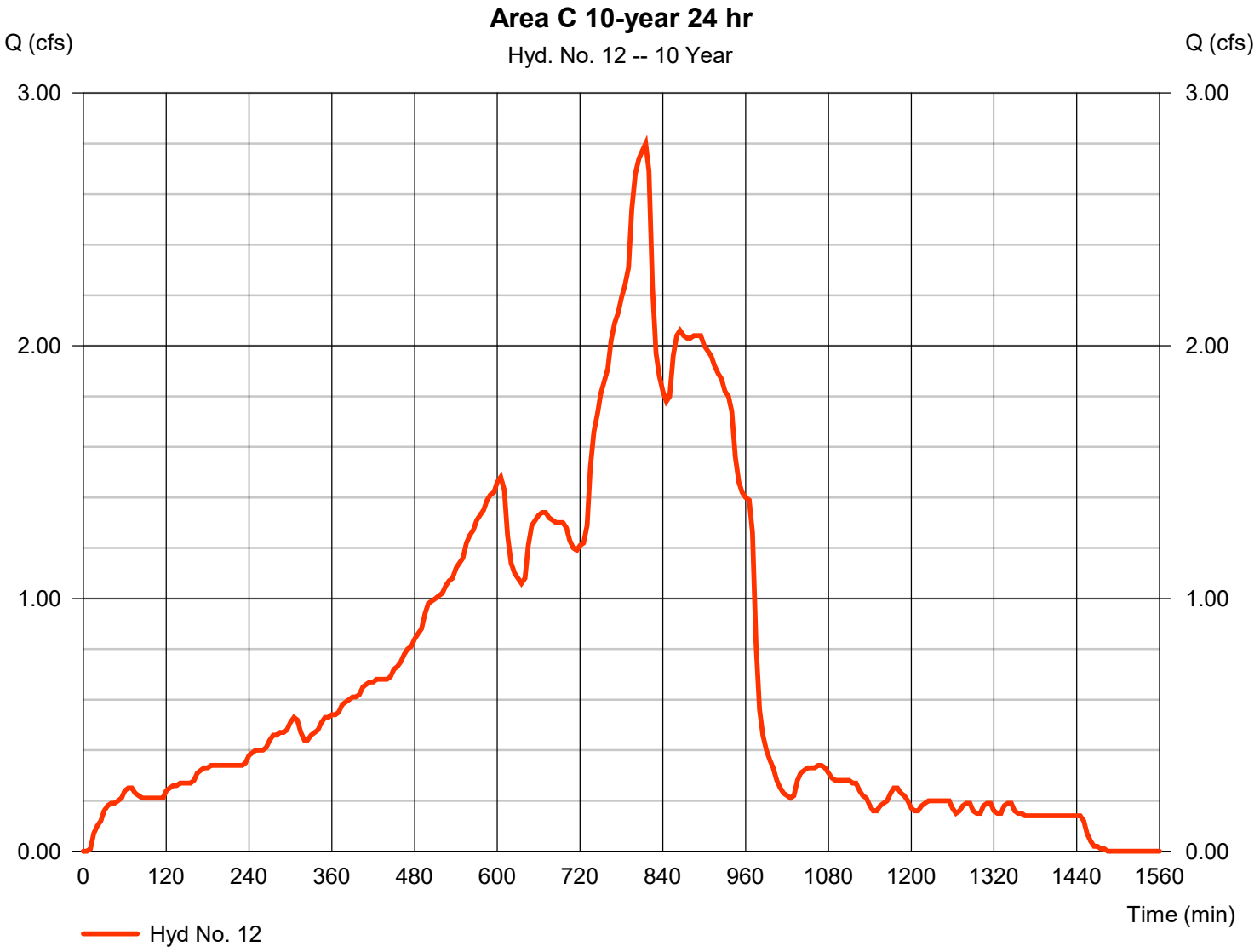
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 12

Area C 10-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 2.800 cfs
Storm frequency	= 10 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 64,764 cuft



Hydrograph Report

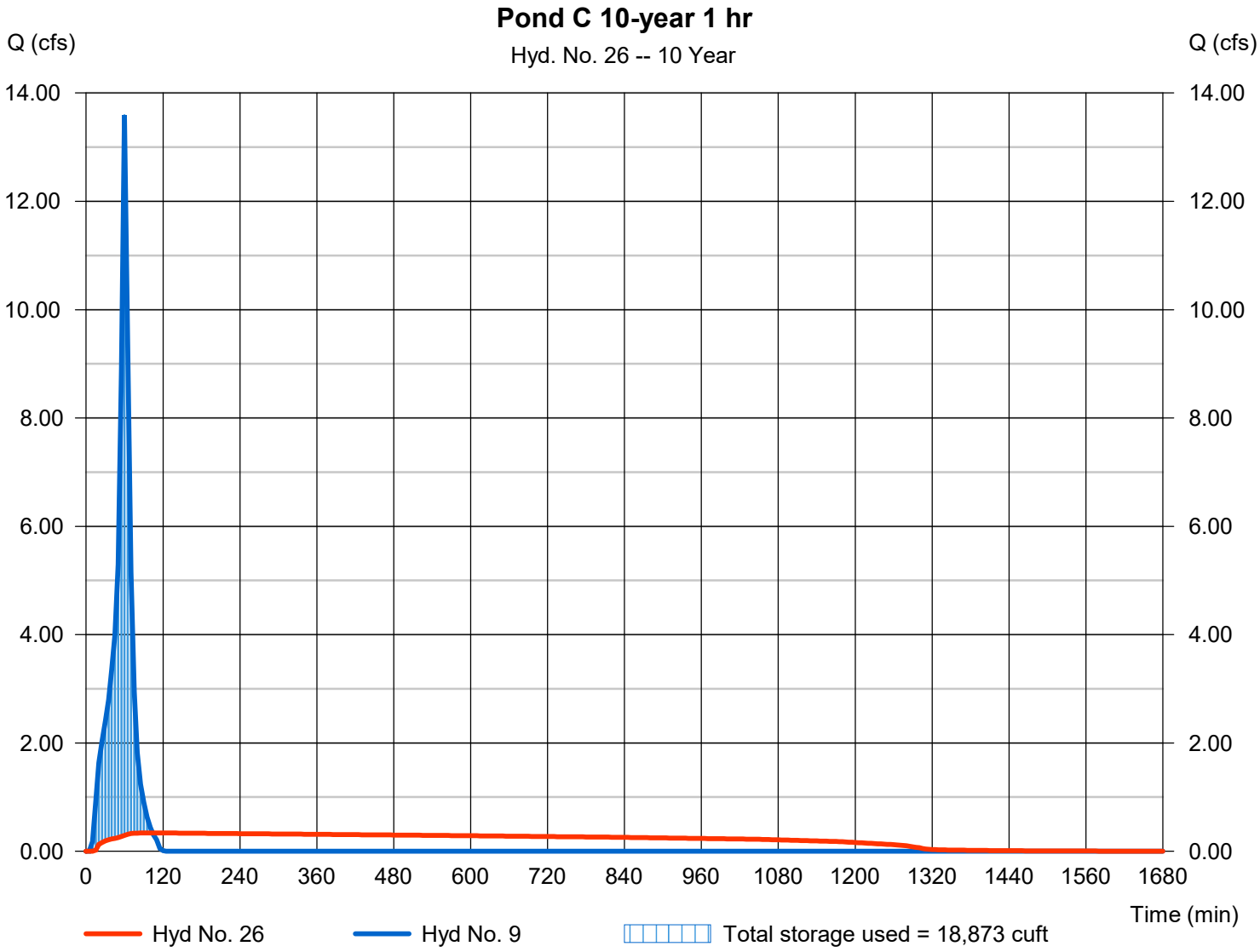
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 26

Pond C 10-year 1 hr

Hydrograph type	= Reservoir	Peak discharge	= 0.338 cfs
Storm frequency	= 10 yrs	Time to peak	= 105 min
Time interval	= 5 min	Hyd. volume	= 20,434 cuft
Inflow hyd. No.	= 9 - Area C 10-year 1 hr	Max. Elevation	= 1146.51 ft
Reservoir name	= Pond C	Max. Storage	= 18,873 cuft

Storage Indication method used.



Hydrograph Report

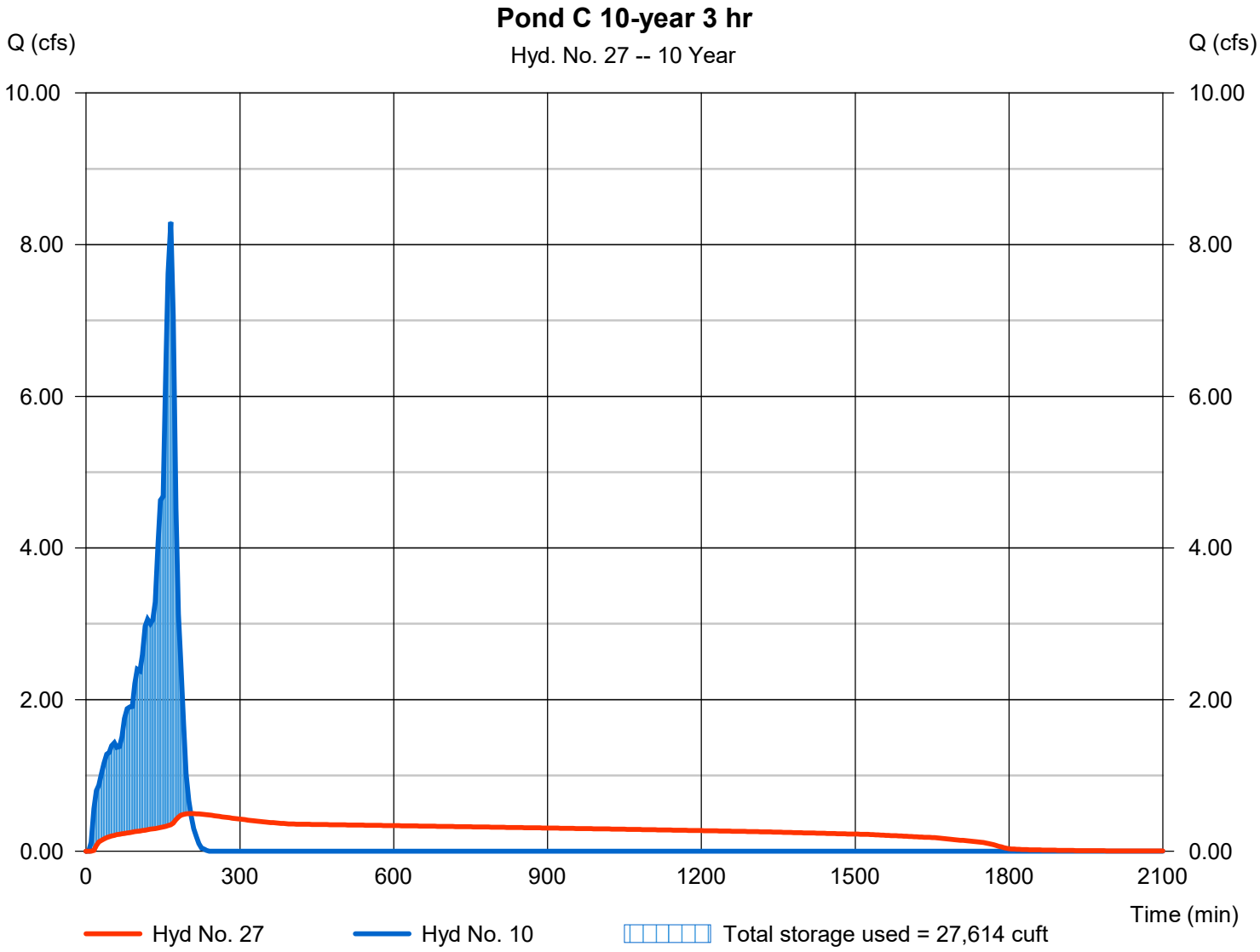
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 27

Pond C 10-year 3 hr

Hydrograph type	=	Reservoir	Peak discharge	=	0.496 cfs
Storm frequency	=	10 yrs	Time to peak	=	205 min
Time interval	=	5 min	Hyd. volume	=	31,126 cuft
Inflow hyd. No.	=	10 - Area C 10-year 3 hr	Max. Elevation	=	1147.31 ft
Reservoir name	=	Pond C	Max. Storage	=	27,614 cuft

Storage Indication method used.



Hydrograph Report

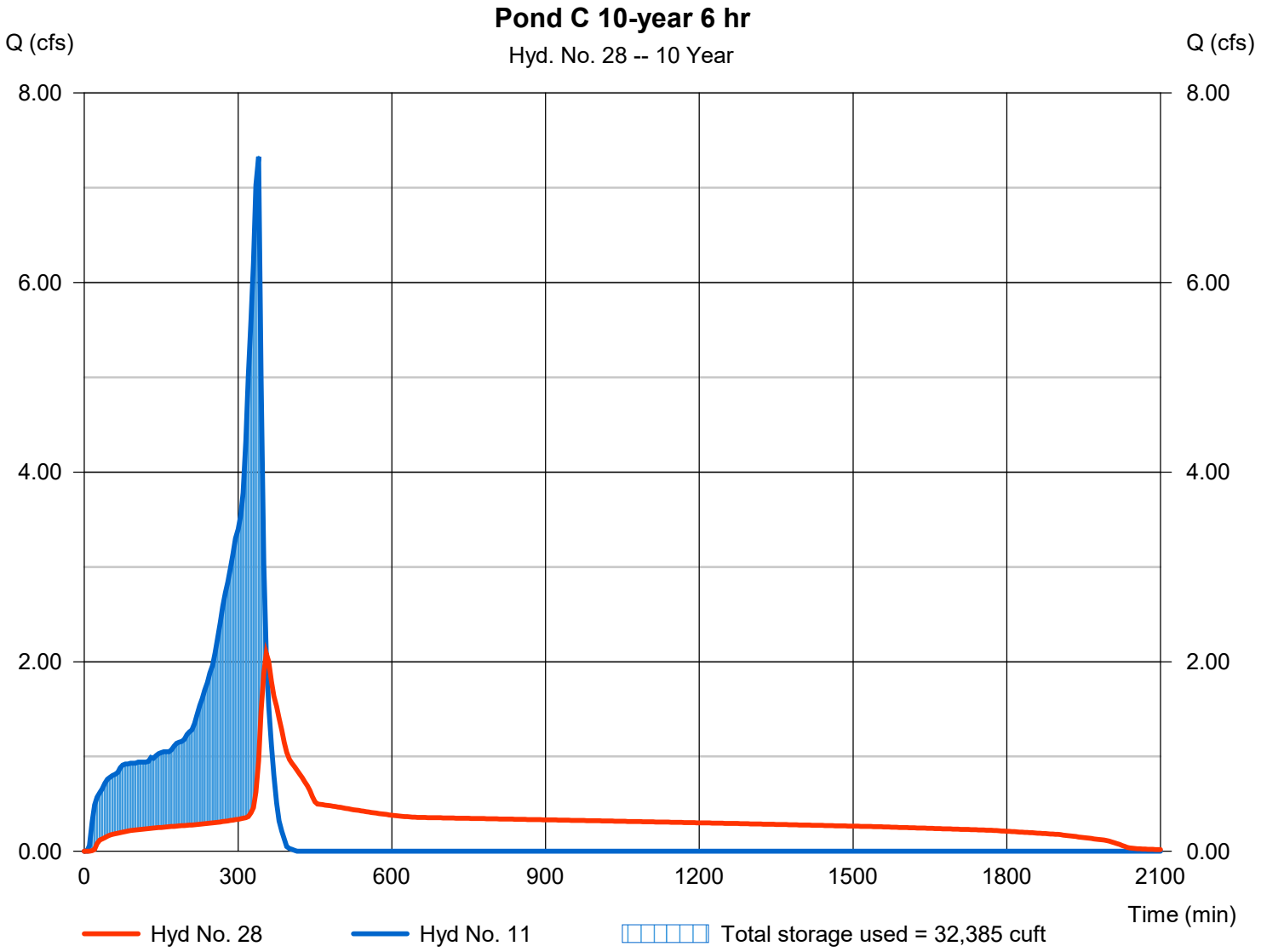
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 28

Pond C 10-year 6 hr

Hydrograph type	= Reservoir	Peak discharge	= 2.088 cfs
Storm frequency	= 10 yrs	Time to peak	= 355 min
Time interval	= 5 min	Hyd. volume	= 40,774 cuft
Inflow hyd. No.	= 11 - Area C 10-year 6 hr	Max. Elevation	= 1147.84 ft
Reservoir name	= Pond C	Max. Storage	= 32,385 cuft

Storage Indication method used.



Hydrograph Report

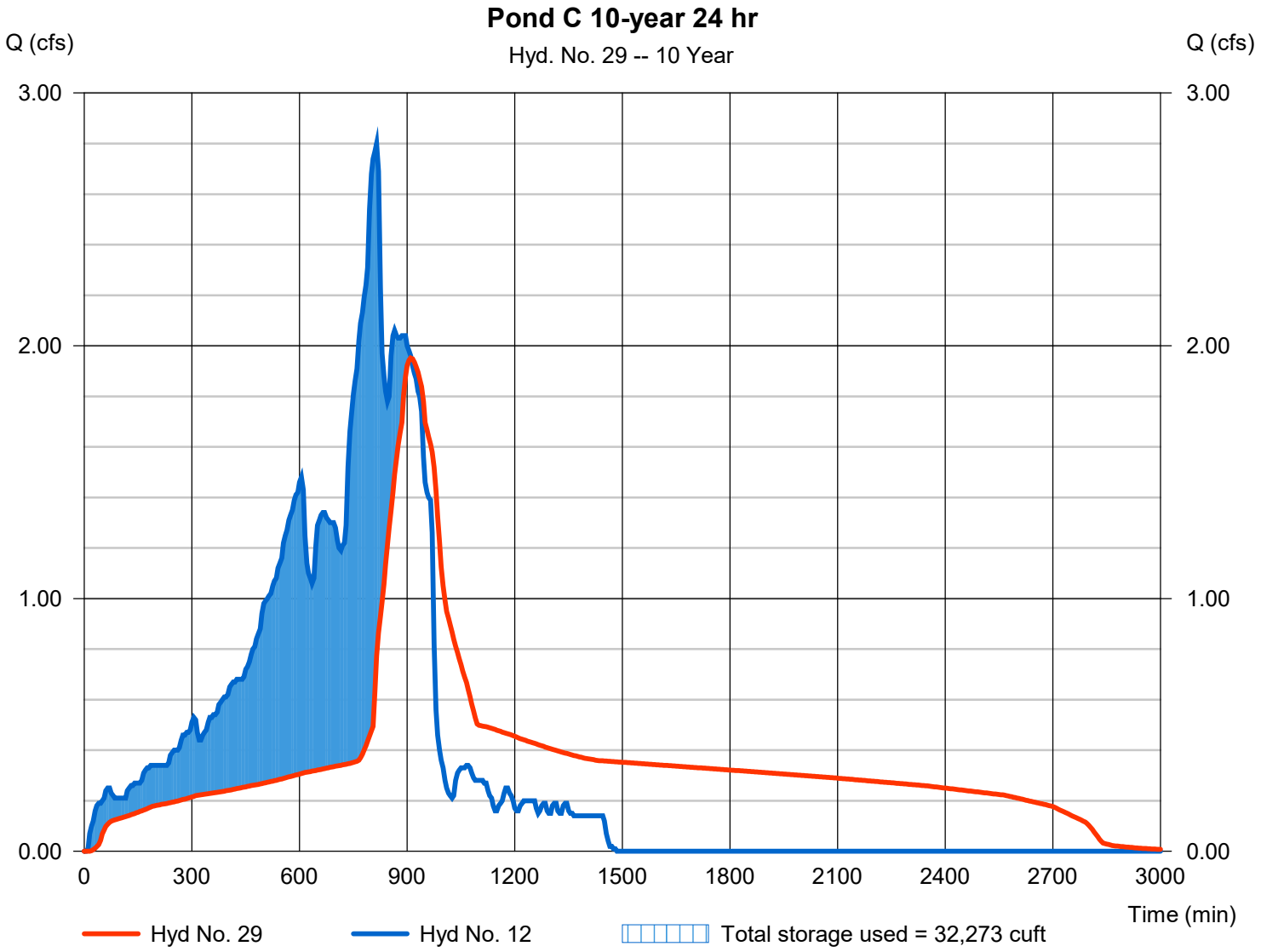
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 29

Pond C 10-year 24 hr

Hydrograph type	= Reservoir	Peak discharge	= 1.951 cfs
Storm frequency	= 10 yrs	Time to peak	= 910 min
Time interval	= 5 min	Hyd. volume	= 64,750 cuft
Inflow hyd. No.	= 12 - Area C 10-year 24 hr	Max. Elevation	= 1147.82 ft
Reservoir name	= Pond C	Max. Storage	= 32,273 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 1 hr
2	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 3 hr
3	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 6 hr
4	Manual	0.000	5	n/a	0	------	------	------	Area C 2-year 24 hr
5	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 1 hr
6	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 3 hr
7	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 6 hr
8	Manual	0.000	5	n/a	0	------	------	------	Area C 5-year 24 hr
9	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 1 hr
10	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 3 hr
11	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 6 hr
12	Manual	0.000	5	n/a	0	------	------	------	Area C 10-year 24 hr
13	Manual	21.78	5	60	34,323	------	------	------	Area C 100-year 1 hr
14	Manual	13.85	5	165	57,273	------	------	------	Area C 100-year 3 hr
15	Manual	11.94	5	340	73,125	------	------	------	Area C 100-year 6 hr
16	Manual	5.020	5	815	117,213	------	------	------	Area C 100-year 24 hr
18	Reservoir	0.000	5	n/a	0	1	1143.40	0.000	Pond C 2-year 1hr
19	Reservoir	0.000	5	n/a	0	2	1143.40	0.000	Pond C 2-year 3 hr
20	Reservoir	0.000	5	n/a	0	3	1143.40	0.000	Pond C 2-year 6 hr
21	Reservoir	0.000	5	n/a	0	4	1143.40	0.000	Pond C 2-year 24 hr
22	Reservoir	0.000	5	n/a	0	5	1143.40	0.000	Pond C 5-year 1 hr
23	Reservoir	0.000	5	n/a	0	6	1143.40	0.000	Pond C 5-year 3 hr
24	Reservoir	0.000	5	n/a	0	7	1143.40	0.000	Pond C 5-year 6 hr
25	Reservoir	0.000	5	n/a	0	8	1143.40	0.000	Pond C 5-year 24 hr
26	Reservoir	0.000	5	n/a	0	9	1143.40	0.000	Pond C 10-year 1 hr
27	Reservoir	0.000	5	n/a	0	10	1143.40	0.000	Pond C 10-year 3 hr
28	Reservoir	0.000	5	n/a	0	11	1143.40	0.000	Pond C 10-year 6 hr
29	Reservoir	0.000	5	n/a	0	12	1143.40	0.000	Pond C 10-year 24 hr
30	Reservoir	1.333	5	90	34,309	13	1147.69	31,144	Pond C 100-year 1 hr
31	Reservoir	8.168	5	175	57,259	14	1148.87	40,283	Pond C 100-year 3 hr
32	Reservoir	9.391	5	345	73,111	15	1149.07	41,294	Pond C 100-year 6 hr
33	Reservoir	4.506	5	820	117,199	16	1148.15	34,944	Pond C 100-year 24 hr

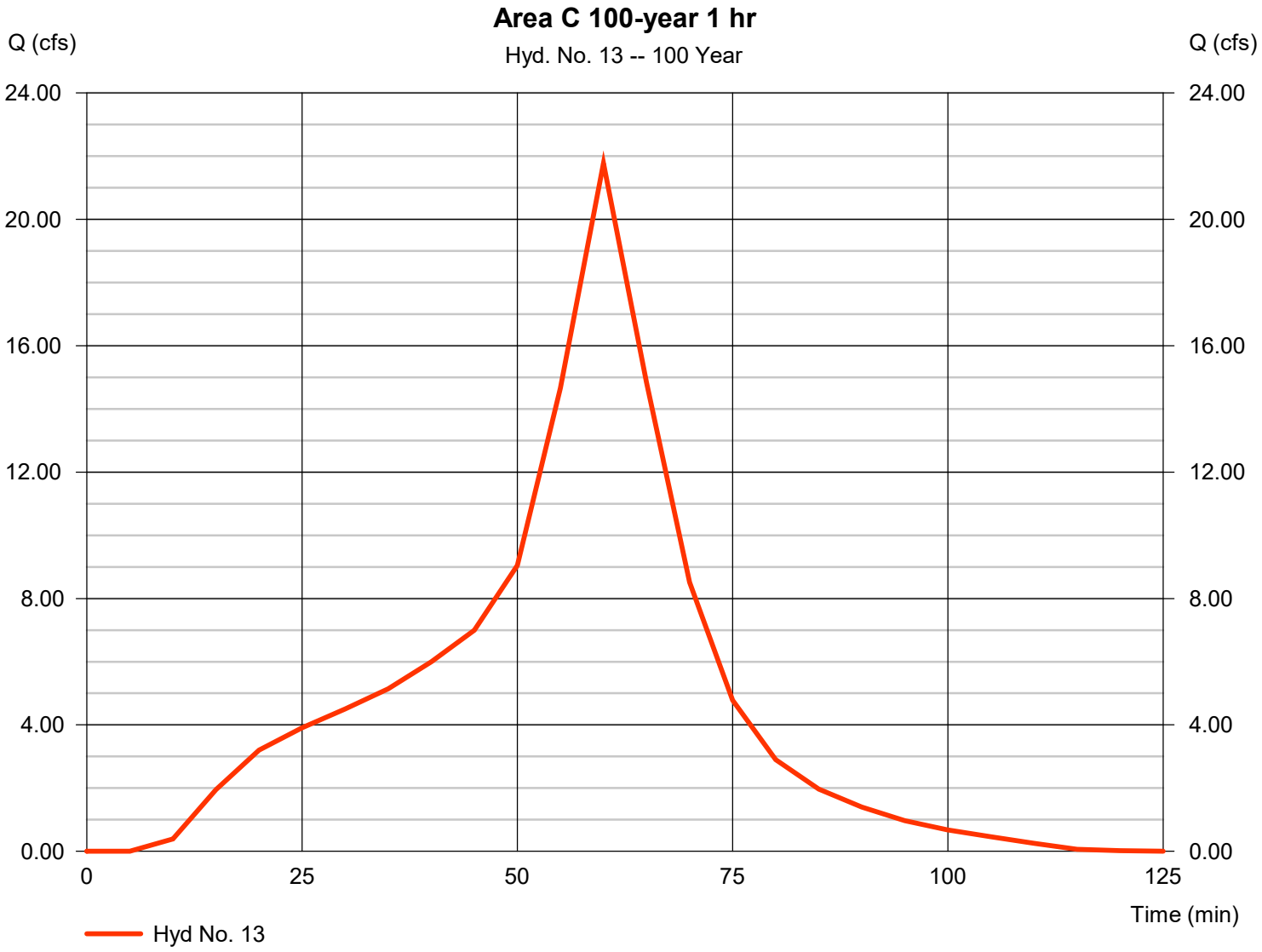
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 13

Area C 100-year 1 hr

Hydrograph type	= Manual	Peak discharge	= 21.78 cfs
Storm frequency	= 100 yrs	Time to peak	= 60 min
Time interval	= 5 min	Hyd. volume	= 34,323 cuft



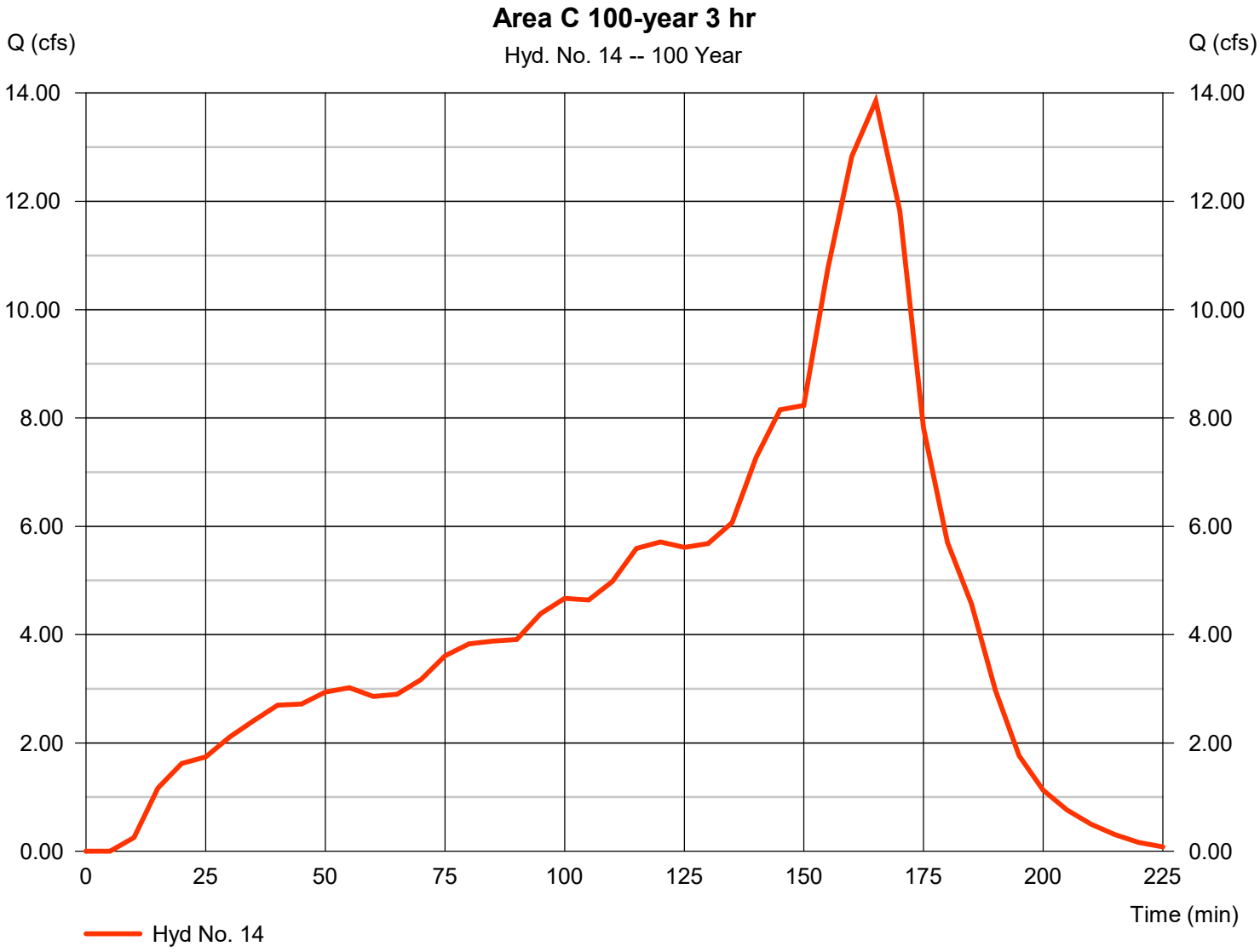
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 14

Area C 100-year 3 hr

Hydrograph type	= Manual	Peak discharge	= 13.85 cfs
Storm frequency	= 100 yrs	Time to peak	= 165 min
Time interval	= 5 min	Hyd. volume	= 57,273 cuft



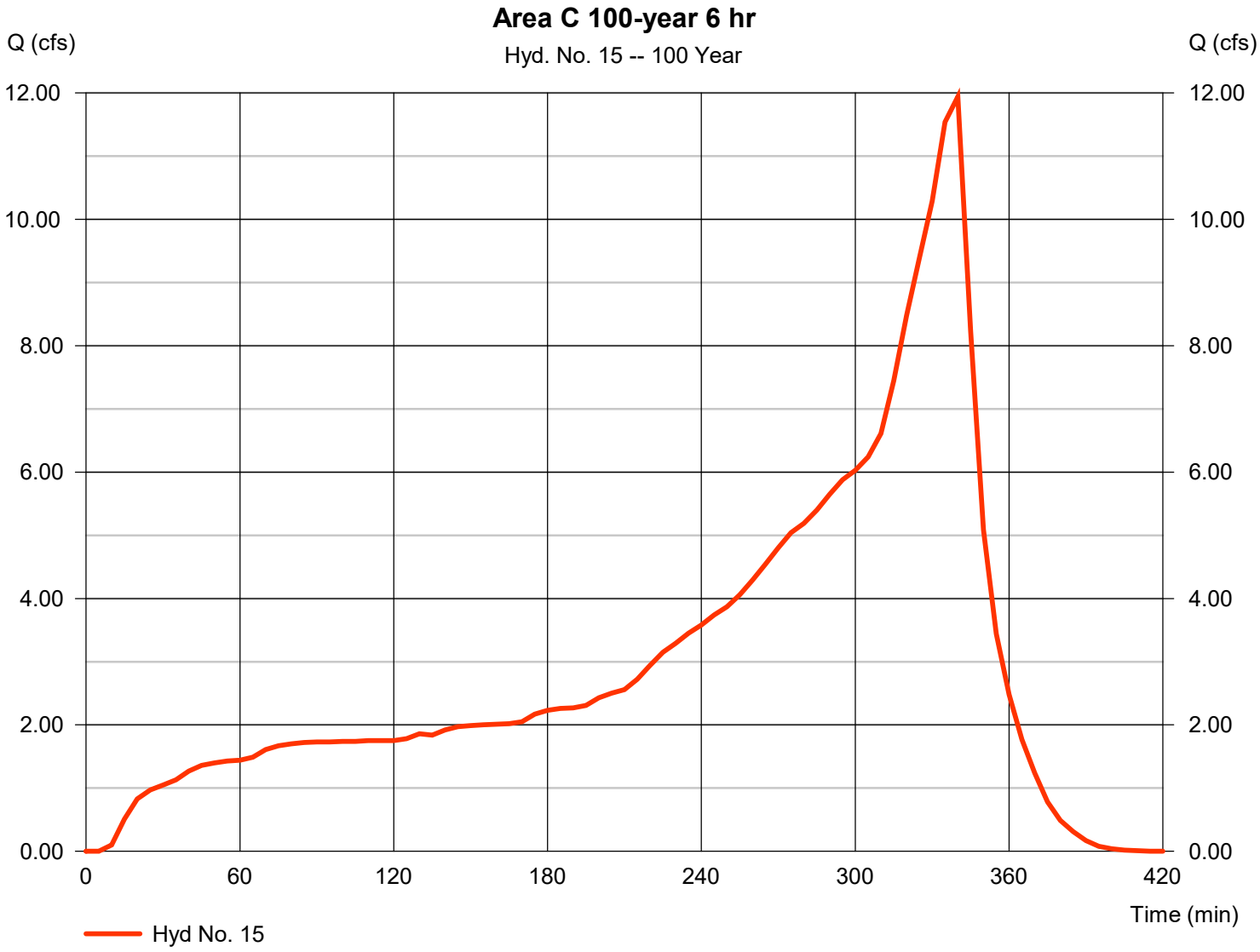
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 15

Area C 100-year 6 hr

Hydrograph type	= Manual	Peak discharge	= 11.94 cfs
Storm frequency	= 100 yrs	Time to peak	= 340 min
Time interval	= 5 min	Hyd. volume	= 73,125 cuft



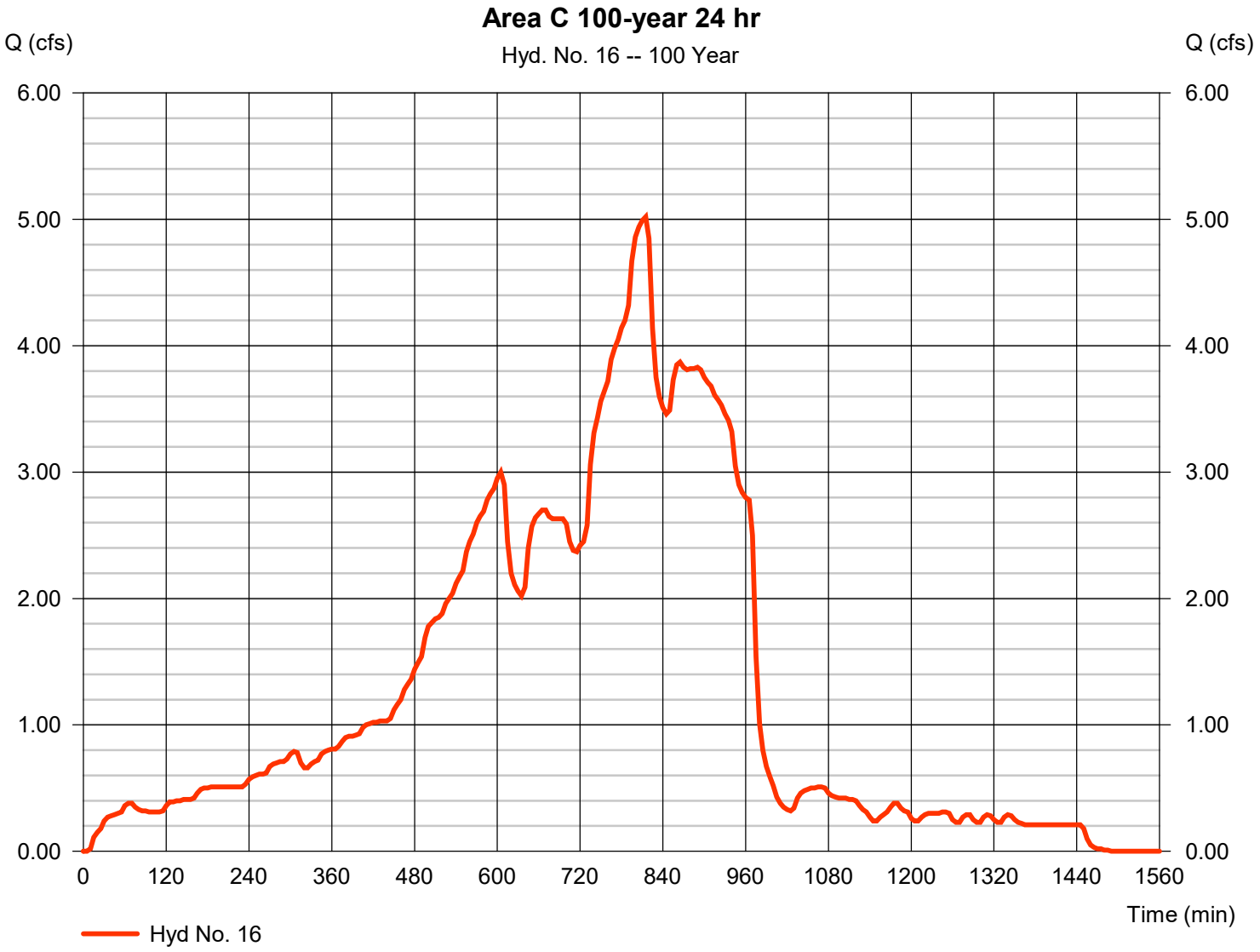
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 16

Area C 100-year 24 hr

Hydrograph type	= Manual	Peak discharge	= 5.020 cfs
Storm frequency	= 100 yrs	Time to peak	= 815 min
Time interval	= 5 min	Hyd. volume	= 117,213 cuft



Hydrograph Report

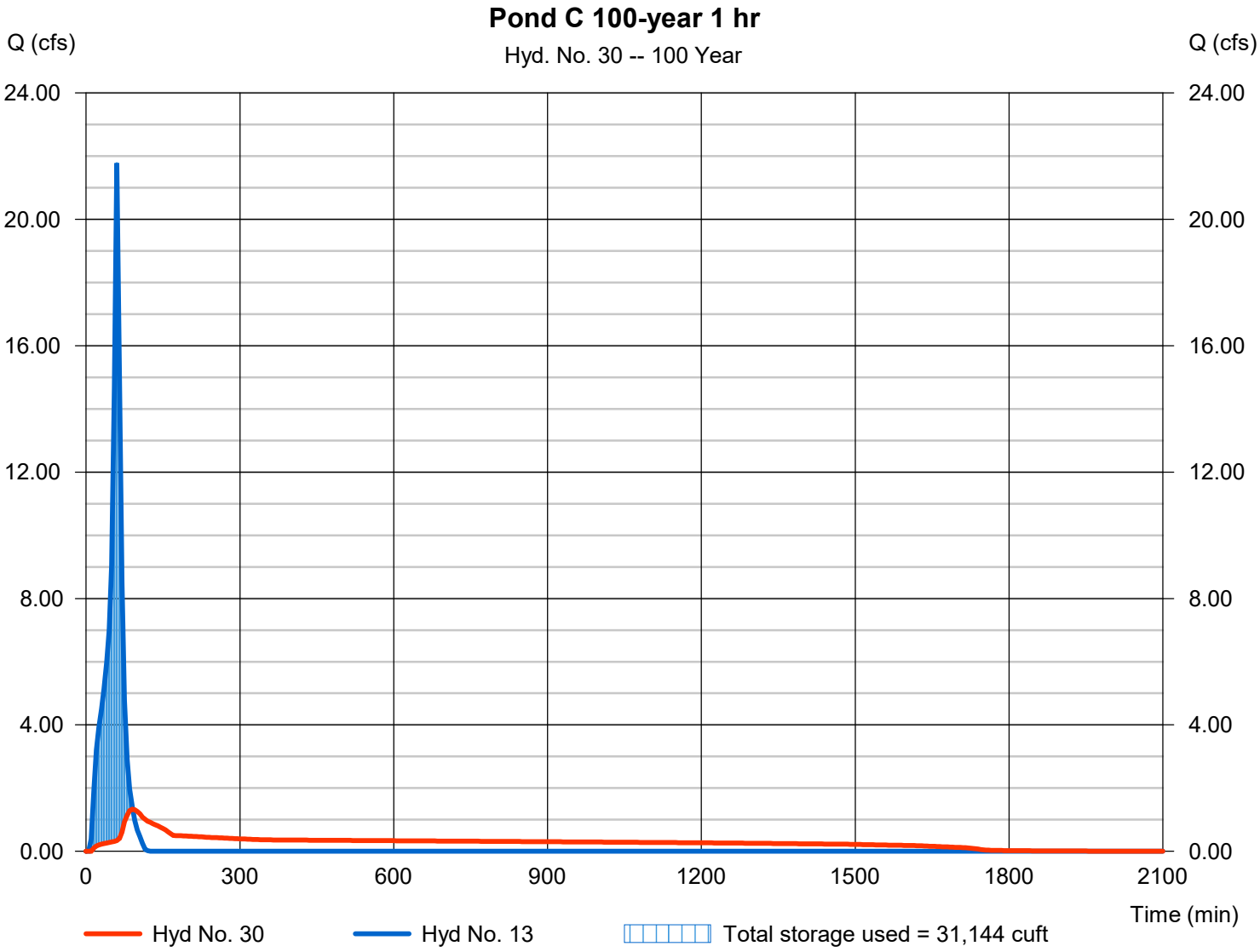
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 30

Pond C 100-year 1 hr

Hydrograph type	=	Reservoir	Peak discharge	=	1.333 cfs
Storm frequency	=	100 yrs	Time to peak	=	90 min
Time interval	=	5 min	Hyd. volume	=	34,309 cuft
Inflow hyd. No.	=	13 - Area C 100-year 1 hr	Max. Elevation	=	1147.69 ft
Reservoir name	=	Pond C	Max. Storage	=	31,144 cuft

Storage Indication method used.



Hydrograph Report

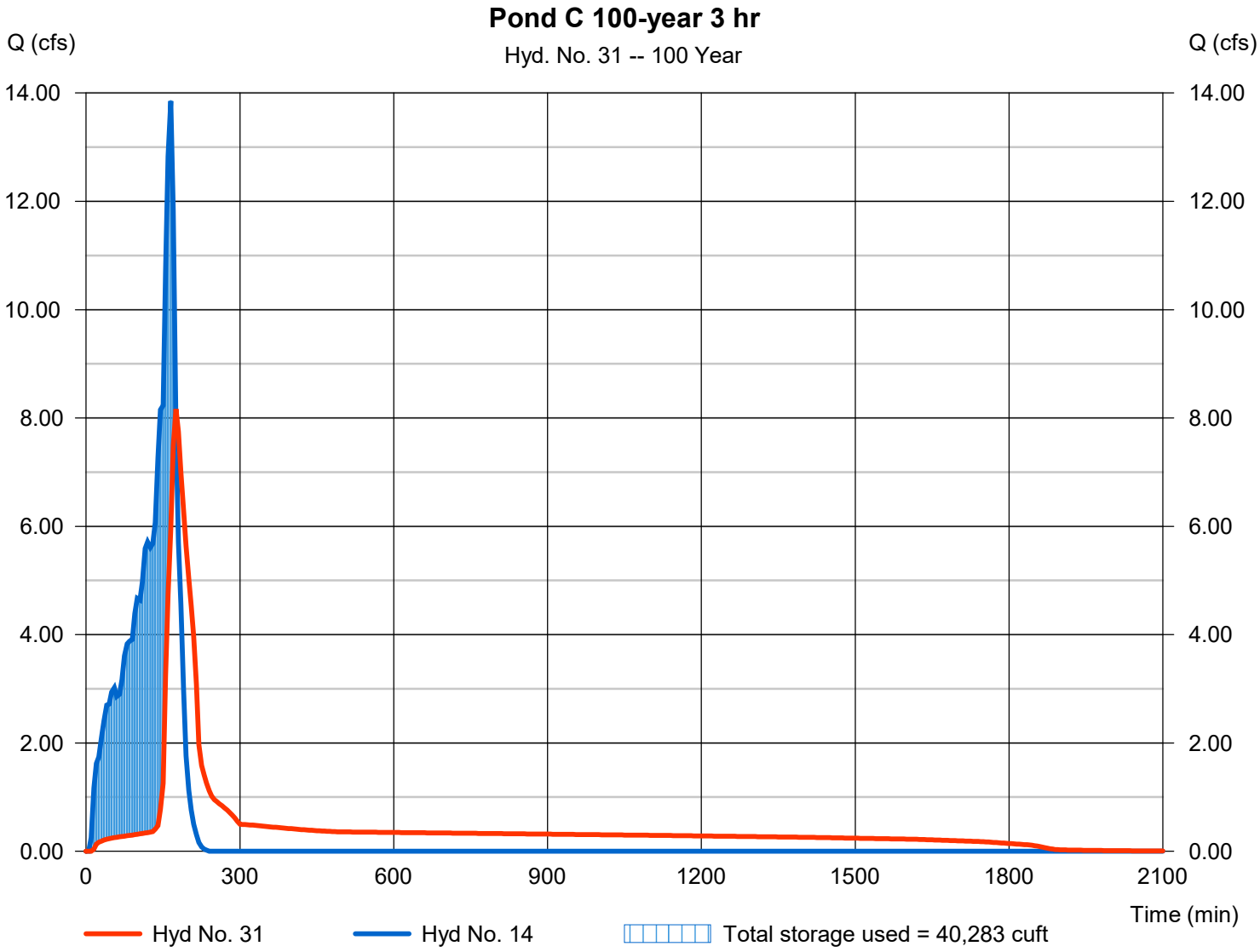
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 31

Pond C 100-year 3 hr

Hydrograph type	= Reservoir	Peak discharge	= 8.168 cfs
Storm frequency	= 100 yrs	Time to peak	= 175 min
Time interval	= 5 min	Hyd. volume	= 57,259 cuft
Inflow hyd. No.	= 14 - Area C 100-year 3 hr	Max. Elevation	= 1148.87 ft
Reservoir name	= Pond C	Max. Storage	= 40,283 cuft

Storage Indication method used.



Hydrograph Report

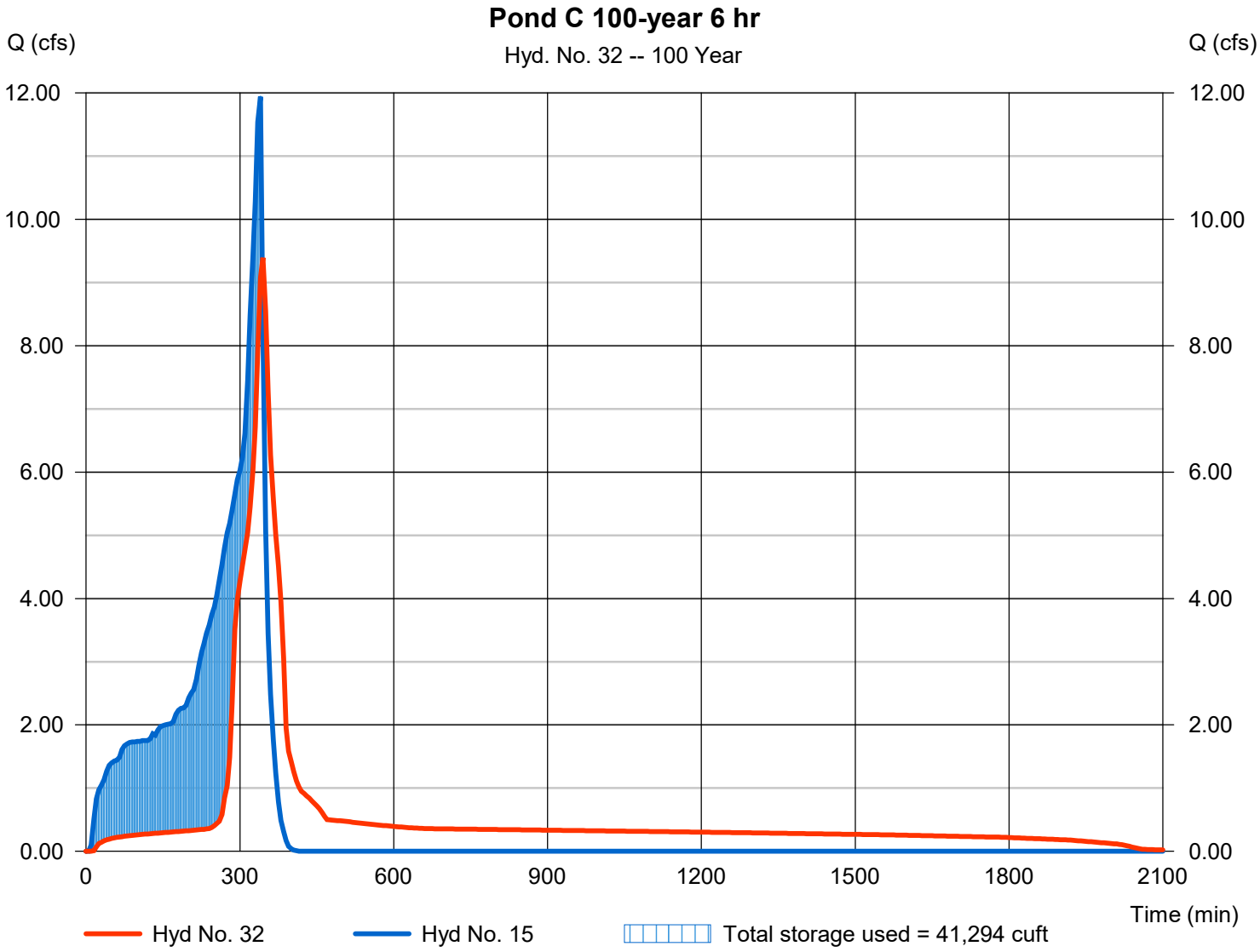
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 32

Pond C 100-year 6 hr

Hydrograph type	=	Reservoir	Peak discharge	=	9.391 cfs
Storm frequency	=	100 yrs	Time to peak	=	345 min
Time interval	=	5 min	Hyd. volume	=	73,111 cuft
Inflow hyd. No.	=	15 - Area C 100-year 6 hr	Max. Elevation	=	1149.07 ft
Reservoir name	=	Pond C	Max. Storage	=	41,294 cuft

Storage Indication method used.



Hydrograph Report

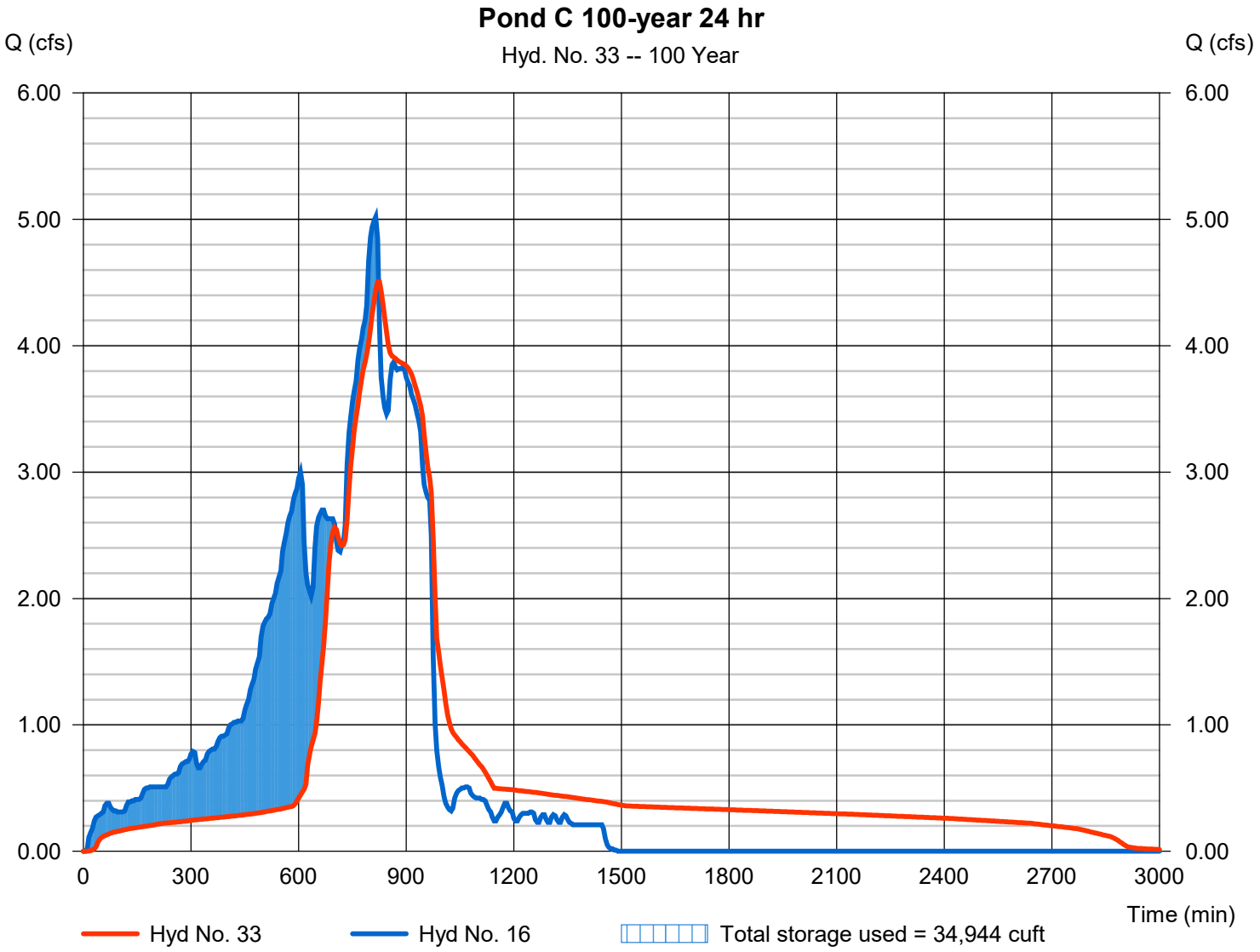
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v10.5 Monday, 03 / 2 / 2020

Hyd. No. 33

Pond C 100-year 24 hr

Hydrograph type	=	Reservoir	Peak discharge	=	4.506 cfs
Storm frequency	=	100 yrs	Time to peak	=	820 min
Time interval	=	5 min	Hyd. volume	=	117,199 cuft
Inflow hyd. No.	=	16 - Area C 100-year 24 hr	Max. Elevation	=	1148.15 ft
Reservoir name	=	Pond C	Max. Storage	=	34,944 cuft

Storage Indication method used.



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Santa Margarita Region - County HydroMod Iterative Spreadsheet Model

Only for use the unincorporated portions of Riverside County, unless otherwise approved by the Co-Permittee

Development Project Number(s):	18-946 Nutmeg Apartments (Area A)	Rain Gauge	Wildomar/North Murrieta
Latitude (decimal format):	33°34'26.36"N	BMP Type (per WQMP):	
Longitude (decimal format):	117°14'5.44"W	BMP Number (Sequential):	

Pre-Development - Hydrology Information

DRAINAGE AREA (ACRES) - 10 acre max[1]	3.35	2-YEAR, 1-HOUR INTENSITY (IN/HR) - Plate D-4.3	0.55
LONGEST WATERCOURSE (FT) - 1,000' max[1]	420	10-YEAR, 1-HOUR INTENSITY (IN/HR) - Plate D-4.1	0.88
UPSTREAM ELEVATION OF WATERCOURSE (FT)	1156	SLOPE OF THE INTENSITY DURATION - Plate D-4.6	0.55
DOWNSTREAM ELEV. OF WATERCOURSE (FT)	1144	CLOSEST IMPERVIOUS PERCENTAGE (%)	0% Undeveloped - Good Cover
EXISTING IMPERVIOUS PERCENTAGE (%)	0		
Use 10% of Q2 to avoid Field Screening requirements	Yes		

Pre-Development - Soils Information

Cover Type #	Subarea Acreage	Cover Type	Vegetative Cover	Soil A %	Soil B %	Soil C %	Soil D %	RI Index AMC I	RI Index AMC II	RI Index AMC III
5	3.35 Ac.	Chaparral, Narrowleaf	Poor Cover			100		75	**88**	95
								0	**0**	0
								0	**0**	0
	3.35 Ac.						**Weighted Average RI Numbers =**	**75.0**	**88.0**	**95.0**

Per Dr. Luis Parra, the AMC condition is based on the rainfall record. Applying NEH-4 (1964) for the non-freezing conditions in Riverside County the AMC conditions are:
AMC-I for less than 0.5" of rain the previous 5 days; AMC-II for between 0.5" to 1.1" of rain the previous 5 days; or AMC-III for more than 1.1" for the previous 5 days.

Pre-Development - Calculated Range of Flow Rates analyzed for Hydromod (Suceptible Range of Flows)

Calculated Upper Flow-rate limit	Calculated Lower Flow-rate limit
Ex. 10-year Flowrate[1] = **2.375** cfs	Ex. 10% of the 2-year Flowrate[1] = **0.246** cfs
(Co-Permitte Approval is required) User-Defined Discharge Values with accompanying Hydrology Study[1]	
Ex. 10-year Flowrate (Attach Study) = cfs	Ex. 2-year Flowrate (Attach Study) = cfs

[1]The equations used to determine the 10-year and 10% of the 2-yr are limited to 10-acres and 1,000'. Flowrates from a separate study can be used to over-ride the calculated values so that larger areas (up to 20 acres) and longer watercourse lengths can be used. All values still need to be filled out, even when there is a user-defined discharge value entered.

Post-Project - Hydrograph Information

DRAINAGE AREA (ACRES)	3.35
LONGEST WATERCOURSE (FT)	227
DIFFERENCE IN ELEV (FT) - along watercourse	3.3
PROPOSED IMPERVIOUS PERCENTAGE (%)	62

Go to "BMP Design" tab to design your BMP, then check results below.
Print both this "HydroMod" Sheet and the "BMP Design" sheet for your submittal.

Post-Project - Soils Information

Cover Type #	Subarea Acreage	Cover Type	Vegetative Cover	Soil A %	Soil B %	Soil C %	Soil D %	RI Index AMC I	RI Index AMC II	RI Index AMC III
22	3.35 Ac.	Urban Landscaping	Good Cover				100	57	**75**	88
								0	**0**	0
								0	**0**	0
	3.35 Ac.						**Weighted Average RI Numbers =**	**57.0**	**75.0**	**88.0**

Per Dr. Luis Parra, the AMC condition is based on the rainfall record. Applying NEH-4 (1964) for the non-freezing conditions in Riverside County the AMC conditions are:
AMC-I for less than 0.5" of rain the previous 5 days; AMC-II for between 0.5" to 1.1" of rain the previous 5 days; or AMC-III for more than 1.1" for the previous 5 days.

Results

		First result out of compliance in the rainfall record				See below for the Height in the Basin (Stage) that is causing a non-compliant result	
Hydromod Ponded depth	**1.59 feet**	Requirement		Proposed			
Hydromod Drain Time (unclogged)	**#DIV/0!**						
Is the HydroMod BMP properly sized?	**Yes, this is acceptable**	---	---	---	---		
Mitigated Q < 110% of Pre-Dev. Q?	**Yes, this is acceptable**	---	---	---	---	Issue @ Stage =	---
Mitigated Duration < 110% of Pre-Dev?*	**Yes, this is acceptable**	---	---	---	---	Issue @ Stage =	---

Responsible-in-charge: MATTHEW HELLESEN Date:

Signature: Spreadsheet Developed by: Benjie Cho, P.E.

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BMP Design

Fill in **blue** shaded areas

BMP Geometry & Detention Calculations

0.53 feet, Stage Intervals

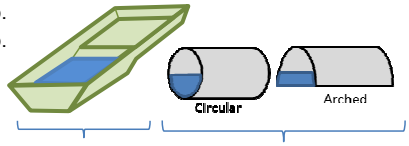
Increase intervals or decrease height

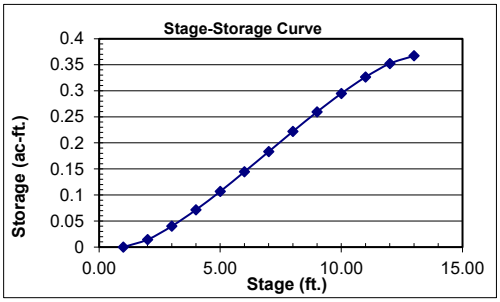
Height is above the limits of this sheet

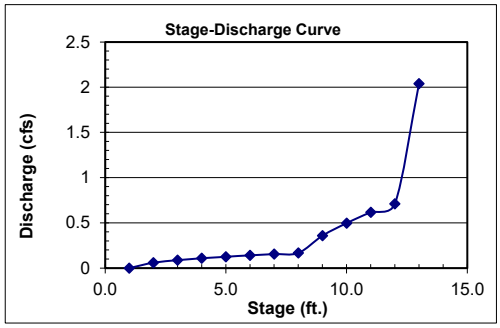
PROPOSED BMP DIMENSIONS

STEP1: Size the BMP, so that the Total Volume > Max HydroMod Vol. (Deeper is ok, it will be refined in the Design Geometry)

Tank BMP	Is the BMP a Tank shape?	1	1 for yes; 2 for no.
	Is the BMP Arched shape?	2	1 for yes; 2 for no.
	How many cells together?	1	
	Diameter (Hortz. for arch) =	76.44	IN
	Length =	502	FT







Prop Single-Circular Vol =	15,997	FT3
Total Prop. Volume[1] =	15,997	FT3
Max HydroMod Volume =	2,466	FT3
Total Acreage[2] =	2,898	FT2
BMP % of Site =	1.99%	
Max HydroMod Depth[3] =	1.59	FT

[1]Does not include forebay, or low flow trench

[2]Does not account for freeboard or access roads

[3]Does not consider Increased Runoff

MINIMUM DESIGN GEOMETRY

STEP3: Delete outlets, then propose the largest lowest orifice that does not, exceed the ex. Q or Duration. If the Q is acceptable, but the duration is exceeded, try decreasing orifice, then adding a weir slightly below the stage that has an issue.

OUTLETS (for Stage-Discharge)

Hydromod Depth =	1.59 FT
+ 1' Freeboard =	2.59 FT

Orifice Outlets			Weir Outlets		
Invert Height (ft)	Diameter (inches)	No. of Orifices	Crest Height (ft)	Crest Width (ft)	No. of Weirs
0	1.80	1			
3.77	3.40	1			
4.64	1.50	1			
			6.03	1.94	1

Stage-Storage-Discharge*

Stage (FT)	Storage (AC-FT)	Storage (FT3)	Q (CFS)
0	0	0	0
0.53	0.015	635	0.06
1.06	0.040	1749	0.09
1.59	0.072	3121	0.11
2.12	0.107	4658	0.13
2.65	0.145	6296	0.14
3.18	0.183	7983	0.15
3.71	0.222	9670	0.17
4.24	0.260	11310	0.36
4.77	0.295	12850	0.50
5.30	0.327	14226	0.62
5.83	0.352	15345	0.71
6.36	0.367	15997	2.04

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Santa Margarita Region - County HydroMod Iterative Spreadsheet Model

Only for use the unincorporated portions of Riverside County, unless otherwise approved by the Co-Permittee

Development Project Number(s):	18-946 Nutmeg Apartments (Area B)	Rain Gauge	Wildomar/North Murrieta
Latitude (decimal format):	33°34'26.36"N	BMP Type (per WQMP):	
Longitude (decimal format):	117°14'5.44"W	BMP Number (Sequential):	

Pre-Development - Hydrology Information

DRAINAGE AREA (ACRES) - 10 acre max[1]	3.7	2-YEAR, 1-HOUR INTENSITY (IN/HR) - Plate D-4.3	0.55
LONGEST WATERCOURSE (FT) - 1,000' max[1]	660	10-YEAR, 1-HOUR INTENSITY (IN/HR) - Plate D-4.1	0.88
UPSTREAM ELEVATION OF WATERCOURSE (FT)	1158	SLOPE OF THE INTENSITY DURATION - Plate D-4.6	0.55
DOWNSTREAM ELEV. OF WATERCOURSE (FT)	1144	CLOSEST IMPERVIOUS PERCENTAGE (%)	0% Undeveloped - Good Cover
EXISTING IMPERVIOUS PERCENTAGE (%)	0		
Use 10% of Q2 to avoid Field Screening requirements	Yes		

Pre-Development - Soils Information

Cover Type #	Subarea Acreage	Cover Type	Vegetative Cover	Soil A %	Soil B %	Soil C %	Soil D %	RI Index AMC I	RI Index AMC II	RI Index AMC III
5	3.7 Ac.	Chaparral, Narrowleaf	Poor Cover			100		75	**88**	95
								0	**0**	0
								0	**0**	0
	3.70 Ac.						**Weighted Average RI Numbers =**	**75.0**	**88.0**	**95.0**

Per Dr. Luis Parra, the AMC condition is based on the rainfall record. Applying NEH-4 (1964) for the non-freezing conditions in Riverside County the AMC conditions are:
AMC-I for less than 0.5" of rain the previous 5 days; AMC-II for between 0.5" to 1.1" of rain the previous 5 days; or AMC-III for more than 1.1" for the previous 5 days.

Pre-Development - Calculated Range of Flow Rates analyzed for Hydromod (Suceptible Range of Flows)

Calculated Upper Flow-rate limit	Calculated Lower Flow-rate limit
Ex. 10-year Flowrate[1] = **2.584** cfs	Ex. 10% of the 2-year Flowrate[1] = **0.233** cfs
(Co-Permitte Approval is required) User-Defined Discharge Values with accompanying Hydrology Study[1]	
Ex. 10-year Flowrate (Attach Study) = cfs	Ex. 2-year Flowrate (Attach Study) = cfs

[1]The equations used to determine the 10-year and 10% of the 2-yr are limited to 10-acres and 1,000'. Flowrates from a separate study can be used to over-ride the calculated values so that larger areas (up to 20 acres) and longer watercourse lengths can be used. All values still need to be filled out, even when there is a user-defined discharge value entered.

Post-Project - Hydrograph Information

DRAINAGE AREA (ACRES)	3.7
LONGEST WATERCOURSE (FT)	150
DIFFERENCE IN ELEV (FT) - along watercourse	2.9
PROPOSED IMPERVIOUS PERCENTAGE (%)	68

Go to "BMP Design" tab to design your BMP, then check results below.
Print both this "HydroMod" Sheet and the "BMP Design" sheet for your submittal.

Post-Project - Soils Information

Cover Type #	Subarea Acreage	Cover Type	Vegetative Cover	Soil A %	Soil B %	Soil C %	Soil D %	RI Index AMC I	RI Index AMC II	RI Index AMC III
22	3.7 Ac.	Urban Landscaping	Good Cover			100		50	**69**	84
								0	**0**	0
								0	**0**	0
	3.70 Ac.						**Weighted Average RI Numbers =**	**50.0**	**69.0**	**84.0**

Per Dr. Luis Parra, the AMC condition is based on the rainfall record. Applying NEH-4 (1964) for the non-freezing conditions in Riverside County the AMC conditions are:
AMC-I for less than 0.5" of rain the previous 5 days; AMC-II for between 0.5" to 1.1" of rain the previous 5 days; or AMC-III for more than 1.1" for the previous 5 days.

		First result out of compliance in the rainfall record				See below for the Height in the Basin (Stage) that is causing a non-compliant result	
Hydromod Ponded depth	**1.53 feet**	Requirement		Proposed			
Hydromod Drain Time (unclogged)	**#DIV/0!**						
Is the HydroMod BMP properly sized?	**Yes, this is acceptable**	---	---	---	---		
Mitigated Q < 110% of Pre-Dev. Q?	**Yes, this is acceptable**	---	---	---	---	Issue @ Stage =	---
Mitigated Duration < 110% of Pre-Dev?*	**Yes, this is acceptable**	---	---	---	---	Issue @ Stage =	---

Responsible-in-charge: MATTHEW HELLESEN Date:

Signature: Spreadsheet Developed by: Benjie Cho, P.E.

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BMP Design

Fill in **blue** shaded areas

BMP Geometry & Detention Calculations

0.51	feet, Stage Intervals

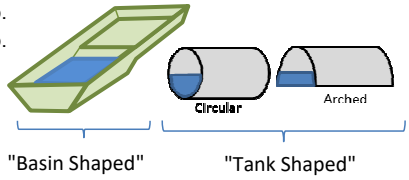
Increase intervals or decrease height

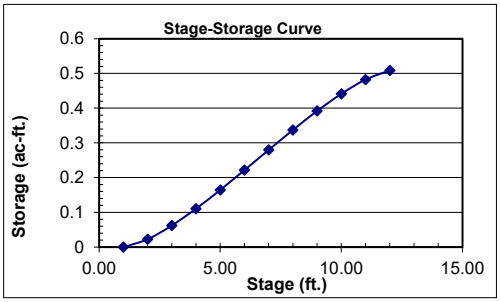
Height is above the limits of this sheet

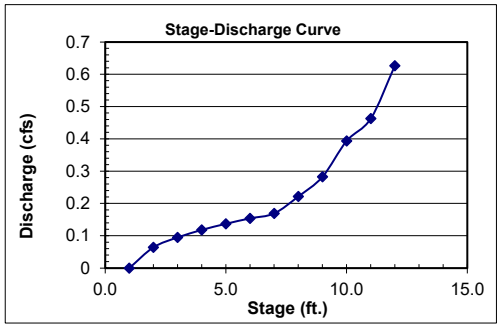
PROPOSED BMP DIMENSIONS

STEP1: Size the BMP, so that the Total Volume > Max HydroMod Vol. (Deeper is ok, it will be refined in the Design Geometry)

Tank BMP	Is the BMP a Tank shape?	1	1 for yes; 2 for no.
	Is the BMP Arched shape?	2	1 for yes; 2 for no.
	How many cells together?	1	
	Diameter (Hortz. for arch) =	68.2	IN
	Length =	875.9	FT







Prop Single-Circular Vol =	22,165	FT3
Total Prop. Volume[1] =	22,165	FT3
Max HydroMod Volume =	2,726	FT3
Total Acreage[2] =	2,898	FT2
BMP % of Site =	1.80%	
Max HydroMod Depth[3] =	1.53	FT

[1]Does not include forebay, or low flow trench

[2]Does not account for freeboard or access roads

[3]Does not consider Increased Runoff

MINIMUM DESIGN GEOMETRY

STEP3: Delete outlets, then propose the largest lowest orifice that does not, exceed the ex. Q or Duration. If the Q is acceptable, but the duration is exceeded, try decreasing orifice, then adding a weir slightly below the stage that has an issue.

OUTLETS (for Stage-Discharge)

Hydromod Depth =	1.53 FT
+ 1' Freeboard =	2.53 FT

Orifice Outlets			Weir Outlets		
Invert Height (ft)	Diameter (inches)	No. of Orifices	Crest Height (ft)	Crest Width (ft)	No. of Weirs
0	1.90	1			
3.36	2.00	1			
4.1	2.00	1			
			5.45	0.49	1

Stage-Storage-Discharge*

Stage (FT)	Storage (AC-FT)	Storage (FT3)	Q (CFS)
0	0	0	0
0.51	0.023	986	0.06
1.02	0.062	2708	0.10
1.53	0.111	4821	0.12
2.04	0.165	7173	0.14
2.55	0.222	9661	0.15
3.06	0.280	12196	0.17
3.57	0.337	14696	0.22
4.08	0.392	17074	0.28
4.59	0.441	19228	0.39
5.10	0.483	21019	0.46
5.61	0.509	22165	0.63

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Santa Margarita Region - County HydroMod Iterative Spreadsheet Model

Only for use the unincorporated portions of Riverside County, unless otherwise approved by the Co-Permittee

Development Project Number(s):	18-946 Nutmeg Apartments (Area C)	Rain Gauge	Wildomar/North Murrieta
Latitude (decimal format):	33°34'26.36"N	BMP Type (per WQMP):	
Longitude (decimal format):	117°14'5.44"W	BMP Number (Sequential):	

Pre-Development - Hydrology Information

DRAINAGE AREA (ACRES) - 10 acre max[1]	7.63	2-YEAR, 1-HOUR INTENSITY (IN/HR) - Plate D-4.3	0.55
LONGEST WATERCOURSE (FT) - 1,000' max[1]	640	10-YEAR, 1-HOUR INTENSITY (IN/HR) - Plate D-4.1	0.88
UPSTREAM ELEVATION OF WATERCOURSE (FT)	1159	SLOPE OF THE INTENSITY DURATION - Plate D-4.6	0.55
DOWNSTREAM ELEV. OF WATERCOURSE (FT)	1148	CLOSEST IMPERVIOUS PERCENTAGE (%)	0% Undeveloped - Good Cover
EXISTING IMPERVIOUS PERCENTAGE (%)	0		
Use 10% of Q2 to avoid Field Screening requirements	Yes		

Pre-Development - Soils Information

Cover Type #	Subarea Acreage	Cover Type	Vegetative Cover	Soil A %	Soil B %	Soil C %	Soil D %	RI Index AMC I	RI Index AMC II	RI Index AMC III
5	7.63 Ac.	Chaparral, Narrowleaf	Poor Cover			100		75	**88**	95
								0	**0**	0
								0	**0**	0
	7.63 Ac.						**Weighted Average RI Numbers =**	**75.0**	**88.0**	**95.0**

Per Dr. Luis Parra, the AMC condition is based on the rainfall record. Applying NEH-4 (1964) for the non-freezing conditions in Riverside County the AMC conditions are:
AMC-I for less than 0.5" of rain the previous 5 days; AMC-II for between 0.5" to 1.1" of rain the previous 5 days; or AMC-III for more than 1.1" for the previous 5 days.

Pre-Development - Calculated Range of Flow Rates analyzed for Hydromod (Suceptible Range of Flows)

Calculated Upper Flow-rate limit	Calculated Lower Flow-rate limit
Ex. 10-year Flowrate[1] = **5.319** cfs	Ex. 10% of the 2-year Flowrate[1] = **0.471** cfs
(Co-Permitte Approval is required) User-Defined Discharge Values with accompanying Hydrology Study[1]	
Ex. 10-year Flowrate (Attach Study) = cfs	Ex. 2-year Flowrate (Attach Study) = cfs

[1]The equations used to determine the 10-year and 10% of the 2-yr are limited to 10-acres and 1,000'. Flowrates from a separate study can be used to over-ride the calculated values so that larger areas (up to 20 acres) and longer watercourse lengths can be used. All values still need to be filled out, even when there is a user-defined discharge value entered.

Post-Project - Hydrograph Information

DRAINAGE AREA (ACRES)	7.63
LONGEST WATERCOURSE (FT)	218
DIFFERENCE IN ELEV (FT) - along watercourse	2.7
PROPOSED IMPERVIOUS PERCENTAGE (%)	63

Go to "BMP Design" tab to design your BMP, then check results below.
Print both this "HydroMod" Sheet and the "BMP Design" sheet for your submittal.

Post-Project - Soils Information

Cover Type #	Subarea Acreage	Cover Type	Vegetative Cover	Soil A %	Soil B %	Soil C %	Soil D %	RI Index AMC I	RI Index AMC II	RI Index AMC III
22	7.63 Ac.	Urban Landscaping	Good Cover				100	57	**75**	88
								0	**0**	0
								0	**0**	0
	7.63 Ac.						**Weighted Average RI Numbers =**	**57.0**	**75.0**	**88.0**

Per Dr. Luis Parra, the AMC condition is based on the rainfall record. Applying NEH-4 (1964) for the non-freezing conditions in Riverside County the AMC conditions are:
AMC-I for less than 0.5" of rain the previous 5 days; AMC-II for between 0.5" to 1.1" of rain the previous 5 days; or AMC-III for more than 1.1" for the previous 5 days.

Results

		First result out of compliance in the rainfall record				See below for the Height in the Basin (Stage) that is causing a non-compliant result	
Hydromod Ponded depth	**1.41 feet**	Requirement		Proposed			
Hydromod Drain Time (unclogged)	**#DIV/0!**						
Is the HydroMod BMP properly sized?	**Yes, this is acceptable**	---	---	---	---		
Mitigated Q < 110% of Pre-Dev. Q?	**Yes, this is acceptable**	---	---	---	---	Issue @ Stage =	---
Mitigated Duration < 110% of Pre-Dev?*	**Yes, this is acceptable**	---	---	---	---	Issue @ Stage =	---

Responsible-in-charge: MATTHEW HELLESEN Date:

Signature: Spreadsheet Developed by: Benjie Cho, P.E.

It is expressly agreed and understood by the USER of this Excel Spreadsheet file (file) released hereby (whether released in digital or hard copy form) that Riverside County (County) makes no representation as to its accuracy. Further, it is the intent of the parties hereto that the USER shall review and verify calculations, analyze results, and/or independently determine the accuracy thereof prior to placing any reliance whatsoever on the information. Further, the USER shall hold the County, together with the officers, agents and employees of each, free and harmless from any liability whatsoever, including wrongful death, based or asserted upon any act or omission of the District or County, their officers, agents, employees or subcontractors, relating to or in any way connected with the unauthorized use of these files or information; and USER agrees to protect and defend, including all attorney fees and other expenses, each of the foregoing bodies and persons in any legal action based or asserted upon any such acts or omissions. USER also agrees not to sell, reproduce or release these files to others for any purpose whatsoever, except those incidental uses for which the files were acquired, verified and combined with USER'S own work product. Reasonable effort was made to fully comply with the San Diego MS4 Permit requirements using the methods found in the Riverside County Hydrology Manual. If the user finds an error in any way, please contact the County so that the error can be corrected. Any direct tampering of the equations in this spreadsheet would be considered extremely inappropriate, and potentially fraudulent.

BMP Design

Fill in **blue** shaded areas

BMP Geometry & Detention Calculations

0.47	feet, Stage Intervals

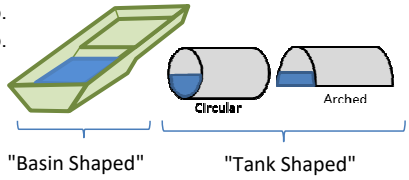
Increase intervals or decrease height

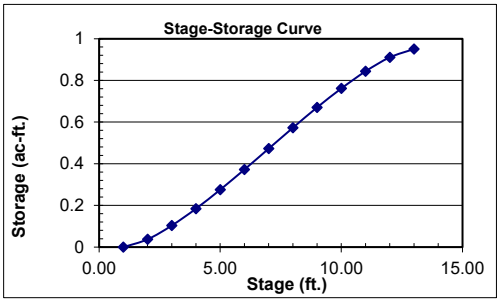
Height is above the limits of this sheet

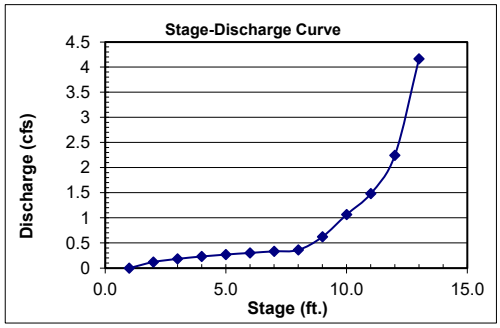
PROPOSED BMP DIMENSIONS

STEP1: Size the BMP, so that the Total Volume > Max HydroMod Vol. (Deeper is ok, it will be refined in the Design Geometry)

Tank BMP	Is the BMP a Tank shape?	1	1 for yes; 2 for no.
	Is the BMP Arched shape?	2	1 for yes; 2 for no.
	How many cells together?	1	
	Diameter (Hortz. for arch) =	68	IN
	Length =	1643	FT







Prop Single-Circular Vol =	41,414	FT3
Total Prop. Volume[1] =	41,414	FT3
Max HydroMod Volume =	5,650	FT3
Total Acreage[2] =	2,898	FT2
BMP % of Site =	0.87%	
Max HydroMod Depth[3] =	1.41	FT

[1]Does not include forebay, or low flow trench

[2]Does not account for freeboard or access roads

[3]Does not consider Increased Runoff

MINIMUM DESIGN GEOMETRY

STEP3: Delete outlets, then propose the largest lowest orifice that does not, exceed the ex. Q or Duration. If the Q is acceptable, but the duration is exceeded, try decreasing orifice, then adding a weir slightly below the stage that has an issue.

OUTLETS (for Stage-Discharge)

Hydromod Depth =	1.41 FT
+ 1' Freeboard =	2.41 FT

Orifice Outlets			Weir Outlets		
Invert Height (ft)	Diameter (inches)	No. of Orifices	Crest Height (ft)	Crest Width (ft)	No. of Weirs
0	2.73	1			
3.45	5.73	1			
4.18	3.00	1			
			4.90	1	1

Stage-Storage-Discharge*

Stage (FT)	Storage (AC-FT)	Storage (FT3)	Q (CFS)
0	0	0	0
0.47	0.038	1638	0.12
0.94	0.104	4509	0.18
1.41	0.185	8047	0.23
1.88	0.276	12013	0.27
2.35	0.373	16240	0.30
2.82	0.473	20594	0.33
3.29	0.573	24951	0.36
3.76	0.670	29189	0.62
4.23	0.762	33174	1.07
4.70	0.843	36742	1.48
5.17	0.910	39660	2.24
5.64	0.951	41414	4.17

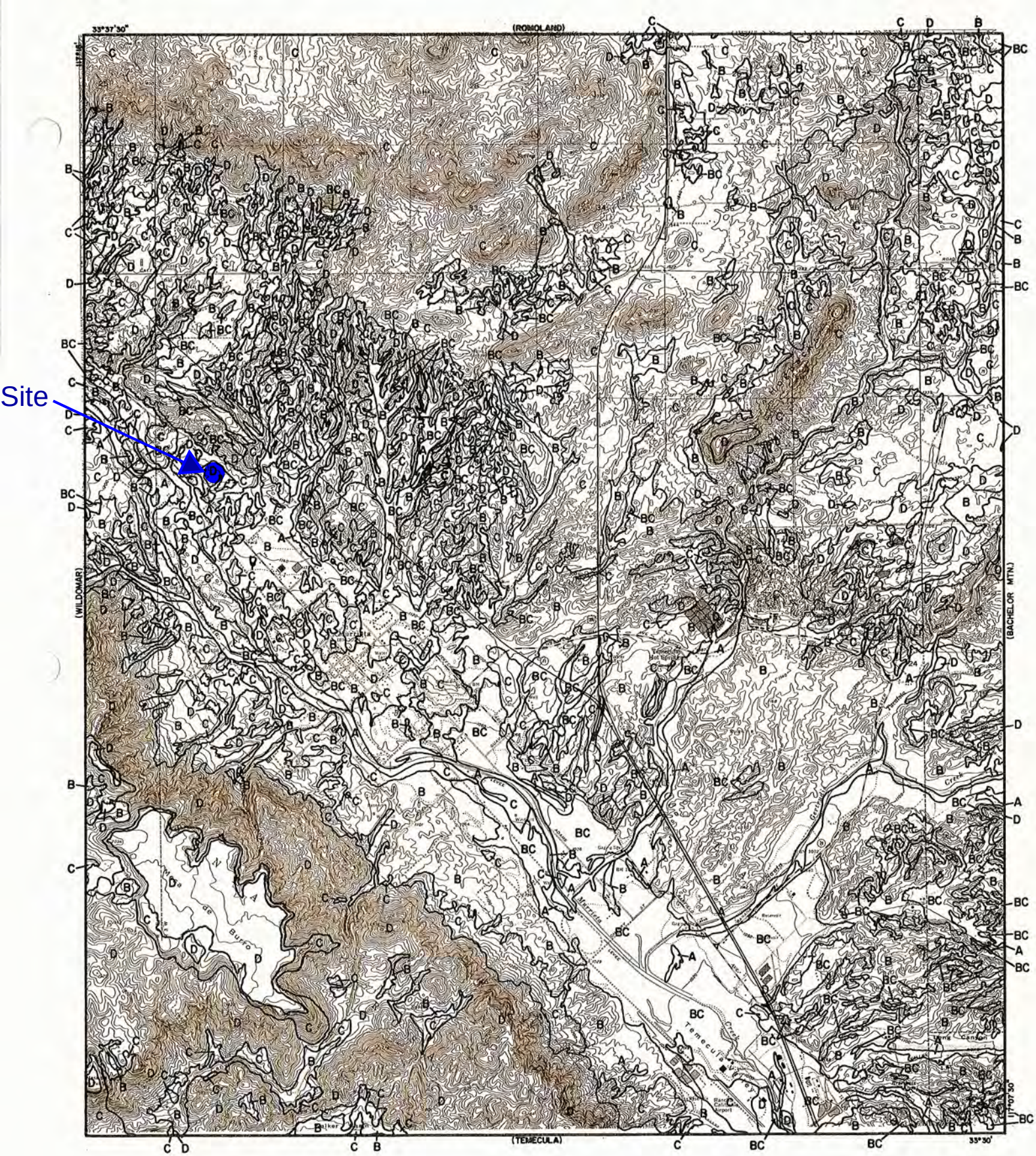
Pond A				
Storm Event	Time Until End of Rain event (min.)	Time Until Tank is Empty (min.)	Difference (hrs.)	Max Draw Down Time (hrs)
2 Year, 1 Hour	125	1200	18	31
2 Year, 3 Hour	225	1440	20	
2 Year, 6 Hour	420	2100	28	
2 Year, 24 Hour	1560	3000	24	
5 Year, 1 Hour	125	1320	20	
5 Year, 3 Hour	225	1800	26	
5 Year, 6 Hour	420	2100	28	
5 Year, 24 Hour	1560	3000	24	
10 Year, 1 Hour	125	1560	24	
10 Year, 3 Hour	225	2100	31	
10 Year, 6 Hour	420	2100	28	
10 Year, 24 Hour	1560	3000	24	
100 Year, 1 Hour	125	1800	28	
100 Year, 3 Hour	225	1800	26	
100 Year, 6 Hour	420	2100	28	
100 Year, 24 Hour	1560	3000	24	

Pond B				
Storm Event	Time til End of Rain event (min.)	Time til Tank is Empty (min.)	Difference (hrs.)	Max Draw Down Time (hrs)
2 Year, 1 Hour	125	1320	20	36
2 Year, 3 Hour	225	1680	24	
2 Year, 6 Hour	420	2100	28	
2 Year, 24 Hour	1560	3300	29	
5 Year, 1 Hour	125	1560	24	
5 Year, 3 Hour	225	2100	31	
5 Year, 6 Hour	420	2400	33	
5 Year, 24 Hour	1560	3300	29	
10 Year, 1 Hour	125	1800	28	
10 Year, 3 Hour	225	2400	36	
10 Year, 6 Hour	420	2400	33	
10 Year, 24 Hour	1560	3300	29	
100 Year, 1 Hour	125	2100	33	
100 Year, 3 Hour	225	2400	36	
100 Year, 6 Hour	420	2400	33	
100 Year, 24 Hour	1560	3300	29	

Pond C				
Storm Event	Time Until End of Rain event (min.)	Time Until Tank is Empty (min.)	Difference (hrs.)	Max Draw Down Time (hrs)
2 Year, 1 Hour	125	1200	18	33
2 Year, 3 Hour	225	1560	22	
2 Year, 6 Hour	420	2100	28	
2 Year, 24 Hour	1560	3000	24	
5 Year, 1 Hour	125	1440	22	
5 Year, 3 Hour	225	1800	26	
5 Year, 6 Hour	420	2400	33	
5 Year, 24 Hour	1560	3000	24	
10 Year, 1 Hour	125	1680	26	
10 Year, 3 Hour	225	2100	31	
10 Year, 6 Hour	420	2100	28	
10 Year, 24 Hour	1560	3000	24	
100 Year, 1 Hour	125	2100	33	
100 Year, 3 Hour	225	2100	31	
100 Year, 6 Hour	420	2100	28	
100 Year, 24 Hour	1560	3000	24	

APPENDIX E

Supporting Material



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC&WCD

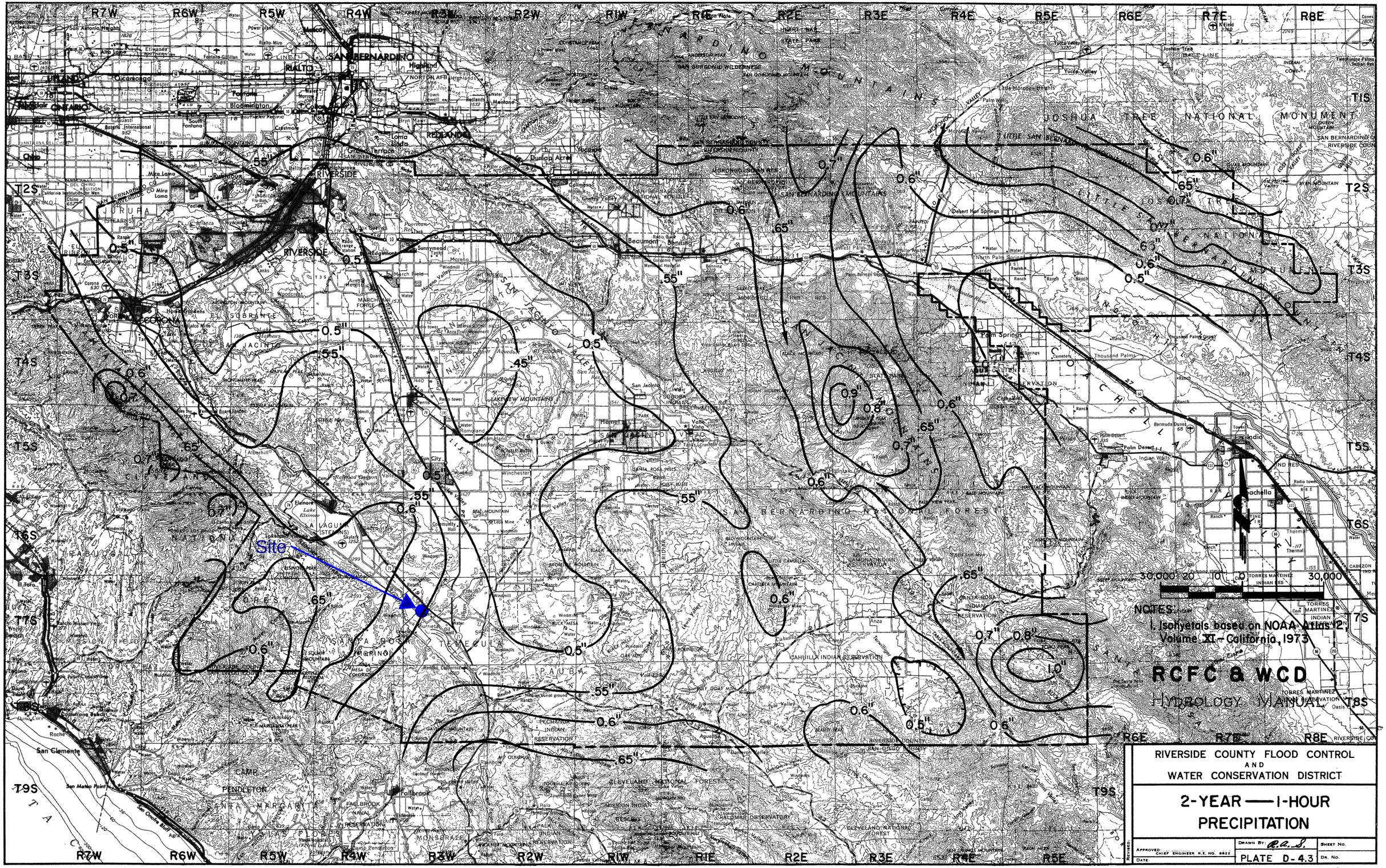
HYDROLOGY MANUAL

N

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR MURRIETA

PLATE C-1.52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.9"
1.0"
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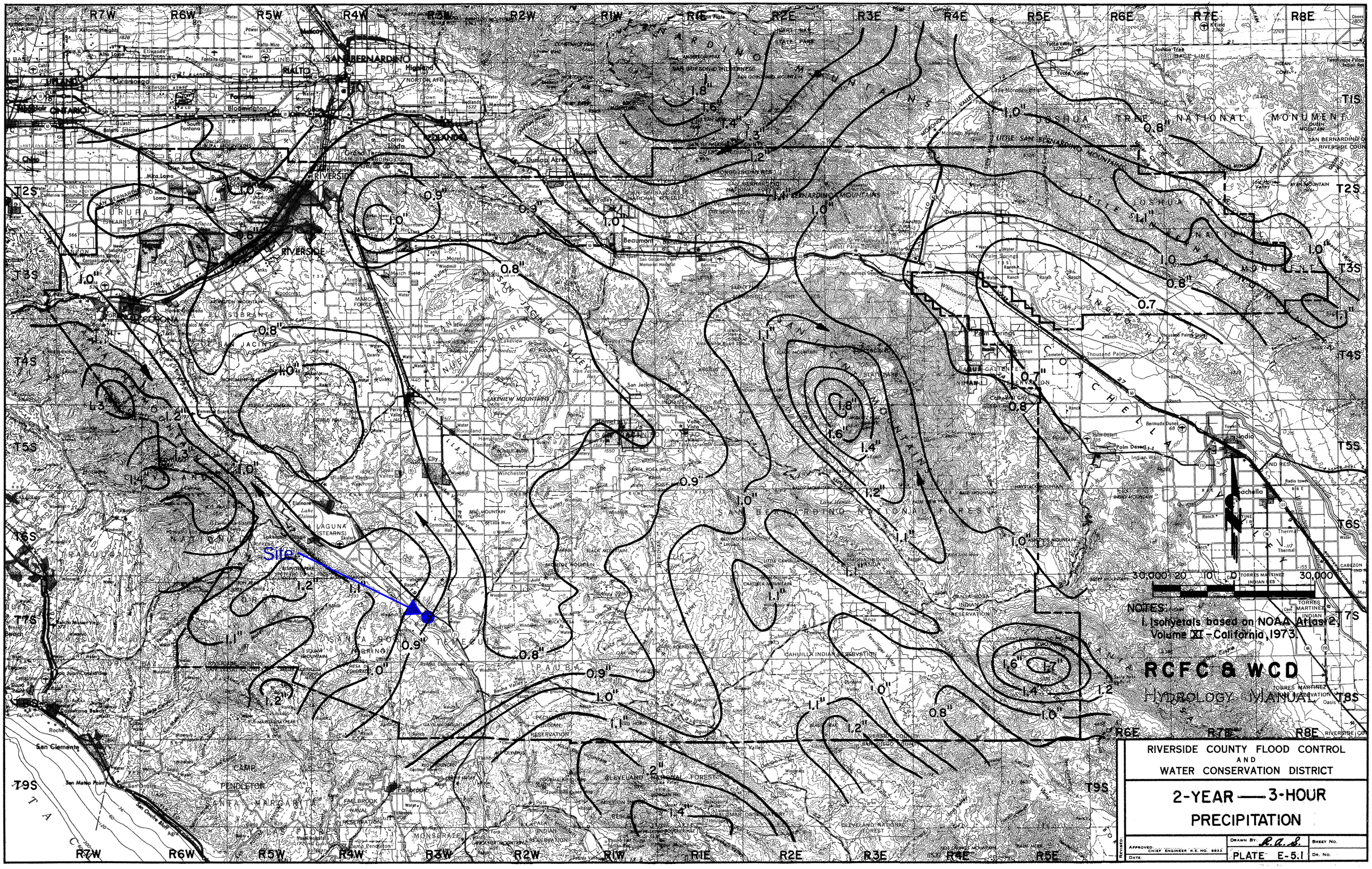
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 1-HOUR PRECIPITATION
DRAWN BY: R.A.S.
PLATE D-4.3
SHEET No.
DR. No.
APPROVED CHIEF ENGINEER R.E. NO. 8822
DATE
REVISED: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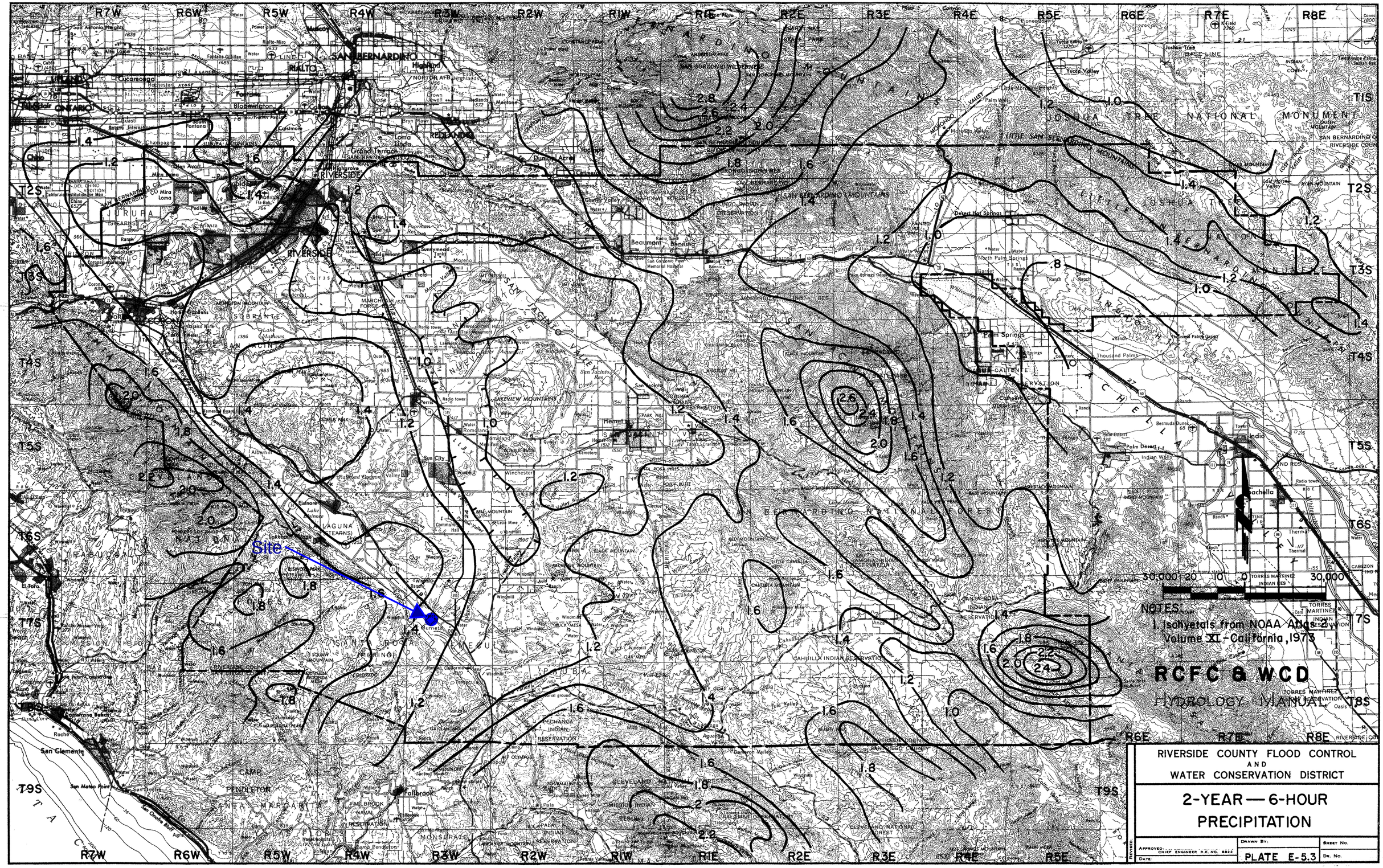
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 3-HOUR PRECIPITATION
DRAWN BY: R.A.S.
SHEET NO.
APPROVED: CHIEF ENGINEER R.E. NO. 6822
DATE:
PLATE E-5.1
DR. NO.
REVISED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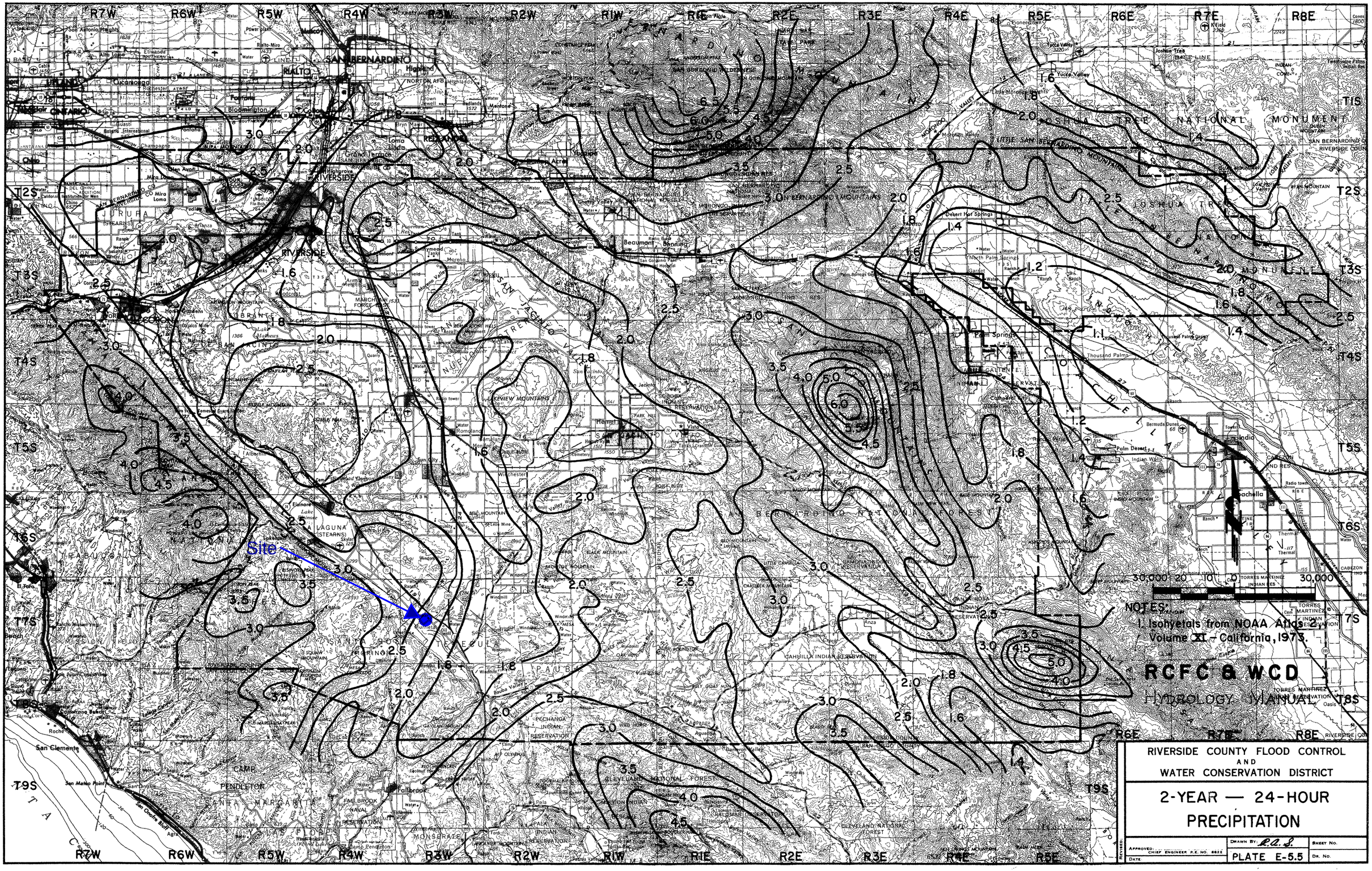
NOTES
1. Isohyetals from NOAA Atlas 2
Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
2-YEAR — 6-HOUR
PRECIPITATION
PLATE E-5.3
DRAWN BY:
SHEET NO.
APPROVED
CHIEF ENGINEER R.E. NO. 6822
DATE
DR. NO.
REVISED
30,000 20 10 0 30,000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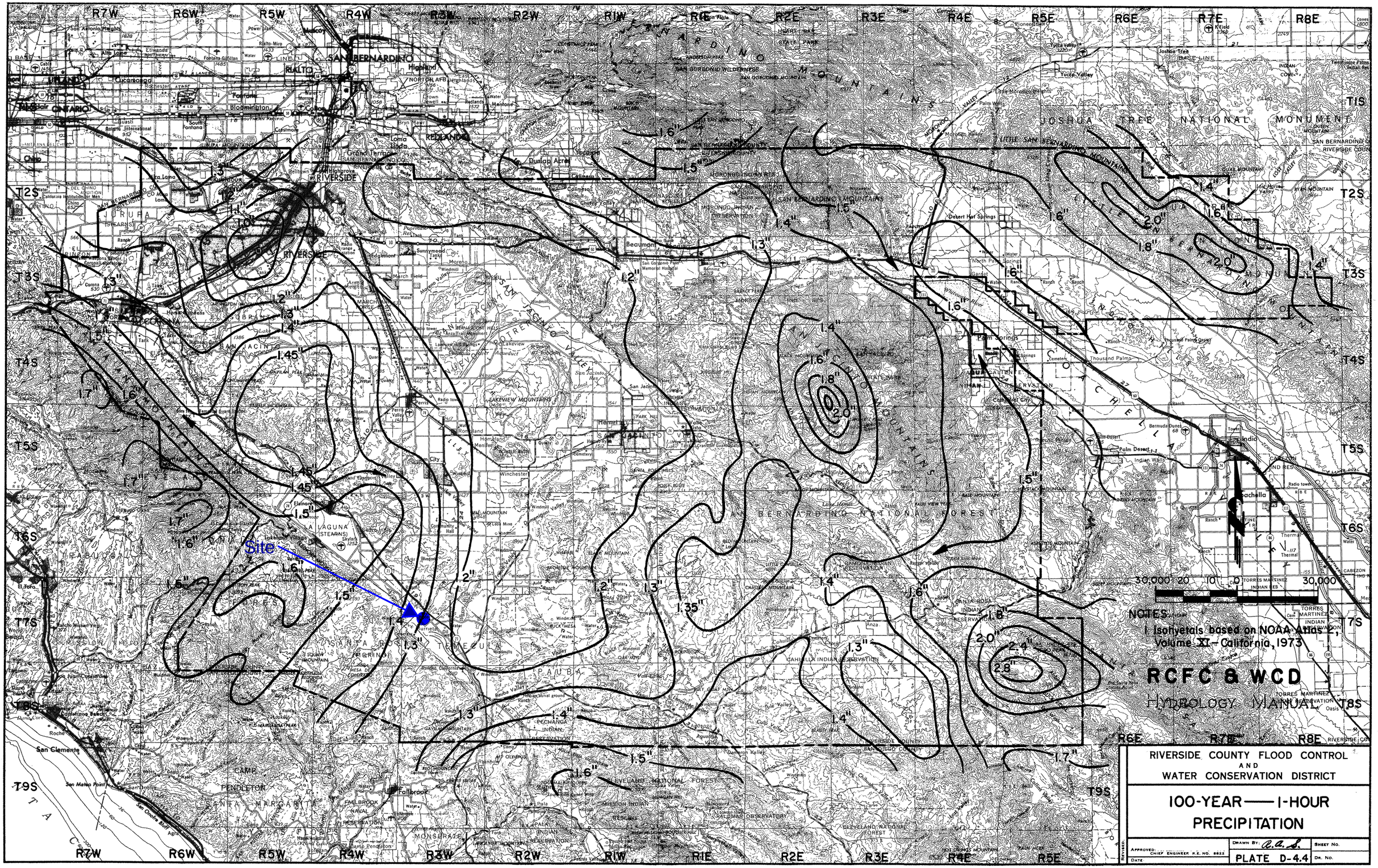
1. Isohyetals from NOAA Atlas 2, Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 24-HOUR PRECIPITATION
DRAWN BY: R.A.S.
PLATE E-5.5
SHEET NO.
DR. NO.
APPROVED: CHIEF ENGINEER R.E. NO. 8822
DATE
REVISED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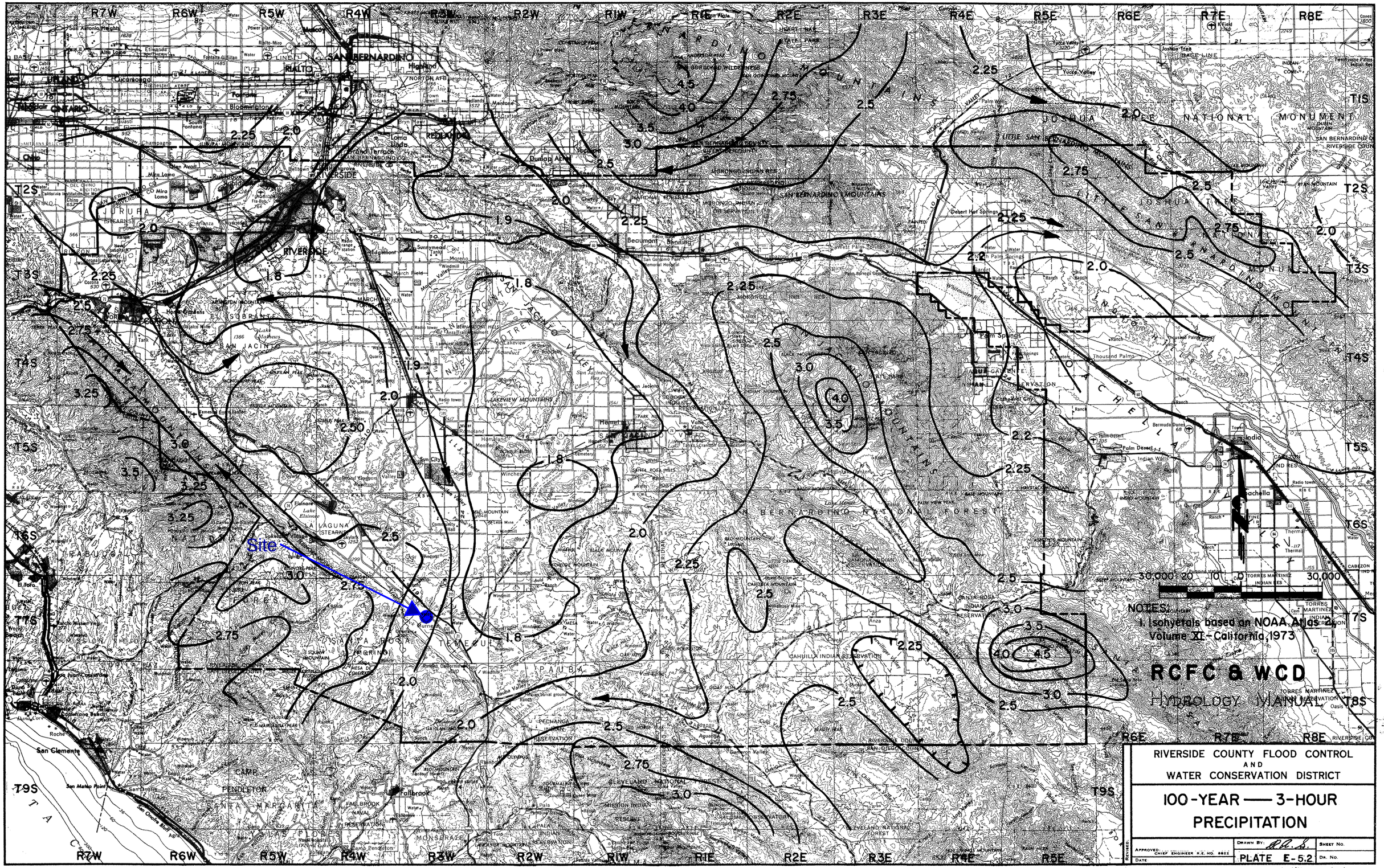
1.3"
1.2"
1.7"
1.8"
2.0"
2.4"
2.8"
1.45"
1.35"
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 1-HOUR PRECIPITATION
DRAWN BY: A.A.S.
SHEET NO.
PLATE D-4.4
DR. NO.
APPROVED: CHIEF ENGINEER R.E. NO. 6822
DATE
REVISED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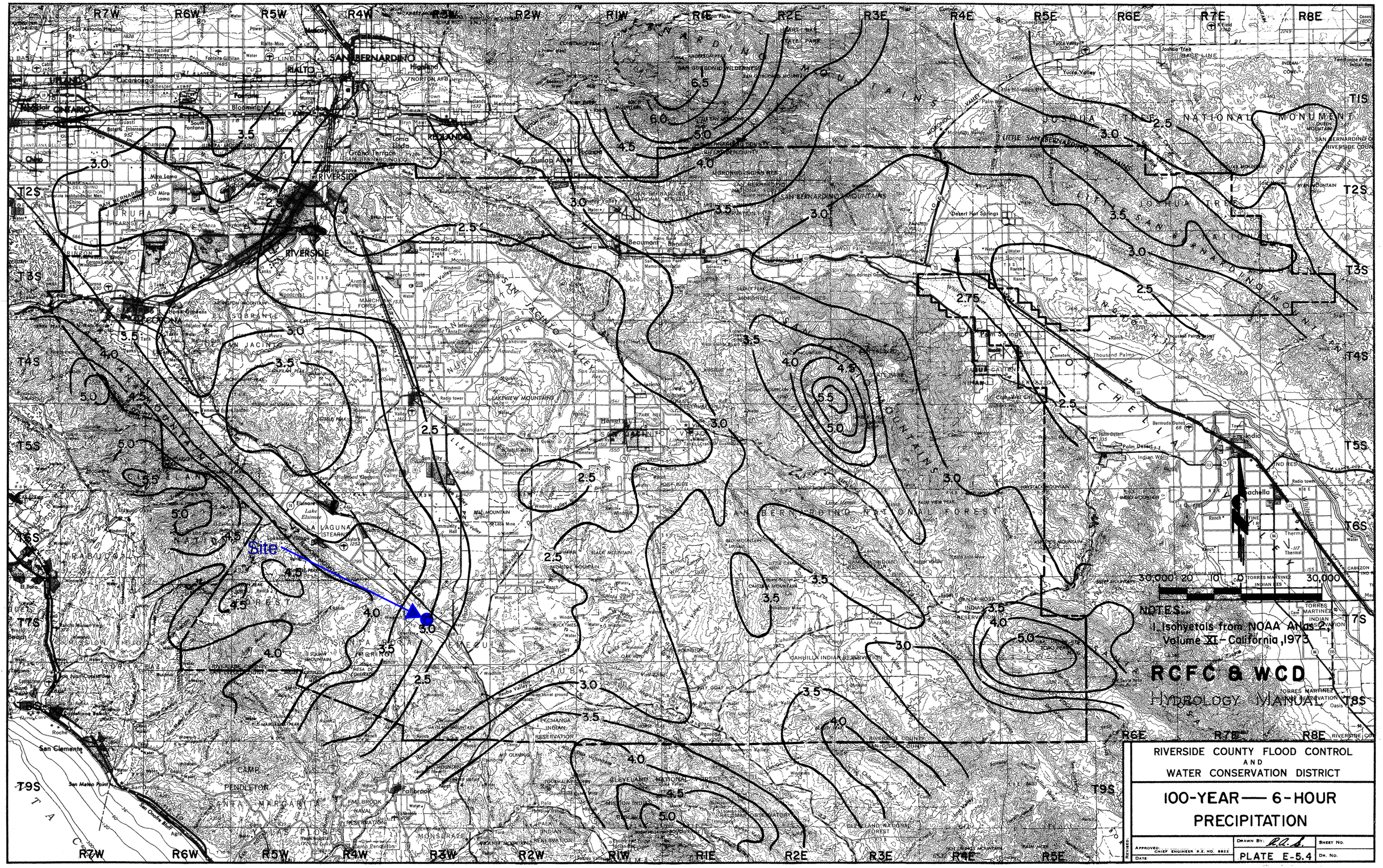
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 3-HOUR PRECIPITATION
DRAWN BY: R.A.S.
PLATE E-5.2
SHEET No.
DR. No.
APPROVED CHIEF ENGINEER R.E. NO. 8822
DATE
REVISED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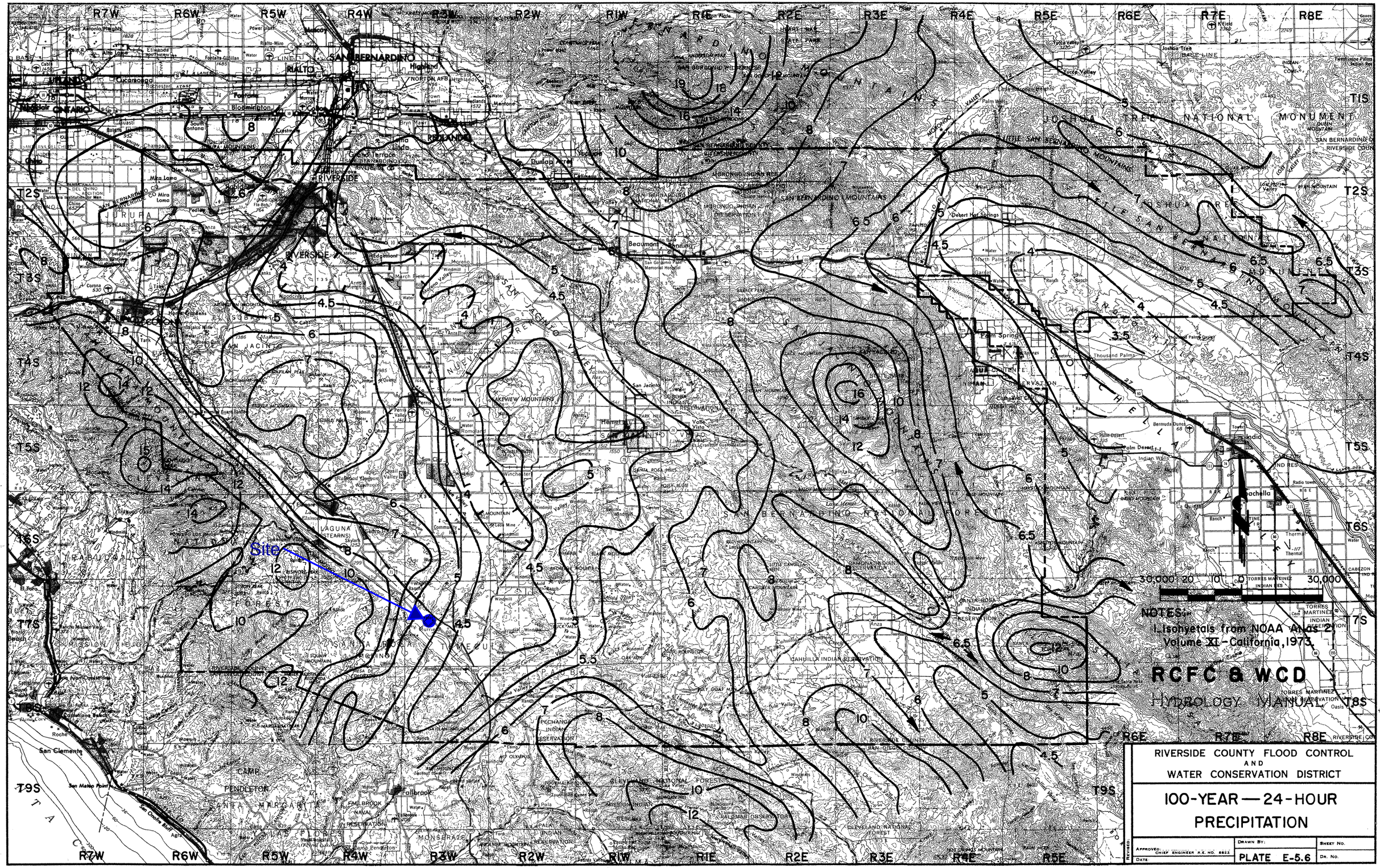
1. Isohyetals from NOAA Atlas 2, Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 6-HOUR PRECIPITATION
DRAWN BY: R.A.S.
SHEET No.
PLATE E-5.4
DR. No.
APPROVED CHIEF ENGINEER R.E. NO. 8822
DATE
REVISED: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NOTES:
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
PLATE E-5.6
APPROVED: CHIEF ENGINEER R.E. NO. 8822
DATE
DRAWN BY:
CHECKED BY:
SHEET NO.
DR. NO.
REVISED
30,000 20 10 0 30,000

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	72	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	28	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
AGRICULTURAL COVERS -					
Fallow (Land plowed but not tilled or seeded)		76	85	90	92

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HYDROLOGY MANUAL

RUNOFF INDEX NUMBERS FOR PERVIOUS AREAS

PLATE E-6.1 (1 of 2)

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
AGRICULTURAL COVERS (cont.) -					
Legumes, Close Seeded (Alfalfa, sweetclover, timothy, etc.)	Poor	66	77	85	89
	Good	58	72	81	85
Orchards, Deciduous (Apples, apricots, pears, walnuts, etc.)		See Note 4			
Orchards, Evergreen (Citrus, avocados, etc.)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
Pasture, Dryland (Annual grasses)	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Pasture, Irrigated (Legumes and perennial grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
Row Crops (Field crops - tomatoes, sugar beets, etc.)	Poor	72	81	88	91
	Good	67	78	85	89
Small Grain (Wheat, oats, barley, etc.)	Poor	65	76	84	88
	Good	63	75	83	87
Vineyard		See Note 4			

Notes:

1. All runoff index (RI) numbers are for Antecedent Moisture Condition (AMC) II.

2. Quality of cover definitions:
   Poor-Heavily grazed or regularly burned areas. Less than 50 percent of the ground surface is protected by plant cover or brush and tree canopy.
   Fair-Moderate cover with 50 percent to 75 percent of the ground surface protected.
   Good-Heavy or dense cover with more than 75 percent of the ground surface protected.

3. See Plate C-2 for a detailed description of cover types.

4. Use runoff index numbers based on ground cover type. See discussion under "Cover Type Descriptions" on Plate C-2.

5. Reference Bibliography item 17.

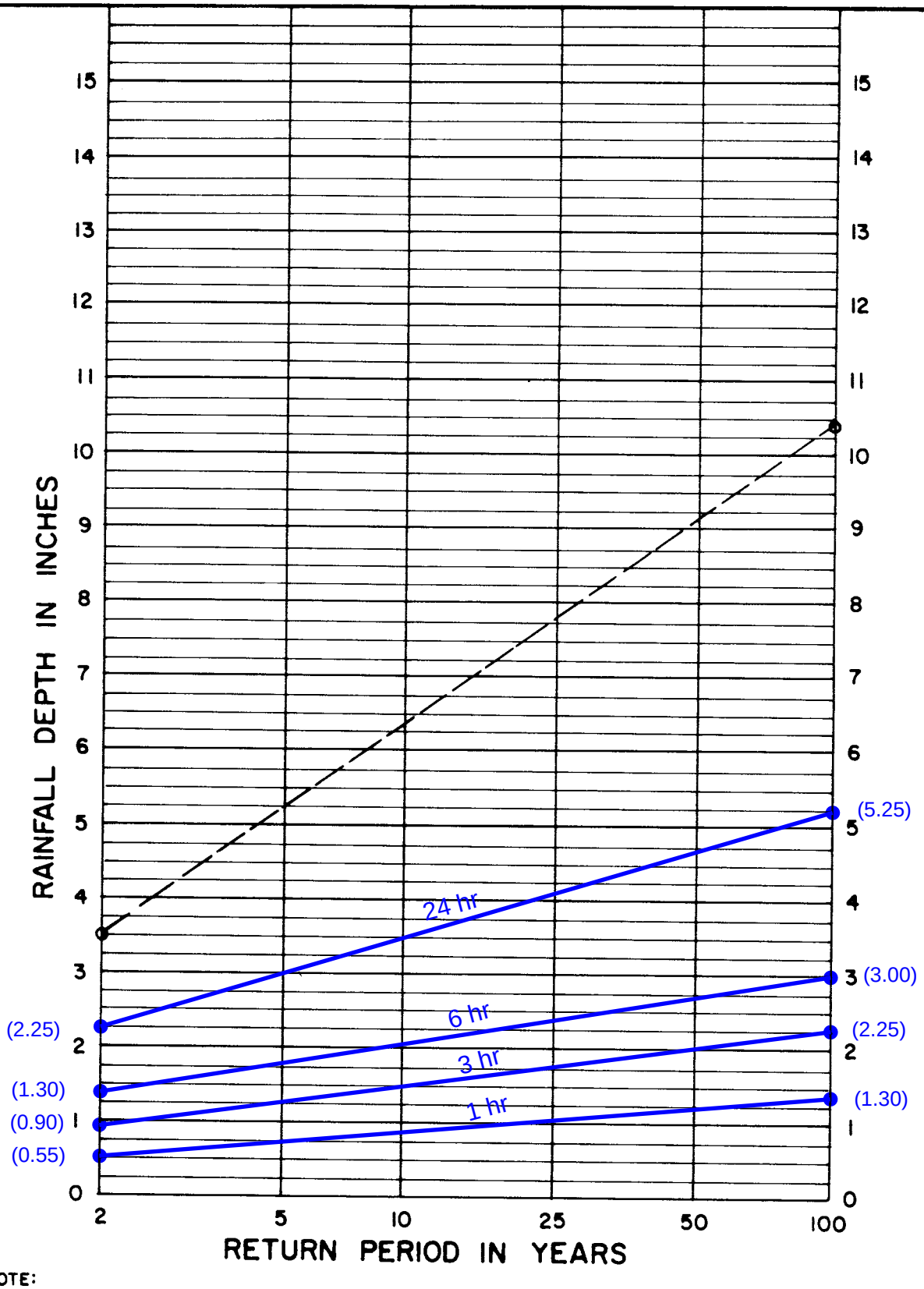
RAINFALL INTENSITY–INCHES PER HOUR

MIRA LOMA			MURRIETA – TEMECULA & RANCHO CALIFORNIA			NORCO			PALM SPRINGS			PERRIS VALLEY		
DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY		DURATION MINUTES	FREQUENCY	
	10 YEAR	100 YEAR		10 YEAR	100 YEAR		10 YEAR	100 YEAR		10 YEAR	100 YEAR		10 YEAR	100 YEAR
5	2.84	4.48	5	3.45	5.10	5	2.77	4.16	5	4.23	6.76	5	2.64	3.
6	2.58	4.07	6	3.12	4.61	6	2.53	3.79	6	3.80	6.08	6	2.41	3.
7	2.37	3.75	7	2.87	4.24	7	2.34	3.51	7	3.48	5.56	7	2.24	3.
8	2.21	3.49	8	2.67	3.94	8	2.19	3.29	8	3.22	5.15	8	2.09	3.
9	2.08	3.28	9	2.50	3.69	9	2.07	3.10	9	3.01	4.81	9	1.98	2.
10	1.96	3.10	10	2.36	3.48	10	1.96	2.94	10	2.83	4.52	10	1.88	2.
11	1.87	2.95	11	2.24	3.30	11	1.87	2.80	11	2.67	4.28	11	1.79	2.
12	1.78	2.82	12	2.13	3.15	12	1.79	2.68	12	2.54	4.07	12	1.72	2.
13	1.71	2.70	13	2.04	3.01	13	1.72	2.58	13	2.43	3.88	13	1.65	2.
14	1.64	2.60	14	1.96	2.89	14	1.66	2.48	14	2.33	3.72	14	1.59	2.
15	1.58	2.50	15	1.89	2.79	15	1.60	2.40	15	2.23	3.58	15	1.54	2.
16	1.53	2.42	16	1.82	2.69	16	1.55	2.32	16	2.15	3.44	16	1.49	2.
17	1.48	2.34	17	1.76	2.60	17	1.50	2.25	17	2.08	3.32	17	1.45	2.
18	1.44	2.27	18	1.71	2.52	18	1.46	2.19	18	2.01	3.22	18	1.41	2.
19	1.40	2.21	19	1.66	2.45	19	1.42	2.13	19	1.95	3.12	19	1.37	1.
20	1.36	2.15	20	1.61	2.38	20	1.39	2.08	20	1.89	3.03	20	1.34	1.
22	1.29	2.04	22	1.53	2.26	22	1.32	1.98	22	1.79	2.86	22	1.28	1.
24	1.24	1.95	24	1.46	2.15	24	1.26	1.90	24	1.70	2.72	24	1.22	1.
26	1.18	1.87	26	1.39	2.06	26	1.22	1.82	26	1.62	2.60	26	1.18	1.
28	1.14	1.80	28	1.34	1.98	28	1.17	1.76	28	1.56	2.49	28	1.13	1.
30	1.10	1.73	30	1.29	1.90	30	1.13	1.70	30	1.49	2.39	30	1.10	1.
32	1.06	1.67	32	1.24	1.84	32	1.10	1.64	32	1.44	2.30	32	1.06	1.
34	1.03	1.62	34	1.20	1.78	34	1.06	1.59	34	1.39	2.22	34	1.03	1.
36	1.00	1.57	36	1.17	1.72	36	1.03	1.55	36	1.34	2.15	36	1.00	1.
38	.97	1.53	38	1.13	1.67	38	1.01	1.51	38	1.30	2.09	38	.98	1.
40	.94	1.49	40	1.10	1.62	40	.98	1.47	40	1.27	2.02	40	.95	1.
45	.89	1.40	45	1.03	1.52	45	.92	1.39	45	1.18	1.89	45	.90	1.
50	.84	1.32	50	.97	1.44	50	.88	1.31	50	1.11	1.78	50	.85	1.
55	.80	1.26	55	.92	1.36	55	.84	1.25	55	1.05	1.68	55	.81	1.
60	.76	1.20	60	.88	1.30	60	.80	1.20	60	1.00	1.60	60	.78	1.
65	.73	1.15	65	.84	1.24	65	.77	1.15	65	.95	1.53	65	.75	1.
70	.70	1.11	70	.81	1.19	70	.74	1.11	70	.91	1.46	70	.72	1.
75	.68	1.07	75	.78	1.15	75	.72	1.07	75	.88	1.41	75	.70	1.
80	.65	1.03	80	.75	1.11	80	.69	1.04	80	.85	1.35	80	.68	.9
85	.63	1.00	85	.73	1.07	85	.67	1.01	85	.82	1.31	85	.66	.9
SLOPE = .530			SLOPE = .550			SLOPE = .500			SLOPE = .580			SLOPE = .490		

RCFC & WCD
HYDROLOGY MANUAL

STANDARD
INTENSITY–DURATION
CURVES DATA

PLATE D-4.1(4 of 6)



NOTE:

1. For intermediate return periods plot 2-year and 100-year values from maps for a specific duration, then connect points and read value for desired return period. For example given 2-year 24-hour = 3.50" and 100-year 24-hour = 10.40", 25-year 24-hour = 7.80"

Reference: NOAA Atlas 2, Volume XI - California, 1973.

RCFC & WCD

HYDROLOGY MANUAL

RAINFALL DEPTH VERSUS RETURN PERIOD FOR PARTIAL DURATION SERIES

PLATE E-5.7

APPENDIX F

Catch Basin Analysis

Nutmeg Apartments
Grate Inlet Analysis
100 Year Storm Event

Catch Basin Node #	Clogging %	Catch Basin Length ft	Catch Basin Width ft	Actual Perimeter ft	Effective Perimeter ft	Q_{100} cfs	Q/P cfs/ft	Head ft
A-1	50%	2.00	2.00	8.00	4.00	0.54	0.14	0.13
A-2	50%	2.00	2.00	8.00	4.00	0.63	0.16	0.14
A-3	50%	2.00	2.00	8.00	4.00	0.63	0.16	0.14
A-4	50%	2.00	2.00	8.00	4.00	0.63	0.16	0.14
A-5	50%	2.00	2.00	8.00	4.00	1.90	0.48	0.29
A-6	50%	2.00	2.00	8.00	4.00	0.68	0.17	0.15
A-7	50%	2.00	2.00	8.00	4.00	1.04	0.26	0.20
A-8	50%	2.00	2.00	8.00	4.00	0.90	0.23	0.18
A-9	50%	1.00	1.00	4.00	2.00	2.12	1.06	0.50
A-10	50%	1.00	1.00	4.00	2.00	1.35	0.68	0.37
A-11	50%	1.00	1.00	4.00	2.00	0.72	0.36	0.24
A-12	50%	1.00	1.00	4.00	2.00	0.50	0.25	0.19
A-13	50%	2.00	2.00	8.00	4.00	0.81	0.20	0.17
A-14	50%	3.00	3.00	12.00	6.00	2.48	0.41	0.27
B-1	50%	2.00	2.00	8.00	4.00	2.12	0.53	0.31
B-2	50%	2.00	2.00	8.00	4.00	1.17	0.29	0.21
B-3	50%	2.00	2.00	8.00	4.00	1.13	0.28	0.21
B-4	50%	2.00	2.00	8.00	4.00	0.86	0.22	0.17
B-5	50%	1.00	1.00	4.00	2.00	1.39	0.70	0.38
B-6	50%	2.00	2.00	8.00	4.00	0.77	0.19	0.16
B-7	50%	2.00	2.00	8.00	4.00	0.81	0.20	0.17
B-8	50%	3.50	3.00	13.00	6.50	1.42	0.22	0.17
B-9	50%	2.00	2.00	8.00	4.00	1.89	0.47	0.29
B-10	50%	2.00	2.00	8.00	4.00	1.31	0.33	0.23
B-11	50%	3.00	3.00	12.00	6.00	3.66	0.61	0.35
C-1	50%	2.00	2.00	8.00	4.00	2.24	0.56	0.33
C-2	50%	3.00	3.50	13.00	6.50	0.50	0.08	0.09
C-3	50%	2.00	2.00	8.00	4.00	0.63	0.16	0.14
C-4	50%	2.00	2.00	8.00	4.00	1.51	0.38	0.25
C-5	50%	2.00	2.00	8.00	4.00	1.35	0.34	0.23
C-6	50%	3.00	3.00	12.00	6.00	1.04	0.17	0.15
C-7	50%	3.00	3.00	12.00	6.00	6.24	1.04	0.49
C-9	50%	3.00	3.00	12.00	6.00	1.62	0.27	0.20
C-10	50%	2.00	2.00	8.00	4.00	3.11	0.78	0.41
C-11	50%	2.00	2.00	8.00	4.00	2.53	0.63	0.35
C-12	50%	2.00	2.00	8.00	4.00	0.77	0.19	0.16
C-13	50%	2.00	2.00	8.00	4.00	0.81	0.20	0.17
C-14	50%	2.00	2.00	8.00	4.00	1.08	0.27	0.20
C-15	50%	3.50	3.00	13.00	6.50	1.44	0.22	0.18
C-16	50%	2.00	2.00	8.00	4.00	1.88	0.47	0.29
C-17	50%	2.00	2.00	8.00	4.00	1.35	0.34	0.23
C-18	50%	2.00	2.00	8.00	4.00	4.53	1.13	0.52

Reference: Bureau of Public Roads "Capacity of Grate Inlet in Sump"