Spook Hill ADMP Update

Flood Control District of Maricopa County

Appendix A
Volume 2

SCS TR-20 Hydrology Analysis

Wood, Patel & Associates, Inc.
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Registered Professional Engineer (Civil)
CERTIFICATE NO.
28615
RICHARD L.
HINER
Date Signed 7-20-99
ARIZONA U.S.A.

Spook Hill Area Drainage Master Plan Update

Flood Control District of Maricopa County

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Registered Professional Engineer (Civil)
Certificate No. 28615
RICHARD L. HINER
Date Signed 9-20-07
ARIZONA U.S.A.

USDA

United States
Department of
Agriculture

Natural
Resources
Conservation
Service

3003 N. Central Ave.
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85012

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AUG - 1 2001
WOOD / PATEL

July 30, 2001

Mr. Richard L. Hiner, P.E.
WOOD/PATEL – Project Manager
2051 West Northern, Suite 100
Phoenix, Arizona 85021

Subject: Spook Hill FRS & Signal Butte FRS
Recreation of the Original SCS TR-20 Design Models and Comparison with HEC-1.

Dear Mr. Hiner

Thank you for allowing NRCS to participate in the review the attempt recreation of the Original SCS TR-20 design models of the Spook Hill FRS & Signal Butte FRS.

NRCS approves the recreation of the Original SCS TR-20 design models.

For justifications, What is the relationship between this study and the study developing by Daniel, Mann, Johnson, & Mendenhall (DMJM)+ Harris of the hydrology for the Spook Hill Floodwater Retarding Structure (FRS)?

If you have any questions, please contact me at (602) 280-8832.

Sincerely,

Q. D. Quan

QUAN D. QUAN
State Hydraulic Engineer

cc: w/o encl.
Noller Herbert, State Conservation Engineer, NRCS, Phoenix, Arizona

WP# 99989

SPOOK HILL AREA DRAINAGE MASTER PLAN

WOOD/PATEL FAX MEMO/TRANSMITTAL

SPOOK HILL ADMP

TO:

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FROM: □ Ashok Patel ■ Rick Hiner

DATE: 11/2/00

WE ARE SENDING YOU THE ATTACHED □ VIA FAX □ VIA MAIL □ VIA HAND DELIVERY

Copies	Date	Description
1	11-1-2000	TR-20 Analysis Report

THESE ARE TRANSMITTED as checked below:

□ For approval □ Approved as submitted □ Approved as noted
□ For your use □ As requested □ For review and comment

Remarks:

Afshin,

Please give this report to Joe Rumann for his review.

Thank you,

Rick H.

WOOD/PATEL

CIVIL ENGINEERS • HYDROLOGISTS • LAND SURVEYORS

Darrel E. Wood, P.E., R.L.S.
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November 1, 2000

Mr. Afshin Ahouraiyan
Project Manager
Flood Control District of Maricopa County
2801 West Durango Avenue
Phoenix, Arizona 85009

RE: Spook Hill ADMP – Optional Item 2.2.9
FCD Contract No. 99-43
Recreation of the Original SCS TR-20 Design Models and Comparison with HEC-1.

Introduction:

During the Level I Analysis portion of the Spook Hill ADMP Update Project, several alternatives were developed which modified the uncontrolled contributing area of the Spook Hill FRS & Signal Butte FRS watersheds. As a result, the existing distribution of flood routing between these FRS structures was altered. According to the HEC-1 hydrologic models developed in conjunction with the Spook Hill ADMP Update, these alternatives functioned properly and did not jeopardize the proper operation of the Buckhorn-Mesa FRS system. However, a cursory comparison of the HEC-1 model to the original TR-20 design model revealed that the HEC-1 model produced lower runoff volumes than the original TR-20 model. In September 2000, the Flood Control District of Maricopa County (District) requested that Wood, Patel & Associates, Inc. attempt to recreate the original TR-20 design models in order to establish a baseline for evaluating issues related to dam safety. This intent of this report is to document these efforts.

Background/History:

Technical Release No. 20: Computer Program for Project Formulation Hydrology (TR-20) is a physically based, watershed runoff event model that computes direct runoff and develops hydrographs resulting from any synthetic or natural rainstorm. The Hydrology Branch of the SCS (forerunner of the NRCS), in cooperation with the Hydrology Laboratory (ARS), developed the original FORTRAN code for the TR-20 computer program through a contract with C-E-I-R, Inc. in 1964.

The original version ran on an IBM 1620 mainframe computer. The SCS made numerous modifications over the years and, in 1986, released a version of the program for the PC that included a draft User Manual. Further revisions to both the program and the User Manual have resulted in version 2.04 and a 1992 draft User Manual. The 1992 PC version of the program has been used for the recreated model with appropriate adjustments made to closely mimic the results in the original output data.

Datum:
The original project design based all of their elevations on the NAD '27 Vertical datum; however, the new topographic information is based on the NAD '88 vertical datum, which is approximately 1.86 feet higher in elevation. Therefore, the spillway elevation at the Signal Butte FRS was 1712.4 ft. in the original survey vs. 1714.26 ft. in the new topographic survey. The elevations in the new stage-storage-discharge curves (used in the "actual storage" model) were adjusted to match the original NAD '27 datum.

Original Design SCS TR-20 Model vs. Recreated Design TR-20 Model:

Input Data:
CTABLE – The original mainframe TR-20 model used the "Convex" method for stormwater routing (which, due to program limitations, utilized a constant velocity for the channel routing regardless of the magnitude of the discharge). When the PC version of TR-20 was released, the convex method was omitted and a new method was introduced that computed the channel routing velocity based on the magnitude of the discharge. Therefore, the CTABLE was not included in the recreated input file. For the purpose of the recreated TR-20 model, elevation-discharge-area information was created for cross sections 102 and 103 to approximate the routing velocity used by the convex routing method in the original model.

Structure 3 – When the concept for the Pass Mountain structure was originally developed, it was intended to be an FRS structure much like the Signal Butte FRS to the south. The design was later changed to be a diversion structure and, although the Standard Control Data section of the TR-20 design model was updated to reflect the diversion, the stage-storage-discharge data was not removed from the input deck. In the recreated model, this data was not included since it was not used in computations.

Output Data:
Runoff Volume – The original TR-20 program (released in 1963) was designed to run on a mainframe computer and, due to program limitations, the hydrographs were limited to 200 ordinates. Unfortunately, given the 0.2-hour time interval utilized in the original TR-20 model, the original hydrograph duration was limited to 40 hours. When the PC version of TR-20 was released in 1986, the number of hydrograph ordinates had been increased to 400. Therefore, the recreated TR-20 model has a hydrograph duration of 80 hours, twice that of the original model, which, in some cases, resulted in an increased runoff volume from the watershed (because of much longer duration allocated for and routed through the FRS).

Peak Discharge – The peak discharge difference observed in the recreated TR-20 model was due to a slight difference in the routing time for reaches 102 and 103. This has been resolved by an adjustment to the cross-section table in the input file

of the recreated model. The original model used the convex routing method, which is unavailable in the PC version of the TR-20 program. Therefore, the routing was done using current methods but was calibrated to reproduce the original routing time and velocity.

TR-20 Model Names & Descriptions:
The output data from the recreated model matches very closely with the original output data (within ±1%) with the exception of the hydrograph volume difference explained above. This gives us a high degree of confidence in the results of the recreated model.

Numerous TR-20 models were created and included in this report and they are described as follows:

1. **SBTR-20.dat** This is a recreation of the original design file for the Signal Butte FRS and includes the Pass Mountain Diversion and the Apache Junction FRS. The model was duplicated using available data from the SCS design documents. The PSH, ESH, & FBH events are included in this model.

2. **SBTR20v.dat** Same as SBTR-20.dat except the time interval has been increased to 0.5 hours in order to adequately model the entire hydrograph volume.

3. **SBTR20T.dat** 100-year, 10-day model with original design stage-storage curves. 100-year rainfall adjusted to 7.02 inches and curve numbers adjusted for 10-day duration according to NEH-4, Table 21.2.

4. **SBTR-20b.dat** Same as SBTR-20.dat except that the Stage-Storage-Elevation information for the Signal Butte FRS and Apache Junction FRS has been updated to reflect actual current conditions based on recent topographic survey information. The datum difference between NAD27 and NAD88 necessitated that the new topographic data be adjusted to match the original topography used in the design model.

5. **SBTR20bv.dat** Same as SBTR-20b.dat except the time interval has been increased to 0.5 hours in order to adequately model the entire hydrograph volume.

6. **SBTR20bT.dat** 100-year, 10-day model with new stage-storage curves based on recent topographic mapping information. 100-year rainfall adjusted to 7.02 inches and curve numbers adjusted for 10-day duration according to NEH-4 Table 21.2.

7. **SBT20bP2.dat** Original condition 24-hour PSH, ESH, & FBH model with updated stage-storage curves and the Signal Butte FRS principal spillway outflow curve doubled.

8. **SBT20bP4.dat** Original condition 24-hour PSH, ESH, & FBH model with updated stage-storage curves and the Signal Butte FRS principal spillway outflow curve quadrupled.

9. **SBT2bTP2.dat** Actual Stage-Storage curves, 100-year 10-day rainfall, Signal Butte FRS principal spillway outflow curve doubled.

10. **SBT2bTP4.dat** Actual Stage-Storage curves, 100-year 10-day rainfall, Signal Butte FRS principal spillway outflow curve quadrupled.

11. **SBTR-20c.dat** Same as SBTR-20b.dat except that the Pass Mountain Diversion alternative from the Spook Hill ADMP Update (Level I) has been added to the model (the Signal Butte FRS contributing area increased by 3.28 square miles). The Signal Butte FRS principal spillway outfall curve has not been changed.

12. **SBTR20cv.dat** Same as SBTR-20c.dat except the time interval has been increased to 0.5 hours in order to adequately model the entire hydrograph volume.

13. **SBTR20cT.dat** 100-year, 10-day model with new stage-storage curves based on recent topographic mapping information and the Pass Mountain Diversion alternative added to the model. 100-year rainfall adjusted to 7.02 inches and curve numbers adjusted for 10-day duration according to NEH-4 Table 21.2.

14. **SBT20cP2.dat** Actual Stage-Storage curves, 100-year 10-day rainfall, Signal Butte FRS principal spillway outflow curve doubled.

15. **SBT20cP4.dat** Actual Stage-Storage curves, 100-year 10-day rainfall, Signal Butte FRS principal spillway outflow curve quadrupled.

16. **SBT2cTP2.dat** Actual Stage-Storage curves, 100-year 10-day rainfall, Signal Butte FRS principal spillway outflow curve doubled, Pass Mountain Diversion option in place.

17. **SBT2cTP4.dat** Actual Stage-Storage curves, 100-year 10-day rainfall, Signal Butte FRS principal spillway outflow curve quadrupled, Pass Mountain Diversion option in place.

Modeling Results:

Actual Storage:
The first step in the flood control alternative modeling was to update the recreated model with the stage-storage curves from the new survey information. The immediate effect was a lowering of the maximum stage and discharge at both the Apache Junction FRS and the Signal Butte FRS. This served to verify that there may be additional storage available in the Signal Butte FRS.

Recreated Original TR-20 Model vs. TR-20 Model w/Pass Mountain Diversion Extension:
During the Level I Alternative Development phase of the project, new topographic survey information was obtained that revealed additional storage behind the Signal Butte FRS, over and above the storage used in the original design calculations. An alternative was developed to capture some of the runoff from the controlled watershed of the Spook Hill FRS and divert it into the Signal Butte FRS, thus reducing the peak stage behind the Spook Hill FRS and decreasing the severity of flooding in the upper developed portions of the Spook Hill FRS watershed. This alternative was modeled and shown to work in HEC-1 but the project team felt that it was important to demonstrate that it worked using the original TR-20 design methodology.

The baseline model for this comparison is the recreated original TR-20 model. It was compared to a model that included the actual storage behind the FRS structures, and included the Pass Mountain Diversion Extension alternative developed in Level I. The results demonstrated that the alternative produced a lower water surface elevation for the principle spillway hydrograph (100-year) event and the freeboard hydrograph event but, in the emergency spillway hydrograph event, the water surface elevation was 0.59 ft. higher than the recreated original model.

Two additional models were created with the principal spillway discharge curve doubled in the first model and quadrupled in the second model. The intent was to see if allowing more water to escape at the principle spillway outfall would lower the water surface elevation behind the FRS sufficiently to allow the emergency spillway hydrograph to work with the additional flow from the Pass Mountain Diversion Extension. The results showed the expected decrease in the water surface elevation in all events, however, in the emergency spillway hydrograph event the water surface elevation was still 0.44 ft. and 0.13 ft. higher in the doubled and quadrupled outflow models respectively.

The results would indicate that the Pass Mountain Diversion is a very workable alternative if some additional design effort is directed towards refining the concept.

Existing Conditions HEC-1 Model vs. Recreated TR-20 Model:
When the results of the HEC-1 model are compared with the results of the recreated TR-20 model, it is apparent that there are significant differences in some of the output values. Most notably, the runoff volumes in the HEC-1 model are lower than in the TR-20 model. This appears to be due to the differences between the runoff calculated using the SCS Curve Number methodology used in TR-20 and the runoff calculated using the Green-Ampt methodology used in HEC-1. Another apparent difference is in the maximum stage documented in the design report at the Apache Junction FRS and Signal Butte FRS. This is a secondary result of the significant differences in runoff volume generated by the two models.

The models were compared to determine the differences that may be causing the disparity in runoff volume. Note some key hydrologic parameters considered in these models:

1. The 100-year rainfall of 3.94 inches was the same in both the TR-20 and HEC-1 models.
2. The SCS Type II rainfall distribution was used in both models.
3. The JD records were removed from the HEC-1 model so that none of the models used an aerial reduction factor.
4. The TR-20 model used the SCS Curve Number method to determine runoff while the HEC-1 model used Green-Ampt methodology.
5. The TR-20 model uses the SCS method to determine the time-of-concentration while the HEC-1 model uses the Clark unit hydrograph method.
6. The TR-20 models use 400 hydrograph ordinates and a time interval of 0.2 hours (12 minutes), which yields in a hydrograph duration of 80 hours. The HEC-1 models use 2000 hydrograph ordinates and a time interval of 2 minutes, which yields a hydrograph duration of 66.7 hours.
7. The original TR-20 model used the "convex" routing method that used a constant velocity for the routing reach regardless of the magnitude of the discharge. The HEC-1 model uses a routing method that computes the routing velocity based on the cross section of the routing reach and the magnitude of the discharge.

Since the first three items are the same in both models, they were eliminated as possible causes. Items 4 and 5, however, are very likely to be the primary causes and items 6 and 7 the secondary causes of the differences in the modeling results. The Green-Ampt methodology, for example, seems to

provide more opportunities for runoff losses than the Curve Number methodology causing a disparity in the volume calculations. The differences in the time of concentration would result in a disparity in the peak discharge values but should not affect the volume of runoff.

Conclusion & Recommendations:
Wood/Patel is very satisfied with the accuracy of the recreated TR-20 model and is confidant that we now have a reliable baseline from which to compare alternatives to the original intended design.

Based on the TR-20 analysis, Wood/Patel has concluded that the Pass Mountain Diversion extension is a viable option that should be pursued further in the Level II Analysis phase. Due to the increase in actual storage available at the Apache Junction FRS and Signal Butte FRS, the Signal Butte FRS seems capable of taking the additional runoff volume resulting from the diversion. It is recommended that, in the Level II Analysis phase and, especially in the Level III Analysis phase, any alternatives which incorporate the Pass Mountain Diversion extension should be modeled in TR-20 to insure that they are not having a negative impact on the flood retarding structures.

Wood/Patel was also asked to compare the TR-20 model results to the HEC-1 model results and attempt to explain the differences in output values between the two programs. We concluded that the switch from the TR-20 model's SCS Curve Number methodology to the HEC-1 model's Green-Ampt methodology resulted in significant differences in the runoff volume produced by the 100-year storm event. This runoff volume is the most critical factor in the performance of the flood retarding structures and, as such, the TR-20 model is recommended as the baseline model for all analyses that are connected with the performance of the flood retarding structures, while the HEC-1 model should be used to design the internal flood control system.

Sincerely,

WOOD, PATEL & ASSOCIATES, INC.

Richard L. Hiner, P.E.
Project Engineer/Manager

Registered Professional Engineer (Civil)
CERTIFICATE NO.
28615
RICHARD L.
HINER
Date Signed 11-1-00
ARIZONA U.S.A.

RLH/jmb

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WOOD/PATEL

CIVIL ENGINEERS • HYDROLOGISTS • LAND SURVEYORS

Darrel E. Wood, P.E., R.L.S.
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Jason Engelhardt, P.E.
Joseph C. Daconta, P.E.
Maher Hazine, P.E.

October 18, 2000

Mr. Afshin Ahouriayan
Project Manager
Flood Control District of Maricopa County
2801 West Durango
Phoenix, AZ 85009

Re: **Spook Hill ADMP Update – Response to TR-20 Comments**
FCD Contract No. 99-43
WP #99989

Dear Afshin:

Wood/Patel has reviewed the comments on the TR-20 analysis and we are pleased to offer the following responses:

Comment #1: *"Page 2 and 3 have values for Apache Junction FRS that are identical even though one analysis represents actual storage, and the other represents double PS outflow. This may explain why the outflow is not doubled in that table (page 3 of 4, dated 9/21)."*

Response #1: It was never the intent of this analysis to double the principal spillway outflow from the Apache Junction FRS and the data column should have been labeled differently in order to make that more clear. The only modifications to the principal spillway outflow curve were at the Signal Butte FRS and this modification would have no effect at the Apache Junction FRS. The tables will be modified to remove the duplicate data for the Apache Junction FRS to avoid further confusion.

Comment #2: *"The recreated model for the Apache Junction FRS PSH shows a peak storage of 601.8. If the inflow is the same, how did the storage increase?"*

Response #2: The original peak storage at the maximum stage of 1799.60 ft was 455.6 acre-feet. The maximum stage using the actual storage volume (from the new topographic survey) is 1799.08, which, on the new stage-storage curve, corresponds to a peak storage volume of 510.1 acre-feet (the volume of 601.8 acre-feet appears to have been an error). The 54.5 acre-foot increase in storage occurred because the new topographic data shows over 100 acre-feet of additional storage available below the principal spillway elevation. This allows the storage of a larger volume of water at a lower elevation than had been originally modeled. Refer to the attached graphs for an illustration of the differences in the stage-storage curves.

Comment #3: *"It appears that the discharge/stage/volume relationship for the structures need to be refined since the peak outflow is greater than expected below the spillway elevation for the structures. If possible please insert another point in the discharge/stage/volume table in the model to reflect conditions at the spillway elevation."*

Response #3: The stage-storage-discharge curve in the recreated model was reproduced exactly as it was in the original design model. We did not have access to the original design calculations for the principal spillway and were unable to verify the methodology or assumptions used to develop the design discharge curve. The design team then agreed that no modifications to the stage-discharge relationship would be made in any of the models. The stage-storage relationship was modified based on the new topographic survey information because it was a physical feature and was unrelated to a design methodology.

Comment #4: *"Please include units associated with values in the summary tables."*

Response #4: The tables will be modified to include units with each of the values.

Comment #5: *"I noticed the HEC-1 model 100-year peak flows for the Apache Junction and Signal Butte FRS's are significantly larger than the TR-20 results. This would indicate that perhaps there is not as much available storage as perceived."*

Response #5: The TR-20 and HEC-1 computer programs utilize different methods for computing the time-of-concentration (unit hydrograph vs. Clark unit hydrograph) and, since a change in the time-of-concentration can dramatically impact the peak discharge, and the results from the two programs are often quite different. It should be noted, however, that this difference in peak discharge does not necessarily affect volume of runoff from the watershed.

When the results of the HEC-1 model are compared with the results of the recreated TR-20 model, it is apparent that there are significant differences in some of the output values. Most notably, the runoff volumes in the HEC-1 model are lower than in the TR-20 model. This appears to be due to the differences between the runoff calculated using the SCS Curve Number methodology used in TR-20 and the runoff calculated using the Green-Ampt methodology used in HEC-1. Another apparent difference is in the maximum stage documented in the design report at the Apache Junction FRS and Signal Butte FRS. This is a secondary result of the significant differences in runoff volume generated by the two models.

The models were compared to determine the differences that may be causing the disparity in runoff volume. Note some key hydrologic parameters considered in these models:

1. The 100-year rainfall of 3.94 inches was the same in both the TR-20 and HEC-1 models.
2. The SCS Type II rainfall distribution was used in both models.
3. The JD records were removed from the HEC-1 model so that none of the models used an aerial reduction factor.
4. The TR-20 model used the SCS Curve Number method to determine runoff while the HEC-1 model used Green-Ampt methodology.
5. The TR-20 model uses the SCS method to determine the time-of-concentration while the HEC-1 model uses the Clark unit hydrograph method.

6. The TR-20 models use 400 hydrograph ordinates and a time interval of 0.2 hours (12 minutes), which yields in a hydrograph duration of 80 hours. The HEC-1 models use 2000 hydrograph ordinates and a time interval of 2 minutes, which yields a hydrograph duration of 66.7 hours.
7. The original TR-20 model used the "convex" routing method that used a constant velocity for the routing reach regardless of the magnitude of the discharge. The HEC-1 model uses a routing method that computes the routing velocity based on the cross section of the routing reach and the magnitude of the discharge.

Since the first three items are the same in both models, they were eliminated as possible causes. Items 4 and 5, however, are very likely to be the primary causes and items 6 and 7 the secondary causes of the differences in the modeling results. The Green-Ampt methodology, for example, seems to provide more opportunities for runoff losses than the Curve Number methodology causing a disparity in the volume calculations. The differences in the time of concentration would result in a disparity in the peak discharge values but should not affect the volume of runoff.

If you have any further questions, please do not hesitate to ask and I will answer them as quickly as possible.

Sincerely

WOOD, PATEL & ASSOCIATES, INC.

Richard Hiner, P.E.
Project Engineer/Manager

RH/jmb

cc: Joe Rumann, FCDMC
Joe Tram, FCDMC
Amir Motamedi, FCDMC
Tom Renckly, FCDMC
Ash Patel, Wood/Patel

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TR-20 Output Comparison

Apache Junction FRS

	Emerg. Spillway Crest = 1799.77 ft Top of Dam = 1810.77 ft	Original SCS Data	Recreated Original Model	Difference
PSH	Maximum Stage (ft)	1799.59 ft	1799.60 ft	0.01 ft
	Peak Inflow (cfs)	3115.8	3125.4	0.308%
	Inflow Volume (ac-ft)	622.6	623.4	0.128%
	Peak Storage (ac-ft)	455.6	455.6	0.000%
	Peak Outflow (cfs)	230.0	230.9	0.391%
10-day PSH	Maximum Stage (ft)	N/A	1799.86 ft	
	Peak Inflow (cfs)	N/A	2412.3	
	Inflow Volume (ac-ft)	N/A	968.5	
	Peak Storage (ac-ft)	N/A	484.6	
	Peak Outflow (cfs)	N/A	410.5	
ESH	Maximum Stage (ft)	1801.77 ft	1801.78 ft	0.01 ft
	Peak Inflow (cfs)	2923.0	2929.7	0.229%
	Inflow Volume (ac-ft)	1511.9	1513.4	0.099%
	Peak Storage (ac-ft)	691.5	691.5	0.000%
	Peak Outflow (cfs)	1794.1	1798.8	0.262%
FBH	Maximum Stage (ft)	1803.89 ft	1803.90 ft	0.01 ft
	Peak Inflow (cfs)	8079.3	8106.6	0.338%
	Inflow Volume (ac-ft)	4246.8	4250.8	0.094%
	Peak Storage (ac-ft)	1004.2	1002.8	(0.139%)
	Peak Outflow (cfs)	7419.6	7440.7	0.284%

Apache Junction FRS

	Emerg. Spillway Crest = 1799.77 ft Top of Dam = 1810.77 ft	Recreated Original Model	Recreated Model w/Actual Storage	Difference
PSH	Maximum Stage (ft)	1799.60 ft	1799.08 ft	(0.52 ft)
	Peak Inflow (cfs)	3125.4	3125.4	0.000%
	Inflow Volume (ac-ft)	623.4	623.4	0.000%
	Peak Storage (ac-ft)	455.6	601.8	32.090%
	Peak Outflow (cfs)	230.9	112.2	(51.408%)
10-day PSH	Maximum Stage (ft)	1799.86 ft	1799.53 ft	(0.33 ft)
	Peak Inflow (cfs)	2412.3	2412.3	0.000%
	Inflow Volume (ac-ft)	968.5	968.5	0.000%
	Peak Storage (ac-ft)	484.6	650.2	34.173%
	Peak Outflow (cfs)	410.5	186.8	(54.495%)
ESH	Maximum Stage (ft)	1801.78 ft	1801.48 ft	(0.30 ft)
	Peak Inflow (cfs)	2929.7	2929.7	0.000%
	Inflow Volume (ac-ft)	1513.4	1513.4	0.000%
	Peak Storage (ac-ft)	691.5	878.1	26.985%
	Peak Outflow (cfs)	1798.8	1490.3	(17.150%)
FBH	Maximum Stage (ft)	1803.90 ft	1803.90 ft	0.00 ft
	Peak Inflow (cfs)	8106.6	8106.6	0.000%
	Inflow Volume (ac-ft)	4250.8	4250.8	0.000%
	Peak Storage (ac-ft)	1002.8	1199.4	19.605%
	Peak Outflow (cfs)	7440.7	7422.8	(0.241%)

TR-20 Output Comparison

Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Original SCS Data	Recreated Original Model	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1712.61 ft	0.00 ft
	Peak Inflow (cfs)	8164.1	8209.2	0.552%
	Inflow Volume (ac-ft)	1581.9	1703.8	7.706%
	Peak Storage (ac-ft)	1391.6	1391.6	0.000%
	Peak Outflow (cfs)	157.9	158.4	0.317%
10-day PSH	Maximum Stage (ft)	N/A	1713.17 ft	
	Peak Inflow (cfs)	N/A	4577.8	
	Inflow Volume (ac-ft)	N/A	2667.2	
	Peak Storage (ac-ft)	N/A	1479.6	
	Peak Outflow (cfs)	N/A	303.5	
ESH	Maximum Stage (ft)	1716.20 ft	1716.20 ft	0.00 ft
	Peak Inflow (cfs)	5492.7	5488.5	(0.076%)
	Inflow Volume (ac-ft)	3192.7	3320.1	3.990%
	Peak Storage (ac-ft)	1944.9	1944.9	0.000%
	Peak Outflow (cfs)	2184.2	2188.0	0.174%
FBH	Maximum Stage (ft)	1722.51 ft	1722.52 ft	0.01 ft
	Peak Inflow (cfs)	14371.0	14360.9	(0.070%)
	Inflow Volume (ac-ft)	7930.1	8066.8	1.724%
	Peak Storage (ac-ft)	3146.8	3146.8	0.000%
	Peak Outflow (cfs)	10237.2	10247.2	0.098%

Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Recreated Original Model	Recreated Model w/Actual Storage	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1710.15 ft	(2.46 ft)
	Peak Inflow (cfs)	8209.2	8209.2	0.000%
	Inflow Volume (ac-ft)	1703.8	1703.3	(0.029%)
	Peak Storage (ac-ft)	1391.6	1120.1	(19.510%)
	Peak Outflow (cfs)	158.4	146.4	(7.576%)
10-day PSH	Maximum Stage (ft)	1713.17 ft	1712.45 ft	(0.72 ft)
	Peak Inflow (cfs)	4577.8	4571.2	(0.144%)
	Inflow Volume (ac-ft)	2667.2	2655.0	(0.457%)
	Peak Storage (ac-ft)	1479.6	1425.0	(3.690%)
	Peak Outflow (cfs)	303.5	154.8	(48.995%)
ESH	Maximum Stage (ft)	1716.20 ft	1715.47 ft	(0.73 ft)
	Peak Inflow (cfs)	5488.5	5488.5	0.000%
	Inflow Volume (ac-ft)	3320.1	3320.1	0.000%
	Peak Storage (ac-ft)	1944.9	1891.5	(2.746%)
	Peak Outflow (cfs)	2188.0	1551.0	(29.113%)
FBH	Maximum Stage (ft)	1722.52 ft	1722.19 ft	(0.33 ft)
	Peak Inflow (cfs)	14360.9	14360.9	0.000%
	Inflow Volume (ac-ft)	8066.8	8070.6	0.047%
	Peak Storage (ac-ft)	3146.8	3159.9	0.416%
	Peak Outflow (cfs)	10247.2	9772.5	(4.632%)

TR-20 Output Comparison

Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Recreated Original Model	Recreated Model w/Actual Storage & Doubled PS Outflow	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1708.97 ft	(3.64 ft)
	Peak Inflow (cfs)	8209.2	8209.2	0.000%
	Inflow Volume (ac-ft)	1703.8	1703.3	(0.029%)
	Peak Storage (ac-ft)	1391.6	978.2	(29.707%)
	Peak Outflow (cfs)	158.4	284.0	79.293%
10-day PSH	Maximum Stage (ft)	1713.17 ft	1710.34 ft	(2.83 ft)
	Peak Inflow (cfs)	4577.8	4571.2	(0.144%)
	Inflow Volume (ac-ft)	2667.2	2655.0	(0.457%)
	Peak Storage (ac-ft)	1479.6	1143.7	(22.702%)
	Peak Outflow (cfs)	303.5	294.2	(3.064%)
ESH	Maximum Stage (ft)	1716.20 ft	1715.25 ft	(0.95 ft)
	Peak Inflow (cfs)	5488.5	5488.5	0.000%
	Inflow Volume (ac-ft)	3320.1	3320.1	0.000%
	Peak Storage (ac-ft)	1944.9	1855.2	(4.612%)
	Peak Outflow (cfs)	2188.0	1543.3	(29.465%)
FBH	Maximum Stage (ft)	1722.52 ft	1722.08 ft	(0.44 ft)
	Peak Inflow (cfs)	14360.9	14360.9	0.000%
	Inflow Volume (ac-ft)	8066.8	8070.6	0.047%
	Peak Storage (ac-ft)	3146.8	3137.4	(0.299%)
	Peak Outflow (cfs)	10247.2	9767.2	(4.684%)

Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Recreated Original Model	Recreated Model w/Actual Storage & Quadrupled PS Outflow	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1707.17 ft	(5.44 ft)
	Peak Inflow (cfs)	8209.2	8209.2	0.000%
	Inflow Volume (ac-ft)	1703.8	1703.3	(0.029%)
	Peak Storage (ac-ft)	1391.6	783.6	(43.691%)
	Peak Outflow (cfs)	158.4	539.9	240.846%
10-day PSH	Maximum Stage (ft)	1713.17 ft	1708.88 ft	(4.29 ft)
	Peak Inflow (cfs)	4577.8	4571.2	(0.144%)
	Inflow Volume (ac-ft)	2667.2	2655.0	(0.457%)
	Peak Storage (ac-ft)	1479.6	968.9	(34.516%)
	Peak Outflow (cfs)	303.5	566.8	86.755%
ESH	Maximum Stage (ft)	1716.20 ft	1714.80 ft	(1.40 ft)
	Peak Inflow (cfs)	5488.5	5488.5	0.000%
	Inflow Volume (ac-ft)	3320.1	3320.1	0.000%
	Peak Storage (ac-ft)	1944.9	1781.0	(8.427%)
	Peak Outflow (cfs)	2188.0	1513.7	(30.818%)
FBH	Maximum Stage (ft)	1722.52 ft	1721.85 ft	(0.67 ft)
	Peak Inflow (cfs)	14360.9	14360.9	0.000%
	Inflow Volume (ac-ft)	8066.8	8070.6	0.047%
	Peak Storage (ac-ft)	3146.8	3091.2	(1.767%)
	Peak Outflow (cfs)	10247.2	9755.9	(4.794%)

TR-20 Output Comparison

Signal Butte FRS

Emerg. Spillway Crest = 1712.40 ft
Top of Dam = 1721.77 ft

		Recreated Original Model	Recreated Model w/Actual Storage & Pass Mountain Diversion Extension	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1712.49 ft	(0.12 ft)
	Peak Inflow (cfs)	8209.2	8353.5	1.758%
	Inflow Volume (ac-ft)	1703.8	1991.9	16.909%
	Peak Storage (ac-ft)	1391.6	1430.7	2.810%
	Peak Outflow (cfs)	158.4	155.0	(2.146%)
10-day PSH	Maximum Stage (ft)	1713.17 ft	1713.31 ft	0.14 ft
	Peak Inflow (cfs)	4577.8	5628.4	22.950%
	Inflow Volume (ac-ft)	2667.2	3146.8	17.981%
	Peak Storage (ac-ft)	1479.6	1550.5	4.792%
	Peak Outflow (cfs)	303.5	341.1	12.389%
ESH	Maximum Stage (ft)	1716.20 ft	1716.79 ft	0.59 ft
	Peak Inflow (cfs)	5488.5	6795.9	23.821%
	Inflow Volume (ac-ft)	3320.1	4115.5	23.957%
	Peak Storage (ac-ft)	1944.9	2115.5	8.772%
	Peak Outflow (cfs)	2188.0	2873.9	31.348%
FBH	Maximum Stage (ft)	1722.52 ft	1722.45 ft	(0.07 ft)
	Peak Inflow (cfs)	14360.9	14388.5	0.192%
	Inflow Volume (ac-ft)	8066.8	9061.3	12.328%
	Peak Storage (ac-ft)	3146.8	3213.0	2.104%
	Peak Outflow (cfs)	10247.2	10146.8	(0.980%)

Signal Butte FRS

Emerg. Spillway Crest = 1712.40 ft
Top of Dam = 1721.77 ft

		Recreated Original Model	Recreated Model w/Actual Storage, Doubled PS Outflow, & Pass Mountain Diversion Extension	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1711.41 ft	(1.20 ft)
	Peak Inflow (cfs)	8209.2	8353.5	1.758%
	Inflow Volume (ac-ft)	1703.8	1991.9	16.909%
	Peak Storage (ac-ft)	1391.6	1280.8	(7.962%)
	Peak Outflow (cfs)	158.4	302.1	90.720%
10-day PSH	Maximum Stage (ft)	1713.17 ft	1712.72 ft	(0.45 ft)
	Peak Inflow (cfs)	4577.8	5628.4	22.950%
	Inflow Volume (ac-ft)	2667.2	3146.8	17.981%
	Peak Storage (ac-ft)	1479.6	1463.0	(1.122%)
	Peak Outflow (cfs)	303.5	343.6	13.213%
ESH	Maximum Stage (ft)	1716.20 ft	1716.64 ft	0.44 ft
	Peak Inflow (cfs)	5488.5	6795.9	23.821%
	Inflow Volume (ac-ft)	3320.1	4115.5	23.957%
	Peak Storage (ac-ft)	1944.9	2089.8	7.450%
	Peak Outflow (cfs)	2188.0	2855.4	30.503%
FBH	Maximum Stage (ft)	1722.52 ft	1722.34 ft	(0.18 ft)
	Peak Inflow (cfs)	14360.9	14388.5	0.192%
	Inflow Volume (ac-ft)	8066.8	9061.3	12.328%
	Peak Storage (ac-ft)	3146.8	3190.7	1.395%
	Peak Outflow (cfs)	10247.2	10142.8	(1.019%)

TR-20 Output Comparison

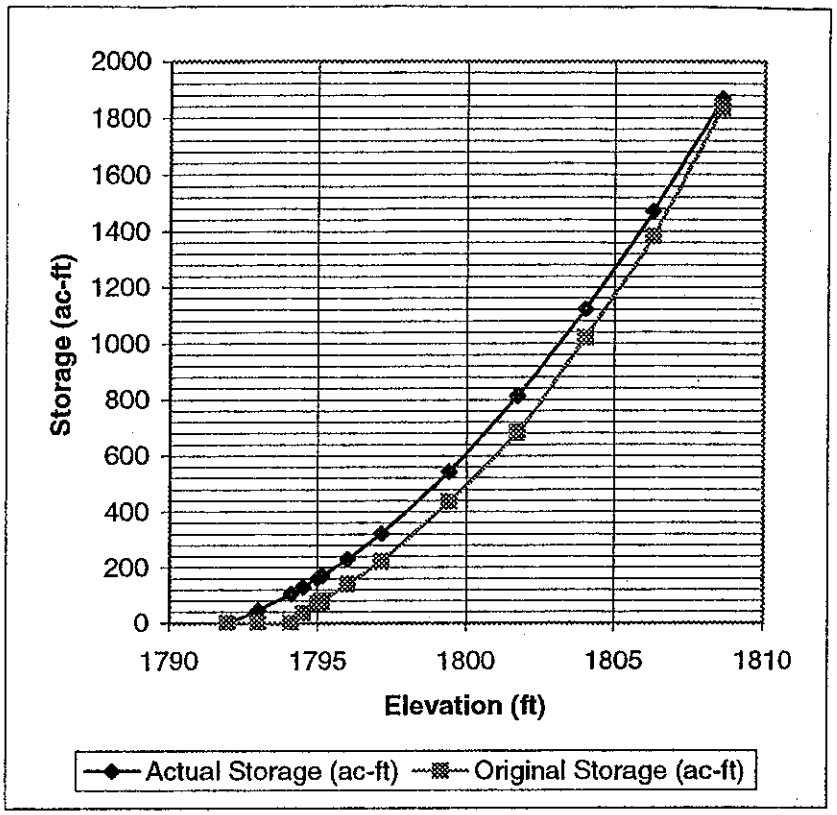
Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Recreated Original Model	Recreated Model w/Actual Storage, Quadrupled PS Outflow, & Pass Mountain Diversion Extension	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1709.50 ft	(3.11 ft)
	Peak Inflow (cfs)	8209.2	8353.5	1.758%
	Inflow Volume (ac-ft)	1703.8	1991.9	16.909%
	Peak Storage (ac-ft)	1391.6	1040.2	(25.252%)
	Peak Outflow (cfs)	158.4	576.0	263.636%
10-day PSH	Maximum Stage (ft)	1713.17 ft	1711.17 ft	(2.00 ft)
	Peak Inflow (cfs)	4577.8	5628.4	22.950%
	Inflow Volume (ac-ft)	2667.2	3146.8	17.981%
	Peak Storage (ac-ft)	1479.6	1250.2	(15.504%)
	Peak Outflow (cfs)	303.5	600.7	97.924%
ESH	Maximum Stage (ft)	1716.20 ft	1716.33 ft	0.13 ft
	Peak Inflow (cfs)	5488.5	6795.9	23.821%
	Inflow Volume (ac-ft)	3320.1	4115.5	23.957%
	Peak Storage (ac-ft)	1944.9	2036.8	4.725%
	Peak Outflow (cfs)	2188.0	2806.4	28.263%
FBH	Maximum Stage (ft)	1722.52 ft	1722.12 ft	(0.40 ft)
	Peak Inflow (cfs)	14360.9	14388.5	0.192%
	Inflow Volume (ac-ft)	8066.8	9061.3	12.328%
	Peak Storage (ac-ft)	3146.8	3144.0	(0.089%)
	Peak Outflow (cfs)	10247.2	10135.4	(1.091%)

TR-20 & HEC-1 Stage-Storage-Discharge Curves

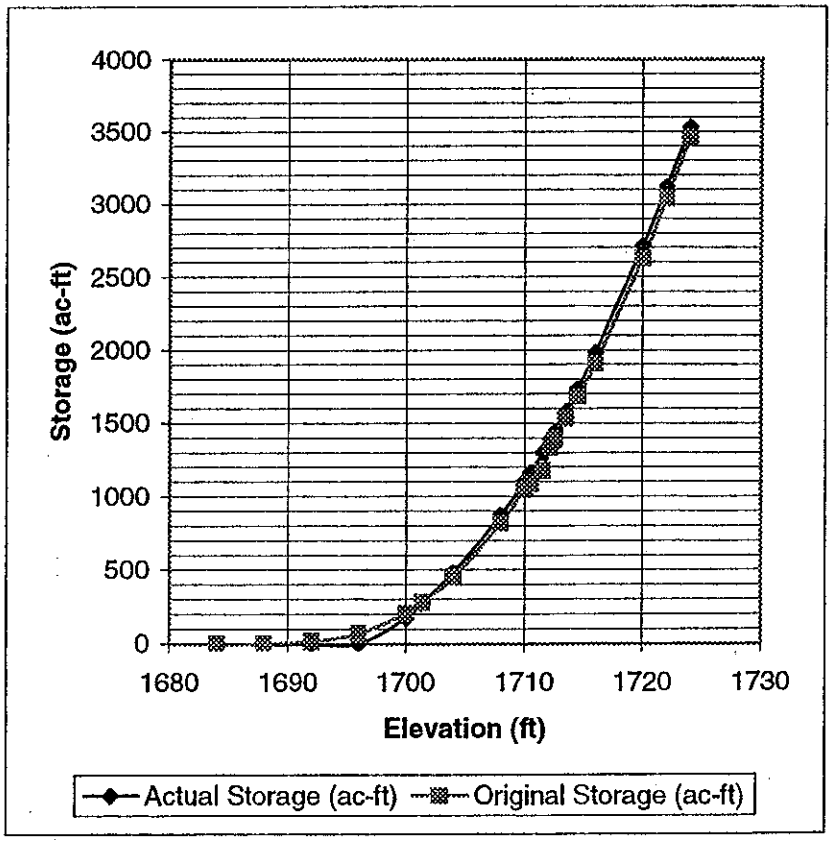
Apache Junction FRS

Elevation	Original Storage	Actual Storage
1791.94	0	0
1793	0	46.8
1794.1	0	106
1794.5	35.37	130
1795	70.75	161.2
1795.14	81.11	170.7
1796	141.5	230.7
1797.14	222.35	322.23
1799.42	437.27	542.99
1801.72	684.12	812.88
1804	1020.46	1121.9
1806.28	1382.58	1470.09
1808.57	1835.7	1865.04



Signal Butte FRS

Elevation	Original Storage	Actual Storage
1684	0.022	0
1688	2.94	0
1692	16.82	0
1696	69.9	0
1700	206.14	172.1
1701.4	281	273.25
1704	450.86	482.24
1708	816.46	871.3
1710	1046.16	1101.52
1710.5	1089.3	1163.52
1711.5	1175.5	1294.09
1712.2	1335.15	1390.2
1712.5	1380.46	1432.05
1712.6	1390	1446.11
1713.5	1531.5	1578.77
1714.5	1682.54	1733.61
1716	1909.1	1980.33
1720	2624.1	2712.23
1722	3040.59	3121
1724	3457.1	3530



TR-20 Output Comparison

Apache Junction FRS

	Emerg. Spillway Crest = 1799.77 ft Top of Dam = 1810.77 ft	Original SCS Data	Recreated Original Model	Difference
PSH	Maximum Stage (ft)	1799.59 ft	1799.60 ft	0.01 ft
	Peak Inflow (cfs)	3115.8	3125.4	0.308%
	Inflow Volume (ac-ft)	622.6	623.4	0.128%
	Peak Storage (ac-ft)	455.6	455.6	0.000%
	Peak Outflow (cfs)	230.0	230.9	0.391%
10-day PSH	Maximum Stage (ft)	N/A	1799.86 ft	
	Peak Inflow (cfs)	N/A	2412.3	
	Inflow Volume (ac-ft)	N/A	968.5	
	Peak Storage (ac-ft)	N/A	484.6	
	Peak Outflow (cfs)	N/A	410.5	
ESH	Maximum Stage (ft)	1801.77 ft	1801.78 ft	0.01 ft
	Peak Inflow (cfs)	2923.0	2929.7	0.229%
	Inflow Volume (ac-ft)	1511.9	1513.4	0.099%
	Peak Storage (ac-ft)	691.5	691.5	0.000%
	Peak Outflow (cfs)	1794.1	1798.8	0.262%
FBH	Maximum Stage (ft)	1803.89 ft	1803.90 ft	0.01 ft
	Peak Inflow (cfs)	8079.3	8106.6	0.338%
	Inflow Volume (ac-ft)	4246.8	4250.8	0.094%
	Peak Storage (ac-ft)	1004.2	1002.8	(0.139%)
	Peak Outflow (cfs)	7419.6	7440.7	0.284%

Apache Junction FRS

	Emerg. Spillway Crest = 1799.77 ft Top of Dam = 1810.77 ft	Recreated Original Model	Recreated Model w/Actual Storage	Difference
PSH	Maximum Stage (ft)	1799.60 ft	1799.08 ft	(0.52 ft)
	Peak Inflow (cfs)	3125.4	3125.4	0.000%
	Inflow Volume (ac-ft)	623.4	623.4	0.000%
	Peak Storage (ac-ft)	455.6	601.8	32.090%
	Peak Outflow (cfs)	230.9	112.2	(51.408%)
10-day PSH	Maximum Stage (ft)	1799.86 ft	1799.53 ft	(0.33 ft)
	Peak Inflow (cfs)	2412.3	2412.3	0.000%
	Inflow Volume (ac-ft)	968.5	968.5	0.000%
	Peak Storage (ac-ft)	484.6	650.2	34.173%
	Peak Outflow (cfs)	410.5	186.8	(54.495%)
ESH	Maximum Stage (ft)	1801.78 ft	1801.48 ft	(0.30 ft)
	Peak Inflow (cfs)	2929.7	2929.7	0.000%
	Inflow Volume (ac-ft)	1513.4	1513.4	0.000%
	Peak Storage (ac-ft)	691.5	878.1	26.985%
	Peak Outflow (cfs)	1798.8	1490.3	(17.150%)
FBH	Maximum Stage (ft)	1803.90 ft	1803.90 ft	0.00 ft
	Peak Inflow (cfs)	8106.6	8106.6	0.000%
	Inflow Volume (ac-ft)	4250.8	4250.8	0.000%
	Peak Storage (ac-ft)	1002.8	1199.4	19.605%
	Peak Outflow (cfs)	7440.7	7422.8	(0.241%)

TR-20 Output Comparison

Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Original SCS Data	Recreated Original Model	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1712.61 ft	0.00 ft
	Peak Inflow (cfs)	8164.1	8209.2	0.552%
	Inflow Volume (ac-ft)	1581.9	1703.8	7.706%
	Peak Storage (ac-ft)	1391.6	1391.6	0.000%
	Peak Outflow (cfs)	157.9	158.4	0.317%
10-day PSH	Maximum Stage (ft)	N/A	1713.17 ft	
	Peak Inflow (cfs)	N/A	4577.8	
	Inflow Volume (ac-ft)	N/A	2667.2	
	Peak Storage (ac-ft)	N/A	1479.6	
	Peak Outflow (cfs)	N/A	303.5	
ESH	Maximum Stage (ft)	1716.20 ft	1716.20 ft	0.00 ft
	Peak Inflow (cfs)	5492.7	5488.5	(0.076%)
	Inflow Volume (ac-ft)	3192.7	3320.1	3.990%
	Peak Storage (ac-ft)	1944.9	1944.9	0.000%
	Peak Outflow (cfs)	2184.2	2188.0	0.174%
FBH	Maximum Stage (ft)	1722.51 ft	1722.52 ft	0.01 ft
	Peak Inflow (cfs)	14371.0	14360.9	(0.070%)
	Inflow Volume (ac-ft)	7930.1	8066.8	1.724%
	Peak Storage (ac-ft)	3146.8	3146.8	0.000%
	Peak Outflow (cfs)	10237.2	10247.2	0.098%

Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Recreated Original Model	Recreated Model w/Actual Storage	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1710.15 ft	(2.46 ft)
	Peak Inflow (cfs)	8209.2	8209.2	0.000%
	Inflow Volume (ac-ft)	1703.8	1703.3	(0.029%)
	Peak Storage (ac-ft)	1391.6	1120.1	(19.510%)
	Peak Outflow (cfs)	158.4	146.4	(7.576%)
10-day PSH	Maximum Stage (ft)	1713.17 ft	1712.45 ft	(0.72 ft)
	Peak Inflow (cfs)	4577.8	4571.2	(0.144%)
	Inflow Volume (ac-ft)	2667.2	2655.0	(0.457%)
	Peak Storage (ac-ft)	1479.6	1425.0	(3.690%)
	Peak Outflow (cfs)	303.5	154.8	(48.995%)
ESH	Maximum Stage (ft)	1716.20 ft	1715.47 ft	(0.73 ft)
	Peak Inflow (cfs)	5488.5	5488.5	0.000%
	Inflow Volume (ac-ft)	3320.1	3320.1	0.000%
	Peak Storage (ac-ft)	1944.9	1891.5	(2.746%)
	Peak Outflow (cfs)	2188.0	1551.0	(29.113%)
FBH	Maximum Stage (ft)	1722.52 ft	1722.19 ft	(0.33 ft)
	Peak Inflow (cfs)	14360.9	14360.9	0.000%
	Inflow Volume (ac-ft)	8066.8	8070.6	0.047%
	Peak Storage (ac-ft)	3146.8	3159.9	0.416%
	Peak Outflow (cfs)	10247.2	9772.5	(4.632%)

TR-20 Output Comparison

Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Recreated Original Model	Recreated Model w/Actual Storage & Doubled PS Outflow	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1708.97 ft	(3.64 ft)
	Peak Inflow (cfs)	8209.2	8209.2	0.000%
	Inflow Volume (ac-ft)	1703.8	1703.3	(0.029%)
	Peak Storage (ac-ft)	1391.6	978.2	(29.707%)
	Peak Outflow (cfs)	158.4	284.0	79.293%
10-day PSH	Maximum Stage (ft)	1713.17 ft	1710.34 ft	(2.83 ft)
	Peak Inflow (cfs)	4577.8	4571.2	(0.144%)
	Inflow Volume (ac-ft)	2667.2	2655.0	(0.457%)
	Peak Storage (ac-ft)	1479.6	1143.7	(22.702%)
	Peak Outflow (cfs)	303.5	294.2	(3.064%)
ESH	Maximum Stage (ft)	1716.20 ft	1715.25 ft	(0.95 ft)
	Peak Inflow (cfs)	5488.5	5488.5	0.000%
	Inflow Volume (ac-ft)	3320.1	3320.1	0.000%
	Peak Storage (ac-ft)	1944.9	1855.2	(4.612%)
	Peak Outflow (cfs)	2188.0	1543.3	(29.465%)
FBH	Maximum Stage (ft)	1722.52 ft	1722.08 ft	(0.44 ft)
	Peak Inflow (cfs)	14360.9	14360.9	0.000%
	Inflow Volume (ac-ft)	8066.8	8070.6	0.047%
	Peak Storage (ac-ft)	3146.8	3137.4	(0.299%)
	Peak Outflow (cfs)	10247.2	9767.2	(4.684%)

Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Recreated Original Model	Recreated Model w/Actual Storage & Quadrupled PS Outflow	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1707.17 ft	(5.44 ft)
	Peak Inflow (cfs)	8209.2	8209.2	0.000%
	Inflow Volume (ac-ft)	1703.8	1703.3	(0.029%)
	Peak Storage (ac-ft)	1391.6	783.6	(43.691%)
	Peak Outflow (cfs)	158.4	539.9	240.846%
10-day PSH	Maximum Stage (ft)	1713.17 ft	1708.88 ft	(4.29 ft)
	Peak Inflow (cfs)	4577.8	4571.2	(0.144%)
	Inflow Volume (ac-ft)	2667.2	2655.0	(0.457%)
	Peak Storage (ac-ft)	1479.6	968.9	(34.516%)
	Peak Outflow (cfs)	303.5	566.8	86.755%
ESH	Maximum Stage (ft)	1716.20 ft	1714.80 ft	(1.40 ft)
	Peak Inflow (cfs)	5488.5	5488.5	0.000%
	Inflow Volume (ac-ft)	3320.1	3320.1	0.000%
	Peak Storage (ac-ft)	1944.9	1781.0	(8.427%)
	Peak Outflow (cfs)	2188.0	1513.7	(30.818%)
FBH	Maximum Stage (ft)	1722.52 ft	1721.85 ft	(0.67 ft)
	Peak Inflow (cfs)	14360.9	14360.9	0.000%
	Inflow Volume (ac-ft)	8066.8	8070.6	0.047%
	Peak Storage (ac-ft)	3146.8	3091.2	(1.767%)
	Peak Outflow (cfs)	10247.2	9755.9	(4.794%)

TR-20 Output Comparison

Signal Butte FRS

Emerg. Spillway Crest = 1712.40 ft
Top of Dam = 1721.77 ft

		Recreated Original Model	Recreated Model w/Actual Storage & Pass Mountain Diversion Extension	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1712.49 ft	(0.12 ft)
	Peak Inflow (cfs)	8209.2	8353.5	1.758%
	Inflow Volume (ac-ft)	1703.8	1991.9	16.909%
	Peak Storage (ac-ft)	1391.6	1430.7	2.810%
	Peak Outflow (cfs)	158.4	155.0	(2.146%)
10-day PSH	Maximum Stage (ft)	1713.17 ft	1713.31 ft	0.14 ft
	Peak Inflow (cfs)	4577.8	5628.4	22.950%
	Inflow Volume (ac-ft)	2667.2	3146.8	17.981%
	Peak Storage (ac-ft)	1479.6	1550.5	4.792%
	Peak Outflow (cfs)	303.5	341.1	12.389%
ESH	Maximum Stage (ft)	1716.20 ft	1716.79 ft	0.59 ft
	Peak Inflow (cfs)	5488.5	6795.9	23.821%
	Inflow Volume (ac-ft)	3320.1	4115.5	23.957%
	Peak Storage (ac-ft)	1944.9	2115.5	8.772%
	Peak Outflow (cfs)	2188.0	2873.9	31.348%
FBH	Maximum Stage (ft)	1722.52 ft	1722.45 ft	(0.07 ft)
	Peak Inflow (cfs)	14360.9	14388.5	0.192%
	Inflow Volume (ac-ft)	8066.8	9061.3	12.328%
	Peak Storage (ac-ft)	3146.8	3213.0	2.104%
	Peak Outflow (cfs)	10247.2	10146.8	(0.980%)

Signal Butte FRS

Emerg. Spillway Crest = 1712.40 ft
Top of Dam = 1721.77 ft

		Recreated Original Model	Recreated Model w/Actual Storage, Doubled PS Outflow, & Pass Mountain Diversion Extension	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1711.41 ft	(1.20 ft)
	Peak Inflow (cfs)	8209.2	8353.5	1.758%
	Inflow Volume (ac-ft)	1703.8	1991.9	16.909%
	Peak Storage (ac-ft)	1391.6	1280.8	(7.962%)
	Peak Outflow (cfs)	158.4	302.1	90.720%
10-day PSH	Maximum Stage (ft)	1713.17 ft	1712.72 ft	(0.45 ft)
	Peak Inflow (cfs)	4577.8	5628.4	22.950%
	Inflow Volume (ac-ft)	2667.2	3146.8	17.981%
	Peak Storage (ac-ft)	1479.6	1463.0	(1.122%)
	Peak Outflow (cfs)	303.5	343.6	13.213%
ESH	Maximum Stage (ft)	1716.20 ft	1716.64 ft	0.44 ft
	Peak Inflow (cfs)	5488.5	6795.9	23.821%
	Inflow Volume (ac-ft)	3320.1	4115.5	23.957%
	Peak Storage (ac-ft)	1944.9	2089.8	7.450%
	Peak Outflow (cfs)	2188.0	2855.4	30.503%
FBH	Maximum Stage (ft)	1722.52 ft	1722.34 ft	(0.18 ft)
	Peak Inflow (cfs)	14360.9	14388.5	0.192%
	Inflow Volume (ac-ft)	8066.8	9061.3	12.328%
	Peak Storage (ac-ft)	3146.8	3190.7	1.395%
	Peak Outflow (cfs)	10247.2	10142.8	(1.019%)

TR-20 Output Comparison

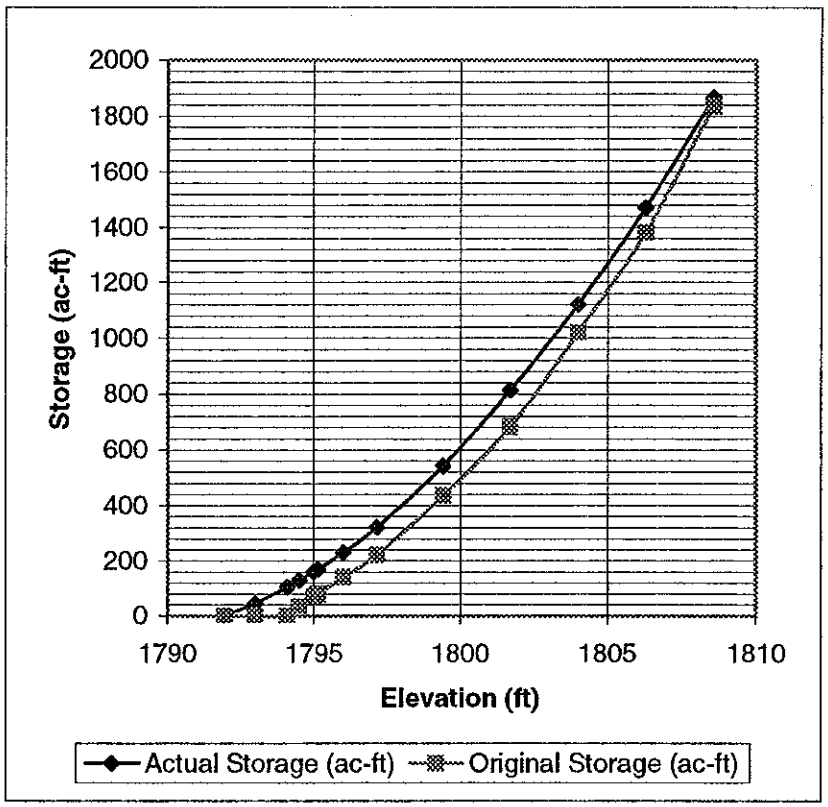
Signal Butte FRS

	Emerg. Spillway Crest = 1712.40 ft Top of Dam = 1721.77 ft	Recreated Original Model	Recreated Model w/Actual Storage, Quadrupled PS Outflow, & Pass Mountain Diversion Extension	Difference
PSH	Maximum Stage (ft)	1712.61 ft	1709.50 ft	(3.11 ft)
	Peak Inflow (cfs)	8209.2	8353.5	1.758%
	Inflow Volume (ac-ft)	1703.8	1991.9	16.909%
	Peak Storage (ac-ft)	1391.6	1040.2	(25.252%)
	Peak Outflow (cfs)	158.4	576.0	263.636%
10-day PSH	Maximum Stage (ft)	1713.17 ft	1711.17 ft	(2.00 ft)
	Peak Inflow (cfs)	4577.8	5628.4	22.950%
	Inflow Volume (ac-ft)	2667.2	3146.8	17.981%
	Peak Storage (ac-ft)	1479.6	1250.2	(15.504%)
	Peak Outflow (cfs)	303.5	600.7	97.924%
ESH	Maximum Stage (ft)	1716.20 ft	1716.33 ft	0.13 ft
	Peak Inflow (cfs)	5488.5	6795.9	23.821%
	Inflow Volume (ac-ft)	3320.1	4115.5	23.957%
	Peak Storage (ac-ft)	1944.9	2036.8	4.725%
	Peak Outflow (cfs)	2188.0	2806.4	28.263%
FBH	Maximum Stage (ft)	1722.52 ft	1722.12 ft	(0.40 ft)
	Peak Inflow (cfs)	14360.9	14388.5	0.192%
	Inflow Volume (ac-ft)	8066.8	9061.3	12.328%
	Peak Storage (ac-ft)	3146.8	3144.0	(0.089%)
	Peak Outflow (cfs)	10247.2	10135.4	(1.091%)

TR-20 & HEC-1 Stage-Storage-Discharge Curves

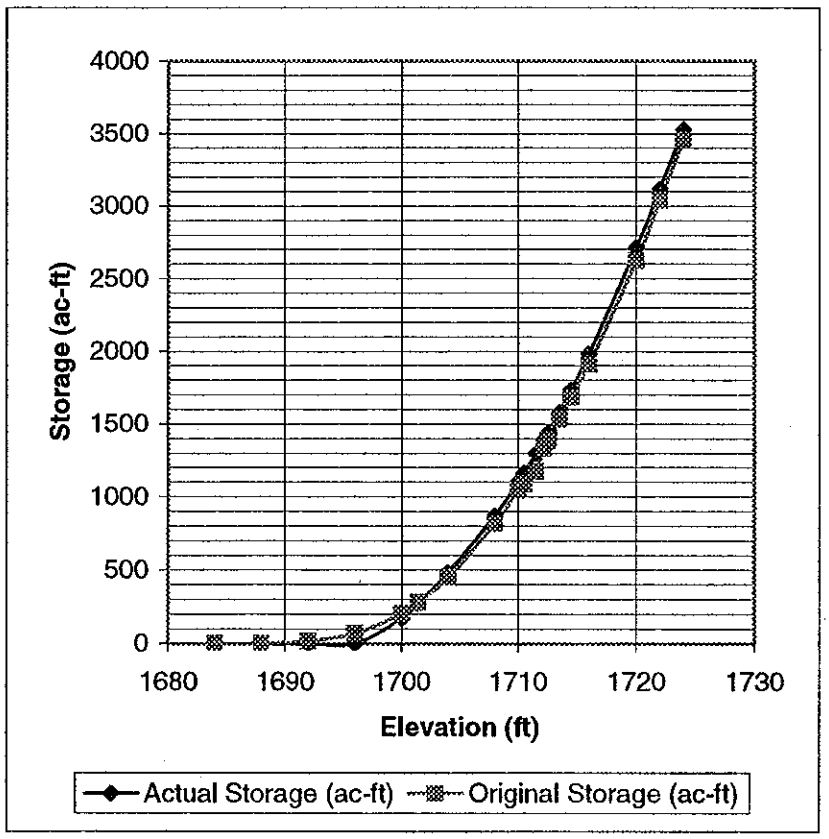
Apache Junction FRS

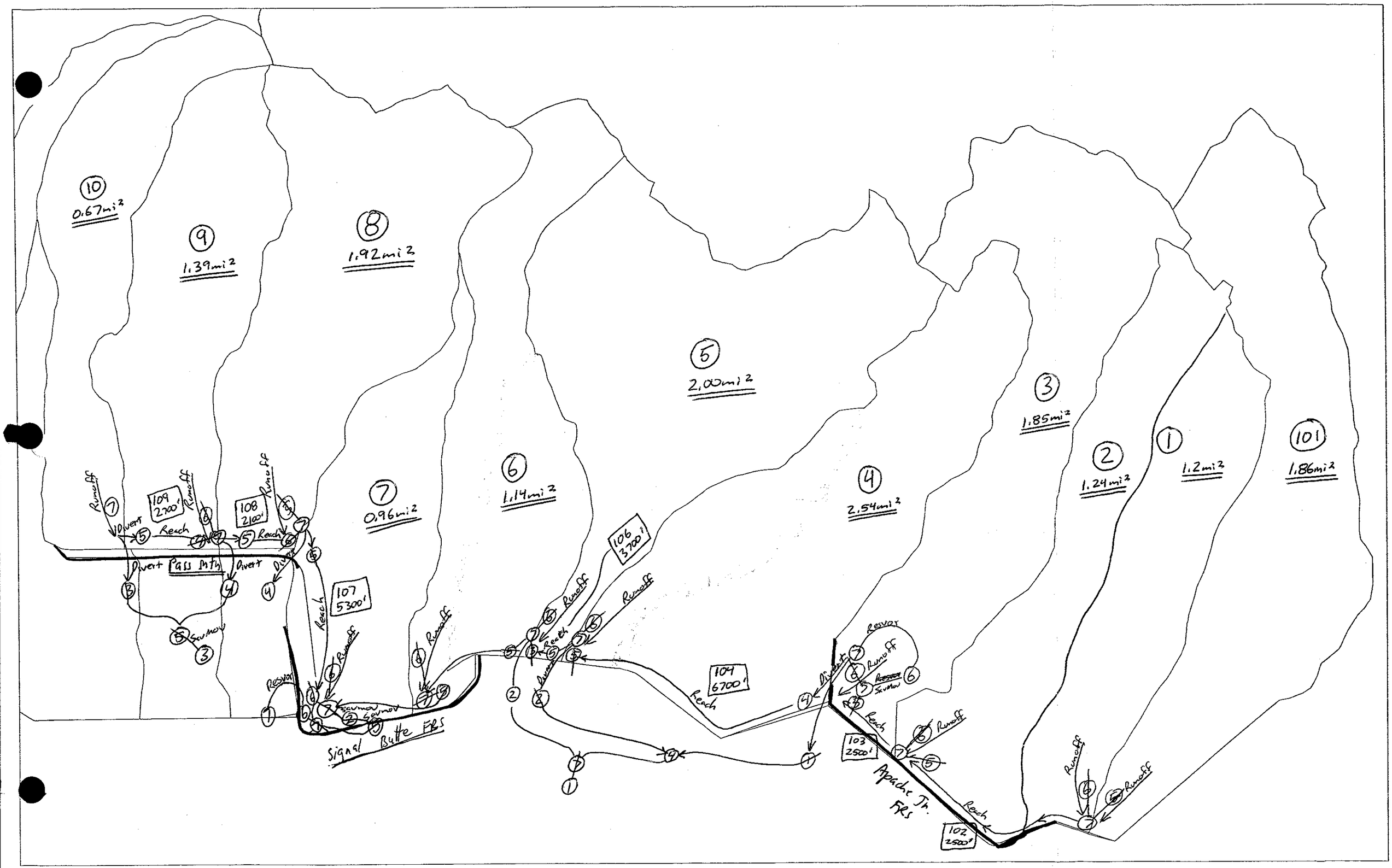
Elevation	Original Storage	Actual Storage
1791.94	0	0
1793	0	46.8
1794.1	0	106
1794.5	35.37	130
1795	70.75	161.2
1795.14	81.11	170.7
1796	141.5	230.7
1797.14	222.35	322.23
1799.42	437.27	542.99
1801.72	684.12	812.88
1804	1020.46	1121.9
1806.28	1382.58	1470.09
1808.57	1835.7	1865.04



Signal Butte FRS

Elevation	Original Storage	Actual Storage
1684	0.022	0
1688	2.94	0
1692	16.82	0
1696	69.9	0
1700	206.14	172.1
1701.4	281	273.25
1704	450.86	482.24
1708	816.46	871.3
1710	1046.16	1101.52
1710.5	1089.3	1163.52
1711.5	1175.5	1294.09
1712.2	1335.15	1390.2
1712.5	1380.46	1432.05
1712.6	1390	1446.11
1713.5	1531.5	1578.77
1714.5	1682.54	1733.61
1716	1909.1	1980.33
1720	2624.1	2712.23
1722	3040.59	3121
1724	3457.1	3530





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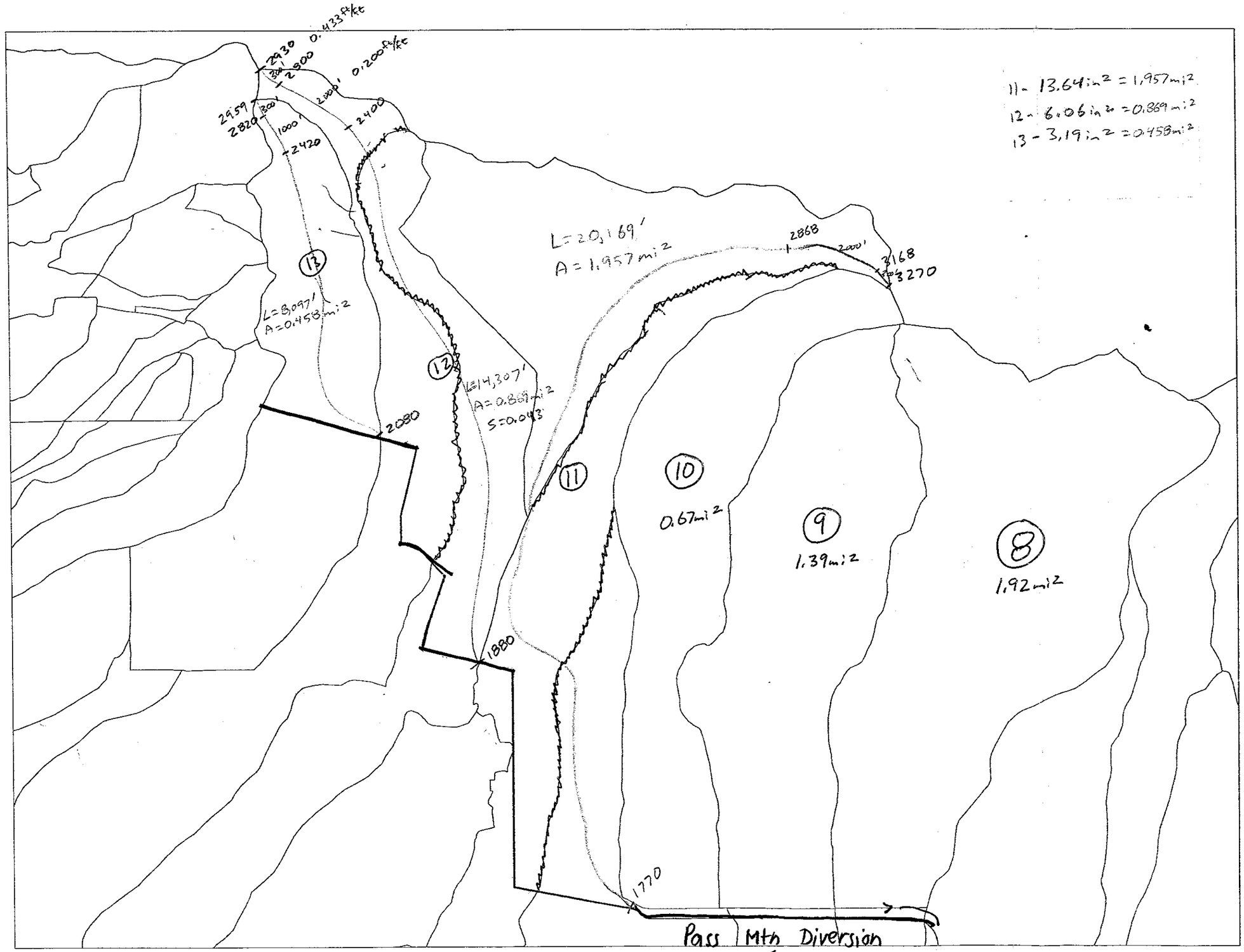
1" = 2000'



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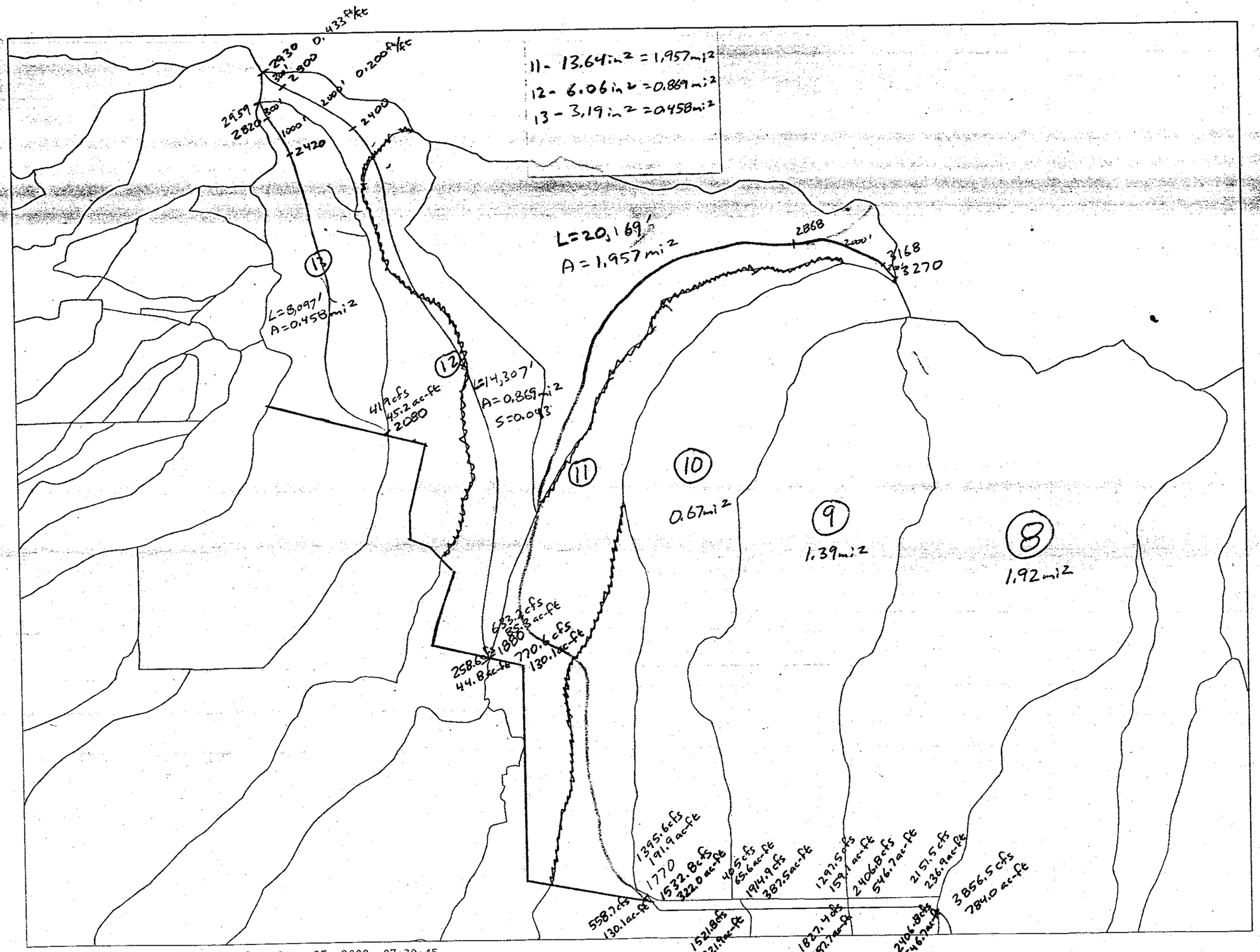

Runoff
Routed Runoff
Combined Runoff

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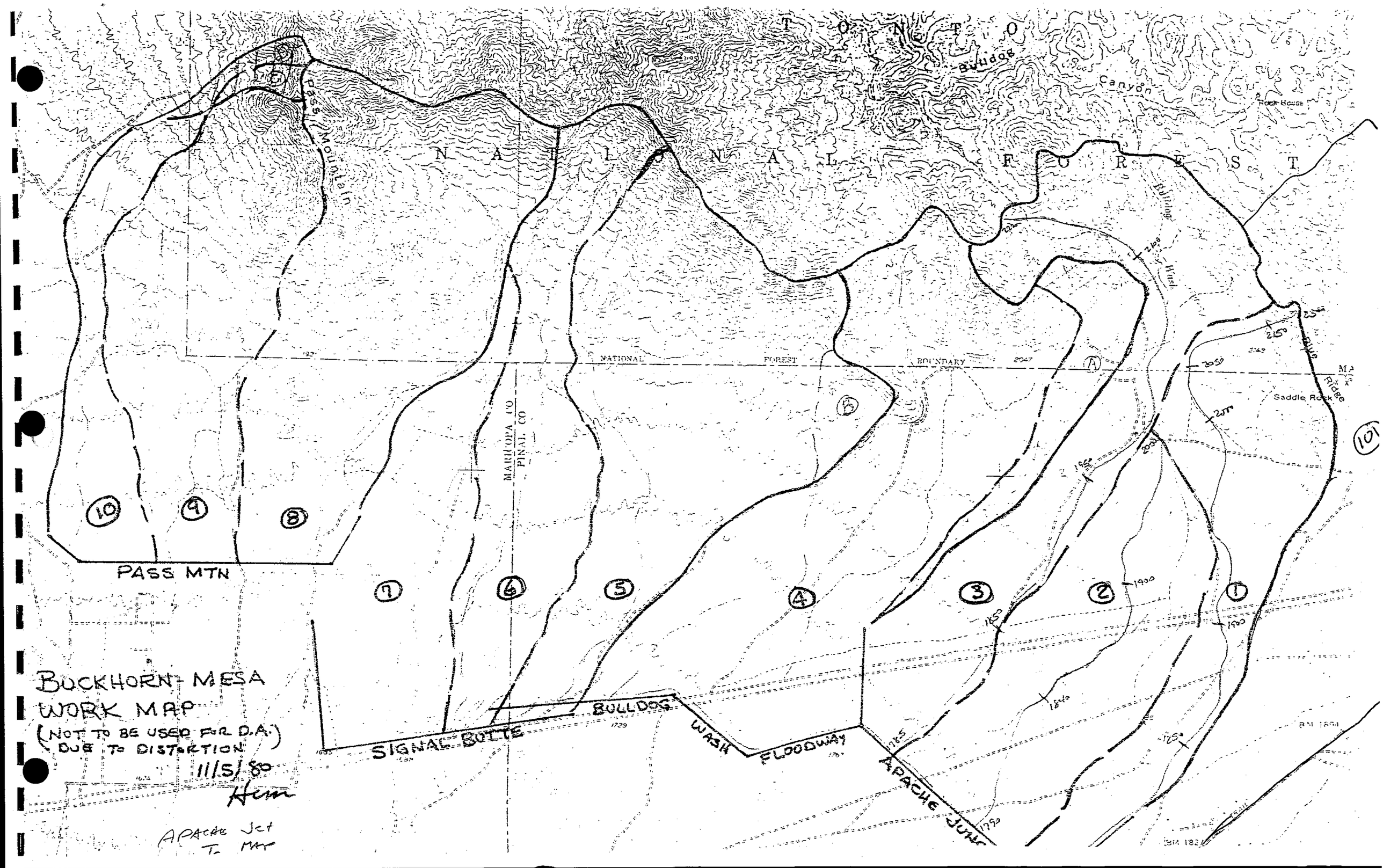
T O N T O
N A T I O N A L F O R E S T
Bulldog Canyon
Rock House
Pass Mountain
Bulldog West
Blue Ridge
Saddle Rock
NATIONAL FOREST BOUNDARY
MARICOPA CO
PINAL CO
PASS MTN
SIGNAL BUTTE
BULLDOG WASH FLOODWAY
APACHE JUNC
BUCKHORN MESA
WORK MAP
(NOT TO BE USED FOR D.A.)
DUE TO DISTORTION
11/5/80
Hem
APACHE Jct
To MAP

WOOD/PATEL

CIVIL ENGINEERS • HYDROLOGISTS • LAND SURVEYORS

PROJECT Spook Hill ADMP

PROJECT NO. _____ SHEET NO. _____ OF _____

CALCULATED BY _____ DATE _____ CHECKED BY _____ DATE _____

Pass Mountain Diversion – Subarea 11

$T_c = T_{t_1} + T_{t_2} + T_{t_3}$

T_{t_1} = Sheet Flow ≤ 300 ft $\quad T_{t_1} = \dfrac{0.007(nL)^{0.8}}{(P_2)^{0.5}\, s^{0.4}}$

$n = 0.13 \quad P_2 = 2$ yr-24hr rainfall $= 1.6''$

T_{t_2} = Use Figure 3-1 for avg V. $\quad T_{t_2} = \dfrac{L}{3600\, V_{avg}}$

T_{t_3} = Use mannings for avg. V. $\quad T_{t_3} = \dfrac{L}{3600\, V_{avg}}$

$$T_{t_1} = \frac{0.007\,(0.13 \cdot 300)^{0.8}}{(1.6)^{0.5}\left(\frac{340}{1000}\right)^{0.4}} = 0.160 \text{ hrs}$$

$$T_{t_2} = \frac{2000}{3600(6.25)} = 0.089 \text{ hrs}$$

$s = \frac{150}{1000} = 0.15$ ft/ft $\quad V_{avg} = 6.25$ ft/s

$L = 2000$ ft

$$T_{t_3} = \frac{17{,}869}{3600(11.42)} = 0.435 \text{ hrs}$$

$s = 0.0614$ ft/ft $\quad V_{avg} = 11.42$ ft/s

$$T_c = 0.160 + 0.089 + 0.435 = 0.684 \text{ hrs}$$

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PROJECT Spook Hill ADMP

PROJECT NO. 99989 SHEET NO. ____ OF ____

CALCULATED BY ____ DATE ____ CHECKED BY ____ DATE ____

– Subarea 12

$$T_{t_1} = \frac{0.007(0.13 \cdot 300)^{0.8}}{(1.6)^{0.5}(.433)^{0.4}} = 0.145 \text{ hrs}$$

$S = 0.433$ ft/ft
$L = 300$ ft

$$T_{t_2} = \frac{2000}{3600(3.3 \text{ ft/s})} = 0.168 \text{ hrs}$$

$S = 0.20$ ft/ft
$L = 2000$ ft
$V_{avg} = 3.3$ ft/s

$$T_{t_3} = \frac{12{,}007}{3600(9.56 \text{ ft/s})} = 0.349 \text{ hrs}$$

$S = 0.043$ ft/ft
$V_{avg} = 9.56$ ft/s

$$T_c = 0.145 + 0.168 + 0.349 = 0.662 \text{ hrs}$$

WOOD/PATEL

CIVIL ENGINEERS • HYDROLOGISTS • LAND SURVEYORS

PROJECT Spook Hill ADMP

PROJECT No. 99989 SHEET No. ____ OF ____

CALCULATED BY ____ DATE ____ CHECKED BY ____ DATE ____

— Subarea 13

$$T_{t_1} = \frac{0.007(0.13 \cdot 300)^{0.8}}{(1.6)^{0.5}(0.463)^{0.4}} = 0.141 \text{ hrs}$$

$S = 0.463$ ft/ft
$L = 300'$

$$T_{t_2} = \frac{1000}{3600(10.3)} = 0.027 \text{ hrs}$$

$S = 0.400$
$L = 1000$ ft
$V_{avg} = 10.3$ ft/s

$$T_{t_2} = \frac{6797}{3600(10.31)} = 0.183 \text{ hrs}$$

$S = 0.05$ ft/ft
$L = 6797$ ft
$V_{avg} = 10.31$ ft/s

$$T_c = 0.141 + 0.027 + 0.183 = 0.351 \text{ hrs}$$

PASS= 1

Signal Butte FRS w/ Pass Mtn Diversion w/99 Ac ft. Additional Sediment — w/ Channel FB.

EXECUTIVE CONTROL CARD 122 OPERATION LIST

LISTING OF DATA IN CORE

0 BUCKHORN-MESA SIGNAL BUTTE FRS W/PASS MTN DIVER

	VELOCITY INCREMENT				
1 CTABLE		.2000			
8	.0000	.0800	.1800	.2500	.3200
8	.3700	.4100	.4500	.4900	.5100
8	.5400	.5700	.5900	.6100	.6300
8	.6500	.6600	.6700	.6900	.7000
8	.7100	.7200	.7300	.7400	.7500
8	.7600	.7700	.7700	.7800	.7900
8	.7900	.8000	.8100	.8100	.8200
8	.8200	.8300	.8300	.8400	.8400
8	.8400	.8500	.8500	.8600	.8600
8	.8600	.8600	.8700	.8700	.8700
8	.8800	.8800	.8800	.8800	.8800
8	.8900	.8900	.8900	.8900	.9000
8	.9000	.9000	.9000	.9000	.9100
8	.9100	.9100	.9100	.9100	.9100
8	.9200	.9200	.9200	.9200	.9200
8	.9200	.9200	.9200	.9300	.9300
9 ENDTBL					

	XSECTN NO.	DRAINAGE AREA
2 XSECTN	104	1.0000

	ELEVATION	DISCHARGE	END AREA
8	.0000	.0000	.0000
8	2.0000	450.0000	40.0000
8	3.0000	838.0000	60.0000
8	4.0000	1288.0000	80.0000
8	5.0000	1782.0000	120.0000
8	6.0000	2314.0000	120.0000
8	7.0000	2875.0000	140.0000
8	8.0000	3454.0000	160.0000
9 ENDTBL			

	XSECTN NO.	DRAINAGE AREA
2 XSECTN	106	1.0000

	ELEVATION	DISCHARGE	END AREA
8	.0000	.0000	.0000
8	1.5000	441.0000	45.0000

8	3.5000	1682.0000	105.0000
8	4.5000	2468.0000	135.0000
8	5.5000	3339.0000	165.0000
8	6.5000	4272.0000	195.0000
8	7.5000	5258.0000	225.0000
8	8.5000	6296.0000	255.0000

9 ENDTBL

XSECTN NO.	DRAINAGE AREA
2 XSECTN 107	1.0000

	ELEVATION	DISCHARGE	END AREA
8	1749.0000	.0000	.0000
8	1750.0000	38.5300	23.0000
8	1751.0000	130.5200	52.0000
8	1752.0000	273.1800	87.0000
8	1753.0000	470.9800	128.0000
8	1754.0000	706.8600	187.0000
8	1755.0000	1005.6200	240.0000
8	1756.0000	1369.4200	299.0000
8	1757.0000	1801.8000	364.0000
8	1758.0000	2305.5000	435.0000
8	1759.0000	2892.8000	512.0000
8	1760.0000	3558.1000	595.0000
8	1761.0000	4316.0400	684.0000
8	1762.0000	5156.9800	779.0000

9 ENDTBL

XSECTN NO.	DRAINAGE AREA
2 XSECTN 108	1.0000

	ELEVATION	DISCHARGE	END AREA
8	1753.7000	.0000	.0000
8	1754.7000	61.9300	23.0000
8	1755.7000	209.3500	52.0000
8	1756.7000	438.9100	87.0000
8	1757.7000	757.0100	128.0000
8	1758.7000	1167.4100	175.0000
8	1759.7000	1678.5600	228.0000
8	1760.7000	2302.3900	287.0000
8	1761.7000	3038.9100	352.0000
8	1762.7000	3894.7400	435.0000
8	1763.7000	4647.7600	512.0000

9 ENDTBL

Q=8623
V=5.4

XSECTN NO.	DRAINAGE AREA
2 XSECTN 109	1.0000

	ELEVATION	DISCHARGE	END AREA
8	1763.6000	.0000	.0000
8	1764.6000	27.4700	23.0000
8	1765.6000	92.8700	52.0000
8	1766.6000	194.7000	87.0000
8	1767.6000	335.9000	128.0000

422=12
8103=X V=5.2

M20 7

8	1768.6000	503.2200	187.0000
8	1769.6000	715.7800	240.0000
8	1770.6000	974.8100	299.0000

9 ENDTBL

Apache Junction?

3 STRUCT STRUCT NO. 1

	ELEVATION	DISCHARGE	STORAGE
8	1794.1000	.0000	.0000
8	1794.5000	26.3000	35.3700
8	1795.0000	74.4000	70.7500
8	1795.1400	91.2000	81.1100
8	1796.0000	96.1600	141.5000
8	1797.1400	102.4200	222.3500
8	1798.4200	113.9100	437.2700
8	1801.7200	1650.0000	684.1200
8	1804.0000	7700.0000	1020.4600
8	1806.2800	15200.0000	1382.5800
8	1808.5700	26200.0000	1835.7000

9 ENDTBL

3 STRUCT STRUCT NO. 2 S.B. FRS 1

	ELEVATION	DISCHARGE	STORAGE
8	1684.0000	.0000	.0220
8	1688.0000	.0000	2.9400
8	1692.0000	.0000	16.8200
8	1696.0000	.0000	60.9000
8	1700.0000	.0000	206.1400
8	1701.4000	.0000	281.0000
8	1704.0000	121.8000	450.8600
8	1708.0000	138.4000	816.4600
8	1710.0000	145.9000	1046.1600
8	1710.5000	147.7000	1089.3000
8	1711.5000	151.4000	1175.5000
8	1712.2000	154.0000	1335.1500
8	1712.5000	155.0000	1380.4600
8	1712.6000	156.0000	1390.0000
8	1713.5000	390.0000	1531.5000
8	1714.5000	820.0000	1682.5400
8	1716.0000	1950.0000	1909.1000
8	1720.0000	6600.0000	2624.1000
8	1722.0000	9500.0000	3040.5900
8	1724.0000	12400.0000	3457.1000

9 ENDTBL

3 STRUCT STRUCT NO. 3 Pasa Mtn.

	ELEVATION	DISCHARGE	STORAGE
8	1765.1000	.0000	100.0000
8	1765.7600	31.1500	114.6000

```
8                    1766.4200      52.3000     130.6900
8                    1767.0700      68.7400     149.6000
8                    1767.7300      87.7800     171.5100
8                    1768.3900     101.7900     200.5900
8                    1769.0500     104.8800     227.4500
8                    1769.7100     108.2100     256.3600
8                    1770.3600     110.3800     278.5100
8                    1771.0200     113.3600     310.6100
8                    1771.6800     116.4500     343.9100
8                    1772.3400     117.9600     366.5200
8                    1773.0000     120.1100     402.6300
8                    1773.6500     501.9900     439.9000
8                    1774.3000    1043.4300     492.9600
8                    1775.4700    2512.2600     570.9300
8                    1776.9000    4839.3600     696.3000
8                    1779.5000   10327.5699     921.6600
8                    1782.7500   18894.0100    1300.2400
8                    1786.0000   28877.7000    1791.8500
9 ENDTBL

                  TIME INCREMENT
4 DIMHYD

8                .0000       .0300       .1000       .1900       .3100
8                .4700       .6600       .8200       .9300       .9900
8               1.0000       .9900       .9300       .8600       .7800
8                .6800       .5600       .4600       .3900       .3300
8                .2800       .2410       .2070       .1740       .1470
8                .1260       .1070       .0910       .0770       .0660
8                .0550       .0470       .0400       .0340       .0290
8                .0250       .0210       .0180       .0150       .0130
8                .0110       .0090       .0080       .0070       .0060
8                .0050       .0040       .0030       .0020       .0010
8                .0000       .0000       .0000       .0000       .0000
9 ENDTBL

  COMPUTED PEAK K FACTOR =  484.00

                  TIME INCREMENT
5 RAINFL 1                 .5000

8                .0000       .0080       .0170       .0260       .0350
8                .0450       .0550       .0650       .0760       .0870
8                .0990       .1120       .1250       .1400       .1560
8                .1740       .1940       .2190       .2540       .3030
8                .5150       .5830       .6240       .6540       .6820
8                .7050       .7270       .7480       .7670       .7840
8                .8000       .8160       .8300       .8440       .8570
8                .8700       .8820       .8930       .9050       .9160
8                .9260       .9360       .9460       .9550       .9650
8                .9740       .9830       .9920      1.0000      1.0000
9 ENDTBL
```

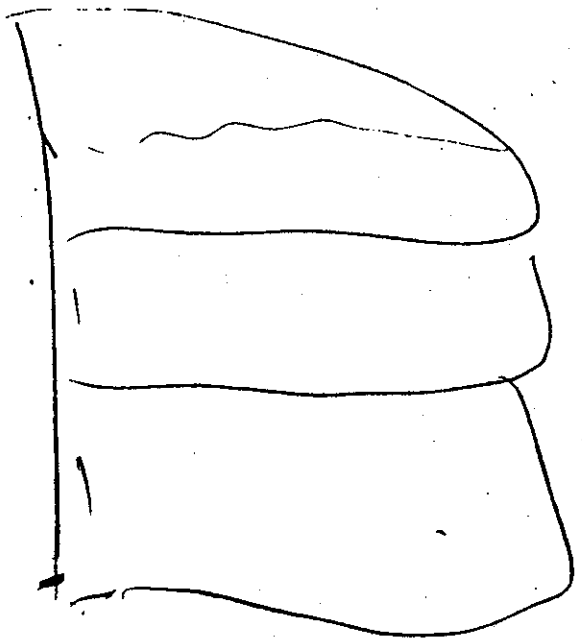
```
8                .0710        .0800        .0890        .0980
8                .1090        .1200        .1330        .1470        .1630
8                .1910        .2040        .2350        .2830        .6630
8                .7350        .7720        .7990        .8200        .8380
8                .8540        .8680        .8800        .8910        .9020
8                .9120        .9210        .9290        .9370        .9450
8                .9520        .9590        .9650        .9720        .9780
8                .9840        .9890        .9950       1.0000       1.0000
9 ENDTBL

                 TIME INCREMENT
5 RAINFL 3                2.4000

8                .0000        .0020        .0040        .0060        .0090
8                .0100        .0120        .0140        .0160        .0180
8                .0200        .0220        .0250        .0270        .0300
8                .0320        .0350        .0380        .0400        .0430
8                .0460        .0490        .0520        .0550        .0580
8                .0610        .0640        .0690        .0720        .0760
8                .0800        .0840        .0890        .0930        .0980
8                .1020        .1080        .1140        .1210        .1270
8                .1330        .1430        .1530        .1640        .1740
8                .1840        .1980        .2150        .2380        .2750
8                .7070        .7650        .7930        .8130        .8290
8                .8410        .8490        .8560        .8630        .8710
8                .8790        .8840        .8890        .8950        .9000
8                .9050        .9090        .9130        .9180        .9220
8                .9260        .9290        .9320        .9360        .9390
8                .9420        .9450        .9480        .9510        .9540
8                .9570        .9590        .9620        .9640        .9670
8                .9690        .9710        .9730        .9760        .9780
8                .9800        .9820        .9840        .9870        .9890
8                .9910        .9930        .9960        .9980       1.0000
9 ENDTBL

                 TIME INCREMENT
5 RAINFL 4                 .2500

8                .0000        .0060        .0110        .0170        .0280
8                .0410        .0570        .0750        .0900        .5620
8                .6970        .7630        .8070        .8390        .8730
8                .9070        .9370        .9480        .9580        .9680
8                .9790        .9840        .9890        .9950       1.0000
9 ENDTBL

                 TIME INCREMENT
5 RAINFL 5                 .5000

9                .0000        .0040        .0080        .0110        .0160
```

```
8                .0210      .0270      .0340      .0440      .0550
8                .0700      .0880      .1080      .1370      .1720
8                .2170      .2730      .3410      .4200      .4920
8                .5600      .6180      .6720      .7170      .7530
8                .7820      .8070      .8270      .8450      .8600
8                .8730      .8850      .8950      .9030      .9130
8                .9210      .9300      .9350      .9420      .9490
8                .9540      .9600      .9670      .9720      .9780
8                .9920      .9890      .9930     1.0000     1.0000
9 ENDTBL
```

STANDARD CONTROL INSTRUCTIONS

```
6 RUNOFF 1 101        5      1.8600     80.0000     1.21001 0 0 1 0 1
6 RUNOFF 1   1        6      1.2000     79.0000      .67001 0 0 1 0 1
6 ADDHYD 4   1    5 6 7                                  1 0 0 1 0 1
6 REACH  3 102    7   5   2500.0000       .6500      .00000 0 0 0 0 0
6 RUNOFF 1   2        6      1.2400     75.0000      .59001 0 0 1 0 1
6 ADDHYD 4   2    5 6 7                                  1 0 0 1 0 1
6 REACH  3 103    7   5   2500.0000       .6500      .00000 0 0 0 0 0
6 RUNOFF 1   3        6      1.8500     80.0000      .91001 0 0 1 0 1
6 ADDHYD 4   3    5 6 7                                  1 1 0 1 0 1
6 SAVMOV 5      1 7   6
6 RESVOR-2      1 6   7   1794.1000                       1 1 0 1 0 1
6 DIVERT 6      1 7 4 1    115.0000       .0000      .00000 0 0 0 0 0
6 REACH  3 104    4   5   6700.0000       .0000      .00001 0 0 1 0 1
6 RUNOFF 1   4        6      2.5400     80.0000      .54001 0 0 1 0 1
6 ADDHYD 4   4    5 6 7                                  1 0 0 1 0 1
6 DIVERT 6 104    7 5 2   3454.0000      1.0000      .00000 0 0 0 0 0
6 ADDHYD 4 104    1 2 4                                  0 0 0 0 0 0
6 REACH  3 106    5   3   3700.0000       .0000      .00001 0 0 1 0 1
6 RUNOFF 1   5        6      2.0000     82.0000      .43001 0 0 1 0 1
6 ADDHYD 4   5    3 6 7                                  1 0 0 1 0 1
6 DIVERT 6 106    7 5 2   6296.0000      1.0000      .00000 0 0 0 0 0
6 RUNOFF 1   6        6      1.1400     79.0000      .42001 0 0 1 0 1
6 ADDHYD 4   6    5 6 7                                  1 0 0 1 0 1
6 SAVMOV 5   6    7   5
6 ADDHYD 4 106    4 2 7                                  1 1 0 1 0 1
6 SAVMOV 5 106    7   1
6 RUNOFF 1   7        6       .9600     75.0000      .23001 0 0 1 0 1
6 ADDHYD 4   7    5 6 7                                  1 1 0 1 0 1
6 SAVMOV 5   7    7   2
6 RUNOFF 1  10        7       .6700     78.0000      .89001 0 0 1 0 1
6 DIVERT 6 110    7 5 3    820.0000      1.0000      .00000 0 0 0 0 0
6 REACH  3 109    5   4   2700.0000       .0000      .00001 0 0 1 0 1
6 RUNOFF 1   9        6      1.3900     82.0000      .55001 0 0 1 0 1
6 ADDHYD 4 109    4 6 7                                  1 0 0 1 0 1
6 DIVERT 6 109    7 5 4   2546.0000      1.0000      .00000 0 0 0 0 0
6 REACH  3 108    5   6   2100.0000       .0000      .00001 0 0 1 0 1
6 RUNOFF 1   8        5      1.9200     84.0000      .42001 0 0 1 0 1
6 ADDHYD 4 108    5 6 7                                  1 1 0 1 0 1
6 ADDHYD 4 109    3 4 5                                  1 1 0 1 0 1
6 SAVMOV 5 109    5   3
6 DIVERT 6 108    7 5 4   5253.0000      1.0000      .00000 0 0 0 0 0
6 REACH  3 107    5   6   5300.0000       .0000      .00001 1 0 1 0 1
6 SAVMOV 5 107    2   5
6 ADDHYD 4 107    5 6 7                                  1 1 0 1 0 1
6 SAVMOV 5      2 7   6
6 RESVOR 2      2 6   7   1701.4000                       1 1 0 1 0 1
  ENDATA
```

END OF LISTING



```
                                                                                                PASS=  1
EXECUTIVE CONTROL CARD      123   OPERATION  INCDEM,     MAIN TIME INCREMENT=   .20
EXECUTIVE CONTROL CARD      124   OPERATION  COMPUT,     FROM XSECTN/STRUCT 101/  0     TO XSECTN/STRUCT   0/  2
        STARTING TIME=   .00     RAIN DEPTH=  3.94     RAIN DURATION=  1.00     RAIN TABLE NO.= 2     SOIL CONDITION= 2
        ALTERNATE NO.= 5         STORM NO.= 1

SUBROUTINE RUNOFF    CROSS SECTION 101
           AREA=   1.86     INPUT RUNOFF CURVE=  80.0     TIME OF CONCENTRATION=  1.21

           PEAK TIMES                  PEAK DISCHARGES                PEAK ELEVATIONS
              12.61                        996.753                      (RUNOFF)
              21.71                         50.851                      (RUNOFF)
              23.71                         43.489                      (RUNOFF)

           TOTAL WATER, IN INCHES ON DRAINAGE AREA=   1.9869        CFS-HRS=    2385.03        ACRE-FT=     197.10

SUBROUTINE RUNOFF    CROSS SECTION   1
           AREA=   1.20     INPUT RUNOFF CURVE=  79.0     TIME OF CONCENTRATION=   .67

           PEAK TIMES                  PEAK DISCHARGES                PEAK ELEVATIONS
              12.25                        900.999                      (RUNOFF)
              21.67                         32.652                      (RUNOFF)
              23.67                         27.939                      (RUNOFF)

           TOTAL WATER, IN INCHES ON DRAINAGE AREA=   1.9122        CFS-HRS=     1480.91        ACRE-FT=     122.38

SUBROUTINE ADDHYD    CROSS SECTION   1
           INPUT HYDROGRAPHS= 5,6     OUTPUT HYDROGRAPH= 7

           PEAK TIMES                  PEAK DISCHARGES                PEAK ELEVATIONS
              12.40                       1735.754                       (NULL)
              21.66                         83.447                       (NULL)
              23.67                         71.339                       (NULL)

           TOTAL WATER, IN INCHES ON DRAINAGE AREA=   1.9576        CFS-HRS=     3865.94        ACRE-FT=     319.48

SUBROUTINE REACH     CROSS SECTION 102
           LENGTH=   2500.00     INPUT COEFFICIENT=   .6500     INPUT ROUTINGS=   .00

           AVERAGE WATER VELOCITY=   3.157       AVERAGE ROUTING COEFF=  .6500       NUMBER OF ROUTINGS=   .71

SUBROUTINE RUNOFF    CROSS SECTION   2
           AREA=   1.24     INPUT RUNOFF CURVE=  75.0     TIME OF CONCENTRATION=   .59

           PEAK TIMES                  PEAK DISCHARGES                PEAK ELEVATIONS
              12.22                        825.204                      (RUNOFF)
              21.63                         31.185                      (RUNOFF)
              23.63                         26.835                      (RUNOFF)

           TOTAL WATER, IN INCHES ON DRAINAGE AREA=   1.6196        CFS-HRS=     1296.13        ACRE-FT=     107.11
```

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SUBROUTINE ADDHYD CROSS SECTION 2
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.47	2180.794	(NULL)
21.64	114.203	(NULL)
23.65	97.714	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.8598 CFS-HRS= 5161.17 ACRE-FT= 426.52

SUBROUTINE REACH CROSS SECTION 103
LENGTH= 2500.00 INPUT COEFFICIENT= .6500 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.157 AVERAGE ROUTING COEFF= .6500 NUMBER OF ROUTINGS= .71

SUBROUTINE RUNOFF CROSS SECTION 3
AREA= 1.85 INPUT RUNOFF CURVE= 80.0 TIME OF CONCENTRATION= .91

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.41	1200.942	(RUNOFF)
21.77	50.706	(RUNOFF)
23.76	43.324	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.9878 CFS-HRS= 2373.33 ACRE-FT= 196.13

SUBROUTINE ADDHYD CROSS SECTION 3
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.59	3115.792	(NULL)
21.75	164.866	(NULL)
23.75	140.952	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.15

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.19	.78	1.99	4.01	7.12	11.34	16.70
10.00	DISCHG	23.25	31.42	41.93	55.29	72.51	94.62	123.25	163.08	251.94	533.62
12.00	DISCHG	1216.74	2186.05	2925.70	3115.36	2892.95	2507.37	2101.20	1719.99	1401.16	1150.99
14.00	DISCHG	959.13	813.36	703.72	619.75	555.40	505.94	467.53	435.77	408.46	384.20
16.00	DISCHG	361.63	340.93	322.72	307.27	294.83	285.51	278.56	272.23	265.47	258.26
18.00	DISCHG	250.36	242.07	233.41	224.64	216.77	210.52	205.99	202.85	200.56	198.08
20.00	DISCHG	194.16	189.40	184.92	181.19	177.35	172.53	167.59	164.71	164.45	164.82
22.00	DISCHG	163.68	161.03	158.17	155.59	152.53	148.14	143.47	140.63	140.49	140.90
24.00	DISCHG	139.61	134.15	120.52	98.47	73.96	52.95	36.81	24.88	16.45	10.76
26.00	DISCHG	7.00	4.55	2.96	1.92	1.24	.80	.52	.33	.21	.12
28.00	DISCHG	.06	.03	.00							

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.8992 CFS-HRS= 7533.80 ACRE-FT= 622.59

SUBROUTINE SAVHOV STRUCTURE 1

PEAK TIMES 18.48 | PEAK DISCHARGES 229.968 | PEAK ELEVATIONS 1789.59

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.15

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.65	.97	1.41	1.98	2.74	3.73	5.01	6.70	9.15	13.84
12.00	DISCHG	24.36	60.04	92.85	96.78	100.50	103.39	105.33	106.93	108.21	109.24
14.00	DISCHG	110.08	110.77	111.34	111.82	112.24	112.61	112.94	113.24	113.52	113.77
16.00	DISCHG	123.28	145.58	163.80	178.59	190.57	200.32	208.31	214.87	220.15	224.23
18.00	DISCHG	227.18	229.04	229.89	229.81	228.91	227.42	225.55	223.48	221.35	219.19
20.00	DISCHG	216.94	214.48	211.80	208.99	206.08	203.04	199.81	196.52	193.39	190.58
22.00	DISCHG	188.01	185.50	182.96	180.41	177.83	175.14	172.27	169.32	166.50	163.98
24.00	DISCHG	161.66	159.23	156.11	151.55	145.16	137.17	128.14	118.62	113.87	113.78
26.00	DISCHG	113.68	113.59	113.49	113.39	113.30	113.20	113.10	113.00	112.90	112.80
28.00	DISCHG	112.70	112.60	112.50	112.40	112.30	112.20	112.10	112.00	111.91	111.81
30.00	DISCHG	111.71	111.61	111.51	111.41	111.31	111.21	111.12	111.02	110.92	110.82
32.00	DISCHG	110.72	110.63	110.53	110.43	110.33	110.24	110.14	110.04	109.94	109.85
34.00	DISCHG	109.75	109.65	109.56	109.46	109.36	109.27	109.17	109.07	108.98	108.88
36.00	DISCHG	108.78	108.69	108.59	108.50	108.40	108.31	108.21	108.11	108.02	107.92
38.00	DISCHG	107.83	107.73	107.64	107.54	107.45	107.35	107.26	107.16	107.07	106.97
40.00	DISCHG	106.88	106.78	106.69	106.60	106.50	106.41	106.31	106.22	106.13	106.03
42.00	DISCHG	105.94	105.85	105.75	105.66	105.57	105.47	105.38	105.29	105.19	105.10
44.00	DISCHG	105.01	104.91	104.82	104.73	104.64	104.54	104.45	104.36	104.27	104.18
46.00	DISCHG	104.08	103.99	103.90	103.81	103.72	103.62	103.53	103.44	103.35	103.26
48.00	DISCHG	103.17	103.08	102.99	102.89	102.80	102.71	102.62	102.53	102.44	102.32
50.00	DISCHG	102.19	102.06	101.93	101.80	101.67	101.54	101.41	101.28	101.15	101.02
52.00	DISCHG	100.89	100.76	100.63	100.50	100.37	100.25	100.12	99.99	99.86	99.73
54.00	DISCHG	99.61	99.48	99.35	99.22	99.10	98.97	98.84	98.72	98.59	98.46
56.00	DISCHG	98.34	98.21	98.09	97.96	97.84	97.71	97.59	97.46	97.34	97.21
58.00	DISCHG	97.09	96.96	96.84	96.72	96.59	96.47	96.35	96.22	96.10	95.97

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.4741 CFS-HRS= 5850.61 ACRE-FT= 483.49

SUBROUTINE DIVERT STRUCTURE 1
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 4,1

SUBROUTINE REACH CROSS SECTION 104
LENGTH= 6700.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 11.250 AVERAGE ROUTING COEFF= .8687 NUMBER OF ROUTINGS= .72

PEAK TIMES 25.30 | PEAK DISCHARGES 115.037 | PEAK ELEVATIONS .51

TOTAL WATER, CANNOT BE COMPUTED WITH D.A.= 0.0 CFS-HRS= 5120.67 ACRE-FT= 423.17

```
SUBROUTINE RUNOFF     CROSS SECTION    4
          AREA=   2.54      INPUT RUNOFF CURVE=  80.0      TIME OF CONCENTRATION=    .54

          PEAK TIMES                    PEAK DISCHARGES                PEAK ELEVATIONS
             12.18                          2223.462                      (RUNOFF)
             21.61                            71.210                      (RUNOFF)
             23.61                            61.203                      (RUNOFF)

          TOTAL WATER, IN INCHES ON DRAINAGE AREA=   1.9909        CFS-HRS=     3263.62        ACRE-FT=     269.71

SUBROUTINE ADDHYD     CROSS SECTION    4
          INPUT HYDROGRAPHS= 5,6      OUTPUT HYDROGRAPH= 7

          PEAK TIMES                    PEAK DISCHARGES                PEAK ELEVATIONS
             12.18                          2254.454                       (NULL)
             21.61                           186.210                       (NULL)
             23.61                           176.203                       (NULL)

          TOTAL WATER, IN INCHES ON DRAINAGE AREA=   5.1147        CFS-HRS=     8384.29        ACRE-FT=     692.88

SUBROUTINE DIVERT     CROSS SECTION 104
          INPUT HYDROGRAPH= 7      OUTPUT HYDROGRAPHS= 5,2

SUBROUTINE ADDHYD     CROSS SECTION 104
          INPUT HYDROGRAPHS= 1,2      OUTPUT HYDROGRAPH= 4

SUBROUTINE REACH      CROSS SECTION 106
          LENGTH=   3700.00      INPUT COEFFICIENT=   .0000      INPUT ROUTINGS=    .00

          AVERAGE WATER VELOCITY=  16.167        AVERAGE ROUTING COEFF=  .9049        NUMBER OF ROUTINGS=    .29

          PEAK TIMES                    PEAK DISCHARGES                PEAK ELEVATIONS
             12.24                          2149.407                        4.09
             21.66                           185.702                         .63
             23.66                           175.668                         .60

          TOTAL WATER, IN INCHES ON DRAINAGE AREA=   5.1100        CFS-HRS=     8376.51        ACRE-FT=     692.23

SUBROUTINE RUNOFF     CROSS SECTION    5
          AREA=   2.00      INPUT RUNOFF CURVE=  82.0      TIME OF CONCENTRATION=    .43

          PEAK TIMES                    PEAK DISCHARGES                PEAK ELEVATIONS
             12.10                          2052.383                      (RUNOFF)
             19.32                            68.094                      (RUNOFF)
             21.56                            58.806                      (RUNOFF)
             23.56                            50.519                      (RUNOFF)

          TOTAL WATER, IN INCHES ON DRAINAGE AREA=   2.1556        CFS-HRS=     2782.28        ACRE-FT=     229.93
```

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```
SUBROUTINE ADDHYD    CROSS SECTION   5
           INPUT HYDROGRAPHS= 3,6      OUTPUT HYDROGRAPH= 7

           PEAK TIMES                  PEAK DISCHARGES              PEAK ELEVATIONS
              12.17                       4107.912                     (NULL)
              21.60                        244.285                     (NULL)
              23.60                        225.059                     (NULL)

           TOTAL WATER, IN INCHES ON DRAINAGE AREA=   3.8085        CFS-HRS=    11158.79        ACRE-FT=     922.16

SUBROUTINE DIVERT    CROSS SECTION 106
           INPUT HYDROGRAPH= 7      OUTPUT HYDROGRAPHS= 5,2

SUBROUTINE RUNOFF    CROSS SECTION   6
           AREA=   1.14      INPUT RUNOFF CURVE=  79.0      TIME OF CONCENTRATION=   .42

           PEAK TIMES                  PEAK DISCHARGES              PEAK ELEVATIONS
              12.11                       1039.291                    (RUNOFF)
              19.32                         36.665                    (RUNOFF)
              21.55                         31.768                    (RUNOFF)
              23.55                         27.320                    (RUNOFF)

           TOTAL WATER, IN INCHES ON DRAINAGE AREA=   1.9171        CFS-HRS=     1410.49        ACRE-FT=     116.56

SUBROUTINE ADDHYD    CROSS SECTION   6
           INPUT HYDROGRAPHS= 5,6      OUTPUT HYDROGRAPH= 7

           PEAK TIMES                  PEAK DISCHARGES              PEAK ELEVATIONS
              12.16                       5129.794                     (NULL)
              19.31                        303.093                     (NULL)
              21.59                        276.005                     (NULL)
              23.59                        253.227                     (NULL)

           TOTAL WATER, IN INCHES ON DRAINAGE AREA=   3.4289        CFS-HRS=    12569.27        ACRE-FT=    1038.72

SUBROUTINE SAVMOV    CROSS SECTION   6
           INPUT HYDROGRAPH= 7      OUTPUT HYDROGRAPH= 5

SUBROUTINE ADDHYD    CROSS SECTION 106
           INPUT HYDROGRAPHS= 4,2      OUTPUT HYDROGRAPH= 7

           PEAK TIMES                  PEAK DISCHARGES              PEAK ELEVATIONS
              18.48                        114.968                       .39

   TIME                                HYDROGRAPH, TZERO=     .00        DELTA T=  .20        DRAINAGE AREA=   6.15
    .00    DISCHG        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   2.00    DISCHG        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   4.00    DISCHG        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   6.00    DISCHG        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   8.00    DISCHG        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
  10.00    DISCHG        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
  12.00    DISCHG        .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
```

14.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16.00	DISCHG	8.28	30.58	48.80	63.59	75.57	85.32	93.31	99.87	105.15	109.23
18.00	DISCHG	112.18	114.04	114.89	114.81	113.91	112.42	110.55	108.48	106.35	104.19
20.00	DISCHG	101.94	99.48	96.80	93.99	91.08	88.04	84.81	81.52	78.39	75.58
22.00	DISCHG	73.01	70.50	67.96	65.41	62.83	60.14	57.27	54.32	51.50	48.98
24.00	DISCHG	46.66	44.23	41.11	36.55	30.16	22.17	13.14	3.62	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1801 CFS-HRS= 714.64 ACRE-FT= 59.06

SUBR [illegible] OV [illegible] GRAP [illegible] 106 [illegible] HYDROGRAPH= 1

SUI [illegible] TIME [illegible] ON= .23

ELE [illegible]

36.00	DISCHG										
38.00	DISCHG	108.89									
40.00	DISCHG	107.93	108.79								
42.00	DISCHG	106.98	107.84	108.70							
44.00	DISCHG	106.04	106.89	107.74	108.60						
46.00	DISCHG	105.11	105.95	106.79	107.65	108.51					
48.00	DISCHG	104.18	105.02	105.85	106.70	107.55	108.41				
50.00	DISCHG	103.27	104.09	104.92	105.76	106.60	107.46	108.31			
52.00	DISCHG	102.33	103.18	104.00	104.83	105.67	106.51	107.36	108.22		
54.00	DISCHG	101.03	102.20	103.08	103.91	104.74	105.57	106.42	107.27	108.12	
56.00	DISCHG	99.74	100.90	102.07	102.99	103.82	104.64	105.48	106.32	107.17	108.03
58.00	DISCHG	98.48	99.62	100.77	101.94	102.90	103.72	104.55	105.39	106.23	107.08
		97.22	98.35	99.49	100.54	101.81	102.81	103.63	104.46	105.29	106.13
			97.10	98.22	99.36	100.51	101.68	102.72	103.54	104.37	105.20
				96.98	98.10	99.24	100.39	101.55	102.63	103.45	104.28
					96.85	97.97	99.11	100.26	101.42	102.54	103.36
						96.73	97.85	98.98	100.13	101.29	102.44
							96.60	97.72	98.86	100.00	101.16
								96.48	97.60	98.73	99.87
									96.36	97.47	98.60
										96.23	97.35
											96.11

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 3.1657 CFS-HRS= 13565.86 ACRE-FT= 1121.08

SUBROUTINE SAVMOV CROSS SECTION 7
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

SUBROUTINE RUNOFF CROSS SECTION 10
AREA= .67 INPUT RUNOFF CURVE= 78.0 TIME OF CONCENTRATION= .89

PEAK TIMES
12.41
21.77
23.76

PEAK DISCHARGES
402.489
17.695
15.181

PEAK ELEVATIONS
(RUNOFF)
(RUNOFF)
(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.8374 CFS-HRS= 794.50 ACRE-FT= 65.66

SUBROUTINE DIVERT CROSS SECTION 110
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,3

SUBROUTINE REACH CROSS SECTION 107
LENGTH= 2700.00 INPUT COEFFICIENT= [illegible]

AVERAGE WATER VELOCITY= [illegible]

PEAK [illegible]

		[illegible]	105.02	[illegible]	[illegible]	[illegible]	106.51	[illegible]	[illegible]	108.12	[illegible]
[illegible]	DISCHG	104.18	104.09	104.00	103	105.67	105.57	105.48	107.27	107.17	[illegible]
[illegible].00	DISCHG	103.27	103.18	103.08	[illegible]	104.74	104.64	104.55	106.32	106.23	[illegible]
[illegible].00	DISCHG	102.33	102.20	102.07	101.94	103.82	103.72	103.63	105.39	105.29	105.20
[illegible].00	DISCHG	101.03	100.90	100.77	100.64	102.90	102.81	102.72	104.46	104.37	104.28
54.00	DISCHG	99.74	99.62	99.49	99.36	101.81	101.68	101.55	103.54	103.45	103.36
56.00	DISCHG	98.48	98.35	98.22	98.10	100.51	100.39	100.26	102.63	102.54	102.44
58.00	DISCHG	97.22	97.10	96.98	96.85	99.24	99.11	98.98	101.42	101.29	101.16
						97.97	97.85	97.72	100.13	100.00	99.87
						96.73	96.60	96.48	98.86	98.73	98.60
									97.60	97.47	97.35
									96.36	96.23	96.11

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 3.1657 CFS-HRS= 13565.86 ACRE-FT= 1121.08

SUBROUTINE SAVMOV CROSS SECTION 7
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

SUBROUTINE RUNOFF CROSS SECTION 10
AREA= .67 INPUT RUNOFF CURVE= 78.0 TIME OF CONCENTRATION= .89

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.41	402.489	(RUNOFF)
21.77	17.695	(RUNOFF)
23.76	15.181	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.8374 CFS-HRS= 794.50 ACRE-FT= 65.66

SUBROUTINE DIVERT CROSS SECTION 110
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,3

SUBROUTINE REACH CROSS SECTION 109
LENGTH= 2700.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 2.514 AVERAGE ROUTING COEFF= .5966 NUMBER OF ROUTINGS= .89

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.69	365.063	1767.77
21.98	17.604	1764.24
23.95	15.080	1764.15

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.8367 CFS-HRS= 794.18 ACRE-FT= 65.63

SUBROUTINE RUNOFF CROSS SECTION [illegible]
AREA= 1.39 INPUT RUNOFF CURVE= 82.0 TIME OF CONCENTRATION= .55

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.18	1307.435	(RUNOFF)
21.61	40.007	(RUNOFF)
23.61	34.695	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1476 CFS-HRS= 1926.50 ACRE-FT= 159.21

SUBROUTINE ADDHYD CROSS SECTION 109
INPUT HYDROGRAPHS= 4,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.22	1484.534	1772.57
21.61	57.024	1765.06
23.61	49.482	1764.94

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.0465 CFS-HRS= 2720.68 ACRE-FT= 224.84

SUBROUTINE DIVERT CROSS SECTION 109
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,4

SUBROUTINE REACH CROSS SECTION 108
LENGTH= 2100.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 6.616 AVERAGE ROUTING COEFF= .7956 NUMBER OF ROUTINGS= .35

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.29	1408.327	1759.17
21.67	57.485	1754.63
23.67	49.160	1754.49

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.0454 CFS-HRS= 2719.25 ACRE-FT= 224.72

SUBROUTINE RUNOFF CROSS SECTION 8
AREA= 1.92 INPUT RUNOFF CURVE= 84.0 TIME OF CONCENTRATION= .42

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.09	2152.812	(RUNOFF)
19.31	67.635	(RUNOFF)
21.55	58.380	(RUNOFF)
23.55	50.071	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.3216 CFS-HRS= 2876.76 ACRE-FT= 237.74

SUBROUTINE ADDHYD CROSS SECTION 108
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.16	3387.930	1762.11
21.58	115.684	1755.06
23.58	99.041	1754.95

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 3.98

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.01	.34	1.53	3.17	4.97
8.00	DISCHG	7.00	9.89	13.85	17.92	22.54	27.20	32.63	39.33	45.81	54.03
10.00	DISCHG	62.46	74.91	90.47	106.65	133.51	161.59	203.87	269.55	455.84	1577.54

12.00	DISCHG →	2999.94	3362.39	2500.77	1836.27	1366.36	1044.29	832.78	672.27	570.05	486.00
14.00	DISCHG	425.67	383.86	348.33	325.00	303.45	286.68	272.28	256.25	244.69	229.92
16.00	DISCHG	217.25	207.60	198.21	192.33	189.08	187.27	183.73	177.69	173.06	166.22
18.00	DISCHG	160.19	154.28	146.83	142.02	139.39	137.94	137.11	136.65	135.74	130.86
20.00	DISCHG	125.90	123.15	121.68	120.12	114.83	109.71	109.36	113.38	115.66	112.37
22.00	DISCHG	108.26	106.00	104.84	103.44	98.25	93.10	92.72	96.83	99.02	95.76
24.00	DISCHG	91.26	75.92	46.32	26.51	15.58	9.42	5.63	3.31	1.94	1.13
26.00	DISCHG	.65	.38	.22	.12	.06	.03	.00			

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1786 CFS-HRS= 5596.01 ACRE-FT= 462.45

SUBROUTINE ADDHYD CROSS SECTION 109
INPUT HYDROGRAPHS= 3,4 OUTPUT HYDROGRAPH= 5

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .00

.00	DISCHG	.00

TOTAL WATER, CANNOT BE COMPUTED WITH D.A.= 0.0 CFS-HRS= .00 ACRE-FT= .00

SUBROUTINE SAVMOV CROSS SECTION 109
INPUT HYDROGRAPH= 5 OUTPUT HYDROGRAPH= 3

SUBROUTINE DIVERT CROSS SECTION 108
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,4

SUBROUTINE REACH CROSS SECTION 107
LENGTH= 5300.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 5.495 AVERAGE ROUTING COEFF= .7637 NUMBER OF ROUTINGS= 1.02

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.41	3170.661	1759.42
21.81	114.879	1750.83
23.81	98.251	1750.65

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 3.98

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.01	.26	1.21	2.68
8.00	DISCHG	4.40	6.35	9.00	12.64	16.61	21.06	25.67	30.90	37.23	43.67
10.00	DISCHG	51.45	59.72	70.44	85.43	101.37	125.47	152.59	191.05	249.91	404.10
12.00	DISCHG	1281.69	2570.44	3169.36	2673.09	2044.97	1534.44	1165.40	914.85	732.23	610.05
14.00	DISCHG	516.70	448.17	399.74	361.06	333.97	311.02	292.71	277.34	261.50	248.85
16.00	DISCHG	234.64	221.56	211.06	201.40	194.57	190.43	188.05	184.81	179.47	174.65
18.00	DISCHG	168.33	162.21	156.25	149.19	143.79	140.47	138.56	137.46	136.85	136.02
20.00	DISCHG	132.16	127.46	124.21	122.30	120.66	116.30	111.35	109.83	112.48	114.87
22.00	DISCHG	113.01	109.45	106.85	105.33	103.91	99.67	94.74	93.20	95.90	98.24
24.00	DISCHG	96.48	92.55	80.18	54.79	33.52	20.00	12.02	7.20	4.26	2.51
26.00	DISCHG	1.47	.85	.49	.28	.16	.09	.04	.01	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.1711 CFS-HRS= 5576.68 ACRE-FT= 460.86

SUBROUTINE SAVMOV   CROSS SECTION 107
INPUT HYDROGRAPH= 2   OUTPUT HYDROGRAPH= 5

SUBROUTINE ADDHYD   CROSS SECTION 107
INPUT HYDROGRAPHS= 5,6   OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.21	8164.111	1765.58
21.61	412.839	1752.71
23.61	370.111	1752.49

HYDROGRAPH, TZERO= .00   DELTA T= .20   DRAINAGE AREA= 10.62

TIME DISCHG .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .01 .26 1.21 2.80 79.97 97.74

DISCHG .00 ... 2 ... 342. ... 5.33 1570. ... 97

22

TIME		HYDROGRAPH, TZERO= .00				DELTA T= .20			DRAINAGE AREA= 10.62		
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.08	.16	.29	.49	.77	1.15	1.66	2.31	3.14	4.15
10.00	DISCHG	5.37	6.85	8.67	10.92	13.70	17.18	21.59	27.35	36.43	61.33
12.00	DISCHG	119.40	127.13	132.73	137.27	139.99	141.74	143.05	144.09	144.93	145.64
14.00	DISCHG	146.36	147.05	147.67	148.26	148.81	149.33	149.82	150.28	150.71	151.12
16.00	DISCHG	151.44	151.58	151.71	151.84	151.96	152.08	152.20	152.32	152.43	152.54
18.00	DISCHG	152.64	152.74	152.84	152.93	153.02	153.10	153.19	153.27	153.36	153.44
20.00	DISCHG	153.52	153.60	153.67	153.75	153.82	153.89	153.95	154.03	154.12	154.21
22.00	DISCHG	154.30	154.39	154.48	154.56	154.64	154.72	154.79	154.87	154.94	155.10
24.00	DISCHG	155.46	155.77	155.98	157.48	157.94	157.66	157.00	156.15	155.95	155.88
26.00	DISCHG	155.81	155.74	155.67	155.60	155.53	155.45	155.38	155.31	155.23	155.16
28.00	DISCHG	155.09	155.01	154.99	154.97	154.96	154.94	154.93	154.91	154.89	154.88
30.00	DISCHG	154.86	154.85	154.83	154.82	154.80	154.78	154.77	154.75	154.74	154.72
32.00	DISCHG	154.70	154.69	154.67	154.66	154.64	154.62	154.61	154.59	154.58	154.56
34.00	DISCHG	154.54	154.53	154.51	154.49	154.48	154.46	154.44	154.43	154.41	154.40
36.00	DISCHG	154.38	154.36	154.35	154.33	154.31	154.30	154.28	154.26	154.24	154.23
38.00	DISCHG	154.21	154.19	154.18	154.16	154.14	154.13	154.11	154.09	154.08	154.06
40.00	DISCHG	154.04	154.02	154.01	153.99	153.98	153.97	153.95	153.94	153.93	153.92
42.00	DISCHG	153.90	153.89	153.88	153.86	153.85	153.84	153.82	153.81	153.80	153.79
44.00	DISCHG	153.77	153.76	153.75	153.73	153.72	153.71	153.69	153.68	153.67	153.65
46.00	DISCHG	153.64	153.63	153.61	153.60	153.59	153.57	153.56	153.55	153.53	153.52
48.00	DISCHG	153.51	153.49	153.48	153.47	153.45	153.44	153.42	153.41	153.40	153.38
50.00	DISCHG	153.37	153.36	153.34	153.33	153.31	153.30	153.29	153.27	153.26	153.24
52.00	DISCHG	153.23	153.22	153.20	153.19	153.17	153.16	153.15	153.13	153.12	153.10
54.00	DISCHG	153.09	153.07	153.06	153.05	153.03	153.02	153.00	152.99	152.97	152.96
56.00	DISCHG	152.94	152.93	152.91	152.90	152.88	152.87	152.86	152.84	152.83	152.81
58.00	DISCHG	152.80	152.78	152.77	152.75	152.74	152.72	152.71	152.69	152.68	152.66

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.0760

HYDROGRAPH, TZERO= .0 DELTA T= .20 DRAINAGE AREA= 10.62

T											
.	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.01	.03
8.00	DISCHG	.08	.16	.29	.49	.77	1.15	1.66	2.31	3.14	4.15
10.00	DISCHG	5.37	6.85	8.67	10.92	13.70	17.18	21.59	27.35	36.43	61.33
12.00	DISCHG	119.40	127.13	132.73	137.27	139.99	141.74	143.05	144.09	144.93	145.64
14.00	DISCHG	146.36	147.05	147.67	148.26	148.81	149.33	149.82	150.28	150.71	151.12
16.00	DISCHG	151.44	151.58	151.71	151.84	151.96	152.08	152.20	152.32	152.43	152.54
18.00	DISCHG	152.64	152.74	152.84	152.93	153.02	153.10	153.19	153.27	153.36	153.44
20.00	DISCHG	153.52	153.60	153.67	153.75	153.82	153.89	153.95	154.03	154.12	154.21
22.00	DISCHG	154.30	154.39	154.48	154.56	154.64	154.72	154.79	154.87	154.94	155.10
24.00	DISCHG	155.46	155.77	155.98	157.48	157.94	157.66	157.00	156.15	155.95	155.88
26.00	DISCHG	155.81	155.74	155.67	155.60	155.53	155.45	155.38	155.31	155.23	155.16
28.00	DISCHG	155.09	155.01	154.99	154.97	154.96	154.94	154.93	154.91	154.89	154.88
30.00	DISCHG	154.86	154.85	154.83	154.82	154.80	154.78	154.77	154.75	154.74	154.72
32.00	DISCHG	154.70	154.69	154.67	154.66	154.64	154.62	154.61	154.59	154.58	154.56
34.00	DISCHG	154.54	154.53	154.51	154.49	154.48	154.46	154.44	154.43	154.41	154.40
36.00	DISCHG	154.38	154.36	154.35	154.33	154.31	154.30	154.28	154.26	154.24	154.23
38.00	DISCHG	154.21	154.19	154.18	154.16	154.14	154.13	154.11	154.09	154.08	154.06
40.00	DISCHG	154.04	154.02	154.01	153.99	153.98	153.97	153.95	153.94	153.93	153.92
42.00	DISCHG	153.90	153.89	153.88	153.86	153.85	153.84	153.82	153.81	153.80	153.79
44.00	DISCHG	153.77	153.76	153.75	153.73	153.72	153.71	153.69	153.68	153.67	153.65
46.00	DISCHG	153.64	153.63	153.61	153.60	153.59	153.57	153.56	153.55	153.53	153.52
48.00	DISCHG	153.51	153.49	153.48	153.47	153.45	153.44	153.42	153.41	153.40	153.38
50.00	DISCHG	153.37	153.36	153.34	153.33	153.31	153.30	153.29	153.27	153.26	153.24
52.00	DISCHG	153.23	153.22	153.20	153.19	153.17	153.16	153.15	153.13	153.12	153.10
54.00	DISCHG	153.09	153.07	153.06	153.05	153.03	153.02	153.00	152.99	152.97	152.96
56.00	DISCHG	152.94	152.93	152.91	152.90	152.88	152.87	152.86	152.84	152.83	152.81
58.00	DISCHG	152.80	152.78	152.77	152.75	152.74	152.72	152.71	152.69	152.68	152.66

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.0760 CFS-HRS= 7374.54 ACRE-FT= 609.43

ENDCMP

```
STARTING TIME=    .00    OPERATION  COMPUT.
ALTERNATE NO.= 5         RAIN DEPTH=  7.06
                         STORM NO.= 4

FROM XSECTN/STRUCT 101/  0      TO XSECTN/STRUCT   0/  2      PASS=  2
DURATION=  1.00      RAIN TABLE NO.= 5      SOIL CONDITION= 2

SUBROUTINE RUNOFF     CROSS SECTION 101
AREA=    1.86     INPUT RUNOFF CURVE=  80.0     TIME OF CONCENTRATION=  1.21

PEAK TIMES          PEAK DISCHARGES          PEAK ELEVATIONS
  10.27                905.926                  (RUNOFF)
  19.61                105.033                  (RUNOFF)
  21.35                 96.011                  (RUNOFF)
  23.42                 86.488                  (RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA=   4.7414      CFS-HRS=    5691.51      ACRE-FT=    470.35

SUBROUTINE RUNOFF     CROSS SECTION   1
AREA=    1.20     INPUT RUNOFF CURVE=  79.0     TIME OF CONCENTRATION=   .67

PEAK TIMES          PEAK DISCHARGES          PEAK ELEVATIONS
   9.90                589.739                  (RUNOFF)
  17.17                 92.968                  (RUNOFF)
  17.98                 85.347                  (RUNOFF)
  19.51                 68.342                  (RUNOFF)
  21.13                 65.259                  (RUNOFF)
  22.07                 56.467                  (RUNOFF)
  23.19                 60.928                  (RUNOFF)
  24.09                 58.396                  (RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA=   4.6306      CFS-HRS=    3586.16      ACRE-FT=    296.36

SUBROUTINE ADDHYD     CROSS SECTION   1
INPUT HYDROGRAPHS= 5,6     OUTPUT HYDROGRAPH= 7

PEAK TIMES          PEAK DISCHARGES          PEAK ELEVATIONS
  10.13                1470.069                 (NULL)
  17.11                 238.877                 (NULL)
  19.54                 173.258                 (NULL)
  21.19                 161.220                 (NULL)
  23.23                 145.887                 (NULL)
  24.08                 142.216                 (NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA=   4.6980      CFS-HRS=    9277.67      ACRE-FT=    766.71

SUBROUTINE REACH      CROSS SECTION 102
LENGTH=  2500.00     INPUT COEFFICIENT=   .6500     INPUT ROUTINGS=   .00
AVERAGE WATER VELOCITY=   3.157     AVERAGE ROUTING COEFF=  .6500     NUMBER OF ROUTINGS=   .71

SUBROUTINE RUNOFF     CROSS SECTION   2
AREA=    1.24     INPUT RUNOFF CURVE=  75.0     TIME OF CONCENTRATION=   .59
```

9.98	554.258	(RUNOFF)
17.14	92.769	(RUNOFF)
17.89	85.252	(RUNOFF)
19.49	67.868	(RUNOFF)
21.09	65.268	(RUNOFF)
22.04	56.464	(RUNOFF)
23.15	61.278	(RUNOFF)
24.05	59.449	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.1947 CFS-HRS= 3356.86 ACRE-FT= 277.41

SUBROUTINE ADDHYD CROSS SECTION 2
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.20	2028.761	(NULL)
19.53	240.054	(NULL)
21.21	222.269	(NULL)
23.25	200.318	(NULL)
24.11	179.188	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.5529 CFS-HRS= 12634.70 ACRE-FT= 1044.13

SUBROUTINE REACH CROSS SECTION 103
LENGTH= 2500.00 INPUT COEFFICIENT= .6500 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.157 AVERAGE ROUTING COEFF= .6500 NUMBER OF ROUTINGS= .71

SUBROUTINE RUNOFF CROSS SECTION 3
AREA= 1.85 INPUT RUNOFF CURVE= 80.0 TIME OF CONCENTRATION= .91

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.04	919.904	(RUNOFF)
17.23	142.715	(RUNOFF)
19.58	104.977	(RUNOFF)
21.23	98.616	(RUNOFF)
23.31	89.089	(RUNOFF)
24.13	86.923	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.7411 CFS-HRS= 5660.56 ACRE-FT= 467.79

SUBROUTINE ADDHYD CROSS SECTION 3
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.31	2923.003	(NULL)
19.57	344.148	(NULL)
21.33	317.633	(NULL)
23.39	285.875	(NULL)
24.16	280.962	(NULL)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.15

	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.26	1.65	5.60	14.00
6.00	DISCHG	28.27	50.76	85.15	134.29	197.53	274.32	365.01	473.23	600.72	747.63
8.00	DISCHG	918.18	1108.43	1319.98	1552.06	1798.90	2058.41	2312.95	2526.91	2686.77	2800.05
10.00	DISCHG	2875.65	2917.12	2919.03	2882.58	2825.85	2762.16	2694.30	2612.95	2512.56	2397.61
12.00	DISCHG	2267.59	2129.47	1988.54	1848.94	1718.48	1599.47	1491.55	1389.54	1291.59	1201.98
14.00	DISCHG	1123.29	1054.77	991.71	931.21	874.41	821.46	773.87	732.07	695.70	662.32
16.00	DISCHG	628.54	593.91	558.13	522.68	494.67	480.78	477.15	472.47	461.75	450.42
18.00	DISCHG	444.34	439.22	423.96	394.82	365.49	347.94	342.56	342.88	344.10	341.77
20.00	DISCHG	331.27	316.51	304.63	299.78	301.53	308.28	316.00	317.32	310.09	300.58
22.00	DISCHG	295.19	292.54	285.54	272.83	264.05	268.43	280.35	285.85	278.64	270.94
24.00	DISCHG	274.18	280.62	266.69	224.86	171.47	124.01	87.00	59.13	39.17	25.61
26.00	DISCHG	16.67	10.84	7.06	4.58	2.96	1.91	1.25	.80	.51	.31
28.00	DISCHG	.17	.08	.03	.00						

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.6095 CFS-HRS= 18295.29 ACRE-FT= 1511.92

SUBROUTINE SAVMOV STRUCTURE 1
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 6

SUBROUTINE RESVOR STRUCTURE 1
SURFACE ELEVATION= 1794.10

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.69	1794.120	1801.77

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.15

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.01	.06	.18
6.00	DISCHG	.43	.91	1.73	3.05	5.04	7.86	11.67	16.64	23.00	34.77
8.00	DISCHG	52.50	73.85	91.85	93.68	95.82	98.18	100.85	103.39	105.60	107.93
10.00	DISCHG	110.34	112.80	265.48	523.28	751.30	951.13	1124.97	1274.51	1400.54	1503.70
12.00	DISCHG	1584.78	1644.82	1743.51	1788.87	1787.53	1754.26	1700.22	1643.58	1613.94	1578.02
14.00	DISCHG	1537.38	1493.52	1447.52	1399.97	1351.34	1302.09	1252.75	1203.86	1155.92	1109.27
16.00	DISCHG	1063.90	1019.61	976.22	933.58	892.02	852.47	815.93	782.56	751.70	722.78
18.00	DISCHG	695.84	670.99	647.57	624.27	600.39	576.55	553.92	533.26	514.70	497.90
20.00	DISCHG	482.11	466.63	451.37	436.77	423.46	411.86	402.11	393.75	385.92	378.03
22.00	DISCHG	370.19	362.73	355.52	349.05	340.26	333.02	327.29	322.96	318.98	314.66
24.00	DISCHG	310.54	307.30	304.01	298.31	288.51	274.74	258.19	240.08	221.40	202.91
26.00	DISCHG	185.13	168.36	152.77	138.39	125.22	113.90	113.80	113.70	113.61	113.51
28.00	DISCHG	113.40	113.30	113.20	113.10	113.01	112.91	112.81	112.71	112.61	112.51
30.00	DISCHG	112.41	112.31	112.21	112.11	112.01	111.91	111.81	111.71	111.62	111.52
32.00	DISCHG	111.42	111.32	111.22	111.13	111.03	110.93	110.83	110.73	110.63	110.54
34.00	DISCHG	110.44	110.34	110.24	110.15	110.05	109.95	109.85	109.76	109.66	109.56
36.00	DISCHG	109.47	109.37	109.27	109.18	109.08	108.98	108.89	108.79	108.70	108.60
38.00	DISCHG	108.50	108.41	108.31	108.22	108.12	108.03	107.93	107.83	107.74	107.64
40.00	DISCHG	107.55	107.45	107.36	107.26	107.17	107.07	106.98	106.89	106.79	106.70
42.00	DISCHG	106.60	106.51	106.41	106.32	106.23	106.13	106.04	105.95	105.85	105.76
44.00	DISCHG	105.66	105.57	105.48	105.39	105.29	105.20	105.11	105.01	104.92	104.83
46.00	DISCHG	104.74	104.64	104.55	104.46	104.37	104.27	104.18	104.09	104.00	103.91
48.00	DISCHG	103.81	103.72	103.63	103.54	103.45	103.36	103.26	103.17	103.08	102.99
50.00	DISCHG	102.90	102.81	102.72	102.63	102.54	102.45	102.33	102.20	102.07	101.94
52.00	DISCHG	101.81	101.68	101.55	101.42	101.29	101.16	101.03	100.90	100.77	100.64

54.00	DISCHG	100.51	100.38	100.25	100.13	100.00	99.87	99.74	99.61	99.49	99.36
56.00	DISCHG	99.23	99.11	98.98	98.85	98.73	98.60	98.47	98.35	98.22	98.10
58.00	DISCHG	97.97	97.85	97.72	97.60	97.47	97.35	97.22	97.10	96.97	96.85

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.1504 CFS-HRS= 16472.99 ACRE-FT= 1361.33

SUBROUTINE DIVERT STRUCTURE 1
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 4,1

SUBROUTINE REACH CROSS SECTION 104
LENGTH= 6700.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 11.250 AVERAGE ROUTING COEFF= .8687 NUMBER OF ROUTINGS= .72

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
26.70	115.036	.51

TOTAL WATER, CANNOT BE COMPUTED WITH D.A.= 0.0 CFS-HRS= 5625.90 ACRE-FT= 464.92

SUBROUTINE RUNOFF CROSS SECTION 4
AREA= 2.54 INPUT RUNOFF CURVE= 80.0 TIME OF CONCENTRATION= .54

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.64	1281.816	(RUNOFF)
17.11	200.622	(RUNOFF)
17.97	184.240	(RUNOFF)
19.45	146.487	(RUNOFF)
21.07	141.759	(RUNOFF)
22.03	122.054	(RUNOFF)
23.12	133.356	(RUNOFF)
24.03	130.610	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.7408 CFS-HRS= 7771.30 ACRE-FT= 642.22

SUBROUTINE ADDHYD CROSS SECTION 4
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.71	1386.022	(NULL)
17.11	315.622	(NULL)
17.97	299.240	(NULL)
19.45	261.487	(NULL)
21.07	256.759	(NULL)
22.03	237.054	(NULL)
23.12	248.356	(NULL)
24.03	245.610	(NULL)
26.70	115.036	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 8.1728 CFS-HRS= 13397.19 ACRE-FT= 1107.14

SUBROUTINE DIVERT CROSS SECTION 104
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,2

OUTPUT HYDROGRAPH= 4

SUBROUTINE REACH CROSS SECTION 104
LENGTH= 3700.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 13.848 AVERAGE ROUTING COEFF= .8907 NUMBER OF ROUTINGS= .33

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.81	1385.612	3.07
17.17	314.133	1.07
18.00	297.338	1.01
19.51	261.697	.89
21.13	255.879	.87
22.09	235.615	.80
23.18	246.075	.84
24.09	240.549	.82
26.70	115.024	.39

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 8.1689 CFS-HRS= 13390.71 ACRE-FT= 1106.61

SUBROUTINE RUNOFF CROSS SECTION 5
AREA= 2.00 INPUT RUNOFF CURVE= 82.0 TIME OF CONCENTRATION= .43

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.24	1070.716	(RUNOFF)
9.51	1060.524	(RUNOFF)
17.05	163.265	(RUNOFF)
17.95	149.788	(RUNOFF)
19.39	118.066	(RUNOFF)
21.00	115.701	(RUNOFF)
21.99	99.172	(RUNOFF)
23.05	111.256	(RUNOFF)
23.98	110.110	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.9625 CFS-HRS= 6405.34 ACRE-FT= 529.34

SUBROUTINE ADDHYD CROSS SECTION 5
INPUT HYDROGRAPHS= 3,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.61	2442.243	(NULL)
17.11	475.443	(NULL)
17.97	446.990	(NULL)
19.46	378.837	(NULL)
21.06	369.836	(NULL)
22.02	334.405	(NULL)
23.11	353.875	(NULL)
24.02	349.026	(NULL)
26.70	115.024	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 6.7564 CFS-HRS= 19796.04 ACRE-FT= 1635.94

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SUBROUTINE DIVERT CROSS SECTION 106
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,2

SUBROUTINE RUNOFF CROSS SECTION 6
AREA= 1.14 INPUT RUNOFF CURVE= 79.0 TIME OF CONCENTRATION= .42

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.27	564.993	(RUNOFF)
9.60	564.418	(RUNOFF)
17.04	90.827	(RUNOFF)
17.95	83.463	(RUNOFF)
19.38	65.639	(RUNOFF)
21.00	64.365	(RUNOFF)
21.99	55.256	(RUNOFF)
23.04	61.849	(RUNOFF)
23.98	61.636	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.6300 CFS-HRS= 3406.37 ACRE-FT= 281.50

SUBROUTINE ADDHYD CROSS SECTION 6
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.61	3006.654	(NULL)
17.09	565.594	(NULL)
17.96	530.434	(NULL)
19.44	444.377	(NULL)
21.04	433.994	(NULL)
22.01	389.603	(NULL)
23.09	415.093	(NULL)
24.01	410.395	(NULL)
26.70	115.024	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 6.3296 CFS-HRS= 23202.40 ACRE-FT= 1917.45

SUBROUTINE SAVHOV CROSS SECTION 6
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 5

SUBROUTINE ADDHYD CROSS SECTION 106
INPUT HYDROGRAPHS= 4,2 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.69	1679.116	3.50

HYDROGRAPH, T7ERO= .00 DELTA T= .20 DRAINAGE AREA= 6.15

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	150.48	408.28	636.30	836.13	1009.97	1159.51	1285.54	1388.70

12.00	DISCHG	1469.78	1529.82	1628.51	1677.87	1672.53	1639.26	1585.22	1528.58	1498.94	1463.02
14.00	DISCHG	1422.38	1378.52	1332.52	1284.97	1236.34	1187.09	1137.75	1088.86	1040.92	994.27
16.00	DISCHG	948.90	904.61	861.22	818.59	777.02	737.47	700.93	667.56	636.70	607.78
18.00	DISCHG	580.84	555.99	532.57	509.27	485.39	461.55	438.92	418.26	399.70	382.90
20.00	DISCHG	367.11	351.63	336.37	321.77	308.46	296.86	287.11	278.75	270.92	263.03
22.00	DISCHG	255.19	247.73	240.52	233.85	225.26	218.02	212.29	207.96	203.98	199.66
24.00	DISCHG	195.54	192.30	189.01	183.31	173.51	159.74	143.19	125.08	106.40	87.91
26.00	DISCHG	70.13	53.36	37.77	23.39	10.22	.00				

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 2.7292 CFS-HRS= 10832.22 ACRE-FT= 895.18

SUBROUTINE SAVMOV CROSS SECTION 106
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 1

[illegible] CTIO 7 [illegible] .0 TIME [illegible]

16.00	DISCHG	670.31	647.45	599.43	580.02	609.12	638.02	627.13	592.46	574.43	585.14
18.00	DISCHG	597.72	552.44	473.02	437.56	452.33	478.27	491.82	497.53	492.18	452.30
20.00	DISCHG	419.00	415.46	429.54	443.29	468.37	486.81	469.97	432.22	412.59	422.97
22.00	DISCHG	435.47	416.04	377.56	365.46	416.61	463.50	447.50	394.87	372.97	419.96
24.00	DISCHG	463.60	394.52	258.34	175.77	138.50	123.97	118.35	116.15	115.36	115.06
26.00	DISCHG	115.00	115.00	115.00	115.00	115.00	114.81	114.20	113.84	113.72	113.62
28.00	DISCHG	113.52	113.42	113.32	113.22	113.12	113.02	112.92	112.82	112.72	112.62
30.00	DISCHG	112.52	112.42	112.32	112.22	112.12	112.02	111.93	111.83	111.73	111.63
32.00	DISCHG	111.53	111.43	111.33	111.24	111.14	111.04	110.94	110.84	110.75	110.65
34.00	DISCHG	110.55	110.45	110.35	110.26	110.16	110.06	109.96	109.87	109.77	109.67
36.00	DISCHG	109.58	109.48	109.38	109.29	109.19	109.09	109.00	108.90	108.80	108.71
38.00	DISCHG	108.61	108.52	108.42	108.33	108.23	108.13	108.04	107.94	107.85	107.75
40.00	DISCHG	107.66	107.56	107.47	107.37	107.28	107.18	107.09	106.99	106.90	106.80
42.00	DISCHG	106.71	106.62	106.52	106.43	106.33	106.24	106.15	106.05	105.96	105.86
44.00	DISCHG	105.77	105.68	105.58	105.49	105.40	105.31	105.21	105.12	105.03	104.93
46.00	DISCHG	104.84	104.75	104.66	104.56	104.47	104.38	104.29	104.19	104.10	104.01
48.00	DISCHG	103.92	103.83	103.73	103.64	103.55	103.46	103.37	103.28	103.19	103.10
50.00	DISCHG	103.00	102.91	102.82	102.73	102.64	102.55	102.45	102.34	102.21	102.08
52.00	DISCHG	101.95	101.82	101.69	101.56	101.43	101.30	101.17	101.04	100.92	100.79
54.00	DISCHG	100.66	100.53	100.40	100.27	100.14	100.02	99.89	99.76	99.63	99.50
56.00	DISCHG	99.38	99.25	99.12	99.00	98.87	98.74	98.62	98.49	98.37	98.24
58.00	DISCHG	98.11	97.99	97.86	97.74	97.61	97.49	97.36	97.24	97.11	96.99

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 6.0203 CFS-HRS= 25798.51 ACRE-FT= 2131.99

SUBROUTINE SAVMOV CROSS SECTION 7
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

SUBROUTINE RUNOFF CROSS SECTION 10
AREA= .67 INPUT RUNOFF CURVE= 78.0 TIME OF CONCENTRATION= .89

PEAK TIMES PEAK DISCHARGES
10.11

16.00	DISCHG	670.31	647.45	599.43	580.02	609.12	638.02	627.13	592.46	574.43	585.14
18.00	DISCHG	597.72	552.44	473.02	432.56	452.33	478.27	491.82	497.53	492.18	452.30
20.00	DISCHG	419.00	415.46	429.54	443.29	468.37	486.81	469.97	432.22	412.59	422.97
22.00	DISCHG	435.47	416.04	377.56	365.46	416.61	463.50	447.50	394.87	372.97	419.96
24.00	DISCHG	463.60	394.52	258.34	175.77	138.50	123.97	118.35	116.15	115.36	115.06
26.00	DISCHG	115.00	115.00	115.00	115.00	115.00	114.81	114.20	113.84	113.72	113.62
28.00	DISCHG	113.52	113.42	113.32	113.22	113.12	113.02	112.92	112.82	112.72	112.62
30.00	DISCHG	112.52	112.42	112.32	112.22	112.12	112.02	111.93	111.83	111.73	111.63
32.00	DISCHG	111.53	111.43	111.33	111.24	111.14	111.04	110.94	110.84	110.75	110.65
34.00	DISCHG	110.55	110.45	110.35	110.26	110.16	110.06	109.96	109.87	109.77	109.67
36.00	DISCHG	109.58	109.48	109.38	109.29	109.19	109.09	109.00	108.90	108.80	108.71
38.00	DISCHG	108.61	108.52	108.42	108.33	108.23	108.13	108.04	107.94	107.85	107.75
40.00	DISCHG	107.66	107.56	107.47	107.37	107.28	107.18	107.09	106.99	106.90	106.80
42.00	DISCHG	106.71	106.62	106.52	106.43	106.33	106.24	106.15	106.05	105.96	105.86
44.00	DISCHG	105.77	105.68	105.58	105.49	105.40	105.31	105.21	105.12	105.03	104.93
46.00	DISCHG	104.84	104.75	104.66	104.56	104.47	104.38	104.29	104.19	104.10	104.01
48.00	DISCHG	103.92	103.83	103.73	103.64	103.55	103.46	103.37	103.28	103.19	103.10
50.00	DISCHG	103.00	102.91	102.82	102.73	102.64	102.55	102.45	102.34	102.21	102.08
52.00	DISCHG	101.95	101.82	101.69	101.56	101.43	101.30	101.17	101.04	100.92	100.79
54.00	DISCHG	100.66	100.53	100.40	100.27	100.14	100.02	99.89	99.76	99.63	99.50
56.00	DISCHG	99.38	99.25	99.12	99.00	98.87	98.74	98.62	98.49	98.37	98.24
58.00	DISCHG	98.11	97.99	97.86	97.74	97.61	97.49	97.36	97.24	97.11	96.99

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 6.0203 CFS-HRS= 25798.51 ACRE-FT= 2131.99

SUBROUTINE SAVMOV CROSS SECTION 7
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

SUBROUTINE RUNOFF CROSS SECTION 10
AREA= .67 INPUT RUNOFF CURVE= 78.0 TIME OF CONCENTRATION= .89

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.11	318.256	(RUNOFF)
17.24	50.653	(RUNOFF)
19.56	37.296	(RUNOFF)
21.22	35.187	(RUNOFF)
23.28	31.852	(RUNOFF)
24.13	30.856	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.5208 CFS-HRS= 1954.77 ACRE-FT= 161.54

SUBROUTINE DIVERT CROSS SECTION 110
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,3

SUBROUTINE REACH CROSS SECTION 109
LENGTH= 2700.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 2.427 AVERAGE ROUTING COEFF= .5881 NUMBER OF ROUTINGS= .91

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.39	316.123	1767.46
17.37	50.528	1764.95
19.80	36.973	1764.75

21.48	34.610	1764.71
23.55	31.055	1764.65
24.33	30.178	1764.64

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.5209 CFS-HRS= 1954.81 ACRE-FT= 161.55

SUBROUTINE RUNOFF CROSS SECTION 9
AREA= 1.39 INPUT RUNOFF CURVE= 82.0 TIME OF CONCENTRATION= .55

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.51	734.724	(RUNOFF)
17.12	111.635	(RUNOFF)
17.98	102.615	(RUNOFF)
19.47	81.479	(RUNOFF)
21.07	78.600	(RUNOFF)
22.03	67.815	(RUNOFF)
23.13	74.431	(RUNOFF)
24.03	72.005	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.9630 CFS-HRS= 4452.10 ACRE-FT= 367.92

SUBROUTINE ADDHYD CROSS SECTION 109
INPUT HYDROGRAPHS= 4,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.96	1034.762	1770.83
17.09	162.067	1766.28
17.96	150.831	1766.17
19.51	118.354	1765.85
21.11	111.814	1765.79
21.99	99.869	1765.67
23.14	103.222	1765.70
24.03	101.022	1765.68

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.8192 CFS-HRS= 6406.91 ACRE-FT= 529.47

SUBROUTINE DIVERT CROSS SECTION 109
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,4

SUBROUTINE REACH CROSS SECTION 108
LENGTH= 2100.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 6.077 AVERAGE ROUTING COEFF= .7814 NUMBER OF ROUTINGS= .38

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.03	1033.058	1758.37
17.16	161.520	1755.38
17.96	149.990	1755.30
19.54	117.803	1755.08
21.17	110.932	1755.03
22.01	99.177	1754.95
23.21	101.597	1754.97
24.11	99.661	1754.96

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.8193 CFS-HRS= 6407.05 ACRE-FT= 529.48

SUBROUTINE RUNOFF CROSS SECTION 8
AREA= 1.92 INPUT RUNOFF CURVE= 84.0 TIME OF CONCENTRATION= .42

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.21	1079.212	(RUNOFF)
17.04	159.640	(RUNOFF)
17.95	146.539	(RUNOFF)
19.38	115.100	(RUNOFF)
21.00	112.728	(RUNOFF)
21.99	96.709	(RUNOFF)
23.04	108.177	(RUNOFF)
23.98	107.742	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 5.1865 CFS-HRS= 6426.70 ACRE-FT= 531.10

SUBROUTINE ADDHYD CROSS SECTION 108
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.71	2070.169	1760.33
17.06	319.934	1756.18
17.95	296.528	1756.08
19.45	232.052	1755.80
21.05	221.771	1755.75
21.99	195.877	1755.61
23.09	206.319	1755.68
24.00	204.582	1755.67

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 3.98

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.31	4.14	12.77	26.44	46.00	67.74	93.35
6.00	DISCHG	120.24	160.56	222.06	281.45	355.59	430.35	520.44	639.59	749.15	897.19
8.00	DISCHG	1041.81	1196.06	1384.95	1545.15	1740.36	1919.26	2017.28	2046.01	2069.72	2069.86
10.00	DISCHG	2067.48	2031.20	1944.78	1885.88	1827.73	1782.96	1718.16	1615.64	1537.31	1421.62
12.00	DISCHG	1318.23	1225.68	1120.08	1045.95	971.09	911.07	852.19	779.03	728.16	683.05
14.00	DISCHG	648.36	613.38	569.58	538.28	503.85	475.33	453.80	433.54	417.74	391.99
16.00	DISCHG	368.34	344.89	315.51	298.78	306.17	319.12	316.31	298.39	287.36	289.97
18.00	DISCHG	275.89	279.23	236.89	210.61	213.37	223.73	229.18	231.95	230.97	213.51
20.00	DISCHG	194.98	189.33	194.35	199.72	210.94	221.37	217.68	199.51	187.87	190.33
22.00	DISCHG	195.86	188.96	168.75	158.97	179.11	203.51	202.85	177.43	163.72	181.90
24.00	DISCHG	204.58	182.91	113.47	65.59	39.10	24.08	14.64	8.73	5.18	3.02
26.00	DISCHG	1.76	1.03	.60	.34	.18	.09	.04	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.9965 CFS-HRS= 12833.74 ACRE-FT= 1060.58

SUBROUTINE ADDHYD CROSS SECTION 109
INPUT HYDROGRAPHS= 3,4 OUTPUT HYDROGRAPH= 5

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .00

.00	DISCHG	.00

TOTAL WATER, CANNOT BE COMPUTED WITH D.A.= 0.0 CFS-HRS= .00 ACRE-FT= .00

SUBROUTINE SAVMOV CROSS SECTION 109
INPUT HYDROGRAPH= 5 OUTPUT HYDROGRAPH= 3

SUBROUTINE DIVERT CROSS SECTION 108
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,4

SUBROUTINE REACH CROSS SECTION 107
LENGTH= 5300.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 4.820 AVERAGE ROUTING COEFF= .7393 NUMBER OF ROUTINGS= 1.13

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.11	2069.743	1757.53
17.33	316.996	1752.22
18.15	294.244	1752.11
19.71	232.045	1751.71
21.32	218.758	1751.62
22.20	194.050	1751.45
23.37	200.720	1751.49
24.24	195.845	1751.46

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 3.98

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.20	2.74	9.31	20.64	37.48	57.73
6.00	DISCHG	81.56	107.53	142.80	195.39	253.21	321.66	394.71	478.86	586.05	695.92
8.00	DISCHG	830.26	972.52	1122.71	1298.13	1465.08	1649.52	1831.45	1959.23	2020.55	2054.57
10.00	DISCHG	2065.85	2067.28	2044.14	1979.11	1915.95	1856.41	1806.49	1747.52	1660.03	1576.96
12.00	DISCHG	1473.42	1368.80	1272.04	1170.01	1085.55	1008.25	942.28	881.43	812.87	755.22
14.00	DISCHG	706.28	666.95	630.74	589.80	554.77	520.49	489.90	465.32	443.81	426.08
16.00	DISCHG	403.39	379.79	356.28	329.01	308.30	306.01	314.44	316.09	304.75	292.97
18.00	DISCHG	290.50	293.91	284.68	253.48	224.36	215.98	220.70	226.44	230.24	230.87
20.00	DISCHG	219.74	203.24	193.51	193.65	197.61	206.37	216.44	217.71	206.02	193.74
22.00	DISCHG	190.99	194.05	190.96	176.51	164.50	173.34	193.26	200.41	185.90	170.85
24.00	DISCHG	177.25	195.24	188.23	139.73	89.60	54.86	33.58	20.50	12.38	7.40
26.00	DISCHG	4.38	2.57	1.50	.87	.50	.28	.15	.07	.02	.00

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.9970 CFS-HRS= 12835.14 ACRE-FT= 1060.70

SUBROUTINE SAVMOV CROSS SECTION 107
INPUT HYDROGRAPH= 2 OUTPUT HYDROGRAPH= 5

SUBROUTINE ADDHYD CROSS SECTION 107
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.92	5492.679	1762.40
17.08	946.540	1754.80
17.94	890.651	1754.62
19.48	724.911	1754.06

24-Hrs ESW Bitte

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21.06	694.714	1753.95
21.97	626.667	1753.66
23.12	645.129	1753.74
24.00	640.856	1753.72

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 10.62

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.25	4.54	18.64	45.98	88.62	144.69
6.00	DISCHG	212.22	304.06	435.98	587.09	769.08	960.55	1193.74	1478.19	1774.43	2150.09
8.00	DISCHG	2534.55	2972.28	3458.60	3919.47	4437.61	4915.95	5227.07	5377.27	5460.15	5476.27
10.00	DISCHG	5484.01	5395.20	5219.64	5062.48	4905.15	4788.57	4613.63	4383.13	4168.01	3873.13
12.00	DISCHG	3613.69	3350.73	3089.10	2882.43	2681.68	2524.54	2359.31	2185.07	2045.34	1920.52
14.00	DISCHG	1828.18	1730.76	1626.62	1539.77	1448.10	1374.23	1312.47	1260.31	1216.40	1152.37
16.00	DISCHG	1093.71	1027.24	955.71	909.02	917.42	944.03	941.57	908.55	879.18	878.11
18.00	DISCHG	888.22	846.35	757.69	686.04	676.69	694.29	712.52	723.97	722.41	683.17
20.00	DISCHG	638.73	618.71	623.05	636.94	665.98	693.18	686.41	649.93	618.61	616.71
22.00	DISCHG	626.46	610.09	568.52	541.98	581.11	636.84	640.76	595.28	558.87	590.80
24.00	DISCHG	640.85	589.76	446.57	315.50	228.10	178.84	151.93	136.66	127.74	122.47
26.00	DISCHG	119.38	117.57	116.50	115.87	115.50	115.09	114.35	113.91	113.74	113.62
28.00	DISCHG	113.52	113.42	113.32	113.22	113.12	113.02	112.92	112.82	112.72	112.62
30.00	DISCHG	112.52	112.42	112.32	112.22	112.12	112.02	111.93	111.83	111.73	111.63
32.00	DISCHG	111.53	111.43	111.33	111.24	111.14	111.04	110.94	110.84	110.75	110.65
34.00	DISCHG	110.55	110.45	110.35	110.26	110.16	110.06	109.96	109.87	109.77	109.67
36.00	DISCHG	109.58	109.48	109.39	109.29	109.19	109.09	109.00	108.90	108.80	108.71
38.00	DISCHG	108.61	108.52	108.42	108.33	108.23	108.13	108.04	107.94	107.85	107.75
40.00	DISCHG	107.66	107.56	107.47	107.37	107.28	107.18	107.09	106.99	106.90	106.80
42.00	DISCHG	106.71	106.62	106.52	106.43	106.33	106.24	106.15	106.05	105.96	105.86
44.00	DISCHG	105.77	105.68	105.58	105.49	105.40	105.31	105.21	105.12	105.03	104.93
46.00	DISCHG	104.84	104.75	104.66	104.56	104.47	104.38	104.29	104.19	104.10	104.01
48.00	DISCHG	103.92	103.83	103.73	103.64	103.55	103.46	103.37	103.28	103.19	103.10
50.00	DISCHG	103.00	102.91	102.82	102.73	102.64	102.55	102.45	102.34	102.21	102.08
52.00	DISCHG	101.95	101.82	101.69	101.56	101.43	101.30	101.17	101.04	100.92	100.79
54.00	DISCHG	100.66	100.53	100.40	100.27	100.14	100.02	99.89	99.76	99.63	99.50
56.00	DISCHG	99.38	99.25	99.12	99.00	98.87	98.74	98.62	98.49	98.37	98.24
58.00	DISCHG	98.11	97.99	97.86	97.74	97.61	97.49	97.36	97.24	97.11	96.99

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 5.6368 CFS-HRS= 38633.64 ACRE-FT= 3192.68

SUBROUTINE SAVMOV STRUCTURE 2
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 6

SUBROUTINE RESVOR STRUCTURE 2
SURFACE ELEVATION= 1701.40

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.42	2184.158	1716.20

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 10.62

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.03	.17	.54	1.33	2.69
6.00	DISCHG	4.76	7.75	12.01	17.90	25.68	35.57	47.84	63.02	81.43	103.60
8.00	DISCHG	122.32	124.29	126.61	129.29	132.32	135.73	139.14	141.93	144.78	148.15
10.00	DISCHG	151.60	153.02	154.56	242.21	370.07	561.83	752.13	999.74	1259.11	1477.75

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12.00	DISCHG	1657.14	1801.64	1913.94	2012.87	2091.34	2143.55	2173.99	2184.00	2176.99	2157.19
14.00	DISCHG	2128.34	2092.75	2050.51	2002.94	1950.92	1907.98	1863.27	1817.60	1771.74	1725.23
16.00	DISCHG	1677.55	1628.69	1578.24	1527.10	1478.50	1435.13	1396.15	1358.85	1322.03	1286.93
18.00	DISCHG	1254.96	1224.26	1190.83	1153.70	1116.30	1082.19	1052.20	1025.76	1001.80	978.12
20.00	DISCHG	953.01	927.34	903.07	881.45	863.24	848.70	836.12	822.82	812.97	803.99
22.00	DISCHG	795.60	787.45	778.34	768.08	758.59	751.71	746.52	740.61	733.09	725.82
24.00	DISCHG	720.76	715.91	706.82	691.84	672.53	650.97	628.64	606.37	584.57	563.45
26.00	DISCHG	543.10	523.58	504.89	487.02	469.95	453.64	438.06	423.17	408.95	395.37
28.00	DISCHG	385.55	378.21	371.07	364.12	357.35	350.77	344.35	338.11	332.04	326.12
30.00	DISCHG	320.36	314.76	309.30	303.95	298.81	293.78	288.88	284.10	279.46	274.93
32.00	DISCHG	270.53	266.24	262.06	258.00	254.04	250.18	246.43	242.77	239.22	235.75
34.00	DISCHG	232.38	229.09	225.89	222.77	219.74	216.78	213.90	211.10	208.37	205.71
3	DISCHG	203.12	200.59	198.13	195.74	193.41	191.13	188.92	186.76	184.66	182.62
3 0		180.62	178.68	176.79	174.94	173.14	171.39	169.68	168.02	166.40	164.82
	SCHG		161.78	160.31	158.89	157.50	156.14	155.92	155.84	155.76	155.67
		15		155.42	155.33	155.25	155.16	155.08	155.00	154.98	154.96
		14		91	154.89	154.87	154.85	154.84	154.82	154.80	154.78
			4.75		71	154.69	154.67	154.65	154.64	154.62	154.60
				154		154.51	154.49	154.47	154.45	154.43	154.41
					39		154.30	154.28	154.26	154.24	154.22
						54.1		154.09	154.07	154.05	154.03
							15		153.91	153.89	153.88
							9			153.75	153.73
								3.63		60	153.58

FT= 210

EXECUTIVE CONTROL CARD
STARTING TIME= .00 127 OPERATION COMPUT,
ALTERNATE NO.= 5 RAIN DEPTH= 15.90
STORM NO.= 5 FROM XSECTN/STRUCT 101/ 0
RAIN DURATION= 1.00 TO XSECTN/STRUCT 0/ 2
RAIN TABLE NO.= 5 PASS= 3
SOIL CONDITION= 2

SUBROUTINE RUNOFF CROSS SECTION 101
AREA= 1.86 INPUT RUNOFF CURVE= 80.0
TIME OF CONCENTRATION= 1.21

PEAK TIMES
9.99
19.60
21.35
23.42

PEAK DISCHARGES
2468.850
250.999
231.050
205.719

PEAK ELEVATIONS
(RUNOFF)
(RUNOFF)
(RUNOFF)
(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.1271
CFS-HRS= 15757.61
ACRE-FT= 1302.21

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 1.20 INPUT RUNOFF CURVE= 79.0
TIME OF CONCENTRATION= .67

PEAK TIMES
9.41
17.17
17.98
19.51
21.13
22.07
23.19
24.09

PEAK DISCHARGES
1643.640
224.454
205.690
164.285
156.519
135.273
145.771
139.574

PEAK ELEVATIONS
(RUNOFF)
(RUNOFF)
(RUNOFF)
(RUNOFF)
(RUNOFF)
(RUNOFF)
(RUNOFF)
(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.8[illegible]

SUBROUTINE ADDHYD CROSS SECT[illegible]
INPUT HYDR[illegible]

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                    STORM NO.= 5                  DURATION=  1.00                 RAIN TABLE NO.= 5                 SOIL CONDITION= 2

SUBROUTINE RUNOFF     CROSS SECTION 101
        AREA=    1.86      INPUT RUNOFF CURVE=  80.0      TIME OF CONCENTRATION=  1.21

        PEAK TIMES                    PEAK DISCHARGES                    PEAK ELEVATIONS
            9.99                          2468.850                           (RUNOFF)
           19.60                           250.999                           (RUNOFF)
           21.35                           231.050                           (RUNOFF)
           23.42                           205.719                           (RUNOFF)

        TOTAL WATER, IN INCHES ON DRAINAGE AREA=  13.1271          CFS-HRS=    15757.61          ACRE-FT=    1302.21

SUBROUTINE RUNOFF     CROSS SECTION   1
        AREA=    1.20      INPUT RUNOFF CURVE=  79.0      TIME OF CONCENTRATION=   .67

        PEAK TIMES                    PEAK DISCHARGES                    PEAK ELEVATIONS
            9.41                          1643.640                           (RUNOFF)
           17.17                           224.454                           (RUNOFF)
           17.98                           205.690                           (RUNOFF)
           19.51                           164.285                           (RUNOFF)
           21.13                           156.519                           (RUNOFF)
           22.07                           135.273                           (RUNOFF)
           23.19                           145.771                           (RUNOFF)
           24.09                           139.574                           (RUNOFF)

        TOTAL WATER, IN INCHES ON DRAINAGE AREA=  12.9799          CFS-HRS=    10052.18          ACRE-FT=     830.71

SUBROUTINE ADDHYD     CROSS SECTION   1
        INPUT HYDROGRAPHS= 5,6      OUTPUT HYDROGRAPH= 7

        PEAK TIMES                    PEAK DISCHARGES                    PEAK ELEVATIONS
            9.84                          4069.525                           (NULL)
           17.11                           574.831                           (NULL)
           19.53                           415.024                           (NULL)
           21.19                           385.333                           (NULL)
           23.23                           347.886                           (NULL)
           24.08                           338.813                           (NULL)

        TOTAL WATER, IN INCHES ON DRAINAGE AREA=  13.0694          CFS-HRS=    25809.78          ACRE-FT=    2132.92

SUBROUTINE REACH      CROSS SECTION 102
        LENGTH=  2500.00      INPUT COEFFICIENT=   .6500      INPUT ROUTINGS=   .00

        AVERAGE WATER VELOCITY=   3.157      AVERAGE ROUTING COEFF=  .6500      NUMBER OF ROUTINGS=   .71

SUBROUTINE RUNOFF     CROSS SECTION   2
        AREA=    1.24      INPUT RUNOFF CURVE=  75.0      TIME OF CONCENTRATION=   .59
```

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.31	1634.492	(RUNOFF)
17.14	230.814	(RUNOFF)
17.99	211.588	(RUNOFF)
19.49	167.890	(RUNOFF)
21.09	160.979	(RUNOFF)
22.04	139.039	(RUNOFF)
23.15	150.637	(RUNOFF)
24.05	145.944	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.3793 CFS-HRS= 9906.65 ACRE-FT= 818.69

SUBROUTINE ADDHYD CROSS SECTION 2
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.94	5635.433	(NULL)
19.53	580.492	(NULL)
21.21	536.242	(NULL)
23.24	482.150	(NULL)
24.10	478.908	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.8706 CFS-HRS= 35716.92 ACRE-FT= 2951.65

SUBROUTINE REACH CROSS SECTION 103
LENGTH= 2500.00 INPUT COEFFICIENT= .6500 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.157 AVERAGE ROUTING COEFF= .6500 NUMBER OF ROUTINGS= .71

SUBROUTINE RUNOFF CROSS SECTION 3
AREA= 1.85 INPUT RUNOFF CURVE= 80.0 TIME OF CONCENTRATION= .91

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.68	2510.235	(RUNOFF)
17.23	342.345	(RUNOFF)
19.58	250.777	(RUNOFF)
21.23	235.078	(RUNOFF)
23.31	211.875	(RUNOFF)
24.13	206.546	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.1268 CFS-HRS= 15672.59 ACRE-FT= 1295.18

SUBROUTINE ADDHYD CROSS SECTION 3
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.04	8079.303	(NULL)
19.56	829.235	(NULL)
21.33	764.015	(NULL)
23.39	685.506	(NULL)
24.16	673.026	(NULL)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.15

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.03	.59	3.49
4.00	DISCHG	10.83	24.85	48.27	82.61	129.90	192.63	271.28	364.82	471.41	587.85
6.00	DISCHG	712.79	851.94	1023.93	1241.24	1493.48	1773.61	2079.32	2424.15	2814.04	3243.08
8.00	DISCHG	3721.59	4234.21	4783.62	5366.96	5964.81	6573.66	7146.39	7586.93	7867.25	8019.76
10.00	DISCHG	8077.20	8054.35	7939.45	7737.26	7497.03	7252.53	7009.55	6743.12	6438.04	6105.06
12.00	DISCHG	5742.10	5366.05	4989.36	4621.25	4290.46	3971.94	3693.89	3432.90	3183.87	2957.11
14.00	DISCHG	2758.64	2585.25	2428.15	2276.96	2135.48	2003.93	1885.90	1782.39	1692.42	1609.96
16.00	DISCHG	1526.69	1441.51	1353.72	1266.87	1198.28	1164.20	1155.11	1143.33	1116.76	1088.73
18.00	DISCHG	1073.58	1060.87	1023.54	952.50	881.16	838.62	825.62	826.32	829.10	823.22
20.00	DISCHG	797.56	761.63	732.79	720.99	725.13	741.30	759.76	762.69	744.94	721.75
22.00	DISCHG	708.64	702.18	685.21	654.44	633.15	643.65	672.36	685.42	667.79	648.99
24.00	DISCHG	656.71	672.19	638.63	537.86	409.54	295.79	207.28	140.77	93.18	60.90
26.00	DISCHG	39.62	25.76	16.78	10.89	7.02	4.53	2.96	1.91	1.21	.73
28.00	DISCHG	.40	.18	.07	.02	.00					

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.9477 CFS-HRS= 51389.67 ACRE-FT= 4246.84

SUBROUTINE SAVMOV STRUCTURE 1
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 6

SUBROUTINE RESVOR STRUCTURE 1
SURFACE ELEVATION= 1794.10

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.88	7419.614	1803.89

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.15

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
4.00	DISCHG	.12	.33	.78	1.56	2.84	4.78	7.55	11.35	16.32	22.59
6.00	DISCHG	33.49	50.13	69.86	91.50	93.23	95.32	97.71	100.47	103.30	105.88
8.00	DISCHG	108.86	112.28	363.53	824.45	1298.06	2005.53	3262.06	4324.49	5205.22	5913.99
10.00	DISCHG	6466.48	6880.44	7169.42	7342.57	7413.64	7403.58	7333.04	7214.82	7053.24	6850.91
12.00	DISCHG	6610.88	6337.34	6037.18	5718.32	5390.25	5063.06	4744.65	4438.90	4146.28	3867.82
14.00	DISCHG	3606.41	3364.66	3142.72	2938.19	2748.73	2572.97	2410.41	2261.25	2125.66	2002.84
16.00	DISCHG	1890.37	1785.21	1684.89	1626.54	1588.00	1548.21	1510.20	1474.89	1441.15	1408.05
18.00	DISCHG	1376.07	1345.86	1316.15	1284.05	1246.13	1210.15	1173.17	1139.20	1108.73	1081.09
	[illegible]	1054.61	1027.71	1000.27	973.52	949.02	927.91	910.56	895.95	882.05	867.50
22.	[illegible]	[illegible]	838.20	824.06	808.98	792.82	777.71	766.00	757.48	749.57	740.65
[illegible]	DISCHG	[illegible]	[illegible]	718.59	705.84	693.13	650.81	611.75	568.93	524.72	480.92
		438.	[illegible]	[illegible]	[illegible]	296.82	268.35	242.47	218.99	197.72	178.47
			34	[illegible]	[illegible]	[illegible]	113.74	113.64	113.54	113.44	113.34
				[illegible]	112			112.64	112.54	112.45	112.35
						485	[illegible]		[illegible]	111.46	111.36
							[illegible]	11		[illegible]	110.38
									1.60	[illegible]	
										108.	[illegible]
54.00	DISCHG										
56.00	DISCHG	101.60	101.47	101.34	101.21	101.08	100.95	100.82	100.69	100.56	100.43
58.00	DISCHG	100.30	100.17	100.05	99.92	99.79	99.66	99.54	99.41	99.28	99.15
		99.03	98.90	98.77	98.65	98.52	98.40	98.27	98.14	98.02	[illegible]

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.4463 CFS-HRS= [illegible]

SUBROUTINE DIVERT STRUCTURE 1
INPUT HYDROGRAPH [illegible]

54.00	DISCHG	101.60	101.47	101.34	101.21	101.08	100.95	100.82	100.69	100.56	100.43
56.00	DISCHG	100.30	100.17	100.05	99.92	99.79	99.66	99.54	99.41	99.28	99.15
58.00	DISCHG	99.03	98.90	98.77	98.65	98.52	98.40	98.27	98.14	98.02	97.89

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.4463 CFS-HRS= 49399.50 ACRE-FT= 4082.37

SUBROUTINE DIVERT STRUCTURE 1
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 4,1

SUBROUTINE REACH CROSS SECTION 104
LENGTH= 6700.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 11.250 AVERAGE ROUTING COEFF= .8687 NUMBER OF ROUTINGS= .72

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
28.50	115.037	.51

TOTAL WATER, CANNOT BE COMPUTED WITH D.A.= 0.0 CFS-HRS= 5860.83 ACRE-FT= 484.34

SUBROUTINE RUNOFF CROSS SECTION 4
AREA= 2.54 INPUT RUNOFF CURVE= 80.0 TIME OF CONCENTRATION= .54

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.25	3567.668	(RUNOFF)
17.11	481.041	(RUNOFF)
17.97	441.002	(RUNOFF)
19.45	349.853	(RUNOFF)
21.07	337.863	(RUNOFF)
22.03	290.575	(RUNOFF)
23.12	317.117	(RUNOFF)
24.03	310.297	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.1260 CFS-HRS= 21516.65 ACRE-FT= 1778.14

SUBROUTINE ADDHYD CROSS SECTION 4
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.25	3682.671	(NULL)
17.11	596.041	(NULL)
17.97	556.002	(NULL)
19.45	464.853	(NULL)
21.07	452.863	(NULL)
22.03	405.575	(NULL)
23.12	432.117	(NULL)
24.03	425.297	(NULL)
28.50	115.037	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 16.7013 CFS-HRS= 27377.46 ACRE-FT= 2262.47

SUBROUTINE DIVERT CROSS SECTION 104
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,2

SUBROUTINE ADDHYD CROSS SECTION 104
INPUT HYDROGRAPHS= 1,2 OUTPUT HYDROGRAPH= 4

SUBROUTINE REACH CROSS SECTION 106
LENGTH= 3700.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 18.962 AVERAGE ROUTING COEFF= .9177 NUMBER OF ROUTINGS= .25

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.90	3460.842	5.63
17.16	593.145	1.77
17.99	552.605	1.70
19.50	464.123	1.54
21.11	451.336	1.52
22.07	402.890	1.37
23.16	427.669	1.45
24.07	415.823	1.41
28.50	115.028	.39

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 16.6047 CFS-HRS= 27218.99 ACRE-FT= 2249.38

SUBROUTINE RUNOFF CROSS SECTION 5
AREA= 2.00 INPUT RUNOFF CURVE= 82.0 TIME OF CONCENTRATION= .43

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.14	2890.470	(RUNOFF)
17.05	386.545	(RUNOFF)
17.95	354.098	(RUNOFF)
19.38	278.612	(RUNOFF)
21.00	272.562	(RUNOFF)
21.99	233.398	(RUNOFF)
23.05	261.600	(RUNOFF)
23.98	258.692	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.4136 CFS-HRS= 17313.43 ACRE-FT= 1430.78

SUBROUTINE ADDHYD CROSS SECTION 5
INPUT HYDROGRAPHS= 3,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.19	6340.939	(NULL)
17.10	975.392	(NULL)
17.96	906.478	(NULL)
19.45	742.112	(NULL)
21.05	720.574	(NULL)
22.01	635.699	(NULL)
23.10	682.623	(NULL)
24.01	671.892	(NULL)
28.50	115.028	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 15.1989 CFS-HRS= 44532.40 ACRE-FT= 3680.16

SUBROUTINE DIVERT CROSS SECTION 106
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,2

SUBROUTINE RUNOFF CROSS SECTION 6
AREA= 1.14 INPUT RUNOFF CURVE= 79.0 TIME OF CONCENTRATION= .42

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.15	1602.612	(RUNOFF)
17.04	219.249	(RUNOFF)
17.95	201.074	(RUNOFF)
19.38	157.770	(RUNOFF)
21.00	154.362	(RUNOFF)
21.99	132.351	(RUNOFF)
23.04	147.967	(RUNOFF)
23.98	147.300	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.9782 CFS-HRS= 9548.35 ACRE-FT= 789.08

SUBROUTINE ADDHYD CROSS SECTION 6
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.15	7899.830	(NULL)
17.08	1194.016	(NULL)
17.96	1107.514	(NULL)
19.43	899.696	(NULL)
21.04	874.542	(NULL)
22.01	767.937	(NULL)
23.09	829.741	(NULL)
24.01	818.682	(NULL)
28.50	115.028	(NULL)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 14.7516 CFS-HRS= 54074.81 ACRE-FT= 4468.74

SUBROUTINE SAVMOV CROSS SECTION 6
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 5

SUBROUTINE ADDHYD CROSS SECTION 106
INPUT HYDROGRAPHS= 4,2 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.08	7304.610	9.47

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.15

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	248.57	709.45	1183.06	2008.04	3415.71	4397.35	5229.09	5879.36
10.00	DISCHG	6371.62	6765.44	7054.42	7227.57	7298.64	7288.58	7218.04	7099.82	6938.24	6735.51
12.00	DISCHG	6495.88	6222.34	5922.19	5603.32	5275.25	4948.06	4629.65	4323.90	4031.28	3752.92
14.00	DISCHG	3491.41	3249.66	3027.72	2823.19	2633.73	2457.97	2295.41	2146.25	2010.66	1887.84

16.00	DISCHG	1775.37	1670.21	1569.89	1511.54	1473.00	1433.21	1395.20	1359.89	1326.15	1293.05
18.00	DISCHG	1261.07	1230.86	1201.15	1169.05	1133.13	1095.15	1058.17	1024.20	993.73	966.09
20.00	DISCHG	939.61	912.71	885.27	858.52	834.02	812.91	795.56	780.95	767.05	752.50
22.00	DISCHG	737.60	723.20	709.06	693.98	677.82	662.71	651.00	642.48	634.57	625.65
24.00	DISCHG	617.06	610.45	603.59	590.84	568.13	535.81	496.75	453.93	409.72	365.92
26.00	DISCHG	323.79	284.07	247.11	213.04	181.82	153.35	127.47	103.99	82.72	63.47
28.00	DISCHG	46.07	30.34	16.13	3.31	.00					

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 11.0058 CFS-HRS= 43682.37 ACRE-FT= 3609.91

SUBROUTINE SAVMOV CROSS SECTION 106
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 1

SUBROUTINE RUNOFF CROSS SECTION 7
AREA= .96 INPUT RUNOFF CURVE= 75.0 TIME OF CONCENTRATION= .23

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.00	1320.594	(RUNOFF)
9.90	1222.027	(RUNOFF)
16.93	188.912	(RUNOFF)
17.91	173.853	(RUNOFF)
19.30	132.824	(RUNOFF)
20.91	133.824	(RUNOFF)
21.92	115.258	(RUNOFF)
22.93	133.573	(RUNOFF)
23.91	139.156	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.3692 CFS-HRS= 7663.38 ACRE-FT= 633.30

SUBROUTINE ADDHYD CROSS SECTION 7
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.09	9247.118	(NULL)
17.04	1377.163	(NULL)
17.94	1280.197	(NULL)
19.39	1031.332	(NULL)
21.00	1005.049	(NULL)
21.98	891.395	(NULL)
23.04	954.098	(NULL)
23.98	951.385	(NULL)
28.50	115.028	(NULL)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.64

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.40	4.21	14.60	41.11
4.00	DISCHG	83.46	139.01	204.43	276.53	392.81	516.45	655.25	815.04	959.77	1122.62
6.00	DISCHG	1274.91	1557.20	1957.95	2300.12	2717.73	3064.40	3530.59	4100.40	4573.76	5279.06
8.00	DISCHG	5961.31	6543.07	7305.96	7887.20	8674.02	9190.85	9166.53	9071.18	9009.48	8876.03
10.00	DISCHG	8806.71	8493.79	8013.53	7711.61	7418.09	7229.05	6871.11	6403.39	6060.90	5509.22
12.00	DISCHG	5107.10	4704.08	4285.84	4023.90	3732.15	3532.06	3284.03	3001.29	2826.96	2662.02
14.00	DISCHG	2555.12	2411.58	2243.27	2131.60	1993.00	1896.54	1821.19	1753.73	1699.06	1585.08
16.00	DISCHG	1497.58	1393.70	1276.73	1231.55	1305.16	1375.13	1345.40	1258.91	1215.97	1243.87
18.00	DISCHG	1274.24	1161.19	966.53	871.49	924.09	987.66	1018.74	1031.32	1017.34	919.16
22.00	DISCHG										

20.00	DISCHG	838.83	832.68	868.11	901.00	961.33	1005.05	962.06	869.17	823.23	850.46
22.00	DISCHG	880.86	832.11	737.95	710.50	837.52	950.21	907.16	777.52	726.73	844.24
24.00	DISCHG	949.33	776.66	444.79	250.88	167.12	134.80	122.35	117.48	115.74	115.12
26.00	DISCHG	115.00	115.00	115.00	115.00	115.00	115.00	115.00	115.00	115.00	115.00
28.00	DISCHG	115.00	115.00	115.00	115.00	114.77	114.09	113.77	113.65	113.55	113.45
30.00	DISCHG	113.35	113.25	113.15	113.05	112.95	112.85	112.75	112.65	112.55	112.45
32.00	DISCHG	112.35	112.25	112.15	112.05	111.95	111.86	111.76	111.66	111.56	111.46
34.00	DISCHG	111.36	111.26	111.17	111.07	110.97	110.87	110.77	110.68	110.58	110.48
36.00	DISCHG	110.38	110.29	110.19	110.09	109.99	109.90	109.80	109.70	109.61	109.51
38.00	DISCHG	109.41	109.32	109.22	109.12	109.03	108.93	108.83	108.74	108.64	108.55
40.00	DISCHG	108.45	108.35	108.26	108.16	108.07	107.97	107.88	107.78	107.69	107.59
42.00	DISCHG	107.50	107.40	107.31	107.21	107.12	107.02	106.93	106.83	106.74	106.64
44.00	DISCHG	106.55	106.46	106.36	106.27	106.17	106.08	105.99	105.89	105.80	105.71
46.00	DISCHG	105.61	105.52	105.43	105.33	105.24	105.15	105.05	104.96	104.87	104.78
48.00	DISCHG	104.68	104.59	104.50	104.41	104.31	104.22	104.13	104.04	103.95	103.85
50.00	DISCHG	103.76	103.67	103.58	103.49	103.40	103.30	103.21	103.12	103.03	102.94
52.00	DISCHG	102.85	102.76	102.67	102.58	102.48	102.38	102.25	102.12	101.99	101.86
54.00	DISCHG	101.73	101.60	101.47	101.34	101.21	101.08	100.95	100.82	100.70	100.57
56.00	DISCHG	100.44	100.31	100.18	100.05	99.93	99.80	99.67	99.54	99.42	99.29
58.00	DISCHG	99.16	99.03	98.91	98.78	98.65	98.53	98.40	98.28	98.15	98.03

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 14.4071 CFS-HRS= 61738.09 ACRE-FT= 5102.04

SUBROUTINE SAVMOV CROSS SECTION 7
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

SUBROUTINE RUNOFF CROSS SECTION 10
AREA= .67 INPUT RUNOFF CURVE= 78.0 TIME OF CONCENTRATION= .89

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.68	893.015	(RUNOFF)
17.23	123.202	(RUNOFF)
19.56	90.255	(RUNOFF)
21.22	84.961	(RUNOFF)
23.28	76.701	(RUNOFF)
24.13	74.225	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.8319 CFS-HRS= 5548.48 ACRE-FT= 458.53

SUBROUTINE DIVERT CROSS SECTION 110
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,3

SUBROUTINE REACH CROSS SECTION 109
LENGTH= 2700.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 2.939 AVERAGE ROUTING COEFF= .6336 NUMBER OF ROUTINGS= .81

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.32	820.053	1770.00
17.38	122.727	1765.89
19.77	89.170	1765.55
21.44	83.792	1765.46
23.51	74.942	1765.33

24.31	72.573	1765.29

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.6614 CFS-HRS= 5474.74 ACRE-FT= 452.43

SUBROUTINE RUNOFF CROSS SECTION 7
AREA= 1.39 INPUT RUNOFF CURVE= 82.0 TIME OF CONCENTRATION= .55

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.25	1986.813	(RUNOFF)
17.12	264.318	(RUNOFF)
17.98	242.609	(RUNOFF)
19.47	192.276	(RUNOFF)
21.07	185.166	(RUNOFF)
22.03	159.609	(RUNOFF)
23.13	175.012	(RUNOFF)
24.03	169.176	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.4148 CFS-HRS= 12033.91 ACRE-FT= 994.48

SUBROUTINE ADDHYD CROSS SECTION 109
INPUT HYDROGRAPHS= 4,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.39	2768.486	1777.52
17.10	386.746	1767.90
17.95	359.170	1767.74
19.51	281.635	1767.22
21.11	265.969	1767.11
21.99	236.365	1766.90
23.15	244.850	1766.96
24.03	238.904	1766.91

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.1697 CFS-HRS= 17508.64 ACRE-FT= 1446.91

SUBROUTINE DIVERT CROSS SECTION 109
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,4

SUBROUTINE REACH CROSS SECTION 108
LENGTH= 2100.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 7.832 AVERAGE ROUTING COEFF= .8216 NUMBER OF ROUTINGS= .31

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
10.10	2547.574	1761.03
17.15	385.202	1756.47
17.95	357.627	1756.35
19.53	280.518	1756.01
21.16	264.247	1755.94
22.00	235.092	1755.81
23.20	241.691	1755.84
24.09	233.400	1755.80

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.0921 CFS-HRS= 17285.77 ACRE-FT= 1428.50

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SUBROUTINE RUNOFF CROSS SECTION 8
AREA= 1.92 INPUT RUNOFF CURVE= 84.0 TIME OF CONCENTRATION= .42

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.12	2825.522	(RUNOFF)
17.04	373.679	(RUNOFF)
17.95	342.582	(RUNOFF)
19.38	268.695	(RUNOFF)
21.00	262.789	(RUNOFF)
21.99	225.268	(RUNOFF)
23.04	251.796	(RUNOFF)
23.98	250.614	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.6962 CFS-HRS= 16971.09 ACRE-FT= 1402.49

SUBROUTINE ADDHYD CROSS SECTION 108
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.17	5364.581	1764.65
17.06	756.159	1757.70
17.95	700.209	1757.52
19.45	547.012	1757.04
21.05	523.018	1756.96
21.99	460.350	1756.77
23.09	486.204	1756.85
24.00	481.576	1756.83

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 3.98

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.02	1.36	7.34	18.25	33.78	61.77
4.00	DISCHG	95.48	131.22	170.57	212.86	283.51	360.05	441.09	537.53	623.19	717.14
6.00	DISCHG	807.00	950.70	1176.11	1365.70	1592.57	1803.12	2049.63	2380.10	2656.77	3037.86
8.00	DISCHG	3391.00	3752.96	4203.16	4554.58	4991.53	5315.81	5363.15	5279.12	5238.42	5171.59
10.00	DISCHG	5124.89	5023.88	4839.54	4695.75	4537.87	4408.34	4227.47	3954.71	3746.68	3449.68
12.00	DISCHG	3185.74	2953.06	2689.62	2505.77	2321.96	2174.66	2031.42	1853.12	1730.39	1622.03
14.00	DISCHG	1538.52	1454.65	1349.21	1274.39	1192.04	1123.75	1072.72	1024.50	987.05	925.52
16.00	DISCHG	868.97	813.16	742.78	703.26	722.31	754.13	747.32	704.13	677.89	684.47
18.00	DISCHG	698.63	658.17	555.76	493.29	501.05	526.46	539.73	546.70	544.53	502.35
20.00	DISCHG	457.70	444.56	456.94	469.91	496.98	522.10	512.87	468.76	440.89	447.08
22.00	DISCHG	460.30	443.53	395.01	372.03	421.02	479.68	477.40	415.82	383.32	427.45
24.00	DISCHG	481.57	428.76	261.80	148.16	86.27	51.20	29.80	17.08	9.81	5.57
26.00	DISCHG	3.18	1.83	1.05	.58	.30	.13	.05	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.3369 CFS-HRS= 34256.84 ACRE-FT= 2830.99

SUBROUTINE ADDHYD CROSS SECTION 109
INPUT HYDROGRAPHS= 3,4 OUTPUT HYDROGRAPH= 5

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.47	286.510	1767.25

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .00

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.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	86.81	236.22	282.98	275.36	242.35
10.00	DISCHG	199.73	134.45	24.77	.00						

TOTAL WATER, CANNOT BE COMPUTED WITH D.A.= 0.0 CFS-HRS= 298.06 ACRE-FT= 24.63

SUBROUTINE SAVMOV CROSS SECTION 109
INPUT HYDROGRAPH= 5 OUTPUT HYDROGRAPH= 3

SUBROUTINE DIVERT CROSS SECTION 108
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 5,4

SUBROUTINE REACH CROSS SECTION 107
LENGTH= 5300.00 INPUT COEFFICIENT= .0000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 6.243 AVERAGE ROUTING COEFF= .7860 NUMBER OF ROUTINGS= .93

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.59	5249.696	1762.11
17.28	749.753	1754.14
18.14	695.635	1753.95
19.65	544.851	1753.31
21.26	517.242	1753.20
22.18	457.019	1752.93
23.32	476.064	1753.02
24.20	467.127	1752.98

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 3.98

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.09	1.47	6.82	16.91	32.10
4.00	DISCHG	57.89	90.16	125.44	164.15	207.41	272.99	347.63	428.32	521.02	608.55
6.00	DISCHG	701.00	794.53	933.14	1139.32	1334.37	1554.01	1768.47	2013.59	2324.05	2613.53
8.00	DISCHG	2974.90	3330.18	3696.01	4123.75	4495.27	4908.98	5185.12	5239.61	5249.50	5236.67
10.00	DISCHG	5181.68	5130.15	5034.01	4869.46	4720.74	4566.34	4428.88	4251.17	4000.97	3779.39
12.00	DISCHG	3499.22	3233.91	2992.98	2738.67	2540.92	2356.50	2202.12	2054.62	1885.66	1754.66
14.00	DISCHG	1643.29	1554.26	1468.11	1368.27	1288.07	1206.97	1137.17	1082.60	1033.76	992.65
16.00	DISCHG	935.44	878.80	821.98	756.08	714.80	722.70	747.53	744.82	710.61	684.74
18.00	DISCHG	685.35	693.63	659.14	572.48	509.37	504.19	522.84	536.81	544.62	542.07
20.00	DISCHG	507.56	466.76	449.67	456.27	468.81	492.90	515.79	510.86	475.43	448.07
22.00	DISCHG	448.05	456.89	443.31	403.19	381.06	416.59	467.10	471.75	424.95	394.13
24.00	DISCHG	424.06	467.12	426.51	287.62	172.04	101.13	59.79	34.97	20.18	11.61
26.00	DISCHG	6.62	3.78	2.17	1.24	.69	.37	.17	.07	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 13.3231 CFS-HRS= 34221.32 ACRE-FT= 2828.05

SUBROUTINE SAVMOV CROSS SECTION 107
INPUT HYDROGRAPH= 2 OUTPUT HYDROGRAPH= 5

SUBROUTINE ADDHYD CROSS SECTION 107

24-Hrs FBF @ SIL BUTTS FCS

INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
9.27	14371.046	1772.96
17.09	2105.872	1757.60
17.95	1964.604	1757.32
19.46	1569.715	1756.46
21.05	1501.185	1756.30
21.99	1329.074	1755.89
23.11	1387.293	1756.04
24.00	1373.400	1756.01
28.50	115.028	1750.83

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 10.62

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.09	1.86	11.03	31.51	73.21
4.00	DISCHG	141.36	229.17	329.87	440.68	600.22	789.45	1002.89	1243.36	1480.79	1731.18
6.00	DISCHG	1975.91	2351.73	2891.09	3439.44	4052.10	4618.41	5299.06	6113.99	6897.81	7892.59
8.00	DISCHG	8836.20	9874.15	11001.97	12010.96	13169.29	14099.83	14351.65	14310.78	14258.98	14112.70
10.00	DISCHG	13988.39	13623.95	13047.53	12581.06	12138.84	11795.39	11299.99	10654.56	10061.87	9288.61
12.00	DISCHG	8606.31	7937.99	7278.82	6762.57	6273.06	5888.56	5486.15	5055.91	4712.62	4416.67
14.00	DISCHG	4198.41	3965.84	3711.38	3499.87	3281.07	3103.51	2958.36	2836.33	2732.83	2577.73
16.00	DISCHG	2433.02	2272.50	2098.71	1987.63	2019.96	2097.83	2092.93	2003.73	1926.58	1928.60
18.00	DISCHG	1959.59	1854.82	1625.67	1443.97	1433.45	1491.85	1541.58	1568.13	1561.96	1461.23
20.00	DISCHG	1346.39	1299.44	1317.78	1357.26	1430.13	1497.95	1477.86	1380.03	1298.66	1298.52
22.00	DISCHG	1328.91	1289.01	1181.26	1113.68	1218.58	1366.79	1374.26	1249.27	1151.67	1238.37
24.00	DISCHG	1373.39	1243.78	871.29	538.50	339.16	235.93	182.14	152.44	135.92	126.72
26.00	DISCHG	121.62	118.78	117.17	116.24	115.69	115.37	115.17	115.07	115.00	115.00
28.00	DISCHG	115.00	115.00	115.00	115.00	114.77	114.09	113.77	113.65	113.55	113.45
30.00	DISCHG	113.35	113.25	113.15	113.05	112.95	112.85	112.75	112.65	112.55	112.45
32.00	DISCHG	112.35	112.25	112.15	112.05	111.95	111.86	111.76	111.66	111.56	111.46
34.00	DISCHG	111.36	111.26	111.17	111.07	110.97	110.87	110.77	110.68	110.58	110.48
36.00	DISCHG	110.38	110.29	110.19	110.09	109.99	109.90	109.80	109.70	109.61	109.51
38.00	DISCHG	109.41	109.32	109.22	109.12	109.03	108.93	108.83	108.74	108.64	108.55
40.00	DISCHG	108.45	108.35	108.26	108.16	108.07	107.97	107.88	107.78	107.69	107.59
42.00	DISCHG	107.50	107.40	107.31	107.21	107.12	107.02	106.93	106.83	106.74	106.64
44.00	DISCHG	106.55	106.46	106.36	106.27	106.17	106.08	105.99	105.89	105.80	105.71
46.00	DISCHG	105.61	105.52	105.43	105.33	105.24	105.15	105.05	104.96	104.87	104.78
48.00	DISCHG	104.68	104.59	104.50	104.41	104.31	104.22	104.13	104.04	103.95	103.85
50.00	DISCHG	103.76	103.67	103.58	103.49	103.40	103.30	103.21	103.12	103.03	102.94
52.00	DISCHG	102.85	102.76	102.67	102.58	102.48	102.38	102.25	102.12	101.99	101.86
54.00	DISCHG	101.73	101.60	101.47	101.34	101.21	101.08	100.95	100.82	100.70	100.57
56.00	DISCHG	100.44	100.31	100.18	100.05	99.93	99.80	99.67	99.54	99.42	99.29
58.00	DISCHG	99.16	99.03	98.91	98.78	98.65	98.53	98.40	98.28	98.15	98.03

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 14.0009 CFS-HRS= 95959.41 ACRE-FT= 7930.09

SUBROUTINE SAVMOV STRUCTURE 2
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 6

SUBROUTINE RESVOP STRUCTURE 2
SURFACE ELEVATION= 1701.40

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
11.54	10237.179	1722.51

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HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 10.62

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.01	.09	.34	.95
4.00	DISCHG	2.20	4.36	7.60	12.05	18.04	26.02	36.27	49.07	64.55	82.71
6.00	DISCHG	103.57	122.18	124.06	126.34	129.06	132.21	135.83	139.56	142.99	147.19
8.00	DISCHG	152.01	154.66	393.95	966.12	1886.47	3066.61	4204.98	5237.99	6160.89	7004.89
10.00	DISCHG	7771.65	8429.37	8962.43	9381.62	9705.73	9951.82	10125.49	10218.18	10233.42	10172.68
12.00	DISCHG	10039.35	9847.04	9603.42	9322.36	9017.14	8697.59	8369.99	8032.74	7690.10	7349.96
14.00	DISCHG	7018.86	6699.26	6401.22	6116.04	5837.99	5568.10	5309.28	5063.23	4830.78	4608.85
16.00	DISCHG	4394.27	4186.01	3981.94	3784.16	3602.54	3445.07	3307.38	3178.94	3055.12	2940.10
18.00	DISCHG	2838.49	2743.49	2641.15	2528.29	2417.14	2319.77	2237.84	2168.17	2106.64	2045.94
20.00	DISCHG	1980.44	1921.56	1873.03	1830.63	1796.04	1769.75	1747.43	1722.22	1691.90	1660.76
22.00	DISCHG	1633.28	1607.60	1578.11	1544.02	1514.10	1496.57	1486.59	1472.75	1451.19	1430.91
24.00	DISCHG	1421.01	1412.10	1384.03	1330.26	1259.68	1182.71	1105.62	1031.32	961.08	895.38
26.00	DISCHG	834.32	795.48	764.34	734.56	706.12	678.97	653.05	628.32	604.72	582.21
28.00	DISCHG	560.73	540.24	520.69	502.03	484.23	467.23	450.99	435.48	420.69	406.56
30.00	DISCHG	393.08	384.26	376.95	369.84	362.91	356.17	349.61	343.22	337.00	330.95
32.00	DISCHG	325.05	319.32	313.73	308.30	303.00	297.85	292.83	287.95	283.19	278.56
34.00	DISCHG	274.06	269.67	265.40	261.24	257.18	253.24	249.40	245.66	242.02	238.47
36.00	DISCHG	235.02	231.66	228.38	225.20	222.09	219.07	216.12	213.25	210.46	207.74
38.00	DISCHG	205.09	202.51	199.99	197.54	195.16	192.83	190.57	188.37	186.22	184.12
40.00	DISCHG	182.08	180.10	178.16	176.28	174.44	172.65	170.90	169.20	167.54	165.93
42.00	DISCHG	164.35	162.82	161.32	159.86	158.44	157.06	155.98	155.90	155.81	155.73
44.00	DISCHG	155.64	155.56	155.47	155.39	155.30	155.22	155.13	155.05	154.99	154.97
46.00	DISCHG	154.96	154.94	154.92	154.90	154.88	154.87	154.85	154.83	154.81	154.79
48.00	DISCHG	154.77	154.76	154.74	154.72	154.70	154.68	154.66	154.65	154.63	154.61
50.00	DISCHG	154.59	154.57	154.55	154.53	154.52	154.50	154.48	154.46	154.44	154.42
52.00	DISCHG	154.40	154.38	154.37	154.35	154.33	154.31	154.29	154.27	154.25	154.23
54.00	DISCHG	154.21	154.19	154.18	154.16	154.14	154.12	154.10	154.08	154.06	154.04
56.00	DISCHG	154.02	154.00	153.99	153.97	153.96	153.94	153.93	153.91	153.90	153.88
58.00	DISCHG	153.87	153.85	153.84	153.82	153.81	153.80	153.78	153.77	153.75	153.74

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 12.1690 CFS-HRS= 83404.47 ACRE-FT= 6892.55

ENDCMP

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SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	ARC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM	
5	1	101	1.86	2	2	.20	.00	3.94	24.00	996.75	12.61	.00	1.99	535.89	
5	1	1	1.20	2	2	.20	.00	3.94	24.00	901.00	12.25	.00	1.91	750.83	
5	1	1	3.06	2	2	.20	.00	3.94	24.00	1735.75	12.40	.00	1.96	567.24	
5	1	2	1.24	2	2	.20	.00	3.94	24.00	825.90	12.22	.00	1.62	666.05	
5	1	2	4.30	2	2	.20	.00	3.94	24.00	2180.79	12.47	.00	1.86	507.16	
5	1	3	1.85	2	2	.20	.00	3.94	24.00	1200.94	12.41	.00	1.99	649.16	
5	1	3	6.15	2	2	.20	.00	3.94	24.00	3115.79	12.59	.00	1.90	506.63	
5	1	-1	6.15	2	2	.20	.00	3.94	24.00	229.97	18.48	1799.59	1.47	37.39	
5	1	104	.00	2	2	.20	.00	3.94	24.00	115.04	25.30	.51	.00	.00	
5	1	4	2.54	2	2	.20	.00	3.94	24.00	2223.46	12.18	.00	1.99	875.38	
5	1	4	2.54	2	2	.20	.00	3.94	24.00	2254.45	12.19	.00	5.11	887.58	
5	1	106	2.54	2	2	.20	.00	3.94	24.00	2149.41	12.24	4.09	5.11	846.22	
5	1	5	2.00	2	2	.20	.00	3.94	24.00	2052.39	12.10	.00	2.16	1026.19	
5	1	5	4.54	2	2	.20	.00	3.94	24.00	4107.81	12.17	.00	3.81	904.80	
5	1	6	1.14	2	2	.20	.00	3.94	24.00	1039.29	12.11	.00	1.92	911.66	
5	1	6	5.69	2	2	.20	.00	3.94	24.00	5129.79	12.16	.00	3.43	903.13	
5	1	106	6.15	2	2	.20	.00	3.94	24.00	114.97	18.48	.39	.18	18.69	
5	1	7	.96	2	2	.20	.00	3.94	24.00	910.17	11.99	.00	1.61	948.09	
5	1	7	6.64	2	2	.20	.00	3.94	24.00	5744.61	12.12	.00	3.17	865.15	
5	1	10	.67	2	2	.20	.00	3.94	24.00	402.49	12.41	.00	1.84	600.73	
5	1	109	.67	2	2	.20	.00	3.94	24.00	365.06	12.69	1767.77	1.84	544.87	
5	1	9	1.39	2	2	.20	.00	3.94	24.00	1307.43	12.18	.00	2.15	940.60	
5	1	109	2.06	2	2	.20	.00	3.94	24.00	1484.53	12.22	1772.57	2.05	720.65	
5	1	108	2.06	2	2	.20	.00	3.94	24.00	1408.33	12.29	1759.17	2.05	683.65	
5	1	8	1.92	2	2	.20	.00	3.94	24.00	2152.81	12.09	.00	2.32	1121.26	
5	1	108	3.98	2	2	.20	.00	3.94	24.00	3387.93	12.16	1762.11	2.18	851.24	
5	1	109	.00	2	2	.20	.00	3.94	24.00	.00	.00	.00	.00	.00	
5	1	107	3.98	2	2	.20	.00	3.94	24.00	3170.66	12.41	1759.42	2.17	796.65	
5	1	107	10.62	2	2	.20	.00	3.94	24.00	8164.11	12.21	1765.58	2.79	768.75	
5	1	-2	10.62	2	2	.20	.00	3.94	24.00	157.95	24.82	1712.61	1.08	14.87	— crest Em. Spwy.
5	4	101	1.86	5	2	.20	.00	7.06	24.00	905.93	10.27	.00	4.74	487.06	
5	4	1	1.20	5	2	.20	.00	7.06	24.00	589.74	9.90	.00	4.63	491.45	
5	4	1	3.06	5	2	.20	.00	7.06	24.00	1490.07	10.13	.00	4.70	486.95	
5	4	2	1.24	5	2	.20	.00	7.06	24.00	554.26	9.98	.00	4.19	446.98	
5	4	2	4.30	5	2	.20	.00	7.06	24.00	2028.76	10.20	.00	4.55	471.80	
5	4	3	1.85	5	2	.20	.00	7.06	24.00	919.90	10.04	.00	4.74	497.25	
5	4	3	6.15	5	2	.20	.00	7.06	24.00	2923.00	10.31	.00	4.61	475.29	
5	4	-1	6.15	5	2	.20	.00	7.06	24.00	1794.12	12.69	1801.77	4.15	291.73	
5	4	104	.00	5	2	.20	.00	7.06	24.00	115.04	26.70	.51	.00	.00	
5	4	4	2.54	5	2	.20	.00	7.06	24.00	1281.82	9.64	.00	4.74	504.65	
5	4	4	2.54	5	2	.20	.00	7.06	24.00	1386.02	9.71	.00	8.17	545.68	
5	4	106	2.54	5	2	.20	.00	7.06	24.00	1385.61	9.81	3.07	8.17	545.52	
5	4	5	2.00	5	2	.20	.00	7.06	24.00	1070.72	9.24	.00	4.96	535.36	
5	4	5	4.54	5	2	.20	.00	7.06	24.00	2442.24	9.61	.00	6.76	537.94	
5	4	6	1.14	5	2	.20	.00	7.06	24.00	564.99	9.27	.00	4.63	495.61	
5	4	6	5.69	5	2	.20	.00	7.06	24.00	3006.65	9.61	.00	6.33	529.34	
5	4	106	6.15	5	2	.20	.00	7.06	24.00	1679.12	12.69	3.50	2.73	273.03	
5	4	7	.96	5	2	.20	.00	7.06	24.00	436.83	9.93	.00	4.19	455.03	
5	4	7	6.64	5	2	.20	.00	7.06	24.00	3439.74	9.61	.00	6.02	518.03	
5	4	10	.67	5	2	.20	.00	7.06	24.00	318.26	10.11	.00	4.52	475.01	
5	4	109	.67	5	2	.20	.00	7.06	24.00	316.12	10.39	1767.46	4.52	471.83	
5	4	9	1.39	5	2	.20	.00	7.06	24.00	734.72	9.51	.00	4.96	528.58	
5	4	109	2.06	5	2	.20	.00	7.06	24.00	1034.76	9.96	1770.83	4.82	502.31	

5	4	108	2.06	5	2	.20	.00	7.06	24.00	1033.06	10.03	1758.37	4.82	501.48
5	4	8	1.92	5	2	.20	.00	7.06	24.00	1079.21	9.21	.00	5.19	562.09
5	4	108	3.98	5	2	.20	.00	7.06	24.00	2070.17	9.71	1760.33	5.00	520.14
5	4	109	.00	5	2	.20	.00	7.06	24.00	.00	.00	.00	.00	.00
5	4	107	3.98	5	2	.20	.00	7.06	24.00	2069.74	10.11	1757.53	5.00	520.04
5	4	107	10.62	5	2	.20	.00	7.06	24.00	5492.68	9.92	1762.40	5.64	517.20
5	4	-2	10.62	5	2	.20	.00	7.06	24.00	2184.16	13.42	1716.20	3.82	205.66
5	5	101	1.86	5	2	.20	.00	15.80	24.00	2468.85	9.99	.00	13.13	1327.34
5	5	1	1.20	5	2	.20	.00	15.80	24.00	1643.64	9.41	.00	12.98	1369.70
5	5	1	3.06	5	2	.20	.00	15.80	24.00	4069.52	9.84	.00	13.07	1329.91
5	5	2	1.24	5	2	.20	.00	15.80	24.00	1634.49	9.31	.00	12.38	1318.14
5	5	2	4.30	5	2	.20	.00	15.80	24.00	5635.43	9.94	.00	12.87	1310.57
5	5	3	1.85	5	2	.20	.00	15.80	24.00	2510.23	9.68	.00	13.13	1356.88
5	5	3	6.15	5	2	.20	.00	15.80	24.00	8079.30	10.04	.00	12.95	1313.71
5	5	-1	6.15	5	2	.20	.00	15.80	24.00	7419.61	10.88	1803.89	12.45	1206.44
5	5	104	.00	5	2	.20	.00	15.80	24.00	115.04	28.50	.51	.00	.00
5	5	4	2.54	5	2	.20	.00	15.80	24.00	3567.67	9.25	.00	13.13	1404.59
5	5	4	2.54	5	2	.20	.00	15.80	24.00	3682.67	9.25	.00	16.70	1449.87
5	5	106	2.54	5	2	.20	.00	15.80	24.00	3460.84	9.90	5.63	16.60	1362.54
5	5	5	2.00	5	2	.20	.00	15.80	24.00	2890.47	9.14	.00	13.41	1445.23
5	5	5	4.54	5	2	.20	.00	15.80	24.00	6340.94	9.19	.00	15.20	1396.68
5	5	6	1.14	5	2	.20	.00	15.80	24.00	1602.61	9.15	.00	12.98	1405.80
5	5	6	5.68	5	2	.20	.00	15.80	24.00	7899.83	9.15	.00	14.75	1390.82
5	5	106	6.15	5	2	.20	.00	15.80	24.00	7304.61	10.88	9.47	11.01	1187.74
5	5	7	.96	5	2	.20	.00	15.80	24.00	1320.59	9.00	.00	12.37	1375.62
5	5	7	6.64	5	2	.20	.00	15.80	24.00	9247.12	9.09	.00	14.41	1392.64
5	5	10	.67	5	2	.20	.00	15.80	24.00	893.01	9.68	.00	12.83	1332.86
5	5	109	.67	5	2	.20	.00	15.80	24.00	820.05	10.32	1770.00	12.66	1223.96
5	5	9	1.30	5	2	.20	.00	15.80	24.00	1986.81	9.25	.00	13.41	1429.36
5	5	109	2.06	5	2	.20	.00	15.80	24.00	2768.49	9.39	1777.52	13.17	1343.93
5	5	108	2.06	5	2	.20	.00	15.80	24.00	2547.57	10.10	1761.03	13.00	1236.69
5	5	8	1.92	5	2	.20	.00	15.80	24.00	2825.52	9.12	.00	13.70	1471.63
5	5	108	3.98	5	2	.20	.00	15.80	24.00	5364.58	9.17	1764.65	13.34	1347.88
5	5	109	.00	5	2	.20	.00	15.80	24.00	286.51	9.47	1767.25	.00	.00
5	5	107	3.98	5	2	.20	.00	15.80	24.00	5249.70	9.59	1762.11	13.32	1319.02
5	5	107	10.62	5	2	.20	.00	15.80	24.00	14371.05	9.27	1772.96	14.00	1353.21
5	5	-2	10.62	5	2	.20	.00	15.80	24.00	10237.18	11.54	1722.51	12.17	963.95 — top dam. (off)

— 157 cfs.
10,080 cfs. use 10,000 cfs. ← discharge to clear from emergency spillway.

SUMMARY TABLE 3

100 yr (24 hr) ESID (24 hr) ESID (24 hr)

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. -2 ALTERNATE 5	157.95	2184.16	10237.18	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. -1 ALTERNATE 5	229.97	1794.12	7419.61	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 1 ALTERNATE 5	1735.75	1490.07	4069.52	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 2 ALTERNATE 5	2190.79	2028.76	5635.43	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 3 ALTERNATE 5	3115.79	2923.00	8079.30	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 4 ALTERNATE 5	2254.45	1386.02	3682.67	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 5 ALTERNATE 5	4107.81	2442.24	6340.94	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 6 ALTERNATE 5	5129.79	3006.65	7899.83	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 7 ALTERNATE 5	5744.61	3439.74	9247.12	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 8 ALTERNATE 5	2152.81	1079.21	2825.52	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 9 ALTERNATE 5	1307.45	734.72	1986.81	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 10 ALTERNATE 5	402.49	318.26	893.01	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.101 ALTERNATE 5	996.75	905.93	2468.85	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.104 ALTERNATE 5	115.04	115.04	115.04	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.106 ALTERNATE 5	114.97	1679.12	7304.61	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.107 ALTERNATE 5	8164.11	5492.68	14371.05	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.108 ALTERNATE 5	3387.93	2070.17	5364.58	.00	.00	.00	.00	.00	.00	.00

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**********[illegible]**80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****************

JOB TR-20
TITLE 000 BUCKHORN-MESA SIGNAL BUTTE FRS W/PASS MTN DIVERSION - SBTR-20.DAT
TITLE 000 ORIGINAL DESIGN CONDITIONS - RECREATED BY WOOD/PATEL (8-18-00)
 5 RAINFL 1            .5
 8          0.0        .008       .017       .026       .035
 8          .045       .055       .065       .076       .087
 8          .099       .112       .125       .14        .156
 8          .174       .194       .219       .254       .303
 8          .515       .583       .624       .654       .682
 8          .705       .727       .748       .767       .784
 8          .8         .816       .83        .844       .857
 8          .87        .882       .893       .905       .916
 8          .926       .936       .946       .955       .965
 8          .974       .983       .992       1.         1.
 9 ENDTBL
 5 RAINFL 2            .5
 8          0.0        .005       .011       .016       .022
 8          .028       .035       .041       .048       .056
 8          .063       .071       .081       .089       .098
 8          .109       .12        .133       .147       .163
 8          .181       .204       .235       .283       .663
 8          .735       .772       .799       .82        .838
 8          .854       .868       .88        .891       .902
 8          .912       .921       .929       .937       .945
 8          .952       .959       .965       .972       .978
 8          .984       .989       .995       1.         1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8          0.0        .002       .004       .006       .008
 8          .01        .012       .014       .016       .018
 8          .02        .022       .025       .027       .03
 8          .032       .035       .038       .04        .043
 8          .046       .049       .052       .055       .058
 8          .061       .064       .069       .072       .076
 8          .08        .084       .089       .093       .098
 8          .102       .108       .114       .121       .127
 8          .133       .143       .153       .164       .174
 8          .184       .198       .215       .238       .275
 8          .707       .765       .793       .813       .829
 8          .841       .849       .856       .863       .871
 8          .879       .884       .889       .895       .9
 8          .905       .909       .913       .918       .922
 8          .926       .929       .932       .936       .939
 8          .942       .945       .948       .951       .954
 8          .957       .959       .962       .964       .967
 8          .969       .971       .973       .976       .978
 8          .98        .982       .984       .987       .989
 8          .991       .993       .996       .998       1.
 9 ENDTBL
 5 RAINFL 4            .25
 8          0.0        .006       .011       .017       .028
 8          .041       .057       .075       .09        .562
 8          .697       .763       .807       .839       .873
 8          .907       .937       .948       .958       .968
 8          .979       .984       .989       1.         1.
 9 ENDTBL
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**********************80-80 LIST OF INPUT DATA (CONTINUED)********[illegible]**********
 5 RAINFL 5            .5
 8          0.0        .004       .008       .011       .016
 8          .021       .027       .034       .044       .055
 8          .07        .088       .108       .137       .172
 8          .217       .273       .341       .42        .492
 8          .56        .618       .672       .717       .753
 8          .782       .807       .827       .845       .86
 8          .873       .885       .895       .903       .913
 8          .921       .93        .935       .943       .949
 8          .954       .96        .967       .972       .978
 8          .982       .989       .993       1.         1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       40.
 8                     3.         838.       60.
 8                     4.         1288.      80.
 8                     5.         1782.      120.
 8                     6.         2314.      130.
 8                     7.         2875.      140.
 8                     8.         3454.      160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0        0.0        0.0
 8                     1.5        441.       45.
 8                     2.5        995.       75.
 8                     3.5        1682.      105.
 8                     4.5        2468.      135.
 8                     5.5        3339.      165.
 8                     6.5        4272.      195.
 8                     7.5        5258.      225.
 8                     8.5        6296.      255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.      0.0        0.0
 8                     1750.      38.53      23.
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8                    1751.      130.52     52.
8                    1752.      273.18     87.
8                    1753.      470.98     128.
8                    1754.      706.86     187.
8                    1755.      1005.62    240.
8                    1756.      1369.42    299.
8                    1757.      1801.8     364.
8                    1758.      2305.5     435.
8                    1759.      2892.8     512.
8                    1760.      3558.1     595.
8                    1761.      4316.04    684.
8                    1762.      5156.98    779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7     0.0        0.0
8                    1754.7     61.93      23.
8                    1755.7     209.35     52.
8                    1756.7     438.91     87.
8                    1757.7     757.01     128.
8                    1758.7     1167.41    175.
8                    1759.7     1678.56    228.
8                    1760.7     2302.39    287.
8                    1761.7     3038.91    352.
8                    1762.7     3894.74    435.
8                    1763.7     4647.76    512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
3 STRUCT     01
8                    1794.1     0.0        0.0
8                    1794.5     26.3       35.37
8                    1795.      74.4       70.75
8                    1795.14    91.2       81.11
8                    1796.      96.16      141.5
8                    1797.14    102.42     222.35
8                    1799.42    113.91     437.37
8                    1801.72    1650.      684.12
8                    1804.      7700.      1020.46
8                    1806.28    15200.     1382.58
8                    1808.57    26200.     1835.7
9 ENDTBL
3 STRUCT     02
8                    1701.4     0.0        281.
8                    1704.      121.8      450.86
8                    1708.      138.4      816.46
8                    1710.      145.9      1046.16
8                    1710.5     147.7      1089.3
8                    1711.5     151.4      1175.9
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8                    1712.2     154.       1335.15
8                    1712.5     155.       1380.46
8                    1712.6     156.       1390.
8                    1713.5     390.       1531.5
8                    1714.5     820.       1682.54
8                    1716.      1950.      1909.1
8                    1720.      6600.      2624.1
8                    1722.      9500.      3040.59
8                    1724.      12400.     3457.1
9 ENDTBL
6 RUNOFF 1 101       5 1.86     80.        1.21       1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2      79.        .67        1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                           1 0 0 1 0 1
6 RUNOFF 1   2       6 1.24     75.        .59        1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                           1 0 0 1 0 1
6 RUNOFF 1   3       6 1.85     80.        .91        1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1794.1                          1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.     1.                    1 0 0 1 0 1
6 REACH  3 104   4   5 6700.                           1 0 0 1 0 1
6 RUNOFF 1   4       6 2.54     80.        .54        1 0 0 1 0 1
6 ADDHYD 4   4   5 6 7                                1 0 0 1 0 1
6 DIVERT 6 104   7 5 2 3454.    1.                    1 0 0 1 0 1
6 ADDHYD 4 104   1 2 4                                1 0 0 1 0 1
6 REACH  3 106   5   3 3700.                           1 0 0 1 0 1
6 RUNOFF 1   5       6 2.       82.        .43        1 0 0 1 0 1
6 ADDHYD 4   5   3 6 7                                1 0 0 1 0 1
6 DIVERT 6 106   7 5 2 6296.    1.                    1 0 0 1 0 1
6 RUNOFF 1   6       6 1.14     79.        .42        1 0 0 1 0 1
6 ADDHYD 4   6   5 6 7                                1 0 0 1 0 1
6 SAVMOV 5   6   7   5
6 ADDHYD 4 106   4 2 7                                1 1 0 1 0 1
6 SAVMOV 5 106   7   1
6 RUNOFF 1   7       6 .96      75.        .23        1 0 0 1 0 1
6 ADDHYD 4   7   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5   7   7   2
6 RUNOFF 1  10       7 .67      78.        .89        1 0 0 1 0 1
6 DIVERT 6 110   7 5 3 820.     1.                    1 0 0 1 0 1
6 REACH  3 109   5   4 2700.                           1 0 0 1 0 1
6 RUNOFF 1   9       6 1.39     82.        .55        1 0 0 1 0 1
6 ADDHYD 4 109   4 6 7                                1 0 0 1 0 1
6 DIVERT 6 109   7 5 4 2546.    1.                    1 0 0 1 0 1
6 REACH  3 108   5   6 2100.                           1 0 0 1 0 1
6 RUNOFF 1   8       5 1.92     84.        .42        1 0 0 1 0 1
6 ADDHYD 4 108   5 6 7                                1 1 0 1 0 1
6 ADDHYD 4 109   3 4 5                                1 1 0 1 0 1
6 SAVMOV 5 106   5   3
6 DIVERT 6 108   7 5 4 5253.    1.                    1 0 0 1 0 1
6 REACH  3 107   5   6 5300.                           1 1 0 1 0 1
6 SAVMOV 5 107   2   5
6 ADDHYD 4 107   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     2 7   6
6 RESVOR 2     2 6   7 1701.4                          1 1 0 1 0 1
```

```
**********.    ********80-80 LIST OF INPUT DATA (CONTINUED)**********************

   ENDATA
 7 INCREM 6              .20
 7 COMPUT 7 101       2            3.94        1.0         2 2  05  01
   ENDCMP 1
 7 COMPUT 7 101       2            7.06        1.0         5 2  05  02
   ENDCMP 1
 7 COMPUT 7 101       2            15.80       1.0         5 2  05  03
   ENDCMP 1
   ENDJOB 2

*******************************END OF 80-80 LIST*******************************
```

```
TR20 ------------------------------------------------------------   ------ SCS -
          BUCKHORN-MESA SIGNAL BUTTE FRS W/PASS MTN DIVERSION - SBTR-20. VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS - RECREATED BY WOOD/PATEL (8-18-00)2.04TEST
09:22:42                    PASS   1   JOB NO.   1                        PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .200 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  3.94       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .200 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1            RAIN TABLE NO. = 2


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.58                          1010.6                        (RUNOFF)
       21.76                            50.9                        (RUNOFF)
       23.77                            43.5                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.99 WATERSHED INCHES;    2390 CFS-HRS;     197.5 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     288    118     82     62     51     44     23      5

    DURATION(HRS)  18
    FLOW(CFS)       0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.22                           900.0                        (RUNOFF)
       21.67                            32.7                        (RUNOFF)
       23.67                            28.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.91 WATERSHED INCHES;    1481 CFS-HRS;     122.4 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     129     69     51     39     32     28     14      1

    DURATION(HRS)  16
    FLOW(CFS)       0


OPERATION ADDHYD    XSECTION   1
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1728.9	(NULL)
21.68	83.5	(NULL)
23.69	71.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3870 CFS-HRS; 319.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	471	194	131	101	83	71	39	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	1690.5	4.81
21.91	83.5	.37
23.91	71.4	.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3871 CFS-HRS; 319.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	472	186	132	102	83	71	39	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	808.7	(RUNOFF)
19.31	36.6	(RUNOFF)
21.63	31.3	(RUNOFF)
23.63	27.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.62 WATERSHED INCHES; 1297 CFS-HRS; 107.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	113	63	46	36	30	26	6	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	2188.1	(NULL)
21.71	114.2	(NULL)
23.71	97.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	594	257	182	138	114	98	45	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.74	2124.9	5.64
21.92	114.1	.51
23.92	97.7	.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	621	261	178	138	114	98	47	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	1217.7	(RUNOFF)
21.78	50.8	(RUNOFF)
23.77	43.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 2377 CFS-HRS; 196.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	255	114	79	61	51	44	23	3

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	3125.4	(NULL)
21.80	164.8	(NULL)
23.80	140.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
8.60	CFS	.31	.92	2.12	4.01	6.94	10.81	15.99	22.50
10.20	CFS	30	40	54	70	91	119	157	236
11.80	CFS	493	1170	2128	2895	3125	2936	2561	2147
13.40	CFS	1751	1414	1156	961	813	703	619	555
15.00	CFS	507	468	437	410	386	364	343	325
16.60	CFS	309	296	286	279	273	267	260	252
18.20	CFS	244	235	226	218	211	206	203	201
19.80	CFS	199	195	190	186	182	178	174	168
21.40	CFS	165	164	165	164	162	159	156	153
23.00	CFS	149	144	141	140	141	140	136	125
24.60	CFS	104	79	56	39	26	17	11	7
26.20	CFS	4.36	2.81	1.80	1.15	.74	.48		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 7544 CFS-HRS; 623.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	961	386	260	201	165	141	70	11

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
18.50	230.9	1799.60

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
8.60	CFS	.00	.01	.03	.07	.13	.24	.40	.63
10.20	CFS	.95	1.37	1.92	2.65	3.61	4.85	6.47	8.79
11.80	CFS	13	23	57	93	97	100	103	105
13.40	CFS	107	108	109	110	111	111	112	112
15.00	CFS	113	113	113	114	114	123	145	164
16.60	CFS	179	191	201	209	215	221	225	228
18.20	CFS	230	231	231	230	228	227	224	222
19.80	CFS	220	218	215	213	210	207	204	201
21.40	CFS	197	194	191	189	186	184	181	178
23.00	CFS	176	173	170	167	164	162	160	157
24.60	CFS	153	147	139	130	120	114	114	114
26.20	CFS	114	114	113	113	113	113	113	113

27.80 CFS	113	113	113	113	112	112	112	112
29.40 CFS	112	112	112	112	112	112	111	111
31.00 CFS	111	111	111	111	111	111	111	111
32.60 CFS	110	110	110	110	110	110	110	110
34.20 CFS	110	110	109	109	109	109	109	109
35.80 CFS	109	109	109	109	109	108	108	108
37.40 CFS	108	108	108	108	108	108	108	107
39.00 CFS	107	107	107	107	107	107	107	107
40.60 CFS	107	107	106	106	106	106	106	106
42.20 CFS	106	106	106	106	105	105	105	105
43.80 CFS	105	105	105	105	105	105	105	104
45.40 CFS	104	104	104	104	104	104	104	104
47.00 CFS	104	104	103	103	103	103	103	103
48.60 CFS	103	103	103	103	103	102	102	102
50.20 CFS	102	102	102	102	102	101	101	101
51.80 CFS	101	101	101	101	101	100	100	100
53.40 CFS	100	100	100	100	100	99	99	99
55.00 CFS	99.00	98.87	98.74	98.62	98.49	98.36	98.24	98.11
56.60 CFS	97.99	97.86	97.74	97.61	97.49	97.36	97.24	97.11
58.20 CFS	96.99	96.86	96.74	96.62	96.49	96.37	96.25	96.12
59.80 CFS	95.99	95.86	95.73	95.60	95.47	95.34	95.21	95.08
61.40 CFS	94.95	94.83	94.70	94.57	94.44	94.31	94.18	94.06
63.00 CFS	93.93	93.80	93.67	93.55	93.42	93.29	93.17	93.04
64.60 CFS	92.91	92.79	92.66	92.54	92.41	92.29	92.16	92.04
66.20 CFS	91.91	91.79	91.66	91.54	91.41	91.29	90.52	88.12
67.80 CFS	85.79	83.52	81.31	79.16	77.07	75.03	73.26	71.63
69.40 CFS	70.04	68.49	66.96	65.48	64.02	62.60	61.21	59.85
71.00 CFS	58.52	57.22	55.95	54.70	53.49	52.30	51.14	50.00
72.60 CFS	48.89	47.80	46.74	45.70	44.69	43.69	42.72	41.77
74.20 CFS	40.84	39.94	39.05	38.18	37.33	36.50	35.69	34.90
75.80 CFS	34.12	33.36	32.62	31.90	31.19	30.50	29.82	29.16
77.40 CFS	28.51	27.87	27.26	26.65	26.17	25.85	25.53	25.22
79.00 CFS	24.91	24.61	24.31	24.01	23.72	23.43	23.14	22.86
80.60 CFS	22.58	22.30	22.03	21.76	21.50	21.23	20.97	20.72
82.20 CFS	20.46	20.21	19.97	19.72	19.48	19.24	19.01	18.78
83.80 CFS	18.55	18.32	18.10	17.88	17.66	17.44	17.23	17.02
85.40 CFS	16.81	16.61	16.40	16.20	16.00	15.81	15.62	15.43
87.00 CFS	15.24	15.05	14.87	14.69				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 7305 CFS-HRS; 603.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	157	111	108	104	100	95	79	33

DURATION(HRS)	72	76
FLOW(CFS)	18	15 TRUNCATED

```
OPERATION DIVERT    XSECTION 104
                    OUTPUT #1 HYDROGRAPH

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       16.00                          115.0 *                          .51
                                          * FIRST POINT OF FLAT PEAK

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.66 WATERSHED INCHES;    6584 CFS-HRS;     544.1 ACRE-FEET.

    DURATION(HRS)   8     16     24     32     40     48     56     64
    FLOW(CFS)     115    111    108    104    100     95     79     33

    DURATION(HRS)  72     76
    FLOW(CFS)      18     15 TRUNCATED


            OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION    0)

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       18.50                          115.9                       (DIVERT)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                     721 CFS-HRS;      59.6 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10
    FLOW(CFS)     106     86     64     42      0

 *** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
               2ND TABLE VALUE.  THIS REACH ROUTING MAY BE INCORRECT,
               UNLESS NEW RATING TABLE VALUES ARE INSERTED.                ***


OPERATION REACH     XSECTION 104

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       17.20                          115.0 *                          .51
                                          * FIRST POINT OF FLAT PEAK

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.66 WATERSHED INCHES;    6579 CFS-HRS;     543.7 ACRE-FEET.
```



```
    DURATION(HRS)   8     16     24     32     40     48     56     64
    FLOW(CFS)     115    111    108    104    100     95     80     33

    DURATION(HRS)  72     76
    FLOW(CFS)      18     15 TRUNCATED


OPERATION RUNOFF    XSECTION   4

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.15                         2179.9                       (RUNOFF)
       19.31                           83.4                       (RUNOFF)
       21.61                           71.4                       (RUNOFF)
       23.61                           61.3                       (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.99 WATERSHED INCHES;    3255 CFS-HRS;     269.0 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     260    145    108     83     70     61     31      3

    DURATION(HRS)  17
    FLOW(CFS)       0

 *** WARNING - XSECTION   4
               VOLUME TRUNCATED AT  13.% IN LOCATION 5 ADDING HYDROGRAPHS.  ***


OPERATION ADDHYD    XSECTION   4

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.15                         2196.0                       (NULL)
       19.31                          198.4                       (NULL)
       21.61                          186.4                       (NULL)
       23.61                          176.3                       (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   1.75 WATERSHED INCHES;    9834 CFS-HRS;     812.7 ACRE-FEET.

    DURATION(HRS)   8     16     24     32     40     48     56     64
    FLOW(CFS)     198    113    109    106    102     97     91     41

    DURATION(HRS)  72     78
    FLOW(CFS)      21     15 TRUNCATED


OPERATION DIVERT    XSECTION 104
                    OUTPUT #1 HYDROGRAPH
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2196.0	5.78
19.31	198.4	.88
21.61	186.4	.83
23.61	176.3	.78

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.75 WATERSHED INCHES; 9834 CFS-HRS; 812.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	198	113	109	106	102	97	91	41

DURATION(HRS)	72	78
FLOW(CFS)	21	15 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
18.50	115.9	.51

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
721 CFS-HRS; 59.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10
FLOW(CFS)	106	86	64	42	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2196.0	4.15
19.31	198.4	.67
21.61	186.4	.63
23.61	176.3	.60

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.75 WATERSHED INCHES; 9834 CFS-HRS; 812.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	198	113	109	106	102	97	91	41

DURATION(HRS)	72	78
FLOW(CFS)	21	15 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	2048.6	(RUNOFF)
19.33	68.2	(RUNOFF)
21.56	59.0	(RUNOFF)
23.56	50.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.14 WATERSHED INCHES; 2762 CFS-HRS; 228.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	121	91	68	59	51	34	5

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.11	4171.3	(NULL)
19.32	266.5	(NULL)
21.58	245.3	(NULL)
23.58	227.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.82 WATERSHED INCHES; 12590 CFS-HRS; 1040.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	266	113	110	106	102	97	92	44

DURATION(HRS)	72	78
FLOW(CFS)	22	15 TRUNCATED

OPERATION DIVERT XSECTION 106
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.11	4171.3	6.39
19.32	266.5	.91
21.58	245.3	.83
23.58	227.0	.77

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.82 WATERSHED INCHES; 12590 CFS-HRS; 1040.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	266	113	110	106	102	97	92	44

DURATION(HRS)	72	78
FLOW(CFS)	22	15 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	1030.8	(RUNOFF)
19.33	36.7	(RUNOFF)
21.55	31.9	(RUNOFF)
23.55	27.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 1408 CFS-HRS; 116.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	119	65	47	37	31	27	13	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	5228.2	(NULL)
19.32	303.3	(NULL)
21.58	277.2	(NULL)
23.58	254.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.83 WATERSHED INCHES; 13990 CFS-HRS; 1156.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	303	114	110	106	102	97	92	44

DURATION(HRS)	72	78
FLOW(CFS)	22	15 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
18.50	115.9	.39

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
15.80 CFS	.00	7.82	30.39	48.84	63.81	75.92	85.73	93.76
17.40 CFS	100	106	110	113	115	116	116	115
19.00 CFS	113	112	109	107	105	103	100	98
20.60 CFS	94.78	91.87	88.85	85.63	82.30	79.09	76.19	73.57
22.20 CFS	71.06	68.54	65.99	63.43	60.77	57.93	54.97	52.09
23.80 CFS	49.50	47.16	44.80	41.92	37.74	31.73	23.97	15.01
25.40 CFS	5.44	.00						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
721 CFS-HRS; 59.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10
FLOW(CFS)	106	86	64	42	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.93	833.8	(RUNOFF)
16.90	38.4	(RUNOFF)
19.31	28.4	(RUNOFF)
20.31	25.0	(RUNOFF)
21.43	25.0	(RUNOFF)
22.30	21.7	(RUNOFF)
23.43	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.61 WATERSHED INCHES; 996 CFS-HRS; 82.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	84	46	35	28	24	20	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	5940.2	(NULL)
19.32	331.7	(NULL)
21.56	301.8	(NULL)
23.56	275.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
7.60 CFS	.07	.64	1.12	2.62	5.55	7.58	13.30	18.67
9.20 CFS	25	36	43	57	69	87	114	135
10.80 CFS	184	223	300	414	904	3635	5796	5365
12.40 CFS	3442	2365	1668	1268	1055	899	821	737
14.00 CFS	682	643	606	585	559	541	522	499
15.60 CFS	484	460	442	429	417	411	409	408
17.20 CFS	402	391	384	371	362	352	340	334
18.80 CFS	332	331	331	332	330	319	310	307
20.40 CFS	306	304	293	284	288	298	302	292
22.00 CFS	284	281	280	278	267	258	261	272
23.60 CFS	275	266	258	220	161	132	121	117
25.20 CFS	116	115	115	114	114	114	114	114
26.80 CFS	113	113	113	113	113	113	113	113
28.40 CFS	113	113	112	112	112	112	112	112
30.00 CFS	112	112	112	112	111	111	111	111
31.60 CFS	111	111	111	111	111	111	110	110
33.20 CFS	110	110	110	110	110	110	110	110
34.80 CFS	110	109	109	109	109	109	109	109
36.40 CFS	109	109	109	108	108	108	108	108
38.00 CFS	108	108	108	108	108	107	107	107
39.60 CFS	107	107	107	107	107	107	107	107
41.20 CFS	106	106	106	106	106	106	106	106
42.80 CFS	106	106	106	105	105	105	105	105
44.40 CFS	105	105	105	105	105	105	104	104
46.00 CFS	104	104	104	104	104	104	104	104
47.60 CFS	103	103	103	103	103	103	103	103
49.20 CFS	103	103	103	102	102	102	102	102
50.80 CFS	102	102	102	101	101	101	101	101
52.40 CFS	101	101	101	100	100	100	100	100

54.00 CFS	99.81	99.68	99.55	99.42	99.29	99.17	99.04	98.92
55.60 CFS	98.79	98.66	98.54	98.41	98.28	98.16	98.03	97.91
57.20 CFS	97.78	97.66	97.53	97.41	97.28	97.16	97.03	96.91
58.80 CFS	96.79	96.66	96.54	96.42	96.29	96.17	96.04	95.91
60.40 CFS	95.78	95.65	95.52	95.39	95.26	95.13	95.00	94.87
62.00 CFS	94.74	94.61	94.49	94.36	94.23	94.10	93.97	93.85
63.60 CFS	93.72	93.59	93.47	93.34	93.21	93.09	92.96	92.83
65.20 CFS	92.71	92.58	92.46	92.33	92.21	92.08	91.96	91.83
66.80 CFS	91.71	91.58	91.46	91.33	90.74	88.82	86.60	84.35
68.40 CFS	82.13	79.96	77.84	75.79	73.94	72.25	70.64	69.06
70.00 CFS	67.53	66.03	64.56	63.12	61.72	60.35	59.01	57.70
71.60 CFS	56.42	55.16	53.94	52.74	51.56	50.42	49.30	48.20
73.20 CFS	47.13	46.08	45.06	44.06	43.08	42.12	41.19	40.27
74.80 CFS	39.38	38.50	37.65	36.81	35.99	35.19	34.41	33.65
76.40 CFS	32.90	32.17	31.45	30.75	30.07	29.40	28.75	28.11
78.00 CFS	27.48	26.87	26.36	25.98	25.65	25.33	25.02	24.72
79.60 CFS	24.42	24.12	23.82	23.53	23.25	22.96	22.68	22.40
81.20 CFS	22.13	21.86	21.59	21.33	21.07	20.81	20.56	20.31
82.80 CFS	20.06	19.81	19.57	19.33	19.10	18.86	18.63	18.40
84.40 CFS	18.18	17.96	17.74	17.52	17.31	17.10	16.89	16.68
86.00 CFS	16.48	16.28	16.08	15.88	15.69	15.49	15.31	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.82 WATERSHED INCHES; 14986 CFS-HRS; 1238.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	331	114	110	106	102	97	92	44

DURATION(HRS)	72	78
FLOW(CFS)	22	15 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	405.0	(RUNOFF)
21.77	17.7	(RUNOFF)
23.76	15.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	86	38	27	21	18	15	7	0

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	405.0	(DIVERT)
21.77	17.7	(DIVERT)
23.76	15.2	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	86	38	27	21	18	15	7	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.66	375.1	1767.83
22.00	17.6	1764.24
23.99	15.1	1764.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 795 CFS-HRS; 65.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	82	38	28	21	18	15	6	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	1297.5	(RUNOFF)
21.61	40.5	(RUNOFF)
23.61	34.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.15 WATERSHED INCHES; 1926 CFS-HRS; 159.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	165	87	64	47	40	36	25	4

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	1471.5	1772.52
21.61	57.8	1765.06
23.61	49.5	1764.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 2723 CFS-HRS; 225.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	264	126	90	69	58	51	29	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	1471.5	1772.52
21.61	57.8	1765.06
23.61	49.5	1764.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 2723 CFS-HRS; 225.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	264	126	90	69	58	51	29	7

DURATION(HRS)	18
FLOW(CFS)	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	1471.5	1759.29
21.61	57.8	1754.63
23.61	49.5	1754.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 2723 CFS-HRS; 225.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	264	126	90	69	58	51	29	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	2151.5	(RUNOFF)
19.32	67.7	(RUNOFF)
21.55	58.5	(RUNOFF)
23.55	50.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.31 WATERSHED INCHES; 2867 CFS-HRS; 236.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	129	92	68	60	51	42	12

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	3497.3	1762.24
21.57	116.3	1755.07
23.57	99.7	1754.96

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
7.00 CFS	.03	.73	2.13	2.98	5.42	7.40	10.22	15.13
8.60 CFS	18.22	23.62	28.16	33.27	41.22	46.53	56.04	64.38

10.20 CFS	76	95	109	140	168	212	287	504
11.80 CFS	1969	3349	3373	2310	1686	1259	952	768
13.40 CFS	623	536	461	407	372	339	318	298
15.00 CFS	282	269	253	242	227	215	206	196
16.60 CFS	191	188	187	183	177	172	165	159
18.20 CFS	153	146	141	139	138	137	137	136
19.80 CFS	130	125	123	121	120	114	109	109
21.40 CFS	114	116	112	108	106	105	103	98
23.00 CFS	92.15	92.36	97.41	99.62	95.49	90.80	74.58	41.46
24.60 CFS	22.06	12.82	7.50	4.27	2.43	1.39	.78	.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.18 WATERSHED INCHES; 5610 CFS-HRS; 463.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	504	253	183	139	116	103	75	18

DURATION(HRS)	18	19
FLOW(CFS)	2	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
99 CFS-HRS; 463.6 ACRE-FEET.

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	3497.3	1762.24
21.57	116.3	1755.07
23.57	99.7	1754.96

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.18 WATERSHED INCHES; 5610 CFS-HRS; 463.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	504	253	183	139	116	103	75	18

DURATION(HRS)	18	19
FLOW(CFS)	2	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	3221.0	1759.49
21.81	115.2	1750.83
23.81	98.6	1750.65

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
7.20 CFS	.03	.53	1.66	2.60	4.60	6.59	9.17	13.40
8.80 CFS	16.83	21.65	26.28	31.25	38.34	44.16	52.60	60.97
10.40 CFS	72	88	103	129	157	196	260	433
12.00 CFS	1524	2821	3214	2572	1942	1457	1098	864
13.60 CFS	693	582	496	433	389	353	328	307
15.20 CFS	289	275	259	247	233	220	210	200
16.80 CFS	194	190	188	185	179	174	168	162
18.40 CFS	156	148	143	140	138	137	137	136
20.00 CFS	132	127	124	122	121	116	111	109
21.60 CFS	113	115	113	109	107	105	104	99
23.20 CFS	94.24	92.90	96.10	98.60	96.39	92.42	79.74	52.54
24.80 CFS	30.88	18.04	10.55	6.08	3.49	1.99	1.13	.65
26.40 CFS	.37							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.17 WATERSHED INCHES; 5580 CFS-HRS; 461.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	496	259	185	138	116	103	72	18

DURATION(HRS)	18	19
FLOW(CFS)	2	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	8209.2	1765.63
21.60	414.2	1752.71
23.60	371.4	1752.50

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
7.20 CFS	.03	.53	1.73	3.23	5.72	9.21	14.72	20.98
8.80 CFS	30	40	52	67	82	101	121	148
10.40 CFS	186	223	287	352	457	610	1164	4069
12.00 CFS	7320	8186	6656	4936	3611	2725	2153	1763

13.60 CFS	1514	1319	1178	1076	995	938	887	848
15.20 CFS	811	774	744	707	675	649	626	611
16.80 CFS	602	598	590	576	563	546	530	514
18.40 CFS	496	482	475	471	470	469	467	455
20.00 CFS	442	434	430	426	413	400	398	407
21.60 CFS	414	408	397	390	387	383	371	357
23.20 CFS	356	365	371	365	354	312	241	184
24.80 CFS	152	135	126	121	119	116	115	114
26.40 CFS	114	114	114	113	113	113	113	113
28.00 CFS	113	113	113	113	112	112	112	112
29.60 CFS	112	112	112	112	112	112	111	111
31.20 CFS	111	111	111	111	111	111	111	111
32.80 CFS	110	110	110	110	110	110	110	110
34.40 CFS	110	110	110	109	109	109	109	109
36.00 CFS	109	109	109	109	109	108	108	108
37.60 CFS	108	108	108	108	108	108	108	107
39.20 CFS	107	107	107	107	107	107	107	107
40.80 CFS	107	107	106	106	106	106	106	106
42.40 CFS	106	106	106	106	106	105	105	105
44.00 CFS	105	105	105	105	105	105	105	105
45.60 CFS	104	104	104	104	104	104	104	104
47.20 CFS	104	104	103	103	103	103	103	103
48.80 CFS	103	103	103	103	103	102	102	102
50.40 CFS	102	102	102	102	102	101	101	101
52.00 CFS	101	101	101	101	101	100	100	100
53.60 CFS	100	100	100	100	100	99	99	99
55.20 CFS	99.04	98.92	98.79	98.66	98.54	98.41	98.28	98.16
56.80 CFS	98.03	97.91	97.78	97.66	97.53	97.41	97.28	97.16
58.40 CFS	97.03	96.91	96.79	96.66	96.54	96.42	96.29	96.17
60.00 CFS	96.04	95.91	95.78	95.65	95.52	95.39	95.26	95.13
61.60 CFS	95.00	94.87	94.74	94.61	94.49	94.36	94.23	94.10
63.20 CFS	93.97	93.85	93.72	93.59	93.47	93.34	93.21	93.09
64.80 CFS	92.96	92.83	92.71	92.58	92.46	92.33	92.21	92.08
66.40 CFS	91.96	91.83	91.71	91.58	91.46	91.33	90.74	88.82
68.00 CFS	86.60	84.35	82.13	79.96	77.84	75.79	73.94	72.25
69.60 CFS	70.64	69.06	67.53	66.03	64.56	63.12	61.72	60.35
71.20 CFS	59.01	57.70	56.42	55.16	53.94	52.74	51.56	50.42
72.80 CFS	49.30	48.20	47.13	46.08	45.06	44.06	43.08	42.12
74.40 CFS	41.19	40.27	39.38	38.50	37.65	36.81	35.99	35.19
76.00 CFS	34.41	33.65	32.90	32.17	31.45	30.75	30.07	29.40
77.60 CFS	28.75	28.11	27.48	26.87	26.36	25.98	25.65	25.33
79.20 CFS	25.02	24.72	24.42	24.12	23.82	23.53	23.25	22.96
80.80 CFS	22.68	22.40	22.13	21.86	21.59	21.33	21.07	20.81
82.40 CFS	20.56	20.31	20.06	19.81	19.57	19.33	19.10	18.86
84.00 CFS	18.63	18.40	18.18	17.96	17.74	17.52	17.31	17.10
85.60 CFS	16.89	16.68	16.48	16.28				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 20611 CFS-HRS; 1703.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	469	115	110	106	102	97	92	47

DURATION(HRS)	72	77
FLOW(CFS)	23	16 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 763.59 AC-FT (.07 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1709.99. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.78	158.4	1712.61

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 146 CFS
RESVOR (92. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
7.40 CFS	.00	.02	.05	.10	.18	.32	.53	.82
9.00 CFS	1.23	1.76	2.44	3.29	4.33	5.59	7.11	8.99
10.60 CFS	11	14	18	22	28	38	69	123
12.20 CFS	128	134	138	140	142	143	144	145
13.80 CFS	146	146	147	148	148	149	149	150
15.40 CFS	150	151	151	151	152	152	152	152
17.00 CFS	152	152	152	152	153	153	153	153
18.60 CFS	153	153	153	153	153	153	153	154
20.20 CFS	154	154	154	154	154	154	154	154
21.80 CFS	154	154	154	154	155	155	155	155
23.40 CFS	155	155	155	156	156	157	158	158
25.00 CFS	158	157	156	156	156	156	156	156
26.60 CFS	156	156	155	155	155	155	155	155
28.20 CFS	155	155	155	155	155	155	155	155
29.80 CFS	155	155	155	155	155	155	155	155
31.40 CFS	155	155	155	155	155	155	155	155
33.00 CFS	155	155	155	155	155	155	155	155
34.60 CFS	154	154	154	154	154	154	154	154
36.20 CFS	154	154	154	154	154	154	154	154
37.80 CFS	154	154	154	154	154	154	154	154
39.40 CFS	154	154	154	154	154	154	154	154
41.00 CFS	154	154	154	154	154	154	154	154
42.60 CFS	154	154	154	154	154	154	154	154
44.20 CFS	154	154	154	154	154	154	154	154
45.80 CFS	154	154	154	154	154	154	154	154
47.40 CFS	154	154	154	154	153	153	153	153
49.00 CFS	153	153	153	153	153	153	153	153
50.60 CFS	153	153	153	153	153	153	153	153

52.20 CFS	153	153	153	153	153	153	153	153
53.80 CFS	153	153	153	153	153	153	153	153
55.40 CFS	153	153	153	153	153	153	153	153
57.00 CFS	153	153	153	153	153	153	153	153
58.60 CFS	153	153	153	153	153	153	153	153
60.20 CFS	153	153	153	153	153	153	153	153
61.80 CFS	153	152	152	152	152	152	152	152
63.40 CFS	152	152	152	152	152	152	152	152
65.00 CFS	152	152	152	152	152	152	152	152
66.60 CFS	152	152	152	152	152	152	152	152
68.20 CFS	152	152	152	152	152	152	152	152
69.80 CFS	152	152	152	152	152	152	152	152
71.40 CFS	152	152	152	152	152	152	151	151
73.00 CFS	151	151	151	151	151	151	151	151
74.60 CFS	151	151	151	151	151	150	150	150
76.20 CFS	150	150	150	150	150	150	150	150
77.80 CFS	150	149	149	149	149	149	149	149
79.40 CFS	149	149	149	149	148	148	148	148
81.00 CFS	148	148	148	148	148	148	148	148
82.60 CFS	147	147	147	147	147	147	147	147
84.20 CFS	147	147	147	146	146	146	146	146
85.80 CFS	146	146	146					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.05 WATERSHED INCHES; 11351 CFS-HRS; 938.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	155	154	154	153	153	152	152	149

DURATION(HRS)	72	73
FLOW(CFS)	146	146 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 7.06 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 2 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.27	907.9	(RUNOFF)
19.37	108.9	(RUNOFF)
21.37	96.9	(RUNOFF)
23.43	87.1	(RUNOFF)
24.14	85.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5697 CFS-HRS; 470.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	798	526	322	205	144	109	93	85

DURATION(HRS)	18	20	22
FLOW(CFS)	54	7	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.92	589.5	(RUNOFF)
17.18	93.2	(RUNOFF)
18.00	85.5	(RUNOFF)
19.22	72.3	(RUNOFF)
21.14	65.6	(RUNOFF)
22.09	56.6	(RUNOFF)
23.19	61.1	(RUNOFF)
24.10	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3590 CFS-HRS; 296.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	513	328	198	126	90	69	60	55

DURATION(HRS)	18	20	20
FLOW(CFS)	38	1	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.12	1492.3	(NULL)
17.12	238.5	(NULL)
19.22	180.6	(NULL)
21.21	161.4	(NULL)
23.24	146.2	(NULL)
24.11	145.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1296	868	531	334	238	178	151	143

DURATION(HRS)	18	20	22
FLOW(CFS)	91	8	0

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.36	1489.4	4.41
17.31	238.5	1.06
19.43	180.0	.80
21.44	160.5	.71
23.47	144.9	.64
24.32	143.7	.64

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1287	883	539	338	234	179	150	140

DURATION(HRS)	18	20	22
FLOW(CFS)	98	9	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.98	554.5	(RUNOFF)
17.14	92.9	(RUNOFF)
17.99	85.3	(RUNOFF)
19.18	72.5	(RUNOFF)
21.10	65.9	(RUNOFF)
22.06	56.7	(RUNOFF)
23.15	62.1	(RUNOFF)
24.06	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 3360 CFS-HRS; 277.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	311	182	119	85	65	59	54

DURATION(HRS)	18	20
FLOW(CFS)	18	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.22	2032.0	(NULL)
19.21	249.8	(NULL)
21.26	221.7	(NULL)
23.28	200.3	(NULL)
24.13	199.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1784	1153	712	450	326	248	208	195

DURATION(HRS)	18	20	22
FLOW(CFS)	105	9	0

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.46	2027.6	5.46
19.39	249.5	1.11
21.50	220.7	.98
23.52	198.8	.88
24.34	197.7	.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1773	1174	723	455	327	248	208	193

DURATION(HRS)	18	20	22
FLOW(CFS)	113	10	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.05	920.4	(RUNOFF)
17.25	143.0	(RUNOFF)
19.33	109.2	(RUNOFF)
21.24	98.9	(RUNOFF)
22.11	88.1	(RUNOFF)
23.29	89.9	(RUNOFF)
24.14	87.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5666 CFS-HRS; 468.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	801	512	311	204	140	108	92	86

DURATION(HRS)	18	20	21
FLOW(CFS)	55	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.34	2929.7	(NULL)
19.35	358.6	(NULL)
21.40	317.3	(NULL)
23.43	286.4	(NULL)
24.21	280.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 2
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.00 CFS	.00	.60	2.70	6.81	14.81	28.09	48.26	81.11
6.60 CFS	128	188	263	351	456	582	725	891
8.20 CFS	1078	1284	1515	1758	2018	2277	2502	2673
9.80 CFS	2792	2872	2920	2928	2897	2840	2776	2708
11.40 CFS	2630	2531	2419	2291	2153	2012	1871	1738
13.00 CFS	1616	1506	1405	1305	1214	1133	1063	1000
14.60 CFS	939	882	829	780	737	700	667	634
16.20 CFS	600	564	528	497	480	476	473	464
17.80 CFS	452	445	441	429	402	372	357	357
19.40 CFS	358	353	341	326	310	297	293	295
21.00 CFS	303	312	317	312	302	296	293	288
22.60 CFS	276	264	265	278	286	281	271	272
24.20 CFS	280	274	237	183	133	92	62	40
25.80 CFS	25.48	16.32	10.46	6.73	4.32	2.77	1.78	1.14
27.40 CFS	.73	.46						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.61 WATERSHED INCHES; 18313 CFS-HRS; 1513.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2531	1738	1063	667	464	357	302	278

DURATION(HRS)	18	20	22	22
FLOW(CFS)	183	16	1	0

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.72	1798.8	1801.78

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 2
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.20 CFS	.00	.02	.08	.21	.47	.93	1.71	2.97
6.80 CFS	4.87	7.57	11.23	16.02	22.17	32.81	50.03	70.79
8.40 CFS	92	93	95	98	100	103	105	108
10.00 CFS	110	112	228	491	723	927	1105	1258
11.60 CFS	1387	1494	1578	1641	1741	1793	1796	1765
13.20 CFS	1712	1648	1620	1584	1544	1501	1455	1407
14.80 CFS	1359	1309	1260	1211	1163	1116	1070	1026
16.40 CFS	983	940	898	858	821	787	756	727
18.00 CFS	699	674	651	628	604	581	559	539
19.60 CFS	521	504	488	471	455	439	425	412
21.20 CFS	402	394	386	378	370	363	356	349
22.80 CFS	341	333	327	323	319	315	311	307
24.40 CFS	304	300	291	278	262	244	225	206
26.00 CFS	188	171	155	140	127	115	114	114
27.60 CFS	114	114	113	113	113	113	113	113
29.20 CFS	113	113	113	113	112	112	112	112
30.80 CFS	112	112	112	112	112	112	111	111
32.40 CFS	111	111	111	111	111	111	111	111
34.00 CFS	110	110	110	110	110	110	110	110
35.60 CFS	110	110	109	109	109	109	109	109
37.20 CFS	109	109	109	109	109	108	108	108
38.80 CFS	108	108	108	108	108	108	108	107
40.40 CFS	107	107	107	107	107	107	107	107
42.00 CFS	107	107	106	106	106	106	106	106
43.60 CFS	106	106	106	106	105	105	105	105
45.20 CFS	105	105	105	105	105	105	105	104
46.80 CFS	104	104	104	104	104	104	104	104
48.40 CFS	104	104	103	103	103	103	103	103
50.00 CFS	103	103	103	103	103	102	102	102
51.60 CFS	102	102	102	102	102	101	101	101
53.20 CFS	101	101	101	101	101	100	100	100
54.80 CFS	100	100	100	100	100	99	99	99
56.40 CFS	99.00	98.87	98.75	98.62	98.50	98.37	98.24	98.12
58.00 CFS	97.99	97.87	97.74	97.62	97.49	97.37	97.24	97.12
59.60 CFS	96.99	96.87	96.75	96.62	96.50	96.38	96.25	96.13
61.20 CFS	96.00	95.87	95.74	95.61	95.48	95.35	95.22	95.09

62.80 CFS	94.96	94.83	94.70	94.57	94.45	94.32	94.19	94.06
64.40 CFS	93.93	93.81	93.68	93.55	93.43	93.30	93.17	93.05
66.00 CFS	92.92	92.79	92.67	92.54	92.42	92.29	92.17	92.04
67.60 CFS	91.92	91.79	91.67	91.54	91.42	91.29	90.63	88.24
69.20 CFS	85.90	83.63	81.42	79.26	77.17	75.13	73.34	71.71
70.80 CFS	70.12	68.56	67.04	65.55	64.09	62.67	61.27	59.91
72.40 CFS	58.58	57.28	56.01	54.76	53.54	52.35	51.19	50.05
74.00 CFS	48.94	47.85	46.79	45.75	44.73	43.74	42.77	41.82
75.60 CFS	40.89	39.98	39.09	38.22	37.37	36.54	35.73	34.94
77.20 CFS	34.16	33.40	32.66	31.93	31.22	30.53	29.85	29.19
78.80 CFS	28.54	27.91	27.29	26.68	26.18	25.86	25.55	25.23
80.40 CFS	24.93	24.62	24.32	24.02	23.73	23.44	23.15	22.87
82.00 CFS	22.59	22.32	22.04	21.77	21.51	21.25	20.99	20.73
83.60 CFS	20.48	20.23	19.98	19.74	19.49	19.26		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 17998 CFS-HRS; 1487.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	604	155	110	107	103	98	94	60

DURATION(HRS)	72	77
FLOW(CFS)	26	19 TRUNCATED

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.40	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.80 WATERSHED INCHES; 7149 CFS-HRS; 590.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	110	107	103	98	94	60

DURATION(HRS)	72	77
FLOW(CFS)	26	19 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.72	1683.8	(DIVERT)

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RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               10849 CFS-HRS;     896.6 ACRE-FEET.

DURATION(HRS)   2     4     6     8    10    12    14    16
FLOW(CFS)    1429  1096   743   489   324   234   185    40

DURATION(HRS)  17
FLOW(CFS)       0

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
              2ND TABLE VALUE.  THIS REACH ROUTING MAY BE INCORRECT,
              UNLESS NEW RATING TABLE VALUES ARE INSERTED.                ***

OPERATION REACH     XSECTION 104

PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
   11.80                        115.0 *                          .51
                                     * FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               1.80 WATERSHED INCHES;    7144 CFS-HRS;     590.4 ACRE-FEET.

DURATION(HRS)   8    16    24    32    40    48    56    64
FLOW(CFS)     115   115   110   107   103    99    94    60

DURATION(HRS)  72    77
FLOW(CFS)      26    20 TRUNCATED

OPERATION RUNOFF    XSECTION   4

PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
    9.62                       1280.3                        (RUNOFF)
   17.11                        201.4                        (RUNOFF)
   17.98                        184.7                        (RUNOFF)
   19.15                        157.1                        (RUNOFF)
   21.07                        142.2                        (RUNOFF)
   22.04                        122.6                        (RUNOFF)
   23.12                        135.1                        (RUNOFF)
   24.03                        132.1                        (RUNOFF)

RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               4.75 WATERSHED INCHES;    7779 CFS-HRS;     642.9 ACRE-FEET.
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DURATION(HRS)   2     4     6     8    10    12    14    16
FLOW(CFS)    1087   722   434   275   190   145   131   115

DURATION(HRS)  18    20    20
FLOW(CFS)      71     2     0

*** WARNING - XSECTION   4
              VOLUME TRUNCATED AT  17.% IN LOCATION 5 ADDING HYDROGRAPHS.  ***

OPERATION ADDHYD    XSECTION   4

PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
    9.72                       1382.8                        (NULL)
   17.11                        316.4                        (NULL)
   17.98                        299.7                        (NULL)
   19.15                        272.1                        (NULL)
   21.07                        257.2                        (NULL)
   22.04                        237.6                        (NULL)
   23.12                        250.1                        (NULL)
   24.03                        247.1                        (NULL)

RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               2.66 WATERSHED INCHES;   14923 CFS-HRS;    1233.3 ACRE-FEET.

DURATION(HRS)   8    16    24    32    40    48    56    64
FLOW(CFS)     379   228   112   108   105   100    95    76

DURATION(HRS)  72    79
FLOW(CFS)      32    20 TRUNCATED

OPERATION DIVERT    XSECTION 104
                    OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
    9.72                       1382.8                          4.19
   17.11                        316.4                          1.41
   17.98                        299.7                          1.33
   19.15                        272.1                          1.21
   21.07                        257.2                          1.14
   22.04                        237.6                          1.06
   23.12                        250.1                          1.11
   24.03                        247.1                          1.10

RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               2.66 WATERSHED INCHES;   14923 CFS-HRS;    1233.3 ACRE-FEET.
```

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	379	228	112	108	105	100	95	76

DURATION(HRS)	72	79
FLOW(CFS)	32	20 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.72	1683.8	4.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
10849 CFS-HRS; 896.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1429	1096	743	489	324	234	185	40

DURATION(HRS)	17
FLOW(CFS)	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.72	1382.8	3.06
17.11	316.4	1.08
17.98	299.7	1.02
19.15	272.1	.93
21.07	257.2	.87
22.04	237.6	.81
23.12	250.1	.85
24.03	247.1	.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.66 WATERSHED INCHES; 14923 CFS-HRS; 1233.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	379	228	112	108	105	100	95	76

DURATION(HRS)	72	79
FLOW(CFS)	32	20 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.26	1067.2	(RUNOFF)
17.05	163.9	(RUNOFF)
17.95	150.0	(RUNOFF)
19.08	129.0	(RUNOFF)
21.01	116.0	(RUNOFF)
21.99	99.5	(RUNOFF)
23.05	111.6	(RUNOFF)
23.99	111.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 6412 CFS-HRS; 529.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	892	579	359	224	154	128	105	94

DURATION(HRS)	18	20	20
FLOW(CFS)	74	2	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.52	2439.3	(NULL)
17.08	479.7	(NULL)
17.97	449.6	(NULL)
19.11	399.6	(NULL)
21.04	372.9	(NULL)
22.01	337.0	(NULL)
23.08	360.7	(NULL)
24.01	357.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.09 WATERSHED INCHES; 21326 CFS-HRS; 1762.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	96	82
DURATION(HRS)	72	79						
FLOW(CFS)	34	20 TRUNCATED						

OPERATION DIVERT XSECTION 106
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.52	2439.3	4.46
17.08	479.7	1.57
17.97	449.6	1.52
19.11	399.6	1.36
21.04	372.9	1.27
22.01	337.0	1.15
23.08	360.7	1.23
24.01	357.9	1.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.09 WATERSHED INCHES; 21326 CFS-HRS; 1762.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	96	82
DURATION(HRS)	72	79						
FLOW(CFS)	34	20 TRUNCATED						

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.49	562.3	(RUNOFF)
17.04	91.0	(RUNOFF)
17.95	83.5	(RUNOFF)
19.07	71.9	(RUNOFF)
21.00	64.6	(RUNOFF)
21.99	55.4	(RUNOFF)
23.04	62.2	(RUNOFF)
23.98	62.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	314	187	120	85	65	58	52
DURATION(HRS)	18	20						
FLOW(CFS)	32	0						

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.52	3001.5	(NULL)
17.07	570.6	(NULL)
17.96	533.1	(NULL)
19.10	470.7	(NULL)
21.03	437.4	(NULL)
22.01	392.4	(NULL)
23.07	422.8	(NULL)
24.00	419.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.24 WATERSHED INCHES; 24736 CFS-HRS; 2044.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	717	371	113	109	105	101	96	82
DURATION(HRS)	72	79						
FLOW(CFS)	34	20 TRUNCATED						

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.72	1683.8	3.50

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 2
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
10.20 CFS	0	113	376	608	812	990	1143	1272

11.80 CFS	1379	1463	1526	1626	1678	1681	1650	1597
13.40 CFS	1533	1505	1469	1429	1386	1340	1292	1244
15.00 CFS	1194	1145	1096	1048	1001	955	911	868
16.60 CFS	825	783	743	706	672	641	612	584
18.20 CFS	559	536	513	489	466	444	424	406
19.80 CFS	389	373	356	340	324	310	297	287
21.40 CFS	279	271	263	255	248	241	234	226
23.00 CFS	218	212	208	204	200	196	192	189
24.60 CFS	185	176	163	147	129	110	91	73
26.20 CFS	55.72	39.85	25.24	11.86	.00			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
10849 CFS-HRS; 896.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1429	1096	743	489	324	234	185	40

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	435.3	(RUNOFF)
16.93	76.1	(RUNOFF)
17.91	70.3	(RUNOFF)
18.94	61.1	(RUNOFF)
20.91	54.4	(RUNOFF)
21.92	46.9	(RUNOFF)
22.93	54.6	(RUNOFF)
23.91	57.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 2600 CFS-HRS; 214.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	373	227	141	93	66	53	46	39

DURATION(HRS)	18	19
FLOW(CFS)	19	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.7%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.55	3429.0	(NULL)
17.04	644.6	(NULL)
17.94	602.9	(NULL)
19.07	530.0	(NULL)
21.00	490.6	(NULL)
21.98	438.5	(NULL)
23.04	474.0	(NULL)
23.98	474.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 2
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
4.60 CFS	0	2	3	14	36	54	98	137
6.20 CFS	211	321	397	544	656	821	1043	1200
7.80 CFS	1504	1735	2028	2395	2641	3033	3308	3410
9.40 CFS	3427	3429	3423	3413	3316	3153	3063	2979
11.00 CFS	2922	2795	2611	2490	2272	2114	1963	1792
12.60 CFS	1695	1581	1503	1407	1287	1221	1157	1115
14.20 CFS	1059	986	943	886	847	819	791	771
15.80 CFS	721	684	643	592	575	612	644	629
17.40 CFS	588	571	586	600	551	462	427	480
19.00 CFS	527	518	478	454	424	404	410	430
20.60 CFS	445	472	491	470	427	409	424	438
22.20 CFS	416	372	361	422	473	450	388	367
23.80 CFS	424	473	394	239	159	131	121	117
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	114	114	114	114	113	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	112	112	112	112	112	112	112	112
31.80 CFS	112	112	111	111	111	111	111	111
33.40 CFS	111	111	111	111	110	110	110	110
35.00 CFS	110	110	110	110	110	110	110	109
36.60 CFS	109	109	109	109	109	109	109	109
38.20 CFS	109	108	108	108	108	108	108	108
39.80 CFS	108	108	108	108	107	107	107	107
41.40 CFS	107	107	107	107	107	107	106	106
43.00 CFS	106	106	106	106	106	106	106	106
44.60 CFS	106	105	105	105	105	105	105	105
46.20 CFS	105	105	105	105	104	104	104	104
47.80 CFS	104	104	104	104	104	104	103	103
49.40 CFS	103	103	103	103	103	103	103	103
51.00 CFS	103	102	102	102	102	102	102	102
52.60 CFS	102	101	101	101	101	101	101	101
54.20 CFS	101	100	100	100	100	100	100	100
55.80 CFS	99.56	99.43	99.30	99.17	99.05	98.92	98.79	98.67
57.40 CFS	98.54	98.42	98.29	98.16	98.04	97.91	97.79	97.66
59.00 CFS	97.54	97.41	97.29	97.16	97.04	96.92	96.79	96.67
60.60 CFS	96.54	96.42	96.30	96.17	96.04	95.91	95.78	95.65
62.20 CFS	95.53	95.39	95.27	95.14	95.01	94.88	94.75	94.62
63.80 CFS	94.49	94.36	94.24	94.11	93.98	93.85	93.73	93.60

65.40 CFS	93.47	93.35	93.22	93.09	92.97	92.84	92.71	92.59
67.00 CFS	92.46	92.34	92.21	92.09	91.96	91.84	91.71	91.59
68.60 CFS	91.46	91.34	90.82	88.93	86.71	84.46	82.23	80.06
70.20 CFS	77.94	75.88	74.02	72.33	70.71	69.14	67.60	66.10
71.80 CFS	64.63	63.19	61.79	60.42	59.07	57.76	56.48	55.22
73.40 CFS	53.99	52.79	51.62	50.47	49.35	48.26	47.18	46.13
75.00 CFS	45.11	44.11	43.13	42.17	41.23	40.31	39.42	38.54
76.60 CFS	37.69	36.85	36.03	35.23	34.45	33.68	32.93	32.20
78.20 CFS	31.49	30.79	30.10	29.43	28.78	28.14	27.51	26.90
79.80 CFS	26.38	26.00	25.67	25.35	25.04	24.73	24.43	24.13
81.40 CFS	23.84	23.55	23.26	22.98	22.69	22.42	22.14	21.87
83.00 CFS	21.61	21.34	21.08	20.82	20.57	20.32	20.07	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.31 WATERSHED INCHES; 27334 CFS-HRS; 2258.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	819	410	113	109	105	101	96	82

DURATION(HRS)	72	79
FLOW(CFS)	34	20 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	318.8	(RUNOFF)
17.24	50.8	(RUNOFF)
19.32	38.9	(RUNOFF)
21.23	35.2	(RUNOFF)
22.12	31.4	(RUNOFF)
23.29	32.1	(RUNOFF)
24.15	31.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	280	179	110	70	49	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	19	1	0

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	318.8	(DIVERT)
17.24	50.8	(DIVERT)
19.32	38.9	(DIVERT)
21.23	35.2	(DIVERT)
22.12	31.4	(DIVERT)
23.29	32.1	(DIVERT)
24.15	31.4	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	280	179	110	70	49	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	19	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.38	317.3	1767.47
17.45	50.6	1764.95
19.57	38.6	1764.77
21.50	34.8	1764.71
23.56	31.5	1764.66
24.36	30.8	1764.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	274	182	109	71	50	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	16	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.48	734.9	(RUNOFF)
17.12	112.1	(RUNOFF)
17.98	102.8	(RUNOFF)
19.16	87.3	(RUNOFF)
21.07	79.0	(RUNOFF)
22.04	68.0	(RUNOFF)
23.13	74.8	(RUNOFF)
24.04	73.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 4457 CFS-HRS; 368.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	628	413	243	155	106	85	73	65

DURATION(HRS)	18	20	21
FLOW(CFS)	53	2	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.96	1036.5	1770.84
17.11	162.3	1766.28
17.96	150.9	1766.17
19.15	124.4	1765.91
21.12	112.0	1765.79
22.00	99.9	1765.67
23.15	103.3	1765.70
24.04	102.0	1765.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 6413 CFS-HRS; 530.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	906	594	360	226	157	122	105	98

DURATION(HRS)	18	20	22
FLOW(CFS)	69	6	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.96	1036.5	1770.84
17.11	162.3	1766.28
17.96	150.9	1766.17
19.15	124.4	1765.91
21.12	112.0	1765.79
22.00	99.9	1765.67
23.15	103.3	1765.70
24.04	102.0	1765.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 6413 CFS-HRS; 530.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	906	594	360	226	157	122	105	98

DURATION(HRS)	18	20	22
FLOW(CFS)	69	6	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.96	1036.5	1758.38
17.11	162.3	1755.38
17.96	150.9	1755.30
19.15	124.4	1755.12
21.12	112.0	1755.04
22.00	99.9	1754.96
23.15	103.3	1754.98
24.04	102.0	1754.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 6413 CFS-HRS; 530.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	906	594	360	226	157	122	105	98
DURATION(HRS)	18	20	22					
FLOW(CFS)	69	6	0					

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.22	1075.7	(RUNOFF)
17.04	160.0	(RUNOFF)
17.95	146.7	(RUNOFF)
19.07	126.0	(RUNOFF)
21.00	113.1	(RUNOFF)
21.99	97.0	(RUNOFF)
23.04	108.9	(RUNOFF)
23.98	108.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.19 WATERSHED INCHES; 6435 CFS-HRS; 531.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	879	601	349	231	157	125	102	92
DURATION(HRS)	18	20	21					
FLOW(CFS)	73	3	0					

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	2079.6	1760.34
17.06	321.8	1756.19
17.95	297.6	1756.08
19.09	249.8	1755.88
21.04	224.0	1755.76
21.99	196.9	1755.62
23.08	210.6	1755.71
24.00	210.4	1755.70

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 2
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
4.40 CFS	.05	.99	8.61	15.00	28.29	53.45	69.65	99.81
6.00 CFS	126	168	241	291	375	449	537	673
7.60 CFS	769	933	1079	1226	1436	1578	1787	1966
9.20 CFS	2044	2065	2079	2076	2071	2028	1932	1873
10.80 CFS	1817	1773	1706	1595	1520	1399	1294	1206
12.40 CFS	1096	1027	953	895	838	762	715	672
14.00 CFS	639	606	560	530	496	468	448	428

15.60 CFS	414	387	363	340	309	293	306	321
17.20 CFS	317	296	285	290	297	278	229	205
18.80 CFS	224	247	246	227	214	198	185	184
20.40 CFS	193	199	212	224	219	197	185	190
22.00 CFS	197	189	165	156	181	208	205	174
23.60 CFS	160	184	210	183	102	54	32	19
25.20 CFS	10.67	6.07	3.43	1.94	1.11	.63	.35	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 12848 CFS-HRS; 1061.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1787	1206	715	449	309	246	208	185
DURATION(HRS)	18	20	22					
FLOW(CFS)	156	15	0					

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
115 CFS-HRS; 1061.8 ACRE-FEET.

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	2079.6	1760.34
17.06	321.8	1756.19
17.95	297.6	1756.08
19.09	249.8	1755.88
21.04	224.0	1755.76
21.99	196.9	1755.62
23.08	210.6	1755.71
24.00	210.4	1755.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 12848 CFS-HRS; 1061.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1787	1206	715	449	309	246	208	185
DURATION(HRS)	18	20	22					
FLOW(CFS)	156	15	0					

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.09	2072.8	1757.54
17.31	317.7	1752.22
18.16	294.9	1752.11
19.36	243.8	1751.79
21.31	219.7	1751.63
22.20	194.7	1751.45
23.35	202.7	1751.51
24.23	199.5	1751.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 2
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
4.60 CFS	.04	.65	5.81	11.77	22.48	42.56	60.13	85.85
6.20 CFS	112	149	209	262	335	409	492	609
7.80 CFS	713	856	1000	1147	1334	1492	1683	1866
9.40 CFS	1981	2036	2063	2072	2071	2043	1971	1907
11.00 CFS	1849	1799	1739	1646	1564	1457	1351	1257
12.60 CFS	1152	1071	995	930	871	800	745	697
14.20 CFS	659	624	583	549	515	484	461	440
15.80 CFS	423	400	376	353	324	304	305	315
17.40 CFS	316	303	291	290	295	284	248	220
19.00 CFS	223	239	243	232	220	206	192	187
20.60 CFS	191	196	206	218	218	204	192	191
22.20 CFS	195	191	174	162	175	197	202	184
23.80 CFS	168	178	199	189	132	82	49	29
25.40 CFS	17.27	10.00	5.74	3.28	1.87	1.07	.60	.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 12846 CFS-HRS; 1061.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1799	1152	713	461	315	243	206	191

DURATION(HRS)	18	20	22
FLOW(CFS)	149	17	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.89	5488.5	1762.39
17.07	951.6	1754.82
17.95	892.9	1754.62
19.13	758.4	1754.17
21.05	698.3	1753.96
21.99	629.2	1753.67
23.10	655.0	1753.78
24.00	651.7	1753.77

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 2
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
4.60 CFS	0	2	9	25	59	96	158	223
6.20 CFS	323	470	606	807	991	1230	1535	1809
7.80 CFS	2217	2590	3029	3542	3975	4525	4992	5277
9.40 CFS	5408	5464	5486	5485	5387	5196	5034	4886
11.00 CFS	4770	4594	4350	4135	3836	3571	3315	3049
12.60 CFS	2848	2652	2498	2337	2157	2021	1901	1812
14.20 CFS	1718	1611	1526	1435	1362	1303	1252	1210
15.80 CFS	1145	1084	1018	945	899	916	949	944
17.40 CFS	904	873	877	891	845	746	675	700
19.00 CFS	749	756	722	687	645	610	603	617
20.60 CFS	635	668	697	688	645	613	616	629
22.20 CFS	611	563	535	584	647	647	590	550
23.80 CFS	592	652	593	428	292	213	170	146
25.40 CFS	133	125	121	118	117	116	116	115
27.00 CFS	115	115	114	114	114	114	113	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	112	112	112	112	112	112	112	112
31.80 CFS	112	112	111	111	111	111	111	111
33.40 CFS	111	111	111	111	110	110	110	110
35.00 CFS	110	110	110	110	110	110	110	109
36.60 CFS	109	109	109	109	109	109	109	109
38.20 CFS	109	108	108	108	108	108	108	108
39.80 CFS	108	108	108	108	107	107	107	107
41.40 CFS	107	107	107	107	107	107	106	106
43.00 CFS	106	106	106	106	106	106	106	106
44.60 CFS	106	105	105	105	105	105	105	105
46.20 CFS	105	105	105	105	104	104	104	104
47.80 CFS	104	104	104	104	104	104	103	103
49.40 CFS	103	103	103	103	103	103	103	103
51.00 CFS	103	102	102	102	102	102	102	102
52.60 CFS	102	101	101	101	101	101	101	101
54.20 CFS	101	100	100	100	100	100	100	100
55.80 CFS	99.56	99.43	99.30	99.17	99.05	98.92	98.79	98.67
57.40 CFS	98.54	98.42	98.29	98.16	98.04	97.91	97.79	97.66
59.00 CFS	97.54	97.41	97.29	97.16	97.04	96.92	96.79	96.67
60.60 CFS	96.54	96.42	96.30	96.17	96.04	95.91	95.78	95.65
62.20 CFS	95.53	95.39	95.27	95.14	95.01	94.88	94.75	94.62
63.80 CFS	94.49	94.36	94.24	94.11	93.98	93.85	93.73	93.60

65.40 CFS	93.47	93.35	93.22	93.09	92.97	92.84	92.71	92.59
67.00 CFS	92.46	92.34	92.21	92.09	91.96	91.84	91.71	91.59
68.60 CFS	91.46	91.34	90.82	88.93	86.71	84.46	82.23	80.06
70.20 CFS	77.94	75.88	74.02	72.33	70.71	69.14	67.60	66.10
71.80 CFS	64.63	63.19	61.79	60.42	59.07	57.76	56.48	55.22
73.40 CFS	53.99	52.79	51.62	50.47	49.35	48.26	47.18	46.13
75.00 CFS	45.11	44.11	43.13	42.17	41.23	40.31	39.42	38.54
76.60 CFS	37.69	36.85	36.03	35.23	34.45	33.68	32.93	32.20
78.20 CFS	31.49	30.79	30.10	29.43	28.78	28.14	27.51	26.90
79.80 CFS	26.38	26.00	25.67	25.35	25.04	24.73	24.43	24.13
81.40 CFS	23.84	23.55	23.26	22.98	22.69	22.42	22.14	21.87
83.00 CFS	21.61	21.34	21.08	20.82				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.71 WATERSHED INCHES; 40175 CFS-HRS; 3320.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1252	606	113	109	105	101	96	84

DURATION(HRS)	72	79
FLOW(CFS)	34	21 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 853.61 AC-FT (.08 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1711.02. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.38	2188.0	1716.20

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 2
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
4.60 CFS	.00	.02	.08	.28	.77	1.68	3.16	5.37
6.20 CFS	8.53	13.10	19.28	27.37	37.64	50.29	65.99	84.91
7.80 CFS	108	123	125	127	130	133	136	140
9.40 CFS	142	145	149	152	153	155	265	392
11.00 CFS	596	784	1050	1303	1515	1688	1827	1935
12.60 CFS	2034	2107	2154	2181	2188	2178	2156	2125
14.20 CFS	2088	2045	1997	1945	1902	1857	1811	1765
15.80 CFS	1719	1671	1622	1571	1520	1471	1429	1390
17.40 CFS	1353	1317	1282	1250	1220	1186	1149	1112
19.00 CFS	1081	1055	1030	1005	978	950	923	898
20.60 CFS	877	859	845	833	820	811	802	794
22.20 CFS	786	777	766	757	750	745	740	732
23.80 CFS	724	720	715	706	690	670	648	625
25.40 CFS	603	581	560	540	520	502	484	467
27.00 CFS	451	436	421	407	393	384	377	370
28.60 CFS	363	356	350	343	337	331	325	319
30.20 CFS	314	308	303	298	293	288	283	279

31.80 CFS	274	270	266	261	257	253	250	246
33.40 CFS	242	239	235	232	229	225	222	219
35.00 CFS	216	213	211	208	205	203	200	198
36.60 CFS	195	193	191	189	186	184	182	180
38.20 CFS	178	177	175	173	171	169	168	166
39.80 CFS	165	163	162	160	159	157	156	156
41.40 CFS	156	156	156	156	155	155	155	155
43.00 CFS	155	155	155	155	155	155	155	155
44.60 CFS	155	155	155	155	155	155	155	155
46.20 CFS	155	155	155	155	155	155	155	155
47.80 CFS	155	155	155	155	155	155	154	154
49.40 CFS	154	154	154	154	154	154	154	154
51.00 CFS	154	154	154	154	154	154	154	154
52.60 CFS	154	154	154	154	154	154	154	154
54.20 CFS	154	154	154	154	154	154	154	154
55.80 CFS	154	154	154	154	154	154	154	154
57.40 CFS	154	154	154	154	154	154	154	154
59.00 CFS	154	154	154	154	154	154	154	154
60.60 CFS	154	154	153	153	153	153	153	153
62.20 CFS	153	153	153	153	153	153	153	153
63.80 CFS	153	153	153	153	153	153	153	153
65.40 CFS	153	153	153	153	153	153	153	153
67.00 CFS	153	153	153	153	153	153	153	153
68.60 CFS	153	153	153	153	153	153	153	153
70.20 CFS	153	153	153	153	153	153	153	153
71.80 CFS	153	153	153	152	152	152	152	152
73.40 CFS	152	152	152	152	152	152	152	152
75.00 CFS	152	152	152	152	152	152	152	152
76.60 CFS	152	152	152	152	152	152	152	152
78.20 CFS	152	152	152	152	152	151	151	151
79.80 CFS	151	151	151	151	151	151	151	151
81.40 CFS	151	151	150	150	150	150	150	150
83.00 CFS	150	150	150	150				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.76 WATERSHED INCHES; 29839 CFS-HRS; 2465.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1030	451	222	155	154	154	153	152

DURATION(HRS)	72	74
FLOW(CFS)	150	150 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 15.80 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 3 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.97	2474.7	(RUNOFF)
19.38	260.1	(RUNOFF)
21.37	231.2	(RUNOFF)
23.43	207.1	(RUNOFF)
24.14	201.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15772 CFS-HRS; 1303.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2130	1491	895	572	384	310	236	213

DURATION(HRS)	18	20	22	24
FLOW(CFS)	199	74	8	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1645.4	(RUNOFF)
17.18	225.3	(RUNOFF)
18.00	206.3	(RUNOFF)
19.22	173.6	(RUNOFF)
21.14	157.2	(RUNOFF)
22.10	136.8	(RUNOFF)
23.18	146.6	(RUNOFF)
24.10	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 10062 CFS-HRS; 831.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1359	945	561	359	231	202	152	137

DURATION(HRS)	18	20	22
FLOW(CFS)	120	35	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	4079.1	(NULL)
17.12	574.5	(NULL)
19.22	432.3	(NULL)
21.21	385.5	(NULL)
23.24	349.2	(NULL)
24.11	344.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3522	2377	1482	944	625	514	386	350

DURATION(HRS)	18	20	22	24
FLOW(CFS)	319	103	12	0

*** WARNING - XSECTION 102, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.06	4073.5	9.07
17.30	574.5	2.32
19.43	430.9	1.91
21.44	383.5	1.70
23.47	346.0	1.54
24.32	341.7	1.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3519	2369	1509	958	604	497	383	350

DURATION(HRS)	18	20	22	24
FLOW(CFS)	320	114	13	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.34	1635.2	(RUNOFF)
17.14	231.2	(RUNOFF)
17.99	211.6	(RUNOFF)
19.18	179.4	(RUNOFF)
21.10	162.5	(RUNOFF)
22.06	139.7	(RUNOFF)
23.15	152.4	(RUNOFF)
24.06	147.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.39 WATERSHED INCHES; 9916 CFS-HRS; 819.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1353	926	554	358	230	196	152	138

DURATION(HRS)	18	20	21
FLOW(CFS)	123	17	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	5653.9	(NULL)
19.21	603.5	(NULL)
21.25	534.8	(NULL)
23.28	481.4	(NULL)
24.13	478.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4815	3359	2061	1304	855	698	530	491

DURATION(HRS)	18	20	22	24
FLOW(CFS)	445	142	13	0

*** WARNING - XSECTION 103, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.19	5645.6	11.79
19.39	602.9	2.39
21.49	532.4	2.21
23.52	478.3	2.07
24.34	474.9	2.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4853	3404	2027	1297	869	706	531	492

DURATION(HRS)	18	20	22	24
FLOW(CFS)	450	132	13	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	2515.5	(RUNOFF)
17.24	343.0	(RUNOFF)
19.34	261.4	(RUNOFF)
21.23	236.0	(RUNOFF)
22.10	209.5	(RUNOFF)
23.30	213.7	(RUNOFF)
24.15	208.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15688 CFS-HRS; 1296.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2109	1485	892	573	376	315	236	209

DURATION(HRS)	18	20	22	23
FLOW(CFS)	196	71	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.07	8106.6	(NULL)
19.35	864.2	(NULL)
21.39	762.6	(NULL)
23.42	687.0	(NULL)
24.21	671.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 3
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
3.40 CFS	0	1	4	12	25	47	79	123

5.00 CFS	184	260	350	456	570	693	829	993
6.60 CFS	1206	1451	1728	2030	2364	2750	3171	3642
8.20 CFS	4149	4688	5271	5868	6481	7073	7549	7863
9.80 CFS	8034	8102	8089	7988	7793	7552	7302	7058
11.40 CFS	6797	6496	6168	5808	5431	5053	4679	4331
13.00 CFS	4015	3732	3471	3220	2988	2784	2607	2449
14.60 CFS	2297	2155	2022	1901	1795	1704	1622	1540
16.20 CFS	1455	1369	1280	1205	1163	1152	1145	1122
17.80 CFS	1093	1076	1065	1036	971	898	860	859
19.40 CFS	864	850	822	784	745	715	704	709
21.00 CFS	727	752	763	750	726	710	703	691
22.60 CFS	662	634	637	666	687	674	650	652
24.20 CFS	671	656	566	437	316	219	146	95
25.80 CFS	60.39	38.60	24.85	16.02	10.26	6.54	4.22	2.72
27.40 CFS	1.74	1.09	.65	.33				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.96 WATERSHED INCHES; 51438 CFS-HRS; 4250.8 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	5868	2988	1540	993	726	650	79	1

DURATION(HRS)	24
FLOW(CFS)	0

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.90	7440.7	1803.90

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 3
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
3.40 CFS	.00	.01	.04	.14	.36	.80	1.56	2.78
5.00 CFS	4.62	7.28	10.91	15.70	21.78	31.63	47.84	67.03
6.60 CFS	91	93	95	97	100	103	105	108
8.20 CFS	112	293	751	1223	1802	3090	4183	5095
9.80 CFS	5833	6412	6847	7156	7346	7430	7430	7365
11.40 CFS	7252	7095	6898	6662	6392	6094	5776	5447
13.00 CFS	5117	4795	4486	4191	3910	3645	3399	3173
14.60 CFS	2966	2774	2597	2432	2281	2143	2019	1906
16.20 CFS	1800	1700	1632	1594	1554	1515	1479	1445
17.80 CFS	1412	1380	1350	1321	1290	1255	1218	1183
19.40 CFS	1151	1123	1095	1066	1037	1007	978	951
21.00 CFS	928	910	895	881	867	853	838	824
22.60 CFS	810	794	779	766	757	750	741	732
24.20 CFS	726	719	709	689	658	620	577	532
25.80 CFS	488	445	405	367	332	301	272	245
27.40 CFS	222	200	181	163	147	133	120	114
29.00 CFS	114	114	114	113	113	113	113	113
30.60 CFS	113	113	113	113	113	112	112	112

32.20 CFS	112	112	112	112	112	112	112	111
33.80 CFS	111	111	111	111	111	111	111	111
35.40 CFS	111	110	110	110	110	110	110	110
37.00 CFS	110	110	110	110	109	109	109	109
38.60 CFS	109	109	109	109	109	109	108	108
40.20 CFS	108	108	108	108	108	108	108	108
41.80 CFS	108	107	107	107	107	107	107	107
43.40 CFS	107	107	107	106	106	106	106	106
45.00 CFS	106	106	106	106	106	106	105	105
46.60 CFS	105	105	105	105	105	105	105	105
48.20 CFS	105	104	104	104	104	104	104	104
49.80 CFS	104	104	104	103	103	103	103	103
51.40 CFS	103	103	103	103	103	103	102	102
53.00 CFS	102	102	102	102	102	102	101	101
54.60 CFS	101	101	101	101	101	101	100	100
56.20 CFS	100	100	100	100	100	100	99	99
57.80 CFS	99.18	99.05	98.92	98.80	98.67	98.54	98.42	98.29
59.40 CFS	98.17	98.04	97.91	97.79	97.66	97.54	97.41	97.29
61.00 CFS	97.17	97.04	96.92	96.79	96.67	96.55	96.42	96.30
62.60 CFS	96.18	96.05	95.92	95.79	95.66	95.53	95.40	95.27
64.20 CFS	95.14	95.01	94.88	94.75	94.62	94.49	94.37	94.24
65.80 CFS	94.11	93.98	93.86	93.73	93.60	93.47	93.35	93.22
67.40 CFS	93.09	92.97	92.84	92.72	92.59	92.46	92.34	92.21
69.00 CFS	92.09	91.96	91.84	91.71	91.59	91.47	91.34	91.22
70.60 CFS	89.12	86.76	84.47	82.24	80.06	77.94	75.88	73.96
72.20 CFS	72.32	70.71	69.14	67.60	66.10	64.63	63.19	61.79
73.80 CFS	60.42	59.07	57.76	56.48	55.22	54.00	52.80	51.62
75.40 CFS	50.47	49.35	48.26	47.18	46.14	45.11	44.11	43.13
77.00 CFS	42.17	41.23	40.32	39.42	38.54	37.69	36.85	36.03
78.60 CFS	35.23	34.45	33.68	32.93	32.20	31.49	30.79	30.10
80.20 CFS	29.43	28.78	28.14	27.51	26.90	26.31	25.98	25.66
81.80 CFS	25.35	25.04	24.74	24.43	24.13			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.86 WATERSHED INCHES; 51035 CFS-HRS; 4217.6 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1554	709	112	108	105	101	96	89

DURATION(HRS)	72	76
FLOW(CFS)	37	24 TRUNCATED

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.40	115.0 *	.51

```
                                        * FIRST POINT OF FLAT PEAK

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.88 WATERSHED INCHES;    7469 CFS-HRS;     617.2 ACRE-FEET.

    DURATION(HRS)   8     16     24     32     40     48     56     64
    FLOW(CFS)     115    115    112    108    105    101     96     89

    DURATION(HRS)  72     76
    FLOW(CFS)      37     24 TRUNCATED


          OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION    0)

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       10.90                        7325.7                        (DIVERT)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 43567 CFS-HRS;    3600.4 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)    6297   4076   2317   1439   1108    836    679    594

    DURATION(HRS)  18     20     20
    FLOW(CFS)     217     18      0

 *** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
               2ND TABLE VALUE.  THIS REACH ROUTING MAY BE INCORRECT,
               UNLESS NEW RATING TABLE VALUES ARE INSERTED.                ***


OPERATION REACH     XSECTION 104

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
        9.80                         115.0 *                          .51
                                        * FIRST POINT OF FLAT PEAK

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.88 WATERSHED INCHES;    7461 CFS-HRS;     616.6 ACRE-FEET.

    DURATION(HRS)   8     16     24     32     40     48     56     64
    FLOW(CFS)     115    115    112    108    105    101     96     88

    DURATION(HRS)  72     77
    FLOW(CFS)      37     25 TRUNCATED


OPERATION RUNOFF    XSECTION   4
```



```
    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
        9.24                         3571.8                        (RUNOFF)
       17.11                          482.9                        (RUNOFF)
       17.98                          442.0                        (RUNOFF)
       19.15                          376.0                        (RUNOFF)
       21.07                          339.4                        (RUNOFF)
       22.04                          291.9                        (RUNOFF)
       23.12                          320.2                        (RUNOFF)
       24.03                          312.6                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 13.14 WATERSHED INCHES;   21539 CFS-HRS;    1780.0 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)    2928   1946   1248    783    503    424    319    294

    DURATION(HRS)  18     20     22     22
    FLOW(CFS)     263     76      1      0

 *** WARNING - XSECTION   4
               VOLUME TRUNCATED AT  21.% IN LOCATION 5 ADDING HYDROGRAPHS.  ***


OPERATION ADDHYD    XSECTION   4

    PEAK TIME(HRS)             PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
        9.24                         3686.8                        (NULL)
       17.11                          597.9                        (NULL)
       17.98                          557.0                        (NULL)
       19.15                          491.0                        (NULL)
       21.07                          454.4                        (NULL)
       22.04                          406.9                        (NULL)
       23.12                          435.2                        (NULL)
       24.03                          427.6                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 5.17 WATERSHED INCHES;   29000 CFS-HRS;    2396.5 ACRE-FEET.

    DURATION(HRS)   8     16     24     32     40     48     56     64
    FLOW(CFS)     891    402    115    110    106    103     98     93

    DURATION(HRS)  72     79
    FLOW(CFS)      48     25 TRUNCATED


OPERATION DIVERT    XSECTION 104
                    OUTPUT #1 HYDROGRAPH
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	8.00
17.11	597.9	2.38
17.98	557.0	2.28
19.15	491.0	2.11
21.07	454.4	2.01
22.04	406.9	1.81
23.12	435.2	1.93
24.03	427.6	1.90

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.14 WATERSHED INCHES; 28841 CFS-HRS; 2383.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	891	402	115	110	106	103	98	93

DURATION(HRS)	72	79
FLOW(CFS)	48	25 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	232.8	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
158 CFS-HRS; 13.1 ACRE-FEET.

DURATION(HRS)	2	16	24	32	40	48	56	64
FLOW(CFS)	891	402	115	110	106	103	98	93

DURATION(HRS)	72	1
FLOW(CFS)	48	0

OPERATION ADDHYD XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.90	7325.7	14.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
43725 CFS-HRS; 3613.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6316	4258	2317	1439	1108	836	679	594

DURATION(HRS)	18	20	20
FLOW(CFS)	217	18	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	5.62
17.11	597.9	1.78
17.98	557.0	1.71
19.15	491.0	1.59
21.07	454.4	1.52
22.04	406.9	1.38
23.12	435.2	1.48
24.03	427.6	1.45

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.14 WATERSHED INCHES; 28841 CFS-HRS; 2383.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	891	402	115	110	106	103	98	93

DURATION(HRS)	72	79
FLOW(CFS)	48	25 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	2891.7	(RUNOFF)
17.05	387.9	(RUNOFF)
17.95	354.7	(RUNOFF)
19.07	304.5	(RUNOFF)
21.01	273.4	(RUNOFF)
21.99	234.1	(RUNOFF)
23.05	262.5	(RUNOFF)
23.99	260.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 17332 CFS-HRS; 1432.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2298	1621	987	636	413	335	261	229
DURATION(HRS)	18	20	22	22				
FLOW(CFS)	210	83	1	0				

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	6345.7	(NULL)
17.08	984.1	(NULL)
17.97	911.6	(NULL)
19.11	791.9	(NULL)
21.03	727.2	(NULL)
22.01	640.8	(NULL)
23.08	695.5	(NULL)
24.01	687.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.69 WATERSHED INCHES; 46170 CFS-HRS; 3815.5 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	110	106	103	98	93
DURATION(HRS)	72	79						
FLOW(CFS)	49	25 TRUNCATED						

OPERATION DIVERT XSECTION 106
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.10	6332.8	8.54
17.08	984.1	2.48
17.97	911.6	2.35
19.11	791.9	2.13
21.03	727.2	2.02
22.01	640.8	1.86
23.08	695.5	1.96
24.01	687.2	1.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.69 WATERSHED INCHES; 46156 CFS-HRS; 3814.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	110	106	103	98	93
DURATION(HRS)	72	79						
FLOW(CFS)	49	25 TRUNCATED						

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.15	46.5	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
14 CFS-HRS; 1.1 ACRE-FEET.

DURATION(HRS)	2	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	110	106	103	98	93
DURATION(HRS)	72	0						
FLOW(CFS)	49	0						

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.14	1601.2	(RUNOFF)
17.04	219.9	(RUNOFF)
17.95	201.2	(RUNOFF)
19.07	172.6	(RUNOFF)
21.00	154.8	(RUNOFF)
21.99	132.8	(RUNOFF)
23.04	149.1	(RUNOFF)
23.98	149.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 9558 CFS-HRS; 789.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1288	901	539	342	220	187	148	127
DURATION(HRS)	18	20	22					
FLOW(CFS)	117	34	0					

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.12	7900.8	(NULL)
17.07	1203.7	(NULL)
17.96	1112.7	(NULL)
19.10	962.7	(NULL)
21.03	881.8	(NULL)
22.01	773.5	(NULL)
23.07	844.1	(NULL)
24.00	836.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.30 WATERSHED INCHES; 55712 CFS-HRS; 4604.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1846	758	115	110	106	103	98	93

DURATION(HRS)	72	79
FLOW(CFS)	50	25 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.90	7325.7	9.49

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 3
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.20 CFS	0	178	636	1108	1846	3249	4258	5119
9.80 CFS	5798	6316	6732	7041	7231	7315	7315	7250
11.40 CFS	7137	6980	6783	6547	6277	5979	5661	5332
13.00 CFS	5002	4680	4371	4076	3795	3530	3284	3058
14.60 CFS	2851	2659	2482	2317	2166	2028	1904	1791
16.20 CFS	1685	1585	1517	1479	1439	1400	1364	1330
17.80 CFS	1297	1265	1235	1206	1175	1140	1103	1068
19.40 CFS	1036	1008	980	951	922	892	863	836
21.00 CFS	813	795	780	766	752	738	723	709
22.60 CFS	695	679	664	651	642	635	626	617
24.20 CFS	611	604	594	574	543	505	462	417
25.80 CFS	373	330	290	252	217	186	157	130
27.40 CFS	107	85	66	48	32	18	5	0

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
43739 CFS-HRS; 3614.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6316	4258	2317	1439	1108	836	679	594

DURATION(HRS)	18	20	20
FLOW(CFS)	217	18	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.98	1313.1	(RUNOFF)
16.93	189.3	(RUNOFF)
17.91	174.5	(RUNOFF)
18.94	151.3	(RUNOFF)
20.91	134.2	(RUNOFF)
21.91	115.4	(RUNOFF)
22.93	134.2	(RUNOFF)
23.91	139.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.38 WATERSHED INCHES; 7673 CFS-HRS; 634.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1053	685	406	274	188	150	126	106

DURATION(HRS)	18	20	20
FLOW(CFS)	87	9	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.09	9240.9	(NULL)
17.03	1387.8	(NULL)
17.94	1285.9	(NULL)
19.07	1109.1	(NULL)
21.00	1013.0	(NULL)
21.98	886.9	(NULL)
23.04	970.1	(NULL)
23.98	969.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 3
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
3.00 CFS	0	3	9	16	56	94	146	219
4.60 CFS	277	419	531	669	846	961	1147	1286
6.20 CFS	1586	2019	2309	2776	3101	3575	4188	4604
7.80 CFS	5372	5928	6603	7416	7930	8773	9199	9166
9.40 CFS	9076	9003	8881	8809	8478	7961	7675	7393
11.00 CFS	7207	6850	6353	6029	5463	5055	4671	4236
12.60 CFS	3991	3703	3507	3267	2970	2805	2645	2542
14.20 CFS	2402	2225	2120	1980	1885	1814	1747	1697
15.80 CFS	1576	1487	1385	1264	1222	1310	1386	1349

17.40 CFS	1251	1209	1246	1280	1160	945	864	989
19.00 CFS	1102	1079	985	927	855	806	821	869
20.60 CFS	903	967	1013	963	859	815	851	886
22.20 CFS	833	728	701	847	967	912	765	715
23.80 CFS	852	967	776	409	220	154	129	120
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	115	115	115	115	115
28.60 CFS	115	115	114	114	114	114	113	113
30.20 CFS	113	113	113	113	113	113	113	113
31.80 CFS	112	112	112	112	112	112	112	112
33.40 CFS	112	112	112	111	111	111	111	111
35.00 CFS	111	111	111	111	111	110	110	110
36.60 CFS	110	110	110	110	110	110	110	109
38.20 CFS	109	109	109	109	109	109	109	109
39.80 CFS	109	108	108	108	108	108	108	108
41.40 CFS	108	108	108	108	107	107	107	107
43.00 CFS	107	107	107	107	107	107	106	106
44.60 CFS	106	106	106	106	106	106	106	106
46.20 CFS	106	105	105	105	105	105	105	105
47.80 CFS	105	105	105	105	104	104	104	104
49.40 CFS	104	104	104	104	104	104	104	103
51.00 CFS	103	103	103	103	103	103	103	103
52.60 CFS	103	103	102	102	102	102	102	102
54.20 CFS	102	102	101	101	101	101	101	101
55.80 CFS	101	101	100	100	100	100	100	100
57.40 CFS	99.60	99.48	99.35	99.22	99.10	98.97	98.84	98.71
59.00 CFS	98.59	98.46	98.34	98.21	98.08	97.96	97.83	97.71
60.60 CFS	97.58	97.46	97.33	97.21	97.09	96.96	96.84	96.71
62.20 CFS	96.59	96.47	96.34	96.22	96.09	95.96	95.83	95.70
63.80 CFS	95.57	95.44	95.31	95.18	95.06	94.93	94.80	94.67
65.40 CFS	94.54	94.41	94.29	94.16	94.03	93.90	93.77	93.65
67.00 CFS	93.52	93.39	93.27	93.14	93.01	92.89	92.76	92.64
68.60 CFS	92.51	92.38	92.26	92.13	92.01	91.88	91.76	91.63
70.20 CFS	91.51	91.39	91.26	89.70	87.55	85.30	83.06	80.86
71.80 CFS	78.73	76.64	74.68	72.95	71.31	69.72	68.17	66.65
73.40 CFS	65.17	63.72	62.31	60.92	59.57	58.25	56.95	55.69
75.00 CFS	54.45	53.24	52.06	50.90	49.77	48.66	47.58	46.52
76.60 CFS	45.49	44.48	43.49	42.52	41.58	40.65	39.75	38.87
78.20 CFS	38.00	37.16	36.33	35.53	34.74	33.97	33.21	32.47
79.80 CFS	31.75	31.05	30.35	29.68	29.02	28.38	27.75	27.13
81.40 CFS	26.53	26.13	25.79	25.47	25.16	24.85	24.54	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.68 WATERSHED INCHES; 63381 CFS-HRS; 5237.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	2120	859	115	110	106	103	98	93
DURATION(HRS)	72	79						
FLOW(CFS)	50	25	TRUNCATED					

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	894.6	(RUNOFF)
17.24	123.5	(RUNOFF)
19.33	94.2	(RUNOFF)
21.23	85.1	(RUNOFF)
22.11	75.6	(RUNOFF)
23.28	77.4	(RUNOFF)
24.14	75.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 5554 CFS-HRS; 459.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	753	524	310	199	131	107	85	75
DURATION(HRS)	18	20	22	23				
FLOW(CFS)	68	19	1	0				

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.20	820.0 *	(DIVERT)
17.24	123.5	(DIVERT)
19.33	94.2	(DIVERT)
21.23	85.1	(DIVERT)
22.11	75.6	(DIVERT)
23.28	77.4	(DIVERT)
24.14	75.1	(DIVERT)

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.67 WATERSHED INCHES; 5477 CFS-HRS; 452.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	753	524	310	199	131	107	85	75

DURATION(HRS)	18	20	22	23
FLOW(CFS)	68	19	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	74.6	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
77 CFS-HRS; 6.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	753	524	310	199	131	107	85	75

DURATION(HRS)	18	20	22	1
FLOW(CFS)	68	19	1	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.50	820.6	1770.00
17.46	123.0	1765.90
19.57	93.5	1765.61
21.48	84.2	1765.47
23.54	76.0	1765.34
24.36	73.9	1765.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.67 WATERSHED INCHES; 5478 CFS-HRS; 452.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	764	504	320	204	129	108	84	75

DURATION(HRS)	18	20	22	22
FLOW(CFS)	69	21	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	1990.4	(RUNOFF)
17.12	265.6	(RUNOFF)
17.98	242.8	(RUNOFF)
19.16	206.3	(RUNOFF)
21.07	185.8	(RUNOFF)
22.04	160.2	(RUNOFF)
23.12	175.5	(RUNOFF)
24.04	171.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 12047 CFS-HRS; 995.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1628	1089	689	432	288	235	183	162

DURATION(HRS)	18	20	22	22
FLOW(CFS)	147	58	1	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.38	2771.3	1777.54
17.11	387.3	1767.91
17.95	359.2	1767.74
19.16	295.8	1767.32
21.12	265.7	1767.10
22.00	236.9	1766.90
23.15	244.1	1766.95
24.04	240.3	1766.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.18 WATERSHED INCHES; 17524 CFS-HRS; 1448.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237

DURATION(HRS)	18	20	22	23
FLOW(CFS)	216	78	7	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	2546.0 *	1776.67
17.11	387.3	1767.91
17.95	359.2	1767.74
19.16	295.8	1767.32
21.12	265.7	1767.10
22.00	236.9	1766.90
23.15	244.1	1766.95
24.04	240.3	1766.92

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.01 WATERSHED INCHES; 17299 CFS-HRS; 1429.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237

DURATION(HRS)	18	20	22	23
FLOW(CFS)	216	78	7	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.38	225.3	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
225 CFS-HRS; 18.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237

DURATION(HRS)	18	20	22	1
FLOW(CFS)	216	78	7	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	2546.0 *	1761.03
17.11	387.3	1756.48
17.95	359.2	1756.35
19.16	295.8	1756.08
21.12	265.7	1755.95
22.00	236.9	1755.82
23.15	244.1	1755.85
24.04	240.3	1755.83

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.01 WATERSHED INCHES; 17299 CFS-HRS; 1429.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237

DURATION(HRS)	18	20	22	23
FLOW(CFS)	216	78	7	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	2826.7	(RUNOFF)
17.04	374.8	(RUNOFF)
17.95	342.6	(RUNOFF)
19.07	293.9	(RUNOFF)
21.00	263.6	(RUNOFF)
21.99	226.1	(RUNOFF)
23.04	253.9	(RUNOFF)
23.98	253.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.71 WATERSHED INCHES; 16988 CFS-HRS; 1403.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2270	1558	986	612	422	330	253	226

DURATION(HRS)	18	20	22	22
FLOW(CFS)	202	92	2	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	5372.7	1764.66
17.06	760.9	1757.71
17.95	701.8	1757.53
19.10	587.6	1757.17
21.04	526.8	1756.98
21.99	462.9	1756.78
23.07	494.7	1756.88
24.00	492.6	1756.87

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 3
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
2.60 CFS	0	1	2	9	24	35	70	103
4.20 CFS	134	181	216	299	374	450	560	632
5.80 CFS	734	823	968	1220	1391	1633	1842	2082
7.40 CFS	2443	2693	3100	3455	3803	4284	4606	5062
9.00 CFS	5360	5364	5281	5238	5173	5126	5025	4830
10.60 CFS	4671	4521	4389	4208	3915	3715	3409	3143
12.20 CFS	2921	2648	2473	2293	2149	2010	1826	1710
13.80 CFS	1605	1524	1443	1333	1262	1180	1112	1064
15.40 CFS	1017	983	918	860	806	732	694	723
17.00 CFS	759	749	699	673	685	700	655	542
18.60 CFS	486	528	581	580	534	505	468	436
20.20 CFS	433	453	468	499	526	514	464	436
21.80 CFS	447	463	444	389	365	425	490	480
23.40 CFS	409	375	432	493	430	239	129	75
25.00 CFS	43.01	24.06	13.43	7.52	4.19	2.38	1.35	.75
26.60 CFS	.39							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.35 WATERSHED INCHES; 34287 CFS-HRS; 2833.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464

DURATION(HRS)	18	20	22	24
FLOW(CFS)	430	181	13	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.46	291.9	1767.29

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 3
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.80 CFS	0	89	244	289	278	244	201	136
10.40 CFS	25.77	.00						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
302 CFS-HRS; 24.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464

DURATION(HRS)	18	20	22	2
FLOW(CFS)	430	181	13	0

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	5253.0 *	1764.50
17.06	760.9	1757.71
17.95	701.8	1757.53
19.10	587.6	1757.17
21.04	526.8	1756.98
21.99	462.9	1756.78
23.07	494.7	1756.88
24.00	492.6	1756.87

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.33 WATERSHED INCHES; 34238 CFS-HRS; 2829.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464

DURATION(HRS)	18	20	22	24
FLOW(CFS)	430	181	13	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	119.7	(DIVERT)

*** WARNING - STRUCTURE 0, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(119.74) EXCEEDS ADJACENT COORDINATE (110.61) BY 8 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
49 CFS-HRS; 4.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464

DURATION(HRS)	18	20	22	1
FLOW(CFS)	430	181	13	0

*** WARNING - XSECTION 107, INPLOW EXCEEDS MAX TABLE DISCHARGE, EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	5249.1	1762.11
17.30	753.4	1754.16
18.16	697.3	1753.96
19.34	578.8	1753.46
21.28	520.3	1753.21
22.20	459.1	1752.94
23.32	482.8	1753.05
24.22	476.6	1753.02

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 3
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
2.80 CFS	.10	1.04	1.97	7.60	19.98	31.32	61.29	92.95
4.40 CFS	125	168	205	277	352	427	529	608
6.00 CFS	705	795	928	1152	1335	1563	1777	2011
7.60 CFS	2342	2611	2986	3346	3697	4147	4499	4931
9.20 CFS	5178	5235	5249	5241	5188	5141	5052	4882
10.80 CFS	4720	4567	4431	4260	3995	3780	3496	3225
12.40 CFS	2992	2728	2533	2349	2195	2053	1879	1749
14.00 CFS	1638	1550	1468	1365	1286	1204	1133	1080
15.60 CFS	1032	994	935	878	823	753	708	719
17.20 CFS	750	749	711	682	684	696	665	571
18.80 CFS	505	523	568	577	544	514	478	446
20.40 CFS	436	449	464	491	518	515	476	446
22.00 CFS	447	459	447	402	374	413	472	478
23.60 CFS	425	387	422	476	441	286	166	96
25.20 CFS	55.35	31.35	17.61	9.87	5.52	3.11	1.76	.98
26.80 CFS	.53	.26						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.33 WATERSHED INCHES; 34238 CFS-HRS; 2829.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4567	3225	2011	1286	823	684	518	464

DURATION(HRS)	18	20	22	24
FLOW(CFS)	425	168	18	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.27	14360.9	1772.94
17.09	2114.2	1757.62
17.95	1968.2	1757.33
19.14	1651.3	1756.65
21.05	1506.9	1756.32
21.99	1333.3	1755.90
23.11	1400.4	1756.07
24.00	1388.8	1756.04

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 3
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
2.80 CFS	0	1	5	16	36	87	155	239
4.40 CFS	344	445	624	808	1021	1273	1490	1755
6.00 CFS	1990	2381	2947	3461	4111	4664	5352	6199
7.60 CFS	6946	7983	8914	9949	11113	12077	13272	14129
9.20 CFS	14344	14312	14252	14122	13997	13619	13013	12557
10.80 CFS	12113	11774	11281	10612	10024	9243	8551	7896
12.40 CFS	7228	6719	6236	5856	5462	5023	4684	4395
14.00 CFS	4180	3953	3694	3484	3266	3089	2947	2827
15.60 CFS	2729	2570	2422	2263	2086	1975	2018	2105
17.20 CFS	2099	2000	1920	1928	1964	1856	1610	1435
18.80 CFS	1495	1624	1647	1562	1471	1369	1285	1267
20.40 CFS	1305	1352	1431	1504	1481	1374	1291	1297
22.00 CFS	1333	1292	1176	1103	1221	1380	1384	1243
23.60 CFS	1140	1239	1389	1252	850	507	320	225
25.20 CFS	175	148	133	125	121	118	117	116
26.80 CFS	116	115	115	115	115	115	115	115
28.40 CFS	115	115	115	114	114	114	114	113
30.00 CFS	113	113	113	113	113	113	113	113
31.60 CFS	113	112	112	112	112	112	112	112
33.20 CFS	112	112	112	112	111	111	111	111
34.80 CFS	111	111	111	111	111	111	110	110
36.40 CFS	110	110	110	110	110	110	110	110
38.00 CFS	109	109	109	109	109	109	109	109
39.60 CFS	109	109	108	108	108	108	108	108
41.20 CFS	108	108	108	108	108	107	107	107
42.80 CFS	107	107	107	107	107	107	107	106
44.40 CFS	106	106	106	106	106	106	106	106
46.00 CFS	106	106	105	105	105	105	105	105
47.60 CFS	105	105	105	105	105	104	104	104
49.20 CFS	104	104	104	104	104	104	104	104
50.80 CFS	103	103	103	103	103	103	103	103
52.40 CFS	103	103	103	102	102	102	102	102
54.00 CFS	102	102	102	101	101	101	101	101
55.60 CFS	101	101	101	100	100	100	100	100
57.20 CFS	99.73	99.60	99.48	99.35	99.22	99.10	98.97	98.84
58.80 CFS	98.71	98.59	98.46	98.34	98.21	98.08	97.96	97.83
60.40 CFS	97.71	97.58	97.46	97.33	97.21	97.09	96.96	96.84
62.00 CFS	96.71	96.59	96.47	96.34	96.22	96.09	95.96	95.83

63.60 CFS	95.70	95.57	95.44	95.31	95.18	95.06	94.93	94.80
65.20 CFS	94.67	94.54	94.41	94.29	94.16	94.03	93.90	93.77
66.80 CFS	93.65	93.52	93.39	93.27	93.14	93.01	92.89	92.76
68.40 CFS	92.64	92.51	92.38	92.26	92.13	92.01	91.88	91.76
70.00 CFS	91.63	91.51	91.39	91.26	89.70	87.55	85.30	83.06
71.60 CFS	80.86	78.73	76.64	74.68	72.95	71.31	69.72	68.17
73.20 CFS	66.65	65.17	63.72	62.31	60.92	59.57	58.25	56.95
74.80 CFS	55.69	54.45	53.24	52.06	50.90	49.77	48.66	47.58
76.40 CFS	46.52	45.49	44.48	43.49	42.52	41.58	40.65	39.75
78.00 CFS	38.87	38.00	37.16	36.33	35.53	34.74	33.97	33.21
79.60 CFS	32.47	31.75	31.05	30.35	29.68	29.02	28.38	27.75
81.20 CFS	27.13	26.53	26.13	25.79	25.47	25.16		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.02 WATERSHED INCHES; 97614 CFS-HRS; 8066.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	3461	1333	115	110	107	103	98	93

DURATION(HRS)	72	78
FLOW(CFS)	50	25 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 887.77 AC-FT (.08 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1711.42. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.52	10247.2	1722.52

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 3
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
2.80 CFS	.00	.01	.04	.16	.47	1.19	2.61	4.90
4.40 CFS	8.28	12.83	18.97	27.19	37.65	50.72	66.40	84.73
6.00 CFS	106	122	124	127	129	132	136	140
7.60 CFS	143	148	152	155	435	1040	1965	3162
9.20 CFS	4292	5315	6230	7071	7832	8482	9008	9419
10.80 CFS	9737	9977	10145	10233	10242	10176	10037	9839
12.40 CFS	9591	9307	8999	8677	8349	8011	7667	7327
14.00 CFS	6996	6677	6381	6096	5819	5549	5291	5046
15.60 CFS	4815	4594	4380	4172	3968	3770	3589	3434
17.20 CFS	3298	3170	3047	2932	2832	2738	2635	2522
18.80 CFS	2414	2327	2256	2190	2121	2050	1976	1915
20.40 CFS	1865	1822	1788	1763	1741	1717	1686	1655
22.00 CFS	1628	1603	1574	1540	1510	1493	1484	1471
23.60 CFS	1449	1428	1419	1411	1383	1327	1255	1177
25.20 CFS	1099	1025	955	890	829	793	762	732
26.80 CFS	704	677	651	626	603	580	559	538
28.40 CFS	519	500	483	466	450	434	419	405

30.00 CFS	392	384	376	369	362	356	349	343
31.60 CFS	336	330	325	319	313	308	303	297
33.20 CFS	292	288	283	278	274	269	265	261
34.80 CFS	257	253	249	245	242	238	235	231
36.40 CFS	228	225	222	219	216	213	210	208
38.00 CFS	205	202	200	197	195	193	190	188
39.60 CFS	186	184	182	180	178	176	174	173
41.20 CFS	171	169	167	166	164	163	161	160
42.80 CFS	158	157	156	156	156	156	156	156
44.40 CFS	155	155	155	155	155	155	155	155
46.00 CFS	155	155	155	155	155	155	155	155
47.60 CFS	155	155	155	155	155	155	155	155
49.20 CFS	155	155	155	155	155	155	155	155
50.80 CFS	155	154	154	154	154	154	154	154
52.40 CFS	154	154	154	154	154	154	154	154
54.00 CFS	154	154	154	154	154	154	154	154
55.60 CFS	154	154	154	154	154	154	154	154
57.20 CFS	154	154	154	154	154	154	154	154
58.80 CFS	154	154	154	154	154	154	154	154
60.40 CFS	154	154	154	154	154	154	154	154
62.00 CFS	154	154	154	154	154	153	153	153
63.60 CFS	153	153	153	153	153	153	153	153
65.20 CFS	153	153	153	153	153	153	153	153
66.80 CFS	153	153	153	153	153	153	153	153
68.40 CFS	153	153	153	153	153	153	153	153
70.00 CFS	153	153	153	153	153	153	153	153
71.60 CFS	153	153	153	153	153	153	153	153
73.20 CFS	153	153	153	153	153	152	152	152
74.80 CFS	152	152	152	152	152	152	152	152
76.40 CFS	152	152	152	152	152	152	152	152
78.00 CFS	152	152	152	152	152	152	152	152
79.60 CFS	152	152	152	152	152	152	152	151
81.20 CFS	151	151	151	151	151	151		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.03 WATERSHED INCHES; 86878 CFS-HRS; 7179.6 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	3298	1255	313	178	155	154	153	153

DURATION(HRS)	72	73
FLOW(CFS)	152	151 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

RAINFALL OF 3.94 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 2, ARC 2
MAIN TIME INCREMENT .200 HOURS

ALTERNATE 5 STORM 1

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 101	RUNOFF	1.86	1.99	---	12.58	1011	543.5
XSECTION 1	RUNOFF	1.20	1.91	---	12.22	900	750.0
XSECTION 1	ADDHYD	3.06	1.96	---	12.37	1729	565.0
XSECTION 102	REACH	3.06	1.96	4.81	12.62	1691	552.6
XSECTION 2	RUNOFF	1.24	1.62	---	12.18	809	652.4
XSECTION 2	ADDHYD	4.30	1.86	---	12.48	2188	508.8
XSECTION 103	REACH	4.30	1.86	5.64	12.74	2125	494.2
XSECTION 3	RUNOFF	1.85	1.99	---	12.38	1218	658.4
XSECTION 3	ADDHYD	6.15	1.90	---	12.61	3125	508.1
STRUCTURE 1	RESVOR	6.15	1.84	1799.60	18.50	231	37.6
XSECTION 104	DIVERT	6.15	1.66	.51	16.00F	115F	18.7
XSECTION 0	DIVERT	.00	1.66	---	18.50	116	********
XSECTION 104	REACH	6.15	1.66	.51	17.20F	115F	18.7
XSECTION 4	RUNOFF	2.54	1.99	---	12.15	2180	858.3
XSECTION 4	ADDHYD	8.69	1.75	---	12.15	2196	252.7
XSECTION 104	DIVERT	8.69	1.75	5.78	12.15	2196	252.7
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 104	ADDHYD	.00	.00	.51	18.50	116	********
XSECTION 106	REACH	8.69	1.75	4.15	12.15	2196	252.7
XSECTION 5	RUNOFF	2.00	2.14	---	12.07	2049	1024.5
XSECTION 5	ADDHYD	10.69	1.82	---	12.11	4171	390.2
XSECTION 106	DIVERT	10.69	1.82	6.39	12.11	4171	390.2
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 6	RUNOFF	1.14	1.91	---	12.06	1031	904.4
XSECTION 6	ADDHYD	11.83	1.83	---	12.10	5228	441.9
XSECTION 106	ADDHYD	.00	1.83	.39	18.50	116	********
XSECTION 7	RUNOFF	.96	1.61	---	11.93	834	868.8
XSECTION 7	ADDHYD	12.79	1.82	---	12.07	5940	464.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 1							
XSECTION 10	RUNOFF	.67	1.84	---	12.37	405	604.5
XSECTION 110	DIVERT	.67	1.84	---	12.37	405	604.5
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 109	REACH	.67	1.84	1767.83	12.66	375	559.7
XSECTION 9	RUNOFF	1.39	2.15	---	12.15	1298	933.8
XSECTION 109	ADDHYD	2.06	2.05	1772.52	12.20	1472	714.6
XSECTION 109	DIVERT	2.06	2.05	1772.52	12.20	1472	714.6
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 108	REACH	2.06	2.05	1759.29	12.20	1472	714.6
XSECTION 8	RUNOFF	1.92	2.31	---	12.06	2152	1120.8
XSECTION 108	ADDHYD	3.98	2.18	1762.24	12.10	3497	878.6
XSECTION 109	ADDHYD	.00	2.18	---	.00	0	********
XSECTION 108	DIVERT	3.98	2.18	1762.24	12.10	3497	878.6
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 107	REACH	3.98	2.17	1759.49	12.38	3221	809.3
XSECTION 107	ADDHYD	16.77	1.90	1765.63	12.17	8209	489.5
STRUCTURE 2	RESVOR	16.77	1.05	1712.61	24.78T	158T	9.4

RAINFALL OF 7.06 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 5, ARC 2

ALTERNATE 5 STORM 2							
XSECTION 101	RUNOFF	1.86	4.75	---	10.27	908	488.2
XSECTION 1	RUNOFF	1.20	4.64	---	9.92	590	491.7
XSECTION 1	ADDHYD	3.06	4.70	---	10.12	1492	487.6
XSECTION 102	REACH	3.06	4.70	4.41	10.36	1489	486.6
XSECTION 2	RUNOFF	1.24	4.20	---	9.98	554	446.8
XSECTION 2	ADDHYD	4.30	4.56	---	10.22	2032	472.6
XSECTION 103	REACH	4.30	4.56	5.46	10.46	2028	471.6
XSECTION 3	RUNOFF	1.85	4.75	---	10.05	920	497.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 2							
XSECTION 3	ADDHYD	6.15	4.61	---	10.34	2930	476.4
STRUCTURE 1	RESVOR	6.15	4.53	1801.78	12.72	1799	292.5
XSECTION 104	DIVERT	6.15	1.80	.51	10.40F	115F	18.7
XSECTION 0	DIVERT	.00	1.80	---	12.72	1684	********
XSECTION 104	REACH	6.15	1.80	.51	11.80F	115F	18.7
XSECTION 4	RUNOFF	2.54	4.75	---	9.62	1280	503.9
XSECTION 4	ADDHYD	8.69	2.66	---	9.72	1383	159.1
XSECTION 104	DIVERT	8.69	2.66	4.19	9.72	1383	159.1
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 104	ADDHYD	.00	.00	4.80	12.72	1684	********
XSECTION 106	REACH	8.69	2.66	3.06	9.72	1383	159.1
XSECTION 5	RUNOFF	2.00	4.97	---	9.26	1067	533.5
XSECTION 5	ADDHYD	10.69	3.09	---	9.52	2439	228.2
XSECTION 106	DIVERT	10.69	3.09	4.46	9.52	2439	228.2
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 6	RUNOFF	1.14	4.64	---	9.49	562	493.0
XSECTION 6	ADDHYD	11.83	3.24	---	9.52	3002	253.8
XSECTION 106	ADDHYD	.00	3.24	3.50	12.72	1684	********
XSECTION 7	RUNOFF	.96	4.20	---	9.90	435	453.1
XSECTION 7	ADDHYD	12.79	3.31	---	9.55	3429	268.1
XSECTION 10	RUNOFF	.67	4.53	---	10.10	319	476.1
XSECTION 110	DIVERT	.67	4.53	---	10.10	319	476.1
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 109	REACH	.67	4.53	1767.47	10.38	317	473.1
XSECTION 9	RUNOFF	1.39	4.97	---	9.48	735	528.8
XSECTION 109	ADDHYD	2.06	4.82	1770.84	9.96	1037	503.4
XSECTION 109	DIVERT	2.06	4.82	1770.84	9.96	1037	503.4
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 108	REACH	2.06	4.82	1758.38	9.96	1037	503.4
XSECTION 8	RUNOFF	1.92	5.19	---	9.22	1076	560.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 2							
XSECTION 108	ADDHYD	3.98	5.00	1760.34	9.67	2080	522.6
XSECTION 109	ADDHYD	.00	5.00	---	.00	0	********
XSECTION 108	DIVERT	3.98	5.00	1760.34	9.67	2080	522.6
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 107	REACH	3.98	5.00	1757.54	10.09	2073	520.9
XSECTION 107	ADDHYD	16.77	3.71	1762.39	9.89	5489	327.3
STRUCTURE 2	RESVOR	16.77	2.76	1716.20	13.38	2188	130.5
RAINFALL OF 15.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 5 STORM 3							
XSECTION 101	RUNOFF	1.86	13.14	---	9.97	2475	1330.6
XSECTION 1	RUNOFF	1.20	12.99	---	9.40	1645	1370.8
XSECTION 1	ADDHYD	3.06	13.08	---	9.81	4079	1333.0
XSECTION 102	REACH	3.06	13.08	9.07	10.06	4073	1331.0
XSECTION 2	RUNOFF	1.24	12.39	---	9.34	1635	1318.5
XSECTION 2	ADDHYD	4.30	12.88	---	9.94	5654	1314.9
XSECTION 103	REACH	4.30	12.88	11.79	10.19	5646	1313.0
XSECTION 3	RUNOFF	1.85	13.14	---	9.66	2515	1359.5
XSECTION 3	ADDHYD	6.15	12.96	---	10.07	8107	1318.2
STRUCTURE 1	RESVOR	6.15	12.86	1803.90	10.90	7441	1209.9
XSECTION 104	DIVERT	6.15	1.88	.51	8.40F	115F	18.7
XSECTION 0	DIVERT	.00	1.88	---	10.90	7326	********
XSECTION 104	REACH	6.15	1.88	.51	9.80F	115F	18.7
XSECTION 4	RUNOFF	2.54	13.14	---	9.24	3572	1406.3
XSECTION 4	ADDHYD	8.69	5.17	---	9.24	3687	424.3
XSECTION 104	DIVERT	8.69	5.14	8.00	9.00F	3454F	397.5
XSECTION 0	DIVERT	.00	5.14	---	9.24	233	********
XSECTION 104	ADDHYD	.00	5.14	14.69	10.90	7326	********
XSECTION 106	REACH	8.69	5.14	5.62	9.00F	3454F	397.5

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 3							
XSECTION 5	RUNOFF	2.00	13.43	---	9.13	2892	1446.0
XSECTION 5	ADDHYD	10.69	6.69	---	9.13	6346	593.6
XSECTION 106	DIVERT	10.69	6.69	8.54	9.10	6333	592.4
XSECTION 0	DIVERT	.00	6.69	---	9.15	47	********
XSECTION 6	RUNOFF	1.14	12.99	---	9.14	1601	1404.4
XSECTION 6	ADDHYD	11.83	7.30	---	9.12	7901	667.9
XSECTION 106	ADDHYD	.00	7.30	9.49	10.90	7326	********
XSECTION 7	RUNOFF	.96	12.38	---	8.98	1313	1367.7
XSECTION 7	ADDHYD	12.79	7.68	---	9.09	9241	722.5
XSECTION 10	RUNOFF	.67	12.84	---	9.67	895	1335.8
XSECTION 110	DIVERT	.67	12.67	---	9.20F	820F	1223.9
XSECTION 0	DIVERT	.00	12.67	---	9.67	75	********
XSECTION 109	REACH	.67	12.67	1770.00	10.50	821	1225.4
XSECTION 9	RUNOFF	1.39	13.43	---	9.24	1990	1431.7
XSECTION 109	ADDHYD	2.06	13.18	1777.54	9.38	2771	1345.1
XSECTION 109	DIVERT	2.06	13.01	1776.67	9.00F	2546F	1235.9
XSECTION 0	DIVERT	.00	13.01	---	9.38	225	********
XSECTION 108	REACH	2.06	13.01	1761.03	9.00F	2546F	1235.9
XSECTION 8	RUNOFF	1.92	13.71	---	9.11	2827	1472.4
XSECTION 108	ADDHYD	3.98	13.35	1764.66	9.11	5373	1350.0
XSECTION 109	ADDHYD	.00	13.35	1767.29	9.46	292	********
XSECTION 108	DIVERT	3.98	13.33	1764.50	9.00F	5253F	1319.8
XSECTION 0	DIVERT	.00	13.33	---	9.11	120	********
XSECTION 107	REACH	3.98	13.33	1762.11	9.62	5249	1318.8
XSECTION 107	ADDHYD	16.77	9.02	1772.94	9.27	14361	856.4
STRUCTURE 2	RESVOR	16.77	8.03	1722.52	11.52	10247	611.0

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1726	12.4	1689	12.6	4.77	1.00	.065	.978	.81?
103	2500		2157	12.4	2116	12.8	4.78	1.00	.061	.981	.82?
104	6700		115	16.0	115	17.2	1.57	1.53	.000	1.000	.73?
106	3700		2171	12.2	2171	12.2	1.13	1.57	.001	1.000	1.00?
109	2700		404	12.4	371	12.6	.39	1.38	.068	.919	.66
108	2100		1472	12.2	1472	12.2	.79	1.41	.012	1.000	1.00?
107	5300		3373	12.2	3214	12.4	.54	1.38	.074	.953	.71?
ALTERNATE 5 STORM 2											
102	2500		1490	10.2	1489	10.4	4.77	1.00	.023	.999	.81?
103	2500		2032	10.2	2026	10.4	4.78	1.00	.023	.997	.81?
104	6700		115	10.4	115	11.8	1.57	1.53	.000	1.000	.73?
106	3700		1383	9.8	1383	9.8	1.06	1.58	.000	1.000	1.00?
109	2700		318	10.2	317	10.4	.30	1.44	.012	.997	.66
108	2100		1036	10.0	1036	10.0	.74	1.43	.002	1.000	1.00?
107	5300		2079	9.6	2072	10.0	.55	1.37	.015	.997	.65
ALTERNATE 5 STORM 3											
102	2500		4079	9.8	4071	10.0	4.78	1.00	.023	.998	.82?
103	2500		5652	10.0	5646	10.2	4.78	1.00	.023	.999	.82?
104	6700		115	8.4	115	9.8	1.57	1.53	.000	1.000	.73?
106	3700		3454	9.0	3454	9.0	1.25	1.55	.000	1.000	1.00?
109	2700		820	9.2	820	10.6	.43	1.35	.011	1.000	.72?
108	2100		2546	9.0	2546	9.0	.86	1.39	.002	1.000	1.00?
107	5300		5253	9.0	5249	9.6	.54	1.38	.009	.999	.77?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3
STRUCTURE 2	16.77			
ALTERNATE 5		158	2188	10247
STRUCTURE 1	6.15			
ALTERNATE 5		231	1799	7441
XSECTION 0	.00			
ALTERNATE 5		0	0	120
XSECTION 1	3.06			
ALTERNATE 5		1729	1492	4079
XSECTION 2	4.30			
ALTERNATE 5		2188	2032	5654
XSECTION 3	6.15			
ALTERNATE 5		3125	2930	8107
XSECTION 4	8.69			
ALTERNATE 5		2196	1383	3687
XSECTION 5	10.69			
ALTERNATE 5		4171	2439	6346
XSECTION 6	11.83			
ALTERNATE 5		5228	3002	7901
XSECTION 7	12.79			
ALTERNATE 5		5940	3429	9241
XSECTION 8	1.92			

ALTERN[illegible]	5	2152	1076	2827

XSECTION [illegible] 1.39

ALTERNATE	5	1298	735	1990

XSECTION 10 .67

ALTERNATE	5	405	319	895

XSECTION 101 1.86

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	2	3
XSECTION 101	1.86			
ALTERNATE 5		1011	908	2475
XSECTION 102	3.06			
ALTERNATE 5		1691	1489	4073
XSECTION 103	4.30			
ALTERNATE 5		2125	2028	5646
XSECTION 104	.00			
ALTERNATE 5		116	1684	7326
XSECTION 106	.00			
ALTERNATE 5		116	1684	7326
XSECTION 107	16.77			
ALTERNATE 5		8209	5489	14361
XSECTION 108	3.98			
ALTERNATE 5		3497	2080	5253
XSECTION 109	.00			
ALTERNATE 5		0	0	292
XSECTION 110	.67			
ALTERNATE 5		405	319	820

```
TR20 -----   ------------------------------------------------------------ SCS -
          BUCKHORN-MESA SIGNAL BUTTE FRS W/PASS MTN DIVERSION - SBTR-20. VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS - RECREATED BY WOOD/PATEL (8-18-00)2.04TEST


END OF  1 JOBS IN THIS RUN


                    SCS  TR-20,  VERSION 2.04TEST
                                   FILES

     INPUT  = SBTR-20.DAT                              , GIVEN DATA FILE
     OUTPUT = SBTR-20.OUT                              , DATED 09/18/**,09:22:42

              FILES GENERATED - DATED 09/18/**,09:22:42

                                NONE!


           TOTAL NUMBER OF WARNINGS =  20,  MESSAGES =  15

                         JOB ENDED AT 09:22:43
                     *** TR-20 RUN COMPLETED ***
```

**********80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY**********

```
JOB TR-20
TITLE 000 BUCKHORN-MESA SIGNAL BUTTE FRS W/PASS MTN DIV - SBTR20T.DAT
TITLE 000 ORIG DSGN COND - 10-DAY - RECREATED BY WOOD/PATEL (8-18-00)
 5 RAINFL 1              .5
 8          0.0          .008         .017         .026         .035
 8          .045         .055         .065         .076         .087
 8          .099         .112         .125         .14          .156
 8          .174         .194         .219         .254         .303
 8          .515         .583         .624         .654         .682
 8          .705         .727         .748         .767         .784
 8          .8           .816         .83          .844         .857
 8          .87          .882         .893         .905         .916
 8          .926         .936         .946         .955         .965
 8          .974         .983         .992         1.           1.
 9 ENDTBL
 5 RAINFL 2              .5
 8          0.0          .005         .011         .016         .022
 8          .028         .035         .041         .048         .056
 8          .063         .071         .081         .089         .098
 8          .109         .12          .133         .147         .163
 8          .181         .204         .235         .283         .663
 8          .735         .772         .799         .82          .838
 8          .854         .868         .88          .891         .902
 8          .912         .921         .929         .937         .945
 8          .952         .959         .965         .972         .978
 8          .984         .989         .995         1.           1.
 9 ENDTBL
 5 RAINFL 3              2.4
 8          0.0          .002         .004         .006         .008
 8          .01          .012         .014         .016         .018
 8          .02          .022         .025         .027         .03
 8          .032         .035         .038         .04          .043
 8          .046         .049         .052         .055         .058
 8          .061         .064         .069         .072         .076
 8          .08          .084         .089         .093         .098
 8          .102         .108         .114         .121         .127
 8          .133         .143         .153         .164         .174
 8          .184         .198         .215         .238         .275
 8          .707         .765         .793         .813         .829
 8          .841         .849         .856         .863         .871
 8          .879         .884         .889         .895         .9
 8          .905         .909         .913         .918         .922
 8          .926         .929         .932         .936         .939
 8          .942         .945         .948         .951         .954
 8          .957         .959         .962         .964         .967
 8          .969         .971         .973         .976         .978
 8          .98          .982         .984         .987         .989
 8          .991         .993         .996         .998         1.
 9 ENDTBL
 5 RAINFL 4              .25
 8          0.0          .006         .011         .017         .028
 8          .041         .057         .075         .09          .562
 8          .697         .763         .807         .839         .873
 8          .907         .937         .948         .958         .968
 8          .979         .984         .989         1.           1.
 9 ENDTBL
```

**********80-80 LIST OF INPUT DATA (CONTINUED)******* **********

```
 5 RAINFL 5              .5
 8          0.0          .004         .008         .011         .016
 8          .021         .027         .034         .044         .055
 8          .07          .088         .108         .137         .172
 8          .217         .273         .341         .42          .492
 8          .56          .618         .672         .717         .753
 8          .782         .807         .827         .845         .86
 8          .873         .885         .895         .903         .913
 8          .921         .93          .935         .943         .949
 8          .954         .96          .967         .972         .978
 8          .982         .989         .993         1.           1.
 9 ENDTBL
 2 XSECTN   102          1.0
 8                       0.0          0.0          0.0
 8                       2.           450.         93.8
 8                       3.           838.         175.5
 8                       4.           1288.        270.
 8                       5.           1782.        373.2
 8                       6.           2314.        484.4
 8                       7.           2875.        601.7
 8                       8.           3454.        722.9
 9 ENDTBL
 2 XSECTN   103          1.0
 8                       0.0          0.0          0.0
 8                       2.           450.         93.8
 8                       3.           838.         175.5
 8                       4.           1288.        270.
 8                       5.           1782.        373.2
 8                       6.           2314.        484.4
 8                       7.           2875.        601.7
 8                       8.           3454.        722.9
 9 ENDTBL
 2 XSECTN   104          1.0
 8                       0.0          0.0          0.0
 8                       2.           450.         40.
 8                       3.           838.         60.
 8                       4.           1288.        80.
 8                       5.           1782.        120.
 8                       6.           2314.        130.
 8                       7.           2875.        140.
 8                       8.           3454.        160.
 9 ENDTBL
 2 XSECTN   106          1.0
 8                       0.0          0.0          0.0
 8                       1.5          441.         45.
 8                       2.5          995.         75.
 8                       3.5          1682.        105.
 8                       4.5          2468.        135.
 8                       5.5          3339.        165.
 8                       6.5          4272.        195.
 8                       7.5          5258.        225.
 8                       8.5          6296.        255.
 9 ENDTBL
 2 XSECTN   107          1.0
 8                       1749.        0.0          0.0
 8                       1750.        38.53        23.
```

```
8                    1751.      130.52     52.
8                    1752.      273.18     87.
8                    1753.      470.98     128.
8                    1754.      706.86     187.
8                    1755.      1005.62    240.
8                    1756.      1369.42    299.
8                    1757.      1801.8     364.
8                    1758.      2305.5     435.
8                    1759.      2892.8     512.
8                    1760.      3558.1     595.
8                    1761.      4316.04    684.
8                    1762.      5156.98    779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7     0.0        0.0
8                    1754.7     61.93      23.
8                    1755.7     209.35     52.
8                    1756.7     438.91     87.
8                    1757.7     757.01     128.
8                    1758.7     1167.41    175.
8                    1759.7     1678.56    228.
8                    1760.7     2302.39    287.
8                    1761.7     3038.91    352.
8                    1762.7     3894.74    435.
8                    1763.7     4647.76    512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
3 STRUCT     01
8                    1794.1     0.0        0.0
8                    1794.5     26.3       35.37
8                    1795.      74.4       70.75
8                    1795.14    91.2       81.11
8                    1796.      96.16      141.5
8                    1797.14    102.42     222.35
8                    1799.42    113.91     437.37
8                    1801.72    1650.      684.12
8                    1804.      7700.      1020.46
8                    1806.28    15200.     1382.58
8                    1808.57    26200.     1835.7
9 ENDTBL
3 STRUCT     02
8                    1701.4     0.0        281.
8                    1704.      121.8      450.86
8                    1708.      138.4      816.46
8                    1710.      145.9      1046.16
8                    1710.5     147.7      1089.3
8                    1711.5     151.4      1175.9
```



```
8                    1712.2     154.       1335.15
8                    1712.5     155.       1380.46
8                    1712.6     156.       1390.
8                    1713.5     390.       1531.5
8                    1714.5     820.       1682.54
8                    1716.      1950.      1909.1
8                    1720.      6600.      2624.1
8                    1722.      9500.      3040.59
8                    1724.      12400.     3457.1
9 ENDTBL
6 RUNOFF 1 101       5 1.86     65.        1.21       1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2      64.        .67        1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   2       6 1.24     58.        .59        1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   3       6 1.85     65.        .91        1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1794.1                          1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.     1.                    0 0 0 0 0 0
6 REACH  3 104   4   5 6700.                           1 0 0 1 0 1
6 RUNOFF 1   4       6 2.54     65.        .54        1 0 0 1 0 1
6 ADDHYD 4   4   5 6 7                                1 0 0 1 0 1
6 DIVERT 6 104   7 5 2 3454.    1.                    0 0 0 0 0 0
6 ADDHYD 4 104   1 2 4                                0 0 0 0 0 0
6 REACH  3 106   5   3 3700.                           1 0 0 1 0 1
6 RUNOFF 1   5       6 2.       68.        .43        1 0 0 1 0 1
6 ADDHYD 4   5   3 6 7                                1 0 0 1 0 1
6 DIVERT 6 106   7 5 2 6296.    1.                    0 0 0 0 0 0
6 RUNOFF 1   6       6 1.14     64.        .42        1 0 0 1 0 1
6 ADDHYD 4   6   5 6 7                                1 0 0 1 0 1
6 SAVMOV 5   6   7   5
6 ADDHYD 4 106   4 2 7                                1 1 0 1 0 1
6 SAVMOV 5 106   7   1
6 RUNOFF 1   7       6 .96      58.        .23        1 0 0 1 0 1
6 ADDHYD 4   7   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5   7   7   2
6 RUNOFF 1  10       7 .67      62.        .89        1 0 0 1 0 1
6 DIVERT 6 110   7 5 3 820.     1.                    0 0 0 0 0 0
6 REACH  3 109   5   4 2700.                           1 0 0 1 0 1
6 RUNOFF 1   9       6 1.39     68.        .55        1 0 0 1 0 1
6 ADDHYD 4 109   4 6 7                                1 0 0 1 0 1
6 DIVERT 6 109   7 5 4 2546.    1.                    0 0 0 0 0 0
6 REACH  3 108   5   6 2100.                           1 0 0 1 0 1
6 RUNOFF 1   8       5 1.92     71.        .42        1 0 0 1 0 1
6 ADDHYD 4 108   5 6 7                                1 1 0 1 0 1
6 ADDHYD 4 109   3 4 5                                1 1 0 1 0 1
6 SAVMOV 5 106   5   3
6 DIVERT 6 108   7 5 4 5253.    1.                    0 0 0 0 0 0
6 REACH  3 107   5   6 5300.                           1 1 0 1 0 1
6 SAVMOV 5 107   2   5
6 ADDHYD 4 107   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     2 7   6
6 RESVOR 2     2 6   7 1701.4                          1 1 0 1 0 1
```

```
**********  ********80-80 LIST OF INPUT DATA (CONTINUED)*********************

   ENDATA
 7 INCREM 6              .60
 7 COMPUT 7 101       2             7.02        1.0         3 2  05  01
   ENDCMP 1
   ENDJOB 2

*******************************END OF 80-80 LIST*****************************
```

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TR20 ---------------------------------------------------------------  ------ SCS -
        BUCKHORN-MESA SIGNAL BUTTE FRS W/PASS MTN DIV - SBTR20T.DAT    VERSION
09/18/**  ORIG DSGN COND - 10-DAY - RECREATED BY WOOD/PATEL (8-18-00)   2.04TEST
09:35:46                    PASS   1   JOB NO.   1                      PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .600 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  7.02       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .600 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1            RAIN TABLE NO. = 3


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
      119.83                          748.1                        (RUNOFF)
      143.41                           20.6                        (RUNOFF)
      151.01                           15.6                        (RUNOFF)
      155.41                           13.0                        (RUNOFF)
      163.01                           13.1                        (RUNOFF)
      167.18                           10.5                        (RUNOFF)
      175.01                           10.6                        (RUNOFF)
      191.20                            8.0                        (RUNOFF)
      223.00                            8.1                        (RUNOFF)
      232.61                            8.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  3.12 WATERSHED INCHES;    3739 CFS-HRS;     309.0 ACRE-FEET.

    DURATION(HRS)  12     24     36     48     60     72     84     96
    FLOW(CFS)      38     19     13     11      8      8      8      6

    DURATION(HRS) 108    120    132    136
    FLOW(CFS)       5      5      2      0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
      119.62                          467.3                        (RUNOFF)
      143.12                           13.0                        (RUNOFF)
      150.79                            9.8                        (RUNOFF)
      155.12                            8.2                        (RUNOFF)
      162.90                            8.4                        (RUNOFF)
      167.13                            6.7                        (RUNOFF)
      174.81                            6.7                        (RUNOFF)
      210.79                            5.1                        (RUNOFF)
      222.85                            5.1                        (RUNOFF)
      232.50                            5.3                        (RUNOFF)
```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.01 WATERSHED INCHES; 2329 CFS-HRS; 192.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	23	12	8	7	5	5	5	4

DURATION(HRS)	108	120	132	133
FLOW(CFS)	3	3	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.67) FOR SUBWATERSHED XSECTION 1.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%. ***

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.75	1239.7	(NULL)
143.22	33.6	(NULL)
150.94	25.5	(NULL)
155.20	21.3	(NULL)
162.94	21.5	(NULL)
167.16	17.2	(NULL)
174.94	17.4	(NULL)
210.94	13.3	(NULL)
222.94	13.3	(NULL)
232.55	13.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.07 WATERSHED INCHES; 6068 CFS-HRS; 501.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	59	31	21	17	13	13	13	11

DURATION(HRS)	108	120	132	137
FLOW(CFS)	9	9	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 102. ***

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.58	371.7	(RUNOFF)
143.12	11.8	(RUNOFF)
150.79	8.9	(RUNOFF)
155.20	7.5	(RUNOFF)
162.80	7.6	(RUNOFF)
167.11	6.1	(RUNOFF)
174.70	6.1	(RUNOFF)
210.78	4.7	(RUNOFF)
222.69	4.7	(RUNOFF)
232.29	4.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.41 WATERSHED INCHES; 1932 CFS-HRS; 159.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	10	8	6	5	5	5	3

DURATION(HRS)	108	120	125
FLOW(CFS)	3	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.59) FOR SUBWATERSHED XSECTION 2.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	1635.8	(NULL)
143.18	45.4	(NULL)
150.92	34.6	(NULL)
155.20	28.8	(NULL)
162.93	29.2	(NULL)
167.14	23.3	(NULL)
174.92	23.6	(NULL)
210.92	18.1	(NULL)
222.92	18.2	(NULL)
232.52	18.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.88 WATERSHED INCHES; 8000 CFS-HRS; 661.1 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	78	40	29	23	18	18	18	13

DURATION(HRS)	108	120	132	137
FLOW(CFS)	12	12	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 103. ***

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	776.5	(RUNOFF)
143.52	20.5	(RUNOFF)
150.92	15.6	(RUNOFF)
155.48	13.0	(RUNOFF)
162.92	13.2	(RUNOFF)
167.25	10.5	(RUNOFF)
174.92	10.6	(RUNOFF)
210.92	8.1	(RUNOFF)
222.92	8.2	(RUNOFF)
232.52	8.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.12 WATERSHED INCHES; 3719 CFS-HRS; 307.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	36	19	13	11	8	8	8	6

DURATION(HRS)	108	120	132	136
FLOW(CFS)	5	5	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.91) FOR SUBWATERSHED XSECTION 3.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.8%. ***

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	2412.3	(NULL)
143.20	65.9	(NULL)
150.92	50.2	(NULL)
155.23	41.8	(NULL)
162.93	42.4	(NULL)
167.16	33.8	(NULL)
174.92	34.2	(NULL)
210.92	26.2	(NULL)
222.92	26.4	(NULL)
232.52	26.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
101.40 CFS	.38	.86	1.00	1.04	1.95	2.89	3.15	3.23
106.20 CFS	4.17	5.12	5.38	5.47	7.85	10.33	11.00	11.20

111.00 CFS	14.57	17.94	18.83	19.14	26.93	33.98	35.81	36.52
115.80 CFS	57	76	81	95	1148	2045	2273	2319
120.60 CFS	1448	692	500	452	336	247	225	219
125.40 CFS	190	166	160	158	144	132	129	128
130.20 CFS	113	101	98	97	82	69	66	65
135.00 CFS	61.17	58.03	57.24	57.05	57.11	57.18	57.20	57.25
139.80 CFS	61.22	64.55	65.38	65.58	65.77	65.89	65.92	65.79
144.60 CFS	54.24	44.54	42.12	41.54	41.44	41.44	41.45	41.51
149.40 CFS	45.47	48.78	49.61	49.76	45.96	42.75	41.95	41.75
154.20 CFS	41.75	41.78	41.78	41.76	37.81	34.58	33.77	33.57
159.00 CFS	33.55	33.56	33.57	33.60	37.64	40.95	41.78	41.95
163.80 CFS	38.04	34.79	33.98	33.78	33.76	33.77	33.77	33.74
168.60 CFS	29.75	26.46	25.64	25.44	25.41	25.41	25.41	25.46
173.40 CFS	29.48	32.82	33.66	33.81	29.89	26.59	25.76	25.56
178.20 CFS	25.52	25.52	25.52	25.52	25.54	25.56	25.56	25.56
183.00 CFS	25.58	25.59	25.59	25.59	25.61	25.62	25.62	25.63
187.80 CFS	25.64	25.66	25.66	25.66	25.68	25.69	25.69	25.64
192.60 CFS	21.61	18.26	17.42	17.25	21.28	24.63	25.48	25.66
197.40 CFS	21.63	18.29	17.45	17.27	21.34	24.69	25.54	25.71
202.20 CFS	21.68	18.33	17.49	17.29	17.24	17.24	17.24	17.24
207.00 CFS	17.24	17.25	17.25	17.29	21.40	24.78	25.63	25.79
211.80 CFS	21.76	18.40	17.56	17.35	17.31	17.30	17.30	17.30
216.60 CFS	17.31	17.31	17.31	17.31	17.32	17.33	17.33	17.38
221.40 CFS	21.51	24.90	25.75	25.90	21.85	18.48	17.64	17.43
226.20 CFS	17.39	17.38	17.38	17.38	17.39	17.39	17.39	17.43
231.00 CFS	21.58	24.99	25.84	26.01	21.94	18.55	17.70	17.49
235.80 CFS	17.45	17.44	17.44	17.34	9.11	2.26	.54	.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.95 WATERSHED INCHES; 11719 CFS-HRS; 968.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	113	58	42	34	26	26	25	19

DURATION(HRS)	108	120	132	138
FLOW(CFS)	17	17	4	0

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
122.62	410.5	1799.86
223.34	24.4	1794.47
233.36	22.4	1794.44

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
100.80 CFS	.00	.01	.03	.06	.10	.15	.23	.33
105.60 CFS	.43	.55	.70	.87	1.03	1.23	1.52	1.85
110.40 CFS	2.18	2.57	3.07	3.62	4.18	4.86	5.79	6.84
115.20 CFS	8	9	11	14	17	48	95	103

120.00 CFS	109	113	307	384	409	405	374	337
124.80 CFS	307	279	252	228	210	194	179	166
129.60 CFS	156	147	136	126	118	114	114	114
134.40 CFS	114	113	113	113	113	113	113	113
139.20 CFS	112	112	112	112	112	112	112	111
144.00 CFS	111	111	111	111	111	111	110	110
148.80 CFS	110	110	110	109	109	109	109	109
153.60 CFS	109	108	108	108	108	108	108	107
158.40 CFS	107	107	107	107	106	106	106	106
163.20 CFS	106	106	105	105	105	105	105	104
168.00 CFS	104	104	104	104	103	103	103	103
172.80 CFS	103	102	102	102	102	101	101	101
177.60 CFS	100	100	100	100	99	99	99	98
182.40 CFS	98.16	97.88	97.61	97.33	97.06	96.78	96.51	96.24
187.20 CFS	95.96	95.67	95.39	95.10	94.82	94.54	94.26	93.98
192.00 CFS	93.70	93.42	93.12	92.81	92.51	92.21	91.93	91.66
196.80 CFS	91.39	89.52	84.14	79.02	74.28	70.69	67.58	64.81
201.60 CFS	62.26	59.74	57.15	54.59	52.17	49.89	47.76	45.77
206.40 CFS	43.91	42.17	40.54	39.02	37.61	36.42	35.55	34.87
211.20 CFS	34.27	33.59	32.71	31.75	30.82	29.94	29.11	28.34
216.00 CFS	27.62	26.95	26.32	25.99	25.67	25.37	25.08	24.80
220.80 CFS	24.53	24.34	24.30	24.34	24.39	24.37	24.22	24.00
225.60 CFS	23.76	23.53	23.31	23.10	22.89	22.69	22.50	22.31
230.40 CFS	22.14	22.04	22.09	22.21	22.34	22.40	22.32	22.17
235.20 CFS	22.00	21.84	21.68	21.53	21.38	21.08	20.53	19.83
240.00 CFS	19.13	18.44	17.77	17.13	16.51	15.91	15.33	14.78
244.80 CFS	14.24	13.73	13.23	12.75	12.29	11.85	11.42	11.00
249.60 CFS	10.60	10.22	9.85	9.49	9.15	8.82	8.50	8.19
254.40 CFS	7.90	7.61	7.33	7.07	6.81	6.57	6.33	6.10
259.20 CFS	5.88	5.67	5.46	5.26	5.07	4.89	4.71	4.54
264.00 CFS	4.38	4.22	4.07	3.92	3.78	3.64	3.51	3.38
268.80 CFS	3.26	3.14	3.03	2.92	2.81	2.71	2.61	2.52
273.60 CFS	2.43	2.34	2.25	2.17	2.09	2.02	1.94	1.87
278.40 CFS	1.81	1.74	1.68	1.62	1.56	1.50	1.45	1.40
283.20 CFS	1.34	1.30	1.25	1.20	1.16	1.12	1.08	1.04
288.00 CFS	1.00	.97	.93	.90	.86	.83	.80	.77
292.80 CFS	.75	.72	.69	.67	.64	.62	.60	.58
297.60 CFS	.56	.53	.52	.50	.48	.46	.44	.43
302.40 CFS	.41	.40	.38	.37	.36	.34	.33	.32
307.20 CFS	.31	.30	.29	.28	.27	.26	.25	.24
312.00 CFS	.23	.22	.21	.21	.20	.19	.18	.18
316.80 CFS	.17	.16	.16	.15	.15	.14	.14	.13
321.60 CFS	.13	.12	.12	.11	.11	.11	.10	.10
326.40 CFS	.09	.09	.09	.08	.08	.08	.08	.07
331.20 CFS	.07	.07	.07	.06	.06	.06	.06	.05
336.00 CFS	.05	.05	.05	.05	.05	.04	.04	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.96 WATERSHED INCHES; 11732 CFS-HRS; 969.6 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	111	104	94	30	21	6	2	1
DURATION(HRS)	193							
FLOW(CFS)	0							

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 104. ***

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
121.20	115.0 *	.51
223.34	24.4	.11
233.36	22.4	.10

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.57 WATERSHED INCHES; 10201 CFS-HRS; 843.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	111	104	94	30	21	6	2	1
DURATION(HRS)	193							
FLOW(CFS)	0							

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	1029.9	(RUNOFF)
143.11	28.1	(RUNOFF)
150.76	21.2	(RUNOFF)
155.14	17.8	(RUNOFF)
162.62	17.9	(RUNOFF)
167.06	14.4	(RUNOFF)
174.79	14.4	(RUNOFF)
210.76	11.0	(RUNOFF)
222.63	11.0	(RUNOFF)
232.23	11.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.11 WATERSHED INCHES; 5098 CFS-HRS; 421.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	53	25	18	14	11	11	11	8

DURATION(HRS)	108	120	132	137
FLOW(CFS)	7	7	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.54) FOR SUBWATERSHED XSECTION 4.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1135.1	(NULL)
140.64	140.1	(NULL)
150.21	130.8	(NULL)
162.20	123.9	(NULL)
174.12	116.4	(NULL)
195.71	102.8	(NULL)
209.66	46.8	(NULL)
222.90	35.7	(NULL)
232.52	33.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.73 WATERSHED INCHES; 15299 CFS-HRS; 1264.3 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	137	119	105	42	29	8	2	1

DURATION(HRS)	198
FLOW(CFS)	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1135.1	2.70
140.64	140.1	.48
150.21	130.8	.45
162.20	123.9	.42
174.12	116.4	.40
195.71	102.8	.35
209.66	46.8	.16
222.90	35.7	.12
232.52	33.7	.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.73 WATERSHED INCHES; 15299 CFS-HRS; 1264.3 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	137	119	105	42	29	8	2	1

DURATION(HRS)	198
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	900.4	(RUNOFF)
143.11	23.2	(RUNOFF)
150.53	17.5	(RUNOFF)
155.10	14.7	(RUNOFF)
162.40	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.39	11.9	(RUNOFF)
210.41	9.0	(RUNOFF)
222.39	9.1	(RUNOFF)
231.99	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.40 WATERSHED INCHES; 4392 CFS-HRS; 363.0 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	45	21	15	12	9	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	4	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.43) FOR SUBWATERSHED XSECTION 5.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.39	2030.4	(NULL)
140.67	163.2	(NULL)
142.04	163.0	(NULL)
150.25	148.4	(NULL)
162.25	138.7	(NULL)
174.19	128.3	(NULL)
195.79	111.8	(NULL)
199.79	89.4	(NULL)
209.89	55.5	(NULL)
222.59	44.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.85 WATERSHED INCHES; 19691 CFS-HRS; 1627.3 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	157	131	115	48	36	9	3	1

DURATION(HRS)	200
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.19	444.2	(RUNOFF)
143.10	12.3	(RUNOFF)
150.89	9.3	(RUNOFF)
155.10	7.8	(RUNOFF)
162.37	7.9	(RUNOFF)
167.15	6.3	(RUNOFF)
174.44	6.3	(RUNOFF)
210.41	4.8	(RUNOFF)
222.38	4.9	(RUNOFF)
231.99	4.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.98 WATERSHED INCHES; 2193 CFS-HRS; 181.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	11	8	6	5	5	5	3

DURATION(HRS)	108	120	132
FLOW(CFS)	3	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 6.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.35	2473.9	(NULL)
137.11	168.1	(NULL)
142.18	175.3	(NULL)
150.26	157.8	(NULL)
162.26	146.5	(NULL)
174.22	134.7	(NULL)
195.81	116.6	(NULL)
199.88	94.1	(NULL)
209.97	60.3	(NULL)
222.54	49.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.87 WATERSHED INCHES; 21885 CFS-HRS; 1808.6 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	168	137	119	54	39	9	3	1

DURATION(HRS)	200
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
122.62	295.5	1.01

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
120.60 CFS	0	192	269	294	290	259	222	192
125.40 CFS	164	137	113	95	79	64	51	41
130.20 CFS	31.51	20.93	11.13	3.41	.00			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1531 CFS-HRS; 126.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	11
FLOW(CFS)	247	173	95	48	14	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.10	294.7	(RUNOFF)
128.70	17.9	(RUNOFF)
143.10	9.3	(RUNOFF)
150.30	7.0	(RUNOFF)
155.10	5.9	(RUNOFF)
162.30	6.0	(RUNOFF)
167.02	4.8	(RUNOFF)
174.30	4.8	(RUNOFF)
222.30	3.7	(RUNOFF)
231.90	3.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.42 WATERSHED INCHES; 1497 CFS-HRS; 123.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	17	8	6	5	4	4	4	2

DURATION(HRS)	108	120	125
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.3%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.28	2766.8	(NULL)
137.24	176.0	(NULL)
142.26	184.6	(NULL)
150.27	164.8	(NULL)
162.26	152.5	(NULL)
174.22	139.5	(NULL)
195.82	120.3	(NULL)
199.93	97.8	(NULL)
209.99	64.0	(NULL)
222.45	53.0	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
98.40 CFS	.45	1.36	1.50	1.51	1.53	3.24	3.58	3.64
103.20 CFS	3.72	5.68	6.16	6.29	6.45	8.67	9.23	9.43
108.00 CFS	9.77	16.10	17.60	18.01	18.54	26.89	28.94	29.60
112.80 CFS	31	48	52	54	57	101	112	115
117.60 CFS	184	2304	2732	2765	2690	944	623	601
122.40 CFS	589	396	359	357	354	301	291	290
127.20 CFS	289	262	257	257	255	228	222	222
132.00 CFS	221	191	186	185	185	178	176	176

136.80 CFS	176	176	176	176	176	183	185	185
141.60 CFS	184	185	184	184	183	161	157	157
146.40 CFS	156	156	156	156	156	163	165	165
151.20 CFS	164	157	155	155	155	155	154	154
156.00 CFS	154	146	145	144	144	144	144	144
160.80 CFS	144	151	152	152	152	144	143	142
165.60 CFS	142	142	142	142	141	133	132	132
170.40 CFS	131	131	131	131	131	138	139	139
175.20 CFS	139	131	129	129	129	128	128	128
180.00 CFS	127	127	127	127	126	126	126	126
184.80 CFS	125	125	125	124	124	124	124	123
189.60 CFS	123	123	123	122	122	114	112	112
194.40 CFS	112	119	120	120	120	110	103	98
199.20 CFS	93.50	97.64	95.93	93.26	90.43	80.24	76.22	73.57
204.00 CFS	71.15	68.88	66.76	64.77	62.90	61.18	59.55	58.04
208.80 CFS	57.00	63.44	64.00	63.41	62.51	54.16	51.85	50.80
213.60 CFS	49.86	49.00	48.17	47.40	46.68	46.02	45.40	45.06
218.40 CFS	44.75	44.46	44.17	43.89	43.82	51.51	52.87	53.00
223.20 CFS	52.61	45.01	43.45	43.13	42.89	42.67	42.45	42.24
228.00 CFS	42.03	41.84	41.66	41.47	41.65	49.28	50.75	50.97
232.80 CFS	50.64	43.16	41.61	41.36	41.20	41.04	40.89	40.73
237.60 CFS	39.95	24.17	20.71	19.83	19.13	18.44	17.77	17.13
242.40 CFS	16.51	15.91	15.33	14.78	14.24	13.73	13.23	12.75
247.20 CFS	12.29	11.85	11.42	11.00	10.60	10.22	9.85	9.49
252.00 CFS	9.15	8.82	8.50	8.19	7.90	7.61	7.33	7.07
256.80 CFS	6.81	6.57	6.33	6.10	5.88	5.67	5.46	5.26
261.60 CFS	5.07	4.89	4.71	4.54	4.38	4.22	4.07	3.92
266.40 CFS	3.78	3.64	3.51	3.38	3.26	3.14	3.03	2.92
271.20 CFS	2.81	2.71	2.61	2.52	2.43	2.34	2.25	2.17
276.00 CFS	2.09	2.02	1.94	1.87	1.81	1.74	1.68	1.62
280.80 CFS	1.56	1.50	1.45	1.40	1.34	1.30	1.25	1.20
285.60 CFS	1.16	1.12	1.08	1.04	1.00	.97	.93	.90
290.40 CFS	.86	.83	.80	.77	.75	.72	.69	.67
295.20 CFS	.64	.62	.60	.58	.56	.53	.52	.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.83 WATERSHED INCHES; 23381 CFS-HRS; 1932.2 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	176	142	123	57	42	9	3	1

DURATION(HRS)	200
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	250.3	(RUNOFF)
143.24	7.0	(RUNOFF)
150.92	5.3	(RUNOFF)
155.27	4.4	(RUNOFF)
162.92	4.5	(RUNOFF)
167.25	3.6	(RUNOFF)
174.92	3.6	(RUNOFF)
210.92	2.8	(RUNOFF)
222.92	2.8	(RUNOFF)
232.52	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1217 CFS-HRS; 100.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96	108	120	130
FLOW(CFS)	12	6	4	4	3	3	3	2	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.89) FOR SUBWATERSHED XSECTION 10.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.7%. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 109. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	250.3	1766.99
143.24	7.0	1763.85
150.92	5.3	1763.79
155.27	4.4	1763.76
162.92	4.5	1763.76
167.25	3.6	1763.73
174.92	3.6	1763.73
210.92	2.8	1763.70
222.92	2.8	1763.70
232.52	2.8	1763.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1217 CFS-HRS; 100.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96	108	120	130
FLOW(CFS)	12	6	4	4	3	3	3	2	2	2	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.53	626.6	(RUNOFF)
143.11	16.2	(RUNOFF)
150.70	12.2	(RUNOFF)
155.11	10.2	(RUNOFF)
162.78	10.3	(RUNOFF)
167.10	8.3	(RUNOFF)
174.87	8.3	(RUNOFF)
210.66	6.3	(RUNOFF)
222.64	6.3	(RUNOFF)
232.23	6.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.42 WATERSHED INCHES; 3066 CFS-HRS; 253.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96	108	120	132	140
FLOW(CFS)	32	14	10	8	7	6	6	5	4	4	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.55) FOR SUBWATERSHED XSECTION 9.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.68	867.0	1770.18
143.12	23.2	1764.44
150.88	17.5	1764.24
155.12	14.7	1764.13
162.90	15.0	1764.15
167.11	11.9	1764.03
174.90	12.1	1764.04
210.85	9.1	1763.93
222.83	9.1	1763.93
232.43	9.1	1763.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.22 WATERSHED INCHES; 4282 CFS-HRS; 353.9 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	44	21	15	12	10	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	3	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.68	867.0	1757.97
143.12	23.2	1754.07
150.88	17.5	1753.98
155.12	14.7	1753.94
162.90	15.0	1753.94
167.11	11.9	1753.89
174.90	12.1	1753.90
210.85	9.1	1753.85
222.83	9.1	1753.85
232.43	9.1	1753.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.22 WATERSHED INCHES; 4282 CFS-HRS; 353.9 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	44	21	15	12	10	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	3	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	950.6	(RUNOFF)
122.10	168.6	(RUNOFF)
143.10	23.4	(RUNOFF)
150.37	17.6	(RUNOFF)
155.19	14.7	(RUNOFF)
162.44	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.38	11.9	(RUNOFF)
222.82	9.1	(RUNOFF)
232.02	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 4612 CFS-HRS; 381.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	23	12	9	7	6	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 8.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	1812.3	1759.91
143.11	46.6	1754.45
150.60	35.1	1754.27
155.13	29.4	1754.18
162.71	29.5	1754.18
167.10	23.7	1754.08
174.64	23.8	1754.08
210.59	18.1	1753.99
222.83	18.2	1753.99
232.27	18.2	1753.99

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40 CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20 CFS	9.63	9.93	9.96	10.13	15.59	16.83	16.94	17.16
111.00 CFS	23.36	24.87	25.02	25.30	37.76	40.76	41.06	41.78
115.80 CFS	73	81	82	129	1438	1775	1812	1783
120.60 CFS	645	351	320	316	191	160	156	155
125.40 CFS	123	114	113	112	96	92	91	91
130.20 CFS	73.72	69.24	68.75	68.34	51.17	46.57	46.06	45.87
135.00 CFS	41.63	40.52	40.39	40.38	40.46	40.49	40.49	40.52
139.80 CFS	45.08	46.27	46.40	46.42	46.54	46.57	46.57	46.10

144.60 CFS	33.13	29.63	29.24	29.19	29.23	29.24	29.24	29.31
149.40 CFS	33.82	35.02	35.15	35.02	30.67	29.51	29.38	29.37
154.20 CFS	29.41	29.42	29.42	29.39	24.89	23.72	23.59	23.58
159.00 CFS	23.60	23.61	23.61	23.75	28.21	29.41	29.54	29.48
163.80 CFS	25.02	23.84	23.71	23.69	23.71	23.72	23.72	23.56
168.60 CFS	19.14	17.97	17.83	17.82	17.83	17.83	17.83	17.86
173.40 CFS	22.46	23.66	23.79	23.69	19.22	18.03	17.90	17.88
178.20 CFS	17.89	17.89	17.89	17.90	17.91	17.91	17.91	17.91
183.00 CFS	17.93	17.93	17.93	17.93	17.95	17.95	17.95	17.95
187.80 CFS	17.96	17.97	17.97	17.97	17.98	17.99	17.99	17.85
192.60 CFS	13.36	12.15	12.02	12.17	16.66	17.86	18.00	17.92
197.40 CFS	13.38	12.17	12.04	12.11	16.67	17.89	18.03	17.91
202.20 CFS	13.38	12.19	12.06	12.04	12.05	12.05	12.05	12.05
207.00 CFS	12.05	12.05	12.05	12.20	16.72	17.94	18.08	17.94
211.80 CFS	13.44	12.23	12.09	12.08	12.08	12.08	12.08	12.08
216.60 CFS	12.09	12.09	12.09	12.09	12.09	12.10	12.10	12.24
221.40 CFS	16.79	18.00	18.14	18.12	13.47	12.27	12.13	12.12
226.20 CFS	12.12	12.12	12.12	12.12	12.13	12.13	12.13	12.22
231.00 CFS	16.83	18.06	18.19	18.11	13.52	12.30	12.17	12.15
235.80 CFS	12.15	12.16	12.16	11.88	2.76	.31		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.46 WATERSHED INCHES; 8894 CFS-HRS; 735.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	42	25	18	14	12	1	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
246 CFS-HRS; 735.0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 107. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	1812.3	1757.02
143.11	46.6	1750.09
150.60	35.1	1749.91
155.13	29.4	1749.76
162.71	29.5	1749.77
167.10	23.7	1749.62
174.64	23.8	1749.62
210.59	18.1	1749.47
222.83	18.2	1749.47
232.27	18.2	1749.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40 CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20 CFS	9.63	9.93	9.96	10.13	15.59	16.83	16.94	17.16
111.00 CFS	23.36	24.87	25.02	25.30	37.76	40.76	41.06	41.78
115.80 CFS	73	81	82	129	1438	1775	1812	1783
120.60 CFS	645	351	320	316	191	160	156	155
125.40 CFS	123	114	113	112	96	92	91	91
130.20 CFS	73.72	69.24	68.75	68.34	51.17	46.57	46.06	45.87
135.00 CFS	41.63	40.52	40.39	40.38	40.46	40.49	40.49	40.52
139.80 CFS	45.08	46.27	46.40	46.42	46.54	46.57	46.57	46.10
144.60 CFS	33.13	29.63	29.24	29.19	29.23	29.24	29.24	29.31
149.40 CFS	33.82	35.02	35.15	35.02	30.67	29.51	29.38	29.37
154.20 CFS	29.41	29.42	29.42	29.39	24.89	23.72	23.59	23.58
159.00 CFS	23.60	23.61	23.61	23.75	28.21	29.41	29.54	29.48
163.80 CFS	25.02	23.84	23.71	23.69	23.71	23.72	23.72	23.56
168.60 CFS	19.14	17.97	17.83	17.82	17.83	17.83	17.83	17.86
173.40 CFS	22.46	23.66	23.79	23.69	19.22	18.03	17.90	17.88
178.20 CFS	17.89	17.89	17.89	17.90	17.91	17.91	17.91	17.91
183.00 CFS	17.93	17.93	17.93	17.93	17.95	17.95	17.95	17.95
187.80 CFS	17.96	17.97	17.97	17.97	17.98	17.99	17.99	17.85
192.60 CFS	13.36	12.15	12.02	12.17	16.66	17.86	18.00	17.92
197.40 CFS	13.38	12.17	12.04	12.11	16.67	17.89	18.03	17.91
202.20 CFS	13.38	12.19	12.06	12.04	12.05	12.05	12.05	12.05
207.00 CFS	12.05	12.05	12.05	12.20	16.72	17.94	18.08	17.94
211.80 CFS	13.44	12.23	12.09	12.08	12.08	12.08	12.08	12.08
216.60 CFS	12.09	12.09	12.09	12.09	12.09	12.10	12.10	12.24
221.40 CFS	16.79	18.00	18.14	18.12	13.47	12.27	12.13	12.12
226.20 CFS	12.12	12.12	12.12	12.12	12.13	12.13	12.13	12.22
231.00 CFS	16.83	18.06	18.19	18.11	13.52	12.30	12.17	12.15
235.80 CFS	12.15	12.16	12.16	11.88	2.76	.31		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.46 WATERSHED INCHES; 8894 CFS-HRS; 735.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	42	25	18	14	12	1	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.34	4577.8	1761.31
142.40	231.1	1751.71
150.37	199.8	1751.49
162.34	181.9	1751.36
174.29	163.3	1751.23
195.89	138.4	1751.05
200.07	115.2	1750.83
210.18	82.0	1750.47
222.54	71.1	1750.35
232.18	69.2	1750.33

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.94	3.26	3.28	3.32	5.71	6.15	6.18	6.28
101.40 CFS	9.98	10.71	10.79	10.90	13.74	14.40	14.54	14.70
106.20 CFS	18.29	19.17	19.39	19.89	31.69	34.43	34.95	35.70
111.00 CFS	50.25	53.81	54.62	56.24	85.94	93.04	94.60	98.44
115.80 CFS	175	193	197	314	3742	4507	4577	4473
120.60 CFS	1589	974	921	905	587	519	513	510
125.40 CFS	423	405	403	401	358	349	348	346
130.20 CFS	301	292	291	289	243	232	231	231
135.00 CFS	219	217	217	216	217	216	216	217
139.80 CFS	228	231	231	231	231	231	231	230
144.60 CFS	194	187	186	186	186	185	185	185
149.40 CFS	197	200	200	199	187	185	184	184
154.20 CFS	184	184	184	183	171	168	168	168
159.00 CFS	168	167	167	168	179	182	182	181
163.80 CFS	169	166	166	166	166	166	165	165
168.60 CFS	153	150	149	149	149	149	149	149
173.40 CFS	161	163	163	162	150	147	147	146
178.20 CFS	146	146	146	145	145	145	145	144
183.00 CFS	144	144	143	143	143	143	142	142
187.80 CFS	142	142	141	141	141	141	140	140
192.60 CFS	127	124	124	124	136	138	138	138
197.40 CFS	123	115	110	106	114	114	111	108
202.20 CFS	93.62	88.41	85.63	83.19	80.93	78.80	76.81	74.95
207.00 CFS	73.23	71.61	70.09	69.20	80.16	81.94	81.49	80.45
211.80 CFS	67.60	64.07	62.89	61.94	61.08	60.26	59.49	58.77
216.60 CFS	58.11	57.49	57.15	56.84	56.55	56.27	55.99	56.06
221.40 CFS	68.30	70.88	71.14	70.73	58.48	55.71	55.26	55.01
226.20 CFS	54.79	54.58	54.36	54.16	53.97	53.79	53.60	53.87
231.00 CFS	66.12	68.81	69.16	68.75	56.68	53.91	53.53	53.35

235.80 CFS	53.20	53.04	52.89	51.83	26.93	21.03	19.87	19.13
240.60 CFS	18.44	17.77	17.13	16.51	15.91	15.33	14.78	14.24
245.40 CFS	13.73	13.23	12.75	12.29	11.85	11.42	11.00	10.60
250.20 CFS	10.22	9.85	9.49	9.15	8.82	8.50	8.19	7.90
255.00 CFS	7.61	7.33	7.07	6.81	6.57	6.33	6.10	5.88
259.80 CFS	5.67	5.46	5.26	5.07	4.89	4.71	4.54	4.38
264.60 CFS	4.22	4.07	3.92	3.78	3.64	3.51	3.38	3.26
269.40 CFS	3.14	3.03	2.92	2.81	2.71	2.61	2.52	2.43
274.20 CFS	2.34	2.25	2.17	2.09	2.02	1.94	1.87	1.81
279.00 CFS	1.74	1.68	1.62	1.56	1.50	1.45	1.40	1.34
283.80 CFS	1.30	1.25	1.20	1.16	1.12	1.08	1.04	1.00
288.60 CFS	.97	.93	.90	.86	.83	.80	.77	.75
293.40 CFS	.72	.69	.67	.64	.62	.60	.58	.56
298.20 CFS	.53	.52	.50					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.98 WATERSHED INCHES; 32275 CFS-HRS; 2667.2 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	217	167	142	73	54	12	4	1

DURATION(HRS)	207
FLOW(CFS)	0

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
130.36	303.5	1713.17
174.92	162.5	1712.63

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
89.40 CFS	.00	.01	.01	.02	.03	.04	.06	.08
94.20 CFS	.10	.13	.16	.19	.25	.35	.45	.55
99.00 CFS	.69	.87	1.06	1.24	1.48	1.79	2.10	2.41
103.80 CFS	2.75	3.15	3.55	3.93	4.37	4.87	5.38	5.87
108.60 CFS	6.57	7.50	8.45	9.38	10.56	12.01	13.48	14.95
113.40 CFS	16.91	19.44	22.04	24.64	28.56	33.98	39.59	47.12
118.20 CFS	116	130	140	147	152	153	154	154
123.00 CFS	155	176	202	227	246	259	270	281
127.80 CFS	288	294	298	302	303	303	302	301
132.60 CFS	298	293	289	284	279	275	270	266
137.40 CFS	262	258	255	252	250	248	247	246
142.20 CFS	244	243	242	241	239	235	231	228
147.00 CFS	224	221	219	216	214	213	212	211
151.80 CFS	209	208	206	204	202	201	200	198
156.60 CFS	197	195	192	191	189	187	186	184
161.40 CFS	183	183	183	183	182	181	180	179
166.20 CFS	178	177	176	175	174	172	170	169
171.00 CFS	167	166	164	163	162	162	162	162

175.80 CFS	162	161	160	159	158	157	156	156
180.60 CFS	156	156	156	156	156	156	156	155
185.40 CFS	155	155	155	155	155	155	155	155
190.20 CFS	155	155	155	155	155	155	155	155
195.00 CFS	155	155	155	155	155	155	155	155
199.80 CFS	155	154	154	154	154	154	154	154
204.60 CFS	154	154	154	154	154	154	154	154
209.40 CFS	153	153	153	153	153	153	153	153
214.20 CFS	153	153	153	153	153	153	153	152
219.00 CFS	152	152	152	152	152	152	152	152
223.80 CFS	152	152	152	152	151	151	151	151
228.60 CFS	151	151	150	150	150	150	150	149
233.40 CFS	149	149	149	149	148	148	148	148
238.20 CFS	148	147	147	147	147	146	146	146
243.00 CFS	146	145	145	145	145	145	144	144
247.80 CFS	144	144	143	143	143	143	143	142
252.60 CFS	142	142	142	142	141	141	141	141
257.40 CFS	140	140	140	140	140	139	139	139
262.20 CFS	139	138	138	138	138	137	137	137
267.00 CFS	136	136	136	136	135	135	135	134
271.80 CFS	134	134	133	133	133	133	132	132
276.60 CFS	132	131	131	131	131	130	130	130
281.40 CFS	129	129	129	129	128	128	128	127
286.20 CFS	127	127	127	126	126	126	125	125
291.00 CFS	125	125	124	124	124	123	123	123
295.80 CFS	123	122	122	122	118	113	109	106
300.60 CFS	102	98	95	92	89	85	82	80
305.40 CFS	76.84	74.17	71.59	69.10	66.69	64.37	62.13	59.97
310.20 CFS	57.89	55.87	53.93	52.05	50.24	48.50	46.81	45.18
315.00 CFS	43.61	42.09	40.63	39.21	37.85	36.53	35.26	34.04
319.80 CFS	32.85	31.71	30.61	29.54	28.51	27.52	26.56	25.64
324.60 CFS	24.75	23.89	23.06	22.25	21.48	20.73		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.95 WATERSHED INCHES; 31924 CFS-HRS; 2638.2 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	216	166	155	153	147	138	127	58

DURATION(HRS) 214
FLOW(CFS) 21 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 7.02 inches AND 237.60 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 3, ARC 2							
MAIN TIME INCREMENT .600 HOURS							
ALTERNATE 5 STORM 1							
XSECTION 101	RUNOFF	1.86	3.12	---	119.83	748	402.2
XSECTION 1	RUNOFF	1.20	3.01	---	119.62	467	389.2
XSECTION 1	ADDHYD	3.06	3.07	---	119.75	1240	405.2
XSECTION 2	RUNOFF	1.24	2.41	---	119.58	372	300.0
XSECTION 2	ADDHYD	4.30	2.88	---	119.73	1636	380.5
XSECTION 3	RUNOFF	1.85	3.12	---	119.73	777	420.0
XSECTION 3	ADDHYD	6.15	2.95	---	119.73	2412	392.2
STRUCTURE 1	RESVOR	6.15	2.96	1799.86	122.62	410	66.7
XSECTION 104	REACH	6.15	2.57	.51	121.20F	115F	18.7
XSECTION 4	RUNOFF	2.54	3.11	---	119.54	1030	405.5
XSECTION 4	ADDHYD	8.69	2.73	---	119.70	1135	130.6
XSECTION 106	REACH	8.69	2.73	2.70	119.70	1135	130.6
XSECTION 5	RUNOFF	2.00	3.40	---	119.20	900	450.0
XSECTION 5	ADDHYD	10.69	2.85	---	119.39	2030	189.9
XSECTION 6	RUNOFF	1.14	2.98	---	119.19	444	389.5
XSECTION 6	ADDHYD	11.83	2.87	---	119.35	2474	209.1
XSECTION 106	ADDHYD	.00	2.87	1.01	122.62	295	********
XSECTION 7	RUNOFF	.96	2.42	---	119.10	295	307.3
XSECTION 7	ADDHYD	12.79	2.83	---	119.28	2767	216.3
XSECTION 10	RUNOFF	.67	2.81	---	119.72	250	373.1
XSECTION 109	REACH	.67	2.81	1766.99	119.72	250	373.1
XSECTION 9	RUNOFF	1.39	3.42	---	119.53	627	451.1
XSECTION 109	ADDHYD	2.06	3.22	1770.18	119.68	867	420.9
XSECTION 108	REACH	2.06	3.22	1757.97	119.68	867	420.9
XSECTION 8	RUNOFF	1.92	3.72	---	119.20	951	495.3
XSECTION 108	ADDHYD	3.98	3.46	1759.91	119.43	1812	455.3
XSECTION 109	ADDHYD	.00	3.46	---	.00	0	********
XSECTION 107	REACH	3.98	3.46	1757.02	119.43	1812	455.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 1							
XSECTION 107	ADDHYD	16.77	2.98	1761.31	119.34	4578	273.0
STRUCTURE 2	RESVOR	16.77	2.95	1713.17	130.36	304	18.1

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1203	120.0	1203	120.0	4.77	1.00	.029	1.000	1.00?
103	2500		1572	120.0	1572	120.0	4.77	1.00	.029	1.000	1.00?
104	6700		115	121.2	115	121.2	1.57	1.53	.000	1.000	1.00?
106	3700		1132	119.4	1132	119.4	1.04	1.59	.000	1.000	1.00?
109	2700		240	120.0	240	120.0	.29	1.46	.018	1.000	1.00?
108	2100		863	119.4	863	119.4	.71	1.44	.003	1.000	1.00?
107	5300		1812	119.4	1812	119.4	.56	1.37	.021	1.000	1.00?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE 2	16.77	
ALTERNATE 5		304
STRUCTURE 1	6.15	
ALTERNATE 5		410
XSECTION 1	3.06	
ALTERNATE 5		1240
XSECTION 2	4.30	
ALTERNATE 5		1636
XSECTION 3	6.15	
ALTERNATE 5		2412
XSECTION 4	8.69	
ALTERNATE 5		1135
XSECTION 5	10.69	
ALTERNATE 5		2030
XSECTION 6	11.83	
ALTERNATE 5		2474
XSECTION 7	12.79	
ALTERNATE 5		2767
XSECTION 8	1.92	
ALTERNATE 5		951
XSECTION 9	1.39	
ALTERNATE 5		627
XSECTION 10	.67	
ALTERNATE 5		250
XSECTION 101	1.86	
ALTERNATE 5		748
XSECTION 104	6.15	

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 104	6.15	
ALTERNATE 5		115
XSECTION 106	.00	
ALTERNATE 5		295
XSECTION 107	16.77	
ALTERNATE 5		4578
XSECTION 108	3.98	
ALTERNATE 5		1812
XSECTION 109	.00	
ALTERNATE 5		0

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = SBTR20T.DAT , GIVEN DATA FILE
OUTPUT = SBTR20T.OUT , DATED 09/18/**,09:35:46

FILES GENERATED - DATED 09/18/**,09:35:46

NONE!

TOTAL NUMBER OF WARNINGS = 18, MESSAGES = 1

JOB ENDED AT 09:35:47
*** TR-20 RUN COMPLETED ***

```
JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATEL
TITLE 000 ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR-20b.DAT
 5 RAINFL 1            .5
 8          0.0        .008       .017       .026       .035
 8          .045       .055       .065       .076       .087
 8          .099       .112       .125       .14        .156
 8          .174       .194       .219       .254       .303
 8          .515       .583       .624       .654       .682
 8          .705       .727       .748       .767       .784
 8          .8         .816       .83        .844       .857
 8          .87        .882       .893       .905       .916
 8          .926       .936       .946       .955       .965
 8          .974       .983       .992       1.         1.
 9 ENDTBL
 5 RAINFL 2            .5
 8          0.0        .005       .011       .016       .022
 8          .028       .035       .041       .048       .056
 8          .063       .071       .081       .089       .098
 8          .109       .12        .133       .147       .163
 8          .181       .204       .235       .283       .663
 8          .735       .772       .799       .82        .838
 8          .854       .868       .88        .891       .902
 8          .912       .921       .929       .937       .945
 8          .952       .959       .965       .972       .978
 8          .984       .989       .995       1.         1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8          0.0        .002       .004       .006       .008
 8          .01        .012       .014       .016       .018
 8          .02        .022       .025       .027       .03
 8          .032       .035       .038       .04        .043
 8          .046       .049       .052       .055       .058
 8          .061       .064       .069       .072       .076
 8          .08        .084       .089       .093       .098
 8          .102       .108       .114       .121       .127
 8          .133       .143       .153       .164       .174
 8          .184       .198       .215       .238       .275
 8          .707       .765       .793       .813       .829
 8          .841       .849       .856       .863       .871
 8          .879       .884       .889       .895       .9
 8          .905       .909       .913       .918       .922
 8          .926       .929       .932       .936       .939
 8          .942       .945       .948       .951       .954
 8          .957       .959       .962       .964       .967
 8          .969       .971       .973       .976       .978
 8          .98        .982       .984       .987       .989
 8          .991       .993       .996       .998       1.
 9 ENDTBL
 5 RAINFL 4            .25
 8          0.0        .006       .011       .017       .028
 8          .041       .057       .075       .09        .562
 8          .697       .763       .807       .839       .873
 8          .907       .937       .948       .958       .968
 8          .979       .984       .989       1.         1.
 9 ENDTBL
```



```
 5 RAINFL 5            .5
 8          0.0        .004       .008       .011       .016
 8          .021       .027       .034       .044       .055
 8          .07        .088       .108       .137       .172
 8          .217       .273       .341       .42        .492
 8          .56        .618       .672       .717       .753
 8          .782       .807       .827       .845       .86
 8          .873       .885       .895       .903       .913
 8          .921       .93        .935       .943       .949
 8          .954       .96        .967       .972       .978
 8          .982       .989       .993       1.         1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       40.
 8                     3.         838.       60.
 8                     4.         1288.      80.
 8                     5.         1782.      120.
 8                     6.         2314.      130.
 8                     7.         2875.      140.
 8                     8.         3454.      160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0        0.0        0.0
 8                     1.5        441.       45.
 8                     2.5        995.       75.
 8                     3.5        1682.      105.
 8                     4.5        2468.      135.
 8                     5.5        3339.      165.
 8                     6.5        4272.      195.
 8                     7.5        5258.      225.
 8                     8.5        6296.      255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.      0.0        0.0
 8                     1750.      38.53      23.
```

```
8                    1751.      130.52     52.
8                    1752.      273.18     87.
8                    1753.      470.98     128.
8                    1754.      706.86     187.
8                    1755.      1005.62    240.
8                    1756.      1369.42    299.
8                    1757.      1801.8     364.
8                    1758.      2305.5     435.
8                    1759.      2892.8     512.
8                    1760.      3558.1     595.
8                    1761.      4316.04    684.
8                    1762.      5156.98    779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7     0.0        0.0
8                    1754.7     61.93      23.
8                    1755.7     209.35     52.
8                    1756.7     438.91     87.
8                    1757.7     757.01     128.
8                    1758.7     1167.41    175.
8                    1759.7     1678.56    228.
8                    1760.7     2302.39    287.
8                    1761.7     3038.91    352.
8                    1762.7     3894.74    435.
8                    1763.7     4647.76    512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
3 STRUCT     01
8                    1791.94    0.00       0.0
8                    1793.      0.01       46.8
8                    1794.1     0.02       106.
8                    1794.5     26.3       130.
8                    1795.      74.4       161.2
8                    1795.14    91.2       170.7
8                    1796.      96.16      230.7
8                    1797.14    102.42     322.23
8                    1799.42    113.91     542.99
8                    1801.72    1650.      812.88
8                    1804.      7700.      1121.9
8                    1806.28    15200.     1470.09
8                    1808.57    26200.     1865.04
9 ENDTBL
3 STRUCT     02
8                    1696.      0.0        0.0
8                    1700.      10.2       172.1
8                    1701.4     10.7       273.25
8                    1704.      121.8      482.24
```



```
8                    1708.      138.4      871.3
8                    1710.      145.9      1101.52
8                    1710.5     147.7      1163.52
8                    1711.5     151.4      1294.09
8                    1712.2     154.       1390.2
8                    1712.5     155.       1432.05
8                    1712.6     156.       1446.11
8                    1713.5     390.       1578.77
8                    1714.5     820.       1733.61
8                    1716.      1950.      1980.33
8                    1720.      6600.      2712.23
8                    1722.      9500.      3121.
8                    1724.      12400.     3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86     80.        1.21       1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2      79.        .67        1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   2       6 1.24     75.        .59        1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   3       6 1.85     80.        .91        1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                        1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.     1.                    0 0 0 0 0 0
6 REACH  3 104   4   5 6700.                           1 0 0 1 0 1
6 RUNOFF 1   4       6 2.54     80.        .54        1 0 0 1 0 1
6 ADDHYD 4   4   5 6 7                                1 0 0 1 0 1
6 DIVERT 6 104   7 5 2 3454.    1.                    0 0 0 0 0 0
6 ADDHYD 4 104   1 2 4                                0 0 0 0 0 0
6 REACH  3 106   5   3 3700.                           1 0 0 1 0 1
6 RUNOFF 1   5       6 2.       82.        .43        1 0 0 1 0 1
6 ADDHYD 4   5   3 6 7                                1 0 0 1 0 1
6 DIVERT 6 106   7 5 2 6296.    1.                    0 0 0 0 0 0
6 RUNOFF 1   6       6 1.14     79.        .42        1 0 0 1 0 1
6 ADDHYD 4   6   5 6 7                                1 0 0 1 0 1
6 SAVMOV 5   6   7   5
6 ADDHYD 4 106   4 2 7                                1 1 0 1 0 1
6 SAVMOV 5 106   7   1
6 RUNOFF 1   7       6 .96      75.        .23        1 0 0 1 0 1
6 ADDHYD 4   7   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5   7   7   2
6 RUNOFF 1  10       7 .67      78.        .89        1 0 0 1 0 1
6 DIVERT 6 110   7 5 3 820.     1.                    0 0 0 0 0 0
6 REACH  3 109   5   4 2700.                           1 0 0 1 0 1
6 RUNOFF 1   9       6 1.39     82.        .55        1 0 0 1 0 1
6 ADDHYD 4 109   4 6 7                                1 0 0 1 0 1
6 DIVERT 6 109   7 5 4 2546.    1.                    0 0 0 0 0 0
6 REACH  3 108   5   6 2100.                           1 0 0 1 0 1
6 RUNOFF 1   8       5 1.92     84.        .42        1 0 0 1 0 1
6 ADDHYD 4 108   5 6 7                                1 1 0 1 0 1
6 ADDHYD 4 109   3 4 5                                1 1 0 1 0 1
6 SAVMOV 5 106   5   3
6 DIVERT 6 108   7 5 4 5253.    1.                    0 0 0 0 0 0
6 REACH  3 107   5   6 5300.                           1 1 0 1 0 1
```

```
*********    *********80-80 LIST OF INPUT DATA (CONTINUED)*********************

 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                  1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                            1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .20
 7 COMPUT 7 101     2            3.94        1.0         2 2  05  01
   ENDCMP 1
 7 COMPUT 7 101     2            7.06        1.0         5 2  05  04
   ENDCMP 1
 7 COMPUT 7 101     2            15.80       1.0         5 2  05  05
   ENDCMP 1
   ENDJOB 2

*******************************END OF 80-80 LIST******************************
```

```
TR20 ---------------------------------------------------------------  -------- SCS -
        SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATE VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR-20b2.04TEST
09:32:48                    PASS   1   JOB NO.   1                        PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .200 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  3.94       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .200 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1            RAIN TABLE NO. = 2


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.58                         1010.6                        (RUNOFF)
       21.76                           50.9                        (RUNOFF)
       23.77                           43.5                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.99 WATERSHED INCHES;    2390 CFS-HRS;     197.5 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     288    118     82     62     51     44     23      5

    DURATION(HRS)  18
    FLOW(CFS)       0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.22                          900.0                        (RUNOFF)
       21.67                           32.7                        (RUNOFF)
       23.67                           28.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.91 WATERSHED INCHES;    1481 CFS-HRS;     122.4 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     129     69     51     39     32     28     14      1

    DURATION(HRS)  16
    FLOW(CFS)       0


OPERATION ADDHYD    XSECTION   1
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1728.9	(NULL)
21.68	83.5	(NULL)
23.69	71.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3870 CFS-HRS; 319.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	471	194	131	101	83	71	39	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	808.7	(RUNOFF)
19.31	36.6	(RUNOFF)
21.63	31.3	(RUNOFF)
23.63	27.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.62 WATERSHED INCHES; 1297 CFS-HRS; 107.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	113	63	46	36	30	26	6	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	2188.1	(NULL)
21.71	114.2	(NULL)
23.71	97.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	594	257	182	138	114	98	45	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	1217.7	(RUNOFF)
21.78	50.8	(RUNOFF)
23.77	43.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 2377 CFS-HRS; 196.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	255	114	79	61	51	44	23	3

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	3125.4	(NULL)
21.80	164.8	(NULL)
23.80	140.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
8.60 CFS	.31	.92	2.12	4.01	6.94	10.81	15.99	22.50
10.20 CFS	30	40	54	70	91	119	157	236
11.80 CFS	493	1170	2128	2895	3125	2936	2561	2147
13.40 CFS	1751	1414	1156	961	813	703	619	555
15.00 CFS	507	468	437	410	386	364	343	325
16.60 CFS	309	296	286	279	273	267	260	252
18.20 CFS	244	235	226	218	211	206	203	201
19.80 CFS	199	195	190	186	182	178	174	168
21.40 CFS	165	164	165	164	162	159	156	153
23.00 CFS	149	144	141	140	141	140	136	125
24.60 CFS	104	79	56	39	26	17	11	7
26.20 CFS	4.36	2.81	1.80	1.15	.74	.48		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 7544 CFS-HRS; 623.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	961	386	260	201	165	141	70	11

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.52	112.2	1799.08

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
11.80 CFS	.00	.01	.01	.02	57.27	93.53	96.99	99.54
13.40 CFS	102	103	104	105	106	106	107	107
15.00 CFS	107	108	108	108	109	109	109	109
16.60 CFS	109	110	110	110	110	110	110	110
18.20 CFS	110	111	111	111	111	111	111	111
19.80 CFS	111	111	111	111	111	112	112	112
21.40 CFS	112	112	112	112	112	112	112	112
23.00 CFS	112	112	112	112	112	112	112	112
24.60 CFS	112	112	112	112	112	112	112	112
26.20 CFS	112	112	111	111	111	111	111	111
27.80 CFS	111	111	111	111	111	110	110	110
29.40 CFS	110	110	110	110	110	110	110	109
31.00 CFS	109	109	109	109	109	109	109	109
32.60 CFS	109	109	108	108	108	108	108	108
34.20 CFS	108	108	108	108	108	107	107	107
35.80 CFS	107	107	107	107	107	107	107	107
37.40 CFS	106	106	106	106	106	106	106	106
39.00 CFS	106	106	106	105	105	105	105	105
40.60 CFS	105	105	105	105	105	105	104	104
42.20 CFS	104	104	104	104	104	104	104	104
43.80 CFS	104	103	103	103	103	103	103	103
45.40 CFS	103	103	103	103	102	102	102	102
47.00 CFS	102	102	102	102	102	101	101	101
48.60 CFS	101	101	101	101	101	101	100	100
50.20 CFS	100	100	100	100	100	100	100	99
51.80 CFS	99.30	99.19	99.08	98.97	98.86	98.74	98.63	98.52
53.40 CFS	98.41	98.30	98.19	98.08	97.97	97.86	97.74	97.63
55.00 CFS	97.52	97.41	97.30	97.19	97.08	96.97	96.86	96.76
56.60 CFS	96.65	96.54	96.43	96.32	96.21	96.09	95.96	95.83
58.20 CFS	95.70	95.57	95.43	95.30	95.17	95.04	94.91	94.78
59.80 CFS	94.66	94.53	94.40	94.27	94.14	94.01	93.88	93.75
61.40 CFS	93.63	93.50	93.37	93.24	93.12	92.99	92.86	92.74
63.00 CFS	92.61	92.48	92.36	92.23	92.10	91.98	91.85	91.73
64.60 CFS	91.60	91.48	91.35	91.23	89.14	86.58	84.08	81.66
66.20 CFS	79.31	77.02	74.80	72.87	71.04	69.25	67.51	65.81
67.80 CFS	64.15	62.54	60.96	59.43	57.93	56.48	55.06	53.67
69.40 CFS	52.32	51.00	49.72	48.47	47.25	46.06	44.90	43.77
71.00 CFS	42.67	41.60	40.55	39.53	38.54	37.57	36.62	35.70
72.60 CFS	34.80	33.93	33.07	32.24	31.43	30.64	29.87	29.12
74.20 CFS	28.38	27.67	26.97	26.30	25.82	25.36	24.91	24.46
75.80 CFS	24.02	23.59	23.17	22.75	22.34	21.94	21.55	21.16
77.40 CFS	20.78	20.41	20.04	19.68	19.33	18.98	18.64	18.31

79.00 CFS	17.98	17.66	17.34	17.03	16.73	16.43	16.13	15.84
80.60 CFS	15.56	15.28	15.00	14.73	14.47	14.21	13.96	13.71
82.20 CFS	13.46	13.22	12.98	12.75	12.52	12.30	12.07	11.86
83.80 CFS	11.65	11.44	11.23	11.03	10.83	10.64	10.45	10.26
85.40 CFS	10.08	9.89	9.72	9.54	9.37	9.20	9.04	8.88
87.00 CFS	8.72	8.56	8.41	8.26				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6170 CFS-HRS; 509.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	99	94	57	22

DURATION(HRS)	72	75	
FLOW(CFS)	11	8	TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.77	112.2	.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6168 CFS-HRS; 509.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	98	94	57	22

DURATION(HRS)	72	75	
FLOW(CFS)	11	8	TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	(RUNOFF)
19.31	83.4	(RUNOFF)
21.61	71.4	(RUNOFF)
23.61	61.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 3255 CFS-HRS; 269.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	260	145	108	83	70	61	31	3
DURATION(HRS)	17							
FLOW(CFS)	0							

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	(NULL)
19.36	194.3	(NULL)
21.61	183.1	(NULL)
23.61	173.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29
DURATION(HRS)	72	78						
FLOW(CFS)	15	8 TRUNCATED						

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	4.13
19.36	194.3	.66
21.61	183.1	.62
23.61	173.4	.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29
DURATION(HRS)	72	78						
FLOW(CFS)	15	8 TRUNCATED						

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	2048.6	(RUNOFF)
19.33	68.2	(RUNOFF)
21.56	59.0	(RUNOFF)
23.56	50.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.14 WATERSHED INCHES; 2762 CFS-HRS; 228.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	121	91	68	59	51	34	5
DURATION(HRS)	17							
FLOW(CFS)	0							

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	4157.5	(NULL)
19.34	262.5	(NULL)
21.58	242.0	(NULL)
23.58	224.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 12182 CFS-HRS; 1006.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	262	112	108	104	100	96	80	32
DURATION(HRS)	72	79						
FLOW(CFS)	15	9 TRUNCATED						

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	1030.8	(RUNOFF)
19.33	36.7	(RUNOFF)
21.55	31.9	(RUNOFF)
23.55	27.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 1408 CFS-HRS; 116.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	119	65	47	37	31	27	13	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.09	5213.0	(NULL)
19.34	299.2	(NULL)
21.58	273.9	(NULL)
23.58	251.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.78 WATERSHED INCHES; 13582 CFS-HRS; 1122.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	299	112	108	104	100	96	82	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION ADDHYD XSECTION 106

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
399 CFS-HRS; 1122.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.93	833.8	(RUNOFF)
16.90	38.4	(RUNOFF)
19.31	28.4	(RUNOFF)
20.31	25.0	(RUNOFF)
21.43	25.0	(RUNOFF)
22.30	21.7	(RUNOFF)
23.43	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.61 WATERSHED INCHES; 996 CFS-HRS; 82.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	84	46	35	28	24	20	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	5926.2	(NULL)
19.33	327.6	(NULL)
21.56	298.5	(NULL)
23.56	272.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
7.60 CFS	.07	.64	1.12	2.62	5.55	7.58	13.30	18.66
9.20 CFS	25	36	43	57	68	87	113	133
10.80 CFS	182	221	297	410	898	3627	5784	5345
12.40 CFS	3395	2284	1618	1249	1045	893	815	732
14.00 CFS	677	638	601	580	554	536	517	494
15.60 CFS	479	454	437	424	411	405	403	403
17.20 CFS	397	386	379	367	357	347	335	329
18.80 CFS	328	327	327	327	326	315	307	303
20.40 CFS	302	300	289	281	284	294	298	289
22.00 CFS	281	278	277	275	264	255	258	269
23.60 CFS	272	263	255	217	158	129	118	114
25.20 CFS	113	112	112	112	112	112	112	112
26.80 CFS	112	111	111	111	111	111	111	111
28.40 CFS	111	111	111	110	110	110	110	110
30.00 CFS	110	110	110	110	110	110	109	109
31.60 CFS	109	109	109	109	109	109	109	109
33.20 CFS	109	108	108	108	108	108	108	108
34.80 CFS	108	108	108	107	107	107	107	107
36.40 CFS	107	107	107	107	107	107	106	106
38.00 CFS	106	106	106	106	106	106	106	106
39.60 CFS	106	105	105	105	105	105	105	105
41.20 CFS	105	105	105	105	104	104	104	104
42.80 CFS	104	104	104	104	104	104	104	103
44.40 CFS	103	103	103	103	103	103	103	103
46.00 CFS	103	103	103	102	102	102	102	102
47.60 CFS	102	102	102	102	101	101	101	101
49.20 CFS	101	101	101	101	100	100	100	100
50.80 CFS	100	100	100	100	100	99	99	99
52.40 CFS	99.12	99.01	98.90	98.79	98.67	98.56	98.45	98.34
54.00 CFS	98.23	98.12	98.01	97.90	97.79	97.68	97.57	97.46
55.60 CFS	97.34	97.23	97.12	97.01	96.90	96.80	96.69	96.58
57.20 CFS	96.47	96.36	96.25	96.13	96.00	95.88	95.74	95.61

58.80 CFS	95.48	95.35	95.22	95.09	94.96	94.83	94.70	94.57
60.40 CFS	94.44	94.32	94.19	94.06	93.93	93.80	93.67	93.55
62.00 CFS	93.42	93.29	93.16	93.04	92.91	92.78	92.65	92.53
63.60 CFS	92.40	92.28	92.15	92.02	91.90	91.77	91.65	91.52
65.20 CFS	91.40	91.27	89.72	87.43	84.99	82.57	80.19	77.89
66.80 CFS	75.64	73.63	71.74	69.93	68.17	66.45	64.78	63.15
68.40 CFS	61.56	60.01	58.50	57.03	55.59	54.19	52.83	51.50
70.00 CFS	50.21	48.94	47.71	46.51	45.34	44.20	43.09	42.00
71.60 CFS	40.95	39.92	38.91	37.93	36.98	36.05	35.14	34.26
73.20 CFS	33.39	32.55	31.74	30.94	30.16	29.40	28.66	27.94
74.80 CFS	27.24	26.55	26.02	25.54	25.08	24.63	24.18	23.75
76.40 CFS	23.33	22.91	22.50	22.09	21.70	21.31	20.92	20.55
78.00 CFS	20.18	19.82	19.46	19.11	18.77	18.43	18.10	17.78
79.60 CFS	17.46	17.15	16.84	16.54	16.24	15.95	15.66	15.38
81.20 CFS	15.11	14.84	14.57	14.31	14.05	13.80	13.55	13.31
82.80 CFS	13.07	12.84	12.60	12.38	12.16	11.94	11.73	11.52
84.40 CFS	11.31	11.10	10.91	10.71	10.52	10.33	10.14	9.96
86.00 CFS	9.78	9.61	9.44	9.27	9.10	8.94	8.78	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 14578 CFS-HRS; 1204.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	327	112	108	104	100	96	83	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	405.0	(RUNOFF)
21.77	17.7	(RUNOFF)
23.76	15.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	86	38	27	21	18	15	7	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.66	375.1	1767.83
22.00	17.6	1764.24
23.99	15.1	1764.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 795 CFS-HRS; 65.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	82	38	28	21	18	15	6	1

DURATION(HRS)	16	
FLOW(CFS)	0	

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	1297.5	(RUNOFF)
21.61	40.5	(RUNOFF)
23.61	34.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.15 WATERSHED INCHES; 1926 CFS-HRS; 159.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	165	87	64	47	40	36	25	4

DURATION(HRS)	17	
FLOW(CFS)	0	

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	1471.5	1772.52
21.61	57.8	1765.06
23.61	49.5	1764.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 2723 CFS-HRS; 225.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	264	126	90	69	58	51	29	7

DURATION(HRS)	18	
FLOW(CFS)	0	

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	1471.5	1759.29
21.61	57.8	1754.63
23.61	49.5	1754.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 2723 CFS-HRS; 225.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	264	126	90	69	58	51	29	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	2151.5	(RUNOFF)
19.32	67.7	(RUNOFF)
21.55	58.5	(RUNOFF)
23.55	50.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.31 WATERSHED INCHES; 2867 CFS-HRS; 236.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	129	92	68	60	51	42	12

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	3497.3	1762.24
21.57	116.3	1755.07
23.57	99.7	1754.96

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
7.00 CFS	.03	.73	2.13	2.98	5.42	7.40	10.22	15.13
8.60 CFS	18.22	23.62	28.16	33.27	41.22	46.53	56.04	64.38
10.20 CFS	76	95	109	140	168	212	287	504
11.80 CFS	1969	3349	3373	2310	1686	1259	952	768
13.40 CFS	623	536	461	407	372	339	318	298
15.00 CFS	282	269	253	242	227	215	206	196
16.60 CFS	191	188	187	183	177	172	165	159
18.20 CFS	153	146	141	139	138	137	137	136

19.80 CFS	130	125	123	121	120	114	109	109
21.40 CFS	114	116	112	108	106	105	103	98
23.00 CFS	92.15	92.36	97.41	99.62	95.49	90.80	74.58	41.46
24.60 CFS	22.06	12.82	7.50	4.27	2.43	1.39	.78	.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.18 WATERSHED INCHES; 5610 CFS-HRS; 463.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	504	253	183	139	116	103	75	18

DURATION(HRS)	18	19
FLOW(CFS)	2	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
99 CFS-HRS; 463.6 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	3221.0	1759.49
21.81	115.2	1750.83
23.81	98.6	1750.65

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
7.20 CFS	.03	.53	1.66	2.60	4.60	6.59	9.17	13.40
8.80 CFS	16.83	21.65	26.28	31.25	38.34	44.16	52.60	60.97
10.40 CFS	72	88	103	129	157	196	260	433
12.00 CFS	1524	2821	3214	2572	1942	1457	1098	864
13.60 CFS	693	582	496	433	389	353	328	307
15.20 CFS	289	275	259	247	233	220	210	200
16.80 CFS	194	190	188	185	179	174	168	162
18.40 CFS	156	148	143	140	138	137	137	136
20.00 CFS	132	127	124	122	121	116	111	109
21.60 CFS	113	115	113	109	107	105	104	99
23.20 CFS	94.24	92.90	96.10	98.60	96.39	92.42	79.74	52.54
24.80 CFS	30.88	18.04	10.55	6.08	3.49	1.99	1.13	.65
26.40 CFS	.37							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.17 WATERSHED INCHES; 5580 CFS-HRS; 461.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	496	259	185	138	116	103	72	18
DURATION(HRS)	18	19						
FLOW(CFS)	2	0						

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	8191.5	1765.61
21.60	410.9	1752.70
23.60	368.5	1752.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
7.20 CFS	.03	.53	1.73	3.23	5.72	9.21	14.72	20.98
8.80 CFS	30	40	52	67	82	101	121	147
10.40 CFS	185	222	285	350	453	606	1158	4061
12.00 CFS	7309	8166	6609	4856	3560	2706	2144	1756
13.60 CFS	1508	1314	1173	1071	990	933	882	843
15.20 CFS	806	769	738	702	670	643	620	605
16.80 CFS	597	593	584	570	558	541	525	509
18.40 CFS	491	478	471	467	466	465	463	451
20.00 CFS	439	430	426	422	410	397	395	404
21.60 CFS	411	404	394	387	384	380	368	354
23.20 CFS	353	362	368	362	351	310	238	181
24.80 CFS	149	132	123	118	116	114	113	112
26.40 CFS	112	112	112	111	111	111	111	111
28.00 CFS	111	111	111	111	111	110	110	110
29.60 CFS	110	110	110	110	110	110	110	110
31.20 CFS	109	109	109	109	109	109	109	109
32.80 CFS	109	109	109	108	108	108	108	108
34.40 CFS	108	108	108	108	108	107	107	107
36.00 CFS	107	107	107	107	107	107	107	107
37.60 CFS	106	106	106	106	106	106	106	106
39.20 CFS	106	106	106	105	105	105	105	105
40.80 CFS	105	105	105	105	105	105	104	104
42.40 CFS	104	104	104	104	104	104	104	104
44.00 CFS	104	103	103	103	103	103	103	103
45.60 CFS	103	103	103	103	103	102	102	102
47.20 CFS	102	102	102	102	102	102	101	101
48.80 CFS	101	101	101	101	101	101	100	100
50.40 CFS	100	100	100	100	100	100	100	99
52.00 CFS	99.35	99.23	99.12	99.01	98.90	98.79	98.67	98.56
53.60 CFS	98.45	98.34	98.23	98.12	98.01	97.90	97.79	97.68
55.20 CFS	97.57	97.46	97.34	97.23	97.12	97.01	96.90	96.80
56.80 CFS	96.69	96.58	96.47	96.36	96.25	96.13	96.00	95.88
58.40 CFS	95.74	95.61	95.48	95.35	95.22	95.09	94.96	94.83
60.00 CFS	94.70	94.57	94.44	94.32	94.19	94.06	93.93	93.80

61.60 CFS	93.67	93.55	93.42	93.29	93.16	93.04	92.91	92.78
63.20 CFS	92.65	92.53	92.40	92.28	92.15	92.02	91.90	91.77
64.80 CFS	91.65	91.52	91.40	91.27	89.72	87.43	84.99	82.57
66.40 CFS	80.19	77.89	75.64	73.63	71.74	69.93	68.17	66.45
68.00 CFS	64.78	63.15	61.56	60.01	58.50	57.03	55.59	54.19
69.60 CFS	52.83	51.50	50.21	48.94	47.71	46.51	45.34	44.20
71.20 CFS	43.09	42.00	40.95	39.92	38.91	37.93	36.98	36.05
72.80 CFS	35.14	34.26	33.39	32.55	31.74	30.94	30.16	29.40
74.40 CFS	28.66	27.94	27.24	26.55	26.02	25.54	25.08	24.63
76.00 CFS	24.18	23.75	23.33	22.91	22.50	22.09	21.70	21.31
77.60 CFS	20.92	20.55	20.18	19.82	19.46	19.11	18.77	18.43
79.20 CFS	18.10	17.78	17.46	17.15	16.84	16.54	16.24	15.95
80.80 CFS	15.66	15.38	15.11	14.84	14.57	14.31	14.05	13.80
82.40 CFS	13.55	13.31	13.07	12.84	12.60	12.38	12.16	11.94
84.00 CFS	11.73	11.52	11.31	11.10	10.91	10.71	10.52	10.33
85.60 CFS	10.14	9.96	9.78	9.61				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.87 WATERSHED INCHES; 20209 CFS-HRS; 1670.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	465	113	108	104	101	96	87	34
DURATION(HRS)	72	78						
FLOW(CFS)	16	10 TRUNCATED						

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 798.63 AC-FT (.07 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1707.25. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.85	146.4	1710.15

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 135 CFS
RESVOR (92. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
7.80 CFS	.00	.01	.02	.03	.04	.07	.10	.15
9.40 CFS	.21	.28	.37	.48	.61	.77	.97	1.22
11.00 CFS	1.52	1.92	2.43	3.29	5.85	10.30	35.54	99.86
12.60 CFS	124	127	129	131	132	133	134	135
14.20 CFS	135	136	137	137	138	138	139	139
15.80 CFS	139	139	140	140	140	140	141	141
17.40 CFS	141	141	142	142	142	142	142	143
19.00 CFS	143	143	143	143	143	144	144	144
20.60 CFS	144	144	144	145	145	145	145	145

22.20 CFS	145	145	145	146	146	146	146	146
23.80 CFS	146	146	146	146	146	146	146	146
25.40 CFS	146	146	146	146	146	146	146	146
27.00 CFS	146	146	146	146	146	146	146	146
28.60 CFS	146	146	146	146	146	146	146	146
30.20 CFS	146	146	146	146	146	146	146	146
31.80 CFS	146	146	146	146	146	146	146	146
33.40 CFS	146	146	146	146	146	146	146	146
35.00 CFS	146	146	146	145	145	145	145	145
36.60 CFS	145	145	145	145	145	145	145	145
38.20 CFS	145	145	145	145	145	145	145	145
39.80 CFS	145	145	145	145	145	145	145	145
41.40 CFS	145	145	145	145	145	145	145	145
43.00 CFS	145	145	145	145	145	145	145	145
44.60 CFS	145	145	144	144	144	144	144	144
46.20 CFS	144	144	144	144	144	144	144	144
47.80 CFS	144	144	144	144	144	144	144	144
49.40 CFS	144	144	144	144	144	144	144	144
51.00 CFS	144	144	144	144	144	144	144	144
52.60 CFS	144	144	144	144	144	143	143	143
54.20 CFS	143	143	143	143	143	143	143	143
55.80 CFS	143	143	143	143	143	143	143	143
57.40 CFS	143	143	143	143	143	143	143	143
59.00 CFS	143	143	143	143	143	143	143	143
60.60 CFS	143	143	143	143	143	142	142	142
62.20 CFS	142	142	142	142	142	142	142	142
63.80 CFS	142	142	142	142	142	142	142	142
65.40 CFS	142	142	142	142	142	142	142	142
67.00 CFS	142	142	142	142	142	142	141	141
68.60 CFS	141	141	141	141	141	141	141	141
70.20 CFS	141	141	141	141	141	141	141	141
71.80 CFS	141	141	140	140	140	140	140	140
73.40 CFS	140	140	140	140	140	140	140	140
75.00 CFS	140	140	140	139	139	139	139	139
76.60 CFS	139	139	139	139	139	139	139	139
78.20 CFS	139	139	139	138	138	138	138	138
79.80 CFS	138	138	138	138	138	138	138	137
81.40 CFS	137	137	137	137	137	137	137	137
83.00 CFS	137	137	137	136	136	136	136	136
84.60 CFS	136	136	136	136	136	136	135	135
86.20 CFS	135							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.97 WATERSHED INCHES; 10525 CFS-HRS; 869.8 ACRE-FEET.

DURATION(HRS)	6	12	18	24	30	36	42	48
FLOW(CFS)	146	146	145	144	144	143	143	142
DURATION(HRS)	54	60	66	71				
FLOW(CFS)	141	139	138	135 TRUNCATED				

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 7.06 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 4 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.27	907.9	(RUNOFF)
19.37	108.9	(RUNOFF)
21.37	96.9	(RUNOFF)
23.43	87.1	(RUNOFF)
24.14	85.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5697 CFS-HRS; 470.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	798	526	322	205	144	109	93	85
DURATION(HRS)	18	20	22					
FLOW(CFS)	54	7	0					

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.92	589.5	(RUNOFF)
17.18	93.2	(RUNOFF)
18.00	85.5	(RUNOFF)
19.22	72.3	(RUNOFF)
21.14	65.6	(RUNOFF)
22.09	56.6	(RUNOFF)
23.19	61.1	(RUNOFF)
24.10	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3590 CFS-HRS; 296.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	513	328	198	126	90	69	60	55

DURATION(HRS)	18	20	20
FLOW(CFS)	38	1	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.12	1492.3	(NULL)
17.12	238.5	(NULL)
19.22	180.6	(NULL)
21.21	161.4	(NULL)
23.24	146.2	(NULL)
24.11	145.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1296	868	531	334	238	178	151	143

DURATION(HRS)	18	20	22
FLOW(CFS)	91	8	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.98	554.5	(RUNOFF)
17.14	92.9	(RUNOFF)
17.99	85.3	(RUNOFF)
19.18	72.5	(RUNOFF)
21.10	65.9	(RUNOFF)
22.06	56.7	(RUNOFF)
23.15	62.1	(RUNOFF)
24.06	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 3360 CFS-HRS; 277.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	311	182	119	85	65	59	54

DURATION(HRS)	18	20
FLOW(CFS)	18	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.22	2032.0	(NULL)
19.21	249.8	(NULL)
21.26	221.7	(NULL)
23.28	200.3	(NULL)
24.13	199.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1784	1153	712	450	326	248	208	195

DURATION(HRS)	18	20	22
FLOW(CFS)	105	9	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.05	920.4	(RUNOFF)
17.25	143.0	(RUNOFF)
19.33	109.2	(RUNOFF)
21.24	98.9	(RUNOFF)
22.11	88.1	(RUNOFF)
23.29	89.9	(RUNOFF)
24.14	87.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5666 CFS-HRS; 468.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	801	512	311	204	140	108	92	86

DURATION(HRS)	18	20	21
FLOW(CFS)	55	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.34	2929.7	(NULL)
19.35	358.6	(NULL)
21.40	317.3	(NULL)
23.43	286.4	(NULL)
24.21	280.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.00 CFS	.00	.60	2.70	6.81	14.81	28.09	48.26	81.11
6.60 CFS	128	188	263	351	456	582	725	891
8.20 CFS	1078	1284	1515	1758	2018	2277	2502	2673
9.80 CFS	2792	2872	2920	2928	2897	2840	2776	2708
11.40 CFS	2630	2531	2419	2291	2153	2012	1871	1738
13.00 CFS	1616	1506	1405	1305	1214	1133	1063	1000
14.60 CFS	939	882	829	780	737	700	667	634
16.20 CFS	600	564	528	497	480	476	473	464
17.80 CFS	452	445	441	429	402	372	357	357
19.40 CFS	358	353	341	326	310	297	293	295
21.00 CFS	303	312	317	312	302	296	293	288
22.60 CFS	276	264	265	278	286	281	271	272
24.20 CFS	280	274	237	183	133	92	62	40
25.80 CFS	25.48	16.32	10.46	6.73	4.32	2.77	1.78	1.14
27.40 CFS	.73	.46						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.61 WATERSHED INCHES; 18313 CFS-HRS; 1513.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2531	1738	1063	667	464	357	302	278

DURATION(HRS)	18	20	22	22
FLOW(CFS)	183	16	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1490.3	1801.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
7.40 CFS	.00	.01	.01	.01	.01	.02	8.52	42.32
9.00 CFS	91	94	97	100	103	105	107	110
10.60 CFS	112	188	423	632	815	973	1108	1220
12.20 CFS	1310	1380	1430	1464	1483	1490	1487	1475
13.80 CFS	1456	1430	1401	1367	1332	1294	1254	1214
15.40 CFS	1173	1132	1092	1052	1013	974	936	898

17.00 CFS	861	827	795	766	738	712	688	665
18.60 CFS	643	620	597	575	556	538	521	504
20.20 CFS	487	471	455	440	428	417	408	399
21.80 CFS	391	383	375	367	360	351	344	337
23.40 CFS	332	328	323	319	315	311	306	298
25.00 CFS	285	270	252	234	216	199	182	166
26.60 CFS	152	139	126	115	114	114	114	114
28.20 CFS	113	113	113	113	113	113	113	113
29.80 CFS	113	113	112	112	112	112	112	112
31.40 CFS	112	112	112	112	111	111	111	111
33.00 CFS	111	111	111	111	111	111	111	110
34.60 CFS	110	110	110	110	110	110	110	110
36.20 CFS	110	110	109	109	109	109	109	109
37.80 CFS	109	109	109	109	108	108	108	108
39.40 CFS	108	108	108	108	108	108	108	107
41.00 CFS	107	107	107	107	107	107	107	107
42.60 CFS	107	107	106	106	106	106	106	106
44.20 CFS	106	106	106	106	106	105	105	105
45.80 CFS	105	105	105	105	105	105	105	105
47.40 CFS	104	104	104	104	104	104	104	104
49.00 CFS	104	104	104	103	103	103	103	103
50.60 CFS	103	103	103	103	103	103	102	102
52.20 CFS	102	102	102	102	102	102	102	101
53.80 CFS	101	101	101	101	101	101	101	101
55.40 CFS	100	100	100	100	100	100	100	100
57.00 CFS	99.53	99.42	99.31	99.20	99.09	98.97	98.86	98.75
58.60 CFS	98.64	98.53	98.42	98.30	98.19	98.08	97.97	97.86
60.20 CFS	97.75	97.64	97.53	97.42	97.31	97.20	97.09	96.98
61.80 CFS	96.87	96.76	96.65	96.54	96.43	96.32	96.22	96.10
63.40 CFS	95.96	95.83	95.70	95.57	95.44	95.31	95.18	95.05
65.00 CFS	94.92	94.79	94.66	94.53	94.40	94.28	94.15	94.02
66.60 CFS	93.89	93.76	93.63	93.51	93.38	93.25	93.12	93.00
68.20 CFS	92.87	92.74	92.62	92.49	92.36	92.24	92.11	91.98
69.80 CFS	91.86	91.73	91.61	91.48	91.36	91.23	89.28	86.71
71.40 CFS	84.21	81.78	79.43	77.14	74.92	72.97	71.13	69.34
73.00 CFS	67.60	65.90	64.24	62.62	61.05	59.51	58.01	56.55
74.60 CFS	55.13	53.74	52.39	51.07	49.79	48.53	47.31	46.12
76.20 CFS	44.96	43.83	42.73	41.65	40.60	39.58	38.59	37.62
77.80 CFS	36.67	35.75	34.85	33.97	33.12	32.28	31.47	30.68
79.40 CFS	29.91	29.15	28.42	27.71	27.01	26.33	25.85	25.38
81.00 CFS	24.93	24.48	24.04	23.61	23.19	22.77	22.36	21.96
82.60 CFS	21.57	21.18	20.80	20.43	20.06	19.70	19.35	19.00
84.20 CFS	18.66	18.33	18.00					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.24 WATERSHED INCHES; 16834 CFS-HRS; 1391.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	575	139	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	25	18 TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.81 WATERSHED INCHES; 7178 CFS-HRS; 593.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	26	18 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	1280.3	(RUNOFF)
17.11	201.4	(RUNOFF)
17.98	184.7	(RUNOFF)
19.15	157.1	(RUNOFF)
21.07	142.2	(RUNOFF)
22.04	122.6	(RUNOFF)
23.12	135.1	(RUNOFF)
24.03	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 7779 CFS-HRS; 642.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1087	722	434	275	190	145	131	115

DURATION(HRS)	18	20	20
FLOW(CFS)	71	2	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 16.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	(NULL)
17.11	316.4	(NULL)
17.98	299.7	(NULL)
19.15	272.1	(NULL)
21.07	257.2	(NULL)
22.04	237.6	(NULL)
23.12	250.1	(NULL)
24.03	247.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	3.06
17.11	316.4	1.08
17.98	299.7	1.02
19.15	272.1	.93
21.07	257.2	.87
22.04	237.6	.81
23.12	250.1	.85
24.03	247.1	.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.26	1067.2	(RUNOFF)
17.05	163.9	(RUNOFF)
17.95	150.0	(RUNOFF)
19.08	129.0	(RUNOFF)
21.01	116.0	(RUNOFF)
21.99	99.5	(RUNOFF)
23.05	111.6	(RUNOFF)
23.99	111.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 6412 CFS-HRS; 529.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	892	579	359	224	154	128	105	94

DURATION(HRS)	18	20	20
FLOW(CFS)	74	2	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.58	2431.4	(NULL)
17.08	479.7	(NULL)
17.97	449.6	(NULL)
19.11	399.6	(NULL)
21.04	372.9	(NULL)
22.01	337.0	(NULL)
23.08	360.7	(NULL)
24.01	357.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 21361 CFS-HRS; 1765.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.49	562.3	(RUNOFF)
17.04	91.0	(RUNOFF)
17.95	83.5	(RUNOFF)
19.07	71.9	(RUNOFF)
21.00	64.6	(RUNOFF)
21.99	55.4	(RUNOFF)
23.04	62.2	(RUNOFF)
23.98	62.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	314	187	120	85	65	58	52

DURATION(HRS)	18	20
FLOW(CFS)	32	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	2993.5	(NULL)
17.07	570.6	(NULL)
17.96	533.1	(NULL)
19.10	470.7	(NULL)
21.03	437.4	(NULL)
22.01	392.4	(NULL)
23.07	422.8	(NULL)
24.00	419.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.24 WATERSHED INCHES; 24770 CFS-HRS; 2047.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	711	371	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	3.05

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
10.60 CFS	0	73	308	517	700	858	993	1105
12.20 CFS	1195	1265	1315	1349	1368	1375	1372	1360
13.80 CFS	1341	1315	1286	1252	1217	1179	1139	1099
15.40 CFS	1058	1017	977	937	898	859	821	783
17.00 CFS	746	712	680	651	623	597	573	550
18.60 CFS	528	505	482	460	441	423	406	389
20.20 CFS	372	356	340	325	313	302	293	284
21.80 CFS	276	268	260	252	245	236	229	222
23.40 CFS	217	213	208	204	200	196	191	183
25.00 CFS	170	155	137	119	101	84	67	51
26.60 CFS	36.92	23.59	11.34	.12				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	435.3	(RUNOFF)
16.93	76.1	(RUNOFF)
17.91	70.3	(RUNOFF)
18.94	61.1	(RUNOFF)
20.91	54.4	(RUNOFF)
21.92	46.9	(RUNOFF)
22.93	54.6	(RUNOFF)
23.91	57.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 2600 CFS-HRS; 214.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	373	227	141	93	66	53	46	39

DURATION(HRS)	18	19
FLOW(CFS)	19	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.7%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.61	3421.4	(NULL)
17.04	644.6	(NULL)
17.94	602.9	(NULL)
19.07	530.0	(NULL)
21.00	490.6	(NULL)
21.98	438.5	(NULL)
23.04	474.0	(NULL)
23.98	474.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
4.60 CFS	0	2	3	14	36	54	98	137
6.20 CFS	211	320	396	542	652	815	1033	1186
7.80 CFS	1484	1705	1984	2332	2556	2948	3247	3389
9.40 CFS	3416	3421	3417	3408	3311	3148	3058	2975
11.00 CFS	2921	2795	2611	2490	2272	2114	1963	1792
12.60 CFS	1695	1581	1503	1407	1287	1221	1157	1115
14.20 CFS	1059	986	943	886	847	819	791	771
15.80 CFS	721	684	643	592	575	612	644	629
17.40 CFS	588	571	586	600	551	462	427	480
19.00 CFS	527	518	478	454	424	404	410	430
20.60 CFS	445	472	491	470	427	409	424	438
22.20 CFS	416	372	361	422	473	450	388	367
23.80 CFS	424	473	394	239	159	131	121	117
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	114	114	114	114	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	113	112	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106

44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103
51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97
65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20	19.83	19.48	19.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.32 WATERSHED INCHES; 27368 CFS-HRS; 2261.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	815	410	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	318.8	(RUNOFF)
17.24	50.8	(RUNOFF)
19.32	38.9	(RUNOFF)
21.23	35.2	(RUNOFF)
22.12	31.4	(RUNOFF)
23.29	32.1	(RUNOFF)
24.15	31.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	280	179	110	70	49	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	19	1	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.38	317.3	1767.47
17.45	50.6	1764.95
19.57	38.6	1764.77
21.50	34.8	1764.71
23.56	31.5	1764.66
24.36	30.8	1764.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	274	182	109	71	50	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	16	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.48	734.9	(RUNOFF)
17.12	112.1	(RUNOFF)
17.98	102.8	(RUNOFF)
19.16	87.3	(RUNOFF)
21.07	79.0	(RUNOFF)
22.04	68.0	(RUNOFF)
23.13	74.8	(RUNOFF)
24.04	73.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 4457 CFS-HRS; 368.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	628	413	243	155	106	85	73	65

DURATION(HRS)	18	20	21
FLOW(CFS)	53	2	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.96	1036.5	1770.84
17.11	162.3	1766.28
17.96	150.9	1766.17
19.15	124.4	1765.91
21.12	112.0	1765.79
22.00	99.9	1765.67
23.15	103.3	1765.70
24.04	102.0	1765.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 6413 CFS-HRS; 530.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	906	594	360	226	157	122	105	98

DURATION(HRS)	18	20	22
FLOW(CFS)	69	6	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.96	1036.5	1758.38
17.11	162.3	1755.38
17.96	150.9	1755.30
19.15	124.4	1755.12
21.12	112.0	1755.04
22.00	99.9	1754.96
23.15	103.3	1754.98
24.04	102.0	1754.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 6413 CFS-HRS; 530.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	906	594	360	226	157	122	105	98

DURATION(HRS)	18	20	22
FLOW(CFS)	69	6	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.22	1075.7	(RUNOFF)
17.04	160.0	(RUNOFF)
17.95	146.7	(RUNOFF)
19.07	126.0	(RUNOFF)
21.00	113.1	(RUNOFF)
21.99	97.0	(RUNOFF)
23.04	108.9	(RUNOFF)
23.98	108.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.19 WATERSHED INCHES; 6435 CFS-HRS; 531.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	879	601	349	231	157	125	102	92

DURATION(HRS)	18	20	21
FLOW(CFS)	73	3	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	2079.6	1760.34
17.06	321.8	1756.19
17.95	297.6	1756.08
19.09	249.8	1755.88
21.04	224.0	1755.76
21.99	196.9	1755.62
23.08	210.6	1755.71
24.00	210.4	1755.70

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS	.05	.99	8.61	15.00	28.29	53.45	69.65	99.81
4.40 CFS								
6.00 CFS	126	168	241	291	375	449	537	673
7.60 CFS	769	933	1079	1226	1436	1578	1787	1966
9.20 CFS	2044	2065	2079	2076	2071	2028	1932	1873
10.80 CFS	1817	1773	1706	1595	1520	1399	1294	1206
12.40 CFS	1096	1027	953	895	838	762	715	672
14.00 CFS	639	606	560	530	496	468	448	428
15.60 CFS	414	387	363	340	309	293	306	321
17.20 CFS	317	296	285	290	297	278	229	205
18.80 CFS	224	247	246	227	214	198	185	184
20.40 CFS	193	199	212	224	219	197	185	190
22.00 CFS	197	189	165	156	181	208	205	174
23.60 CFS	160	184	210	183	102	54	32	19

25.20 CFS	10.67	6.07	3.43	1.94	1.11	.63	.35

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 12848 CFS-HRS; 1061.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1787	1206	715	449	309	246	208	185

DURATION(HRS)	18	20	22
FLOW(CFS)	156	15	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
115 CFS-HRS; 1061.8 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.09	2072.8	1757.54
17.31	317.7	1752.22
18.16	294.9	1752.11
19.36	243.8	1751.79
21.31	219.7	1751.63
22.20	194.7	1751.45
23.35	202.7	1751.51
24.23	199.5	1751.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
4.60 CFS	.04	.65	5.81	11.77	22.48	42.56	60.13	85.85
6.20 CFS	112	149	209	262	335	409	492	609
7.80 CFS	713	856	1000	1147	1334	1492	1683	1866
9.40 CFS	1981	2036	2063	2072	2071	2043	1971	1907
11.00 CFS	1849	1799	1739	1646	1564	1457	1351	1257
12.60 CFS	1152	1071	995	930	871	800	745	697
14.20 CFS	659	624	583	549	515	484	461	440
15.80 CFS	423	400	376	353	324	304	305	315
17.40 CFS	316	303	291	290	295	284	248	220
19.00 CFS	223	239	243	232	220	206	192	187
20.60 CFS	191	196	206	218	218	204	192	191
22.20 CFS	195	191	174	162	175	197	202	184
23.80 CFS	168	178	199	189	132	82	49	29
25.40 CFS	17.27	10.00	5.74	3.28	1.87	1.07	.60	.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 12846 CFS-HRS; 1061.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1799	1152	713	461	315	243	206	191

DURATION(HRS)	18	20	22
FLOW(CFS)	149	17	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	5483.0	1762.39
17.07	951.6	1754.82
17.95	892.9	1754.62
19.13	758.4	1754.17
21.05	698.3	1753.96
21.99	629.2	1753.67
23.10	655.0	1753.78
24.00	651.7	1753.77

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
4.60 CFS	0	2	9	25	59	96	158	223
6.20 CFS	323	469	604	804	987	1224	1525	1795
7.80 CFS	2197	2561	2984	3478	3890	4440	4930	5255
9.40 CFS	5397	5457	5480	5480	5382	5191	5029	4883
11.00 CFS	4770	4594	4350	4135	3836	3571	3315	3049
12.60 CFS	2848	2652	2498	2337	2157	2021	1901	1812
14.20 CFS	1718	1611	1526	1435	1362	1303	1252	1210
15.80 CFS	1145	1084	1018	945	899	916	949	944
17.40 CFS	904	873	877	891	845	746	675	700
19.00 CFS	749	756	722	687	645	610	603	617
20.60 CFS	635	668	697	688	645	613	616	629
22.20 CFS	611	563	535	584	647	647	590	550
23.80 CFS	592	652	593	428	292	213	170	146
25.40 CFS	133	125	121	118	117	116	116	115
27.00 CFS	115	115	115	114	114	114	114	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	113	112	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103

51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97
65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 40211 CFS-HRS; 3323.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1252	604	113	109	105	102	97	92

DURATION(HRS)	72	78
FLOW(CFS)	40	20 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 1200.66 AC-FT (.11 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1710.78. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.54	1551.0	1715.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
4.80 CFS	.00	.01	.02	.06	.14	.27	.45	.72
6.40 CFS	1.11	1.63	2.32	3.19	4.27	5.61	7.23	9.18
8.00 CFS	10	11	21	53	89	122	126	130
9.60 CFS	133	137	140	143	146	148	151	153
11.20 CFS	155	225	341	476	621	748	880	1031
12.80 CFS	1157	1260	1344	1410	1460	1496	1523	1540
14.40 CFS	1549	1551	1546	1535	1520	1502	1483	1460
16.00 CFS	1435	1407	1376	1343	1311	1284	1259	1235

17.60 CFS	1209	1185	1163	1142	1116	1087	1058	1033
19.20 CFS	1013	993	972	949	926	903	881	863
20.80 CFS	847	835	825	816	807	799	791	783
22.40 CFS	774	764	755	749	744	739	731	724
24.00 CFS	719	715	706	690	671	649	627	605
25.60 CFS	584	563	543	524	506	488	472	456
27.20 CFS	440	426	412	398	387	379	372	364
28.80 CFS	357	350	343	337	330	324	318	312
30.40 CFS	306	301	295	290	285	280	275	270
32.00 CFS	266	261	257	253	249	245	241	237
33.60 CFS	234	230	227	223	220	217	214	211
35.20 CFS	208	205	203	200	197	195	192	190
36.80 CFS	188	185	183	181	179	177	175	173
38.40 CFS	171	169	168	166	164	163	161	160
40.00 CFS	158	157	156	156	156	156	156	156
41.60 CFS	156	156	156	155	155	155	155	155
43.20 CFS	155	155	155	155	155	155	155	155
44.80 CFS	155	155	155	155	155	155	155	155
46.40 CFS	155	155	155	155	155	155	155	155
48.00 CFS	155	155	155	155	155	154	154	154
49.60 CFS	154	154	154	154	154	154	154	154
51.20 CFS	154	154	154	154	154	154	154	154
52.80 CFS	154	154	154	154	154	154	154	154
54.40 CFS	154	154	154	154	154	154	154	154
56.00 CFS	154	154	154	154	154	154	154	154
57.60 CFS	154	154	154	153	153	153	153	153
59.20 CFS	153	153	153	153	153	153	153	153
60.80 CFS	153	153	153	153	153	153	153	153
62.40 CFS	153	153	153	153	153	153	153	153
64.00 CFS	153	153	153	153	153	153	153	153
65.60 CFS	153	153	152	152	152	152	152	152
67.20 CFS	152	152	152	152	152	152	152	152
68.80 CFS	152	152	152	152	152	152	152	152
70.40 CFS	152	152	152	152	152	152	152	152
72.00 CFS	152	152	152	152	152	152	151	151
73.60 CFS	151	151	151	151	151	151	151	151
75.20 CFS	151	151	151	151	151	151	151	151
76.80 CFS	151	151	151	151	150	150	150	150
78.40 CFS	150	150	150	150	150	150	150	150
80.00 CFS	150	150	150	150	150	150	149	149
81.60 CFS	149	149	149	149	149	149	149	149
83.20 CFS	149	149	149					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.37 WATERSHED INCHES; 25678 CFS-HRS; 2122.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	880	398	205	155	154	153	152	151

DURATION(HRS)	72	73
FLOW(CFS)	149	149 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 15.80 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 5 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.97	2474.7	(RUNOFF)
19.38	260.1	(RUNOFF)
21.37	231.2	(RUNOFF)
23.43	207.1	(RUNOFF)
24.14	201.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15772 CFS-HRS; 1303.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2130	1491	895	572	384	310	236	213

DURATION(HRS)	18	20	22	24
FLOW(CFS)	199	74	8	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1645.4	(RUNOFF)
17.18	225.3	(RUNOFF)
18.00	206.3	(RUNOFF)
19.22	173.6	(RUNOFF)
21.14	157.2	(RUNOFF)
22.10	136.8	(RUNOFF)
23.18	146.6	(RUNOFF)
24.10	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 10062 CFS-HRS; 831.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1359	945	561	359	231	202	152	137

DURATION(HRS)	18	20	22
FLOW(CFS)	120	35	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	4079.1	(NULL)
17.12	574.5	(NULL)
19.22	432.3	(NULL)
21.21	385.5	(NULL)
23.24	349.2	(NULL)
24.11	344.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3522	2377	1482	944	625	514	386	350

DURATION(HRS)	18	20	22	24
FLOW(CFS)	319	103	12	0

*** WARNING - XSECTION 102, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.34	1635.2	(RUNOFF)
17.14	231.2	(RUNOFF)
17.99	211.6	(RUNOFF)
19.18	179.4	(RUNOFF)
21.10	162.5	(RUNOFF)
22.06	139.7	(RUNOFF)
23.15	152.4	(RUNOFF)
24.06	147.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.39 WATERSHED INCHES; 9916 CFS-HRS; 819.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1353	926	554	358	230	196	152	138

DURATION(HRS)	18	20	21
FLOW(CFS)	123	17	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	5653.9	(NULL)
19.21	603.5	(NULL)
21.25	534.8	(NULL)
23.28	481.4	(NULL)
24.13	478.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4815	3359	2061	1304	855	698	530	491

DURATION(HRS)	18	20	22	24
FLOW(CFS)	445	142	13	0

*** WARNING - XSECTION 103, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	2515.5	(RUNOFF)
17.24	343.0	(RUNOFF)
19.34	261.4	(RUNOFF)
21.23	236.0	(RUNOFF)
22.10	209.5	(RUNOFF)
23.30	213.7	(RUNOFF)
24.15	208.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15688 CFS-HRS; 1296.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2109	1485	892	573	376	315	236	209

DURATION(HRS)	18	20	22	23
FLOW(CFS)	196	71	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.07	8106.6	(NULL)
19.35	864.2	(NULL)
21.39	762.6	(NULL)
23.42	687.0	(NULL)
24.21	671.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
3.40 CFS	0	1	4	12	25	47	79	123
5.00 CFS	184	260	350	456	570	693	829	993
6.60 CFS	1206	1451	1728	2030	2364	2750	3171	3642
8.20 CFS	4149	4688	5271	5868	6481	7073	7549	7863
9.80 CFS	8034	8102	8089	7988	7793	7552	7302	7058
11.40 CFS	6797	6496	6168	5808	5431	5053	4679	4331
13.00 CFS	4015	3732	3471	3220	2988	2784	2607	2449
14.60 CFS	2297	2155	2022	1901	1795	1704	1622	1540
16.20 CFS	1455	1369	1280	1205	1163	1152	1145	1122
17.80 CFS	1093	1076	1065	1036	971	898	860	859
19.40 CFS	864	850	822	784	745	715	704	709
21.00 CFS	727	752	763	750	726	710	703	691
22.60 CFS	662	634	637	666	687	674	650	652
24.20 CFS	671	656	566	437	316	219	146	95
25.80 CFS	60.39	38.60	24.85	16.02	10.26	6.54	4.22	2.72
27.40 CFS	1.74	1.09	.65	.33				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.96 WATERSHED INCHES; 51438 CFS-HRS; 4250.8 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	5868	2988	1540	993	726	650	79	1

DURATION(HRS)	24
FLOW(CFS)	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7422.8	1803.90

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.60 CFS	.00	.01	.01	.01	.01	.02	2.65	33.05
7.20 CFS	80	94	97	100	103	107	110	187

8.80 CFS	670	1165	1709	3269	4505	5464	6189	6720
10.40 CFS	7087	7311	7412	7416	7350	7233	7069	6864
12.00 CFS	6620	6341	6035	5709	5374	5039	4715	4404
13.60 CFS	4110	3829	3567	3324	3102	2899	2711	2538
15.20 CFS	2377	2230	2096	1975	1865	1763	1665	1624
16.80 CFS	1590	1553	1518	1485	1453	1422	1392	1363
18.40 CFS	1335	1305	1272	1237	1203	1172	1144	1116
20.00 CFS	1088	1059	1029	1001	974	951	932	916
21.60 CFS	902	887	872	857	843	828	812	796
23.20 CFS	783	773	765	756	746	739	732	721
24.80 CFS	701	672	636	595	552	510	468	429
26.40 CFS	392	358	327	298	272	247	225	205
28.00 CFS	187	170	155	141	128	117	114	114
29.60 CFS	114	114	113	113	113	113	113	113
31.20 CFS	113	113	113	113	112	112	112	112
32.80 CFS	112	112	112	112	112	112	112	111
34.40 CFS	111	111	111	111	111	111	111	111
36.00 CFS	111	110	110	110	110	110	110	110
37.60 CFS	110	110	110	110	109	109	109	109
39.20 CFS	109	109	109	109	109	109	108	108
40.80 CFS	108	108	108	108	108	108	108	108
42.40 CFS	108	107	107	107	107	107	107	107
44.00 CFS	107	107	107	107	106	106	106	106
45.60 CFS	106	106	106	106	106	106	106	105
47.20 CFS	105	105	105	105	105	105	105	105
48.80 CFS	105	105	104	104	104	104	104	104
50.40 CFS	104	104	104	104	104	103	103	103
52.00 CFS	103	103	103	103	103	103	103	103
53.60 CFS	102	102	102	102	102	102	102	102
55.20 CFS	102	101	101	101	101	101	101	101
56.80 CFS	101	101	100	100	100	100	100	100
58.40 CFS	99.77	99.66	99.55	99.44	99.32	99.21	99.10	98.99
60.00 CFS	98.87	98.76	98.65	98.54	98.43	98.32	98.21	98.10
61.60 CFS	97.98	97.87	97.76	97.65	97.54	97.43	97.32	97.21
63.20 CFS	97.10	96.99	96.88	96.77	96.66	96.56	96.45	96.34
64.80 CFS	96.23	96.11	95.98	95.85	95.72	95.59	95.46	95.33
66.40 CFS	95.20	95.07	94.94	94.81	94.68	94.55	94.42	94.29
68.00 CFS	94.16	94.03	93.90	93.78	93.65	93.52	93.39	93.26
69.60 CFS	93.14	93.01	92.88	92.76	92.63	92.50	92.38	92.25
71.20 CFS	92.13	92.00	91.87	91.75	91.62	91.50	91.37	91.25
72.80 CFS	89.59	87.01	84.50	82.06	79.70	77.40	75.17	73.18
74.40 CFS	71.34	69.55	67.80	66.09	64.43	62.81	61.23	59.69
76.00 CFS	58.19	56.72	55.29	53.90	52.55	51.22	49.94	48.68
77.60 CFS	47.45	46.26	45.10	43.96	42.86	41.78	40.73	39.70
79.20 CFS	38.70	37.73	36.78	35.85	34.95	34.07	33.21	32.38
80.80 CFS	31.56	30.77	30.00	29.24	28.51	27.79	27.09	26.41
82.40 CFS	25.90	25.44						


```
RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
              12.57 WATERSHED INCHES;   49889 CFS-HRS;    4122.8 ACRE-FEET.

DURATION(HRS)   8     16     24     32     40     48     56     64
FLOW(CFS)    1518    672    112    108    105    101     97     92

DURATION(HRS)  72     76
FLOW(CFS)      39     25 TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
              2ND TABLE VALUE.  THIS REACH ROUTING MAY BE INCORRECT,
              UNLESS NEW RATING TABLE VALUES ARE INSERTED.                ***


OPERATION REACH     XSECTION 104

PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
   10.00                          115.0 *                          .51
                                        * FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               1.89 WATERSHED INCHES;    7508 CFS-HRS;     620.5 ACRE-FEET.

DURATION(HRS)   8     16     24     32     40     48     56     64
FLOW(CFS)     115    115    112    109    105    101     97     92

DURATION(HRS)  72     75
FLOW(CFS)      39     26 TRUNCATED


OPERATION RUNOFF    XSECTION   4

PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
    9.24                          3571.8                        (RUNOFF)
   17.11                           482.9                        (RUNOFF)
   17.98                           442.0                        (RUNOFF)
   19.15                           376.0                        (RUNOFF)
   21.07                           339.4                        (RUNOFF)
   22.04                           291.9                        (RUNOFF)
   23.12                           320.2                        (RUNOFF)
   24.03                           312.6                        (RUNOFF)

RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
              13.14 WATERSHED INCHES;   21539 CFS-HRS;    1780.0 ACRE-FEET.
```

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2928	1946	1248	783	503	424	319	294

DURATION(HRS)	18	20	22	22
FLOW(CFS)	263	76	1	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 23.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3686.8	(NULL)
17.11	597.9	(NULL)
17.98	557.0	(NULL)
19.15	491.0	(NULL)
21.07	454.4	(NULL)
22.04	406.9	(NULL)
23.12	435.2	(NULL)
24.03	427.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.18 WATERSHED INCHES; 29047 CFS-HRS; 2400.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	5.62
17.11	597.9	1.78
17.98	557.0	1.71
19.15	491.0	1.59
21.07	454.4	1.52
22.04	406.9	1.38
23.12	435.2	1.48
24.03	427.6	1.45

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 28888 CFS-HRS; 2387.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	2891.7	(RUNOFF)
17.05	387.9	(RUNOFF)
17.95	354.7	(RUNOFF)
19.07	304.5	(RUNOFF)
21.01	273.4	(RUNOFF)
21.99	234.1	(RUNOFF)
23.05	262.5	(RUNOFF)
23.99	260.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 17332 CFS-HRS; 1432.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2298	1621	987	636	413	335	261	229

DURATION(HRS)	18	20	22	22
FLOW(CFS)	210	83	1	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	6345.7	(NULL)
17.08	984.1	(NULL)
17.97	911.6	(NULL)
19.11	791.9	(NULL)
21.03	727.2	(NULL)
22.01	640.8	(NULL)
23.08	695.5	(NULL)
24.01	687.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.70 WATERSHED INCHES; 46217 CFS-HRS; 3819.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.14	1601.2	(RUNOFF)
17.04	219.9	(RUNOFF)
17.95	201.2	(RUNOFF)
19.07	172.6	(RUNOFF)
21.00	154.8	(RUNOFF)
21.99	132.8	(RUNOFF)
23.04	149.1	(RUNOFF)
23.98	149.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 9558 CFS-HRS; 789.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1288	901	539	342	220	187	148	127

DURATION(HRS)	18	20	22
FLOW(CFS)	117	34	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.12	7900.8	(NULL)
17.07	1203.7	(NULL)
17.96	1112.7	(NULL)
19.10	962.7	(NULL)
21.03	881.8	(NULL)
22.01	773.5	(NULL)
23.07	844.1	(NULL)
24.00	836.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.30 WATERSHED INCHES; 55759 CFS-HRS; 4608.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1846	758	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	9.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.40 CFS	0	72	555	1209	1868	3344	4530	5429
10.00 CFS	6094	6605	6972	7196	7297	7301	7235	7118
11.60 CFS	6954	6749	6505	6226	5920	5594	5259	4924
13.20 CFS	4600	4289	3995	3714	3452	3209	2987	2784
14.80 CFS	2596	2423	2262	2115	1981	1860	1750	1648
16.40 CFS	1550	1509	1475	1438	1403	1370	1338	1307
18.00 CFS	1277	1248	1220	1190	1157	1122	1088	1057
19.60 CFS	1029	1001	973	944	914	886	859	836
21.20 CFS	817	801	787	772	757	742	728	713
22.80 CFS	697	681	668	658	650	641	631	624
24.40 CFS	617	606	586	557	521	480	437	395
26.00 CFS	353	314	277	243	212	183	157	132
27.60 CFS	110	90	72	55	40	26	13	2
29.20 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42546 CFS-HRS; 3516.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1122	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.98	1313.1	(RUNOFF)
16.93	189.3	(RUNOFF)
17.91	174.5	(RUNOFF)
18.94	151.3	(RUNOFF)
20.91	134.2	(RUNOFF)
21.91	115.4	(RUNOFF)
22.93	134.2	(RUNOFF)
23.91	139.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.38 WATERSHED INCHES; 7673 CFS-HRS; 634.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1053	685	406	274	188	150	126	106

DURATION(HRS)	18	20	20
FLOW(CFS)	87	9	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.09	9241.1	(NULL)
17.03	1387.8	(NULL)
17.94	1285.9	(NULL)
19.07	1109.1	(NULL)
21.00	1013.0	(NULL)
21.98	886.9	(NULL)
23.04	970.1	(NULL)
23.98	969.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
3.00 CFS	0	3	9	16	56	94	146	219
4.60 CFS	276	418	528	665	839	951	1133	1266
6.20 CFS	1558	1976	2248	2693	3012	3506	4157	4591
7.80 CFS	5364	5922	6598	7411	7925	8772	9199	9166
9.40 CFS	9076	9003	8881	8809	8478	7961	7675	7393
11.00 CFS	7207	6850	6353	6029	5463	5055	4671	4236
12.60 CFS	3991	3703	3507	3267	2970	2805	2645	2542
14.20 CFS	2402	2225	2120	1980	1885	1814	1747	1697
15.80 CFS	1576	1487	1385	1264	1222	1310	1386	1349
17.40 CFS	1251	1209	1246	1280	1160	945	864	989
19.00 CFS	1102	1079	985	927	855	806	821	869
20.60 CFS	903	967	1013	963	859	815	851	886
22.20 CFS	833	728	701	847	967	912	765	715
23.80 CFS	852	967	776	409	220	154	129	120
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	115	115	115	115	115
28.60 CFS	115	115	115	115	114	114	114	114
30.20 CFS	113	113	113	113	113	113	113	113
31.80 CFS	113	113	113	112	112	112	112	112
33.40 CFS	112	112	112	112	112	111	111	111
35.00 CFS	111	111	111	111	111	111	111	110
36.60 CFS	110	110	110	110	110	110	110	110

38.20 CFS	110	110	109	109	109	109	109	109
39.80 CFS	109	109	109	109	109	108	108	108
41.40 CFS	108	108	108	108	108	108	108	107
43.00 CFS	107	107	107	107	107	107	107	107
44.60 CFS	107	107	106	106	106	106	106	106
46.20 CFS	106	106	106	106	106	105	105	105
47.80 CFS	105	105	105	105	105	105	105	105
49.40 CFS	104	104	104	104	104	104	104	104
51.00 CFS	104	104	104	104	103	103	103	103
52.60 CFS	103	103	103	103	103	103	103	102
54.20 CFS	102	102	102	102	102	102	102	102
55.80 CFS	101	101	101	101	101	101	101	101
57.40 CFS	100	100	100	100	100	100	100	100
59.00 CFS	99.59	99.48	99.36	99.25	99.14	99.03	98.92	98.80
60.60 CFS	98.69	98.58	98.47	98.36	98.25	98.14	98.03	97.91
62.20 CFS	97.80	97.69	97.58	97.47	97.36	97.25	97.14	97.03
63.80 CFS	96.92	96.81	96.70	96.60	96.49	96.38	96.27	96.15
65.40 CFS	96.03	95.90	95.76	95.63	95.50	95.37	95.24	95.11
67.00 CFS	94.98	94.85	94.72	94.60	94.47	94.34	94.21	94.08
68.60 CFS	93.95	93.82	93.69	93.57	93.44	93.31	93.18	93.06
70.20 CFS	92.93	92.80	92.68	92.55	92.42	92.30	92.17	92.04
71.80 CFS	91.92	91.79	91.67	91.54	91.42	91.29	90.04	87.82
73.40 CFS	85.39	82.96	80.57	78.25	76.00	73.94	72.04	70.22
75.00 CFS	68.45	66.72	65.04	63.41	61.81	60.26	58.74	57.26
76.60 CFS	55.82	54.42	53.05	51.71	50.41	49.14	47.91	46.70
78.20 CFS	45.53	44.38	43.26	42.18	41.12	40.08	39.07	38.09
79.80 CFS	37.13	36.20	35.28	34.40	33.53	32.69	31.87	31.06
81.40 CFS	30.28	29.52	28.78	28.05	27.35	26.66	26.10	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.68 WATERSHED INCHES; 63428 CFS-HRS; 5241.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	2120	859	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	894.6	(RUNOFF)
17.24	123.5	(RUNOFF)
19.33	94.2	(RUNOFF)
21.23	85.1	(RUNOFF)
22.11	75.6	(RUNOFF)
23.28	77.4	(RUNOFF)
24.14	75.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 5554 CFS-HRS; 459.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	753	524	310	199	131	107	85	75

DURATION(HRS)	18	20	22	23
FLOW(CFS)	68	19	1	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.50	820.6	1770.00
17.46	123.0	1765.90
19.57	93.5	1765.61
21.48	84.2	1765.47
23.54	76.0	1765.34
24.36	73.9	1765.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.67 WATERSHED INCHES; 5478 CFS-HRS; 452.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	764	504	320	204	129	108	84	75

DURATION(HRS)	18	20	22	22
FLOW(CFS)	69	21	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	1990.4	(RUNOFF)
17.12	265.6	(RUNOFF)
17.98	242.8	(RUNOFF)
19.16	206.3	(RUNOFF)
21.07	185.8	(RUNOFF)
22.04	160.2	(RUNOFF)
23.12	175.5	(RUNOFF)
24.04	171.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 12047 CFS-HRS; 995.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1628	1089	689	432	288	235	183	162

DURATION(HRS)	18	20	22	22
FLOW(CFS)	147	58	1	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.38	2771.3	1777.54
17.11	387.3	1767.91
17.95	359.2	1767.74
19.16	295.8	1767.32
21.12	265.7	1767.10
22.00	236.9	1766.90
23.15	244.1	1766.95
24.04	240.3	1766.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.18 WATERSHED INCHES; 17524 CFS-HRS; 1448.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237

DURATION(HRS)	18	20	22	23
FLOW(CFS)	216	78	7	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	2546.0 *	1761.03
17.11	387.3	1756.48
17.95	359.2	1756.35
19.16	295.8	1756.08
21.12	265.7	1755.95
22.00	236.9	1755.82
23.15	244.1	1755.85
24.04	240.3	1755.83

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.01 WATERSHED INCHES; 17299 CFS-HRS; 1429.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237
DURATION(HRS)	18	20	22	23				
FLOW(CFS)	216	78	7	0				

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	2826.7	(RUNOFF)
17.04	374.8	(RUNOFF)
17.95	342.6	(RUNOFF)
19.07	293.9	(RUNOFF)
21.00	263.6	(RUNOFF)
21.99	226.1	(RUNOFF)
23.04	253.9	(RUNOFF)
23.98	253.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.71 WATERSHED INCHES; 16988 CFS-HRS; 1403.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2270	1558	986	612	422	330	253	226
DURATION(HRS)	18	20	22	22				
FLOW(CFS)	202	92	2	0				

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	5372.7	1764.66
17.06	760.9	1757.71
17.95	701.8	1757.53
19.10	587.6	1757.17
21.04	526.8	1756.98
21.99	462.9	1756.78
23.07	494.7	1756.88
24.00	492.6	1756.87

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
2.60 CFS	0	1	2	9	24	35	70	103
4.20 CFS	134	181	216	299	374	450	560	632
5.80 CFS	734	823	968	1220	1391	1633	1842	2082
7.40 CFS	2443	2693	3100	3455	3803	4284	4606	5062
9.00 CFS	5360	5364	5281	5238	5173	5126	5025	4830
10.60 CFS	4671	4521	4389	4208	3915	3715	3409	3143
12.20 CFS	2921	2648	2473	2293	2149	2010	1826	1710

13.80 CFS	1605	1524	1443	1333	1262	1180	1112	1064
15.40 CFS	1017	983	918	860	806	732	694	723
17.00 CFS	759	749	699	673	685	700	655	542
18.60 CFS	486	528	581	580	534	505	468	436
20.20 CFS	433	453	468	499	526	514	464	436
21.80 CFS	447	463	444	389	365	425	490	480
23.40 CFS	409	375	432	493	430	239	129	75
25.00 CFS	43.01	24.06	13.43	7.52	4.19	2.38	1.35	.75
26.60 CFS	.39							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.35 WATERSHED INCHES; 34287 CFS-HRS; 2833.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464
DURATION(HRS)	18	20	22	24				
FLOW(CFS)	430	181	13	0				

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.46	291.9	1767.29

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.80 CFS	0	89	244	289	278	244	201	136
10.40 CFS	25.77	.00						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
302 CFS-HRS; 24.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464
DURATION(HRS)	18	20	22	2				
FLOW(CFS)	430	181	13	0				

*** WARNING - XSECTION 107, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	5249.1	1762.11
17.30	753.4	1754.16
18.16	697.3	1753.96
19.34	578.8	1753.46
21.28	520.3	1753.21
22.20	459.1	1752.94
23.32	482.8	1753.05
24.22	476.6	1753.02

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
2.80 CFS	.10	1.04	1.97	7.60	19.98	31.32	61.29	92.95
4.40 CFS	125	168	205	277	352	427	529	608
6.00 CFS	705	795	928	1152	1335	1563	1777	2011
7.60 CFS	2342	2611	2986	3346	3697	4147	4499	4931
9.20 CFS	5178	5235	5249	5241	5188	5141	5052	4882
10.80 CFS	4720	4567	4431	4260	3995	3780	3496	3225
12.40 CFS	2992	2728	2533	2349	2195	2053	1879	1749
14.00 CFS	1638	1550	1468	1365	1286	1204	1133	1080
15.60 CFS	1032	994	935	878	823	753	708	719
17.20 CFS	750	749	711	682	684	696	665	571
18.80 CFS	505	523	568	577	544	514	478	446
20.40 CFS	436	449	464	491	518	515	476	446
22.00 CFS	447	459	447	402	374	413	472	478
23.60 CFS	425	387	422	476	441	286	166	96
25.20 CFS	55.35	31.35	17.61	9.87	5.52	3.11	1.76	.98
26.80 CFS	.53	.26						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.33 WATERSHED INCHES; 34238 CFS-HRS; 2829.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4567	3225	2011	1286	823	684	518	464

DURATION(HRS)	18	20	22	24
FLOW(CFS)	425	168	18	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.27	14360.9	1772.94
17.09	2114.2	1757.62
17.95	1968.2	1757.33
19.14	1651.3	1756.65
21.05	1506.9	1756.32
21.99	1333.3	1755.90
23.11	1400.4	1756.07
24.00	1388.8	1756.04

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
2.80 CFS	0	1	5	16	36	87	155	239
4.40 CFS	344	444	623	806	1017	1267	1480	1741
6.00 CFS	1971	2353	2904	3400	4028	4576	5282	6167
7.60 CFS	6933	7975	8908	9944	11108	12072	13271	14129
9.20 CFS	14344	14312	14252	14122	13997	13619	13013	12557
10.80 CFS	12113	11774	11281	10612	10024	9243	8551	7896
12.40 CFS	7228	6719	6236	5856	5462	5023	4684	4395
14.00 CFS	4180	3953	3694	3484	3266	3089	2947	2827
15.60 CFS	2729	2570	2422	2263	2086	1975	2018	2105
17.20 CFS	2099	2000	1920	1928	1964	1856	1610	1435
18.80 CFS	1495	1624	1647	1562	1471	1369	1285	1267
20.40 CFS	1305	1352	1431	1504	1481	1374	1291	1297
22.00 CFS	1333	1292	1176	1103	1221	1380	1384	1243
23.60 CFS	1140	1239	1389	1252	850	507	320	225
25.20 CFS	175	148	133	125	121	118	117	116
26.80 CFS	116	115	115	115	115	115	115	115
28.40 CFS	115	115	115	115	115	114	114	114
30.00 CFS	114	113	113	113	113	113	113	113
31.60 CFS	113	113	113	113	112	112	112	112
33.20 CFS	112	112	112	112	112	112	111	111
34.80 CFS	111	111	111	111	111	111	111	111
36.40 CFS	110	110	110	110	110	110	110	110
38.00 CFS	110	110	110	109	109	109	109	109
39.60 CFS	109	109	109	109	109	109	108	108
41.20 CFS	108	108	108	108	108	108	108	108
42.80 CFS	107	107	107	107	107	107	107	107
44.40 CFS	107	107	107	106	106	106	106	106
46.00 CFS	106	106	106	106	106	106	105	105
47.60 CFS	105	105	105	105	105	105	105	105
49.20 CFS	105	104	104	104	104	104	104	104
50.80 CFS	104	104	104	104	104	103	103	103
52.40 CFS	103	103	103	103	103	103	103	103
54.00 CFS	102	102	102	102	102	102	102	102
55.60 CFS	102	101	101	101	101	101	101	101
57.20 CFS	101	100	100	100	100	100	100	100
58.80 CFS	99.70	99.59	99.48	99.36	99.25	99.14	99.03	98.92
60.40 CFS	98.80	98.69	98.58	98.47	98.36	98.25	98.14	98.03
62.00 CFS	97.91	97.80	97.69	97.58	97.47	97.36	97.25	97.14
63.60 CFS	97.03	96.92	96.81	96.70	96.60	96.49	96.38	96.27
65.20 CFS	96.15	96.03	95.90	95.76	95.63	95.50	95.37	95.24
66.80 CFS	95.11	94.98	94.85	94.72	94.60	94.47	94.34	94.21
68.40 CFS	94.08	93.95	93.82	93.69	93.57	93.44	93.31	93.18
70.00 CFS	93.06	92.93	92.80	92.68	92.55	92.42	92.30	92.17
71.60 CFS	92.04	91.92	91.79	91.67	91.54	91.42	91.29	90.04
73.20 CFS	87.82	85.39	82.96	80.57	78.25	76.00	73.94	72.04
74.80 CFS	70.22	68.45	66.72	65.04	63.41	61.81	60.26	58.74
76.40 CFS	57.26	55.82	54.42	53.05	51.71	50.41	49.14	47.91
78.00 CFS	46.70	45.53	44.38	43.26	42.18	41.12	40.08	39.07

79.60 CFS	38.09	37.13	36.20	35.28	34.40	33.53	32.69	31.87
81.20 CFS	31.06	30.28	29.52	28.78	28.05	27.35		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.02 WATERSHED INCHES; 97660 CFS-HRS; 8070.6 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	3400	1333	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	62	27 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 1236.01 AC-FT (.11 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1711.06. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.66	9772.5	1722.19

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
3.20 CFS	.00	.01	.04	.10	.22	.41	.70	1.08
4.80 CFS	1.60	2.30	3.19	4.31	5.65	7.22	9.03	10.28
6.40 CFS	10	16	48	85	122	126	131	136
8.00 CFS	141	146	151	188	635	1472	2570	3743
9.60 CFS	4795	5732	6563	7361	8021	8549	8968	9297
11.20 CFS	9544	9700	9768	9753	9658	9500	9285	9029
12.80 CFS	8746	8447	8138	7818	7489	7162	6844	6543
14.40 CFS	6271	6004	5741	5486	5239	5005	4783	4570
16.00 CFS	4363	4161	3963	3770	3593	3440	3307	3181
17.60 CFS	3060	2946	2846	2753	2651	2539	2431	2344
19.20 CFS	2274	2207	2138	2066	1993	1929	1882	1842
20.80 CFS	1809	1784	1763	1738	1709	1678	1652	1627
22.40 CFS	1598	1565	1535	1518	1508	1494	1472	1452
24.00 CFS	1441	1433	1405	1352	1283	1210	1136	1065
25.60 CFS	997	934	875	820	788	758	729	702
27.20 CFS	675	650	626	603	581	561	541	521
28.80 CFS	503	486	469	453	438	423	410	396
30.40 CFS	386	378	370	363	356	349	342	336
32.00 CFS	329	323	317	311	305	300	294	289
33.60 CFS	284	279	274	270	265	261	256	252
35.20 CFS	248	244	240	237	233	229	226	223
36.80 CFS	219	216	213	210	207	205	202	199
38.40 CFS	197	194	192	189	187	185	183	181
40.00 CFS	178	176	175	173	171	169	167	166
41.60 CFS	164	162	161	159	158	156	156	156
43.20 CFS	156	156	156	156	156	156	155	155
44.80 CFS	155	155	155	155	155	155	155	155

46.40 CFS	155	155	155	155	155	155	155	155
48.00 CFS	155	155	155	155	155	155	155	155
49.60 CFS	155	155	155	155	155	155	155	155
51.20 CFS	155	154	154	154	154	154	154	154
52.80 CFS	154	154	154	154	154	154	154	154
54.40 CFS	154	154	154	154	154	154	154	154
56.00 CFS	154	154	154	154	154	154	154	154
57.60 CFS	154	154	154	154	154	154	154	154
59.20 CFS	154	154	154	154	154	154	153	153
60.80 CFS	153	153	153	153	153	153	153	153
62.40 CFS	153	153	153	153	153	153	153	153
64.00 CFS	153	153	153	153	153	153	153	153
65.60 CFS	153	153	153	153	153	153	153	153
67.20 CFS	153	153	153	153	153	152	152	152
68.80 CFS	152	152	152	152	152	152	152	152
70.40 CFS	152	152	152	152	152	152	152	152
72.00 CFS	152	152	152	152	152	152	152	152
73.60 CFS	152	152	152	152	152	152	152	152
75.20 CFS	151	151	151	151	151	151	151	151
76.80 CFS	151	151	151	151	151	151	151	151
78.40 CFS	151	151	151	151	151	151	150	150
80.00 CFS	150	150	150	150	150	150	150	150
81.60 CFS	150	150	150	150				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.64 WATERSHED INCHES; 82707 CFS-HRS; 6834.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	3181	1210	305	173	155	154	153	152

DURATION(HRS)	72	74
FLOW(CFS)	150	150 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 3.94 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 2, ARC 2							
MAIN TIME INCREMENT .200 HOURS							
ALTERNATE 5 STORM 1							
XSECTION 101	RUNOFF	1.86	1.99	---	12.58	1011	543.5
XSECTION 1	RUNOFF	1.20	1.91	---	12.22	900	750.0
XSECTION 1	ADDHYD	3.06	1.96	---	12.37	1729	565.0
XSECTION 2	RUNOFF	1.24	1.62	---	12.18	809	652.4
XSECTION 2	ADDHYD	4.30	1.86	---	12.48	2188	508.8
XSECTION 3	RUNOFF	1.85	1.99	---	12.38	1218	658.4
XSECTION 3	ADDHYD	6.15	1.90	---	12.61	3125	508.1
STRUCTURE 1	RESVOR	6.15	1.55	1799.08	24.52	112	18.2
XSECTION 104	REACH	6.15	1.55	.50	24.77	112	18.2
XSECTION 4	RUNOFF	2.54	1.99	---	12.15	2180	858.3
XSECTION 4	ADDHYD	8.69	1.68	---	12.15	2180	250.9
XSECTION 106	REACH	8.69	1.68	4.13	12.15	2180	250.9
XSECTION 5	RUNOFF	2.00	2.14	---	12.07	2049	1024.5
XSECTION 5	ADDHYD	10.69	1.77	---	12.10	4157	388.9
XSECTION 6	RUNOFF	1.14	1.91	---	12.06	1031	904.4
XSECTION 6	ADDHYD	11.83	1.78	---	12.09	5213	440.7
XSECTION 106	ADDHYD	.00	1.78	---	.00	0	********
XSECTION 7	RUNOFF	.96	1.61	---	11.93	834	868.8
XSECTION 7	ADDHYD	12.79	1.77	---	12.07	5926	463.3
XSECTION 10	RUNOFF	.67	1.84	---	12.37	405	604.5
XSECTION 109	REACH	.67	1.84	1767.83	12.66	375	559.7
XSECTION 9	RUNOFF	1.39	2.15	---	12.15	1298	933.8
XSECTION 109	ADDHYD	2.06	2.05	1772.52	12.20	1472	714.6
XSECTION 108	REACH	2.06	2.05	1759.29	12.20	1472	714.6
XSECTION 8	RUNOFF	1.92	2.31	---	12.06	2152	1120.8
XSECTION 108	ADDHYD	3.98	2.18	1762.24	12.10	3497	878.6
XSECTION 109	ADDHYD	.00	2.18	---	.00	0	********
XSECTION 107	REACH	3.98	2.17	1759.49	12.38	3221	809.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 1							
XSECTION 107	ADDHYD	16.77	1.87	1765.61	12.17	8191	488.4
STRUCTURE 2	RESVOR	16.77	.97	1710.15	24.85T	146T	8.7
RAINFALL OF 7.06 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 5, ARC 2							
ALTERNATE 5 STORM 4							
XSECTION 101	RUNOFF	1.86	4.75	---	10.27	908	488.2
XSECTION 1	RUNOFF	1.20	4.64	---	9.92	590	491.7
XSECTION 1	ADDHYD	3.06	4.70	---	10.12	1492	487.6
XSECTION 2	RUNOFF	1.24	4.20	---	9.98	554	446.8
XSECTION 2	ADDHYD	4.30	4.56	---	10.22	2032	472.6
XSECTION 3	RUNOFF	1.85	4.75	---	10.05	920	497.3
XSECTION 3	ADDHYD	6.15	4.61	---	10.34	2930	476.4
STRUCTURE 1	RESVOR	6.15	4.24	1801.48	13.24	1490	242.3
XSECTION 104	REACH	6.15	1.81	.51	12.20F	115F	18.7
XSECTION 4	RUNOFF	2.54	4.75	---	9.62	1280	503.9
XSECTION 4	ADDHYD	8.69	2.67	---	9.81	1377	158.5
XSECTION 106	REACH	8.69	2.67	3.06	9.81	1377	158.5
XSECTION 5	RUNOFF	2.00	4.97	---	9.26	1067	533.5
XSECTION 5	ADDHYD	10.69	3.10	---	9.58	2431	227.4
XSECTION 6	RUNOFF	1.14	4.64	---	9.49	562	493.0
XSECTION 6	ADDHYD	11.83	3.24	---	9.57	2994	253.1
XSECTION 106	ADDHYD	.00	3.24	3.05	13.24	1375	********
XSECTION 7	RUNOFF	.96	4.20	---	9.90	435	453.1
XSECTION 7	ADDHYD	12.79	3.32	---	9.61	3421	267.5
XSECTION 10	RUNOFF	.67	4.53	---	10.10	319	476.1
XSECTION 109	REACH	.67	4.53	1767.47	10.38	317	473.1
XSECTION 9	RUNOFF	1.39	4.97	---	9.48	735	528.8
XSECTION 109	ADDHYD	2.06	4.82	1770.84	9.96	1037	503.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 4							
XSECTION 108	REACH	2.06	4.82	1758.38	9.96	1037	503.4
XSECTION 8	RUNOFF	1.92	5.19	---	9.22	1076	560.4
XSECTION 108	ADDHYD	3.98	5.00	1760.34	9.67	2080	522.6
XSECTION 109	ADDHYD	.00	5.00	---	.00	0	********
XSECTION 107	REACH	3.98	5.00	1757.54	10.09	2073	520.9
XSECTION 107	ADDHYD	16.77	3.72	1762.39	9.90	5483	327.0
STRUCTURE 2	RESVOR	16.77	2.37	1715.47	14.54	1551	92.5

RAINFALL OF 15.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 5 STORM 5							
XSECTION 101	RUNOFF	1.86	13.14	---	9.97	2475	1330.6
XSECTION 1	RUNOFF	1.20	12.99	---	9.40	1645	1370.8
XSECTION 1	ADDHYD	3.06	13.08	---	9.81	4079	1333.0
XSECTION 2	RUNOFF	1.24	12.39	---	9.34	1635	1318.5
XSECTION 2	ADDHYD	4.30	12.88	---	9.94	5654	1314.9
XSECTION 3	RUNOFF	1.85	13.14	---	9.66	2515	1359.5
XSECTION 3	ADDHYD	6.15	12.96	---	10.07	8107	1318.2
STRUCTURE 1	RESVOR	6.15	12.57	1803.90	10.91	7423	1207.0
XSECTION 104	REACH	6.15	1.89	.51	10.00F	115F	18.7
XSECTION 4	RUNOFF	2.54	13.14	---	9.24	3572	1406.3
XSECTION 4	ADDHYD	8.69	5.18	---	9.24	3687	424.3
XSECTION 106	REACH	8.69	5.15	5.62	9.00F	3454F	397.5
XSECTION 5	RUNOFF	2.00	13.43	---	9.13	2892	1446.0
XSECTION 5	ADDHYD	10.69	6.70	---	9.13	6346	593.6
XSECTION 6	RUNOFF	1.14	12.99	---	9.14	1601	1404.4
XSECTION 6	ADDHYD	11.83	7.30	---	9.12	7901	667.9
XSECTION 106	ADDHYD	.00	7.30	9.47	10.91	7308	********
XSECTION 7	RUNOFF	.96	12.38	---	8.98	1313	1367.7
XSECTION 7	ADDHYD	12.79	7.68	---	9.09	9241	722.5

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 5							
XSECTION 10	RUNOFF	.67	12.84	---	9.67	895	1335.8
XSECTION 109	REACH	.67	12.67	1770.00	10.50	821	1225.4
XSECTION 9	RUNOFF	1.39	13.43	---	9.24	1990	1431.7
XSECTION 109	ADDHYD	2.06	13.18	1777.54	9.38	2771	1345.1
XSECTION 108	REACH	2.06	13.01	1761.03	9.00F	2546F	1235.9
XSECTION 8	RUNOFF	1.92	13.71	---	9.11	2827	1472.4
XSECTION 108	ADDHYD	3.98	13.35	1764.66	9.11	5373	1350.0
XSECTION 109	ADDHYD	.00	13.35	1767.29	9.46	292	********
XSECTION 107	REACH	3.98	13.33	1762.11	9.62	5249	1318.8
XSECTION 107	ADDHYD	16.77	9.02	1772.94	9.27	14361	856.4
STRUCTURE 2	RESVOR	16.77	7.64	1722.19	11.66	9772	582.7

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1726	12.4	1689	12.6	4.77	1.00	.065	.978	.81?
103	2500		2157	12.4	2116	12.8	4.78	1.00	.061	.981	.82?
104	6700		112	24.6	112	24.8	1.57	1.53	.000	1.000	.73?
106	3700		2151	12.2	2151	12.2	1.13	1.57	.001	1.000	1.00?
109	2700		404	12.4	371	12.6	.39	1.38	.068	.919	.66
108	2100		1472	12.2	1472	12.2	.79	1.41	.012	1.000	1.00?
107	5300		3373	12.2	3214	12.4	.54	1.38	.074	.953	.71?
ALTERNATE 5 STORM 4											
102	2500		1490	10.2	1489	10.4	4.77	1.00	.023	.999	.81?
103	2500		2032	10.2	2026	10.4	4.78	1.00	.023	.997	.81?
104	6700		115	10.8	115	12.2	1.57	1.53	.000	1.000	.73?
106	3700		1377	9.8	1377	9.8	1.06	1.58	.000	1.000	1.00?
109	2700		318	10.2	317	10.4	.30	1.44	.012	.997	.66
108	2100		1036	10.0	1036	10.0	.74	1.43	.002	1.000	1.00?
107	5300		2079	9.6	2072	10.0	.55	1.37	.015	.997	.65
ALTERNATE 5 STORM 5											
102	2500		4079	9.8	4071	10.0	4.78	1.00	.023	.998	.82?
103	2500		5652	10.0	5646	10.2	4.78	1.00	.023	.999	.82?
104	6700		115	8.6	115	10.0	1.57	1.53	.000	1.000	.73?
106	3700		3454	9.0	3454	9.0	1.25	1.55	.000	1.000	1.00?
109	2700		820	9.2	820	10.6	.43	1.35	.011	1.000	.72?
108	2100		2546	9.0	2546	9.0	.86	1.39	.002	1.000	1.00?
107	5300		5253	9.0	5249	9.6	.54	1.38	.009	.999	.77?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
STRUCTURE 2	16.77			
ALTERNATE 5		146	1551	9772
STRUCTURE 1	6.15			
ALTERNATE 5		112	1490	7423
XSECTION 1	3.06			
ALTERNATE 5		1729	1492	4079
XSECTION 2	4.30			
ALTERNATE 5		2188	2032	5654
XSECTION 3	6.15			
ALTERNATE 5		3125	2930	8107
XSECTION 4	8.69			
ALTERNATE 5		2180	1377	3687
XSECTION 5	10.69			
ALTERNATE 5		4157	2431	6346
XSECTION 6	11.83			
ALTERNATE 5		5213	2994	7901
XSECTION 7	12.79			
ALTERNATE 5		5926	3421	9241
XSECTION 8	1.92			
ALTERNATE 5		2152	1076	2827
XSECTION 9	1.39			

ALTERNA	5	1298	735	1990
XSECTION	.67			
ALTERNATE	5	405	319	895
XSECTION 101	1.86			
ALTERNATE	5	1011	908	2475
XSECTION 104	6.15			

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
XSECTION 104	6.15			
ALTERNATE 5		112	115	115
XSECTION 106	.00			
ALTERNATE 5		0	1375	7308
XSECTION 107	16.77			
ALTERNATE 5		8191	5483	14361
XSECTION 108	3.98			
ALTERNATE 5		3497	2080	5373
XSECTION 109	.00			
ALTERNATE 5		0	0	292

```
TR20 ------   ------------------------------------------------------------ SCS -
          SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATE VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR-20b2.04TEST


END OF  1 JOBS IN THIS RUN


                    SCS  TR-20,  VERSION 2.04TEST
                                   FILES

     INPUT  = SBTR-20B.DAT                          , GIVEN DATA FILE
     OUTPUT = SBTR-20B.OUT                          , DATED 09/18/**,09:32:48

             FILES GENERATED - DATED 09/18/**,09:32:48

                             NONE!


          TOTAL NUMBER OF WARNINGS =  18,  MESSAGES =   9

                       JOB ENDED AT 09:32:48
                  *** TR-20 RUN COMPLETED ***
```

```
***********[illegible]**80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****************

JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATEL
TITLE 000 ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR20bT.DAT
 5 RAINFL 1            .5
 8          0.0        .008       .017       .026       .035
 8          .045       .055       .065       .076       .087
 8          .099       .112       .125       .14        .156
 8          .174       .194       .219       .254       .303
 8          .515       .583       .624       .654       .682
 8          .705       .727       .748       .767       .784
 8          .8         .816       .83        .844       .857
 8          .87        .882       .893       .905       .916
 8          .926       .936       .946       .955       .965
 8          .974       .983       .992       1.         1.
 9 ENDTBL
 5 RAINFL 2            .5
 8          0.0        .005       .011       .016       .022
 8          .028       .035       .041       .048       .056
 8          .063       .071       .081       .089       .098
 8          .109       .12        .133       .147       .163
 8          .181       .204       .235       .283       .663
 8          .735       .772       .799       .82        .838
 8          .854       .868       .88        .891       .902
 8          .912       .921       .929       .937       .945
 8          .952       .959       .965       .972       .978
 8          .984       .989       .995       1.         1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8          0.0        .002       .004       .006       .008
 8          .01        .012       .014       .016       .018
 8          .02        .022       .025       .027       .03
 8          .032       .035       .038       .04        .043
 8          .046       .049       .052       .055       .058
 8          .061       .064       .069       .072       .076
 8          .08        .084       .089       .093       .098
 8          .102       .108       .114       .121       .127
 8          .133       .143       .153       .164       .174
 8          .184       .198       .215       .238       .275
 8          .707       .765       .793       .813       .829
 8          .841       .849       .856       .863       .871
 8          .879       .884       .889       .895       .9
 8          .905       .909       .913       .918       .922
 8          .926       .929       .932       .936       .939
 8          .942       .945       .948       .951       .954
 8          .957       .959       .962       .964       .967
 8          .969       .971       .973       .976       .978
 8          .98        .982       .984       .987       .989
 8          .991       .993       .996       .998       1.
 9 ENDTBL
 5 RAINFL 4            .25
 8          0.0        .006       .011       .017       .028
 8          .041       .057       .075       .09        .562
 8          .697       .763       .807       .839       .873
 8          .907       .937       .948       .958       .968
 8          .979       .984       .989       1.         1.
 9 ENDTBL
```

```
**********************80-80 LIST OF INPUT DATA (CONTINUED)********      **********

 5 RAINFL 5            .5
 8          0.0        .004       .008       .011       .016
 8          .021       .027       .034       .044       .055
 8          .07        .088       .108       .137       .172
 8          .217       .273       .341       .42        .492
 8          .56        .618       .672       .717       .753
 8          .782       .807       .827       .845       .86
 8          .873       .885       .895       .903       .913
 8          .921       .93        .935       .943       .949
 8          .954       .96        .967       .972       .978
 8          .982       .989       .993       1.         1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       40.
 8                     3.         838.       60.
 8                     4.         1288.      80.
 8                     5.         1782.      120.
 8                     6.         2314.      130.
 8                     7.         2875.      140.
 8                     8.         3454.      160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0        0.0        0.0
 8                     1.5        441.       45.
 8                     2.5        995.       75.
 8                     3.5        1682.      105.
 8                     4.5        2468.      135.
 8                     5.5        3339.      165.
 8                     6.5        4272.      195.
 8                     7.5        5258.      225.
 8                     8.5        6296.      255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.      0.0        0.0
 8                     1750.      38.53      23.
```

```
8                    1751.      130.52     52.
8                    1752.      273.18     87.
8                    1753.      470.98     128.
8                    1754.      706.86     187.
8                    1755.      1005.62    240.
8                    1756.      1369.42    299.
8                    1757.      1801.8     364.
8                    1758.      2305.5     435.
8                    1759.      2892.8     512.
8                    1760.      3558.1     595.
8                    1761.      4316.04    684.
8                    1762.      5156.98    779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7     0.0        0.0
8                    1754.7     61.93      23.
8                    1755.7     209.35     52.
8                    1756.7     438.91     87.
8                    1757.7     757.01     128.
8                    1758.7     1167.41    175.
8                    1759.7     1678.56    228.
8                    1760.7     2302.39    287.
8                    1761.7     3038.91    352.
8                    1762.7     3894.74    435.
8                    1763.7     4647.76    512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
3 STRUCT     01
8                    1791.94    0.00       0.0
8                    1793.      0.01       46.8
8                    1794.1     0.02       106.
8                    1794.5     26.3       130.
8                    1795.      74.4       161.2
8                    1795.14    91.2       170.7
8                    1796.      96.16      230.7
8                    1797.14    102.42     322.23
8                    1799.42    113.91     542.99
8                    1801.72    1650.      812.88
8                    1804.      7700.      1121.9
8                    1806.28    15200.     1470.09
8                    1808.57    26200.     1865.04
9 ENDTBL
3 STRUCT     02
8                    1696.      0.0        0.0
8                    1700.      10.2       172.1
8                    1701.4     10.7       273.25
8                    1704.      121.8      482.24
```



```
8                    1708.      138.4      871.3
8                    1710.      145.9      1101.52
8                    1710.5     147.7      1163.52
8                    1711.5     151.4      1294.09
8                    1712.2     154.       1390.2
8                    1712.5     155.       1432.05
8                    1712.6     156.       1446.11
8                    1713.5     390.       1578.77
8                    1714.5     820.       1733.61
8                    1716.      1950.      1980.33
8                    1720.      6600.      2712.23
8                    1722.      9500.      3121.
8                    1724.      12400.     3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86     65.        1.21       1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2      64.        .67        1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   2       6 1.24     58.        .59        1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   3       6 1.85     65.        .91        1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                        1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.     1.                    0 0 0 0 0 0
6 REACH  3 104   4   5 6700.                           1 0 0 1 0 1
6 RUNOFF 1   4       6 2.54     65.        .54        1 0 0 1 0 1
6 ADDHYD 4   4   5 6 7                                1 0 0 1 0 1
6 DIVERT 6 104   7 5 2 3454.    1.                    0 0 0 0 0 0
6 ADDHYD 4 104   1 2 4                                0 0 0 0 0 0
6 REACH  3 106   5   3 3700.                           1 0 0 1 0 1
6 RUNOFF 1   5       6 2.       68.        .43        1 0 0 1 0 1
6 ADDHYD 4   5   3 6 7                                1 0 0 1 0 1
6 DIVERT 6 106   7 5 2 6296.    1.                    0 0 0 0 0 0
6 RUNOFF 1   6       6 1.14     64.        .42        1 0 0 1 0 1
6 ADDHYD 4   6   5 6 7                                1 0 0 1 0 1
6 SAVMOV 5   6   7   5
6 ADDHYD 4 106   4 2 7                                1 1 0 1 0 1
6 SAVMOV 5 106   7   1
6 RUNOFF 1   7       6 .96      58.        .23        1 0 0 1 0 1
6 ADDHYD 4   7   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5   7   7   2
6 RUNOFF 1  10       7 .67      62.        .89        1 0 0 1 0 1
6 DIVERT 6 110   7 5 3 820.     1.                    0 0 0 0 0 0
6 REACH  3 109   5   4 2700.                           1 0 0 1 0 1
6 RUNOFF 1   9       6 1.39     68.        .55        1 0 0 1 0 1
6 ADDHYD 4 109   4 6 7                                1 0 0 1 0 1
6 DIVERT 6 109   7 5 4 2546.    1.                    0 0 0 0 0 0
6 REACH  3 108   5   6 2100.                           1 0 0 1 0 1
6 RUNOFF 1   8       5 1.92     71.        .42        1 0 0 1 0 1
6 ADDHYD 4 108   5 6 7                                1 1 0 1 0 1
6 ADDHYD 4 109   3 4 5                                1 1 0 1 0 1
6 SAVMOV 5 106   5   3
6 DIVERT 6 108   7 5 4 5253.    1.                    0 0 0 0 0 0
6 REACH  3 107   5   6 5300.                           1 1 0 1 0 1
```

```
***********.  ********80-80 LIST OF INPUT DATA (CONTINUED)*********************

 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                  1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                            1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .60
 7 COMPUT 7 101       2             7.02        1.0      3 2  05  01
   ENDCMP 1
   ENDJOB 2

*******************************END OF 80-80 LIST******************************
```

```
TR20 ------------------------------------------------------------   ----- SCS -
         SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATE VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR20bT2.04TEST
09:33:20                    PASS   1   JOB NO.   1                      PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .600 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  7.02       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .600 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1            RAIN TABLE NO. = 3


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
      119.83                          748.1                        (RUNOFF)
      143.41                           20.6                        (RUNOFF)
      151.01                           15.6                        (RUNOFF)
      155.41                           13.0                        (RUNOFF)
      163.01                           13.1                        (RUNOFF)
      167.18                           10.5                        (RUNOFF)
      175.01                           10.6                        (RUNOFF)
      191.20                            8.0                        (RUNOFF)
      223.00                            8.1                        (RUNOFF)
      232.61                            8.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   3.12 WATERSHED INCHES;    3739 CFS-HRS;     309.0 ACRE-FEET.

    DURATION(HRS)  12     24     36     48     60     72     84     96
    FLOW(CFS)      38     19     13     11      8      8      8      6

    DURATION(HRS) 108    120    132    136
    FLOW(CFS)       5      5      2      0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
      119.62                          467.3                        (RUNOFF)
      143.12                           13.0                        (RUNOFF)
      150.79                            9.8                        (RUNOFF)
      155.12                            8.2                        (RUNOFF)
      162.90                            8.4                        (RUNOFF)
      167.13                            6.7                        (RUNOFF)
      174.81                            6.7                        (RUNOFF)
      210.79                            5.1                        (RUNOFF)
      222.85                            5.1                        (RUNOFF)
      232.50                            5.3                        (RUNOFF)
```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.01 WATERSHED INCHES; 2329 CFS-HRS; 192.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	23	12	8	7	5	5	5	4

DURATION(HRS)	108	120	132	133
FLOW(CFS)	3	3	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.67) FOR SUBWATERSHED XSECTION 1.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%. ***

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.75	1239.7	(NULL)
143.22	33.6	(NULL)
150.94	25.5	(NULL)
155.20	21.3	(NULL)
162.94	21.5	(NULL)
167.16	17.2	(NULL)
174.94	17.4	(NULL)
210.94	13.3	(NULL)
222.94	13.3	(NULL)
232.55	13.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.07 WATERSHED INCHES; 6068 CFS-HRS; 501.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	59	31	21	17	13	13	13	11

DURATION(HRS)	108	120	132	137
FLOW(CFS)	9	9	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 102. ***

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.58	371.7	(RUNOFF)
143.12	11.8	(RUNOFF)
150.79	8.9	(RUNOFF)
155.20	7.5	(RUNOFF)
162.80	7.6	(RUNOFF)
167.11	6.1	(RUNOFF)
174.70	6.1	(RUNOFF)
210.78	4.7	(RUNOFF)
222.69	4.7	(RUNOFF)
232.29	4.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.41 WATERSHED INCHES; 1932 CFS-HRS; 159.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	10	8	6	5	5	5	3

DURATION(HRS)	108	120	125
FLOW(CFS)	3	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.59) FOR SUBWATERSHED XSECTION 2.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	1635.8	(NULL)
143.18	45.4	(NULL)
150.92	34.6	(NULL)
155.20	28.8	(NULL)
162.93	29.2	(NULL)
167.14	23.3	(NULL)
174.92	23.6	(NULL)
210.92	18.1	(NULL)
222.92	18.2	(NULL)
232.52	18.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.88 WATERSHED INCHES; 8000 CFS-HRS; 661.1 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	78	40	29	23	18	18	18	13

DURATION(HRS)	108	120	132	137
FLOW(CFS)	12	12	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 103. ***

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	776.5	(RUNOFF)
143.52	20.5	(RUNOFF)
150.92	15.6	(RUNOFF)
155.48	13.0	(RUNOFF)
162.92	13.2	(RUNOFF)
167.25	10.5	(RUNOFF)
174.92	10.6	(RUNOFF)
210.92	8.1	(RUNOFF)
222.92	8.2	(RUNOFF)
232.52	8.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.12 WATERSHED INCHES; 3719 CFS-HRS; 307.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	36	19	13	11	8	8	8	6

DURATION(HRS)	108	120	132	136
FLOW(CFS)	5	5	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.91) FOR SUBWATERSHED XSECTION 3.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.8%. ***

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	2412.3	(NULL)
143.20	65.9	(NULL)
150.92	50.2	(NULL)
155.23	41.8	(NULL)
162.93	42.4	(NULL)
167.16	33.8	(NULL)
174.92	34.2	(NULL)
210.92	26.2	(NULL)
222.92	26.4	(NULL)
232.52	26.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
101.40 CFS	.38	.86	1.00	1.04	1.95	2.89	3.15	3.23
106.20 CFS	4.17	5.12	5.38	5.47	7.85	10.33	11.00	11.20

111.00 CFS	14.57	17.94	18.83	19.14	26.93	33.98	35.81	36.52
115.80 CFS	57	76	81	95	1148	2045	2273	2319
120.60 CFS	1448	692	500	452	336	247	225	219
125.40 CFS	190	166	160	158	144	132	129	128
130.20 CFS	113	101	98	97	82	69	66	65
135.00 CFS	61.17	58.03	57.24	57.05	57.11	57.18	57.20	57.25
139.80 CFS	61.22	64.55	65.38	65.58	65.77	65.89	65.92	65.79
144.60 CFS	54.24	44.54	42.12	41.54	41.44	41.44	41.45	41.51
149.40 CFS	45.47	48.78	49.61	49.76	45.96	42.75	41.95	41.75
154.20 CFS	41.75	41.78	41.78	41.76	37.81	34.58	33.77	33.57
159.00 CFS	33.55	33.56	33.57	33.60	37.64	40.95	41.78	41.95
163.80 CFS	38.04	34.79	33.98	33.78	33.76	33.77	33.77	33.74
168.60 CFS	29.75	26.46	25.64	25.44	25.41	25.41	25.41	25.46
173.40 CFS	29.48	32.82	33.66	33.81	29.89	26.59	25.76	25.56
178.20 CFS	25.52	25.52	25.52	25.52	25.54	25.56	25.56	25.56
183.00 CFS	25.58	25.59	25.59	25.59	25.61	25.62	25.62	25.63
187.80 CFS	25.64	25.66	25.66	25.66	25.68	25.69	25.69	25.64
192.60 CFS	21.61	18.26	17.42	17.25	21.28	24.63	25.48	25.66
197.40 CFS	21.63	18.29	17.45	17.27	21.34	24.69	25.54	25.71
202.20 CFS	21.68	18.33	17.49	17.29	17.24	17.24	17.24	17.24
207.00 CFS	17.24	17.25	17.25	17.29	21.40	24.78	25.63	25.79
211.80 CFS	21.76	18.40	17.56	17.35	17.31	17.30	17.30	17.30
216.60 CFS	17.31	17.31	17.31	17.31	17.32	17.33	17.33	17.38
221.40 CFS	21.51	24.90	25.75	25.90	21.85	18.48	17.64	17.43
226.20 CFS	17.39	17.38	17.38	17.38	17.39	17.39	17.39	17.43
231.00 CFS	21.58	24.99	25.84	26.01	21.94	18.55	17.70	17.49
235.80 CFS	17.45	17.44	17.44	17.34	9.11	2.26	.54	.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.95 WATERSHED INCHES; 11719 CFS-HRS; 968.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	113	58	42	34	26	26	25	19

DURATION(HRS)	108	120	132	138
FLOW(CFS)	17	17	4	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	186.8	1799.53
223.52	23.8	1794.46
233.48	21.7	1794.43

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
117.00	CFS	0	0	0	35	97	104	108	111
121.80	CFS	112	113	114	144	167	181	187	184
126.60	CFS	179	174	168	161	153	147	141	132
131.40	CFS	124	117	114	114	114	114	113	113
136.20	CFS	113	113	113	113	113	112	112	112
141.00	CFS	112	112	112	112	112	111	111	111
145.80	CFS	111	111	111	110	110	110	110	110
150.60	CFS	110	109	109	109	109	109	109	108
155.40	CFS	108	108	108	108	108	107	107	107
160.20	CFS	107	107	106	106	106	106	106	106
165.00	CFS	105	105	105	105	105	104	104	104
169.80	CFS	104	104	103	103	103	103	103	102
174.60	CFS	102	102	102	102	101	101	101	100
179.40	CFS	100	100	100	99	99	99	99	98
184.20	CFS	98.24	98.00	97.75	97.51	97.27	97.02	96.78	96.54
189.00	CFS	96.30	96.04	95.75	95.47	95.18	94.90	94.61	94.30
193.80	CFS	93.99	93.67	93.37	93.08	92.80	92.53	92.25	91.95
198.60	CFS	91.65	91.34	88.09	82.62	77.79	73.53	69.86	66.19
203.40	CFS	62.63	59.30	56.21	53.34	50.68	48.22	45.94	43.82
208.20	CFS	41.87	40.06	38.53	37.39	36.50	35.70	34.82	33.74
213.00	CFS	32.58	31.46	30.42	29.46	28.56	27.73	26.97	26.27
217.80	CFS	25.79	25.35	24.92	24.52	24.14	23.78	23.55	23.53
222.60	CFS	23.63	23.74	23.75	23.56	23.27	22.97	22.67	22.39
227.40	CFS	22.13	21.88	21.64	21.42	21.20	21.00	20.92	21.05
232.20	CFS	21.28	21.52	21.65	21.58	21.40	21.20	21.00	20.81
237.00	CFS	20.63	20.46	20.08	19.32	18.37	17.42	16.50	15.63
241.80	CFS	14.80	14.02	13.28	12.58	11.91	11.28	10.69	10.12
246.60	CFS	9.59	9.08	8.60	8.15	7.71	7.31	6.92	6.55
251.40	CFS	6.21	5.88	5.57	5.27	5.00	4.73	4.48	4.24
256.20	CFS	4.02	3.81	3.61	3.42	3.24	3.06	2.90	2.75
261.00	CFS	2.60	2.47	2.34	2.21	2.10	1.98	1.88	1.78
265.80	CFS	1.69	1.60	1.51	1.43	1.36	1.29	1.22	1.15
270.60	CFS	1.09	1.03	.98	.93	.88	.83	.79	.75
275.40	CFS	.71	.67	.63	.60	.57	.54	.51	.48
280.20	CFS	.46	.43	.41	.39	.37	.35	.33	.31
285.00	CFS	.30	.28	.27	.25	.24	.23	.21	.20
289.80	CFS	.19	.18	.17	.16	.15	.15	.14	.13
294.60	CFS	.12	.12	.11	.11	.10	.09	.09	.09
299.40	CFS	.08	.08	.07	.07	.06	.06	.06	.06
304.20	CFS	.05	.05	.05	.04	.04	.04	.04	.04
309.00	CFS	.03	.03	.03	.03	.03	.03	.02	.02
313.80	CFS	.02	.02	.02	.02	.02	.02	.02	.02
318.60	CFS	.02	.02	.02	.02	.02	.02	.02	.02
323.40	CFS	.02	.02	.02	.02	.02	.02	.02	.02
328.20	CFS	.02	.02	.02	.02	.02	.02	.02	.02
333.00	CFS	.02	.02	.02	.02	.02	.02	.02	.02
337.80	CFS	.02	.02	.02	.02				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.63 WATERSHED INCHES; 10436 CFS-HRS; 862.4 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	161
FLOW(CFS)	111	104	95	29	19	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 104. ***

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
123.60	115.0 *	.51
223.52	23.8	.11
233.48	21.7	.10

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.53 WATERSHED INCHES; 10053 CFS-HRS; 830.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	161
FLOW(CFS)	111	104	95	29	19	2	0

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	1029.9	(RUNOFF)
143.11	28.1	(RUNOFF)
150.76	21.2	(RUNOFF)
155.14	17.8	(RUNOFF)
162.62	17.9	(RUNOFF)
167.06	14.4	(RUNOFF)
174.79	14.4	(RUNOFF)
210.76	11.0	(RUNOFF)
222.63	11.0	(RUNOFF)
232.23	11.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.11 WATERSHED INCHES; 5098 CFS-HRS; 421.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	53	25	18	14	11	11	11	8

DURATION(HRS)	108	120	132	137
FLOW(CFS)	7	7	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.54) FOR SUBWATERSHED XSECTION 4.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1208.0	(NULL)
140.64	140.1	(NULL)
150.21	130.9	(NULL)
162.20	124.1	(NULL)
174.16	116.8	(NULL)
195.70	104.0	(NULL)
209.56	48.8	(NULL)
222.91	35.1	(NULL)
232.54	32.8	(NULL)

*** WARNING - XSECTION 4, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1207.99) EXCEEDS ADJACENT COORDINATE (1127.25) BY 7 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 15151 CFS-HRS; 1252.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	178
FLOW(CFS)	137	119	107	39	28	5	1	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1208.0	2.81
140.64	140.1	.48
150.21	130.9	.45
162.20	124.1	.42
174.16	116.8	.40
195.70	104.0	.35
209.56	48.8	.17
222.91	35.1	.12
232.54	32.8	.11

*** WARNING - XSECTION 106, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1207.99) EXCEEDS ADJACENT COORDINATE (1127.25) BY 7 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 15151 CFS-HRS; 1252.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	178
FLOW(CFS)	137	119	107	39	28	5	1	0

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	900.4	(RUNOFF)
143.11	23.2	(RUNOFF)
150.53	17.5	(RUNOFF)
155.10	14.7	(RUNOFF)
162.40	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.39	11.9	(RUNOFF)
210.41	9.0	(RUNOFF)
222.39	9.1	(RUNOFF)
231.99	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.40 WATERSHED INCHES; 4392 CFS-HRS; 363.0 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	45	21	15	12	9	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	4	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.43) FOR SUBWATERSHED XSECTION 5.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	2027.3	(NULL)
142.06	163.1	(NULL)
150.25	148.5	(NULL)
162.25	138.9	(NULL)
174.22	128.8	(NULL)
195.79	113.0	(NULL)
199.70	106.9	(NULL)
209.70	57.4	(NULL)
222.74	43.7	(NULL)
232.51	42.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.83 WATERSHED INCHES; 19543 CFS-HRS; 1615.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	157	131	116	49	35	7	1	0

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.19	444.2	(RUNOFF)
143.10	12.3	(RUNOFF)
150.89	9.3	(RUNOFF)
155.10	7.8	(RUNOFF)
162.37	7.9	(RUNOFF)
167.15	6.3	(RUNOFF)
174.44	6.3	(RUNOFF)
210.41	4.8	(RUNOFF)
222.38	4.9	(RUNOFF)
231.99	4.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.98 WATERSHED INCHES; 2193 CFS-HRS; 181.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	11	8	6	5	5	5	3

DURATION(HRS)	108	120	132
FLOW(CFS)	3	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 6.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.50	2469.3	(NULL)
137.13	168.1	(NULL)
142.19	175.4	(NULL)
150.27	157.9	(NULL)
162.26	146.7	(NULL)
174.24	135.1	(NULL)
195.81	117.8	(NULL)
199.77	111.4	(NULL)
209.82	62.2	(NULL)
222.65	48.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.85 WATERSHED INCHES; 21737 CFS-HRS; 1796.3 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	168	138	121	53	38	7	1	0

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	71.8	.24

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
123.00 CFS	.00	29.45	52.08	65.68	71.58	69.43	64.13	59.20
127.80 CFS	53.49	45.91	38.36	32.19	25.60	17.28	9.11	2.47
132.60 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
383 CFS-HRS; 31.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	9
FLOW(CFS)	62	48	29	7	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.10	294.7	(RUNOFF)
128.70	17.9	(RUNOFF)
143.10	9.3	(RUNOFF)
150.30	7.0	(RUNOFF)
155.10	5.9	(RUNOFF)
162.30	6.0	(RUNOFF)
167.02	4.8	(RUNOFF)
174.30	4.8	(RUNOFF)
222.30	3.7	(RUNOFF)
231.90	3.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.42 WATERSHED INCHES; 1497 CFS-HRS; 123.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	17	8	6	5	4	4	4	2

DURATION(HRS)	108	120	125
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.3%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.42	2758.9	(NULL)
137.25	176.1	(NULL)
142.27	184.6	(NULL)
150.27	164.9	(NULL)
162.26	152.7	(NULL)
174.24	139.9	(NULL)
195.82	121.5	(NULL)
199.81	115.0	(NULL)
209.86	65.9	(NULL)
222.52	52.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
98.40 CFS	.45	1.36	1.50	1.51	1.53	3.24	3.55	3.57
103.20 CFS	3.62	5.54	5.93	5.96	6.01	8.11	8.53	8.56
108.00 CFS	8.74	14.87	16.08	16.16	16.36	24.31	25.87	25.98
112.80 CFS	27	43	46	47	49	92	100	101
117.60 CFS	168	2256	2672	2759	2685	939	619	599
122.40 CFS	587	395	359	357	354	301	291	290
127.20 CFS	289	262	257	257	255	228	222	222
132.00 CFS	221	191	186	185	185	178	176	176

136.80 CFS	176	176	176	176	176	183	185	185
141.60 CFS	184	185	185	184	183	161	157	157
146.40 CFS	156	156	156	156	156	164	165	165
151.20 CFS	164	157	155	155	155	155	155	154
156.00 CFS	154	146	145	145	144	144	144	144
160.80 CFS	144	151	153	152	152	144	143	143
165.60 CFS	142	142	142	142	141	134	132	132
170.40 CFS	132	131	131	131	131	139	140	140
175.20 CFS	139	131	130	129	129	129	129	128
180.00 CFS	128	128	128	127	127	127	127	126
184.80 CFS	126	126	126	126	125	125	125	125
189.60 CFS	124	124	124	124	123	115	113	113
194.40 CFS	113	120	121	121	121	113	111	111
199.20 CFS	111	115	111	106	102	90	85	82
204.00 CFS	78.28	75.20	72.33	69.68	67.21	64.94	62.83	60.88
208.80 CFS	59.45	65.55	65.84	65.04	63.94	55.40	52.88	51.63
213.60 CFS	50.51	49.48	48.52	47.63	46.80	46.04	45.34	44.87
218.40 CFS	44.42	44.01	43.61	43.23	43.07	50.72	52.10	52.29
223.20 CFS	51.96	44.39	42.79	42.40	42.10	41.81	41.54	41.27
228.00 CFS	41.02	40.79	40.57	40.36	40.52	48.17	49.71	50.04
232.80 CFS	49.82	42.41	40.87	40.59	40.39	40.20	40.02	39.84
237.60 CFS	39.03	23.17	19.51	18.37	17.42	16.50	15.63	14.80
242.40 CFS	14.02	13.28	12.58	11.91	11.28	10.69	10.12	9.59
247.20 CFS	9.08	8.60	8.15	7.71	7.31	6.92	6.55	6.21
252.00 CFS	5.88	5.57	5.27	5.00	4.73	4.48	4.24	4.02
256.80 CFS	3.81	3.61	3.42	3.24	3.06	2.90	2.75	2.60
261.60 CFS	2.47	2.34	2.21	2.10	1.98	1.88	1.78	1.69
266.40 CFS	1.60	1.51	1.43	1.36	1.29	1.22	1.15	1.09
271.20 CFS	1.03	.98	.93	.88	.83	.79	.75	.71
276.00 CFS	.67	.63	.60	.57	.54	.51	.48	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 23233 CFS-HRS; 1920.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	176	142	124	55	41	7	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	250.3	(RUNOFF)
143.24	7.0	(RUNOFF)
150.92	5.3	(RUNOFF)
155.27	4.4	(RUNOFF)
162.92	4.5	(RUNOFF)
167.25	3.6	(RUNOFF)
174.92	3.6	(RUNOFF)
210.92	2.8	(RUNOFF)
222.92	2.8	(RUNOFF)
232.52	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1217 CFS-HRS; 100.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	12	6	4	4	3	3	3	2

DURATION(HRS)	108	120	130
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.89) FOR SUBWATERSHED XSECTION 10.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.7%. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 109. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	250.3	1766.99
143.24	7.0	1763.85
150.92	5.3	1763.79
155.27	4.4	1763.76
162.92	4.5	1763.76
167.25	3.6	1763.73
174.92	3.6	1763.73
210.92	2.8	1763.70
222.92	2.8	1763.70
232.52	2.8	1763.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1217 CFS-HRS; 100.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	12	6	4	4	3	3	3	2

DURATION(HRS)	108	120	130
FLOW(CFS)	2	2	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.53	626.6	(RUNOFF)
143.11	16.2	(RUNOFF)
150.70	12.2	(RUNOFF)
155.11	10.2	(RUNOFF)
162.78	10.3	(RUNOFF)
167.10	8.3	(RUNOFF)
174.87	8.3	(RUNOFF)
210.66	6.3	(RUNOFF)
222.64	6.3	(RUNOFF)
232.23	6.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.42 WATERSHED INCHES; 3066 CFS-HRS; 253.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	32	14	10	8	7	6	6	5

DURATION(HRS)	108	120	132	140
FLOW(CFS)	4	4	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.55) FOR SUBWATERSHED XSECTION 9.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.68	867.0	1770.18
143.12	23.2	1764.44
150.88	17.5	1764.24
155.12	14.7	1764.13
162.90	15.0	1764.15
167.11	11.9	1764.03
174.90	12.1	1764.04
210.85	9.1	1763.93
222.83	9.1	1763.93
232.43	9.1	1763.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.22 WATERSHED INCHES; 4282 CFS-HRS; 353.9 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	44	21	15	12	10	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	3	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.68	867.0	1757.97
143.12	23.2	1754.07
150.88	17.5	1753.98
155.12	14.7	1753.94
162.90	15.0	1753.94
167.11	11.9	1753.89
174.90	12.1	1753.90
210.85	9.1	1753.85
222.83	9.1	1753.85
232.43	9.1	1753.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.22 WATERSHED INCHES; 4282 CFS-HRS; 353.9 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	44	21	15	12	10	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	3	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	950.6	(RUNOFF)
122.10	168.6	(RUNOFF)
143.10	23.4	(RUNOFF)
150.37	17.6	(RUNOFF)
155.19	14.7	(RUNOFF)
162.44	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.38	11.9	(RUNOFF)
222.82	9.1	(RUNOFF)
232.02	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 4612 CFS-HRS; 381.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	23	12	9	7	6	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 8.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	1812.3	1759.91
143.11	46.6	1754.45
150.60	35.1	1754.27
155.13	29.4	1754.18
162.71	29.5	1754.18
167.10	23.7	1754.08
174.64	23.8	1754.08
210.59	18.1	1753.99
222.83	18.2	1753.99
232.27	18.2	1753.99

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40 CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20 CFS	9.63	9.93	9.96	10.13	15.59	16.83	16.94	17.16
111.00 CFS	23.36	24.87	25.02	25.30	37.76	40.76	41.06	41.78
115.80 CFS	73	81	82	129	1438	1775	1812	1783
120.60 CFS	645	351	320	316	191	160	156	155
125.40 CFS	123	114	113	112	96	92	91	91
130.20 CFS	73.72	69.24	68.75	68.34	51.17	46.57	46.06	45.87
135.00 CFS	41.63	40.52	40.39	40.38	40.46	40.49	40.49	40.52
139.80 CFS	45.08	46.27	46.40	46.42	46.54	46.57	46.57	46.10

144.60 CFS	33.13	29.63	29.24	29.19	29.23	29.24	29.24	29.31
149.40 CFS	33.82	35.02	35.15	35.02	30.67	29.51	29.38	29.37
154.20 CFS	29.41	29.42	29.42	29.39	24.89	23.72	23.59	23.58
159.00 CFS	23.60	23.61	23.61	23.75	28.21	29.41	29.54	29.48
163.80 CFS	25.02	23.84	23.71	23.69	23.71	23.72	23.72	23.56
168.60 CFS	19.14	17.97	17.83	17.82	17.83	17.83	17.83	17.86
173.40 CFS	22.46	23.66	23.79	23.69	19.22	18.03	17.90	17.88
178.20 CFS	17.89	17.89	17.89	17.90	17.91	17.91	17.91	17.91
183.00 CFS	17.93	17.93	17.93	17.93	17.95	17.95	17.95	17.95
187.80 CFS	17.96	17.97	17.97	17.97	17.98	17.99	17.99	17.85
192.60 CFS	13.36	12.15	12.02	12.17	16.66	17.86	18.00	17.92
197.40 CFS	13.38	12.17	12.04	12.11	16.67	17.89	18.03	17.91
202.20 CFS	13.38	12.19	12.06	12.04	12.05	12.05	12.05	12.05
207.00 CFS	12.05	12.05	12.05	12.20	16.72	17.94	18.08	17.94
211.80 CFS	13.44	12.23	12.09	12.08	12.08	12.08	12.08	12.08
216.60 CFS	12.09	12.09	12.09	12.09	12.09	12.10	12.10	12.24
221.40 CFS	16.79	18.00	18.14	18.12	13.47	12.27	12.13	12.12
226.20 CFS	12.12	12.12	12.12	12.12	12.13	12.13	12.13	12.22
231.00 CFS	16.83	18.06	18.19	18.11	13.52	12.30	12.17	12.15
235.80 CFS	12.15	12.16	12.16	11.88	2.76	.31		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.46 WATERSHED INCHES; 8894 CFS-HRS; 735.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	42	25	18	14	12	1	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
246 CFS-HRS; 735.0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 107. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	1812.3	1757.02
143.11	46.6	1750.09
150.60	35.1	1749.91
155.13	29.4	1749.76
162.71	29.5	1749.77
167.10	23.7	1749.62
174.64	23.8	1749.62
210.59	18.1	1749.47
222.83	18.2	1749.47
232.27	18.2	1749.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40 CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20 CFS	9.63	9.93	9.96	10.13	15.59	16.83	16.94	17.16
111.00 CFS	23.36	24.87	25.02	25.30	37.76	40.76	41.06	41.78
115.80 CFS	73	81	82	129	1438	1775	1812	1783
120.60 CFS	645	351	320	316	191	160	156	155
125.40 CFS	123	114	113	112	96	92	91	91
130.20 CFS	73.72	69.24	68.75	68.34	51.17	46.57	46.06	45.87
135.00 CFS	41.63	40.52	40.39	40.38	40.46	40.49	40.49	40.52
139.80 CFS	45.08	46.27	46.40	46.42	46.54	46.57	46.57	46.10
144.60 CFS	33.13	29.63	29.24	29.19	29.23	29.24	29.24	29.31
149.40 CFS	33.82	35.02	35.15	35.02	30.67	29.51	29.38	29.37
154.20 CFS	29.41	29.42	29.42	29.39	24.89	23.72	23.59	23.58
159.00 CFS	23.60	23.61	23.61	23.75	28.21	29.41	29.54	29.48
163.80 CFS	25.02	23.84	23.71	23.69	23.71	23.72	23.72	23.56
168.60 CFS	19.14	17.97	17.83	17.82	17.83	17.83	17.83	17.86
173.40 CFS	22.46	23.66	23.79	23.69	19.22	18.03	17.90	17.88
178.20 CFS	17.89	17.89	17.89	17.90	17.91	17.91	17.91	17.91
183.00 CFS	17.93	17.93	17.93	17.93	17.95	17.95	17.95	17.95
187.80 CFS	17.96	17.97	17.97	17.97	17.98	17.99	17.99	17.85
192.60 CFS	13.36	12.15	12.02	12.17	16.66	17.86	18.00	17.92
197.40 CFS	13.38	12.17	12.04	12.11	16.67	17.89	18.03	17.91
202.20 CFS	13.38	12.19	12.06	12.04	12.05	12.05	12.05	12.05
207.00 CFS	12.05	12.05	12.05	12.20	16.72	17.94	18.08	17.94
211.80 CFS	13.44	12.23	12.09	12.08	12.08	12.08	12.08	12.08
216.60 CFS	12.09	12.09	12.09	12.09	12.09	12.10	12.10	12.24
221.40 CFS	16.79	18.00	18.14	18.12	13.47	12.27	12.13	12.12
226.20 CFS	12.12	12.12	12.12	12.12	12.13	12.13	12.13	12.22
231.00 CFS	16.83	18.06	18.19	18.11	13.52	12.30	12.17	12.15
235.80 CFS	12.15	12.16	12.16	11.88	2.76	.31		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.46 WATERSHED INCHES; 8894 CFS-HRS; 735.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	42	25	18	14	12	1	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	4571.2	1761.30
141.01	231.0	1751.70
142.41	231.2	1751.71
150.37	199.9	1751.49
162.35	182.1	1751.36
174.30	163.5	1751.23
195.89	139.5	1751.06
199.96	132.1	1751.01
210.12	83.8	1750.49
222.59	70.4	1750.35

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.94	3.26	3.28	3.32	5.71	6.15	6.18	6.28
101.40 CFS	9.97	10.68	10.72	10.80	13.59	14.17	14.21	14.27
106.20 CFS	17.74	18.47	18.52	18.86	30.45	32.91	33.11	33.52
111.00 CFS	47.68	50.74	51.00	52.06	81.08	87.26	87.76	90.54
115.80 CFS	165	181	183	297	3693	4448	4571	4468
120.60 CFS	1584	970	918	903	586	519	513	510
125.40 CFS	423	405	403	401	358	349	348	346
130.20 CFS	301	292	291	289	243	232	231	231
135.00 CFS	219	217	217	216	217	216	216	217
139.80 CFS	228	231	231	231	231	231	231	230
144.60 CFS	194	187	186	186	186	185	185	185
149.40 CFS	197	200	200	199	187	185	184	184
154.20 CFS	184	184	184	183	171	169	168	168
159.00 CFS	168	168	167	168	180	182	182	181
163.80 CFS	169	167	166	166	166	166	166	165
168.60 CFS	153	150	150	149	149	149	149	149
173.40 CFS	161	163	163	163	151	148	147	147
178.20 CFS	147	147	146	146	146	146	145	145
183.00 CFS	145	145	144	144	144	144	143	143
187.80 CFS	143	143	143	142	142	142	141	141
192.60 CFS	128	125	125	125	137	139	139	139
197.40 CFS	126	123	123	123	132	129	124	120
202.20 CFS	104	97	94	90	87	84	82	79
207.00 CFS	77.00	74.89	72.93	71.65	82.27	83.79	83.12	81.88
211.80 CFS	68.84	65.10	63.72	62.59	61.56	60.60	59.71	58.88
216.60 CFS	58.13	57.43	56.96	56.51	56.11	55.71	55.33	55.31
221.40 CFS	67.51	70.11	70.43	70.09	57.86	55.05	54.53	54.21
226.20 CFS	53.93	53.66	53.39	53.14	52.92	52.70	52.49	52.73
231.00 CFS	65.00	67.77	68.23	67.93	55.93	53.17	52.76	52.54

235.80 CFS	52.36	52.17	51.99	50.91	25.93	19.82	18.41	17.42
240.60 CFS	16.50	15.63	14.80	14.02	13.28	12.58	11.91	11.28
245.40 CFS	10.69	10.12	9.59	9.08	8.60	8.15	7.71	7.31
250.20 CFS	6.92	6.55	6.21	5.88	5.57	5.27	5.00	4.73
255.00 CFS	4.48	4.24	4.02	3.81	3.61	3.42	3.24	3.06
259.80 CFS	2.90	2.75	2.60	2.47	2.34	2.21	2.10	1.98
264.60 CFS	1.88	1.78	1.69	1.60	1.51	1.43	1.36	1.29
269.40 CFS	1.22	1.15	1.09	1.03	.98	.93	.88	.83
274.20 CFS	.79	.75	.71	.67	.63	.60	.57	.54
279.00 CFS	.51	.48						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.97 WATERSHED INCHES; 32127 CFS-HRS; 2655.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	187
FLOW(CFS)	217	167	143	77	53	10	2	0

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
175.65	154.8	1712.44
168.60	154.8	1712.45

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
92.40 CFS	.00	.01	.01	.01	.01	.01	.02	.02
97.20 CFS	.03	.04	.05	.06	.08	.10	.12	.14
102.00 CFS	.17	.20	.23	.27	.31	.35	.39	.44
106.80 CFS	.49	.54	.59	.66	.75	.85	.94	1.06
111.60 CFS	1.20	1.35	1.50	1.69	1.93	2.18	2.43	2.80
116.40 CFS	3	4	5	10	65	127	136	141
121.20 CFS	143	144	145	146	147	147	148	148
126.00 CFS	149	149	150	150	150	150	151	151
130.80 CFS	151	151	152	152	152	152	152	152
135.60 CFS	152	152	152	152	153	153	153	153
140.40 CFS	153	153	153	153	153	153	154	154
145.20 CFS	154	154	154	154	154	154	154	154
150.00 CFS	154	154	154	154	154	154	154	154
154.80 CFS	154	154	154	154	154	155	155	155
159.60 CFS	155	155	155	155	155	155	155	155
164.40 CFS	155	155	155	155	155	155	155	155
169.20 CFS	155	155	155	155	155	155	155	155
174.00 CFS	155	155	155	155	155	155	155	155
178.80 CFS	155	155	155	155	155	155	155	155
183.60 CFS	155	155	155	155	155	155	155	155
188.40 CFS	155	155	155	155	155	155	154	154
193.20 CFS	154	154	154	154	154	154	154	154
198.00 CFS	154	154	154	154	154	154	154	154
202.80 CFS	154	154	154	154	154	153	153	153
207.60 CFS	153	153	153	153	153	153	153	152

212.40 CFS	152	152	152	152	152	152	152	151
217.20 CFS	151	151	151	151	151	151	151	150
222.00 CFS	150	150	150	150	150	150	150	149
226.80 CFS	149	149	149	149	149	149	148	148
231.60 CFS	148	148	148	148	148	148	148	147
236.40 CFS	147	147	147	147	147	146	146	146
241.20 CFS	146	146	145	145	145	145	145	144
246.00 CFS	144	144	144	144	143	143	143	143
250.80 CFS	142	142	142	142	142	141	141	141
255.60 CFS	141	140	140	140	140	140	139	139
260.40 CFS	139	139	138	138	138	138	137	137
265.20 CFS	137	136	136	136	136	135	135	135
270.00 CFS	134	134	134	134	133	133	133	133
274.80 CFS	132	132	132	131	131	131	131	130
279.60 CFS	130	130	129	129	129	129	128	128
284.40 CFS	128	128	127	127	127	127	126	126
289.20 CFS	126	125	125	125	125	124	124	124
294.00 CFS	124	123	123	123	123	122	122	122
298.80 CFS	119	116	113	110	107	104	101	99
303.60 CFS	96.08	93.58	91.15	88.78	86.47	84.22	82.03	79.90
308.40 CFS	77.82	75.79	73.82	71.90	70.03	68.21	66.44	64.71
313.20 CFS	63.03	61.39	59.79	58.24	56.72	55.25	53.81	52.41
318.00 CFS	51.05	49.72	48.43	47.17	45.94	44.75	43.58	42.45
322.80 CFS	41.34	40.27	39.22	38.20	37.21	36.24	35.30	34.38
327.60 CFS	33.49							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.62 WATERSHED INCHES; 28308 CFS-HRS; 2339.4 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	155	154	153	150	145	137	127	68

DURATION(HRS) 209
FLOW(CFS) 33 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 7.02 inches AND 237.60 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 3, ARC 2							
MAIN TIME INCREMENT .600 HOURS							
ALTERNATE 5 STORM 1							
XSECTION 101	RUNOFF	1.86	3.12	---	119.83	748	402.2
XSECTION 1	RUNOFF	1.20	3.01	---	119.62	467	389.2
XSECTION 1	ADDHYD	3.06	3.07	---	119.75	1240	405.2
XSECTION 2	RUNOFF	1.24	2.41	---	119.58	372	300.0
XSECTION 2	ADDHYD	4.30	2.88	---	119.73	1636	380.5
XSECTION 3	RUNOFF	1.85	3.12	---	119.73	777	420.0
XSECTION 3	ADDHYD	6.15	2.95	---	119.73	2412	392.2
STRUCTURE 1	RESVOR	6.15	2.63	1799.53	125.54	187	30.4
XSECTION 104	REACH	6.15	2.53	.51	123.60F	115F	18.7
XSECTION 4	RUNOFF	2.54	3.11	---	119.54	1030	405.5
XSECTION 4	ADDHYD	8.69	2.70	---	119.70	1208	139.0
XSECTION 106	REACH	8.69	2.70	2.81	119.70	1208	139.0
XSECTION 5	RUNOFF	2.00	3.40	---	119.20	900	450.0
XSECTION 5	ADDHYD	10.69	2.83	---	119.54	2027	189.6
XSECTION 6	RUNOFF	1.14	2.98	---	119.19	444	389.5
XSECTION 6	ADDHYD	11.83	2.85	---	119.50	2469	208.7
XSECTION 106	ADDHYD	.00	2.85	.24	125.54	72	********
XSECTION 7	RUNOFF	.96	2.42	---	119.10	295	307.3
XSECTION 7	ADDHYD	12.79	2.81	---	119.42	2759	215.7
XSECTION 10	RUNOFF	.67	2.81	---	119.72	250	373.1
XSECTION 109	REACH	.67	2.81	1766.99	119.72	250	373.1
XSECTION 9	RUNOFF	1.39	3.42	---	119.53	627	451.1
XSECTION 109	ADDHYD	2.06	3.22	1770.18	119.68	867	420.9
XSECTION 108	REACH	2.06	3.22	1757.97	119.68	867	420.9
XSECTION 8	RUNOFF	1.92	3.72	---	119.20	951	495.3
XSECTION 108	ADDHYD	3.98	3.46	1759.91	119.43	1812	455.3
XSECTION 109	ADDHYD	.00	3.46	---	.00	0	********
XSECTION 107	REACH	3.98	3.46	1757.02	119.43	1812	455.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 1							
XSECTION 107	ADDHYD	16.77	2.97	1761.30	119.43	4571	272.6
STRUCTURE 2	RESVOR	16.77	2.62	1712.44	175.65T	155T	9.2

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1203	120.0	1203	120.0	4.77	1.00	.029	1.000	1.00?
103	2500		1572	120.0	1572	120.0	4.77	1.00	.029	1.000	1.00?
104	6700		115	123.6	115	123.6	1.57	1.53	.000	1.000	1.00?
106	3700		1127	120.0	1127	120.0	1.04	1.59	.000	1.000	1.00?
109	2700		240	120.0	240	120.0	.29	1.46	.018	1.000	1.00?
108	2100		863	119.4	863	119.4	.71	1.44	.003	1.000	1.00?
107	5300		1812	119.4	1812	119.4	.56	1.37	.021	1.000	1.00?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE 2	16.77	
ALTERNATE 5		155
STRUCTURE 1	6.15	
ALTERNATE 5		187
XSECTION 1	3.06	
ALTERNATE 5		1240
XSECTION 2	4.30	
ALTERNATE 5		1636
XSECTION 3	6.15	
ALTERNATE 5		2412
XSECTION 4	8.69	
ALTERNATE 5		1208
XSECTION 5	10.69	
ALTERNATE 5		2027
XSECTION 6	11.83	
ALTERNATE 5		2469
XSECTION 7	12.79	
ALTERNATE 5		2759
XSECTION 8	1.92	
ALTERNATE 5		951
XSECTION 9	1.39	
ALTERNATE 5		627
XSECTION 10	.67	
ALTERNATE 5		250
XSECTION 101	1.86	
ALTERNATE 5		748
XSECTION 104	6.15	

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 104	6.15	
ALTERNATE 5		115
XSECTION 106	.00	
ALTERNATE 5		72
XSECTION 107	16.77	
ALTERNATE 5		4571
XSECTION 108	3.98	
ALTERNATE 5		1812
XSECTION 109	.00	
ALTERNATE 5		0

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = SBTR20BT.DAT , GIVEN DATA FILE
OUTPUT = SBTR20BT.OUT , DATED 09/18/**,09:33:20

FILES GENERATED - DATED 09/18/**,09:33:20

NONE!

TOTAL NUMBER OF WARNINGS = 20, MESSAGES = 2

JOB ENDED AT 09:33:20
*** TR-20 RUN COMPLETED ***

```
***********[redacted]**80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****************

JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATEL
TITLE 000 ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBT20bP2.DAT
 5 RAINFL 1            .5
 8        0.0          .008         .017         .026         .035
 8        .045         .055         .065         .076         .087
 8        .099         .112         .125         .14          .156
 8        .174         .194         .219         .254         .303
 8        .515         .583         .624         .654         .682
 8        .705         .727         .748         .767         .784
 8        .8           .816         .83          .844         .857
 8        .87          .882         .893         .905         .916
 8        .926         .936         .946         .955         .965
 8        .974         .983         .992         1.           1.
 9 ENDTBL
 5 RAINFL 2            .5
 8        0.0          .005         .011         .016         .022
 8        .028         .035         .041         .048         .056
 8        .063         .071         .081         .089         .098
 8        .109         .12          .133         .147         .163
 8        .181         .204         .235         .283         .663
 8        .735         .772         .799         .82          .838
 8        .854         .868         .88          .891         .902
 8        .912         .921         .929         .937         .945
 8        .952         .959         .965         .972         .978
 8        .984         .989         .995         1.           1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8        0.0          .002         .004         .006         .008
 8        .01          .012         .014         .016         .018
 8        .02          .022         .025         .027         .03
 8        .032         .035         .038         .04          .043
 8        .046         .049         .052         .055         .058
 8        .061         .064         .069         .072         .076
 8        .08          .084         .089         .093         .098
 8        .102         .108         .114         .121         .127
 8        .133         .143         .153         .164         .174
 8        .184         .198         .215         .238         .275
 8        .707         .765         .793         .813         .829
 8        .841         .849         .856         .863         .871
 8        .879         .884         .889         .895         .9
 8        .905         .909         .913         .918         .922
 8        .926         .929         .932         .936         .939
 8        .942         .945         .948         .951         .954
 8        .957         .959         .962         .964         .967
 8        .969         .971         .973         .976         .978
 8        .98          .982         .984         .987         .989
 8        .991         .993         .996         .998         1.
 9 ENDTBL
 5 RAINFL 4            .25
 8        0.0          .006         .011         .017         .028
 8        .041         .057         .075         .09          .562
 8        .697         .763         .807         .839         .873
 8        .907         .937         .948         .958         .968
 8        .979         .984         .989         1.           1.
 9 ENDTBL
```

```
**********************80-80 LIST OF INPUT DATA (CONTINUED)*******   ************
 5 RAINFL 5            .5
 8        0.0          .004         .008         .011         .016
 8        .021         .027         .034         .044         .055
 8        .07          .088         .108         .137         .172
 8        .217         .273         .341         .42          .492
 8        .56          .618         .672         .717         .753
 8        .782         .807         .827         .845         .86
 8        .873         .885         .895         .903         .913
 8        .921         .93          .935         .943         .949
 8        .954         .96          .967         .972         .978
 8        .982         .989         .993         1.           1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0          0.0          0.0
 8                     2.           450.         93.8
 8                     3.           838.         175.5
 8                     4.           1288.        270.
 8                     5.           1782.        373.2
 8                     6.           2314.        484.4
 8                     7.           2875.        601.7
 8                     8.           3454.        722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0          0.0          0.0
 8                     2.           450.         93.8
 8                     3.           838.         175.5
 8                     4.           1288.        270.
 8                     5.           1782.        373.2
 8                     6.           2314.        484.4
 8                     7.           2875.        601.7
 8                     8.           3454.        722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0          0.0          0.0
 8                     2.           450.         40.
 8                     3.           838.         60.
 8                     4.           1288.        80.
 8                     5.           1782.        120.
 8                     6.           2314.        130.
 8                     7.           2875.        140.
 8                     8.           3454.        160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0          0.0          0.0
 8                     1.5          441.         45.
 8                     2.5          995.         75.
 8                     3.5          1682.        105.
 8                     4.5          2468.        135.
 8                     5.5          3339.        165.
 8                     6.5          4272.        195.
 8                     7.5          5258.        225.
 8                     8.5          6296.        255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.        0.0          0.0
 8                     1750.        38.53        23.
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8                    1751.      130.52     52.
8                    1752.      273.18     87.
8                    1753.      470.98     128.
8                    1754.      706.86     187.
8                    1755.      1005.62    240.
8                    1756.      1369.42    299.
8                    1757.      1801.8     364.
8                    1758.      2305.5     435.
8                    1759.      2892.8     512.
8                    1760.      3558.1     595.
8                    1761.      4316.04    684.
8                    1762.      5156.98    779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7     0.0        0.0
8                    1754.7     61.93      23.
8                    1755.7     209.35     52.
8                    1756.7     438.91     87.
8                    1757.7     757.01     128.
8                    1758.7     1167.41    175.
8                    1759.7     1678.56    228.
8                    1760.7     2302.39    287.
8                    1761.7     3038.91    352.
8                    1762.7     3894.74    435.
8                    1763.7     4647.76    512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
3 STRUCT     01
8                    1791.94    0.00       0.0
8                    1793.      0.01       46.8
8                    1794.1     0.02       106.
8                    1794.5     26.3       130.
8                    1795.      74.4       161.2
8                    1795.14    91.2       170.7
8                    1796.      96.16      230.7
8                    1797.14    102.42     322.23
8                    1799.42    113.91     542.99
8                    1801.72    1650.      812.88
8                    1804.      7700.      1121.9
8                    1806.28    15200.     1470.09
8                    1808.57    26200.     1865.04
9 ENDTBL
3 STRUCT     02
8                    1696.      0.0        0.0
8                    1700.      20.4       172.1
8                    1701.4     21.4       273.25
8                    1704.      243.6      482.24
```



```
8                    1708.      276.8      871.3
8                    1710.      291.8      1101.52
8                    1710.5     295.4      1163.52
8                    1711.5     302.8      1294.09
8                    1712.2     308.       1390.2
8                    1712.5     310.       1432.05
8                    1712.6     312.       1446.11
8                    1713.5     546.       1578.77
8                    1714.5     976.       1733.61
8                    1716.      2106.      1980.33
8                    1720.      6756.      2712.23
8                    1722.      9656.      3121.
8                    1724.      12556.     3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86     80.        1.21       1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2      79.        .67        1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   2       6 1.24     75.        .59        1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   3       6 1.85     80.        .91        1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                        1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.     1.                    0 0 0 0 0 0
6 REACH  3 104   4   5 6700.                           1 0 0 1 0 1
6 RUNOFF 1   4       6 2.54     80.        .54        1 0 0 1 0 1
6 ADDHYD 4   4   5 6 7                                1 0 0 1 0 1
6 DIVERT 6 104   7 5 2 3454.    1.                    0 0 0 0 0 0
6 ADDHYD 4 104   1 2 4                                0 0 0 0 0 0
6 REACH  3 106   5   3 3700.                           1 0 0 1 0 1
6 RUNOFF 1   5       6 2.       82.        .43        1 0 0 1 0 1
6 ADDHYD 4   5   3 6 7                                1 0 0 1 0 1
6 DIVERT 6 106   7 5 2 6296.    1.                    0 0 0 0 0 0
6 RUNOFF 1   6       6 1.14     79.        .42        1 0 0 1 0 1
6 ADDHYD 4   6   5 6 7                                1 0 0 1 0 1
6 SAVMOV 5   6   7   5
6 ADDHYD 4 106   4 2 7                                1 1 0 1 0 1
6 SAVMOV 5 106   7   1
6 RUNOFF 1   7       6 .96      75.        .23        1 0 0 1 0 1
6 ADDHYD 4   7   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5   7   7   2
6 RUNOFF 1  10       7 .67      78.        .89        1 0 0 1 0 1
6 DIVERT 6 110   7 5 3 820.     1.                    0 0 0 0 0 0
6 REACH  3 109   5   4 2700.                           1 0 0 1 0 1
6 RUNOFF 1   9       6 1.39     82.        .55        1 0 0 1 0 1
6 ADDHYD 4 109   4 6 7                                1 0 0 1 0 1
6 DIVERT 6 109   7 5 4 2546.    1.                    0 0 0 0 0 0
6 REACH  3 108   5   6 2100.                           1 0 0 1 0 1
6 RUNOFF 1   8       5 1.92     84.        .42        1 0 0 1 0 1
6 ADDHYD 4 108   5 6 7                                1 1 0 1 0 1
6 ADDHYD 4 109   3 4 5                                1 1 0 1 0 1
6 SAVMOV 5 106   5   3
6 DIVERT 6 108   7 5 4 5253.    1.                    0 0 0 0 0 0
6 REACH  3 107   5   6 5300.                           1 1 0 1 0 1
```

```
**********   *********80-80 LIST OF INPUT DATA (CONTINUED)**********************

 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                  1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                            1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .20
 7 COMPUT 7 101       2             3.94        1.0        2 2  05  01
   ENDCMP 1
 7 COMPUT 7 101       2             7.06        1.0        5 2  05  04
   ENDCMP 1
 7 COMPUT 7 101       2             15.80       1.0        5 2  05  05
   ENDCMP 1
   ENDJOB 2

******************************END OF 80-80 LIST******************************
```

```
TR20 ------------------------------------------------------------   ------ SCS -
        SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATE VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR20bP2.04TEST
09:23:59                    PASS   1   JOB NO.   1                        PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .200 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  3.94       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .200 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1            RAIN TABLE NO. = 2


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
       12.58                         1010.6                        (RUNOFF)
       21.76                           50.9                        (RUNOFF)
       23.77                           43.5                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.99 WATERSHED INCHES;    2390 CFS-HRS;     197.5 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     288    118     82     62     51     44     23      5

    DURATION(HRS)  18
    FLOW(CFS)       0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
       12.22                          900.0                        (RUNOFF)
       21.67                           32.7                        (RUNOFF)
       23.67                           28.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.91 WATERSHED INCHES;    1481 CFS-HRS;     122.4 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     129     69     51     39     32     28     14      1

    DURATION(HRS)  16
    FLOW(CFS)       0


OPERATION ADDHYD    XSECTION   1
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1728.9	(NULL)
21.68	83.5	(NULL)
23.69	71.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3870 CFS-HRS; 319.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	471	194	131	101	83	71	39	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	808.7	(RUNOFF)
19.31	36.6	(RUNOFF)
21.63	31.3	(RUNOFF)
23.63	27.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.62 WATERSHED INCHES; 1297 CFS-HRS; 107.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	113	63	46	36	30	26	6	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	2188.1	(NULL)
21.71	114.2	(NULL)
23.71	97.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	594	257	182	138	114	98	45	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	1217.7	(RUNOFF)
21.78	50.8	(RUNOFF)
23.77	43.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 2377 CFS-HRS; 196.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	255	114	79	61	51	44	23	3

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	3125.4	(NULL)
21.80	164.8	(NULL)
23.80	140.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
8.60 CFS	.31	.92	2.12	4.01	6.94	10.81	15.99	22.50
10.20 CFS	30	40	54	70	91	119	157	236
11.80 CFS	493	1170	2128	2895	3125	2936	2561	2147
13.40 CFS	1751	1414	1156	961	813	703	619	555
15.00 CFS	507	468	437	410	386	364	343	325
16.60 CFS	309	296	286	279	273	267	260	252
18.20 CFS	244	235	226	218	211	206	203	201
19.80 CFS	199	195	190	186	182	178	174	168
21.40 CFS	165	164	165	164	162	159	156	153
23.00 CFS	149	144	141	140	141	140	136	125
24.60 CFS	104	79	56	39	26	17	11	7
26.20 CFS	4.36	2.81	1.80	1.15	.74	.48		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 7544 CFS-HRS; 623.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	961	386	260	201	165	141	70	11

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.52	112.2	1799.08

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
11.80 CFS	.00	.01	.01	.02	57.27	93.53	96.99	99.54
13.40 CFS	102	103	104	105	106	106	107	107
15.00 CFS	107	108	108	108	109	109	109	109
16.60 CFS	109	110	110	110	110	110	110	110
18.20 CFS	110	111	111	111	111	111	111	111
19.80 CFS	111	111	111	111	111	112	112	112
21.40 CFS	112	112	112	112	112	112	112	112
23.00 CFS	112	112	112	112	112	112	112	112
24.60 CFS	112	112	112	112	112	112	112	112
26.20 CFS	112	112	111	111	111	111	111	111
27.80 CFS	111	111	111	111	111	110	110	110
29.40 CFS	110	110	110	110	110	110	110	109
31.00 CFS	109	109	109	109	109	109	109	109
32.60 CFS	109	109	108	108	108	108	108	108
34.20 CFS	108	108	108	108	108	107	107	107
35.80 CFS	107	107	107	107	107	107	107	107
37.40 CFS	106	106	106	106	106	106	106	106
39.00 CFS	106	106	106	105	105	105	105	105
40.60 CFS	105	105	105	105	105	105	104	104
42.20 CFS	104	104	104	104	104	104	104	104
43.80 CFS	104	103	103	103	103	103	103	103
45.40 CFS	103	103	103	103	102	102	102	102
47.00 CFS	102	102	102	102	102	101	101	101
48.60 CFS	101	101	101	101	101	101	100	100
50.20 CFS	100	100	100	100	100	100	100	99
51.80 CFS	99.30	99.19	99.08	98.97	98.86	98.74	98.63	98.52
53.40 CFS	98.41	98.30	98.19	98.08	97.97	97.86	97.74	97.63
55.00 CFS	97.52	97.41	97.30	97.19	97.08	96.97	96.86	96.76
56.60 CFS	96.65	96.54	96.43	96.32	96.21	96.09	95.96	95.83
58.20 CFS	95.70	95.57	95.43	95.30	95.17	95.04	94.91	94.78
59.80 CFS	94.66	94.53	94.40	94.27	94.14	94.01	93.88	93.75
61.40 CFS	93.63	93.50	93.37	93.24	93.12	92.99	92.86	92.74
63.00 CFS	92.61	92.48	92.36	92.23	92.10	91.98	91.85	91.73
64.60 CFS	91.60	91.48	91.35	91.23	89.14	86.58	84.08	81.66
66.20 CFS	79.31	77.02	74.80	72.87	71.04	69.25	67.51	65.81
67.80 CFS	64.15	62.54	60.96	59.43	57.93	56.48	55.06	53.67
69.40 CFS	52.32	51.00	49.72	48.47	47.25	46.06	44.90	43.77
71.00 CFS	42.67	41.60	40.55	39.53	38.54	37.57	36.62	35.70
72.60 CFS	34.80	33.93	33.07	32.24	31.43	30.64	29.87	29.12
74.20 CFS	28.38	27.67	26.97	26.30	25.82	25.36	24.91	24.46
75.80 CFS	24.02	23.59	23.17	22.75	22.34	21.94	21.55	21.16
77.40 CFS	20.78	20.41	20.04	19.68	19.33	18.98	18.64	18.31

79.00 CFS	17.98	17.66	17.34	17.03	16.73	16.43	16.13	15.84
80.60 CFS	15.56	15.28	15.00	14.73	14.47	14.21	13.96	13.71
82.20 CFS	13.46	13.22	12.98	12.75	12.52	12.30	12.07	11.86
83.80 CFS	11.65	11.44	11.23	11.03	10.83	10.64	10.45	10.26
85.40 CFS	10.08	9.89	9.72	9.54	9.37	9.20	9.04	8.88
87.00 CFS	8.72	8.56	8.41	8.26				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6170 CFS-HRS; 509.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	99	94	57	22
DURATION(HRS)	72	75						
FLOW(CFS)	11	8 TRUNCATED						

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.77	112.2	.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6168 CFS-HRS; 509.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	98	94	57	22
DURATION(HRS)	72	75						
FLOW(CFS)	11	8 TRUNCATED						

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	(RUNOFF)
19.31	83.4	(RUNOFF)
21.61	71.4	(RUNOFF)
23.61	61.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 3255 CFS-HRS; 269.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	260	145	108	83	70	61	31	3
DURATION(HRS)	17							
FLOW(CFS)	0							

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	(NULL)
19.36	194.3	(NULL)
21.61	183.1	(NULL)
23.61	173.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29
DURATION(HRS)	72	78						
FLOW(CFS)	15	8 TRUNCATED						

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	4.13
19.36	194.3	.66
21.61	183.1	.62
23.61	173.4	.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29
DURATION(HRS)	72	78						
FLOW(CFS)	15	8 TRUNCATED						

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	2048.6	(RUNOFF)
19.33	68.2	(RUNOFF)
21.56	59.0	(RUNOFF)
23.56	50.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.14 WATERSHED INCHES; 2762 CFS-HRS; 228.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	121	91	68	59	51	34	5
DURATION(HRS)	17							
FLOW(CFS)	0							

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	4157.5	(NULL)
19.34	262.5	(NULL)
21.58	242.0	(NULL)
23.58	224.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 12182 CFS-HRS; 1006.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	262	112	108	104	100	96	80	32
DURATION(HRS)	72	79						
FLOW(CFS)	15	9 TRUNCATED						

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	1030.8	(RUNOFF)
19.33	36.7	(RUNOFF)
21.55	31.9	(RUNOFF)
23.55	27.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 1408 CFS-HRS; 116.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	119	65	47	37	31	27	13	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.09	5213.0	(NULL)
19.34	299.2	(NULL)
21.58	273.9	(NULL)
23.58	251.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.78 WATERSHED INCHES; 13582 CFS-HRS; 1122.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	299	112	108	104	100	96	82	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION ADDHYD XSECTION 106

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
399 CFS-HRS; 1122.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.93	833.8	(RUNOFF)
16.90	38.4	(RUNOFF)
19.31	28.4	(RUNOFF)
20.31	25.0	(RUNOFF)
21.43	25.0	(RUNOFF)
22.30	21.7	(RUNOFF)
23.43	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.61 WATERSHED INCHES; 996 CFS-HRS; 82.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	84	46	35	28	24	20	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	5926.2	(NULL)
19.33	327.6	(NULL)
21.56	298.5	(NULL)
23.56	272.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS									
7.60	CFS	.07	.64	1.12	2.62	5.55	7.58	13.30	18.66
9.20	CFS	25	36	43	57	68	87	113	133
10.80	CFS	182	221	297	410	898	3627	5784	5345
12.40	CFS	3395	2284	1618	1249	1045	893	815	732
14.00	CFS	677	638	601	580	554	536	517	494
15.60	CFS	479	454	437	424	411	405	403	403
17.20	CFS	397	386	379	367	357	347	335	329
18.80	CFS	328	327	327	327	326	315	307	303
20.40	CFS	302	300	289	281	284	294	298	289
22.00	CFS	281	278	277	275	264	255	258	269
23.60	CFS	272	263	255	217	158	129	118	114
25.20	CFS	113	112	112	112	112	112	112	112
26.80	CFS	112	111	111	111	111	111	111	111
28.40	CFS	111	111	111	110	110	110	110	110
30.00	CFS	110	110	110	110	110	110	109	109
31.60	CFS	109	109	109	109	109	109	109	109
33.20	CFS	109	108	108	108	108	108	108	108
34.80	CFS	108	108	108	107	107	107	107	107
36.40	CFS	107	107	107	107	107	107	106	106
38.00	CFS	106	106	106	106	106	106	106	106
39.60	CFS	106	105	105	105	105	105	105	105
41.20	CFS	105	105	105	105	104	104	104	104
42.80	CFS	104	104	104	104	104	104	104	103
44.40	CFS	103	103	103	103	103	103	103	103
46.00	CFS	103	103	103	102	102	102	102	102
47.60	CFS	102	102	102	102	101	101	101	101
49.20	CFS	101	101	101	101	100	100	100	100
50.80	CFS	100	100	100	100	100	99	99	99
52.40	CFS	99.12	99.01	98.90	98.79	98.67	98.56	98.45	98.34
54.00	CFS	98.23	98.12	98.01	97.90	97.79	97.68	97.57	97.46
55.60	CFS	97.34	97.23	97.12	97.01	96.90	96.80	96.69	96.58
57.20	CFS	96.47	96.36	96.25	96.13	96.00	95.88	95.74	95.61

58.80 CFS	95.48	95.35	95.22	95.09	94.96	94.83	94.70	94.57
60.40 CFS	94.44	94.32	94.19	94.06	93.93	93.80	93.67	93.55
62.00 CFS	93.42	93.29	93.16	93.04	92.91	92.78	92.65	92.53
63.60 CFS	92.40	92.28	92.15	92.02	91.90	91.77	91.65	91.52
65.20 CFS	91.40	91.27	89.72	87.43	84.99	82.57	80.19	77.89
66.80 CFS	75.64	73.63	71.74	69.93	68.17	66.45	64.78	63.15
68.40 CFS	61.56	60.01	58.50	57.03	55.59	54.19	52.83	51.50
70.00 CFS	50.21	48.94	47.71	46.51	45.34	44.20	43.09	42.00
71.60 CFS	40.95	39.92	38.91	37.93	36.98	36.05	35.14	34.26
73.20 CFS	33.39	32.55	31.74	30.94	30.16	29.40	28.66	27.94
74.80 CFS	27.24	26.55	26.02	25.54	25.08	24.63	24.18	23.75
76.40 CFS	23.33	22.91	22.50	22.09	21.70	21.31	20.92	20.55
78.00 CFS	20.18	19.82	19.46	19.11	18.77	18.43	18.10	17.78
79.60 CFS	17.46	17.15	16.84	16.54	16.24	15.95	15.66	15.38
81.20 CFS	15.11	14.84	14.57	14.31	14.05	13.80	13.55	13.31
82.80 CFS	13.07	12.84	12.60	12.38	12.16	11.94	11.73	11.52
84.40 CFS	11.31	11.10	10.91	10.71	10.52	10.33	10.14	9.96
86.00 CFS	9.78	9.61	9.44	9.27	9.10	8.94	8.78	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 14578 CFS-HRS; 1204.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	327	112	108	104	100	96	83	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	405.0	(RUNOFF)
21.77	17.7	(RUNOFF)
23.76	15.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	86	38	27	21	18	15	7	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.66	375.1	1767.83
22.00	17.6	1764.24
23.99	15.1	1764.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 795 CFS-HRS; 65.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	82	38	28	21	18	15	6	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	1297.5	(RUNOFF)
21.61	40.5	(RUNOFF)
23.61	34.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.15 WATERSHED INCHES; 1926 CFS-HRS; 159.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	165	87	64	47	40	36	25	4

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	1471.5	1772.52
21.61	57.8	1765.06
23.61	49.5	1764.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 2723 CFS-HRS; 225.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	264	126	90	69	58	51	29	7

DURATION(HRS)	18
FLOW(CFS)	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	1471.5	1759.29
21.61	57.8	1754.63
23.61	49.5	1754.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 2723 CFS-HRS; 225.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	264	126	90	69	58	51	29	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	2151.5	(RUNOFF)
19.32	67.7	(RUNOFF)
21.55	58.5	(RUNOFF)
23.55	50.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.31 WATERSHED INCHES; 2867 CFS-HRS; 236.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	129	92	68	60	51	42	12

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	3497.3	1762.24
21.57	116.3	1755.07
23.57	99.7	1754.96

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
7.00 CFS	.03	.73	2.13	2.98	5.42	7.40	10.22	15.13
8.60 CFS	18.22	23.62	28.16	33.27	41.22	46.53	56.04	64.38
10.20 CFS	76	95	109	140	168	212	287	504
11.80 CFS	1969	3349	3373	2310	1686	1259	952	768
13.40 CFS	623	536	461	407	372	339	318	298
15.00 CFS	282	269	253	242	227	215	206	196
16.60 CFS	191	188	187	183	177	172	165	159
18.20 CFS	153	146	141	139	138	137	137	136

19.80 CFS	130	125	123	121	120	114	109	109
21.40 CFS	114	116	112	108	106	105	103	98
23.00 CFS	92.15	92.36	97.41	99.62	95.49	90.80	74.58	41.46
24.60 CFS	22.06	12.82	7.50	4.27	2.43	1.39	.78	.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.18 WATERSHED INCHES; 5610 CFS-HRS; 463.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	504	253	183	139	116	103	75	18

DURATION(HRS)	18	19
FLOW(CFS)	2	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
99 CFS-HRS; 463.6 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	3221.0	1759.49
21.81	115.2	1750.83
23.81	98.6	1750.65

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
7.20 CFS	.03	.53	1.66	2.60	4.60	6.59	9.17	13.40
8.80 CFS	16.83	21.65	26.28	31.25	38.34	44.16	52.60	60.97
10.40 CFS	72	88	103	129	157	196	260	433
12.00 CFS	1524	2821	3214	2572	1942	1457	1098	864
13.60 CFS	693	582	496	433	389	353	328	307
15.20 CFS	289	275	259	247	233	220	210	200
16.80 CFS	194	190	188	185	179	174	168	162
18.40 CFS	156	148	143	140	138	137	137	136
20.00 CFS	132	127	124	122	121	116	111	109
21.60 CFS	113	115	113	109	107	105	104	99
23.20 CFS	94.24	92.90	96.10	98.60	96.39	92.42	79.74	52.54
24.80 CFS	30.88	18.04	10.55	6.08	3.49	1.99	1.13	.65
26.40 CFS	.37							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.17 WATERSHED INCHES; 5580 CFS-HRS; 461.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	496	259	185	138	116	103	72	18

DURATION(HRS)	18	19
FLOW(CFS)	2	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	8191.5	1765.61
21.60	410.9	1752.70
23.60	368.5	1752.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
7.20 CFS	.03	.53	1.73	3.23	5.72	9.21	14.72	20.98
8.80 CFS	30	40	52	67	82	101	121	147
10.40 CFS	185	222	285	350	453	606	1158	4061
12.00 CFS	7309	8166	6609	4856	3560	2706	2144	1756
13.60 CFS	1508	1314	1173	1071	990	933	882	843
15.20 CFS	806	769	738	702	670	643	620	605
16.80 CFS	597	593	584	570	558	541	525	509
18.40 CFS	491	478	471	467	466	465	463	451
20.00 CFS	439	430	426	422	410	397	395	404
21.60 CFS	411	404	394	387	384	380	368	354
23.20 CFS	353	362	368	362	351	310	238	181
24.80 CFS	149	132	123	118	116	114	113	112
26.40 CFS	112	112	112	111	111	111	111	111
28.00 CFS	111	111	111	111	111	110	110	110
29.60 CFS	110	110	110	110	110	110	110	110
31.20 CFS	109	109	109	109	109	109	109	109
32.80 CFS	109	109	109	108	108	108	108	108
34.40 CFS	108	108	108	108	108	107	107	107
36.00 CFS	107	107	107	107	107	107	107	107
37.60 CFS	106	106	106	106	106	106	106	106
39.20 CFS	106	106	106	105	105	105	105	105
40.80 CFS	105	105	105	105	105	105	104	104
42.40 CFS	104	104	104	104	104	104	104	104
44.00 CFS	104	103	103	103	103	103	103	103
45.60 CFS	103	103	103	103	103	102	102	102
47.20 CFS	102	102	102	102	102	102	101	101
48.80 CFS	101	101	101	101	101	101	100	100
50.40 CFS	100	100	100	100	100	100	100	99
52.00 CFS	99.35	99.23	99.12	99.01	98.90	98.79	98.67	98.56
53.60 CFS	98.45	98.34	98.23	98.12	98.01	97.90	97.79	97.68
55.20 CFS	97.57	97.46	97.34	97.23	97.12	97.01	96.90	96.80
56.80 CFS	96.69	96.58	96.47	96.36	96.25	96.13	96.00	95.88
58.40 CFS	95.74	95.61	95.48	95.35	95.22	95.09	94.96	94.83
60.00 CFS	94.70	94.57	94.44	94.32	94.19	94.06	93.93	93.80

61.60 CFS	93.67	93.55	93.42	93.29	93.16	93.04	92.91	92.78
63.20 CFS	92.65	92.53	92.40	92.28	92.15	92.02	91.90	91.77
64.80 CFS	91.65	91.52	91.40	91.27	89.72	87.43	84.99	82.57
66.40 CFS	80.19	77.89	75.64	73.63	71.74	69.93	68.17	66.45
68.00 CFS	64.78	63.15	61.56	60.01	58.50	57.03	55.59	54.19
69.60 CFS	52.83	51.50	50.21	48.94	47.71	46.51	45.34	44.20
71.20 CFS	43.09	42.00	40.95	39.92	38.91	37.93	36.98	36.05
72.80 CFS	35.14	34.26	33.39	32.55	31.74	30.94	30.16	29.40
74.40 CFS	28.66	27.94	27.24	26.55	26.02	25.54	25.08	24.63
76.00 CFS	24.18	23.75	23.33	22.91	22.50	22.09	21.70	21.31
77.60 CFS	20.92	20.55	20.18	19.82	19.46	19.11	18.77	18.43
79.20 CFS	18.10	17.78	17.46	17.15	16.84	16.54	16.24	15.95
80.80 CFS	15.66	15.38	15.11	14.84	14.57	14.31	14.05	13.80
82.40 CFS	13.55	13.31	13.07	12.84	12.60	12.38	12.16	11.94
84.00 CFS	11.73	11.52	11.31	11.10	10.91	10.71	10.52	10.33
85.60 CFS	10.14	9.96	9.78	9.61				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.87 WATERSHED INCHES; 20209 CFS-HRS; 1670.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	465	113	108	104	101	96	87	34

DURATION(HRS)	72	78
FLOW(CFS)	16	10 TRUNCATED

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.26	284.0	1708.97

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
7.60 CFS	.00	.01	.02	.03	.05	.09	.14	.21
9.20 CFS	.30	.41	.56	.74	.95	1.21	1.53	1.93
10.80 CFS	2.42	3.04	3.82	4.85	6.56	11.66	20.60	70.24
12.40 CFS	198	248	253	257	260	263	265	266
14.00 CFS	268	269	270	271	272	273	273	274
15.60 CFS	275	275	276	277	277	277	278	278
17.20 CFS	278	279	279	279	280	280	280	280
18.80 CFS	281	281	281	281	281	282	282	282
20.40 CFS	282	282	282	282	283	283	283	283
22.00 CFS	283	283	283	283	284	284	284	284
23.60 CFS	284	284	284	284	284	284	284	284
25.20 CFS	284	283	283	283	283	283	282	282
26.80 CFS	282	282	282	282	281	281	281	281
28.40 CFS	281	280	280	280	280	280	279	279
30.00 CFS	279	279	279	279	278	278	278	278
31.60 CFS	278	277	277	277	277	277	277	276
33.20 CFS	276	276	276	275	275	275	275	274

34.80 CFS	274	274	274	273	273	273	273	273
36.40 CFS	272	272	272	272	271	271	271	271
38.00 CFS	270	270	270	270	270	269	269	269
39.60 CFS	269	268	268	268	268	267	267	267
41.20 CFS	267	267	266	266	266	266	265	265
42.80 CFS	265	265	264	264	264	264	264	263
44.40 CFS	263	263	263	262	262	262	262	262
46.00 CFS	261	261	261	261	260	260	260	260
47.60 CFS	260	259	259	259	259	258	258	258
49.20 CFS	258	258	257	257	257	257	256	256
50.80 CFS	256	256	256	255	255	255	255	254
52.40 CFS	254	254	254	254	253	253	253	253
54.00 CFS	253	252	252	252	252	251	251	251
55.60 CFS	251	251	250	250	250	250	249	249
57.20 CFS	249	249	249	248	248	248	248	248
58.80 CFS	247	247	247	247	246	246	246	246
60.40 CFS	246	245	245	245	245	245	244	244
62.00 CFS	244	244	242	240	237	235	232	230
63.60 CFS	227	225	223	220	218	216	214	212
65.20 CFS	210	207	205	203	201	199	197	195
66.80 CFS	193	191	189	187	185	183	181	179
68.40 CFS	177	175	173	171	169	167	165	163
70.00 CFS	161	159	157	155	153	151	149	148
71.60 CFS	146	144	142	140	138	137	135	133
73.20 CFS	131	130	128	126	125	123	121	120
74.80 CFS	118	117	115	113	112	110	109	107
76.40 CFS	106	104	103	102	100	99	98	96
78.00 CFS	94.88	93.58	92.29	91.02	89.76	88.52	87.30	86.09
79.60 CFS	84.90	83.72	82.56	81.41	80.28	79.16	78.06	76.97
81.20 CFS	75.89	74.83	73.78	72.75	71.73	70.72	69.73	68.75
82.80 CFS	67.78	66.83	65.88	64.95	64.03	63.13	62.24	61.35
84.40 CFS	60.48	59.63	58.78	57.94	57.12	56.30	55.50	54.71
86.00 CFS	53.93	53.16						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.53 WATERSHED INCHES; 16520 CFS-HRS; 1365.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	281	277	270	262	254	245	177	106

DURATION(HRS)	72	74
FLOW(CFS)	61	53 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 7.06 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 4 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.27	907.9	(RUNOFF)
19.37	108.9	(RUNOFF)
21.37	96.9	(RUNOFF)
23.43	87.1	(RUNOFF)
24.14	85.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5697 CFS-HRS; 470.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	798	526	322	205	144	109	93	85

DURATION(HRS)	18	20	22
FLOW(CFS)	54	7	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.92	589.5	(RUNOFF)
17.18	93.2	(RUNOFF)
18.00	85.5	(RUNOFF)
19.22	72.3	(RUNOFF)
21.14	65.6	(RUNOFF)
22.09	56.6	(RUNOFF)
23.19	61.1	(RUNOFF)
24.10	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3590 CFS-HRS; 296.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	513	328	198	126	90	69	60	55

DURATION(HRS)	18	20	20
FLOW(CFS)	38	1	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.12	1492.3	(NULL)
17.12	238.5	(NULL)
19.22	180.6	(NULL)
21.21	161.4	(NULL)
23.24	146.2	(NULL)
24.11	145.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1296	868	531	334	238	178	151	143

DURATION(HRS)	18	20	22
FLOW(CFS)	91	8	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.98	554.5	(RUNOFF)
17.14	92.9	(RUNOFF)
17.99	85.3	(RUNOFF)
19.18	72.5	(RUNOFF)
21.10	65.9	(RUNOFF)
22.06	56.7	(RUNOFF)
23.15	62.1	(RUNOFF)
24.06	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 3360 CFS-HRS; 277.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	311	182	119	85	65	59	54

DURATION(HRS)	18	20
FLOW(CFS)	18	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.22	2032.0	(NULL)
19.21	249.8	(NULL)
21.26	221.7	(NULL)
23.28	200.3	(NULL)
24.13	199.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1784	1153	712	450	326	248	208	195

DURATION(HRS)	18	20	22
FLOW(CFS)	105	9	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.05	920.4	(RUNOFF)
17.25	143.0	(RUNOFF)
19.33	109.2	(RUNOFF)
21.24	98.9	(RUNOFF)
22.11	88.1	(RUNOFF)
23.29	89.9	(RUNOFF)
24.14	87.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5666 CFS-HRS; 468.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	801	512	311	204	140	108	92	86

DURATION(HRS)	18	20	21
FLOW(CFS)	55	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.34	2929.7	(NULL)
19.35	358.6	(NULL)
21.40	317.3	(NULL)
23.43	286.4	(NULL)
24.21	280.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.00 CFS	.00	.60	2.70	6.81	14.81	28.09	48.26	81.11

6.60 CFS	128	188	263	351	456	582	725	891
8.20 CFS	1078	1284	1515	1758	2018	2277	2502	2673
9.80 CFS	2792	2872	2920	2928	2897	2840	2776	2708
11.40 CFS	2630	2531	2419	2291	2153	2012	1871	1738
13.00 CFS	1616	1506	1405	1305	1214	1133	1063	1000
14.60 CFS	939	882	829	780	737	700	667	634
16.20 CFS	600	564	528	497	480	476	473	464
17.80 CFS	452	445	441	429	402	372	357	357
19.40 CFS	358	353	341	326	310	297	293	295
21.00 CFS	303	312	317	312	302	296	293	288
22.60 CFS	276	264	265	278	286	281	271	272
24.20 CFS	280	274	237	183	133	92	62	40
25.80 CFS	25.48	16.32	10.46	6.73	4.32	2.77	1.78	1.14
27.40 CFS	.73	.46						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.61 WATERSHED INCHES; 18313 CFS-HRS; 1513.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2531	1738	1063	667	464	357	302	278

DURATION(HRS)	18	20	22	22
FLOW(CFS)	183	16	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1490.3	1801.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
7.40 CFS	.00	.01	.01	.01	.01	.02	8.52	42.32
9.00 CFS	91	94	97	100	103	105	107	110
10.60 CFS	112	188	423	632	815	973	1108	1220
12.20 CFS	1310	1380	1430	1464	1483	1490	1487	1475
13.80 CFS	1456	1430	1401	1367	1332	1294	1254	1214
15.40 CFS	1173	1132	1092	1052	1013	974	936	898
17.00 CFS	861	827	795	766	738	712	688	665
18.60 CFS	643	620	597	575	556	538	521	504
20.20 CFS	487	471	455	440	428	417	408	399
21.80 CFS	391	383	375	367	360	351	344	337
23.40 CFS	332	328	323	319	315	311	306	298
25.00 CFS	285	270	252	234	216	199	182	166
26.60 CFS	152	139	126	115	114	114	114	114
28.20 CFS	113	113	113	113	113	113	113	113
29.80 CFS	113	113	112	112	112	112	112	112

31.40 CFS	112	112	112	112	111	111	111	111
33.00 CFS	111	111	111	111	111	111	111	110
34.60 CFS	110	110	110	110	110	110	110	110
36.20 CFS	110	110	109	109	109	109	109	109
37.80 CFS	109	109	109	109	108	108	108	108
39.40 CFS	108	108	108	108	108	108	108	107
41.00 CFS	107	107	107	107	107	107	107	107
42.60 CFS	107	107	106	106	106	106	106	106
44.20 CFS	106	106	106	106	106	105	105	105
45.80 CFS	105	105	105	105	105	105	105	105
47.40 CFS	104	104	104	104	104	104	104	104
49.00 CFS	104	104	104	103	103	103	103	103
50.60 CFS	103	103	103	103	103	103	102	102
52.20 CFS	102	102	102	102	102	102	102	101
53.80 CFS	101	101	101	101	101	101	101	101
55.40 CFS	100	100	100	100	100	100	100	100
57.00 CFS	99.53	99.42	99.31	99.20	99.09	98.97	98.86	98.75
58.60 CFS	98.64	98.53	98.42	98.30	98.19	98.08	97.97	97.86
60.20 CFS	97.75	97.64	97.53	97.42	97.31	97.20	97.09	96.98
61.80 CFS	96.87	96.76	96.65	96.54	96.43	96.32	96.22	96.10
63.40 CFS	95.96	95.83	95.70	95.57	95.44	95.31	95.18	95.05
65.00 CFS	94.92	94.79	94.66	94.53	94.40	94.28	94.15	94.02
66.60 CFS	93.89	93.76	93.63	93.51	93.38	93.25	93.12	93.00
68.20 CFS	92.87	92.74	92.62	92.49	92.36	92.24	92.11	91.98
69.80 CFS	91.86	91.73	91.61	91.48	91.36	91.23	89.28	86.71
71.40 CFS	84.21	81.78	79.43	77.14	74.92	72.97	71.13	69.34
73.00 CFS	67.60	65.90	64.24	62.62	61.05	59.51	58.01	56.55
74.60 CFS	55.13	53.74	52.39	51.07	49.79	48.53	47.31	46.12
76.20 CFS	44.96	43.83	42.73	41.65	40.60	39.58	38.59	37.62
77.80 CFS	36.67	35.75	34.85	33.97	33.12	32.28	31.47	30.68
79.40 CFS	29.91	29.15	28.42	27.71	27.01	26.33	25.85	25.38
81.00 CFS	24.93	24.48	24.04	23.61	23.19	22.77	22.36	21.96
82.60 CFS	21.57	21.18	20.80	20.43	20.06	19.70	19.35	19.00
84.20 CFS	18.66	18.33	18.00					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.24 WATERSHED INCHES; 16834 CFS-HRS; 1391.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	575	139	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	25	18 TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.81 WATERSHED INCHES; 7178 CFS-HRS; 593.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	26	18 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	1280.3	(RUNOFF)
17.11	201.4	(RUNOFF)
17.98	184.7	(RUNOFF)
19.15	157.1	(RUNOFF)
21.07	142.2	(RUNOFF)
22.04	122.6	(RUNOFF)
23.12	135.1	(RUNOFF)
24.03	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 7779 CFS-HRS; 642.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1087	722	434	275	190	145	131	115

DURATION(HRS)	18	20	20
FLOW(CFS)	71	2	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 16.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	(NULL)
17.11	316.4	(NULL)
17.98	299.7	(NULL)
19.15	272.1	(NULL)
21.07	257.2	(NULL)
22.04	237.6	(NULL)
23.12	250.1	(NULL)
24.03	247.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	3.06
17.11	316.4	1.08
17.98	299.7	1.02
19.15	272.1	.93
21.07	257.2	.87
22.04	237.6	.81
23.12	250.1	.85
24.03	247.1	.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.26	1067.2	(RUNOFF)
17.05	163.9	(RUNOFF)
17.95	150.0	(RUNOFF)
19.08	129.0	(RUNOFF)
21.01	116.0	(RUNOFF)
21.99	99.5	(RUNOFF)
23.05	111.6	(RUNOFF)
23.99	111.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 6412 CFS-HRS; 529.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	892	579	359	224	154	128	105	94

DURATION(HRS)	18	20	20
FLOW(CFS)	74	2	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.58	2431.4	(NULL)
17.08	479.7	(NULL)
17.97	449.6	(NULL)
19.11	399.6	(NULL)
21.04	372.9	(NULL)
22.01	337.0	(NULL)
23.08	360.7	(NULL)
24.01	357.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 21361 CFS-HRS; 1765.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.49	562.3	(RUNOFF)
17.04	91.0	(RUNOFF)
17.95	83.5	(RUNOFF)
19.07	71.9	(RUNOFF)
21.00	64.6	(RUNOFF)
21.99	55.4	(RUNOFF)
23.04	62.2	(RUNOFF)
23.98	62.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	314	187	120	85	65	58	52

DURATION(HRS)	18	20
FLOW(CFS)	32	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	2993.5	(NULL)
17.07	570.6	(NULL)
17.96	533.1	(NULL)
19.10	470.7	(NULL)
21.03	437.4	(NULL)
22.01	392.4	(NULL)
23.07	422.8	(NULL)
24.00	419.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.24 WATERSHED INCHES; 24770 CFS-HRS; 2047.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	711	371	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	3.05

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
10.60 CFS	0	73	308	517	700	858	993	1105

12.20 CFS	1195	1265	1315	1349	1368	1375	1372	1360
13.80 CFS	1341	1315	1286	1252	1217	1179	1139	1099
15.40 CFS	1058	1017	977	937	898	859	821	783
17.00 CFS	746	712	680	651	623	597	573	550
18.60 CFS	528	505	482	460	441	423	406	389
20.20 CFS	372	356	340	325	313	302	293	284
21.80 CFS	276	268	260	252	245	236	229	222
23.40 CFS	217	213	208	204	200	196	191	183
25.00 CFS	170	155	137	119	101	84	67	51
26.60 CFS	36.92	23.59	11.34	.12				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	435.3	(RUNOFF)
16.93	76.1	(RUNOFF)
17.91	70.3	(RUNOFF)
18.94	61.1	(RUNOFF)
20.91	54.4	(RUNOFF)
21.92	46.9	(RUNOFF)
22.93	54.6	(RUNOFF)
23.91	57.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 2600 CFS-HRS; 214.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	373	227	141	93	66	53	46	39

DURATION(HRS)	18	19
FLOW(CFS)	19	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.7%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.61	3421.4	(NULL)
17.04	644.6	(NULL)
17.94	602.9	(NULL)
19.07	530.0	(NULL)
21.00	490.6	(NULL)
21.98	438.5	(NULL)
23.04	474.0	(NULL)
23.98	474.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
4.60 CFS	0	2	3	14	36	54	98	137
6.20 CFS	211	320	396	542	652	815	1033	1186
7.80 CFS	1484	1705	1984	2332	2556	2948	3247	3389
9.40 CFS	3416	3421	3417	3408	3311	3148	3058	2975
11.00 CFS	2921	2795	2611	2490	2272	2114	1963	1792
12.60 CFS	1695	1581	1503	1407	1287	1221	1157	1115
14.20 CFS	1059	986	943	886	847	819	791	771
15.80 CFS	721	684	643	592	575	612	644	629
17.40 CFS	588	571	586	600	551	462	427	480
19.00 CFS	527	518	478	454	424	404	410	430
20.60 CFS	445	472	491	470	427	409	424	438
22.20 CFS	416	372	361	422	473	450	388	367
23.80 CFS	424	473	394	239	159	131	121	117
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	114	114	114	114	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	113	112	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103
51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97

65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20	19.83	19.48	19.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.32 WATERSHED INCHES; 27368 CFS-HRS; 2261.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	815	410	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	318.8	(RUNOFF)
17.24	50.8	(RUNOFF)
19.32	38.9	(RUNOFF)
21.23	35.2	(RUNOFF)
22.12	31.4	(RUNOFF)
23.29	32.1	(RUNOFF)
24.15	31.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	280	179	110	70	49	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	19	1	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.38	317.3	1767.47
17.45	50.6	1764.95
19.57	38.6	1764.77
21.50	34.8	1764.71
23.56	31.5	1764.66
24.36	30.8	1764.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	274	182	109	71	50	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	16	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.48	734.9	(RUNOFF)
17.12	112.1	(RUNOFF)
17.98	102.8	(RUNOFF)
19.16	87.3	(RUNOFF)
21.07	79.0	(RUNOFF)
22.04	68.0	(RUNOFF)
23.13	74.8	(RUNOFF)
24.04	73.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 4457 CFS-HRS; 368.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	628	413	243	155	106	85	73	65

DURATION(HRS)	18	20	21
FLOW(CFS)	53	2	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.96	1036.5	1770.84
17.11	162.3	1766.28
17.96	150.9	1766.17
19.15	124.4	1765.91
21.12	112.0	1765.79
22.00	99.9	1765.67
23.15	103.3	1765.70
24.04	102.0	1765.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 6413 CFS-HRS; 530.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	906	594	360	226	157	122	105	98

DURATION(HRS)	18	20	22
FLOW(CFS)	69	6	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.96	1036.5	1758.38
17.11	162.3	1755.38
17.96	150.9	1755.30
19.15	124.4	1755.12
21.12	112.0	1755.04
22.00	99.9	1754.96
23.15	103.3	1754.98
24.04	102.0	1754.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 6413 CFS-HRS; 530.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	906	594	360	226	157	122	105	98

DURATION(HRS)	18	20	22
FLOW(CFS)	69	6	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.22	1075.7	(RUNOFF)
17.04	160.0	(RUNOFF)
17.95	146.7	(RUNOFF)
19.07	126.0	(RUNOFF)
21.00	113.1	(RUNOFF)
21.99	97.0	(RUNOFF)
23.04	108.9	(RUNOFF)
23.98	108.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.19 WATERSHED INCHES; 6435 CFS-HRS; 531.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	879	601	349	231	157	125	102	92

DURATION(HRS)	18	20	21
FLOW(CFS)	73	3	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	2079.6	1760.34
17.06	321.8	1756.19
17.95	297.6	1756.08
19.09	249.8	1755.88
21.04	224.0	1755.76
21.99	196.9	1755.62
23.08	210.6	1755.71
24.00	210.4	1755.70

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
4.40 CFS	.05	.99	8.61	15.00	28.29	53.45	69.65	99.81
6.00 CFS	126	168	241	291	375	449	537	673
7.60 CFS	769	933	1079	1226	1436	1578	1787	1966
9.20 CFS	2044	2065	2079	2076	2071	2028	1932	1873
10.80 CFS	1817	1773	1706	1595	1520	1399	1294	1206
12.40 CFS	1096	1027	953	895	838	762	715	672
14.00 CFS	639	606	560	530	496	468	448	428
15.60 CFS	414	387	363	340	309	293	306	321
17.20 CFS	317	296	285	290	297	278	229	205
18.80 CFS	224	247	246	227	214	198	185	184
20.40 CFS	193	199	212	224	219	197	185	190
22.00 CFS	197	189	165	156	181	208	205	174
23.60 CFS	160	184	210	183	102	54	32	19
25.20 CFS	10.67	6.07	3.43	1.94	1.11	.63	.35	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 12848 CFS-HRS; 1061.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1787	1206	715	449	309	246	208	185

DURATION(HRS)	18	20	22
FLOW(CFS)	156	15	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
115 CFS-HRS; 1061.8 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.09	2072.8	1757.54
17.31	317.7	1752.22
18.16	294.9	1752.11
19.36	243.8	1751.79
21.31	219.7	1751.63
22.20	194.7	1751.45
23.35	202.7	1751.51
24.23	199.5	1751.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
4.60 CFS	.04	.65	5.81	11.77	22.48	42.56	60.13	85.85
6.20 CFS	112	149	209	262	335	409	492	609
7.80 CFS	713	856	1000	1147	1334	1492	1683	1866
9.40 CFS	1981	2036	2063	2072	2071	2043	1971	1907
11.00 CFS	1849	1799	1739	1646	1564	1457	1351	1257
12.60 CFS	1152	1071	995	930	871	800	745	697
14.20 CFS	659	624	583	549	515	484	461	440
15.80 CFS	423	400	376	353	324	304	305	315
17.40 CFS	316	303	291	290	295	284	248	220
19.00 CFS	223	239	243	232	220	206	192	187
20.60 CFS	191	196	206	218	218	204	192	191
22.20 CFS	195	191	174	162	175	197	202	184
23.80 CFS	168	178	199	189	132	82	49	29
25.40 CFS	17.27	10.00	5.74	3.28	1.87	1.07	.60	.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 12846 CFS-HRS; 1061.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1799	1152	713	461	315	243	206	191

DURATION(HRS)	18	20	22
FLOW(CFS)	149	17	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	5483.0	1762.39
17.07	951.6	1754.82
17.95	892.9	1754.62
19.13	758.4	1754.17
21.05	698.3	1753.96
21.99	629.2	1753.67
23.10	655.0	1753.78
24.00	651.7	1753.77

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
4.60 CFS	0	2	9	25	59	96	158	223
6.20 CFS	323	469	604	804	987	1224	1525	1795
7.80 CFS	2197	2561	2984	3478	3890	4440	4930	5255
9.40 CFS	5397	5457	5480	5480	5382	5191	5029	4883
11.00 CFS	4770	4594	4350	4135	3836	3571	3315	3049
12.60 CFS	2848	2652	2498	2337	2157	2021	1901	1812
14.20 CFS	1718	1611	1526	1435	1362	1303	1252	1210
15.80 CFS	1145	1084	1018	945	899	916	949	944
17.40 CFS	904	873	877	891	845	746	675	700
19.00 CFS	749	756	722	687	645	610	603	617
20.60 CFS	635	668	697	688	645	613	616	629
22.20 CFS	611	563	535	584	647	647	590	550
23.80 CFS	592	652	593	428	292	213	170	146
25.40 CFS	133	125	121	118	117	116	116	115
27.00 CFS	115	115	115	114	114	114	114	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	113	112	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103

51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97
65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 40211 CFS-HRS; 3323.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1252	604	113	109	105	102	97	92

DURATION(HRS)	72	78
FLOW(CFS)	40	20 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 596.69 AC-FT (.06 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1705.18. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.56	1543.3	1715.25

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 253 CFS
RESVOR (16. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
4.80 CFS	.00	.01	.05	.13	.28	.53	.90	1.43
6.40 CFS	2.21	3.25	4.62	6.37	8.52	11.19	14.42	18.30
8.00 CFS	21	21	41	105	175	244	251	258
9.60 CFS	266	273	280	285	290	295	300	304

11.20 CFS	308	325	437	539	678	802	908	1015
12.80 CFS	1142	1246	1332	1398	1449	1486	1513	1531
14.40 CFS	1541	1543	1539	1528	1514	1497	1477	1456
16.00 CFS	1431	1403	1372	1339	1308	1281	1256	1232
17.60 CFS	1207	1183	1161	1140	1114	1085	1056	1032
19.20 CFS	1011	992	973	959	944	929	915	902
20.80 CFS	890	881	873	863	853	842	832	823
22.40 CFS	812	800	790	782	776	769	760	751
24.00 CFS	745	740	730	713	692	670	647	624
25.60 CFS	602	580	560	542	530	518	506	495
27.20 CFS	484	474	463	453	444	434	425	416
28.80 CFS	407	399	391	383	375	367	360	353
30.40 CFS	346	339	333	326	320	314	312	311
32.00 CFS	311	310	310	310	310	309	309	309
33.60 CFS	309	309	309	309	308	308	308	308
35.20 CFS	308	308	307	307	307	307	307	306
36.80 CFS	306	306	306	306	306	305	305	305
38.40 CFS	305	305	305	304	304	304	304	304
40.00 CFS	304	303	303	303	303	303	302	302
41.60 CFS	302	302	302	302	301	301	301	301
43.20 CFS	301	300	300	300	300	300	300	299
44.80 CFS	299	299	299	299	298	298	298	298
46.40 CFS	298	298	297	297	297	297	297	296
48.00 CFS	296	296	296	296	296	295	295	295
49.60 CFS	295	295	294	294	294	294	294	294
51.20 CFS	293	293	293	293	293	292	292	292
52.80 CFS	292	292	292	291	291	291	291	290
54.40 CFS	290	290	290	290	289	289	289	289
56.00 CFS	289	288	288	288	288	288	287	287
57.60 CFS	287	287	287	286	286	286	286	286
59.20 CFS	285	285	285	285	285	284	284	284
60.80 CFS	284	284	283	283	283	283	283	282
62.40 CFS	282	282	282	282	281	281	281	281
64.00 CFS	281	280	280	280	280	280	279	279
65.60 CFS	279	279	279	278	278	278	278	278
67.20 CFS	277	277	277	277	277	276	276	276
68.80 CFS	276	275	275	275	275	274	274	274
70.40 CFS	274	273	273	273	272	272	272	272
72.00 CFS	271	271	271	271	270	270	270	269
73.60 CFS	269	269	269	268	268	268	267	267
75.20 CFS	267	267	266	266	266	265	265	265
76.80 CFS	264	264	264	263	263	263	262	262
78.40 CFS	262	262	261	261	261	260	260	260
80.00 CFS	259	259	259	258	258	258	257	257
81.60 CFS	257	256	256	256	255	255	255	254
83.20 CFS	254	254	253					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.05 WATERSHED INCHES; 32989 CFS-HRS; 2726.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	908	453	308	301	294	286	279	269
DURATION(HRS)	72	74						
FLOW(CFS)	257	253 TRUNCATED						

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 15.80 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 5 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.97	2474.7	(RUNOFF)
19.38	260.1	(RUNOFF)
21.37	231.2	(RUNOFF)
23.43	207.1	(RUNOFF)
24.14	201.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15772 CFS-HRS; 1303.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2130	1491	895	572	384	310	236	213
DURATION(HRS)	18	20	22	24				
FLOW(CFS)	199	74	8	0				

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1645.4	(RUNOFF)
17.18	225.3	(RUNOFF)
18.00	206.3	(RUNOFF)
19.22	173.6	(RUNOFF)
21.14	157.2	(RUNOFF)
22.10	136.8	(RUNOFF)
23.18	146.6	(RUNOFF)
24.10	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 10062 CFS-HRS; 831.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1359	945	561	359	231	202	152	137
DURATION(HRS)	18	20	22					
FLOW(CFS)	120	35	0					

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	4079.1	(NULL)
17.12	574.5	(NULL)
19.22	432.3	(NULL)
21.21	385.5	(NULL)
23.24	349.2	(NULL)
24.11	344.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3522	2377	1482	944	625	514	386	350
DURATION(HRS)	18	20	22	24				
FLOW(CFS)	319	103	12	0				

*** WARNING - XSECTION 102, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.34	1635.2	(RUNOFF)
17.14	231.2	(RUNOFF)
17.99	211.6	(RUNOFF)
19.18	179.4	(RUNOFF)
21.10	162.5	(RUNOFF)
22.06	139.7	(RUNOFF)
23.15	152.4	(RUNOFF)
24.06	147.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.39 WATERSHED INCHES; 9916 CFS-HRS; 819.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1353	926	554	358	230	196	152	138

DURATION(HRS)	18	20	21
FLOW(CFS)	123	17	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	5653.9	(NULL)
19.21	603.5	(NULL)
21.25	534.8	(NULL)
23.28	481.4	(NULL)
24.13	478.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4815	3359	2061	1304	855	698	530	491

DURATION(HRS)	18	20	22	24
FLOW(CFS)	445	142	13	0

*** WARNING - XSECTION 103, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	2515.5	(RUNOFF)
17.24	343.0	(RUNOFF)
19.34	261.4	(RUNOFF)
21.23	236.0	(RUNOFF)
22.10	209.5	(RUNOFF)
23.30	213.7	(RUNOFF)
24.15	208.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15688 CFS-HRS; 1296.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2109	1485	892	573	376	315	236	209

DURATION(HRS)	18	20	22	23
FLOW(CFS)	196	71	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.07	8106.6	(NULL)
19.35	864.2	(NULL)
21.39	762.6	(NULL)
23.42	687.0	(NULL)
24.21	671.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
3.40 CFS	0	1	4	12	25	47	79	123
5.00 CFS	184	260	350	456	570	693	829	993
6.60 CFS	1206	1451	1728	2030	2364	2750	3171	3642
8.20 CFS	4149	4688	5271	5868	6481	7073	7549	7863
9.80 CFS	8034	8102	8089	7988	7793	7552	7302	7058
11.40 CFS	6797	6496	6168	5808	5431	5053	4679	4331
13.00 CFS	4015	3732	3471	3220	2988	2784	2607	2449
14.60 CFS	2297	2155	2022	1901	1795	1704	1622	1540
16.20 CFS	1455	1369	1280	1205	1163	1152	1145	1122
17.80 CFS	1093	1076	1065	1036	971	898	860	859
19.40 CFS	864	850	822	784	745	715	704	709
21.00 CFS	727	752	763	750	726	710	703	691
22.60 CFS	662	634	637	666	687	674	650	652
24.20 CFS	671	656	566	437	316	219	146	95
25.80 CFS	60.39	38.60	24.85	16.02	10.26	6.54	4.22	2.72
27.40 CFS	1.74	1.09	.65	.33				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.96 WATERSHED INCHES; 51438 CFS-HRS; 4250.8 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	5868	2988	1540	993	726	650	79	1

DURATION(HRS)	24
FLOW(CFS)	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7422.8	1803.90

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.60 CFS	.00	.01	.01	.01	.01	.02	2.65	33.05
7.20 CFS	80	94	97	100	103	107	110	187

8.80 CFS	670	1165	1709	3269	4505	5464	6189	6720
10.40 CFS	7087	7311	7412	7416	7350	7233	7069	6864
12.00 CFS	6620	6341	6035	5709	5374	5039	4715	4404
13.60 CFS	4110	3829	3567	3324	3102	2899	2711	2538
15.20 CFS	2377	2230	2096	1975	1865	1763	1665	1624
16.80 CFS	1590	1553	1518	1485	1453	1422	1392	1363
18.40 CFS	1335	1305	1272	1237	1203	1172	1144	1116
20.00 CFS	1088	1059	1029	1001	974	951	932	916
21.60 CFS	902	887	872	857	843	828	812	796
23.20 CFS	783	773	765	756	746	739	732	721
24.80 CFS	701	672	636	595	552	510	468	429
26.40 CFS	392	358	327	298	272	247	225	205
28.00 CFS	187	170	155	141	128	117	114	114
29.60 CFS	114	114	113	113	113	113	113	113
31.20 CFS	113	113	113	113	112	112	112	112
32.80 CFS	112	112	112	112	112	112	112	111
34.40 CFS	111	111	111	111	111	111	111	111
36.00 CFS	111	110	110	110	110	110	110	110
37.60 CFS	110	110	110	110	109	109	109	109
39.20 CFS	109	109	109	109	109	109	108	108
40.80 CFS	108	108	108	108	108	108	108	108
42.40 CFS	108	107	107	107	107	107	107	107
44.00 CFS	107	107	107	107	106	106	106	106
45.60 CFS	106	106	106	106	106	106	106	105
47.20 CFS	105	105	105	105	105	105	105	105
48.80 CFS	105	105	104	104	104	104	104	104
50.40 CFS	104	104	104	104	104	103	103	103
52.00 CFS	103	103	103	103	103	103	103	103
53.60 CFS	102	102	102	102	102	102	102	102
55.20 CFS	102	101	101	101	101	101	101	101
56.80 CFS	101	101	100	100	100	100	100	100
58.40 CFS	99.77	99.66	99.55	99.44	99.32	99.21	99.10	98.99
60.00 CFS	98.87	98.76	98.65	98.54	98.43	98.32	98.21	98.10
61.60 CFS	97.98	97.87	97.76	97.65	97.54	97.43	97.32	97.21
63.20 CFS	97.10	96.99	96.88	96.77	96.66	96.56	96.45	96.34
64.80 CFS	96.23	96.11	95.98	95.85	95.72	95.59	95.46	95.33
66.40 CFS	95.20	95.07	94.94	94.81	94.68	94.55	94.42	94.29
68.00 CFS	94.16	94.03	93.90	93.78	93.65	93.52	93.39	93.26
69.60 CFS	93.14	93.01	92.88	92.76	92.63	92.50	92.38	92.25
71.20 CFS	92.13	92.00	91.87	91.75	91.62	91.50	91.37	91.25
72.80 CFS	89.59	87.01	84.50	82.06	79.70	77.40	75.17	73.18
74.40 CFS	71.34	69.55	67.80	66.09	64.43	62.81	61.23	59.69
76.00 CFS	58.19	56.72	55.29	53.90	52.55	51.22	49.94	48.68
77.60 CFS	47.45	46.26	45.10	43.96	42.86	41.78	40.73	39.70
79.20 CFS	38.70	37.73	36.78	35.85	34.95	34.07	33.21	32.38
80.80 CFS	31.56	30.77	30.00	29.24	28.51	27.79	27.09	26.41
82.40 CFS	25.90	25.44						


```
RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
              12.57 WATERSHED INCHES;   49889 CFS-HRS;    4122.8 ACRE-FEET.

DURATION(HRS)   8     16     24     32     40     48     56     64
FLOW(CFS)    1518    672    112    108    105    101     97     92

DURATION(HRS)  72     76
FLOW(CFS)      39     25 TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
              2ND TABLE VALUE.  THIS REACH ROUTING MAY BE INCORRECT,
              UNLESS NEW RATING TABLE VALUES ARE INSERTED.                ***

OPERATION REACH     XSECTION 104

PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
   10.00                          115.0 *                          .51
                                        * FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
               1.89 WATERSHED INCHES;    7508 CFS-HRS;     620.5 ACRE-FEET.

DURATION(HRS)   8     16     24     32     40     48     56     64
FLOW(CFS)     115    115    112    109    105    101     97     92

DURATION(HRS)  72     75
FLOW(CFS)      39     26 TRUNCATED

OPERATION RUNOFF    XSECTION   4

PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
    9.24                          3571.8                        (RUNOFF)
   17.11                           482.9                        (RUNOFF)
   17.98                           442.0                        (RUNOFF)
   19.15                           376.0                        (RUNOFF)
   21.07                           339.4                        (RUNOFF)
   22.04                           291.9                        (RUNOFF)
   23.12                           320.2                        (RUNOFF)
   24.03                           312.6                        (RUNOFF)

RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
              13.14 WATERSHED INCHES;   21539 CFS-HRS;    1780.0 ACRE-FEET.
```

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2928	1946	1248	783	503	424	319	294

DURATION(HRS)	18	20	22	22
FLOW(CFS)	263	76	1	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 23.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3686.8	(NULL)
17.11	597.9	(NULL)
17.98	557.0	(NULL)
19.15	491.0	(NULL)
21.07	454.4	(NULL)
22.04	406.9	(NULL)
23.12	435.2	(NULL)
24.03	427.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.18 WATERSHED INCHES; 29047 CFS-HRS; 2400.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	5.62
17.11	597.9	1.78
17.98	557.0	1.71
19.15	491.0	1.59
21.07	454.4	1.52
22.04	406.9	1.38
23.12	435.2	1.48
24.03	427.6	1.45

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 28888 CFS-HRS; 2387.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	2891.7	(RUNOFF)
17.05	387.9	(RUNOFF)
17.95	354.7	(RUNOFF)
19.07	304.5	(RUNOFF)
21.01	273.4	(RUNOFF)
21.99	234.1	(RUNOFF)
23.05	262.5	(RUNOFF)
23.99	260.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 17332 CFS-HRS; 1432.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2298	1621	987	636	413	335	261	229

DURATION(HRS)	18	20	22	22
FLOW(CFS)	210	83	1	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	6345.7	(NULL)
17.08	984.1	(NULL)
17.97	911.6	(NULL)
19.11	791.9	(NULL)
21.03	727.2	(NULL)
22.01	640.8	(NULL)
23.08	695.5	(NULL)
24.01	687.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.70 WATERSHED INCHES; 46217 CFS-HRS; 3819.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.14	1601.2	(RUNOFF)
17.04	219.9	(RUNOFF)
17.95	201.2	(RUNOFF)
19.07	172.6	(RUNOFF)
21.00	154.8	(RUNOFF)
21.99	132.8	(RUNOFF)
23.04	149.1	(RUNOFF)
23.98	149.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 9558 CFS-HRS; 789.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1288	901	539	342	220	187	148	127

DURATION(HRS)	18	20	22
FLOW(CFS)	117	34	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.12	7900.8	(NULL)
17.07	1203.7	(NULL)
17.96	1112.7	(NULL)
19.10	962.7	(NULL)
21.03	881.8	(NULL)
22.01	773.5	(NULL)
23.07	844.1	(NULL)
24.00	836.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.30 WATERSHED INCHES; 55759 CFS-HRS; 4608.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1846	758	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	9.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.40 CFS	0	72	555	1209	1868	3344	4530	5429
10.00 CFS	6094	6605	6972	7196	7297	7301	7235	7118
11.60 CFS	6954	6749	6505	6226	5920	5594	5259	4924
13.20 CFS	4600	4289	3995	3714	3452	3209	2987	2784
14.80 CFS	2596	2423	2262	2115	1981	1860	1750	1648
16.40 CFS	1550	1509	1475	1438	1403	1370	1338	1307
18.00 CFS	1277	1248	1220	1190	1157	1122	1088	1057
19.60 CFS	1029	1001	973	944	914	886	859	836
21.20 CFS	817	801	787	772	757	742	728	713
22.80 CFS	697	681	668	658	650	641	631	624
24.40 CFS	617	606	586	557	521	480	437	395
26.00 CFS	353	314	277	243	212	183	157	132
27.60 CFS	110	90	72	55	40	26	13	2
29.20 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42546 CFS-HRS; 3516.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1122	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.98	1313.1	(RUNOFF)
16.93	189.3	(RUNOFF)
17.91	174.5	(RUNOFF)
18.94	151.3	(RUNOFF)
20.91	134.2	(RUNOFF)
21.91	115.4	(RUNOFF)
22.93	134.2	(RUNOFF)
23.91	139.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.38 WATERSHED INCHES; 7673 CFS-HRS; 634.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1053	685	406	274	188	150	126	106

DURATION(HRS)	18	20	20
FLOW(CFS)	87	9	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.09	9241.1	(NULL)
17.03	1387.8	(NULL)
17.94	1285.9	(NULL)
19.07	1109.1	(NULL)
21.00	1013.0	(NULL)
21.98	886.9	(NULL)
23.04	970.1	(NULL)
23.98	969.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
3.00 CFS	0	3	9	16	56	94	146	219
4.60 CFS	276	418	528	665	839	951	1133	1266
6.20 CFS	1558	1976	2248	2693	3012	3506	4157	4591
7.80 CFS	5364	5922	6598	7411	7925	8772	9199	9166
9.40 CFS	9076	9003	8881	8809	8478	7961	7675	7393
11.00 CFS	7207	6850	6353	6029	5463	5055	4671	4236
12.60 CFS	3991	3703	3507	3267	2970	2805	2645	2542
14.20 CFS	2402	2225	2120	1980	1885	1814	1747	1697
15.80 CFS	1576	1487	1385	1264	1222	1310	1386	1349
17.40 CFS	1251	1209	1246	1280	1160	945	864	989
19.00 CFS	1102	1079	985	927	855	806	821	869
20.60 CFS	903	967	1013	963	859	815	851	886
22.20 CFS	833	728	701	847	967	912	765	715
23.80 CFS	852	967	776	409	220	154	129	120
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	115	115	115	115	115
28.60 CFS	115	115	115	115	114	114	114	114
30.20 CFS	113	113	113	113	113	113	113	113
31.80 CFS	113	113	113	112	112	112	112	112
33.40 CFS	112	112	112	112	112	111	111	111
35.00 CFS	111	111	111	111	111	111	111	110
36.60 CFS	110	110	110	110	110	110	110	110

38.20 CFS	110	110	109	109	109	109	109	109
39.80 CFS	109	109	109	109	109	108	108	108
41.40 CFS	108	108	108	108	108	108	108	107
43.00 CFS	107	107	107	107	107	107	107	107
44.60 CFS	107	107	106	106	106	106	106	106
46.20 CFS	106	106	106	106	106	105	105	105
47.80 CFS	105	105	105	105	105	105	105	105
49.40 CFS	104	104	104	104	104	104	104	104
51.00 CFS	104	104	104	104	103	103	103	103
52.60 CFS	103	103	103	103	103	103	103	102
54.20 CFS	102	102	102	102	102	102	102	102
55.80 CFS	101	101	101	101	101	101	101	101
57.40 CFS	100	100	100	100	100	100	100	100
59.00 CFS	99.59	99.48	99.36	99.25	99.14	99.03	98.92	98.80
60.60 CFS	98.69	98.58	98.47	98.36	98.25	98.14	98.03	97.91
62.20 CFS	97.80	97.69	97.58	97.47	97.36	97.25	97.14	97.03
63.80 CFS	96.92	96.81	96.70	96.60	96.49	96.38	96.27	96.15
65.40 CFS	96.03	95.90	95.76	95.63	95.50	95.37	95.24	95.11
67.00 CFS	94.98	94.85	94.72	94.60	94.47	94.34	94.21	94.08
68.60 CFS	93.95	93.82	93.69	93.57	93.44	93.31	93.18	93.06
70.20 CFS	92.93	92.80	92.68	92.55	92.42	92.30	92.17	92.04
71.80 CFS	91.92	91.79	91.67	91.54	91.42	91.29	90.04	87.82
73.40 CFS	85.39	82.96	80.57	78.25	76.00	73.94	72.04	70.22
75.00 CFS	68.45	66.72	65.04	63.41	61.81	60.26	58.74	57.26
76.60 CFS	55.82	54.42	53.05	51.71	50.41	49.14	47.91	46.70
78.20 CFS	45.53	44.38	43.26	42.18	41.12	40.08	39.07	38.09
79.80 CFS	37.13	36.20	35.28	34.40	33.53	32.69	31.87	31.06
81.40 CFS	30.28	29.52	28.78	28.05	27.35	26.66	26.10	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.68 WATERSHED INCHES; 63428 CFS-HRS; 5241.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	2120	859	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	894.6	(RUNOFF)
17.24	123.5	(RUNOFF)
19.33	94.2	(RUNOFF)
21.23	85.1	(RUNOFF)
22.11	75.6	(RUNOFF)
23.28	77.4	(RUNOFF)
24.14	75.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 5554 CFS-HRS; 459.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	753	524	310	199	131	107	85	75

DURATION(HRS)	18	20	22	23
FLOW(CFS)	68	19	1	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.50	820.6	1770.00
17.46	123.0	1765.90
19.57	93.5	1765.61
21.48	84.2	1765.47
23.54	76.0	1765.34
24.36	73.9	1765.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.67 WATERSHED INCHES; 5478 CFS-HRS; 452.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	764	504	320	204	129	108	84	75

DURATION(HRS)	18	20	22	22
FLOW(CFS)	69	21	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	1990.4	(RUNOFF)
17.12	265.6	(RUNOFF)
17.98	242.8	(RUNOFF)
19.16	206.3	(RUNOFF)
21.07	185.8	(RUNOFF)
22.04	160.2	(RUNOFF)
23.12	175.5	(RUNOFF)
24.04	171.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 12047 CFS-HRS; 995.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1628	1089	689	432	288	235	183	162

DURATION(HRS)	18	20	22	22
FLOW(CFS)	147	58	1	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.38	2771.3	1777.54
17.11	387.3	1767.91
17.95	359.2	1767.74
19.16	295.8	1767.32
21.12	265.7	1767.10
22.00	236.9	1766.90
23.15	244.1	1766.95
24.04	240.3	1766.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.18 WATERSHED INCHES; 17524 CFS-HRS; 1448.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237

DURATION(HRS)	18	20	22	23
FLOW(CFS)	216	78	7	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	2546.0 *	1761.03
17.11	387.3	1756.48
17.95	359.2	1756.35
19.16	295.8	1756.08
21.12	265.7	1755.95
22.00	236.9	1755.82
23.15	244.1	1755.85
24.04	240.3	1755.83

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.01 WATERSHED INCHES; 17299 CFS-HRS; 1429.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237
DURATION(HRS)	18	20	22	23				
FLOW(CFS)	216	78	7	0				

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	2826.7	(RUNOFF)
17.04	374.8	(RUNOFF)
17.95	342.6	(RUNOFF)
19.07	293.9	(RUNOFF)
21.00	263.6	(RUNOFF)
21.99	226.1	(RUNOFF)
23.04	253.9	(RUNOFF)
23.98	253.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.71 WATERSHED INCHES; 16988 CFS-HRS; 1403.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2270	1558	986	612	422	330	253	226
DURATION(HRS)	18	20	22	22				
FLOW(CFS)	202	92	2	0				

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	5372.7	1764.66
17.06	760.9	1757.71
17.95	701.8	1757.53
19.10	587.6	1757.17
21.04	526.8	1756.98
21.99	462.9	1756.78
23.07	494.7	1756.88
24.00	492.6	1756.87

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
2.60 CFS	0	1	2	9	24	35	70	103
4.20 CFS	134	181	216	299	374	450	560	632
5.80 CFS	734	823	968	1220	1391	1633	1842	2082
7.40 CFS	2443	2693	3100	3455	3803	4284	4606	5062
9.00 CFS	5360	5364	5281	5238	5173	5126	5025	4830
10.60 CFS	4671	4521	4389	4208	3915	3715	3409	3143
12.20 CFS	2921	2648	2473	2293	2149	2010	1826	1710

13.80 CFS	1605	1524	1443	1333	1262	1180	1112	1064
15.40 CFS	1017	983	918	860	806	732	694	723
17.00 CFS	759	749	699	673	685	700	655	542
18.60 CFS	486	528	581	580	534	505	468	436
20.20 CFS	433	453	468	499	526	514	464	436
21.80 CFS	447	463	444	389	365	425	490	480
23.40 CFS	409	375	432	493	430	239	129	75
25.00 CFS	43.01	24.06	13.43	7.52	4.19	2.38	1.35	.75
26.60 CFS	.39							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.35 WATERSHED INCHES; 34287 CFS-HRS; 2833.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464
DURATION(HRS)	18	20	22	24				
FLOW(CFS)	430	181	13	0				

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.46	291.9	1767.29

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.80 CFS	0	89	244	289	278	244	201	136
10.40 CFS	25.77	.00						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
302 CFS-HRS; 24.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464
DURATION(HRS)	18	20	22	2				
FLOW(CFS)	430	181	13	0				

*** WARNING - XSECTION 107, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	5249.1	1762.11
17.30	753.4	1754.16
18.16	697.3	1753.96
19.34	578.8	1753.46
21.28	520.3	1753.21
22.20	459.1	1752.94
23.32	482.8	1753.05
24.22	476.6	1753.02

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
2.80 CFS	.10	1.04	1.97	7.60	19.98	31.32	61.29	92.95
4.40 CFS	125	168	205	277	352	427	529	608
6.00 CFS	705	795	928	1152	1335	1563	1777	2011
7.60 CFS	2342	2611	2986	3346	3697	4147	4499	4931
9.20 CFS	5178	5235	5249	5241	5188	5141	5052	4882
10.80 CFS	4720	4567	4431	4260	3995	3780	3496	3225
12.40 CFS	2992	2728	2533	2349	2195	2053	1879	1749
14.00 CFS	1638	1550	1468	1365	1286	1204	1133	1080
15.60 CFS	1032	994	935	878	823	753	708	719
17.20 CFS	750	749	711	682	684	696	665	571
18.80 CFS	505	523	568	577	544	514	478	446
20.40 CFS	436	449	464	491	518	515	476	446
22.00 CFS	447	459	447	402	374	413	472	478
23.60 CFS	425	387	422	476	441	286	166	96
25.20 CFS	55.35	31.35	17.61	9.87	5.52	3.11	1.76	.98
26.80 CFS	.53	.26						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.33 WATERSHED INCHES; 34238 CFS-HRS; 2829.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4567	3225	2011	1286	823	684	518	464

DURATION(HRS)	18	20	22	24
FLOW(CFS)	425	168	18	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.27	14360.9	1772.94
17.09	2114.2	1757.62
17.95	1968.2	1757.33
19.14	1651.3	1756.65
21.05	1506.9	1756.32
21.99	1333.3	1755.90
23.11	1400.4	1756.07
24.00	1388.8	1756.04

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
2.80 CFS	0	1	5	16	36	87	155	239
4.40 CFS	344	444	623	806	1017	1267	1480	1741
6.00 CFS	1971	2353	2904	3400	4028	4576	5282	6167
7.60 CFS	6933	7975	8908	9944	11108	12072	13271	14129
9.20 CFS	14344	14312	14252	14122	13997	13619	13013	12557
10.80 CFS	12113	11774	11281	10612	10024	9243	8551	7896
12.40 CFS	7228	6719	6236	5856	5462	5023	4684	4395
14.00 CFS	4180	3953	3694	3484	3266	3089	2947	2827
15.60 CFS	2729	2570	2422	2263	2086	1975	2018	2105
17.20 CFS	2099	2000	1920	1928	1964	1856	1610	1435
18.80 CFS	1495	1624	1647	1562	1471	1369	1285	1267
20.40 CFS	1305	1352	1431	1504	1481	1374	1291	1297
22.00 CFS	1333	1292	1176	1103	1221	1380	1384	1243
23.60 CFS	1140	1239	1389	1252	850	507	320	225
25.20 CFS	175	148	133	125	121	118	117	116
26.80 CFS	116	115	115	115	115	115	115	115
28.40 CFS	115	115	115	115	115	114	114	114
30.00 CFS	114	113	113	113	113	113	113	113
31.60 CFS	113	113	113	113	112	112	112	112
33.20 CFS	112	112	112	112	112	112	111	111
34.80 CFS	111	111	111	111	111	111	111	111
36.40 CFS	110	110	110	110	110	110	110	110
38.00 CFS	110	110	110	109	109	109	109	109
39.60 CFS	109	109	109	109	109	109	108	108
41.20 CFS	108	108	108	108	108	108	108	108
42.80 CFS	107	107	107	107	107	107	107	107
44.40 CFS	107	107	107	106	106	106	106	106
46.00 CFS	106	106	106	106	106	106	105	105
47.60 CFS	105	105	105	105	105	105	105	105
49.20 CFS	105	104	104	104	104	104	104	104
50.80 CFS	104	104	104	104	104	103	103	103
52.40 CFS	103	103	103	103	103	103	103	103
54.00 CFS	102	102	102	102	102	102	102	102
55.60 CFS	102	101	101	101	101	101	101	101
57.20 CFS	101	100	100	100	100	100	100	100
58.80 CFS	99.70	99.59	99.48	99.36	99.25	99.14	99.03	98.92
60.40 CFS	98.80	98.69	98.58	98.47	98.36	98.25	98.14	98.03
62.00 CFS	97.91	97.80	97.69	97.58	97.47	97.36	97.25	97.14
63.60 CFS	97.03	96.92	96.81	96.70	96.60	96.49	96.38	96.27
65.20 CFS	96.15	96.03	95.90	95.76	95.63	95.50	95.37	95.24
66.80 CFS	95.11	94.98	94.85	94.72	94.60	94.47	94.34	94.21
68.40 CFS	94.08	93.95	93.82	93.69	93.57	93.44	93.31	93.18
70.00 CFS	93.06	92.93	92.80	92.68	92.55	92.42	92.30	92.17
71.60 CFS	92.04	91.92	91.79	91.67	91.54	91.42	91.29	90.04
73.20 CFS	87.82	85.39	82.96	80.57	78.25	76.00	73.94	72.04
74.80 CFS	70.22	68.45	66.72	65.04	63.41	61.81	60.26	58.74
76.40 CFS	57.26	55.82	54.42	53.05	51.71	50.41	49.14	47.91
78.00 CFS	46.70	45.53	44.38	43.26	42.18	41.12	40.08	39.07

79.60 CFS	38.09	37.13	36.20	35.28	34.40	33.53	32.69	31.87
81.20 CFS	31.06	30.28	29.52	28.78	28.05	27.35		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.02 WATERSHED INCHES; 97660 CFS-HRS; 8070.6 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	3400	1333	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	62	27 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 667.87 AC-FT (.06 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1705.91. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.67	9767.2	1722.08

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
3.00 CFS	.00	.01	.03	.08	.20	.44	.82	1.39
4.60 CFS	2.16	3.20	4.59	6.37	8.59	11.26	14.39	17.99
6.20 CFS	21	21	31	95	168	244	252	261
7.80 CFS	271	281	291	301	312	730	1523	2577
9.40 CFS	3749	4800	5737	6567	7348	8009	8538	8959
11.00 CFS	9290	9537	9693	9763	9748	9654	9496	9281
12.60 CFS	9026	8743	8445	8136	7816	7488	7161	6843
14.20 CFS	6557	6284	6015	5752	5495	5248	5012	4789
15.80 CFS	4576	4368	4166	3968	3774	3597	3444	3310
17.40 CFS	3184	3062	2948	2848	2755	2653	2540	2433
19.00 CFS	2346	2275	2208	2139	2078	2023	1968	1919
20.60 CFS	1875	1840	1813	1790	1763	1732	1700	1672
22.20 CFS	1646	1616	1581	1550	1532	1521	1506	1483
23.80 CFS	1462	1451	1441	1413	1359	1290	1216	1142
25.40 CFS	1070	1003	953	916	880	846	813	782
27.00 CFS	752	723	696	670	645	621	599	577
28.60 CFS	556	540	528	516	504	493	482	472
30.20 CFS	461	451	442	432	423	414	405	397
31.80 CFS	389	381	373	366	358	351	344	338
33.40 CFS	331	325	319	313	312	311	311	310
35.00 CFS	310	310	310	309	309	309	309	309
36.60 CFS	309	308	308	308	308	308	308	308
38.20 CFS	307	307	307	307	307	306	306	306
39.80 CFS	306	306	306	305	305	305	305	305
41.40 CFS	305	304	304	304	304	304	303	303
43.00 CFS	303	303	303	303	302	302	302	302
44.60 CFS	302	301	301	301	301	301	301	300

46.20 CFS	300	300	300	300	299	299	299	299
47.80 CFS	299	299	298	298	298	298	298	297
49.40 CFS	297	297	297	297	297	296	296	296
51.00 CFS	296	296	295	295	295	295	295	295
52.60 CFS	294	294	294	294	294	293	293	293
54.20 CFS	293	293	293	292	292	292	292	292
55.80 CFS	291	291	291	291	291	290	290	290
57.40 CFS	290	290	289	289	289	289	289	288
59.00 CFS	288	288	288	288	287	287	287	287
60.60 CFS	287	286	286	286	286	286	285	285
62.20 CFS	285	285	285	284	284	284	284	284
63.80 CFS	283	283	283	283	283	282	282	282
65.40 CFS	282	282	281	281	281	281	281	280
67.00 CFS	280	280	280	280	279	279	279	279
68.60 CFS	279	278	278	278	278	278	277	277
70.20 CFS	277	277	276	276	276	276	275	275
71.80 CFS	275	275	274	274	274	274	273	273
73.40 CFS	273	273	272	272	272	271	271	271
75.00 CFS	271	270	270	270	269	269	269	269
76.60 CFS	268	268	268	267	267	267	266	266
78.20 CFS	266	266	265	265	265	264	264	264
79.80 CFS	263	263	263	262	262	262	261	261
81.40 CFS	261	260	260	260	259			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.28 WATERSHED INCHES; 89581 CFS-HRS; 7403.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	3184	1216	351	305	298	291	283	275

DURATION(HRS)	72	75
FLOW(CFS)	263	259 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 3.94 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 2, ARC 2							
MAIN TIME INCREMENT .200 HOURS							
ALTERNATE 5 STORM 1							
XSECTION 101	RUNOFF	1.86	1.99	---	12.58	1011	543.5
XSECTION 1	RUNOFF	1.20	1.91	---	12.22	900	750.0
XSECTION 1	ADDHYD	3.06	1.96	---	12.37	1729	565.0
XSECTION 2	RUNOFF	1.24	1.62	---	12.18	809	652.4
XSECTION 2	ADDHYD	4.30	1.86	---	12.48	2188	508.8
XSECTION 3	RUNOFF	1.85	1.99	---	12.38	1218	658.4
XSECTION 3	ADDHYD	6.15	1.90	---	12.61	3125	508.1
STRUCTURE 1	RESVOR	6.15	1.55	1799.08	24.52	112	18.2
XSECTION 104	REACH	6.15	1.55	.50	24.77	112	18.2
XSECTION 4	RUNOFF	2.54	1.99	---	12.15	2180	858.3
XSECTION 4	ADDHYD	8.69	1.68	---	12.15	2180	250.9
XSECTION 106	REACH	8.69	1.68	4.13	12.15	2180	250.9
XSECTION 5	RUNOFF	2.00	2.14	---	12.07	2049	1024.5
XSECTION 5	ADDHYD	10.69	1.77	---	12.10	4157	388.9
XSECTION 6	RUNOFF	1.14	1.91	---	12.06	1031	904.4
XSECTION 6	ADDHYD	11.83	1.78	---	12.09	5213	440.7
XSECTION 106	ADDHYD	.00	1.78	---	.00	0	********
XSECTION 7	RUNOFF	.96	1.61	---	11.93	834	868.8
XSECTION 7	ADDHYD	12.79	1.77	---	12.07	5926	463.3
XSECTION 10	RUNOFF	.67	1.84	---	12.37	405	604.5
XSECTION 109	REACH	.67	1.84	1767.83	12.66	375	559.7
XSECTION 9	RUNOFF	1.39	2.15	---	12.15	1298	933.8
XSECTION 109	ADDHYD	2.06	2.05	1772.52	12.20	1472	714.6
XSECTION 108	REACH	2.06	2.05	1759.29	12.20	1472	714.6
XSECTION 8	RUNOFF	1.92	2.31	---	12.06	2152	1120.8
XSECTION 108	ADDHYD	3.98	2.18	1762.24	12.10	3497	878.6
XSECTION 109	ADDHYD	.00	2.18	---	.00	0	********
XSECTION 107	REACH	3.98	2.17	1759.49	12.38	3221	809.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 1							
XSECTION 107	ADDHYD	16.77	1.87	1765.61	12.17	8191	488.4
STRUCTURE 2	RESVOR	16.77	1.53	1708.97	24.26T	284T	16.9
RAINFALL OF 7.06 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 5, ARC 2							
ALTERNATE 5 STORM 4							
XSECTION 101	RUNOFF	1.86	4.75	---	10.27	908	488.2
XSECTION 1	RUNOFF	1.20	4.64	---	9.92	590	491.7
XSECTION 1	ADDHYD	3.06	4.70	---	10.12	1492	487.6
XSECTION 2	RUNOFF	1.24	4.20	---	9.98	554	446.8
XSECTION 2	ADDHYD	4.30	4.56	---	10.22	2032	472.6
XSECTION 3	RUNOFF	1.85	4.75	---	10.05	920	497.3
XSECTION 3	ADDHYD	6.15	4.61	---	10.34	2930	476.4
STRUCTURE 1	RESVOR	6.15	4.24	1801.48	13.24	1490	242.3
XSECTION 104	REACH	6.15	1.81	.51	12.20F	115F	18.7
XSECTION 4	RUNOFF	2.54	4.75	---	9.62	1280	503.9
XSECTION 4	ADDHYD	8.69	2.67	---	9.81	1377	158.5
XSECTION 106	REACH	8.69	2.67	3.06	9.81	1377	158.5
XSECTION 5	RUNOFF	2.00	4.97	---	9.26	1067	533.5
XSECTION 5	ADDHYD	10.69	3.10	---	9.58	2431	227.4
XSECTION 6	RUNOFF	1.14	4.64	---	9.49	562	493.0
XSECTION 6	ADDHYD	11.83	3.24	---	9.57	2994	253.1
XSECTION 106	ADDHYD	.00	3.24	3.05	13.24	1375	********
XSECTION 7	RUNOFF	.96	4.20	---	9.90	435	453.1
XSECTION 7	ADDHYD	12.79	3.32	---	9.61	3421	267.5
XSECTION 10	RUNOFF	.67	4.53	---	10.10	319	476.1
XSECTION 109	REACH	.67	4.53	1767.47	10.38	317	473.1
XSECTION 9	RUNOFF	1.39	4.97	---	9.48	735	528.8
XSECTION 109	ADDHYD	2.06	4.82	1770.84	9.96	1037	503.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 4							
XSECTION 108	REACH	2.06	4.82	1758.38	9.96	1037	503.4
XSECTION 8	RUNOFF	1.92	5.19	---	9.22	1076	560.4
XSECTION 108	ADDHYD	3.98	5.00	1760.34	9.67	2080	522.6
XSECTION 109	ADDHYD	.00	5.00	---	.00	0	********
XSECTION 107	REACH	3.98	5.00	1757.54	10.09	2073	520.9
XSECTION 107	ADDHYD	16.77	3.72	1762.39	9.90	5483	327.0
STRUCTURE 2	RESVOR	16.77	3.05	1715.25	14.56T	1543T	92.0

RAINFALL OF 15.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 5 STORM 5							
XSECTION 101	RUNOFF	1.86	13.14	---	9.97	2475	1330.6
XSECTION 1	RUNOFF	1.20	12.99	---	9.40	1645	1370.8
XSECTION 1	ADDHYD	3.06	13.08	---	9.81	4079	1333.0
XSECTION 2	RUNOFF	1.24	12.39	---	9.34	1635	1318.5
XSECTION 2	ADDHYD	4.30	12.88	---	9.94	5654	1314.9
XSECTION 3	RUNOFF	1.85	13.14	---	9.66	2515	1359.5
XSECTION 3	ADDHYD	6.15	12.96	---	10.07	8107	1318.2
STRUCTURE 1	RESVOR	6.15	12.57	1803.90	10.91	7423	1207.0
XSECTION 104	REACH	6.15	1.89	.51	10.00F	115F	18.7
XSECTION 4	RUNOFF	2.54	13.14	---	9.24	3572	1406.3
XSECTION 4	ADDHYD	8.69	5.18	---	9.24	3687	424.3
XSECTION 106	REACH	8.69	5.15	5.62	9.00F	3454F	397.5
XSECTION 5	RUNOFF	2.00	13.43	---	9.13	2892	1446.0
XSECTION 5	ADDHYD	10.69	6.70	---	9.13	6346	593.6
XSECTION 6	RUNOFF	1.14	12.99	---	9.14	1601	1404.4
XSECTION 6	ADDHYD	11.83	7.30	---	9.12	7901	667.9
XSECTION 106	ADDHYD	.00	7.30	9.47	10.91	7308	********
XSECTION 7	RUNOFF	.96	12.38	---	8.98	1313	1367.7
XSECTION 7	ADDHYD	12.79	7.68	---	9.09	9241	722.5

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 5							
XSECTION 10	RUNOFF	.67	12.84	---	9.67	895	1335.8
XSECTION 109	REACH	.67	12.67	1770.00	10.50	821	1225.4
XSECTION 9	RUNOFF	1.39	13.43	---	9.24	1990	1431.7
XSECTION 109	ADDHYD	2.06	13.18	1777.54	9.38	2771	1345.1
XSECTION 108	REACH	2.06	13.01	1761.03	9.00F	2546F	1235.9
XSECTION 8	RUNOFF	1.92	13.71	---	9.11	2827	1472.4
XSECTION 108	ADDHYD	3.98	13.35	1764.66	9.11	5373	1350.0
XSECTION 109	ADDHYD	.00	13.35	1767.29	9.46	292	********
XSECTION 107	REACH	3.98	13.33	1762.11	9.62	5249	1318.8
XSECTION 107	ADDHYD	16.77	9.02	1772.94	9.27	14361	856.4
STRUCTURE 2	RESVOR	16.77	8.28	1722.08	11.67	9767	582.4

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1726	12.4	1689	12.6	4.77	1.00	.065	.978	.81?
103	2500		2157	12.4	2116	12.8	4.78	1.00	.061	.981	.82?
104	6700		112	24.6	112	24.8	1.57	1.53	.000	1.000	.73?
106	3700		2151	12.2	2151	12.2	1.13	1.57	.001	1.000	1.00?
109	2700		404	12.4	371	12.6	.39	1.38	.068	.919	.66
108	2100		1472	12.2	1472	12.2	.79	1.41	.012	1.000	1.00?
107	5300		3373	12.2	3214	12.4	.54	1.38	.074	.953	.71?
ALTERNATE 5 STORM 4											
102	2500		1490	10.2	1489	10.4	4.77	1.00	.023	.999	.81?
103	2500		2032	10.2	2026	10.4	4.78	1.00	.023	.997	.81?
104	6700		115	10.8	115	12.2	1.57	1.53	.000	1.000	.73?
106	3700		1377	9.8	1377	9.8	1.06	1.58	.000	1.000	1.00?
109	2700		318	10.2	317	10.4	.30	1.44	.012	.997	.66
108	2100		1036	10.0	1036	10.0	.74	1.43	.002	1.000	1.00?
107	5300		2079	9.6	2072	10.0	.55	1.37	.015	.997	.65
ALTERNATE 5 STORM 5											
102	2500		4079	9.8	4071	10.0	4.78	1.00	.023	.998	.82?
103	2500		5652	10.0	5646	10.2	4.78	1.00	.023	.999	.82?
104	6700		115	8.6	115	10.0	1.57	1.53	.000	1.000	.73?
106	3700		3454	9.0	3454	9.0	1.25	1.55	.000	1.000	1.00?
109	2700		820	9.2	820	10.6	.43	1.35	.011	1.000	.72?
108	2100		2546	9.0	2546	9.0	.86	1.39	.002	1.000	1.00?
107	5300		5253	9.0	5249	9.6	.54	1.38	.009	.999	.77?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
STRUCTURE 2	16.77			
ALTERNATE 5		284	1543	9767
STRUCTURE 1	6.15			
ALTERNATE 5		112	1490	7423
XSECTION 1	3.06			
ALTERNATE 5		1729	1492	4079
XSECTION 2	4.30			
ALTERNATE 5		2188	2032	5654
XSECTION 3	6.15			
ALTERNATE 5		3125	2930	8107
XSECTION 4	8.69			
ALTERNATE 5		2180	1377	3687
XSECTION 5	10.69			
ALTERNATE 5		4157	2431	6346
XSECTION 6	11.83			
ALTERNATE 5		5213	2994	7901
XSECTION 7	12.79			
ALTERNATE 5		5926	3421	9241
XSECTION 8	1.92			
ALTERNATE 5		2152	1076	2827
XSECTION 9	1.39			

ALTERN[illegible]	5	1298	735	1990

XSECTION [illegible] .67

ALTERNATE	5	405	319	895

XSECTION 101 1.86

ALTERNATE	5	1011	908	2475

XSECTION 104 6.15

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID		DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
XSECTION 104		6.15			
ALTERNATE	5		112	115	115
XSECTION 106		.00			
ALTERNATE	5		0	1375	7308
XSECTION 107		16.77			
ALTERNATE	5		8191	5483	14361
XSECTION 108		3.98			
ALTERNATE	5		3497	2080	5373
XSECTION 109		.00			
ALTERNATE	5		0	0	292

```
TR20 ------ ------------------------------------------------------------ SCS -
          SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATE VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR20bP2.04TEST


END OF  1 JOBS IN THIS RUN


                    SCS  TR-20,  VERSION 2.04TEST
                                   FILES

     INPUT  = SBT20BP2.DAT                          , GIVEN DATA FILE
     OUTPUT = SBT20BP2.OUT                          , DATED 09/18/**,09:23:59

              FILES GENERATED - DATED 09/18/**,09:23:59

                                NONE!


          TOTAL NUMBER OF WARNINGS =  18,  MESSAGES =   8

                       JOB ENDED AT 09:23:59
                   *** TR-20 RUN COMPLETED ***
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.81 WATERSHED INCHES; 7178 CFS-HRS; 593.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	26	18 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	1280.3	(RUNOFF)
17.11	201.4	(RUNOFF)
17.98	184.7	(RUNOFF)
19.15	157.1	(RUNOFF)
21.07	142.2	(RUNOFF)
22.04	122.6	(RUNOFF)
23.12	135.1	(RUNOFF)
24.03	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 7779 CFS-HRS; 642.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1087	722	434	275	190	145	131	115

DURATION(HRS)	18	20	20
FLOW(CFS)	71	2	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 16.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	(NULL)
17.11	316.4	(NULL)
17.98	299.7	(NULL)
19.15	272.1	(NULL)
21.07	257.2	(NULL)
22.04	237.6	(NULL)
23.12	250.1	(NULL)
24.03	247.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	3.06
17.11	316.4	1.08
17.98	299.7	1.02
19.15	272.1	.93
21.07	257.2	.87
22.04	237.6	.81
23.12	250.1	.85
24.03	247.1	.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.26	1067.2	(RUNOFF)
17.05	163.9	(RUNOFF)
17.95	150.0	(RUNOFF)
19.08	129.0	(RUNOFF)
21.01	116.0	(RUNOFF)
21.99	99.5	(RUNOFF)
23.05	111.6	(RUNOFF)
23.99	111.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 6412 CFS-HRS; 529.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	892	579	359	224	154	128	105	94

DURATION(HRS)	18	20	20
FLOW(CFS)	74	2	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.58	2431.4	(NULL)
17.08	479.7	(NULL)
17.97	449.6	(NULL)
19.11	399.6	(NULL)
21.04	372.9	(NULL)
22.01	337.0	(NULL)
23.08	360.7	(NULL)
24.01	357.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 21361 CFS-HRS; 1765.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.49	562.3	(RUNOFF)
17.04	91.0	(RUNOFF)
17.95	83.5	(RUNOFF)
19.07	71.9	(RUNOFF)
21.00	64.6	(RUNOFF)
21.99	55.4	(RUNOFF)
23.04	62.2	(RUNOFF)
23.98	62.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	314	187	120	85	65	58	52

DURATION(HRS)	18	20
FLOW(CFS)	32	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	2993.5	(NULL)
17.07	570.6	(NULL)
17.96	533.1	(NULL)
19.10	470.7	(NULL)
21.03	437.4	(NULL)
22.01	392.4	(NULL)
23.07	422.8	(NULL)
24.00	419.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.24 WATERSHED INCHES; 24770 CFS-HRS; 2047.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	711	371	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	3.05

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
10.60 CFS	0	73	308	517	700	858	993	1105

12.20 CFS	1195	1265	1315	1349	1368	1375	1372	1360
13.80 CFS	1341	1315	1286	1252	1217	1179	1139	1099
15.40 CFS	1058	1017	977	937	898	859	821	783
17.00 CFS	746	712	680	651	623	597	573	550
18.60 CFS	528	505	482	460	441	423	406	389
20.20 CFS	372	356	340	325	313	302	293	284
21.80 CFS	276	268	260	252	245	236	229	222
23.40 CFS	217	213	208	204	200	196	191	183
25.00 CFS	170	155	137	119	101	84	67	51
26.60 CFS	36.92	23.59	11.34	.12				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	435.3	(RUNOFF)
16.93	76.1	(RUNOFF)
17.91	70.3	(RUNOFF)
18.94	61.1	(RUNOFF)
20.91	54.4	(RUNOFF)
21.92	46.9	(RUNOFF)
22.93	54.6	(RUNOFF)
23.91	57.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 2600 CFS-HRS; 214.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	373	227	141	93	66	53	46	39

DURATION(HRS)	18	19
FLOW(CFS)	19	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.7%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.61	3421.4	(NULL)
17.04	644.6	(NULL)
17.94	602.9	(NULL)
19.07	530.0	(NULL)
21.00	490.6	(NULL)
21.98	438.5	(NULL)
23.04	474.0	(NULL)
23.98	474.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
4.60 CFS	0	2	3	14	36	54	98	137
6.20 CFS	211	320	396	542	652	815	1033	1186
7.80 CFS	1484	1705	1984	2332	2556	2948	3247	3389
9.40 CFS	3416	3421	3417	3408	3311	3148	3058	2975
11.00 CFS	2921	2795	2611	2490	2272	2114	1963	1792
12.60 CFS	1695	1581	1503	1407	1287	1221	1157	1115
14.20 CFS	1059	986	943	886	847	819	791	771
15.80 CFS	721	684	643	592	575	612	644	629
17.40 CFS	588	571	586	600	551	462	427	480
19.00 CFS	527	518	478	454	424	404	410	430
20.60 CFS	445	472	491	470	427	409	424	438
22.20 CFS	416	372	361	422	473	450	388	367
23.80 CFS	424	473	394	239	159	131	121	117
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	114	114	114	114	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	113	112	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103
51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97

65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20	19.83	19.48	19.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.32 WATERSHED INCHES; 27368 CFS-HRS; 2261.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	815	410	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	318.8	(RUNOFF)
17.24	50.8	(RUNOFF)
19.32	38.9	(RUNOFF)
21.23	35.2	(RUNOFF)
22.12	31.4	(RUNOFF)
23.29	32.1	(RUNOFF)
24.15	31.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	280	179	110	70	49	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	19	1	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.38	317.3	1767.47
17.45	50.6	1764.95
19.57	38.6	1764.77
21.50	34.8	1764.71
23.56	31.5	1764.66
24.36	30.8	1764.65

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	274	182	109	71	50	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	16	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.48	734.9	(RUNOFF)
17.12	112.1	(RUNOFF)
17.98	102.8	(RUNOFF)
19.16	87.3	(RUNOFF)
21.07	79.0	(RUNOFF)
22.04	68.0	(RUNOFF)
23.13	74.8	(RUNOFF)
24.04	73.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 4457 CFS-HRS; 368.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	628	413	243	155	106	85	73	65

DURATION(HRS)	18	20	21
FLOW(CFS)	53	2	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.96	1036.5	1770.84
17.11	162.3	1766.28
17.96	150.9	1766.17
19.15	124.4	1765.91
21.12	112.0	1765.79
22.00	99.9	1765.67
23.15	103.3	1765.70
24.04	102.0	1765.69

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 6413 CFS-HRS; 530.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	906	594	360	226	157	122	105	98

DURATION(HRS)	18	20	22
FLOW(CFS)	69	6	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.96	1036.5	1758.38
17.11	162.3	1755.38
17.96	150.9	1755.30
19.15	124.4	1755.12
21.12	112.0	1755.04
22.00	99.9	1754.96
23.15	103.3	1754.98
24.04	102.0	1754.97

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.82 WATERSHED INCHES; 6413 CFS-HRS; 530.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	906	594	360	226	157	122	105	98

DURATION(HRS)	18	20	22
FLOW(CFS)	69	6	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.22	1075.7	(RUNOFF)
17.04	160.0	(RUNOFF)
17.95	146.7	(RUNOFF)
19.07	126.0	(RUNOFF)
21.00	113.1	(RUNOFF)
21.99	97.0	(RUNOFF)
23.04	108.9	(RUNOFF)
23.98	108.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.19 WATERSHED INCHES; 6435 CFS-HRS; 531.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	879	601	349	231	157	125	102	92

DURATION(HRS)	18	20	21
FLOW(CFS)	73	3	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	2079.6	1760.34
17.06	321.8	1756.19
17.95	297.6	1756.08
19.09	249.8	1755.88
21.04	224.0	1755.76
21.99	196.9	1755.62
23.08	210.6	1755.71
24.00	210.4	1755.70

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
4.40 CFS	.05	.99	8.61	15.00	28.29	53.45	69.65	99.81
6.00 CFS	126	168	241	291	375	449	537	673
7.60 CFS	769	933	1079	1226	1436	1578	1787	1966
9.20 CFS	2044	2065	2079	2076	2071	2028	1932	1873
10.80 CFS	1817	1773	1706	1595	1520	1399	1294	1206
12.40 CFS	1096	1027	953	895	838	762	715	672
14.00 CFS	639	606	560	530	496	468	448	428
15.60 CFS	414	387	363	340	309	293	306	321
17.20 CFS	317	296	285	290	297	278	229	205
18.80 CFS	224	247	246	227	214	198	185	184
20.40 CFS	193	199	212	224	219	197	185	190
22.00 CFS	197	189	165	156	181	208	205	174
23.60 CFS	160	184	210	183	102	54	32	19
25.20 CFS	10.67	6.07	3.43	1.94	1.11	.63	.35	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 12848 CFS-HRS; 1061.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1787	1206	715	449	309	246	208	185

DURATION(HRS)	18	20	22
FLOW(CFS)	156	15	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
115 CFS-HRS; 1061.8 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.09	2072.8	1757.54
17.31	317.7	1752.22
18.16	294.9	1752.11
19.36	243.8	1751.79
21.31	219.7	1751.63
22.20	194.7	1751.45
23.35	202.7	1751.51
24.23	199.5	1751.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
4.60 CFS	.04	.65	5.81	11.77	22.48	42.56	60.13	85.85
6.20 CFS	112	149	209	262	335	409	492	609
7.80 CFS	713	856	1000	1147	1334	1492	1683	1866
9.40 CFS	1981	2036	2063	2072	2071	2043	1971	1907
11.00 CFS	1849	1799	1739	1646	1564	1457	1351	1257
12.60 CFS	1152	1071	995	930	871	800	745	697
14.20 CFS	659	624	583	549	515	484	461	440
15.80 CFS	423	400	376	353	324	304	305	315
17.40 CFS	316	303	291	290	295	284	248	220
19.00 CFS	223	239	243	232	220	206	192	187
20.60 CFS	191	196	206	218	218	204	192	191
22.20 CFS	195	191	174	162	175	197	202	184
23.80 CFS	168	178	199	189	132	82	49	29
25.40 CFS	17.27	10.00	5.74	3.28	1.87	1.07	.60	.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.00 WATERSHED INCHES; 12846 CFS-HRS; 1061.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1799	1152	713	461	315	243	206	191

DURATION(HRS)	18	20	22
FLOW(CFS)	149	17	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	5483.0	1762.39
17.07	951.6	1754.82
17.95	892.9	1754.62
19.13	758.4	1754.17
21.05	698.3	1753.96
21.99	629.2	1753.67
23.10	655.0	1753.78
24.00	651.7	1753.77

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
4.60 CFS	0	2	9	25	59	96	158	223
6.20 CFS	323	469	604	804	987	1224	1525	1795
7.80 CFS	2197	2561	2984	3478	3890	4440	4930	5255
9.40 CFS	5397	5457	5480	5480	5382	5191	5029	4883
11.00 CFS	4770	4594	4350	4135	3836	3571	3315	3049
12.60 CFS	2848	2652	2498	2337	2157	2021	1901	1812
14.20 CFS	1718	1611	1526	1435	1362	1303	1252	1210
15.80 CFS	1145	1084	1018	945	899	916	949	944
17.40 CFS	904	873	877	891	845	746	675	700
19.00 CFS	749	756	722	687	645	610	603	617
20.60 CFS	635	668	697	688	645	613	616	629
22.20 CFS	611	563	535	584	647	647	590	550
23.80 CFS	592	652	593	428	292	213	170	146
25.40 CFS	133	125	121	118	117	116	116	115
27.00 CFS	115	115	115	114	114	114	114	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	113	112	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103

51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97
65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 40211 CFS-HRS; 3323.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1252	604	113	109	105	102	97	92

DURATION(HRS)	72	78
FLOW(CFS)	40	20 TRUNCATED

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
14.63	1513.7	1714.80

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
4.60 CFS	.00	.01	.03	.09	.26	.56	1.06	1.80
6.20 CFS	2.86	4.40	6.48	9.21	12.67	16.95	22.25	28.66
7.80 CFS	36	41	42	78	202	339	487	500
9.40 CFS	514	528	542	555	566	576	585	594
11.00 CFS	602	609	616	630	726	812	904	1006
12.60 CFS	1093	1168	1231	1284	1352	1406	1446	1476
14.20 CFS	1497	1509	1514	1511	1503	1491	1475	1457
15.80 CFS	1437	1413	1387	1357	1326	1295	1276	1261
17.40 CFS	1246	1230	1214	1199	1185	1167	1147	1126
19.00 CFS	1108	1092	1076	1060	1042	1023	1005	987
20.60 CFS	971	956	944	933	921	908	895	882
22.20 CFS	871	858	849	841	834	829	823	816

23.80 CFS	809	803	798	790	777	762	746	729
25.40 CFS	712	695	679	663	647	632	623	620
27.00 CFS	619	619	618	617	616	615	614	614
28.60 CFS	613	612	611	610	609	608	607	606
30.20 CFS	606	605	604	603	602	601	600	599
31.80 CFS	598	597	596	595	595	594	593	592
33.40 CFS	591	590	589	588	587	586	585	585
35.00 CFS	584	583	582	581	580	579	578	577
36.60 CFS	576	575	574	573	572	571	570	569
38.20 CFS	568	567	566	565	564	563	562	561
39.80 CFS	560	559	558	557	556	555	554	553
41.40 CFS	552	550	549	548	547	545	544	543
43.00 CFS	542	540	539	538	537	535	534	533
44.60 CFS	532	531	529	528	527	526	525	524
46.20 CFS	522	521	520	519	518	517	515	514
47.80 CFS	513	512	511	510	508	507	506	505
49.40 CFS	504	503	502	501	499	498	497	496
51.00 CFS	495	494	493	492	491	489	488	487
52.60 CFS	475	462	450	438	426	415	404	394
54.20 CFS	384	374	364	355	347	338	330	322
55.80 CFS	314	307	300	293	286	280	274	268
57.40 CFS	262	256	251	245	240	236	231	226
59.00 CFS	222	218	213	209	206	202	198	195
60.60 CFS	192	188	185	182	179	176	174	171
62.20 CFS	168	166	164	161	159	157	155	153
63.80 CFS	151	149	147	145	144	142	140	139
65.40 CFS	137	136	134	133	132	130	129	128
67.00 CFS	127	126	124	123	122	121	120	119
68.60 CFS	118	118	117	116	115	114	114	113
70.20 CFS	112	111	111	110	109	109	108	107
71.80 CFS	106	106	105	104	103	102	101	100
73.40 CFS	98.42	97.29	96.14	94.98	93.80	92.61	91.41	90.20
75.00 CFS	88.98	87.76	86.53	85.30	84.07	82.83	81.60	80.37
76.60 CFS	79.14	77.92	76.70	75.48	74.27	73.07	71.88	70.69
78.20 CFS	69.51	68.34	67.18	66.03	64.89	63.76	62.64	61.53
79.80 CFS	60.44	59.35	58.28	57.22	56.18	55.14	54.13	53.14
81.40 CFS	52.16	51.20	50.26	49.34	48.43	47.55	46.67	45.82
83.00 CFS	44.98	44.16	43.35	42.80				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.41 WATERSHED INCHES; 36898 CFS-HRS; 3049.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	987	617	585	548	504	280	144	103

DURATION(HRS)	72	75
FLOW(CFS)	57	43 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 15.80 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 5 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.97	2474.7	(RUNOFF)
19.38	260.1	(RUNOFF)
21.37	231.2	(RUNOFF)
23.43	207.1	(RUNOFF)
24.14	201.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15772 CFS-HRS; 1303.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2130	1491	895	572	384	310	236	213

DURATION(HRS)	18	20	22	24
FLOW(CFS)	199	74	8	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1645.4	(RUNOFF)
17.18	225.3	(RUNOFF)
18.00	206.3	(RUNOFF)
19.22	173.6	(RUNOFF)
21.14	157.2	(RUNOFF)
22.10	136.8	(RUNOFF)
23.18	146.6	(RUNOFF)
24.10	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 10062 CFS-HRS; 831.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1359	945	561	359	231	202	152	137

DURATION(HRS)	18	20	22
FLOW(CFS)	120	35	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	4079.1	(NULL)
17.12	574.5	(NULL)
19.22	432.3	(NULL)
21.21	385.5	(NULL)
23.24	349.2	(NULL)
24.11	344.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3522	2377	1482	944	625	514	386	350

DURATION(HRS)	18	20	22	24
FLOW(CFS)	319	103	12	0

*** WARNING - XSECTION 102, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.34	1635.2	(RUNOFF)
17.14	231.2	(RUNOFF)
17.99	211.6	(RUNOFF)
19.18	179.4	(RUNOFF)
21.10	162.5	(RUNOFF)
22.06	139.7	(RUNOFF)
23.15	152.4	(RUNOFF)
24.06	147.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.39 WATERSHED INCHES; 9916 CFS-HRS; 819.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1353	926	554	358	230	196	152	138

DURATION(HRS)	18	20	21
FLOW(CFS)	123	17	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	5653.9	(NULL)
19.21	603.5	(NULL)
21.25	534.8	(NULL)
23.28	481.4	(NULL)
24.13	478.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4815	3359	2061	1304	855	698	530	491

DURATION(HRS)	18	20	22	24
FLOW(CFS)	445	142	13	0

*** WARNING - XSECTION 103, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	2515.5	(RUNOFF)
17.24	343.0	(RUNOFF)
19.34	261.4	(RUNOFF)
21.23	236.0	(RUNOFF)
22.10	209.5	(RUNOFF)
23.30	213.7	(RUNOFF)
24.15	208.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15688 CFS-HRS; 1296.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2109	1485	892	573	376	315	236	209

DURATION(HRS)	18	20	22	23
FLOW(CFS)	196	71	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.07	8106.6	(NULL)
19.35	864.2	(NULL)
21.39	762.6	(NULL)
23.42	687.0	(NULL)
24.21	671.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
3.40 CFS	0	1	4	12	25	47	79	123
5.00 CFS	184	260	350	456	570	693	829	993
6.60 CFS	1206	1451	1728	2030	2364	2750	3171	3642
8.20 CFS	4149	4688	5271	5868	6481	7073	7549	7863
9.80 CFS	8034	8102	8089	7988	7793	7552	7302	7058
11.40 CFS	6797	6496	6168	5808	5431	5053	4679	4331
13.00 CFS	4015	3732	3471	3220	2988	2784	2607	2449
14.60 CFS	2297	2155	2022	1901	1795	1704	1622	1540
16.20 CFS	1455	1369	1280	1205	1163	1152	1145	1122
17.80 CFS	1093	1076	1065	1036	971	898	860	859
19.40 CFS	864	850	822	784	745	715	704	709
21.00 CFS	727	752	763	750	726	710	703	691
22.60 CFS	662	634	637	666	687	674	650	652
24.20 CFS	671	656	566	437	316	219	146	95
25.80 CFS	60.39	38.60	24.85	16.02	10.26	6.54	4.22	2.72
27.40 CFS	1.74	1.09	.65	.33				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.96 WATERSHED INCHES; 51438 CFS-HRS; 4250.8 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	5868	2988	1540	993	726	650	79	1

DURATION(HRS)	24
FLOW(CFS)	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7422.8	1803.90

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.60 CFS	.00	.01	.01	.01	.01	.02	2.65	33.05
7.20 CFS	80	94	97	100	103	107	110	187

8.80 CFS	670	1165	1709	3269	4505	5464	6189	6720
10.40 CFS	7087	7311	7412	7416	7350	7233	7069	6864
12.00 CFS	6620	6341	6035	5709	5374	5039	4715	4404
13.60 CFS	4110	3829	3567	3324	3102	2899	2711	2538
15.20 CFS	2377	2230	2096	1975	1865	1763	1665	1624
16.80 CFS	1590	1553	1518	1485	1453	1422	1392	1363
18.40 CFS	1335	1305	1272	1237	1203	1172	1144	1116
20.00 CFS	1088	1059	1029	1001	974	951	932	916
21.60 CFS	902	887	872	857	843	828	812	796
23.20 CFS	783	773	765	756	746	739	732	721
24.80 CFS	701	672	636	595	552	510	468	429
26.40 CFS	392	358	327	298	272	247	225	205
28.00 CFS	187	170	155	141	128	117	114	114
29.60 CFS	114	114	113	113	113	113	113	113
31.20 CFS	113	113	113	113	112	112	112	112
32.80 CFS	112	112	112	112	112	112	112	111
34.40 CFS	111	111	111	111	111	111	111	111
36.00 CFS	111	110	110	110	110	110	110	110
37.60 CFS	110	110	110	110	109	109	109	109
39.20 CFS	109	109	109	109	109	109	108	108
40.80 CFS	108	108	108	108	108	108	108	108
42.40 CFS	108	107	107	107	107	107	107	107
44.00 CFS	107	107	107	107	106	106	106	106
45.60 CFS	106	106	106	106	106	106	106	105
47.20 CFS	105	105	105	105	105	105	105	105
48.80 CFS	105	105	104	104	104	104	104	104
50.40 CFS	104	104	104	104	104	103	103	103
52.00 CFS	103	103	103	103	103	103	103	103
53.60 CFS	102	102	102	102	102	102	102	102
55.20 CFS	102	101	101	101	101	101	101	101
56.80 CFS	101	101	100	100	100	100	100	100
58.40 CFS	99.77	99.66	99.55	99.44	99.32	99.21	99.10	98.99
60.00 CFS	98.87	98.76	98.65	98.54	98.43	98.32	98.21	98.10
61.60 CFS	97.98	97.87	97.76	97.65	97.54	97.43	97.32	97.21
63.20 CFS	97.10	96.99	96.88	96.77	96.66	96.56	96.45	96.34
64.80 CFS	96.23	96.11	95.98	95.85	95.72	95.59	95.46	95.33
66.40 CFS	95.20	95.07	94.94	94.81	94.68	94.55	94.42	94.29
68.00 CFS	94.16	94.03	93.90	93.78	93.65	93.52	93.39	93.26
69.60 CFS	93.14	93.01	92.88	92.76	92.63	92.50	92.38	92.25
71.20 CFS	92.13	92.00	91.87	91.75	91.62	91.50	91.37	91.25
72.80 CFS	89.59	87.01	84.50	82.06	79.70	77.40	75.17	73.18
74.40 CFS	71.34	69.55	67.80	66.09	64.43	62.81	61.23	59.69
76.00 CFS	58.19	56.72	55.29	53.90	52.55	51.22	49.94	48.68
77.60 CFS	47.45	46.26	45.10	43.96	42.86	41.78	40.73	39.70
79.20 CFS	38.70	37.73	36.78	35.85	34.95	34.07	33.21	32.38
80.80 CFS	31.56	30.77	30.00	29.24	28.51	27.79	27.09	26.41
82.40 CFS	25.90	25.44						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.57 WATERSHED INCHES; 49889 CFS-HRS; 4122.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1518	672	112	108	105	101	97	92

DURATION(HRS)	72	76
FLOW(CFS)	39	25 TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.00	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.89 WATERSHED INCHES; 7508 CFS-HRS; 620.5 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	112	109	105	101	97	92

DURATION(HRS)	72	75
FLOW(CFS)	39	26 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3571.8	(RUNOFF)
17.11	482.9	(RUNOFF)
17.98	442.0	(RUNOFF)
19.15	376.0	(RUNOFF)
21.07	339.4	(RUNOFF)
22.04	291.9	(RUNOFF)
23.12	320.2	(RUNOFF)
24.03	312.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 21539 CFS-HRS; 1780.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2928	1946	1248	783	503	424	319	294

DURATION(HRS)	18	20	22	22
FLOW(CFS)	263	76	1	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 23.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3686.8	(NULL)
17.11	597.9	(NULL)
17.98	557.0	(NULL)
19.15	491.0	(NULL)
21.07	454.4	(NULL)
22.04	406.9	(NULL)
23.12	435.2	(NULL)
24.03	427.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.18 WATERSHED INCHES; 29047 CFS-HRS; 2400.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	5.62
17.11	597.9	1.78
17.98	557.0	1.71
19.15	491.0	1.59
21.07	454.4	1.52
22.04	406.9	1.38
23.12	435.2	1.48
24.03	427.6	1.45

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 28888 CFS-HRS; 2387.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	2891.7	(RUNOFF)
17.05	387.9	(RUNOFF)
17.95	354.7	(RUNOFF)
19.07	304.5	(RUNOFF)
21.01	273.4	(RUNOFF)
21.99	234.1	(RUNOFF)
23.05	262.5	(RUNOFF)
23.99	260.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 17332 CFS-HRS; 1432.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2298	1621	987	636	413	335	261	229

DURATION(HRS)	18	20	22	22
FLOW(CFS)	210	83	1	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	6345.7	(NULL)
17.08	984.1	(NULL)
17.97	911.6	(NULL)
19.11	791.9	(NULL)
21.03	727.2	(NULL)
22.01	640.8	(NULL)
23.08	695.5	(NULL)
24.01	687.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.70 WATERSHED INCHES; 46217 CFS-HRS; 3819.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.14	1601.2	(RUNOFF)
17.04	219.9	(RUNOFF)
17.95	201.2	(RUNOFF)
19.07	172.6	(RUNOFF)
21.00	154.8	(RUNOFF)
21.99	132.8	(RUNOFF)
23.04	149.1	(RUNOFF)
23.98	149.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 9558 CFS-HRS; 789.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1288	901	539	342	220	187	148	127

DURATION(HRS)	18	20	22
FLOW(CFS)	117	34	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.12	7900.8	(NULL)
17.07	1203.7	(NULL)
17.96	1112.7	(NULL)
19.10	962.7	(NULL)
21.03	881.8	(NULL)
22.01	773.5	(NULL)
23.07	844.1	(NULL)
24.00	836.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.30 WATERSHED INCHES; 55759 CFS-HRS; 4608.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1846	758	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	9.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.40 CFS	0	72	555	1209	1868	3344	4530	5429
10.00 CFS	6094	6605	6972	7196	7297	7301	7235	7118
11.60 CFS	6954	6749	6505	6226	5920	5594	5259	4924
13.20 CFS	4600	4289	3995	3714	3452	3209	2987	2784
14.80 CFS	2596	2423	2262	2115	1981	1860	1750	1648
16.40 CFS	1550	1509	1475	1438	1403	1370	1338	1307
18.00 CFS	1277	1248	1220	1190	1157	1122	1088	1057
19.60 CFS	1029	1001	973	944	914	886	859	836
21.20 CFS	817	801	787	772	757	742	728	713
22.80 CFS	697	681	668	658	650	641	631	624
24.40 CFS	617	606	586	557	521	480	437	395
26.00 CFS	353	314	277	243	212	183	157	132
27.60 CFS	110	90	72	55	40	26	13	2
29.20 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42546 CFS-HRS; 3516.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1122	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.98	1313.1	(RUNOFF)
16.93	189.3	(RUNOFF)
17.91	174.5	(RUNOFF)
18.94	151.3	(RUNOFF)
20.91	134.2	(RUNOFF)
21.91	115.4	(RUNOFF)
22.93	134.2	(RUNOFF)
23.91	139.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.38 WATERSHED INCHES; 7673 CFS-HRS; 634.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1053	685	406	274	188	150	126	106

DURATION(HRS)	18	20	20
FLOW(CFS)	87	9	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.09	9241.1	(NULL)
17.03	1387.8	(NULL)
17.94	1285.9	(NULL)
19.07	1109.1	(NULL)
21.00	1013.0	(NULL)
21.98	886.9	(NULL)
23.04	970.1	(NULL)
23.98	969.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
3.00 CFS	0	3	9	16	56	94	146	219
4.60 CFS	276	418	528	665	839	951	1133	1266
6.20 CFS	1558	1976	2248	2693	3012	3506	4157	4591
7.80 CFS	5364	5922	6598	7411	7925	8772	9199	9166
9.40 CFS	9076	9003	8881	8809	8478	7961	7675	7393
11.00 CFS	7207	6850	6353	6029	5463	5055	4671	4236
12.60 CFS	3991	3703	3507	3267	2970	2805	2645	2542
14.20 CFS	2402	2225	2120	1980	1885	1814	1747	1697
15.80 CFS	1576	1487	1385	1264	1222	1310	1386	1349
17.40 CFS	1251	1209	1246	1280	1160	945	864	989
19.00 CFS	1102	1079	985	927	855	806	821	869
20.60 CFS	903	967	1013	963	859	815	851	886
22.20 CFS	833	728	701	847	967	912	765	715
23.80 CFS	852	967	776	409	220	154	129	120
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	115	115	115	115	115
28.60 CFS	115	115	115	115	114	114	114	114
30.20 CFS	113	113	113	113	113	113	113	113
31.80 CFS	113	113	113	112	112	112	112	112
33.40 CFS	112	112	112	112	112	111	111	111
35.00 CFS	111	111	111	111	111	111	111	110
36.60 CFS	110	110	110	110	110	110	110	110

38.20 CFS	110	110	109	109	109	109	109	109
39.80 CFS	109	109	109	109	109	108	108	108
41.40 CFS	108	108	108	108	108	108	108	107
43.00 CFS	107	107	107	107	107	107	107	107
44.60 CFS	107	107	106	106	106	106	106	106
46.20 CFS	106	106	106	106	106	105	105	105
47.80 CFS	105	105	105	105	105	105	105	105
49.40 CFS	104	104	104	104	104	104	104	104
51.00 CFS	104	104	104	104	103	103	103	103
52.60 CFS	103	103	103	103	103	103	103	102
54.20 CFS	102	102	102	102	102	102	102	102
55.80 CFS	101	101	101	101	101	101	101	101
57.40 CFS	100	100	100	100	100	100	100	100
59.00 CFS	99.59	99.48	99.36	99.25	99.14	99.03	98.92	98.80
60.60 CFS	98.69	98.58	98.47	98.36	98.25	98.14	98.03	97.91
62.20 CFS	97.80	97.69	97.58	97.47	97.36	97.25	97.14	97.03
63.80 CFS	96.92	96.81	96.70	96.60	96.49	96.38	96.27	96.15
65.40 CFS	96.03	95.90	95.76	95.63	95.50	95.37	95.24	95.11
67.00 CFS	94.98	94.85	94.72	94.60	94.47	94.34	94.21	94.08
68.60 CFS	93.95	93.82	93.69	93.57	93.44	93.31	93.18	93.06
70.20 CFS	92.93	92.80	92.68	92.55	92.42	92.30	92.17	92.04
71.80 CFS	91.92	91.79	91.67	91.54	91.42	91.29	90.04	87.82
73.40 CFS	85.39	82.96	80.57	78.25	76.00	73.94	72.04	70.22
75.00 CFS	68.45	66.72	65.04	63.41	61.81	60.26	58.74	57.26
76.60 CFS	55.82	54.42	53.05	51.71	50.41	49.14	47.91	46.70
78.20 CFS	45.53	44.38	43.26	42.18	41.12	40.08	39.07	38.09
79.80 CFS	37.13	36.20	35.28	34.40	33.53	32.69	31.87	31.06
81.40 CFS	30.28	29.52	28.78	28.05	27.35	26.66	26.10	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.68 WATERSHED INCHES; 63428 CFS-HRS; 5241.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	2120	859	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	894.6	(RUNOFF)
17.24	123.5	(RUNOFF)
19.33	94.2	(RUNOFF)
21.23	85.1	(RUNOFF)
22.11	75.6	(RUNOFF)
23.28	77.4	(RUNOFF)
24.14	75.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 5554 CFS-HRS; 459.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	753	524	310	199	131	107	85	75

DURATION(HRS)	18	20	22	23
FLOW(CFS)	68	19	1	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.50	820.6	1770.00
17.46	123.0	1765.90
19.57	93.5	1765.61
21.48	84.2	1765.47
23.54	76.0	1765.34
24.36	73.9	1765.31

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.67 WATERSHED INCHES; 5478 CFS-HRS; 452.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	764	504	320	204	129	108	84	75

DURATION(HRS)	18	20	22	22
FLOW(CFS)	69	21	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	1990.4	(RUNOFF)
17.12	265.6	(RUNOFF)
17.98	242.8	(RUNOFF)
19.16	206.3	(RUNOFF)
21.07	185.8	(RUNOFF)
22.04	160.2	(RUNOFF)
23.12	175.5	(RUNOFF)
24.04	171.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 12047 CFS-HRS; 995.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1628	1089	689	432	288	235	183	162

DURATION(HRS)	18	20	22	22
FLOW(CFS)	147	58	1	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.38	2771.3	1777.54
17.11	387.3	1767.91
17.95	359.2	1767.74
19.16	295.8	1767.32
21.12	265.7	1767.10
22.00	236.9	1766.90
23.15	244.1	1766.95
24.04	240.3	1766.92

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.18 WATERSHED INCHES; 17524 CFS-HRS; 1448.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237

DURATION(HRS)	18	20	22	23
FLOW(CFS)	216	78	7	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	2546.0 *	1761.03
17.11	387.3	1756.48
17.95	359.2	1756.35
19.16	295.8	1756.08
21.12	265.7	1755.95
22.00	236.9	1755.82
23.15	244.1	1755.85
24.04	240.3	1755.83

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.01 WATERSHED INCHES; 17299 CFS-HRS; 1429.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2383	1614	999	637	418	355	266	237
DURATION(HRS)	18	20	22	23				
FLOW(CFS)	216	78	7	0				

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	2826.7	(RUNOFF)
17.04	374.8	(RUNOFF)
17.95	342.6	(RUNOFF)
19.07	293.9	(RUNOFF)
21.00	263.6	(RUNOFF)
21.99	226.1	(RUNOFF)
23.04	253.9	(RUNOFF)
23.98	253.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.71 WATERSHED INCHES; 16988 CFS-HRS; 1403.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2270	1558	986	612	422	330	253	226
DURATION(HRS)	18	20	22	22				
FLOW(CFS)	202	92	2	0				

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	5372.7	1764.66
17.06	760.9	1757.71
17.95	701.8	1757.53
19.10	587.6	1757.17
21.04	526.8	1756.98
21.99	462.9	1756.78
23.07	494.7	1756.88
24.00	492.6	1756.87

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
2.60 CFS	0	1	2	9	24	35	70	103
4.20 CFS	134	181	216	299	374	450	560	632
5.80 CFS	734	823	968	1220	1391	1633	1842	2082
7.40 CFS	2443	2693	3100	3455	3803	4284	4606	5062
9.00 CFS	5360	5364	5281	5238	5173	5126	5025	4830
10.60 CFS	4671	4521	4389	4208	3915	3715	3409	3143
12.20 CFS	2921	2648	2473	2293	2149	2010	1826	1710

13.80 CFS	1605	1524	1443	1333	1262	1180	1112	1064
15.40 CFS	1017	983	918	860	806	732	694	723
17.00 CFS	759	749	699	673	685	700	655	542
18.60 CFS	486	528	581	580	534	505	468	436
20.20 CFS	433	453	468	499	526	514	464	436
21.80 CFS	447	463	444	389	365	425	490	480
23.40 CFS	409	375	432	493	430	239	129	75
25.00 CFS	43.01	24.06	13.43	7.52	4.19	2.38	1.35	.75
26.60 CFS	.39							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.35 WATERSHED INCHES; 34287 CFS-HRS; 2833.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464
DURATION(HRS)	18	20	22	24				
FLOW(CFS)	430	181	13	0				

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.46	291.9	1767.29

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.80 CFS	0	89	244	289	278	244	201	136
10.40 CFS	25.77	.00						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
302 CFS-HRS; 24.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4606	3143	2010	1262	823	685	526	464
DURATION(HRS)	18	20	22	2				
FLOW(CFS)	430	181	13	0				

*** WARNING - XSECTION 107, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	5249.1	1762.11
17.30	753.4	1754.16
18.16	697.3	1753.96
19.34	578.8	1753.46
21.28	520.3	1753.21
22.20	459.1	1752.94
23.32	482.8	1753.05
24.22	476.6	1753.02

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
2.80 CFS	.10	1.04	1.97	7.60	19.98	31.32	61.29	92.95
4.40 CFS	125	168	205	277	352	427	529	608
6.00 CFS	705	795	928	1152	1335	1563	1777	2011
7.60 CFS	2342	2611	2986	3346	3697	4147	4499	4931
9.20 CFS	5178	5235	5249	5241	5188	5141	5052	4882
10.80 CFS	4720	4567	4431	4260	3995	3780	3496	3225
12.40 CFS	2992	2728	2533	2349	2195	2053	1879	1749
14.00 CFS	1638	1550	1468	1365	1286	1204	1133	1080
15.60 CFS	1032	994	935	878	823	753	708	719
17.20 CFS	750	749	711	682	684	696	665	571
18.80 CFS	505	523	568	577	544	514	478	446
20.40 CFS	436	449	464	491	518	515	476	446
22.00 CFS	447	459	447	402	374	413	472	478
23.60 CFS	425	387	422	476	441	286	166	96
25.20 CFS	55.35	31.35	17.61	9.87	5.52	3.11	1.76	.98
26.80 CFS	.53	.26						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.33 WATERSHED INCHES; 34238 CFS-HRS; 2829.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4567	3225	2011	1286	823	684	518	464

DURATION(HRS)	18	20	22	24
FLOW(CFS)	425	168	18	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.27	14360.9	1772.94
17.09	2114.2	1757.62
17.95	1968.2	1757.33
19.14	1651.3	1756.65
21.05	1506.9	1756.32
21.99	1333.3	1755.90
23.11	1400.4	1756.07
24.00	1388.8	1756.04

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
2.80 CFS	0	1	5	16	36	87	155	239
4.40 CFS	344	444	623	806	1017	1267	1480	1741
6.00 CFS	1971	2353	2904	3400	4028	4576	5282	6167
7.60 CFS	6933	7975	8908	9944	11108	12072	13271	14129
9.20 CFS	14344	14312	14252	14122	13997	13619	13013	12557
10.80 CFS	12113	11774	11281	10612	10024	9243	8551	7896
12.40 CFS	7228	6719	6236	5856	5462	5023	4684	4395
14.00 CFS	4180	3953	3694	3484	3266	3089	2947	2827
15.60 CFS	2729	2570	2422	2263	2086	1975	2018	2105
17.20 CFS	2099	2000	1920	1928	1964	1856	1610	1435
18.80 CFS	1495	1624	1647	1562	1471	1369	1285	1267
20.40 CFS	1305	1352	1431	1504	1481	1374	1291	1297
22.00 CFS	1333	1292	1176	1103	1221	1380	1384	1243
23.60 CFS	1140	1239	1389	1252	850	507	320	225
25.20 CFS	175	148	133	125	121	118	117	116
26.80 CFS	116	115	115	115	115	115	115	115
28.40 CFS	115	115	115	115	115	114	114	114
30.00 CFS	114	113	113	113	113	113	113	113
31.60 CFS	113	113	113	113	112	112	112	112
33.20 CFS	112	112	112	112	112	112	111	111
34.80 CFS	111	111	111	111	111	111	111	111
36.40 CFS	110	110	110	110	110	110	110	110
38.00 CFS	110	110	110	109	109	109	109	109
39.60 CFS	109	109	109	109	109	109	108	108
41.20 CFS	108	108	108	108	108	108	108	108
42.80 CFS	107	107	107	107	107	107	107	107
44.40 CFS	107	107	107	106	106	106	106	106
46.00 CFS	106	106	106	106	106	106	105	105
47.60 CFS	105	105	105	105	105	105	105	105
49.20 CFS	105	104	104	104	104	104	104	104
50.80 CFS	104	104	104	104	104	103	103	103
52.40 CFS	103	103	103	103	103	103	103	103
54.00 CFS	102	102	102	102	102	102	102	102
55.60 CFS	102	101	101	101	101	101	101	101
57.20 CFS	101	100	100	100	100	100	100	100
58.80 CFS	99.70	99.59	99.48	99.36	99.25	99.14	99.03	98.92
60.40 CFS	98.80	98.69	98.58	98.47	98.36	98.25	98.14	98.03
62.00 CFS	97.91	97.80	97.69	97.58	97.47	97.36	97.25	97.14
63.60 CFS	97.03	96.92	96.81	96.70	96.60	96.49	96.38	96.27
65.20 CFS	96.15	96.03	95.90	95.76	95.63	95.50	95.37	95.24
66.80 CFS	95.11	94.98	94.85	94.72	94.60	94.47	94.34	94.21
68.40 CFS	94.08	93.95	93.82	93.69	93.57	93.44	93.31	93.18
70.00 CFS	93.06	92.93	92.80	92.68	92.55	92.42	92.30	92.17
71.60 CFS	92.04	91.92	91.79	91.67	91.54	91.42	91.29	90.04
73.20 CFS	87.82	85.39	82.96	80.57	78.25	76.00	73.94	72.04
74.80 CFS	70.22	68.45	66.72	65.04	63.41	61.81	60.26	58.74
76.40 CFS	57.26	55.82	54.42	53.05	51.71	50.41	49.14	47.91
78.00 CFS	46.70	45.53	44.38	43.26	42.18	41.12	40.08	39.07

79.60 CFS	38.09	37.13	36.20	35.28	34.40	33.53	32.69	31.87
81.20 CFS	31.06	30.28	29.52	28.78	28.05	27.35		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.02 WATERSHED INCHES; 97660 CFS-HRS; 8070.6 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	3400	1333	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	62	27 TRUNCATED

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.67	9755.9	1721.85

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
3.00 CFS	.00	.01	.05	.16	.40	.87	1.64	2.77
4.60 CFS	4.30	6.37	9.14	12.67	17.09	22.39	28.60	35.75
6.20 CFS	41	42	57	183	326	485	502	519
7.80 CFS	538	559	578	598	617	920	1622	2588
9.40 CFS	3760	4809	5745	6575	7322	7986	8517	8940
11.00 CFS	9273	9522	9680	9751	9738	9645	9487	9274
12.60 CFS	9019	8738	8439	8131	7811	7484	7158	6862
14.20 CFS	6583	6308	6037	5771	5512	5264	5026	4802
15.80 CFS	4587	4379	4175	3976	3782	3604	3450	3315
17.40 CFS	3189	3066	2952	2852	2758	2656	2543	2435
19.00 CFS	2367	2313	2262	2207	2150	2090	2030	1976
20.60 CFS	1929	1890	1859	1832	1803	1768	1734	1703
22.20 CFS	1675	1643	1606	1573	1554	1541	1524	1500
23.80 CFS	1477	1466	1455	1425	1371	1301	1250	1203
25.40 CFS	1156	1110	1066	1024	983	945	907	872
27.00 CFS	845	824	804	784	765	746	728	710
28.60 CFS	693	677	661	645	630	622	620	619
30.20 CFS	618	618	617	616	615	614	613	612
31.80 CFS	612	611	610	609	608	607	606	605
33.40 CFS	604	604	603	602	601	600	599	598
35.00 CFS	597	596	595	594	593	593	592	591
36.60 CFS	590	589	588	587	586	585	584	583
38.20 CFS	582	581	580	579	578	577	576	575
39.80 CFS	574	573	572	571	570	569	568	567
41.40 CFS	566	565	564	563	562	561	560	559
43.00 CFS	559	558	557	556	555	554	552	551
44.60 CFS	550	549	547	546	545	544	543	541
46.20 CFS	540	539	538	536	535	534	533	532
47.80 CFS	530	529	528	527	526	524	523	522
49.40 CFS	521	520	519	517	516	515	514	513
51.00 CFS	512	510	509	508	507	506	505	504

52.60 CFS	502	501	500	499	498	497	496	495
54.20 CFS	494	492	491	490	489	488	484	471
55.80 CFS	458	446	434	423	411	401	390	380
57.40 CFS	371	361	352	344	335	327	319	312
59.00 CFS	304	297	290	284	277	271	265	260
60.60 CFS	254	249	243	238	234	229	224	220
62.20 CFS	216	212	208	204	200	197	193	190
63.80 CFS	187	184	181	178	175	172	170	167
65.40 CFS	165	162	160	158	156	154	152	150
67.00 CFS	148	146	144	142	141	139	138	136
68.60 CFS	135	133	132	131	129	128	127	126
70.20 CFS	125	123	122	121	120	119	118	118
71.80 CFS	117	116	115	114	113	113	112	111
73.40 CFS	110	109	108	107	106	105	104	103
75.00 CFS	102	101	99	98	97	96	95	93
76.60 CFS	91.98	90.70	89.43	88.15	86.86	85.58	84.30	83.03
78.20 CFS	81.75	80.48	79.21	77.95	76.70	75.45	74.21	72.98
79.80 CFS	71.76	70.55	69.35	68.15	66.97	65.80	64.65	63.50
81.40 CFS	62.37	61.24	60.14	59.04	57.96			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.71 WATERSHED INCHES; 94271 CFS-HRS; 7790.5 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	3189	1250	608	572	530	485	200	121

DURATION(HRS)	72	76
FLOW(CFS)	78	58 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

RAINFALL OF 3.94 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 2, ARC 2
MAIN TIME INCREMENT .200 HOURS

ALTERNATE 5 STORM 1

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 101	RUNOFF	1.86	1.99	---	12.58	1011	543.5
XSECTION 1	RUNOFF	1.20	1.91	---	12.22	900	750.0
XSECTION 1	ADDHYD	3.06	1.96	---	12.37	1729	565.0
XSECTION 2	RUNOFF	1.24	1.62	---	12.18	809	652.4
XSECTION 2	ADDHYD	4.30	1.86	---	12.48	2188	508.8
XSECTION 3	RUNOFF	1.85	1.99	---	12.38	1218	658.4
XSECTION 3	ADDHYD	6.15	1.90	---	12.61	3125	508.1
STRUCTURE 1	RESVOR	6.15	1.55	1799.08	24.52	112	18.2
XSECTION 104	REACH	6.15	1.55	.50	24.77	112	18.2
XSECTION 4	RUNOFF	2.54	1.99	---	12.15	2180	858.3
XSECTION 4	ADDHYD	8.69	1.68	---	12.15	2180	250.9
XSECTION 106	REACH	8.69	1.68	4.13	12.15	2180	250.9
XSECTION 5	RUNOFF	2.00	2.14	---	12.07	2049	1024.5
XSECTION 5	ADDHYD	10.69	1.77	---	12.10	4157	388.9
XSECTION 6	RUNOFF	1.14	1.91	---	12.06	1031	904.4
XSECTION 6	ADDHYD	11.83	1.78	---	12.09	5213	440.7
XSECTION 106	ADDHYD	.00	1.78	---	.00	0	********
XSECTION 7	RUNOFF	.96	1.61	---	11.93	834	868.8
XSECTION 7	ADDHYD	12.79	1.77	---	12.07	5926	463.3
XSECTION 10	RUNOFF	.67	1.84	---	12.37	405	604.5
XSECTION 109	REACH	.67	1.84	1767.83	12.66	375	559.7
XSECTION 9	RUNOFF	1.39	2.15	---	12.15	1298	933.8
XSECTION 109	ADDHYD	2.06	2.05	1772.52	12.20	1472	714.6
XSECTION 108	REACH	2.06	2.05	1759.29	12.20	1472	714.6
XSECTION 8	RUNOFF	1.92	2.31	---	12.06	2152	1120.8
XSECTION 108	ADDHYD	3.98	2.18	1762.24	12.10	3497	878.6
XSECTION 109	ADDHYD	.00	2.18	---	.00	0	********
XSECTION 107	REACH	3.98	2.17	1759.49	12.38	3221	809.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

ALTERNATE 5 STORM 1

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 107	ADDHYD	16.77	1.87	1765.61	12.17	8191	488.4
STRUCTURE 2	RESVOR	16.77	1.58	1707.17	17.82	540	32.2

RAINFALL OF 7.06 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 5, ARC 2

ALTERNATE 5 STORM 4

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 101	RUNOFF	1.86	4.75	---	10.27	908	488.2
XSECTION 1	RUNOFF	1.20	4.64	---	9.92	590	491.7
XSECTION 1	ADDHYD	3.06	4.70	---	10.12	1492	487.6
XSECTION 2	RUNOFF	1.24	4.20	---	9.98	554	446.8
XSECTION 2	ADDHYD	4.30	4.56	---	10.22	2032	472.6
XSECTION 3	RUNOFF	1.85	4.75	---	10.05	920	497.3
XSECTION 3	ADDHYD	6.15	4.61	---	10.34	2930	476.4
STRUCTURE 1	RESVOR	6.15	4.24	1801.48	13.24	1490	242.3
XSECTION 104	REACH	6.15	1.81	.51	12.20F	115F	18.7
XSECTION 4	RUNOFF	2.54	4.75	---	9.62	1280	503.9
XSECTION 4	ADDHYD	8.69	2.67	---	9.81	1377	158.5
XSECTION 106	REACH	8.69	2.67	3.06	9.81	1377	158.5
XSECTION 5	RUNOFF	2.00	4.97	---	9.26	1067	533.5
XSECTION 5	ADDHYD	10.69	3.10	---	9.58	2431	227.4
XSECTION 6	RUNOFF	1.14	4.64	---	9.49	562	493.0
XSECTION 6	ADDHYD	11.83	3.24	---	9.57	2994	253.1
XSECTION 106	ADDHYD	.00	3.24	3.05	13.24	1375	********
XSECTION 7	RUNOFF	.96	4.20	---	9.90	435	453.1
XSECTION 7	ADDHYD	12.79	3.32	---	9.61	3421	267.5
XSECTION 10	RUNOFF	.67	4.53	---	10.10	319	476.1
XSECTION 109	REACH	.67	4.53	1767.47	10.38	317	473.1
XSECTION 9	RUNOFF	1.39	4.97	---	9.48	735	528.8
XSECTION 109	ADDHYD	2.06	4.82	1770.84	9.96	1037	503.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 4							
XSECTION 108	REACH	2.06	4.82	1758.38	9.96	1037	503.4
XSECTION 8	RUNOFF	1.92	5.19	---	9.22	1076	560.4
XSECTION 108	ADDHYD	3.98	5.00	1760.34	9.67	2080	522.6
XSECTION 109	ADDHYD	.00	5.00	---	.00	0	********
XSECTION 107	REACH	3.98	5.00	1757.54	10.09	2073	520.9
XSECTION 107	ADDHYD	16.77	3.72	1762.39	9.90	5483	327.0
STRUCTURE 2	RESVOR	16.77	3.41	1714.80	14.63	1514	90.3

RAINFALL OF 15.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 5 STORM 5							
XSECTION 101	RUNOFF	1.86	13.14	---	9.97	2475	1330.6
XSECTION 1	RUNOFF	1.20	12.99	---	9.40	1645	1370.8
XSECTION 1	ADDHYD	3.06	13.08	---	9.81	4079	1333.0
XSECTION 2	RUNOFF	1.24	12.39	---	9.34	1635	1318.5
XSECTION 2	ADDHYD	4.30	12.88	---	9.94	5654	1314.9
XSECTION 3	RUNOFF	1.85	13.14	---	9.66	2515	1359.5
XSECTION 3	ADDHYD	6.15	12.96	---	10.07	8107	1318.2
STRUCTURE 1	RESVOR	6.15	12.57	1803.90	10.91	7423	1207.0
XSECTION 104	REACH	6.15	1.89	.51	10.00F	115F	18.7
XSECTION 4	RUNOFF	2.54	13.14	---	9.24	3572	1406.3
XSECTION 4	ADDHYD	8.69	5.18	---	9.24	3687	424.3
XSECTION 106	REACH	8.69	5.15	5.62	9.00F	3454F	397.5
XSECTION 5	RUNOFF	2.00	13.43	---	9.13	2892	1446.0
XSECTION 5	ADDHYD	10.69	6.70	---	9.13	6346	593.6
XSECTION 6	RUNOFF	1.14	12.99	---	9.14	1601	1404.4
XSECTION 6	ADDHYD	11.83	7.30	---	9.12	7901	667.9
XSECTION 106	ADDHYD	.00	7.30	9.47	10.91	7308	********
XSECTION 7	RUNOFF	.96	12.38	---	8.98	1313	1367.7
XSECTION 7	ADDHYD	12.79	7.68	---	9.09	9241	722.5

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 5							
XSECTION 10	RUNOFF	.67	12.84	---	9.67	895	1335.8
XSECTION 109	REACH	.67	12.67	1770.00	10.50	821	1225.4
XSECTION 9	RUNOFF	1.39	13.43	---	9.24	1990	1431.7
XSECTION 109	ADDHYD	2.06	13.18	1777.54	9.38	2771	1345.1
XSECTION 108	REACH	2.06	13.01	1761.03	9.00F	2546F	1235.9
XSECTION 8	RUNOFF	1.92	13.71	---	9.11	2827	1472.4
XSECTION 108	ADDHYD	3.98	13.35	1764.66	9.11	5373	1350.0
XSECTION 109	ADDHYD	.00	13.35	1767.29	9.46	292	********
XSECTION 107	REACH	3.98	13.33	1762.11	9.62	5249	1318.8
XSECTION 107	ADDHYD	16.77	9.02	1772.94	9.27	14361	856.4
STRUCTURE 2	RESVOR	16.77	8.71	1721.85	11.67	9756	581.8

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1726	12.4	1689	12.6	4.77	1.00	.065	.978	.81?
103	2500		2157	12.4	2116	12.8	4.78	1.00	.061	.981	.82?
104	6700		112	24.6	112	24.8	1.57	1.53	.000	1.000	.73?
106	3700		2151	12.2	2151	12.2	1.13	1.57	.001	1.000	1.00?
109	2700		404	12.4	371	12.6	.39	1.38	.068	.919	.66
108	2100		1472	12.2	1472	12.2	.79	1.41	.012	1.000	1.00?
107	5300		3373	12.2	3214	12.4	.54	1.38	.074	.953	.71?
ALTERNATE 5 STORM 4											
102	2500		1490	10.2	1489	10.4	4.77	1.00	.023	.999	.81?
103	2500		2032	10.2	2026	10.4	4.78	1.00	.023	.997	.81?
104	6700		115	10.8	115	12.2	1.57	1.53	.000	1.000	.73?
106	3700		1377	9.8	1377	9.8	1.06	1.58	.000	1.000	1.00?
109	2700		318	10.2	317	10.4	.30	1.44	.012	.997	.66
108	2100		1036	10.0	1036	10.0	.74	1.43	.002	1.000	1.00?
107	5300		2079	9.6	2072	10.0	.55	1.37	.015	.997	.65
ALTERNATE 5 STORM 5											
102	2500		4079	9.8	4071	10.0	4.78	1.00	.023	.998	.82?
103	2500		5652	10.0	5646	10.2	4.78	1.00	.023	.999	.82?
104	6700		115	8.6	115	10.0	1.57	1.53	.000	1.000	.73?
106	3700		3454	9.0	3454	9.0	1.25	1.55	.000	1.000	1.00?
109	2700		820	9.2	820	10.6	.43	1.35	.011	1.000	.72?
108	2100		2546	9.0	2546	9.0	.86	1.39	.002	1.000	1.00?
107	5300		5253	9.0	5249	9.6	.54	1.38	.009	.999	.77?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
STRUCTURE 2	16.77			
ALTERNATE 5		540	1514	9756
STRUCTURE 1	6.15			
ALTERNATE 5		112	1490	7423
XSECTION 1	3.06			
ALTERNATE 5		1729	1492	4079
XSECTION 2	4.30			
ALTERNATE 5		2188	2032	5654
XSECTION 3	6.15			
ALTERNATE 5		3125	2930	8107
XSECTION 4	8.69			
ALTERNATE 5		2180	1377	3687
XSECTION 5	10.69			
ALTERNATE 5		4157	2431	6346
XSECTION 6	11.83			
ALTERNATE 5		5213	2994	7901
XSECTION 7	12.79			
ALTERNATE 5		5926	3421	9241
XSECTION 8	1.92			
ALTERNATE 5		2152	1076	2827
XSECTION 9	1.39			

ALTERNA[illegible]	5	1298	735	1990

XSECTION [illegible] .67

ALTERNATE	5	405	319	895

XSECTION 101 1.86

ALTERNATE	5	1011	908	2475

XSECTION 104 6.15

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
XSECTION 104	6.15			
ALTERNATE 5		112	115	115
XSECTION 106	.00			
ALTERNATE 5		0	1375	7308
XSECTION 107	16.77			
ALTERNATE 5		8191	5483	14361
XSECTION 108	3.98			
ALTERNATE 5		3497	2080	5373
XSECTION 109	.00			
ALTERNATE 5		0	0	292

```
TR20 -------  ------------------------------------------------------------ SCS -
          SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATE VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR20bP2.04TEST



END OF  1 JOBS IN THIS RUN



                    SCS  TR-20,  VERSION 2.04TEST
                                   FILES

     INPUT  = SBT20BP4.DAT                          , GIVEN DATA FILE
     OUTPUT = SBT20BP4.OUT                          , DATED 09/18/**,09:24:47

             FILES GENERATED - DATED 09/18/**,09:24:47

                              NONE!


          TOTAL NUMBER OF WARNINGS =  17,  MESSAGES =   6

                        JOB ENDED AT 09:24:48
                    *** TR-20 RUN COMPLETED ***
```

```
**********[illegible]**80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****************

JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATEL
TITLE 000 ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBT20bP4.DAT
 5 RAINFL 1             .5
 8          0.0         .008        .017        .026        .035
 8          .045        .055        .065        .076        .087
 8          .099        .112        .125        .14         .156
 8          .174        .194        .219        .254        .303
 8          .515        .583        .624        .654        .682
 8          .705        .727        .748        .767        .784
 8          .8          .816        .83         .844        .857
 8          .87         .882        .893        .905        .916
 8          .926        .936        .946        .955        .965
 8          .974        .983        .992        1.          1.
 9 ENDTBL
 5 RAINFL 2             .5
 8          0.0         .005        .011        .016        .022
 8          .028        .035        .041        .048        .056
 8          .063        .071        .081        .089        .098
 8          .109        .12         .133        .147        .163
 8          .181        .204        .235        .283        .663
 8          .735        .772        .799        .82         .838
 8          .854        .868        .88         .891        .902
 8          .912        .921        .929        .937        .945
 8          .952        .959        .965        .972        .978
 8          .984        .989        .995        1.          1.
 9 ENDTBL
 5 RAINFL 3             2.4
 8          0.0         .002        .004        .006        .008
 8          .01         .012        .014        .016        .018
 8          .02         .022        .025        .027        .03
 8          .032        .035        .038        .04         .043
 8          .046        .049        .052        .055        .058
 8          .061        .064        .069        .072        .076
 8          .08         .084        .089        .093        .098
 8          .102        .108        .114        .121        .127
 8          .133        .143        .153        .164        .174
 8          .184        .198        .215        .238        .275
 8          .707        .765        .793        .813        .829
 8          .841        .849        .856        .863        .871
 8          .879        .884        .889        .895        .9
 8          .905        .909        .913        .918        .922
 8          .926        .929        .932        .936        .939
 8          .942        .945        .948        .951        .954
 8          .957        .959        .962        .964        .967
 8          .969        .971        .973        .976        .978
 8          .98         .982        .984        .987        .989
 8          .991        .993        .996        .998        1.
 9 ENDTBL
 5 RAINFL 4             .25
 8          0.0         .006        .011        .017        .028
 8          .041        .057        .075        .09         .562
 8          .697        .763        .807        .839        .873
 8          .907        .937        .948        .958        .968
 8          .979        .984        .989        1.          1.
 9 ENDTBL
```

```
**********************80-80 LIST OF INPUT DATA (CONTINUED)********[illegible]**********

 5 RAINFL 5             .5
 8          0.0         .004        .008        .011        .016
 8          .021        .027        .034        .044        .055
 8          .07         .088        .108        .137        .172
 8          .217        .273        .341        .42         .492
 8          .56         .618        .672        .717        .753
 8          .782        .807        .827        .845        .86
 8          .873        .885        .895        .903        .913
 8          .921        .93         .935        .943        .949
 8          .954        .96         .967        .972        .978
 8          .982        .989        .993        1.          1.
 9 ENDTBL
 2 XSECTN   102         1.0
 8                      0.0         0.0         0.0
 8                      2.          450.        93.8
 8                      3.          838.        175.5
 8                      4.          1288.       270.
 8                      5.          1782.       373.2
 8                      6.          2314.       484.4
 8                      7.          2875.       601.7
 8                      8.          3454.       722.9
 9 ENDTBL
 2 XSECTN   103         1.0
 8                      0.0         0.0         0.0
 8                      2.          450.        93.8
 8                      3.          838.        175.5
 8                      4.          1288.       270.
 8                      5.          1782.       373.2
 8                      6.          2314.       484.4
 8                      7.          2875.       601.7
 8                      8.          3454.       722.9
 9 ENDTBL
 2 XSECTN   104         1.0
 8                      0.0         0.0         0.0
 8                      2.          450.        40.
 8                      3.          838.        60.
 8                      4.          1288.       80.
 8                      5.          1782.       120.
 8                      6.          2314.       130.
 8                      7.          2875.       140.
 8                      8.          3454.       160.
 9 ENDTBL
 2 XSECTN   106         1.0
 8                      0.0         0.0         0.0
 8                      1.5         441.        45.
 8                      2.5         995.        75.
 8                      3.5         1682.       105.
 8                      4.5         2468.       135.
 8                      5.5         3339.       165.
 8                      6.5         4272.       195.
 8                      7.5         5258.       225.
 8                      8.5         6296.       255.
 9 ENDTBL
 2 XSECTN   107         1.0
 8                      1749.       0.0         0.0
 8                      1750.       38.53       23.
```

```
8                    1751.      130.52     52.
8                    1752.      273.18     87.
8                    1753.      470.98     128.
8                    1754.      706.86     187.
8                    1755.      1005.62    240.
8                    1756.      1369.42    299.
8                    1757.      1801.8     364.
8                    1758.      2305.5     435.
8                    1759.      2892.8     512.
8                    1760.      3558.1     595.
8                    1761.      4316.04    684.
8                    1762.      5156.98    779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7     0.0        0.0
8                    1754.7     61.93      23.
8                    1755.7     209.35     52.
8                    1756.7     438.91     87.
8                    1757.7     757.01     128.
8                    1758.7     1167.41    175.
8                    1759.7     1678.56    228.
8                    1760.7     2302.39    287.
8                    1761.7     3038.91    352.
8                    1762.7     3894.74    435.
8                    1763.7     4647.76    512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
3 STRUCT     01
8                    1791.94    0.00       0.0
8                    1793.      0.01       46.8
8                    1794.1     0.02       106.
8                    1794.5     26.3       130.
8                    1795.      74.4       161.2
8                    1795.14    91.2       170.7
8                    1796.      96.16      230.7
8                    1797.14    102.42     322.23
8                    1799.42    113.91     542.99
8                    1801.72    1650.      812.88
8                    1804.      7700.      1121.9
8                    1806.28    15200.     1470.09
8                    1808.57    26200.     1865.04
9 ENDTBL
3 STRUCT     02
8                    1696.      0.0        0.0
8                    1700.      40.8       172.1
8                    1701.4     42.8       273.25
8                    1704.      487.2      482.24
```



```
8                    1708.      553.6      871.3
8                    1710.      583.6      1101.52
8                    1710.5     590.8      1163.52
8                    1711.5     605.6      1294.09
8                    1712.2     616.       1390.2
8                    1712.5     620.       1432.05
8                    1712.6     624.       1446.11
8                    1713.5     858.       1578.77
8                    1714.5     1288.      1733.61
8                    1716.      2418.      1980.33
8                    1720.      7068.      2712.23
8                    1722.      9968.      3121.
8                    1724.      12868.     3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86     80.        1.21       1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2      79.        .67        1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   2       6 1.24     75.        .59        1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   3       6 1.85     80.        .91        1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                        1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.     1.                    0 0 0 0 0 0
6 REACH  3 104   4   5 6700.                           1 0 0 1 0 1
6 RUNOFF 1   4       6 2.54     80.        .54        1 0 0 1 0 1
6 ADDHYD 4   4   5 6 7                                1 0 0 1 0 1
6 DIVERT 6 104   7 5 2 3454.    1.                    0 0 0 0 0 0
6 ADDHYD 4 104   1 2 4                                0 0 0 0 0 0
6 REACH  3 106   5   3 3700.                           1 0 0 1 0 1
6 RUNOFF 1   5       6 2.       82.        .43        1 0 0 1 0 1
6 ADDHYD 4   5   3 6 7                                1 0 0 1 0 1
6 DIVERT 6 106   7 5 2 6296.    1.                    0 0 0 0 0 0
6 RUNOFF 1   6       6 1.14     79.        .42        1 0 0 1 0 1
6 ADDHYD 4   6   5 6 7                                1 0 0 1 0 1
6 SAVMOV 5   6   7   5
6 ADDHYD 4 106   4 2 7                                1 1 0 1 0 1
6 SAVMOV 5 106   7   1
6 RUNOFF 1   7       6 .96      75.        .23        1 0 0 1 0 1
6 ADDHYD 4   7   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5   7   7   2
6 RUNOFF 1  10       7 .67      78.        .89        1 0 0 1 0 1
6 DIVERT 6 110   7 5 3 820.     1.                    0 0 0 0 0 0
6 REACH  3 109   5   4 2700.                           1 0 0 1 0 1
6 RUNOFF 1   9       6 1.39     82.        .55        1 0 0 1 0 1
6 ADDHYD 4 109   4 6 7                                1 0 0 1 0 1
6 DIVERT 6 109   7 5 4 2546.    1.                    0 0 0 0 0 0
6 REACH  3 108   5   6 2100.                           1 0 0 1 0 1
6 RUNOFF 1   8       5 1.92     84.        .42        1 0 0 1 0 1
6 ADDHYD 4 108   5 6 7                                1 1 0 1 0 1
6 ADDHYD 4 109   3 4 5                                1 1 0 1 0 1
6 SAVMOV 5 106   5   3
6 DIVERT 6 108   7 5 4 5253.    1.                    0 0 0 0 0 0
6 REACH  3 107   5   6 5300.                           1 1 0 1 0 1
```

```
***********   ********80-80 LIST OF INPUT DATA (CONTINUED)*********************

 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                  1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                            1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .20
 7 COMPUT 7 101       2            3.94        1.0       2 2  05  01
   ENDCMP 1
 7 COMPUT 7 101       2            7.06        1.0       5 2  05  04
   ENDCMP 1
 7 COMPUT 7 101       2            15.80       1.0       5 2  05  05
   ENDCMP 1
   ENDJOB 2

*******************************END OF 80-80 LIST*****************************
```

```
TR20 ------------------------------------------------------------  ----- SCS -
         SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATE VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR20bP2.04TEST
09:24:47                    PASS   1   JOB NO.   1                      PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .200 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  3.94       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .200 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1            RAIN TABLE NO. = 2


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
       12.58                         1010.6                        (RUNOFF)
       21.76                           50.9                        (RUNOFF)
       23.77                           43.5                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.99 WATERSHED INCHES;    2390 CFS-HRS;     197.5 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     288    118     82     62     51     44     23      5

    DURATION(HRS)  18
    FLOW(CFS)       0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
       12.22                          900.0                        (RUNOFF)
       21.67                           32.7                        (RUNOFF)
       23.67                           28.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.91 WATERSHED INCHES;    1481 CFS-HRS;     122.4 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     129     69     51     39     32     28     14      1

    DURATION(HRS)  16
    FLOW(CFS)       0


OPERATION ADDHYD    XSECTION   1
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1728.9	(NULL)
21.68	83.5	(NULL)
23.69	71.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3870 CFS-HRS; 319.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	471	194	131	101	83	71	39	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	808.7	(RUNOFF)
19.31	36.6	(RUNOFF)
21.63	31.3	(RUNOFF)
23.63	27.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.62 WATERSHED INCHES; 1297 CFS-HRS; 107.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	113	63	46	36	30	26	6	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	2188.1	(NULL)
21.71	114.2	(NULL)
23.71	97.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	594	257	182	138	114	98	45	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	1217.7	(RUNOFF)
21.78	50.8	(RUNOFF)
23.77	43.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 2377 CFS-HRS; 196.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	255	114	79	61	51	44	23	3

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	3125.4	(NULL)
21.80	164.8	(NULL)
23.80	140.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
8.60 CFS	.31	.92	2.12	4.01	6.94	10.81	15.99	22.50
10.20 CFS	30	40	54	70	91	119	157	236
11.80 CFS	493	1170	2128	2895	3125	2936	2561	2147
13.40 CFS	1751	1414	1156	961	813	703	619	555
15.00 CFS	507	468	437	410	386	364	343	325
16.60 CFS	309	296	286	279	273	267	260	252
18.20 CFS	244	235	226	218	211	206	203	201
19.80 CFS	199	195	190	186	182	178	174	168
21.40 CFS	165	164	165	164	162	159	156	153
23.00 CFS	149	144	141	140	141	140	136	125
24.60 CFS	104	79	56	39	26	17	11	7
26.20 CFS	4.36	2.81	1.80	1.15	.74	.48		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 7544 CFS-HRS; 623.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	961	386	260	201	165	141	70	11

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.52	112.2	1799.08

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
11.80 CFS	.00	.01	.01	.02	57.27	93.53	96.99	99.54
13.40 CFS	102	103	104	105	106	106	107	107
15.00 CFS	107	108	108	108	109	109	109	109
16.60 CFS	109	110	110	110	110	110	110	110
18.20 CFS	110	111	111	111	111	111	111	111
19.80 CFS	111	111	111	111	111	112	112	112
21.40 CFS	112	112	112	112	112	112	112	112
23.00 CFS	112	112	112	112	112	112	112	112
24.60 CFS	112	112	112	112	112	112	112	112
26.20 CFS	112	112	111	111	111	111	111	111
27.80 CFS	111	111	111	111	111	110	110	110
29.40 CFS	110	110	110	110	110	110	110	109
31.00 CFS	109	109	109	109	109	109	109	109
32.60 CFS	109	109	108	108	108	108	108	108
34.20 CFS	108	108	108	108	108	107	107	107
35.80 CFS	107	107	107	107	107	107	107	107
37.40 CFS	106	106	106	106	106	106	106	106
39.00 CFS	106	106	106	105	105	105	105	105
40.60 CFS	105	105	105	105	105	105	104	104
42.20 CFS	104	104	104	104	104	104	104	104
43.80 CFS	104	103	103	103	103	103	103	103
45.40 CFS	103	103	103	103	102	102	102	102
47.00 CFS	102	102	102	102	102	101	101	101
48.60 CFS	101	101	101	101	101	101	100	100
50.20 CFS	100	100	100	100	100	100	100	99
51.80 CFS	99.30	99.19	99.08	98.97	98.86	98.74	98.63	98.52
53.40 CFS	98.41	98.30	98.19	98.08	97.97	97.86	97.74	97.63
55.00 CFS	97.52	97.41	97.30	97.19	97.08	96.97	96.86	96.76
56.60 CFS	96.65	96.54	96.43	96.32	96.21	96.09	95.96	95.83
58.20 CFS	95.70	95.57	95.43	95.30	95.17	95.04	94.91	94.78
59.80 CFS	94.66	94.53	94.40	94.27	94.14	94.01	93.88	93.75
61.40 CFS	93.63	93.50	93.37	93.24	93.12	92.99	92.86	92.74
63.00 CFS	92.61	92.48	92.36	92.23	92.10	91.98	91.85	91.73
64.60 CFS	91.60	91.48	91.35	91.23	89.14	86.58	84.08	81.66
66.20 CFS	79.31	77.02	74.80	72.87	71.04	69.25	67.51	65.81
67.80 CFS	64.15	62.54	60.96	59.43	57.93	56.48	55.06	53.67
69.40 CFS	52.32	51.00	49.72	48.47	47.25	46.06	44.90	43.77
71.00 CFS	42.67	41.60	40.55	39.53	38.54	37.57	36.62	35.70
72.60 CFS	34.80	33.93	33.07	32.24	31.43	30.64	29.87	29.12
74.20 CFS	28.38	27.67	26.97	26.30	25.82	25.36	24.91	24.46
75.80 CFS	24.02	23.59	23.17	22.75	22.34	21.94	21.55	21.16
77.40 CFS	20.78	20.41	20.04	19.68	19.33	18.98	18.64	18.31

79.00 CFS	17.98	17.66	17.34	17.03	16.73	16.43	16.13	15.84
80.60 CFS	15.56	15.28	15.00	14.73	14.47	14.21	13.96	13.71
82.20 CFS	13.46	13.22	12.98	12.75	12.52	12.30	12.07	11.86
83.80 CFS	11.65	11.44	11.23	11.03	10.83	10.64	10.45	10.26
85.40 CFS	10.08	9.89	9.72	9.54	9.37	9.20	9.04	8.88
87.00 CFS	8.72	8.56	8.41	8.26				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6170 CFS-HRS; 509.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	99	94	57	22

DURATION(HRS)	72	75
FLOW(CFS)	11	8 TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.77	112.2	.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6168 CFS-HRS; 509.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	98	94	57	22

DURATION(HRS)	72	75
FLOW(CFS)	11	8 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	(RUNOFF)
19.31	83.4	(RUNOFF)
21.61	71.4	(RUNOFF)
23.61	61.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 3255 CFS-HRS; 269.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	260	145	108	83	70	61	31	3
DURATION(HRS)	17							
FLOW(CFS)	0							

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	(NULL)
19.36	194.3	(NULL)
21.61	183.1	(NULL)
23.61	173.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29
DURATION(HRS)	72	78						
FLOW(CFS)	15	8 TRUNCATED						

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	4.13
19.36	194.3	.66
21.61	183.1	.62
23.61	173.4	.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29
DURATION(HRS)	72	78						
FLOW(CFS)	15	8 TRUNCATED						

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	2048.6	(RUNOFF)
19.33	68.2	(RUNOFF)
21.56	59.0	(RUNOFF)
23.56	50.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.14 WATERSHED INCHES; 2762 CFS-HRS; 228.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	121	91	68	59	51	34	5
DURATION(HRS)	17							
FLOW(CFS)	0							

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	4157.5	(NULL)
19.34	262.5	(NULL)
21.58	242.0	(NULL)
23.58	224.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 12182 CFS-HRS; 1006.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	262	112	108	104	100	96	80	32
DURATION(HRS)	72	79						
FLOW(CFS)	15	9 TRUNCATED						

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	1030.8	(RUNOFF)
19.33	36.7	(RUNOFF)
21.55	31.9	(RUNOFF)
23.55	27.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 1408 CFS-HRS; 116.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	119	65	47	37	31	27	13	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.09	5213.0	(NULL)
19.34	299.2	(NULL)
21.58	273.9	(NULL)
23.58	251.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.78 WATERSHED INCHES; 13582 CFS-HRS; 1122.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	299	112	108	104	100	96	82	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION ADDHYD XSECTION 106

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
399 CFS-HRS; 1122.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.93	833.8	(RUNOFF)
16.90	38.4	(RUNOFF)
19.31	28.4	(RUNOFF)
20.31	25.0	(RUNOFF)
21.43	25.0	(RUNOFF)
22.30	21.7	(RUNOFF)
23.43	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.61 WATERSHED INCHES; 996 CFS-HRS; 82.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	84	46	35	28	24	20	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	5926.2	(NULL)
19.33	327.6	(NULL)
21.56	298.5	(NULL)
23.56	272.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS									
7.60	CFS	.07	.64	1.12	2.62	5.55	7.58	13.30	18.66
9.20	CFS	25	36	43	57	68	87	113	133
10.80	CFS	182	221	297	410	898	3627	5784	5345
12.40	CFS	3395	2284	1618	1249	1045	893	815	732
14.00	CFS	677	638	601	580	554	536	517	494
15.60	CFS	479	454	437	424	411	405	403	403
17.20	CFS	397	386	379	367	357	347	335	329
18.80	CFS	328	327	327	327	326	315	307	303
20.40	CFS	302	300	289	281	284	294	298	289
22.00	CFS	281	278	277	275	264	255	258	269
23.60	CFS	272	263	255	217	158	129	118	114
25.20	CFS	113	112	112	112	112	112	112	112
26.80	CFS	112	111	111	111	111	111	111	111
28.40	CFS	111	111	111	110	110	110	110	110
30.00	CFS	110	110	110	110	110	110	109	109
31.60	CFS	109	109	109	109	109	109	109	109
33.20	CFS	109	108	108	108	108	108	108	108
34.80	CFS	108	108	108	107	107	107	107	107
36.40	CFS	107	107	107	107	107	107	106	106
38.00	CFS	106	106	106	106	106	106	106	106
39.60	CFS	106	105	105	105	105	105	105	105
41.20	CFS	105	105	105	105	104	104	104	104
42.80	CFS	104	104	104	104	104	104	104	103
44.40	CFS	103	103	103	103	103	103	103	103
46.00	CFS	103	103	103	102	102	102	102	102
47.60	CFS	102	102	102	102	101	101	101	101
49.20	CFS	101	101	101	101	100	100	100	100
50.80	CFS	100	100	100	100	100	99	99	99
52.40	CFS	99.12	99.01	98.90	98.79	98.67	98.56	98.45	98.34
54.00	CFS	98.23	98.12	98.01	97.90	97.79	97.68	97.57	97.46
55.60	CFS	97.34	97.23	97.12	97.01	96.90	96.80	96.69	96.58
57.20	CFS	96.47	96.36	96.25	96.13	96.00	95.88	95.74	95.61

58.80 CFS	95.48	95.35	95.22	95.09	94.96	94.83	94.70	94.57
60.40 CFS	94.44	94.32	94.19	94.06	93.93	93.80	93.67	93.55
62.00 CFS	93.42	93.29	93.16	93.04	92.91	92.78	92.65	92.53
63.60 CFS	92.40	92.28	92.15	92.02	91.90	91.77	91.65	91.52
65.20 CFS	91.40	91.27	89.72	87.43	84.99	82.57	80.19	77.89
66.80 CFS	75.64	73.63	71.74	69.93	68.17	66.45	64.78	63.15
68.40 CFS	61.56	60.01	58.50	57.03	55.59	54.19	52.83	51.50
70.00 CFS	50.21	48.94	47.71	46.51	45.34	44.20	43.09	42.00
71.60 CFS	40.95	39.92	38.91	37.93	36.98	36.05	35.14	34.26
73.20 CFS	33.39	32.55	31.74	30.94	30.16	29.40	28.66	27.94
74.80 CFS	27.24	26.55	26.02	25.54	25.08	24.63	24.18	23.75
76.40 CFS	23.33	22.91	22.50	22.09	21.70	21.31	20.92	20.55
78.00 CFS	20.18	19.82	19.46	19.11	18.77	18.43	18.10	17.78
79.60 CFS	17.46	17.15	16.84	16.54	16.24	15.95	15.66	15.38
81.20 CFS	15.11	14.84	14.57	14.31	14.05	13.80	13.55	13.31
82.80 CFS	13.07	12.84	12.60	12.38	12.16	11.94	11.73	11.52
84.40 CFS	11.31	11.10	10.91	10.71	10.52	10.33	10.14	9.96
86.00 CFS	9.78	9.61	9.44	9.27	9.10	8.94	8.78	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 14578 CFS-HRS; 1204.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	327	112	108	104	100	96	83	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	405.0	(RUNOFF)
21.77	17.7	(RUNOFF)
23.76	15.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	86	38	27	21	18	15	7	0

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.66	375.1	1767.83
22.00	17.6	1764.24
23.99	15.1	1764.15

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 795 CFS-HRS; 65.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	82	38	28	21	18	15	6	1

DURATION(HRS)	16	
FLOW(CFS)	0	

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	1297.5	(RUNOFF)
21.61	40.5	(RUNOFF)
23.61	34.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.15 WATERSHED INCHES; 1926 CFS-HRS; 159.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	165	87	64	47	40	36	25	4

DURATION(HRS)	17	
FLOW(CFS)	0	

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	1471.5	1772.52
21.61	57.8	1765.06
23.61	49.5	1764.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 2723 CFS-HRS; 225.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	264	126	90	69	58	51	29	7

DURATION(HRS)	18	
FLOW(CFS)	0	

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	1471.5	1759.29
21.61	57.8	1754.63
23.61	49.5	1754.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.05 WATERSHED INCHES; 2723 CFS-HRS; 225.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	264	126	90	69	58	51	29	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	2151.5	(RUNOFF)
19.32	67.7	(RUNOFF)
21.55	58.5	(RUNOFF)
23.55	50.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.31 WATERSHED INCHES; 2867 CFS-HRS; 236.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	129	92	68	60	51	42	12

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	3497.3	1762.24
21.57	116.3	1755.07
23.57	99.7	1754.96

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
7.00 CFS	.03	.73	2.13	2.98	5.42	7.40	10.22	15.13
8.60 CFS	18.22	23.62	28.16	33.27	41.22	46.53	56.04	64.38
10.20 CFS	76	95	109	140	168	212	287	504
11.80 CFS	1969	3349	3373	2310	1686	1259	952	768
13.40 CFS	623	536	461	407	372	339	318	298
15.00 CFS	282	269	253	242	227	215	206	196
16.60 CFS	191	188	187	183	177	172	165	159
18.20 CFS	153	146	141	139	138	137	137	136

19.80 CFS	130	125	123	121	120	114	109	109
21.40 CFS	114	116	112	108	106	105	103	98
23.00 CFS	92.15	92.36	97.41	99.62	95.49	90.80	74.58	41.46
24.60 CFS	22.06	12.82	7.50	4.27	2.43	1.39	.78	.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.18 WATERSHED INCHES; 5610 CFS-HRS; 463.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	504	253	183	139	116	103	75	18

DURATION(HRS)	18	19
FLOW(CFS)	2	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
99 CFS-HRS; 463.6 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	3221.0	1759.49
21.81	115.2	1750.83
23.81	98.6	1750.65

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
7.20 CFS	.03	.53	1.66	2.60	4.60	6.59	9.17	13.40
8.80 CFS	16.83	21.65	26.28	31.25	38.34	44.16	52.60	60.97
10.40 CFS	72	88	103	129	157	196	260	433
12.00 CFS	1524	2821	3214	2572	1942	1457	1098	864
13.60 CFS	693	582	496	433	389	353	328	307
15.20 CFS	289	275	259	247	233	220	210	200
16.80 CFS	194	190	188	185	179	174	168	162
18.40 CFS	156	148	143	140	138	137	137	136
20.00 CFS	132	127	124	122	121	116	111	109
21.60 CFS	113	115	113	109	107	105	104	99
23.20 CFS	94.24	92.90	96.10	98.60	96.39	92.42	79.74	52.54
24.80 CFS	30.88	18.04	10.55	6.08	3.49	1.99	1.13	.65
26.40 CFS	.37							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.17 WATERSHED INCHES; 5580 CFS-HRS; 461.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	496	259	185	138	116	103	72	18

DURATION(HRS)	18	19
FLOW(CFS)	2	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.17	8191.5	1765.61
21.60	410.9	1752.70
23.60	368.5	1752.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
7.20 CFS	.03	.53	1.73	3.23	5.72	9.21	14.72	20.98
8.80 CFS	30	40	52	67	82	101	121	147
10.40 CFS	185	222	285	350	453	606	1158	4061
12.00 CFS	7309	8166	6609	4856	3560	2706	2144	1756
13.60 CFS	1508	1314	1173	1071	990	933	882	843
15.20 CFS	806	769	738	702	670	643	620	605
16.80 CFS	597	593	584	570	558	541	525	509
18.40 CFS	491	478	471	467	466	465	463	451
20.00 CFS	439	430	426	422	410	397	395	404
21.60 CFS	411	404	394	387	384	380	368	354
23.20 CFS	353	362	368	362	351	310	238	181
24.80 CFS	149	132	123	118	116	114	113	112
26.40 CFS	112	112	112	111	111	111	111	111
28.00 CFS	111	111	111	111	111	110	110	110
29.60 CFS	110	110	110	110	110	110	110	110
31.20 CFS	109	109	109	109	109	109	109	109
32.80 CFS	109	109	109	108	108	108	108	108
34.40 CFS	108	108	108	108	108	107	107	107
36.00 CFS	107	107	107	107	107	107	107	107
37.60 CFS	106	106	106	106	106	106	106	106
39.20 CFS	106	106	106	105	105	105	105	105
40.80 CFS	105	105	105	105	105	105	104	104
42.40 CFS	104	104	104	104	104	104	104	104
44.00 CFS	104	103	103	103	103	103	103	103
45.60 CFS	103	103	103	103	103	102	102	102
47.20 CFS	102	102	102	102	102	102	101	101
48.80 CFS	101	101	101	101	101	101	100	100
50.40 CFS	100	100	100	100	100	100	100	99
52.00 CFS	99.35	99.23	99.12	99.01	98.90	98.79	98.67	98.56
53.60 CFS	98.45	98.34	98.23	98.12	98.01	97.90	97.79	97.68
55.20 CFS	97.57	97.46	97.34	97.23	97.12	97.01	96.90	96.80
56.80 CFS	96.69	96.58	96.47	96.36	96.25	96.13	96.00	95.88
58.40 CFS	95.74	95.61	95.48	95.35	95.22	95.09	94.96	94.83
60.00 CFS	94.70	94.57	94.44	94.32	94.19	94.06	93.93	93.80

61.60 CFS	93.67	93.55	93.42	93.29	93.16	93.04	92.91	92.78
63.20 CFS	92.65	92.53	92.40	92.28	92.15	92.02	91.90	91.77
64.80 CFS	91.65	91.52	91.40	91.27	89.72	87.43	84.99	82.57
66.40 CFS	80.19	77.89	75.64	73.63	71.74	69.93	68.17	66.45
68.00 CFS	64.78	63.15	61.56	60.01	58.50	57.03	55.59	54.19
69.60 CFS	52.83	51.50	50.21	48.94	47.71	46.51	45.34	44.20
71.20 CFS	43.09	42.00	40.95	39.92	38.91	37.93	36.98	36.05
72.80 CFS	35.14	34.26	33.39	32.55	31.74	30.94	30.16	29.40
74.40 CFS	28.66	27.94	27.24	26.55	26.02	25.54	25.08	24.63
76.00 CFS	24.18	23.75	23.33	22.91	22.50	22.09	21.70	21.31
77.60 CFS	20.92	20.55	20.18	19.82	19.46	19.11	18.77	18.43
79.20 CFS	18.10	17.78	17.46	17.15	16.84	16.54	16.24	15.95
80.80 CFS	15.66	15.38	15.11	14.84	14.57	14.31	14.05	13.80
82.40 CFS	13.55	13.31	13.07	12.84	12.60	12.38	12.16	11.94
84.00 CFS	11.73	11.52	11.31	11.10	10.91	10.71	10.52	10.33
85.60 CFS	10.14	9.96	9.78	9.61				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.87 WATERSHED INCHES; 20209 CFS-HRS; 1670.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	465	113	108	104	101	96	87	34

DURATION(HRS)	72	78
FLOW(CFS)	16	10 TRUNCATED

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
17.82	539.9	1707.17

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
7.40 CFS	.00	.01	.02	.03	.06	.11	.18	.28
9.00 CFS	.41	.59	.82	1.11	1.46	1.89	2.41	3.05
10.60 CFS	3.83	4.81	6.03	7.58	9.62	13.03	23.18	41.18
12.20 CFS	137	388	494	505	512	517	521	525
13.80 CFS	527	529	531	532	533	534	535	536
15.40 CFS	537	537	538	538	539	539	539	539
17.00 CFS	540	540	540	540	540	540	540	540
18.60 CFS	540	539	539	539	539	539	538	538
20.20 CFS	538	537	537	537	536	536	536	535
21.80 CFS	535	535	534	534	533	533	532	532
23.40 CFS	531	531	530	530	529	529	528	527
25.00 CFS	526	524	523	522	521	520	519	518
26.60 CFS	516	515	514	513	512	511	510	509
28.20 CFS	507	506	505	504	503	502	501	500
29.80 CFS	499	497	496	495	494	493	492	491
31.40 CFS	490	489	488	481	468	456	444	432
33.00 CFS	421	410	400	390	380	371	362	353

34.60 CFS	344	336	328	321	313	306	299	293
36.20 CFS	286	280	274	268	263	257	252	247
37.80 CFS	242	238	233	229	224	220	216	213
39.40 CFS	209	205	202	198	195	192	189	186
41.00 CFS	183	181	178	176	173	171	168	166
42.60 CFS	164	162	160	158	156	154	153	151
44.20 CFS	149	148	146	145	143	142	141	139
45.80 CFS	138	137	136	134	133	132	131	130
47.40 CFS	129	128	127	127	126	125	124	123
49.00 CFS	122	122	121	120	120	119	118	118
50.60 CFS	117	117	116	115	115	114	114	113
52.20 CFS	113	112	112	111	111	111	110	110
53.80 CFS	109	109	109	108	108	108	107	107
55.40 CFS	107	106	106	106	105	105	105	104
57.00 CFS	104	104	104	103	103	103	103	102
58.60 CFS	102	102	102	102	101	101	101	101
60.20 CFS	100	100	100	100	100	99	99	99
61.80 CFS	98.89	98.70	98.52	98.34	98.16	97.98	97.80	97.62
63.40 CFS	97.45	97.28	97.11	96.94	96.77	96.60	96.44	96.28
65.00 CFS	96.11	95.95	95.79	95.61	95.37	95.05	94.66	94.20
66.60 CFS	93.68	93.10	92.46	91.78	91.05	90.29	89.50	88.67
68.20 CFS	87.82	86.94	86.04	85.11	84.17	83.20	82.23	81.24
69.80 CFS	80.23	79.22	78.19	77.16	76.12	75.08	74.03	72.98
71.40 CFS	71.93	70.88	69.83	68.78	67.73	66.68	65.64	64.60
73.00 CFS	63.57	62.54	61.52	60.51	59.50	58.50	57.51	56.52
74.60 CFS	55.55	54.58	53.63	52.68	51.75	50.84	49.94	49.06
76.20 CFS	48.19	47.34	46.50	45.68	44.87	44.08	43.30	42.80
77.80 CFS	42.79	42.78	42.78	42.77	42.76	42.75	42.74	42.74
79.40 CFS	42.73	42.72	42.71	42.70	42.70	42.69	42.68	42.67
81.00 CFS	42.66	42.65	42.64	42.63	42.62	42.61	42.61	42.60
82.60 CFS	42.59	42.58	42.57	42.56	42.55	42.54	42.53	42.52
84.20 CFS	42.51	42.50	42.49	42.48	42.47	42.46	42.45	42.43
85.80 CFS	42.42	42.41	42.40					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.58 WATERSHED INCHES; 17124 CFS-HRS; 1415.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	533	504	280	148	113	100	88	48

DURATION(HRS)	72	72
FLOW(CFS)	43	42 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 7.06 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 4 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.27	907.9	(RUNOFF)
19.37	108.9	(RUNOFF)
21.37	96.9	(RUNOFF)
23.43	87.1	(RUNOFF)
24.14	85.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5697 CFS-HRS; 470.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	798	526	322	205	144	109	93	85

DURATION(HRS)	18	20	22
FLOW(CFS)	54	7	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.92	589.5	(RUNOFF)
17.18	93.2	(RUNOFF)
18.00	85.5	(RUNOFF)
19.22	72.3	(RUNOFF)
21.14	65.6	(RUNOFF)
22.09	56.6	(RUNOFF)
23.19	61.1	(RUNOFF)
24.10	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3590 CFS-HRS; 296.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	513	328	198	126	90	69	60	55

DURATION(HRS)	18	20	20
FLOW(CFS)	38	1	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.12	1492.3	(NULL)
17.12	238.5	(NULL)
19.22	180.6	(NULL)
21.21	161.4	(NULL)
23.24	146.2	(NULL)
24.11	145.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1296	868	531	334	238	178	151	143

DURATION(HRS)	18	20	22
FLOW(CFS)	91	8	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.98	554.5	(RUNOFF)
17.14	92.9	(RUNOFF)
17.99	85.3	(RUNOFF)
19.18	72.5	(RUNOFF)
21.10	65.9	(RUNOFF)
22.06	56.7	(RUNOFF)
23.15	62.1	(RUNOFF)
24.06	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 3360 CFS-HRS; 277.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	311	182	119	85	65	59	54

DURATION(HRS)	18	20
FLOW(CFS)	18	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.22	2032.0	(NULL)
19.21	249.8	(NULL)
21.26	221.7	(NULL)
23.28	200.3	(NULL)
24.13	199.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1784	1153	712	450	326	248	208	195

DURATION(HRS)	18	20	22
FLOW(CFS)	105	9	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.05	920.4	(RUNOFF)
17.25	143.0	(RUNOFF)
19.33	109.2	(RUNOFF)
21.24	98.9	(RUNOFF)
22.11	88.1	(RUNOFF)
23.29	89.9	(RUNOFF)
24.14	87.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5666 CFS-HRS; 468.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	801	512	311	204	140	108	92	86

DURATION(HRS)	18	20	21
FLOW(CFS)	55	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.34	2929.7	(NULL)
19.35	358.6	(NULL)
21.40	317.3	(NULL)
23.43	286.4	(NULL)
24.21	280.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.00 CFS	.00	.60	2.70	6.81	14.81	28.09	48.26	81.11

6.60 CFS	128	188	263	351	456	582	725	891
8.20 CFS	1078	1284	1515	1758	2018	2277	2502	2673
9.80 CFS	2792	2872	2920	2928	2897	2840	2776	2708
11.40 CFS	2630	2531	2419	2291	2153	2012	1871	1738
13.00 CFS	1616	1506	1405	1305	1214	1133	1063	1000
14.60 CFS	939	882	829	780	737	700	667	634
16.20 CFS	600	564	528	497	480	476	473	464
17.80 CFS	452	445	441	429	402	372	357	357
19.40 CFS	358	353	341	326	310	297	293	295
21.00 CFS	303	312	317	312	302	296	293	288
22.60 CFS	276	264	265	278	286	281	271	272
24.20 CFS	280	274	237	183	133	92	62	40
25.80 CFS	25.48	16.32	10.46	6.73	4.32	2.77	1.78	1.14
27.40 CFS	.73	.46						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.61 WATERSHED INCHES; 18313 CFS-HRS; 1513.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2531	1738	1063	667	464	357	302	278

DURATION(HRS)	18	20	22	22
FLOW(CFS)	183	16	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1490.3	1801.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
7.40 CFS	.00	.01	.01	.01	.01	.02	8.52	42.32
9.00 CFS	91	94	97	100	103	105	107	110
10.60 CFS	112	188	423	632	815	973	1108	1220
12.20 CFS	1310	1380	1430	1464	1483	1490	1487	1475
13.80 CFS	1456	1430	1401	1367	1332	1294	1254	1214
15.40 CFS	1173	1132	1092	1052	1013	974	936	898
17.00 CFS	861	827	795	766	738	712	688	665
18.60 CFS	643	620	597	575	556	538	521	504
20.20 CFS	487	471	455	440	428	417	408	399
21.80 CFS	391	383	375	367	360	351	344	337
23.40 CFS	332	328	323	319	315	311	306	298
25.00 CFS	285	270	252	234	216	199	182	166
26.60 CFS	152	139	126	115	114	114	114	114
28.20 CFS	113	113	113	113	113	113	113	113
29.80 CFS	113	113	112	112	112	112	112	112

31.40 CFS	112	112	112	112	111	111	111	111
33.00 CFS	111	111	111	111	111	111	111	110
34.60 CFS	110	110	110	110	110	110	110	110
36.20 CFS	110	110	109	109	109	109	109	109
37.80 CFS	109	109	109	109	108	108	108	108
39.40 CFS	108	108	108	108	108	108	108	107
41.00 CFS	107	107	107	107	107	107	107	107
42.60 CFS	107	107	106	106	106	106	106	106
44.20 CFS	106	106	106	106	106	105	105	105
45.80 CFS	105	105	105	105	105	105	105	105
47.40 CFS	104	104	104	104	104	104	104	104
49.00 CFS	104	104	104	103	103	103	103	103
50.60 CFS	103	103	103	103	103	103	102	102
52.20 CFS	102	102	102	102	102	102	102	101
53.80 CFS	101	101	101	101	101	101	101	101
55.40 CFS	100	100	100	100	100	100	100	100
57.00 CFS	99.53	99.42	99.31	99.20	99.09	98.97	98.86	98.75
58.60 CFS	98.64	98.53	98.42	98.30	98.19	98.08	97.97	97.86
60.20 CFS	97.75	97.64	97.53	97.42	97.31	97.20	97.09	96.98
61.80 CFS	96.87	96.76	96.65	96.54	96.43	96.32	96.22	96.10
63.40 CFS	95.96	95.83	95.70	95.57	95.44	95.31	95.18	95.05
65.00 CFS	94.92	94.79	94.66	94.53	94.40	94.28	94.15	94.02
66.60 CFS	93.89	93.76	93.63	93.51	93.38	93.25	93.12	93.00
68.20 CFS	92.87	92.74	92.62	92.49	92.36	92.24	92.11	91.98
69.80 CFS	91.86	91.73	91.61	91.48	91.36	91.23	89.28	86.71
71.40 CFS	84.21	81.78	79.43	77.14	74.92	72.97	71.13	69.34
73.00 CFS	67.60	65.90	64.24	62.62	61.05	59.51	58.01	56.55
74.60 CFS	55.13	53.74	52.39	51.07	49.79	48.53	47.31	46.12
76.20 CFS	44.96	43.83	42.73	41.65	40.60	39.58	38.59	37.62
77.80 CFS	36.67	35.75	34.85	33.97	33.12	32.28	31.47	30.68
79.40 CFS	29.91	29.15	28.42	27.71	27.01	26.33	25.85	25.38
81.00 CFS	24.93	24.48	24.04	23.61	23.19	22.77	22.36	21.96
82.60 CFS	21.57	21.18	20.80	20.43	20.06	19.70	19.35	19.00
84.20 CFS	18.66	18.33	18.00					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.24 WATERSHED INCHES; 16834 CFS-HRS; 1391.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	575	139	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	25	18 TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

```
***********[redacted]**80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****************

JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATEL
TITLE 000 ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBT2bTP2.DAT
 5 RAINFL 1            .5
 8        0.0          .008         .017         .026         .035
 8        .045         .055         .065         .076         .087
 8        .099         .112         .125         .14          .156
 8        .174         .194         .219         .254         .303
 8        .515         .583         .624         .654         .682
 8        .705         .727         .748         .767         .784
 8        .8           .816         .83          .844         .857
 8        .87          .882         .893         .905         .916
 8        .926         .936         .946         .955         .965
 8        .974         .983         .992         1.           1.
 9 ENDTBL
 5 RAINFL 2            .5
 8        0.0          .005         .011         .016         .022
 8        .028         .035         .041         .048         .056
 8        .063         .071         .081         .089         .098
 8        .109         .12          .133         .147         .163
 8        .181         .204         .235         .283         .663
 8        .735         .772         .799         .82          .838
 8        .854         .868         .88          .891         .902
 8        .912         .921         .929         .937         .945
 8        .952         .959         .965         .972         .978
 8        .984         .989         .995         1.           1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8        0.0          .002         .004         .006         .008
 8        .01          .012         .014         .016         .018
 8        .02          .022         .025         .027         .03
 8        .032         .035         .038         .04          .043
 8        .046         .049         .052         .055         .058
 8        .061         .064         .069         .072         .076
 8        .08          .084         .089         .093         .098
 8        .102         .108         .114         .121         .127
 8        .133         .143         .153         .164         .174
 8        .184         .198         .215         .238         .275
 8        .707         .765         .793         .813         .829
 8        .841         .849         .856         .863         .871
 8        .879         .884         .889         .895         .9
 8        .905         .909         .913         .918         .922
 8        .926         .929         .932         .936         .939
 8        .942         .945         .948         .951         .954
 8        .957         .959         .962         .964         .967
 8        .969         .971         .973         .976         .978
 8        .98          .982         .984         .987         .989
 8        .991         .993         .996         .998         1.
 9 ENDTBL
 5 RAINFL 4            .25
 8        0.0          .006         .011         .017         .028
 8        .041         .057         .075         .09          .562
 8        .697         .763         .807         .839         .873
 8        .907         .937         .948         .958         .968
 8        .979         .984         .989         1.           1.
 9 ENDTBL
```

```
**********************80-80 LIST OF INPUT DATA (CONTINUED)********[redacted]**********
 5 RAINFL 5            .5
 8        0.0          .004         .008         .011         .016
 8        .021         .027         .034         .044         .055
 8        .07          .088         .108         .137         .172
 8        .217         .273         .341         .42          .492
 8        .56          .618         .672         .717         .753
 8        .782         .807         .827         .845         .86
 8        .873         .885         .895         .903         .913
 8        .921         .93          .935         .943         .949
 8        .954         .96          .967         .972         .978
 8        .982         .989         .993         1.           1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0          0.0          0.0
 8                     2.           450.         93.8
 8                     3.           838.         175.5
 8                     4.           1288.        270.
 8                     5.           1782.        373.2
 8                     6.           2314.        484.4
 8                     7.           2875.        601.7
 8                     8.           3454.        722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0          0.0          0.0
 8                     2.           450.         93.8
 8                     3.           838.         175.5
 8                     4.           1288.        270.
 8                     5.           1782.        373.2
 8                     6.           2314.        484.4
 8                     7.           2875.        601.7
 8                     8.           3454.        722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0          0.0          0.0
 8                     2.           450.         40.
 8                     3.           838.         60.
 8                     4.           1288.        80.
 8                     5.           1782.        120.
 8                     6.           2314.        130.
 8                     7.           2875.        140.
 8                     8.           3454.        160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0          0.0          0.0
 8                     1.5          441.         45.
 8                     2.5          995.         75.
 8                     3.5          1682.        105.
 8                     4.5          2468.        135.
 8                     5.5          3339.        165.
 8                     6.5          4272.        195.
 8                     7.5          5258.        225.
 8                     8.5          6296.        255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.        0.0          0.0
 8                     1750.        38.53        23.
```

```
8                       1751.       130.52      52.
8                       1752.       273.18      87.
8                       1753.       470.98      128.
8                       1754.       706.86      187.
8                       1755.       1005.62     240.
8                       1756.       1369.42     299.
8                       1757.       1801.8      364.
8                       1758.       2305.5      435.
8                       1759.       2892.8      512.
8                       1760.       3558.1      595.
8                       1761.       4316.04     684.
8                       1762.       5156.98     779.
9 ENDTBL
2 XSECTN   108          1.0
8                       1753.7      0.0         0.0
8                       1754.7      61.93       23.
8                       1755.7      209.35      52.
8                       1756.7      438.91      87.
8                       1757.7      757.01      128.
8                       1758.7      1167.41     175.
8                       1759.7      1678.56     228.
8                       1760.7      2302.39     287.
8                       1761.7      3038.91     352.
8                       1762.7      3894.74     435.
8                       1763.7      4647.76     512.
9 ENDTBL
2 XSECTN   109          1.0
8                       1763.6      0.0         0.0
8                       1764.6      27.47       23.
8                       1765.6      92.87       52.
8                       1766.6      194.7       87.
8                       1767.6      335.8       128.
8                       1768.6      503.22      187.
8                       1769.6      715.78      240.
8                       1770.6      974.81      299.
9 ENDTBL
3 STRUCT      01
8                       1791.94     0.00        0.0
8                       1793.       0.01        46.8
8                       1794.1      0.02        106.
8                       1794.5      26.3        130.
8                       1795.       74.4        161.2
8                       1795.14     91.2        170.7
8                       1796.       96.16       230.7
8                       1797.14     102.42      322.23
8                       1799.42     113.91      542.99
8                       1801.72     1650.       812.88
8                       1804.       7700.       1121.9
8                       1806.28     15200.      1470.09
8                       1808.57     26200.      1865.04
9 ENDTBL
3 STRUCT      02
8                       1696.       0.0         0.0
8                       1700.       20.4        172.1
8                       1701.4      21.4        273.25
8                       1704.       243.6       482.24
```



```
8                       1708.       276.8       871.3
8                       1710.       291.8       1101.52
8                       1710.5      295.4       1163.52
8                       1711.5      302.8       1294.09
8                       1712.2      308.        1390.2
8                       1712.5      310.        1432.05
8                       1712.6      312.        1446.11
8                       1713.5      546.        1578.77
8                       1714.5      976.        1733.61
8                       1716.       2106.       1980.33
8                       1720.       6756.       2712.23
8                       1722.       9656.       3121.
8                       1724.       12556.      3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86         65.         1.21        1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2          64.         .67         1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                      1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                                 0 0 0 0 0 0
6 RUNOFF 1   2       6 1.24         58.         .59         1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                      1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                                 0 0 0 0 0 0
6 RUNOFF 1   3       6 1.85         65.         .91         1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                      1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                               1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.         1.                      0 0 0 0 0 0
6 REACH  3 104   4   5 6700.                                 1 0 0 1 0 1
6 RUNOFF 1   4       6 2.54         65.         .54         1 0 0 1 0 1
6 ADDHYD 4   4   5 6 7                                      1 0 0 1 0 1
6 DIVERT 6 104   7 5 2 3454.        1.                      0 0 0 0 0 0
6 ADDHYD 4 104   1 2 4                                      0 0 0 0 0 0
6 REACH  3 106   5   3 3700.                                 1 0 0 1 0 1
6 RUNOFF 1   5       6 2.           68.         .43         1 0 0 1 0 1
6 ADDHYD 4   5   3 6 7                                      1 0 0 1 0 1
6 DIVERT 6 106   7 5 2 6296.        1.                      0 0 0 0 0 0
6 RUNOFF 1   6       6 1.14         64.         .42         1 0 0 1 0 1
6 ADDHYD 4   6   5 6 7                                      1 0 0 1 0 1
6 SAVMOV 5   6   7   5
6 ADDHYD 4 106   4 2 7                                      1 1 0 1 0 1
6 SAVMOV 5 106   7   1
6 RUNOFF 1   7       6 .96          58.         .23         1 0 0 1 0 1
6 ADDHYD 4   7   5 6 7                                      1 1 0 1 0 1
6 SAVMOV 5   7   7   2
6 RUNOFF 1  10       7 .67          62.         .89         1 0 0 1 0 1
6 DIVERT 6 110   7 5 3 820.         1.                      0 0 0 0 0 0
6 REACH  3 109   5   4 2700.                                 1 0 0 1 0 1
6 RUNOFF 1   9       6 1.39         68.         .55         1 0 0 1 0 1
6 ADDHYD 4 109   4 6 7                                      1 0 0 1 0 1
6 DIVERT 6 109   7 5 4 2546.        1.                      0 0 0 0 0 0
6 REACH  3 108   5   6 2100.                                 1 0 0 1 0 1
6 RUNOFF 1   8       5 1.92         71.         .42         1 0 0 1 0 1
6 ADDHYD 4 108   5 6 7                                      1 1 0 1 0 1
6 ADDHYD 4 109   3 4 5                                      1 1 0 1 0 1
6 SAVMOV 5 106   5   3
6 DIVERT 6 108   7 5 4 5253.        1.                      0 0 0 0 0 0
6 REACH  3 107   5   6 5300.                                 1 1 0 1 0 1
```

```
************   *******80-80 LIST OF INPUT DATA (CONTINUED)*********************

 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                  1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                            1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .60
 7 COMPUT 7 101       2            7.02        1.0       3 2  05  01
   ENDCMP 1
   ENDJOB 2

*******************************END OF 80-80 LIST******************************
```

```
TR20 ------------------------------------------------------------------ ----- SCS -
         SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATE VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR20bT2.04TEST
09:31:38                    PASS   1   JOB NO.   1                        PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .600 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  7.02       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .600 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1            RAIN TABLE NO. = 3


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
      119.83                          748.1                        (RUNOFF)
      143.41                           20.6                        (RUNOFF)
      151.01                           15.6                        (RUNOFF)
      155.41                           13.0                        (RUNOFF)
      163.01                           13.1                        (RUNOFF)
      167.18                           10.5                        (RUNOFF)
      175.01                           10.6                        (RUNOFF)
      191.20                            8.0                        (RUNOFF)
      223.00                            8.1                        (RUNOFF)
      232.61                            8.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  3.12 WATERSHED INCHES;    3739 CFS-HRS;     309.0 ACRE-FEET.

    DURATION(HRS)  12     24     36     48     60     72     84     96
    FLOW(CFS)      38     19     13     11      8      8      8      6

    DURATION(HRS) 108    120    132    136
    FLOW(CFS)       5      5      2      0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
      119.62                          467.3                        (RUNOFF)
      143.12                           13.0                        (RUNOFF)
      150.79                            9.8                        (RUNOFF)
      155.12                            8.2                        (RUNOFF)
      162.90                            8.4                        (RUNOFF)
      167.13                            6.7                        (RUNOFF)
      174.81                            6.7                        (RUNOFF)
      210.79                            5.1                        (RUNOFF)
      222.85                            5.1                        (RUNOFF)
      232.50                            5.3                        (RUNOFF)
```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.01 WATERSHED INCHES; 2329 CFS-HRS; 192.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	23	12	8	7	5	5	5	4
DURATION(HRS)	108	120	132	133				
FLOW(CFS)	3	3	1	0				

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.67) FOR SUBWATERSHED XSECTION 1.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%. ***

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.75	1239.7	(NULL)
143.22	33.6	(NULL)
150.94	25.5	(NULL)
155.20	21.3	(NULL)
162.94	21.5	(NULL)
167.16	17.2	(NULL)
174.94	17.4	(NULL)
210.94	13.3	(NULL)
222.94	13.3	(NULL)
232.55	13.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.07 WATERSHED INCHES; 6068 CFS-HRS; 501.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	59	31	21	17	13	13	13	11
DURATION(HRS)	108	120	132	137				
FLOW(CFS)	9	9	2	0				

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 102. ***

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.58	371.7	(RUNOFF)
143.12	11.8	(RUNOFF)
150.79	8.9	(RUNOFF)
155.20	7.5	(RUNOFF)
162.80	7.6	(RUNOFF)
167.11	6.1	(RUNOFF)
174.70	6.1	(RUNOFF)
210.78	4.7	(RUNOFF)
222.69	4.7	(RUNOFF)
232.29	4.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.41 WATERSHED INCHES; 1932 CFS-HRS; 159.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	10	8	6	5	5	5	3
DURATION(HRS)	108	120	125					
FLOW(CFS)	3	3	0					

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.59) FOR SUBWATERSHED XSECTION 2.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	1635.8	(NULL)
143.18	45.4	(NULL)
150.92	34.6	(NULL)
155.20	28.8	(NULL)
162.93	29.2	(NULL)
167.14	23.3	(NULL)
174.92	23.6	(NULL)
210.92	18.1	(NULL)
222.92	18.2	(NULL)
232.52	18.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.88 WATERSHED INCHES; 8000 CFS-HRS; 661.1 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	78	40	29	23	18	18	18	13
DURATION(HRS)	108	120	132	137				
FLOW(CFS)	12	12	2	0				

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 103. ***

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	776.5	(RUNOFF)
143.52	20.5	(RUNOFF)
150.92	15.6	(RUNOFF)
155.48	13.0	(RUNOFF)
162.92	13.2	(RUNOFF)
167.25	10.5	(RUNOFF)
174.92	10.6	(RUNOFF)
210.92	8.1	(RUNOFF)
222.92	8.2	(RUNOFF)
232.52	8.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.12 WATERSHED INCHES; 3719 CFS-HRS; 307.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	36	19	13	11	8	8	8	6

DURATION(HRS)	108	120	132	136
FLOW(CFS)	5	5	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.91) FOR SUBWATERSHED XSECTION 3.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.8%. ***

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	2412.3	(NULL)
143.20	65.9	(NULL)
150.92	50.2	(NULL)
155.23	41.8	(NULL)
162.93	42.4	(NULL)
167.16	33.8	(NULL)
174.92	34.2	(NULL)
210.92	26.2	(NULL)
222.92	26.4	(NULL)
232.52	26.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
101.40 CFS	.38	.86	1.00	1.04	1.95	2.89	3.15	3.23
106.20 CFS	4.17	5.12	5.38	5.47	7.85	10.33	11.00	11.20

111.00 CFS	14.57	17.94	18.83	19.14	26.93	33.98	35.81	36.52
115.80 CFS	57	76	81	95	1148	2045	2273	2319
120.60 CFS	1448	692	500	452	336	247	225	219
125.40 CFS	190	166	160	158	144	132	129	128
130.20 CFS	113	101	98	97	82	69	66	65
135.00 CFS	61.17	58.03	57.24	57.05	57.11	57.18	57.20	57.25
139.80 CFS	61.22	64.55	65.38	65.58	65.77	65.89	65.92	65.79
144.60 CFS	54.24	44.54	42.12	41.54	41.44	41.44	41.45	41.51
149.40 CFS	45.47	48.78	49.61	49.76	45.96	42.75	41.95	41.75
154.20 CFS	41.75	41.78	41.78	41.76	37.81	34.58	33.77	33.57
159.00 CFS	33.55	33.56	33.57	33.60	37.64	40.95	41.78	41.95
163.80 CFS	38.04	34.79	33.98	33.78	33.76	33.77	33.77	33.74
168.60 CFS	29.75	26.46	25.64	25.44	25.41	25.41	25.41	25.46
173.40 CFS	29.48	32.82	33.66	33.81	29.89	26.59	25.76	25.56
178.20 CFS	25.52	25.52	25.52	25.52	25.54	25.56	25.56	25.56
183.00 CFS	25.58	25.59	25.59	25.59	25.61	25.62	25.62	25.63
187.80 CFS	25.64	25.66	25.66	25.66	25.68	25.69	25.69	25.64
192.60 CFS	21.61	18.26	17.42	17.25	21.28	24.63	25.48	25.66
197.40 CFS	21.63	18.29	17.45	17.27	21.34	24.69	25.54	25.71
202.20 CFS	21.68	18.33	17.49	17.29	17.24	17.24	17.24	17.24
207.00 CFS	17.24	17.25	17.25	17.29	21.40	24.78	25.63	25.79
211.80 CFS	21.76	18.40	17.56	17.35	17.31	17.30	17.30	17.30
216.60 CFS	17.31	17.31	17.31	17.31	17.32	17.33	17.33	17.38
221.40 CFS	21.51	24.90	25.75	25.90	21.85	18.48	17.64	17.43
226.20 CFS	17.39	17.38	17.38	17.38	17.39	17.39	17.39	17.43
231.00 CFS	21.58	24.99	25.84	26.01	21.94	18.55	17.70	17.49
235.80 CFS	17.45	17.44	17.44	17.34	9.11	2.26	.54	.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.95 WATERSHED INCHES; 11719 CFS-HRS; 968.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	113	58	42	34	26	26	25	19

DURATION(HRS)	108	120	132	138
FLOW(CFS)	17	17	4	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	186.8	1799.53
223.52	23.8	1794.46
233.48	21.7	1794.43

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
117.00	CFS	0	0	0	35	97	104	108	111
121.80	CFS	112	113	114	144	167	181	187	184
126.60	CFS	179	174	168	161	153	147	141	132
131.40	CFS	124	117	114	114	114	114	113	113
136.20	CFS	113	113	113	113	113	112	112	112
141.00	CFS	112	112	112	112	112	111	111	111
145.80	CFS	111	111	111	110	110	110	110	110
150.60	CFS	110	109	109	109	109	109	109	108
155.40	CFS	108	108	108	108	108	107	107	107
160.20	CFS	107	107	106	106	106	106	106	106
165.00	CFS	105	105	105	105	105	104	104	104
169.80	CFS	104	104	103	103	103	103	103	102
174.60	CFS	102	102	102	102	101	101	101	100
179.40	CFS	100	100	100	99	99	99	99	98
184.20	CFS	98.24	98.00	97.75	97.51	97.27	97.02	96.78	96.54
189.00	CFS	96.30	96.04	95.75	95.47	95.18	94.90	94.61	94.30
193.80	CFS	93.99	93.67	93.37	93.08	92.80	92.53	92.25	91.95
198.60	CFS	91.65	91.34	88.09	82.62	77.79	73.53	69.86	66.19
203.40	CFS	62.63	59.30	56.21	53.34	50.68	48.22	45.94	43.82
208.20	CFS	41.87	40.06	38.53	37.39	36.50	35.70	34.82	33.74
213.00	CFS	32.58	31.46	30.42	29.46	28.56	27.73	26.97	26.27
217.80	CFS	25.79	25.35	24.92	24.52	24.14	23.78	23.55	23.53
222.60	CFS	23.63	23.74	23.75	23.56	23.27	22.97	22.67	22.39
227.40	CFS	22.13	21.88	21.64	21.42	21.20	21.00	20.92	21.05
232.20	CFS	21.28	21.52	21.65	21.58	21.40	21.20	21.00	20.81
237.00	CFS	20.63	20.46	20.08	19.32	18.37	17.42	16.50	15.63
241.80	CFS	14.80	14.02	13.28	12.58	11.91	11.28	10.69	10.12
246.60	CFS	9.59	9.08	8.60	8.15	7.71	7.31	6.92	6.55
251.40	CFS	6.21	5.88	5.57	5.27	5.00	4.73	4.48	4.24
256.20	CFS	4.02	3.81	3.61	3.42	3.24	3.06	2.90	2.75
261.00	CFS	2.60	2.47	2.34	2.21	2.10	1.98	1.88	1.78
265.80	CFS	1.69	1.60	1.51	1.43	1.36	1.29	1.22	1.15
270.60	CFS	1.09	1.03	.98	.93	.88	.83	.79	.75
275.40	CFS	.71	.67	.63	.60	.57	.54	.51	.48
280.20	CFS	.46	.43	.41	.39	.37	.35	.33	.31
285.00	CFS	.30	.28	.27	.25	.24	.23	.21	.20
289.80	CFS	.19	.18	.17	.16	.15	.15	.14	.13
294.60	CFS	.12	.12	.11	.11	.10	.09	.09	.09
299.40	CFS	.08	.08	.07	.07	.06	.06	.06	.06
304.20	CFS	.05	.05	.05	.04	.04	.04	.04	.04
309.00	CFS	.03	.03	.03	.03	.03	.03	.02	.02
313.80	CFS	.02	.02	.02	.02	.02	.02	.02	.02
318.60	CFS	.02	.02	.02	.02	.02	.02	.02	.02
323.40	CFS	.02	.02	.02	.02	.02	.02	.02	.02
328.20	CFS	.02	.02	.02	.02	.02	.02	.02	.02
333.00	CFS	.02	.02	.02	.02	.02	.02	.02	.02
337.80	CFS	.02	.02	.02	.02				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.63 WATERSHED INCHES; 10436 CFS-HRS; 862.4 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	161
FLOW(CFS)	111	104	95	29	19	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 104. ***

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
123.60	115.0 *	.51
223.52	23.8	.11
233.48	21.7	.10

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.53 WATERSHED INCHES; 10053 CFS-HRS; 830.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	161
FLOW(CFS)	111	104	95	29	19	2	0

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	1029.9	(RUNOFF)
143.11	28.1	(RUNOFF)
150.76	21.2	(RUNOFF)
155.14	17.8	(RUNOFF)
162.62	17.9	(RUNOFF)
167.06	14.4	(RUNOFF)
174.79	14.4	(RUNOFF)
210.76	11.0	(RUNOFF)
222.63	11.0	(RUNOFF)
232.23	11.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.11 WATERSHED INCHES; 5098 CFS-HRS; 421.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	53	25	18	14	11	11	11	8

DURATION(HRS)	108	120	132	137
FLOW(CFS)	7	7	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.54) FOR SUBWATERSHED XSECTION 4.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1208.0	(NULL)
140.64	140.1	(NULL)
150.21	130.9	(NULL)
162.20	124.1	(NULL)
174.16	116.8	(NULL)
195.70	104.0	(NULL)
209.56	48.8	(NULL)
222.91	35.1	(NULL)
232.54	32.8	(NULL)

*** WARNING - XSECTION 4, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1207.99) EXCEEDS ADJACENT COORDINATE (1127.25) BY 7 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 15151 CFS-HRS; 1252.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	178
FLOW(CFS)	137	119	107	39	28	5	1	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1208.0	2.81
140.64	140.1	.48
150.21	130.9	.45
162.20	124.1	.42
174.16	116.8	.40
195.70	104.0	.35
209.56	48.8	.17
222.91	35.1	.12
232.54	32.8	.11

*** WARNING - XSECTION 106, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1207.99) EXCEEDS ADJACENT COORDINATE (1127.25) BY 7 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 15151 CFS-HRS; 1252.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	178
FLOW(CFS)	137	119	107	39	28	5	1	0

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	900.4	(RUNOFF)
143.11	23.2	(RUNOFF)
150.53	17.5	(RUNOFF)
155.10	14.7	(RUNOFF)
162.40	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.39	11.9	(RUNOFF)
210.41	9.0	(RUNOFF)
222.39	9.1	(RUNOFF)
231.99	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.40 WATERSHED INCHES; 4392 CFS-HRS; 363.0 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	45	21	15	12	9	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	4	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.43) FOR SUBWATERSHED XSECTION 5.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	2027.3	(NULL)
142.06	163.1	(NULL)
150.25	148.5	(NULL)
162.25	138.9	(NULL)
174.22	128.8	(NULL)
195.79	113.0	(NULL)
199.70	106.9	(NULL)
209.70	57.4	(NULL)
222.74	43.7	(NULL)
232.51	42.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.83 WATERSHED INCHES; 19543 CFS-HRS; 1615.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	157	131	116	49	35	7	1	0

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.19	444.2	(RUNOFF)
143.10	12.3	(RUNOFF)
150.89	9.3	(RUNOFF)
155.10	7.8	(RUNOFF)
162.37	7.9	(RUNOFF)
167.15	6.3	(RUNOFF)
174.44	6.3	(RUNOFF)
210.41	4.8	(RUNOFF)
222.38	4.9	(RUNOFF)
231.99	4.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.98 WATERSHED INCHES; 2193 CFS-HRS; 181.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	11	8	6	5	5	5	3

DURATION(HRS)	108	120	132
FLOW(CFS)	3	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 6.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.50	2469.3	(NULL)
137.13	168.1	(NULL)
142.19	175.4	(NULL)
150.27	157.9	(NULL)
162.26	146.7	(NULL)
174.24	135.1	(NULL)
195.81	117.8	(NULL)
199.77	111.4	(NULL)
209.82	62.2	(NULL)
222.65	48.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.85 WATERSHED INCHES; 21737 CFS-HRS; 1796.3 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	168	138	121	53	38	7	1	0

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	71.8	.24

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
123.00 CFS	.00	29.45	52.08	65.68	71.58	69.43	64.13	59.20
127.80 CFS	53.49	45.91	38.36	32.19	25.60	17.28	9.11	2.47
132.60 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
383 CFS-HRS; 31.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	9
FLOW(CFS)	62	48	29	7	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.10	294.7	(RUNOFF)
128.70	17.9	(RUNOFF)
143.10	9.3	(RUNOFF)
150.30	7.0	(RUNOFF)
155.10	5.9	(RUNOFF)
162.30	6.0	(RUNOFF)
167.02	4.8	(RUNOFF)
174.30	4.8	(RUNOFF)
222.30	3.7	(RUNOFF)
231.90	3.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.42 WATERSHED INCHES; 1497 CFS-HRS; 123.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	17	8	6	5	4	4	4	2

DURATION(HRS)	108	120	125
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.3%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.42	2758.9	(NULL)
137.25	176.1	(NULL)
142.27	184.6	(NULL)
150.27	164.9	(NULL)
162.26	152.7	(NULL)
174.24	139.9	(NULL)
195.82	121.5	(NULL)
199.81	115.0	(NULL)
209.86	65.9	(NULL)
222.52	52.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
98.40 CFS	.45	1.36	1.50	1.51	1.53	3.24	3.55	3.57
103.20 CFS	3.62	5.54	5.93	5.96	6.01	8.11	8.53	8.56
108.00 CFS	8.74	14.87	16.08	16.16	16.36	24.31	25.87	25.98
112.80 CFS	27	43	46	47	49	92	100	101
117.60 CFS	168	2256	2672	2759	2685	939	619	599
122.40 CFS	587	395	359	357	354	301	291	290
127.20 CFS	289	262	257	257	255	228	222	222
132.00 CFS	221	191	186	185	185	178	176	176

136.80 CFS	176	.176	176	176	176	183	185	185
141.60 CFS	184	185	185	184	183	161	157	157
146.40 CFS	156	156	156	156	156	164	165	165
151.20 CFS	164	157	155	155	155	155	155	154
156.00 CFS	154	146	145	145	144	144	144	144
160.80 CFS	144	151	153	152	152	144	143	143
165.60 CFS	142	142	142	142	141	134	132	132
170.40 CFS	132	131	131	131	131	139	140	140
175.20 CFS	139	131	130	129	129	129	129	128
180.00 CFS	128	128	128	127	127	127	127	126
184.80 CFS	126	126	126	126	125	125	125	125
189.60 CFS	124	124	124	124	123	115	113	113
194.40 CFS	113	120	121	121	121	113	111	111
199.20 CFS	111	115	111	106	102	90	85	82
204.00 CFS	78.28	75.20	72.33	69.68	67.21	64.94	62.83	60.88
208.80 CFS	59.45	65.55	65.84	65.04	63.94	55.40	52.88	51.63
213.60 CFS	50.51	49.48	48.52	47.63	46.80	46.04	45.34	44.87
218.40 CFS	44.42	44.01	43.61	43.23	43.07	50.72	52.10	52.29
223.20 CFS	51.96	44.39	42.79	42.40	42.10	41.81	41.54	41.27
228.00 CFS	41.02	40.79	40.57	40.36	40.52	48.17	49.71	50.04
232.80 CFS	49.82	42.41	40.87	40.59	40.39	40.20	40.02	39.84
237.60 CFS	39.03	23.17	19.51	18.37	17.42	16.50	15.63	14.80
242.40 CFS	14.02	13.28	12.58	11.91	11.28	10.69	10.12	9.59
247.20 CFS	9.08	8.60	8.15	7.71	7.31	6.92	6.55	6.21
252.00 CFS	5.88	5.57	5.27	5.00	4.73	4.48	4.24	4.02
256.80 CFS	3.81	3.61	3.42	3.24	3.06	2.90	2.75	2.60
261.60 CFS	2.47	2.34	2.21	2.10	1.98	1.88	1.78	1.69
266.40 CFS	1.60	1.51	1.43	1.36	1.29	1.22	1.15	1.09
271.20 CFS	1.03	.98	.93	.88	.83	.79	.75	.71
276.00 CFS	.67	.63	.60	.57	.54	.51	.48	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 23233 CFS-HRS; 1920.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	176	142	124	55	41	7	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	250.3	(RUNOFF)
143.24	7.0	(RUNOFF)
150.92	5.3	(RUNOFF)
155.27	4.4	(RUNOFF)
162.92	4.5	(RUNOFF)
167.25	3.6	(RUNOFF)
174.92	3.6	(RUNOFF)
210.92	2.8	(RUNOFF)
222.92	2.8	(RUNOFF)
232.52	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1217 CFS-HRS; 100.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	12	6	4	4	3	3	3	2

DURATION(HRS)	108	120	130
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.89) FOR SUBWATERSHED XSECTION 10.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.7%. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 109. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	250.3	1766.99
143.24	7.0	1763.85
150.92	5.3	1763.79
155.27	4.4	1763.76
162.92	4.5	1763.76
167.25	3.6	1763.73
174.92	3.6	1763.73
210.92	2.8	1763.70
222.92	2.8	1763.70
232.52	2.8	1763.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1217 CFS-HRS; 100.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	12	6	4	4	3	3	3	2

DURATION(HRS)	108	120	130
FLOW(CFS)	2	2	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.53	626.6	(RUNOFF)
143.11	16.2	(RUNOFF)
150.70	12.2	(RUNOFF)
155.11	10.2	(RUNOFF)
162.78	10.3	(RUNOFF)
167.10	8.3	(RUNOFF)
174.87	8.3	(RUNOFF)
210.66	6.3	(RUNOFF)
222.64	6.3	(RUNOFF)
232.23	6.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.42 WATERSHED INCHES; 3066 CFS-HRS; 253.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	32	14	10	8	7	6	6	5

DURATION(HRS)	108	120	132	140
FLOW(CFS)	4	4	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.55) FOR SUBWATERSHED XSECTION 9.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.68	867.0	1770.18
143.12	23.2	1764.44
150.88	17.5	1764.24
155.12	14.7	1764.13
162.90	15.0	1764.15
167.11	11.9	1764.03
174.90	12.1	1764.04
210.85	9.1	1763.93
222.83	9.1	1763.93
232.43	9.1	1763.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.22 WATERSHED INCHES; 4282 CFS-HRS; 353.9 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	44	21	15	12	10	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	3	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.68	867.0	1757.97
143.12	23.2	1754.07
150.88	17.5	1753.98
155.12	14.7	1753.94
162.90	15.0	1753.94
167.11	11.9	1753.89
174.90	12.1	1753.90
210.85	9.1	1753.85
222.83	9.1	1753.85
232.43	9.1	1753.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.22 WATERSHED INCHES; 4282 CFS-HRS; 353.9 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	44	21	15	12	10	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	3	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	950.6	(RUNOFF)
122.10	168.6	(RUNOFF)
143.10	23.4	(RUNOFF)
150.37	17.6	(RUNOFF)
155.19	14.7	(RUNOFF)
162.44	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.38	11.9	(RUNOFF)
222.82	9.1	(RUNOFF)
232.02	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 4612 CFS-HRS; 381.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	23	12	9	7	6	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 8.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	1812.3	1759.91
143.11	46.6	1754.45
150.60	35.1	1754.27
155.13	29.4	1754.18
162.71	29.5	1754.18
167.10	23.7	1754.08
174.64	23.8	1754.08
210.59	18.1	1753.99
222.83	18.2	1753.99
232.27	18.2	1753.99

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS									
91.80	CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60	CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40	CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20	CFS	9.63	9.93	9.96	10.13	15.59	16.83	16.94	17.16
111.00	CFS	23.36	24.87	25.02	25.30	37.76	40.76	41.06	41.78
115.80	CFS	73	81	82	129	1438	1775	1812	1783
120.60	CFS	645	351	320	316	191	160	156	155
125.40	CFS	123	114	113	112	96	92	91	91
130.20	CFS	73.72	69.24	68.75	68.34	51.17	46.57	46.06	45.87
135.00	CFS	41.63	40.52	40.39	40.38	40.46	40.49	40.49	40.52
139.80	CFS	45.08	46.27	46.40	46.42	46.54	46.57	46.57	46.10

144.60 CFS	33.13	29.63	29.24	29.19	29.23	29.24	29.24	29.31
149.40 CFS	33.82	35.02	35.15	35.02	30.67	29.51	29.38	29.37
154.20 CFS	29.41	29.42	29.42	29.39	24.89	23.72	23.59	23.58
159.00 CFS	23.60	23.61	23.61	23.75	28.21	29.41	29.54	29.48
163.80 CFS	25.02	23.84	23.71	23.69	23.71	23.72	23.72	23.56
168.60 CFS	19.14	17.97	17.83	17.82	17.83	17.83	17.83	17.86
173.40 CFS	22.46	23.66	23.79	23.69	19.22	18.03	17.90	17.88
178.20 CFS	17.89	17.89	17.89	17.90	17.91	17.91	17.91	17.91
183.00 CFS	17.93	17.93	17.93	17.93	17.95	17.95	17.95	17.95
187.80 CFS	17.96	17.97	17.97	17.97	17.98	17.99	17.99	17.85
192.60 CFS	13.36	12.15	12.02	12.17	16.66	17.86	18.00	17.92
197.40 CFS	13.38	12.17	12.04	12.11	16.67	17.89	18.03	17.91
202.20 CFS	13.38	12.19	12.06	12.04	12.05	12.05	12.05	12.05
207.00 CFS	12.05	12.05	12.05	12.20	16.72	17.94	18.08	17.94
211.80 CFS	13.44	12.23	12.09	12.08	12.08	12.08	12.08	12.08
216.60 CFS	12.09	12.09	12.09	12.09	12.09	12.10	12.10	12.24
221.40 CFS	16.79	18.00	18.14	18.12	13.47	12.27	12.13	12.12
226.20 CFS	12.12	12.12	12.12	12.12	12.13	12.13	12.13	12.22
231.00 CFS	16.83	18.06	18.19	18.11	13.52	12.30	12.17	12.15
235.80 CFS	12.15	12.16	12.16	11.88	2.76	.31		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.46 WATERSHED INCHES; 8894 CFS-HRS; 735.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	42	25	18	14	12	1	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
246 CFS-HRS; 735.0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 107. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	1812.3	1757.02
143.11	46.6	1750.09
150.60	35.1	1749.91
155.13	29.4	1749.76
162.71	29.5	1749.77
167.10	23.7	1749.62
174.64	23.8	1749.62
210.59	18.1	1749.47
222.83	18.2	1749.47
232.27	18.2	1749.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40 CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20 CFS	9.63	9.93	9.96	10.13	15.59	16.83	16.94	17.16
111.00 CFS	23.36	24.87	25.02	25.30	37.76	40.76	41.06	41.78
115.80 CFS	73	81	82	129	1438	1775	1812	1783
120.60 CFS	645	351	320	316	191	160	156	155
125.40 CFS	123	114	113	112	96	92	91	91
130.20 CFS	73.72	69.24	68.75	68.34	51.17	46.57	46.06	45.87
135.00 CFS	41.63	40.52	40.39	40.38	40.46	40.49	40.49	40.52
139.80 CFS	45.08	46.27	46.40	46.42	46.54	46.57	46.57	46.10
144.60 CFS	33.13	29.63	29.24	29.19	29.23	29.24	29.24	29.31
149.40 CFS	33.82	35.02	35.15	35.02	30.67	29.51	29.38	29.37
154.20 CFS	29.41	29.42	29.42	29.39	24.89	23.72	23.59	23.58
159.00 CFS	23.60	23.61	23.61	23.75	28.21	29.41	29.54	29.48
163.80 CFS	25.02	23.84	23.71	23.69	23.71	23.72	23.72	23.56
168.60 CFS	19.14	17.97	17.83	17.82	17.83	17.83	17.83	17.86
173.40 CFS	22.46	23.66	23.79	23.69	19.22	18.03	17.90	17.88
178.20 CFS	17.89	17.89	17.89	17.90	17.91	17.91	17.91	17.91
183.00 CFS	17.93	17.93	17.93	17.93	17.95	17.95	17.95	17.95
187.80 CFS	17.96	17.97	17.97	17.97	17.98	17.99	17.99	17.85
192.60 CFS	13.36	12.15	12.02	12.17	16.66	17.86	18.00	17.92
197.40 CFS	13.38	12.17	12.04	12.11	16.67	17.89	18.03	17.91
202.20 CFS	13.38	12.19	12.06	12.04	12.05	12.05	12.05	12.05
207.00 CFS	12.05	12.05	12.05	12.20	16.72	17.94	18.08	17.94
211.80 CFS	13.44	12.23	12.09	12.08	12.08	12.08	12.08	12.08
216.60 CFS	12.09	12.09	12.09	12.09	12.09	12.10	12.10	12.24
221.40 CFS	16.79	18.00	18.14	18.12	13.47	12.27	12.13	12.12
226.20 CFS	12.12	12.12	12.12	12.12	12.13	12.13	12.13	12.22
231.00 CFS	16.83	18.06	18.19	18.11	13.52	12.30	12.17	12.15
235.80 CFS	12.15	12.16	12.16	11.88	2.76	.31		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.46 WATERSHED INCHES; 8894 CFS-HRS; 735.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	42	25	18	14	12	1	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	4571.2	1761.30
141.01	231.0	1751.70
142.41	231.2	1751.71
150.37	199.9	1751.49
162.35	182.1	1751.36
174.30	163.5	1751.23
195.89	139.5	1751.06
199.96	132.1	1751.01
210.12	83.8	1750.49
222.59	70.4	1750.35

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.94	3.26	3.28	3.32	5.71	6.15	6.18	6.28
101.40 CFS	9.97	10.68	10.72	10.80	13.59	14.17	14.21	14.27
106.20 CFS	17.74	18.47	18.52	18.86	30.45	32.91	33.11	33.52
111.00 CFS	47.68	50.74	51.00	52.06	81.08	87.26	87.76	90.54
115.80 CFS	165	181	183	297	3693	4448	4571	4468
120.60 CFS	1584	970	918	903	586	519	513	510
125.40 CFS	423	405	403	401	358	349	348	346
130.20 CFS	301	292	291	289	243	232	231	231
135.00 CFS	219	217	217	216	217	216	216	217
139.80 CFS	228	231	231	231	231	231	231	230
144.60 CFS	194	187	186	186	186	185	185	185
149.40 CFS	197	200	200	199	187	185	184	184
154.20 CFS	184	184	184	183	171	169	168	168
159.00 CFS	168	168	167	168	180	182	182	181
163.80 CFS	169	167	166	166	166	166	166	165
168.60 CFS	153	150	150	149	149	149	149	149
173.40 CFS	161	163	163	163	151	148	147	147
178.20 CFS	147	147	146	146	146	146	145	145
183.00 CFS	145	145	144	144	144	144	143	143
187.80 CFS	143	143	143	142	142	142	141	141
192.60 CFS	128	125	125	125	137	139	139	139
197.40 CFS	126	123	123	123	132	129	124	120
202.20 CFS	104	97	94	90	87	84	82	79
207.00 CFS	77.00	74.89	72.93	71.65	82.27	83.79	83.12	81.88
211.80 CFS	68.84	65.10	63.72	62.59	61.56	60.60	59.71	58.88
216.60 CFS	58.13	57.43	56.96	56.51	56.11	55.71	55.33	55.31
221.40 CFS	67.51	70.11	70.43	70.09	57.86	55.05	54.53	54.21
226.20 CFS	53.93	53.66	53.39	53.14	52.92	52.70	52.49	52.73
231.00 CFS	65.00	67.77	68.23	67.93	55.93	53.17	52.76	52.54

235.80 CFS	52.36	52.17	51.99	50.91	25.93	19.82	18.41	17.42
240.60 CFS	16.50	15.63	14.80	14.02	13.28	12.58	11.91	11.28
245.40 CFS	10.69	10.12	9.59	9.08	8.60	8.15	7.71	7.31
250.20 CFS	6.92	6.55	6.21	5.88	5.57	5.27	5.00	4.73
255.00 CFS	4.48	4.24	4.02	3.81	3.61	3.42	3.24	3.06
259.80 CFS	2.90	2.75	2.60	2.47	2.34	2.21	2.10	1.98
264.60 CFS	1.88	1.78	1.69	1.60	1.51	1.43	1.36	1.29
269.40 CFS	1.22	1.15	1.09	1.03	.98	.93	.88	.83
274.20 CFS	.79	.75	.71	.67	.63	.60	.57	.54
279.00 CFS	.51	.48						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.97 WATERSHED INCHES; 32127 CFS-HRS; 2655.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	187
FLOW(CFS)	217	167	143	77	53	10	2	0

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
130.76	294.2	1710.34

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
91.80 CFS	.00	.01	.01	.01	.02	.02	.03	.03
96.60 CFS	.05	.06	.08	.10	.13	.16	.20	.23
101.40 CFS	.28	.34	.40	.46	.53	.61	.69	.76
106.20 CFS	.85	.96	1.06	1.16	1.30	1.48	1.66	1.85
111.00 CFS	2.07	2.35	2.64	2.92	3.29	3.77	4.26	4.76
115.80 CFS	5	6	7	9	20	125	252	270
120.60 CFS	281	284	286	288	290	290	291	292
125.40 CFS	292	293	293	293	294	294	294	294
130.20 CFS	294	294	294	294	294	294	294	294
135.00 CFS	293	293	293	293	293	292	292	292
139.80 CFS	292	291	291	291	291	291	290	290
144.60 CFS	290	290	289	289	289	288	288	288
149.40 CFS	287	287	287	287	286	286	286	285
154.20 CFS	285	285	284	284	284	283	283	283
159.00 CFS	282	282	281	281	281	280	280	280
163.80 CFS	279	279	279	278	278	278	277	277
168.60 CFS	276	276	275	275	274	274	273	273
173.40 CFS	272	272	271	271	270	270	269	269
178.20 CFS	268	268	267	267	266	266	265	265
183.00 CFS	264	264	263	263	262	262	261	261
187.80 CFS	260	260	259	259	258	258	257	257
192.60 CFS	256	256	255	255	254	254	253	253
197.40 CFS	252	252	251	250	250	249	249	248
202.20 CFS	248	247	247	246	245	245	244	239
207.00 CFS	231	223	215	208	201	195	189	184
211.80 CFS	178	172	167	162	156	152	147	142

216.60 CFS	138	134	130	126	123	119	116	113
221.40 CFS	110	108	106	104	102	100	98	95
226.20 CFS	93.20	91.18	89.24	87.39	85.63	83.94	82.33	80.81
231.00 CFS	79.68	79.00	78.43	77.90	77.08	75.92	74.74	73.61
235.80 CFS	72.52	71.48	70.48	69.51	67.91	65.60	63.21	60.88
240.60 CFS	58.63	56.44	54.32	52.27	50.29	48.37	46.51	44.72
245.40 CFS	42.99	41.31	39.70	38.14	36.63	35.18	33.78	32.43
250.20 CFS	31.13	29.88	28.67	27.51	26.39	25.31	24.28	23.28
255.00 CFS	22.32	21.40	21.39	21.38	21.37	21.37	21.36	21.35
259.80 CFS	21.34	21.33	21.32	21.31	21.30	21.29	21.28	21.27
264.60 CFS	21.26	21.25	21.25	21.24	21.23	21.22	21.21	21.20
269.40 CFS	21.19	21.18	21.17	21.16	21.15	21.14	21.13	21.12
274.20 CFS	21.11	21.10	21.09	21.08	21.07	21.06	21.05	21.04
279.00 CFS	21.03	21.02	21.01	21.00	20.99	20.98	20.97	20.96
283.80 CFS	20.95	20.94	20.93	20.92	20.91	20.90	20.89	20.88
288.60 CFS	20.87	20.86	20.85	20.84	20.83	20.82	20.81	20.80
293.40 CFS	20.79	20.78	20.77	20.76	20.74	20.73	20.72	20.71
298.20 CFS	20.70	20.69	20.68	20.67	20.66	20.65	20.64	20.63
303.00 CFS	20.62	20.61	20.60	20.59	20.58	20.57	20.56	20.55
307.80 CFS	20.54	20.53	20.52	20.51	20.50	20.49	20.48	20.47
312.60 CFS	20.46	20.45	20.44	20.43	20.42	20.41	20.40	20.31
317.40 CFS	20.20	20.08	19.96	19.84	19.73	19.61	19.50	19.38
322.20 CFS	19.27	19.16	19.04	18.93	18.82	18.71	18.60	18.49
327.00 CFS	18.38	18.28						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 30266 CFS-HRS; 2501.2 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	289	276	257	147	66	21	21	20

DURATION(HRS)	208	
FLOW(CFS)	18	TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 7.02 inches AND 237.60 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 3, ARC 2							
MAIN TIME INCREMENT .600 HOURS							
ALTERNATE 5 STORM 1							
XSECTION 101	RUNOFF	1.86	3.12	---	119.83	748	402.2
XSECTION 1	RUNOFF	1.20	3.01	---	119.62	467	389.2
XSECTION 1	ADDHYD	3.06	3.07	---	119.75	1240	405.2
XSECTION 2	RUNOFF	1.24	2.41	---	119.58	372	300.0
XSECTION 2	ADDHYD	4.30	2.88	---	119.73	1636	380.5
XSECTION 3	RUNOFF	1.85	3.12	---	119.73	777	420.0
XSECTION 3	ADDHYD	6.15	2.95	---	119.73	2412	392.2
STRUCTURE 1	RESVOR	6.15	2.63	1799.53	125.54	187	30.4
XSECTION 104	REACH	6.15	2.53	.51	123.60F	115F	18.7
XSECTION 4	RUNOFF	2.54	3.11	---	119.54	1030	405.5
XSECTION 4	ADDHYD	8.69	2.70	---	119.70	1208	139.0
XSECTION 106	REACH	8.69	2.70	2.81	119.70	1208	139.0
XSECTION 5	RUNOFF	2.00	3.40	---	119.20	900	450.0
XSECTION 5	ADDHYD	10.69	2.83	---	119.54	2027	189.6
XSECTION 6	RUNOFF	1.14	2.98	---	119.19	444	389.5
XSECTION 6	ADDHYD	11.83	2.85	---	119.50	2469	208.7
XSECTION 106	ADDHYD	.00	2.85	.24	125.54	72	********
XSECTION 7	RUNOFF	.96	2.42	---	119.10	295	307.3
XSECTION 7	ADDHYD	12.79	2.81	---	119.42	2759	215.7
XSECTION 10	RUNOFF	.67	2.81	---	119.72	250	373.1
XSECTION 109	REACH	.67	2.81	1766.99	119.72	250	373.1
XSECTION 9	RUNOFF	1.39	3.42	---	119.53	627	451.1
XSECTION 109	ADDHYD	2.06	3.22	1770.18	119.68	867	420.9
XSECTION 108	REACH	2.06	3.22	1757.97	119.68	867	420.9
XSECTION 8	RUNOFF	1.92	3.72	---	119.20	951	495.3
XSECTION 108	ADDHYD	3.98	3.46	1759.91	119.43	1812	455.3
XSECTION 109	ADDHYD	.00	3.46	---	.00	0	********
XSECTION 107	REACH	3.98	3.46	1757.02	119.43	1812	455.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 1							
XSECTION 107	ADDHYD	16.77	2.97	1761.30	119.43	4571	272.6
STRUCTURE 2	RESVOR	16.77	2.80	1710.34	130.76	294	17.5

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1203	120.0	1203	120.0	4.77	1.00	.029	1.000	1.00?
103	2500		1572	120.0	1572	120.0	4.77	1.00	.029	1.000	1.00?
104	6700		115	123.6	115	123.6	1.57	1.53	.000	1.000	1.00?
106	3700		1127	120.0	1127	120.0	1.04	1.59	.000	1.000	1.00?
109	2700		240	120.0	240	120.0	.29	1.46	.018	1.000	1.00?
108	2100		863	119.4	863	119.4	.71	1.44	.003	1.000	1.00?
107	5300		1812	119.4	1812	119.4	.56	1.37	.021	1.000	1.00?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE 2	16.77	
ALTERNATE 5		294
STRUCTURE 1	6.15	
ALTERNATE 5		187
XSECTION 1	3.06	
ALTERNATE 5		1240
XSECTION 2	4.30	
ALTERNATE 5		1636
XSECTION 3	6.15	
ALTERNATE 5		2412
XSECTION 4	8.69	
ALTERNATE 5		1208
XSECTION 5	10.69	
ALTERNATE 5		2027
XSECTION 6	11.83	
ALTERNATE 5		2469
XSECTION 7	12.79	
ALTERNATE 5		2759
XSECTION 8	1.92	
ALTERNATE 5		951
XSECTION 9	1.39	
ALTERNATE 5		627
XSECTION 10	.67	
ALTERNATE 5		250
XSECTION 101	1.86	
ALTERNATE 5		748
XSECTION 104	6.15	

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 104	6.15	
ALTERNATE 5		115
XSECTION 106	.00	
ALTERNATE 5		72
XSECTION 107	16.77	
ALTERNATE 5		4571
XSECTION 108	3.98	
ALTERNATE 5		1812
XSECTION 109	.00	
ALTERNATE 5		0

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = SBT2BTP2.DAT , GIVEN DATA FILE
OUTPUT = SBT2BTP2.OUT , DATED 09/18/**,09:31:38

FILES GENERATED - DATED 09/18/**,09:31:38

NONE!

TOTAL NUMBER OF WARNINGS = 20, MESSAGES = 2

JOB ENDED AT 09:31:38
*** TR-20 RUN COMPLETED ***

```
JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATEL
TITLE 000 ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBT2bTP4.DAT
 5 RAINFL 1            .5
 8          0.0        .008       .017       .026       .035
 8          .045       .055       .065       .076       .087
 8          .099       .112       .125       .14        .156
 8          .174       .194       .219       .254       .303
 8          .515       .583       .624       .654       .682
 8          .705       .727       .748       .767       .784
 8          .8         .816       .83        .844       .857
 8          .87        .882       .893       .905       .916
 8          .926       .936       .946       .955       .965
 8          .974       .983       .992       1.         1.
 9 ENDTBL
 5 RAINFL 2            .5
 8          0.0        .005       .011       .016       .022
 8          .028       .035       .041       .048       .056
 8          .063       .071       .081       .089       .098
 8          .109       .12        .133       .147       .163
 8          .181       .204       .235       .283       .663
 8          .735       .772       .799       .82        .838
 8          .854       .868       .88        .891       .902
 8          .912       .921       .929       .937       .945
 8          .952       .959       .965       .972       .978
 8          .984       .989       .995       1.         1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8          0.0        .002       .004       .006       .008
 8          .01        .012       .014       .016       .018
 8          .02        .022       .025       .027       .03
 8          .032       .035       .038       .04        .043
 8          .046       .049       .052       .055       .058
 8          .061       .064       .069       .072       .076
 8          .08        .084       .089       .093       .098
 8          .102       .108       .114       .121       .127
 8          .133       .143       .153       .164       .174
 8          .184       .198       .215       .238       .275
 8          .707       .765       .793       .813       .829
 8          .841       .849       .856       .863       .871
 8          .879       .884       .889       .895       .9
 8          .905       .909       .913       .918       .922
 8          .926       .929       .932       .936       .939
 8          .942       .945       .948       .951       .954
 8          .957       .959       .962       .964       .967
 8          .969       .971       .973       .976       .978
 8          .98        .982       .984       .987       .989
 8          .991       .993       .996       .998       1.
 9 ENDTBL
 5 RAINFL 4            .25
 8          0.0        .006       .011       .017       .028
 8          .041       .057       .075       .09        .562
 8          .697       .763       .807       .839       .873
 8          .907       .937       .948       .958       .968
 8          .979       .984       .989       1.         1.
 9 ENDTBL
```



```
 5 RAINFL 5            .5
 8          0.0        .004       .008       .011       .016
 8          .021       .027       .034       .044       .055
 8          .07        .088       .108       .137       .172
 8          .217       .273       .341       .42        .492
 8          .56        .618       .672       .717       .753
 8          .782       .807       .827       .845       .86
 8          .873       .885       .895       .903       .913
 8          .921       .93        .935       .943       .949
 8          .954       .96        .967       .972       .978
 8          .982       .989       .993       1.         1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       40.
 8                     3.         838.       60.
 8                     4.         1288.      80.
 8                     5.         1782.      120.
 8                     6.         2314.      130.
 8                     7.         2875.      140.
 8                     8.         3454.      160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0        0.0        0.0
 8                     1.5        441.       45.
 8                     2.5        995.       75.
 8                     3.5        1682.      105.
 8                     4.5        2468.      135.
 8                     5.5        3339.      165.
 8                     6.5        4272.      195.
 8                     7.5        5258.      225.
 8                     8.5        6296.      255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.      0.0        0.0
 8                     1750.      38.53      23.
```

```
8                    1751.       130.52      52.
8                    1752.       273.18      87.
8                    1753.       470.98      128.
8                    1754.       706.86      187.
8                    1755.       1005.62     240.
8                    1756.       1369.42     299.
8                    1757.       1801.8      364.
8                    1758.       2305.5      435.
8                    1759.       2892.8      512.
8                    1760.       3558.1      595.
8                    1761.       4316.04     684.
8                    1762.       5156.98     779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7      0.0         0.0
8                    1754.7      61.93       23.
8                    1755.7      209.35      52.
8                    1756.7      438.91      87.
8                    1757.7      757.01      128.
8                    1758.7      1167.41     175.
8                    1759.7      1678.56     228.
8                    1760.7      2302.39     287.
8                    1761.7      3038.91     352.
8                    1762.7      3894.74     435.
8                    1763.7      4647.76     512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6      0.0         0.0
8                    1764.6      27.47       23.
8                    1765.6      92.87       52.
8                    1766.6      194.7       87.
8                    1767.6      335.8       128.
8                    1768.6      503.22      187.
8                    1769.6      715.78      240.
8                    1770.6      974.81      299.
9 ENDTBL
3 STRUCT     01
8                    1791.94     0.00        0.0
8                    1793.       0.01        46.8
8                    1794.1      0.02        106.
8                    1794.5      26.3        130.
8                    1795.       74.4        161.2
8                    1795.14     91.2        170.7
8                    1796.       96.16       230.7
8                    1797.14     102.42      322.23
8                    1799.42     113.91      542.99
8                    1801.72     1650.       812.88
8                    1804.       7700.       1121.9
8                    1806.28     15200.      1470.09
8                    1808.57     26200.      1865.04
9 ENDTBL
3 STRUCT     02
8                    1696.       0.0         0.0
8                    1700.       40.8        172.1
8                    1701.4      42.8        273.25
8                    1704.       487.2       482.24
```



```
8                    1708.       553.6       871.3
8                    1710.       583.6       1101.52
8                    1710.5      590.8       1163.52
8                    1711.5      605.6       1294.09
8                    1712.2      616.        1390.2
8                    1712.5      620.        1432.05
8                    1712.6      624.        1446.11
8                    1713.5      858.        1578.77
8                    1714.5      1288.       1733.61
8                    1716.       2418.       1980.33
8                    1720.       7068.       2712.23
8                    1722.       9968.       3121.
8                    1724.       12868.      3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86      65.         1.21        1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2       64.         .67         1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                   1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                             0 0 0 0 0 0
6 RUNOFF 1   2       6 1.24      58.         .59         1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                   1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                             0 0 0 0 0 0
6 RUNOFF 1   3       6 1.85      65.         .91         1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                   1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                           1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.      1.                      0 0 0 0 0 0
6 REACH  3 104   4   5 6700.                             1 0 0 1 0 1
6 RUNOFF 1   4       6 2.54      65.         .54         1 0 0 1 0 1
6 ADDHYD 4   4   5 6 7                                   1 0 0 1 0 1
6 DIVERT 6 104   7 5 2 3454.      1.                      0 0 0 0 0 0
6 ADDHYD 4 104   1 2 4                                   0 0 0 0 0 0
6 REACH  3 106   5   3 3700.                             1 0 0 1 0 1
6 RUNOFF 1   5       6 2.        68.         .43         1 0 0 1 0 1
6 ADDHYD 4   5   3 6 7                                   1 0 0 1 0 1
6 DIVERT 6 106   7 5 2 6296.      1.                      0 0 0 0 0 0
6 RUNOFF 1   6       6 1.14      64.         .42         1 0 0 1 0 1
6 ADDHYD 4   6   5 6 7                                   1 0 0 1 0 1
6 SAVMOV 5   6   7   5
6 ADDHYD 4 106   4 2 7                                   1 1 0 1 0 1
6 SAVMOV 5 106   7   1
6 RUNOFF 1   7       6 .96       58.         .23         1 0 0 1 0 1
6 ADDHYD 4   7   5 6 7                                   1 1 0 1 0 1
6 SAVMOV 5   7   7   2
6 RUNOFF 1  10       7 .67       62.         .89         1 0 0 1 0 1
6 DIVERT 6 110   7 5 3 820.       1.                      0 0 0 0 0 0
6 REACH  3 109   5   4 2700.                             1 0 0 1 0 1
6 RUNOFF 1   9       6 1.39      68.         .55         1 0 0 1 0 1
6 ADDHYD 4 109   4 6 7                                   1 0 0 1 0 1
6 DIVERT 6 109   7 5 4 2546.      1.                      0 0 0 0 0 0
6 REACH  3 108   5   6 2100.                             1 0 0 1 0 1
6 RUNOFF 1   8       5 1.92      71.         .42         1 0 0 1 0 1
6 ADDHYD 4 108   5 6 7                                   1 1 0 1 0 1
6 ADDHYD 4 109   3 4 5                                   1 1 0 1 0 1
6 SAVMOV 5 106   5   3
6 DIVERT 6 108   7 5 4 5253.      1.                      0 0 0 0 0 0
6 REACH  3 107   5   6 5300.                             1 1 0 1 0 1
```

```
***********   ********80-80 LIST OF INPUT DATA (CONTINUED)*********************

 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                  1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                            1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .60
 7 COMPUT 7 101       2            7.02        1.0        3 2  05  01
   ENDCMP 1
   ENDJOB 2

*******************************END OF 80-80 LIST******************************
```

```
TR20 ------------------------------------------------------------ ------ SCS -
        SIGNAL BUTTE FRS W/PASS MTN DIVERSION - RECREATED BY WOOD/PATE VERSION
09/18/**  ORIGINAL DESIGN CONDITIONS + NEW STAGE-STORAGE CURVES SBTR20bT2.04TEST
09:31:57                    PASS   1   JOB NO.   1                      PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .600 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  7.02       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .600 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1            RAIN TABLE NO. = 3


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
      119.83                          748.1                        (RUNOFF)
      143.41                           20.6                        (RUNOFF)
      151.01                           15.6                        (RUNOFF)
      155.41                           13.0                        (RUNOFF)
      163.01                           13.1                        (RUNOFF)
      167.18                           10.5                        (RUNOFF)
      175.01                           10.6                        (RUNOFF)
      191.20                            8.0                        (RUNOFF)
      223.00                            8.1                        (RUNOFF)
      232.61                            8.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  3.12 WATERSHED INCHES;    3739 CFS-HRS;     309.0 ACRE-FEET.

    DURATION(HRS)  12     24     36     48     60     72     84     96
    FLOW(CFS)      38     19     13     11      8      8      8      6

    DURATION(HRS) 108    120    132    136
    FLOW(CFS)       5      5      2      0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
      119.62                          467.3                        (RUNOFF)
      143.12                           13.0                        (RUNOFF)
      150.79                            9.8                        (RUNOFF)
      155.12                            8.2                        (RUNOFF)
      162.90                            8.4                        (RUNOFF)
      167.13                            6.7                        (RUNOFF)
      174.81                            6.7                        (RUNOFF)
      210.79                            5.1                        (RUNOFF)
      222.85                            5.1                        (RUNOFF)
      232.50                            5.3                        (RUNOFF)
```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.01 WATERSHED INCHES; 2329 CFS-HRS; 192.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	23	12	8	7	5	5	5	4

DURATION(HRS)	108	120	132	133
FLOW(CFS)	3	3	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.67) FOR SUBWATERSHED XSECTION 1.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%. ***

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.75	1239.7	(NULL)
143.22	33.6	(NULL)
150.94	25.5	(NULL)
155.20	21.3	(NULL)
162.94	21.5	(NULL)
167.16	17.2	(NULL)
174.94	17.4	(NULL)
210.94	13.3	(NULL)
222.94	13.3	(NULL)
232.55	13.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.07 WATERSHED INCHES; 6068 CFS-HRS; 501.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	59	31	21	17	13	13	13	11

DURATION(HRS)	108	120	132	137
FLOW(CFS)	9	9	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 102. ***

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.58	371.7	(RUNOFF)
143.12	11.8	(RUNOFF)
150.79	8.9	(RUNOFF)
155.20	7.5	(RUNOFF)
162.80	7.6	(RUNOFF)
167.11	6.1	(RUNOFF)
174.70	6.1	(RUNOFF)
210.78	4.7	(RUNOFF)
222.69	4.7	(RUNOFF)
232.29	4.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.41 WATERSHED INCHES; 1932 CFS-HRS; 159.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	10	8	6	5	5	5	3

DURATION(HRS)	108	120	125	
FLOW(CFS)	3	3	0	

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.59) FOR SUBWATERSHED XSECTION 2.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	1635.8	(NULL)
143.18	45.4	(NULL)
150.92	34.6	(NULL)
155.20	28.8	(NULL)
162.93	29.2	(NULL)
167.14	23.3	(NULL)
174.92	23.6	(NULL)
210.92	18.1	(NULL)
222.92	18.2	(NULL)
232.52	18.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.88 WATERSHED INCHES; 8000 CFS-HRS; 661.1 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	78	40	29	23	18	18	18	13

DURATION(HRS)	108	120	132	137
FLOW(CFS)	12	12	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 103. ***

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	776.5	(RUNOFF)
143.52	20.5	(RUNOFF)
150.92	15.6	(RUNOFF)
155.48	13.0	(RUNOFF)
162.92	13.2	(RUNOFF)
167.25	10.5	(RUNOFF)
174.92	10.6	(RUNOFF)
210.92	8.1	(RUNOFF)
222.92	8.2	(RUNOFF)
232.52	8.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.12 WATERSHED INCHES; 3719 CFS-HRS; 307.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	36	19	13	11	8	8	8	6

DURATION(HRS)	108	120	132	136
FLOW(CFS)	5	5	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.91) FOR SUBWATERSHED XSECTION 3.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.8%. ***

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	2412.3	(NULL)
143.20	65.9	(NULL)
150.92	50.2	(NULL)
155.23	41.8	(NULL)
162.93	42.4	(NULL)
167.16	33.8	(NULL)
174.92	34.2	(NULL)
210.92	26.2	(NULL)
222.92	26.4	(NULL)
232.52	26.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
101.40 CFS	.38	.86	1.00	1.04	1.95	2.89	3.15	3.23
106.20 CFS	4.17	5.12	5.38	5.47	7.85	10.33	11.00	11.20

111.00 CFS	14.57	17.94	18.83	19.14	26.93	33.98	35.81	36.52
115.80 CFS	57	76	81	95	1148	2045	2273	2319
120.60 CFS	1448	692	500	452	336	247	225	219
125.40 CFS	190	166	160	158	144	132	129	128
130.20 CFS	113	101	98	97	82	69	66	65
135.00 CFS	61.17	58.03	57.24	57.05	57.11	57.18	57.20	57.25
139.80 CFS	61.22	64.55	65.38	65.58	65.77	65.89	65.92	65.79
144.60 CFS	54.24	44.54	42.12	41.54	41.44	41.44	41.45	41.51
149.40 CFS	45.47	48.78	49.61	49.76	45.96	42.75	41.95	41.75
154.20 CFS	41.75	41.78	41.78	41.76	37.81	34.58	33.77	33.57
159.00 CFS	33.55	33.56	33.57	33.60	37.64	40.95	41.78	41.95
163.80 CFS	38.04	34.79	33.98	33.78	33.76	33.77	33.77	33.74
168.60 CFS	29.75	26.46	25.64	25.44	25.41	25.41	25.41	25.46
173.40 CFS	29.48	32.82	33.66	33.81	29.89	26.59	25.76	25.56
178.20 CFS	25.52	25.52	25.52	25.52	25.54	25.56	25.56	25.56
183.00 CFS	25.58	25.59	25.59	25.59	25.61	25.62	25.62	25.63
187.80 CFS	25.64	25.66	25.66	25.66	25.68	25.69	25.69	25.64
192.60 CFS	21.61	18.26	17.42	17.25	21.28	24.63	25.48	25.66
197.40 CFS	21.63	18.29	17.45	17.27	21.34	24.69	25.54	25.71
202.20 CFS	21.68	18.33	17.49	17.29	17.24	17.24	17.24	17.24
207.00 CFS	17.24	17.25	17.25	17.29	21.40	24.78	25.63	25.79
211.80 CFS	21.76	18.40	17.56	17.35	17.31	17.30	17.30	17.30
216.60 CFS	17.31	17.31	17.31	17.31	17.32	17.33	17.33	17.38
221.40 CFS	21.51	24.90	25.75	25.90	21.85	18.48	17.64	17.43
226.20 CFS	17.39	17.38	17.38	17.38	17.39	17.39	17.39	17.43
231.00 CFS	21.58	24.99	25.84	26.01	21.94	18.55	17.70	17.49
235.80 CFS	17.45	17.44	17.44	17.34	9.11	2.26	.54	.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.95 WATERSHED INCHES; 11719 CFS-HRS; 968.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	113	58	42	34	26	26	25	19

DURATION(HRS)	108	120	132	138
FLOW(CFS)	17	17	4	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	186.8	1799.53
223.52	23.8	1794.46
233.48	21.7	1794.43

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
117.00 CFS	0	0	0	35	97	104	108	111
121.80 CFS	112	113	114	144	167	181	187	184
126.60 CFS	179	174	168	161	153	147	141	132
131.40 CFS	124	117	114	114	114	114	113	113
136.20 CFS	113	113	113	113	113	112	112	112
141.00 CFS	112	112	112	112	112	111	111	111
145.80 CFS	111	111	111	110	110	110	110	110
150.60 CFS	110	109	109	109	109	109	109	108
155.40 CFS	108	108	108	108	108	107	107	107
160.20 CFS	107	107	106	106	106	106	106	106
165.00 CFS	105	105	105	105	105	104	104	104
169.80 CFS	104	104	103	103	103	103	103	102
174.60 CFS	102	102	102	102	101	101	101	100
179.40 CFS	100	100	100	99	99	99	99	98
184.20 CFS	98.24	98.00	97.75	97.51	97.27	97.02	96.78	96.54
189.00 CFS	96.30	96.04	95.75	95.47	95.18	94.90	94.61	94.30
193.80 CFS	93.99	93.67	93.37	93.08	92.80	92.53	92.25	91.95
198.60 CFS	91.65	91.34	88.09	82.62	77.79	73.53	69.86	66.19
203.40 CFS	62.63	59.30	56.21	53.34	50.68	48.22	45.94	43.82
208.20 CFS	41.87	40.06	38.53	37.39	36.50	35.70	34.82	33.74
213.00 CFS	32.58	31.46	30.42	29.46	28.56	27.73	26.97	26.27
217.80 CFS	25.79	25.35	24.92	24.52	24.14	23.78	23.55	23.53
222.60 CFS	23.63	23.74	23.75	23.56	23.27	22.97	22.67	22.39
227.40 CFS	22.13	21.88	21.64	21.42	21.20	21.00	20.92	21.05
232.20 CFS	21.28	21.52	21.65	21.58	21.40	21.20	21.00	20.81
237.00 CFS	20.63	20.46	20.08	19.32	18.37	17.42	16.50	15.63
241.80 CFS	14.80	14.02	13.28	12.58	11.91	11.28	10.69	10.12
246.60 CFS	9.59	9.08	8.60	8.15	7.71	7.31	6.92	6.55
251.40 CFS	6.21	5.88	5.57	5.27	5.00	4.73	4.48	4.24
256.20 CFS	4.02	3.81	3.61	3.42	3.24	3.06	2.90	2.75
261.00 CFS	2.60	2.47	2.34	2.21	2.10	1.98	1.88	1.78
265.80 CFS	1.69	1.60	1.51	1.43	1.36	1.29	1.22	1.15
270.60 CFS	1.09	1.03	.98	.93	.88	.83	.79	.75
275.40 CFS	.71	.67	.63	.60	.57	.54	.51	.48
280.20 CFS	.46	.43	.41	.39	.37	.35	.33	.31
285.00 CFS	.30	.28	.27	.25	.24	.23	.21	.20
289.80 CFS	.19	.18	.17	.16	.15	.15	.14	.13
294.60 CFS	.12	.12	.11	.11	.10	.09	.09	.09
299.40 CFS	.08	.08	.07	.07	.06	.06	.06	.06
304.20 CFS	.05	.05	.05	.04	.04	.04	.04	.04
309.00 CFS	.03	.03	.03	.03	.03	.03	.02	.02
313.80 CFS	.02	.02	.02	.02	.02	.02	.02	.02
318.60 CFS	.02	.02	.02	.02	.02	.02	.02	.02
323.40 CFS	.02	.02	.02	.02	.02	.02	.02	.02
328.20 CFS	.02	.02	.02	.02	.02	.02	.02	.02
333.00 CFS	.02	.02	.02	.02	.02	.02	.02	.02
337.80 CFS	.02	.02	.02	.02				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.63 WATERSHED INCHES; 10436 CFS-HRS; 862.4 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	161
FLOW(CFS)	111	104	95	29	19	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 104. ***

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
123.60	115.0 *	.51
223.52	23.8	.11
233.48	21.7	.10

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.53 WATERSHED INCHES; 10053 CFS-HRS; 830.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	161
FLOW(CFS)	111	104	95	29	19	2	0

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	1029.9	(RUNOFF)
143.11	28.1	(RUNOFF)
150.76	21.2	(RUNOFF)
155.14	17.8	(RUNOFF)
162.62	17.9	(RUNOFF)
167.06	14.4	(RUNOFF)
174.79	14.4	(RUNOFF)
210.76	11.0	(RUNOFF)
222.63	11.0	(RUNOFF)
232.23	11.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.11 WATERSHED INCHES; 5098 CFS-HRS; 421.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	53	25	18	14	11	11	11	8

DURATION(HRS)	108	120	132	137
FLOW(CFS)	7	7	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.54) FOR SUBWATERSHED XSECTION 4.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1208.0	(NULL)
140.64	140.1	(NULL)
150.21	130.9	(NULL)
162.20	124.1	(NULL)
174.16	116.8	(NULL)
195.70	104.0	(NULL)
209.56	48.8	(NULL)
222.91	35.1	(NULL)
232.54	32.8	(NULL)

*** WARNING - XSECTION 4, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1207.99) EXCEEDS ADJACENT COORDINATE (1127.25) BY 7 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 15151 CFS-HRS; 1252.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	178
FLOW(CFS)	137	119	107	39	28	5	1	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1208.0	2.81
140.64	140.1	.48
150.21	130.9	.45
162.20	124.1	.42
174.16	116.8	.40
195.70	104.0	.35
209.56	48.8	.17
222.91	35.1	.12
232.54	32.8	.11

*** WARNING - XSECTION 106, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1207.99) EXCEEDS ADJACENT COORDINATE (1127.25) BY 7 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 15151 CFS-HRS; 1252.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	178
FLOW(CFS)	137	119	107	39	28	5	1	0

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	900.4	(RUNOFF)
143.11	23.2	(RUNOFF)
150.53	17.5	(RUNOFF)
155.10	14.7	(RUNOFF)
162.40	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.39	11.9	(RUNOFF)
210.41	9.0	(RUNOFF)
222.39	9.1	(RUNOFF)
231.99	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.40 WATERSHED INCHES; 4392 CFS-HRS; 363.0 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	45	21	15	12	9	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	4	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.43) FOR SUBWATERSHED XSECTION 5.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	2027.3	(NULL)
142.06	163.1	(NULL)
150.25	148.5	(NULL)
162.25	138.9	(NULL)
174.22	128.8	(NULL)
195.79	113.0	(NULL)
199.70	106.9	(NULL)
209.70	57.4	(NULL)
222.74	43.7	(NULL)
232.51	42.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.83 WATERSHED INCHES; 19543 CFS-HRS; 1615.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	157	131	116	49	35	7	1	0

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.19	444.2	(RUNOFF)
143.10	12.3	(RUNOFF)
150.89	9.3	(RUNOFF)
155.10	7.8	(RUNOFF)
162.37	7.9	(RUNOFF)
167.15	6.3	(RUNOFF)
174.44	6.3	(RUNOFF)
210.41	4.8	(RUNOFF)
222.38	4.9	(RUNOFF)
231.99	4.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.98 WATERSHED INCHES; 2193 CFS-HRS; 181.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	11	8	6	5	5	5	3

DURATION(HRS)	108	120	132
FLOW(CFS)	3	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 6.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.50	2469.3	(NULL)
137.13	168.1	(NULL)
142.19	175.4	(NULL)
150.27	157.9	(NULL)
162.26	146.7	(NULL)
174.24	135.1	(NULL)
195.81	117.8	(NULL)
199.77	111.4	(NULL)
209.82	62.2	(NULL)
222.65	48.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.85 WATERSHED INCHES; 21737 CFS-HRS; 1796.3 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	168	138	121	53	38	7	1	0

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	71.8	.24

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
123.00 CFS	.00	29.45	52.08	65.68	71.58	69.43	64.13	59.20
127.80 CFS	53.49	45.91	38.36	32.19	25.60	17.28	9.11	2.47
132.60 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
383 CFS-HRS; 31.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	9
FLOW(CFS)	62	48	29	7	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.10	294.7	(RUNOFF)
128.70	17.9	(RUNOFF)
143.10	9.3	(RUNOFF)
150.30	7.0	(RUNOFF)
155.10	5.9	(RUNOFF)
162.30	6.0	(RUNOFF)
167.02	4.8	(RUNOFF)
174.30	4.8	(RUNOFF)
222.30	3.7	(RUNOFF)
231.90	3.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.42 WATERSHED INCHES; 1497 CFS-HRS; 123.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	17	8	6	5	4	4	4	2

DURATION(HRS)	108	120	125
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.3%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.42	2758.9	(NULL)
137.25	176.1	(NULL)
142.27	184.6	(NULL)
150.27	164.9	(NULL)
162.26	152.7	(NULL)
174.24	139.9	(NULL)
195.82	121.5	(NULL)
199.81	115.0	(NULL)
209.86	65.9	(NULL)
222.52	52.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
98.40 CFS	.45	1.36	1.50	1.51	1.53	3.24	3.55	3.57
103.20 CFS	3.62	5.54	5.93	5.96	6.01	8.11	8.53	8.56
108.00 CFS	8.74	14.87	16.08	16.16	16.36	24.31	25.87	25.98
112.80 CFS	27	43	46	47	49	92	100	101
117.60 CFS	168	2256	2672	2759	2685	939	619	599
122.40 CFS	587	395	359	357	354	301	291	290
127.20 CFS	289	262	257	257	255	228	222	222
132.00 CFS	221	191	186	185	185	178	176	176

136.80 CFS	176	176	176	176	176	183	185	185
141.60 CFS	184	185	185	184	183	161	157	157
146.40 CFS	156	156	156	156	156	164	165	165
151.20 CFS	164	157	155	155	155	155	155	154
156.00 CFS	154	146	145	145	144	144	144	144
160.80 CFS	144	151	153	152	152	144	143	143
165.60 CFS	142	142	142	142	141	134	132	132
170.40 CFS	132	131	131	131	131	139	140	140
175.20 CFS	139	131	130	129	129	129	129	128
180.00 CFS	128	128	128	127	127	127	127	126
184.80 CFS	126	126	126	126	125	125	125	125
189.60 CFS	124	124	124	124	123	115	113	113
194.40 CFS	113	120	121	121	121	113	111	111
199.20 CFS	111	115	111	106	102	90	85	82
204.00 CFS	78.28	75.20	72.33	69.68	67.21	64.94	62.83	60.88
208.80 CFS	59.45	65.55	65.84	65.04	63.94	55.40	52.88	51.63
213.60 CFS	50.51	49.48	48.52	47.63	46.80	46.04	45.34	44.87
218.40 CFS	44.42	44.01	43.61	43.23	43.07	50.72	52.10	52.29
223.20 CFS	51.96	44.39	42.79	42.40	42.10	41.81	41.54	41.27
228.00 CFS	41.02	40.79	40.57	40.36	40.52	48.17	49.71	50.04
232.80 CFS	49.82	42.41	40.87	40.59	40.39	40.20	40.02	39.84
237.60 CFS	39.03	23.17	19.51	18.37	17.42	16.50	15.63	14.80
242.40 CFS	14.02	13.28	12.58	11.91	11.28	10.69	10.12	9.59
247.20 CFS	9.08	8.60	8.15	7.71	7.31	6.92	6.55	6.21
252.00 CFS	5.88	5.57	5.27	5.00	4.73	4.48	4.24	4.02
256.80 CFS	3.81	3.61	3.42	3.24	3.06	2.90	2.75	2.60
261.60 CFS	2.47	2.34	2.21	2.10	1.98	1.88	1.78	1.69
266.40 CFS	1.60	1.51	1.43	1.36	1.29	1.22	1.15	1.09
271.20 CFS	1.03	.98	.93	.88	.83	.79	.75	.71
276.00 CFS	.67	.63	.60	.57	.54	.51	.48	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 23233 CFS-HRS; 1920.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	176	142	124	55	41	7	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	250.3	(RUNOFF)
143.24	7.0	(RUNOFF)
150.92	5.3	(RUNOFF)
155.27	4.4	(RUNOFF)
162.92	4.5	(RUNOFF)
167.25	3.6	(RUNOFF)
174.92	3.6	(RUNOFF)
210.92	2.8	(RUNOFF)
222.92	2.8	(RUNOFF)
232.52	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1217 CFS-HRS; 100.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	12	6	4	4	3	3	3	2

DURATION(HRS)	108	120	130
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.89) FOR SUBWATERSHED XSECTION 10.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.7%. ***

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 109. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	250.3	1766.99
143.24	7.0	1763.85
150.92	5.3	1763.79
155.27	4.4	1763.76
162.92	4.5	1763.76
167.25	3.6	1763.73
174.92	3.6	1763.73
210.92	2.8	1763.70
222.92	2.8	1763.70
232.52	2.8	1763.70

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1217 CFS-HRS; 100.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	12	6	4	4	3	3	3	2

DURATION(HRS)	108	120	130
FLOW(CFS)	2	2	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.53	626.6	(RUNOFF)
143.11	16.2	(RUNOFF)
150.70	12.2	(RUNOFF)
155.11	10.2	(RUNOFF)
162.78	10.3	(RUNOFF)
167.10	8.3	(RUNOFF)
174.87	8.3	(RUNOFF)
210.66	6.3	(RUNOFF)
222.64	6.3	(RUNOFF)
232.23	6.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.42 WATERSHED INCHES; 3066 CFS-HRS; 253.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	32	14	10	8	7	6	6	5

DURATION(HRS)	108	120	132	140
FLOW(CFS)	4	4	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.55) FOR SUBWATERSHED XSECTION 9.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.68	867.0	1770.18
143.12	23.2	1764.44
150.88	17.5	1764.24
155.12	14.7	1764.13
162.90	15.0	1764.15
167.11	11.9	1764.03
174.90	12.1	1764.04
210.85	9.1	1763.93
222.83	9.1	1763.93
232.43	9.1	1763.93

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.22 WATERSHED INCHES; 4282 CFS-HRS; 353.9 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	44	21	15	12	10	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	3	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.68	867.0	1757.97
143.12	23.2	1754.07
150.88	17.5	1753.98
155.12	14.7	1753.94
162.90	15.0	1753.94
167.11	11.9	1753.89
174.90	12.1	1753.90
210.85	9.1	1753.85
222.83	9.1	1753.85
232.43	9.1	1753.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.22 WATERSHED INCHES; 4282 CFS-HRS; 353.9 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	44	21	15	12	10	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	3	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	950.6	(RUNOFF)
122.10	168.6	(RUNOFF)
143.10	23.4	(RUNOFF)
150.37	17.6	(RUNOFF)
155.19	14.7	(RUNOFF)
162.44	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.38	11.9	(RUNOFF)
222.82	9.1	(RUNOFF)
232.02	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 4612 CFS-HRS; 381.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	23	12	9	7	6	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 8.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	1812.3	1759.91
143.11	46.6	1754.45
150.60	35.1	1754.27
155.13	29.4	1754.18
162.71	29.5	1754.18
167.10	23.7	1754.08
174.64	23.8	1754.08
210.59	18.1	1753.99
222.83	18.2	1753.99
232.27	18.2	1753.99

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40 CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20 CFS	9.63	9.93	9.96	10.13	15.59	16.83	16.94	17.16
111.00 CFS	23.36	24.87	25.02	25.30	37.76	40.76	41.06	41.78
115.80 CFS	73	81	82	129	1438	1775	1812	1783
120.60 CFS	645	351	320	316	191	160	156	155
125.40 CFS	123	114	113	112	96	92	91	91
130.20 CFS	73.72	69.24	68.75	68.34	51.17	46.57	46.06	45.87
135.00 CFS	41.63	40.52	40.39	40.38	40.46	40.49	40.49	40.52
139.80 CFS	45.08	46.27	46.40	46.42	46.54	46.57	46.57	46.10

144.60 CFS	33.13	29.63	29.24	29.19	29.23	29.24	29.24	29.31
149.40 CFS	33.82	35.02	35.15	35.02	30.67	29.51	29.38	29.37
154.20 CFS	29.41	29.42	29.42	29.39	24.89	23.72	23.59	23.58
159.00 CFS	23.60	23.61	23.61	23.75	28.21	29.41	29.54	29.48
163.80 CFS	25.02	23.84	23.71	23.69	23.71	23.72	23.72	23.56
168.60 CFS	19.14	17.97	17.83	17.82	17.83	17.83	17.83	17.86
173.40 CFS	22.46	23.66	23.79	23.69	19.22	18.03	17.90	17.88
178.20 CFS	17.89	17.89	17.89	17.90	17.91	17.91	17.91	17.91
183.00 CFS	17.93	17.93	17.93	17.93	17.95	17.95	17.95	17.95
187.80 CFS	17.96	17.97	17.97	17.97	17.98	17.99	17.99	17.85
192.60 CFS	13.36	12.15	12.02	12.17	16.66	17.86	18.00	17.92
197.40 CFS	13.38	12.17	12.04	12.11	16.67	17.89	18.03	17.91
202.20 CFS	13.38	12.19	12.06	12.04	12.05	12.05	12.05	12.05
207.00 CFS	12.05	12.05	12.05	12.20	16.72	17.94	18.08	17.94
211.80 CFS	13.44	12.23	12.09	12.08	12.08	12.08	12.08	12.08
216.60 CFS	12.09	12.09	12.09	12.09	12.09	12.10	12.10	12.24
221.40 CFS	16.79	18.00	18.14	18.12	13.47	12.27	12.13	12.12
226.20 CFS	12.12	12.12	12.12	12.12	12.13	12.13	12.13	12.22
231.00 CFS	16.83	18.06	18.19	18.11	13.52	12.30	12.17	12.15
235.80 CFS	12.15	12.16	12.16	11.88	2.76	.31		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.46 WATERSHED INCHES; 8894 CFS-HRS; 735.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	42	25	18	14	12	1	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
246 CFS-HRS; 735.0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 107. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	1812.3	1757.02
143.11	46.6	1750.09
150.60	35.1	1749.91
155.13	29.4	1749.76
162.71	29.5	1749.77
167.10	23.7	1749.62
174.64	23.8	1749.62
210.59	18.1	1749.47
222.83	18.2	1749.47
232.27	18.2	1749.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 3.98 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40 CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20 CFS	9.63	9.93	9.96	10.13	15.59	16.83	16.94	17.16
111.00 CFS	23.36	24.87	25.02	25.30	37.76	40.76	41.06	41.78
115.80 CFS	73	81	82	129	1438	1775	1812	1783
120.60 CFS	645	351	320	316	191	160	156	155
125.40 CFS	123	114	113	112	96	92	91	91
130.20 CFS	73.72	69.24	68.75	68.34	51.17	46.57	46.06	45.87
135.00 CFS	41.63	40.52	40.39	40.38	40.46	40.49	40.49	40.52
139.80 CFS	45.08	46.27	46.40	46.42	46.54	46.57	46.57	46.10
144.60 CFS	33.13	29.63	29.24	29.19	29.23	29.24	29.24	29.31
149.40 CFS	33.82	35.02	35.15	35.02	30.67	29.51	29.38	29.37
154.20 CFS	29.41	29.42	29.42	29.39	24.89	23.72	23.59	23.58
159.00 CFS	23.60	23.61	23.61	23.75	28.21	29.41	29.54	29.48
163.80 CFS	25.02	23.84	23.71	23.69	23.71	23.72	23.72	23.56
168.60 CFS	19.14	17.97	17.83	17.82	17.83	17.83	17.83	17.86
173.40 CFS	22.46	23.66	23.79	23.69	19.22	18.03	17.90	17.88
178.20 CFS	17.89	17.89	17.89	17.90	17.91	17.91	17.91	17.91
183.00 CFS	17.93	17.93	17.93	17.93	17.95	17.95	17.95	17.95
187.80 CFS	17.96	17.97	17.97	17.97	17.98	17.99	17.99	17.85
192.60 CFS	13.36	12.15	12.02	12.17	16.66	17.86	18.00	17.92
197.40 CFS	13.38	12.17	12.04	12.11	16.67	17.89	18.03	17.91
202.20 CFS	13.38	12.19	12.06	12.04	12.05	12.05	12.05	12.05
207.00 CFS	12.05	12.05	12.05	12.20	16.72	17.94	18.08	17.94
211.80 CFS	13.44	12.23	12.09	12.08	12.08	12.08	12.08	12.08
216.60 CFS	12.09	12.09	12.09	12.09	12.09	12.10	12.10	12.24
221.40 CFS	16.79	18.00	18.14	18.12	13.47	12.27	12.13	12.12
226.20 CFS	12.12	12.12	12.12	12.12	12.13	12.13	12.13	12.22
231.00 CFS	16.83	18.06	18.19	18.11	13.52	12.30	12.17	12.15
235.80 CFS	12.15	12.16	12.16	11.88	2.76	.31		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.46 WATERSHED INCHES; 8894 CFS-HRS; 735.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	42	25	18	14	12	1	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.43	4571.2	1761.30
141.01	231.0	1751.70
142.41	231.2	1751.71
150.37	199.9	1751.49
162.35	182.1	1751.36
174.30	163.5	1751.23
195.89	139.5	1751.06
199.96	132.1	1751.01
210.12	83.8	1750.49
222.59	70.4	1750.35

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.94	3.26	3.28	3.32	5.71	6.15	6.18	6.28
101.40 CFS	9.97	10.68	10.72	10.80	13.59	14.17	14.21	14.27
106.20 CFS	17.74	18.47	18.52	18.86	30.45	32.91	33.11	33.52
111.00 CFS	47.68	50.74	51.00	52.06	81.08	87.26	87.76	90.54
115.80 CFS	165	181	183	297	3693	4448	4571	4468
120.60 CFS	1584	970	918	903	586	519	513	510
125.40 CFS	423	405	403	401	358	349	348	346
130.20 CFS	301	292	291	289	243	232	231	231
135.00 CFS	219	217	217	216	217	216	216	217
139.80 CFS	228	231	231	231	231	231	231	230
144.60 CFS	194	187	186	186	186	185	185	185
149.40 CFS	197	200	200	199	187	185	184	184
154.20 CFS	184	184	184	183	171	169	168	168
159.00 CFS	168	168	167	168	180	182	182	181
163.80 CFS	169	167	166	166	166	166	166	165
168.60 CFS	153	150	150	149	149	149	149	149
173.40 CFS	161	163	163	163	151	148	147	147
178.20 CFS	147	147	146	146	146	146	145	145
183.00 CFS	145	145	144	144	144	144	143	143
187.80 CFS	143	143	143	142	142	142	141	141
192.60 CFS	128	125	125	125	137	139	139	139
197.40 CFS	126	123	123	123	132	129	124	120
202.20 CFS	104	97	94	90	87	84	82	79
207.00 CFS	77.00	74.89	72.93	71.65	82.27	83.79	83.12	81.88
211.80 CFS	68.84	65.10	63.72	62.59	61.56	60.60	59.71	58.88
216.60 CFS	58.13	57.43	56.96	56.51	56.11	55.71	55.33	55.31
221.40 CFS	67.51	70.11	70.43	70.09	57.86	55.05	54.53	54.21
226.20 CFS	53.93	53.66	53.39	53.14	52.92	52.70	52.49	52.73
231.00 CFS	65.00	67.77	68.23	67.93	55.93	53.17	52.76	52.54

235.80 CFS	52.36	52.17	51.99	50.91	25.93	19.82	18.41	17.42
240.60 CFS	16.50	15.63	14.80	14.02	13.28	12.58	11.91	11.28
245.40 CFS	10.69	10.12	9.59	9.08	8.60	8.15	7.71	7.31
250.20 CFS	6.92	6.55	6.21	5.88	5.57	5.27	5.00	4.73
255.00 CFS	4.48	4.24	4.02	3.81	3.61	3.42	3.24	3.06
259.80 CFS	2.90	2.75	2.60	2.47	2.34	2.21	2.10	1.98
264.60 CFS	1.88	1.78	1.69	1.60	1.51	1.43	1.36	1.29
269.40 CFS	1.22	1.15	1.09	1.03	.98	.93	.88	.83
274.20 CFS	.79	.75	.71	.67	.63	.60	.57	.54
279.00 CFS	.51	.48						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.97 WATERSHED INCHES; 32127 CFS-HRS; 2655.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	187
FLOW(CFS)	217	167	143	77	53	10	2	0

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
123.26	566.8	1708.88
175.00	162.2	1702.10
196.59	138.0	1701.96
223.35	65.7	1701.53
233.24	60.4	1701.50

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 16.77 SQ.MI.

HRS								
90.60 CFS	.00	.01	.01	.01	.02	.03	.04	.05
95.40 CFS	.06	.07	.09	.13	.16	.20	.25	.32
100.20 CFS	.38	.45	.54	.66	.77	.89	1.02	1.17
105.00 CFS	1.33	1.48	1.65	1.84	2.03	2.23	2.49	2.83
109.80 CFS	3.18	3.54	3.97	4.50	5.04	5.58	6.30	7.21
114.60 CFS	8	9	10	12	14	17	40	236
119.40 CFS	502	536	556	561	563	565	567	567
124.20 CFS	566	566	565	564	563	562	561	560
129.00 CFS	558	557	555	554	552	549	547	544
133.80 CFS	542	539	537	534	531	529	526	523
138.60 CFS	521	518	516	513	511	509	506	504
143.40 CFS	502	499	497	494	492	489	479	450
148.20 CFS	423	399	379	361	344	330	316	303
153.00 CFS	291	281	271	262	254	247	240	233
157.80 CFS	227	221	216	211	206	203	200	198
162.60 CFS	196	195	193	190	188	186	184	182
167.40 CFS	180	179	177	174	172	170	168	166
172.20 CFS	164	163	162	162	162	162	162	160
177.00 CFS	159	158	157	156	155	154	153	152
181.80 CFS	152	151	150	150	149	149	148	148
186.60 CFS	147	147	147	146	146	146	145	145
191.40 CFS	145	144	143	142	140	138	138	138

196.20 CFS	138	138	137	136	135	134	133	133
201.00 CFS	132	131	129	126	123	120	117	114
205.80 CFS	111	108	105	102	99	96	94	93
210.60 CFS	92.31	91.32	89.72	87.44	85.14	82.94	80.85	78.87
215.40 CFS	76.99	75.22	73.55	71.97	70.49	69.11	67.83	66.63
220.20 CFS	65.52	64.50	64.19	64.65	65.21	65.72	65.54	64.63
225.00 CFS	63.65	62.72	61.85	61.05	60.29	59.59	58.93	58.32
229.80 CFS	57.75	57.23	57.40	58.30	59.27	60.15	60.33	59.75
234.60 CFS	59.07	58.43	57.83	57.27	56.75	56.22	54.44	51.28
239.40 CFS	48.05	45.04	42.79	42.77	42.74	42.71	42.68	42.66
244.20 CFS	42.63	42.60	42.56	42.53	42.50	42.47	42.44	42.40
249.00 CFS	42.37	42.33	42.30	42.26	42.23	42.19	42.16	42.12
253.80 CFS	42.09	42.05	42.01	41.98	41.94	41.90	41.86	41.83
258.60 CFS	41.79	41.75	41.71	41.68	41.64	41.60	41.56	41.52
263.40 CFS	41.48	41.44	41.41	41.37	41.33	41.29	41.25	41.21
268.20 CFS	41.17	41.13	41.09	41.06	41.02	40.98	40.94	40.90
273.00 CFS	40.86	40.82	40.57	40.11	39.65	39.19	38.74	38.29
277.80 CFS	37.85	37.42	36.99	36.56	36.14	35.72	35.31	34.90
282.60 CFS	34.50	34.10	33.70	33.31	32.93	32.55	32.17	31.80
287.40 CFS	31.43	31.06	30.70	30.35	29.99	29.65	29.30	28.96
292.20 CFS	28.62	28.29	27.96	27.64	27.32	27.00	26.68	26.37
297.00 CFS	26.07	25.76	25.46	25.17	24.87	24.58	24.30	24.01
301.80 CFS	23.73	23.46	23.18	22.91	22.65	22.38	22.12	21.86
306.60 CFS	21.61	21.36	21.11	20.86	20.62	20.38	20.14	19.90
311.40 CFS	19.67	19.44	19.21	18.99	18.77	18.55	18.33	18.12
316.20 CFS	17.91	17.70	17.49	17.29	17.09	16.89	16.69	16.49
321.00 CFS	16.30	16.11	15.92	15.74	15.55	15.37	15.19	15.02
325.80 CFS	14.84	14.67	14.50	14.33				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.90 WATERSHED INCHES; 31395 CFS-HRS; 2594.5 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	502	182	145	79	51	42	32	20

DURATION(HRS) 209
FLOW(CFS) 14 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 7.02 inches AND 237.60 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 3, ARC 2							
MAIN TIME INCREMENT .600 HOURS							
ALTERNATE 5 STORM 1							
XSECTION 101	RUNOFF	1.86	3.12	---	119.83	748	402.2
XSECTION 1	RUNOFF	1.20	3.01	---	119.62	467	389.2
XSECTION 1	ADDHYD	3.06	3.07	---	119.75	1240	405.2
XSECTION 2	RUNOFF	1.24	2.41	---	119.58	372	300.0
XSECTION 2	ADDHYD	4.30	2.88	---	119.73	1636	380.5
XSECTION 3	RUNOFF	1.85	3.12	---	119.73	777	420.0
XSECTION 3	ADDHYD	6.15	2.95	---	119.73	2412	392.2
STRUCTURE 1	RESVOR	6.15	2.63	1799.53	125.54	187	30.4
XSECTION 104	REACH	6.15	2.53	.51	123.60F	115F	18.7
XSECTION 4	RUNOFF	2.54	3.11	---	119.54	1030	405.5
XSECTION 4	ADDHYD	8.69	2.70	---	119.70	1208	139.0
XSECTION 106	REACH	8.69	2.70	2.81	119.70	1208	139.0
XSECTION 5	RUNOFF	2.00	3.40	---	119.20	900	450.0
XSECTION 5	ADDHYD	10.69	2.83	---	119.54	2027	189.6
XSECTION 6	RUNOFF	1.14	2.98	---	119.19	444	389.5
XSECTION 6	ADDHYD	11.83	2.85	---	119.50	2469	208.7
XSECTION 106	ADDHYD	.00	2.85	.24	125.54	72	********
XSECTION 7	RUNOFF	.96	2.42	---	119.10	295	307.3
XSECTION 7	ADDHYD	12.79	2.81	---	119.42	2759	215.7
XSECTION 10	RUNOFF	.67	2.81	---	119.72	250	373.1
XSECTION 109	REACH	.67	2.81	1766.99	119.72	250	373.1
XSECTION 9	RUNOFF	1.39	3.42	---	119.53	627	451.1
XSECTION 109	ADDHYD	2.06	3.22	1770.18	119.68	867	420.9
XSECTION 108	REACH	2.06	3.22	1757.97	119.68	867	420.9
XSECTION 8	RUNOFF	1.92	3.72	---	119.20	951	495.3
XSECTION 108	ADDHYD	3.98	3.46	1759.91	119.43	1812	455.3
XSECTION 109	ADDHYD	.00	3.46	---	.00	0	********
XSECTION 107	REACH	3.98	3.46	1757.02	119.43	1812	455.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 1							
XSECTION 107	ADDHYD	16.77	2.97	1761.30	119.43	4571	272.6
STRUCTURE 2	RESVOR	16.77	2.90	1708.88	123.26	567	33.8

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1203	120.0	1203	120.0	4.77	1.00	.029	1.000	1.00?
103	2500		1572	120.0	1572	120.0	4.77	1.00	.029	1.000	1.00?
104	6700		115	123.6	115	123.6	1.57	1.53	.000	1.000	1.00?
106	3700		1127	120.0	1127	120.0	1.04	1.59	.000	1.000	1.00?
109	2700		240	120.0	240	120.0	.29	1.46	.018	1.000	1.00?
108	2100		863	119.4	863	119.4	.71	1.44	.003	1.000	1.00?
107	5300		1812	119.4	1812	119.4	.56	1.37	.021	1.000	1.00?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE 2	16.77	
ALTERNATE 5		567
STRUCTURE 1	6.15	
ALTERNATE 5		187
XSECTION 1	3.06	
ALTERNATE 5		1240
XSECTION 2	4.30	
ALTERNATE 5		1636
XSECTION 3	6.15	
ALTERNATE 5		2412
XSECTION 4	8.69	
ALTERNATE 5		1208
XSECTION 5	10.69	
ALTERNATE 5		2027
XSECTION 6	11.83	
ALTERNATE 5		2469
XSECTION 7	12.79	
ALTERNATE 5		2759
XSECTION 8	1.92	
ALTERNATE 5		951
XSECTION 9	1.39	
ALTERNATE 5		627
XSECTION 10	.67	
ALTERNATE 5		250
XSECTION 101	1.86	
ALTERNATE 5		748
XSECTION 104	6.15	

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 104	6.15	
ALTERNATE 5		115
XSECTION 106	.00	
ALTERNATE 5		72
XSECTION 107	16.77	
ALTERNATE 5		4571
XSECTION 108	3.98	
ALTERNATE 5		1812
XSECTION 109	.00	
ALTERNATE 5		0

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = SBT2BTP4.DAT , GIVEN DATA FILE
OUTPUT = SBT2BTP4.OUT , DATED 09/18/**,09:31:57

FILES GENERATED - DATED 09/18/**,09:31:57

NONE!

TOTAL NUMBER OF WARNINGS = 20, MESSAGES = 2

JOB ENDED AT 09:31:58
*** TR-20 RUN COMPLETED ***

```
***********[redacted]*80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****************

JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBTR-20c.DAT
TITLE 000 ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNTN
 5 RAINFL 1            .5
 8          0.0        .008       .017       .026       .035
 8          .045       .055       .065       .076       .087
 8          .099       .112       .125       .14        .156
 8          .174       .194       .219       .254       .303
 8          .515       .583       .624       .654       .682
 8          .705       .727       .748       .767       .784
 8          .8         .816       .83        .844       .857
 8          .87        .882       .893       .905       .916
 8          .926       .936       .946       .955       .965
 8          .974       .983       .992       1.         1.
 9 ENDTBL
 5 RAINFL 2            .5
 8          0.0        .005       .011       .016       .022
 8          .028       .035       .041       .048       .056
 8          .063       .071       .081       .089       .098
 8          .109       .12        .133       .147       .163
 8          .181       .204       .235       .283       .663
 8          .735       .772       .799       .82        .838
 8          .854       .868       .88        .891       .902
 8          .912       .921       .929       .937       .945
 8          .952       .959       .965       .972       .978
 8          .984       .989       .995       1.         1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8          0.0        .002       .004       .006       .008
 8          .01        .012       .014       .016       .018
 8          .02        .022       .025       .027       .03
 8          .032       .035       .038       .04        .043
 8          .046       .049       .052       .055       .058
 8          .061       .064       .069       .072       .076
 8          .08        .084       .089       .093       .098
 8          .102       .108       .114       .121       .127
 8          .133       .143       .153       .164       .174
 8          .184       .198       .215       .238       .275
 8          .707       .765       .793       .813       .829
 8          .841       .849       .856       .863       .871
 8          .879       .884       .889       .895       .9
 8          .905       .909       .913       .918       .922
 8          .926       .929       .932       .936       .939
 8          .942       .945       .948       .951       .954
 8          .957       .959       .962       .964       .967
 8          .969       .971       .973       .976       .978
 8          .98        .982       .984       .987       .989
 8          .991       .993       .996       .998       1.
 9 ENDTBL
 5 RAINFL 4            .25
 8          0.0        .006       .011       .017       .028
 8          .041       .057       .075       .09        .562
 8          .697       .763       .807       .839       .873
 8          .907       .937       .948       .958       .968
 8          .979       .984       .989       1.         1.
 9 ENDTBL
```

```
**********************80-80 LIST OF INPUT DATA (CONTINUED)*******.  ***********
 5 RAINFL 5            .5
 8          0.0        .004       .008       .011       .016
 8          .021       .027       .034       .044       .055
 8          .07        .088       .108       .137       .172
 8          .217       .273       .341       .42        .492
 8          .56        .618       .672       .717       .753
 8          .782       .807       .827       .845       .86
 8          .873       .885       .895       .903       .913
 8          .921       .93        .935       .943       .949
 8          .954       .96        .967       .972       .978
 8          .982       .989       .993       1.         1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       40.
 8                     3.         838.       60.
 8                     4.         1288.      80.
 8                     5.         1782.      120.
 8                     6.         2314.      130.
 8                     7.         2875.      140.
 8                     8.         3454.      160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0        0.0        0.0
 8                     1.5        441.       45.
 8                     2.5        995.       75.
 8                     3.5        1682.      105.
 8                     4.5        2468.      135.
 8                     5.5        3339.      165.
 8                     6.5        4272.      195.
 8                     7.5        5258.      225.
 8                     8.5        6296.      255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.      0.0        0.0
 8                     1750.      38.53      23.
```

```
8                    1751.      130.52     52.
8                    1752.      273.18     87.
8                    1753.      470.98     128.
8                    1754.      706.86     187.
8                    1755.      1005.62    240.
8                    1756.      1369.42    299.
8                    1757.      1801.8     364.
8                    1758.      2305.5     435.
8                    1759.      2892.8     512.
8                    1760.      3558.1     595.
8                    1761.      4316.04    684.
8                    1762.      5156.98    779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7     0.0        0.0
8                    1754.7     61.93      23.
8                    1755.7     209.35     52.
8                    1756.7     438.91     87.
8                    1757.7     757.01     128.
8                    1758.7     1167.41    175.
8                    1759.7     1678.56    228.
8                    1760.7     2302.39    287.
8                    1761.7     3038.91    352.
8                    1762.7     3894.74    435.
8                    1763.7     4647.76    512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
2 XSECTN   111       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
2 XSECTN   112       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
```



```
2 XSECTN   113       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
3 STRUCT      01
8                    1791.94    0.00       0.0
8                    1793.      0.01       46.8
8                    1794.1     0.02       106.
8                    1794.5     26.3       130.
8                    1795.      74.4       161.2
8                    1795.14    91.2       170.7
8                    1796.      96.16      230.7
8                    1797.14    102.42     322.23
8                    1799.42    113.91     542.99
8                    1801.72    1650.      812.88
8                    1804.      7700.      1121.9
8                    1806.28    15200.     1470.09
8                    1808.57    26200.     1865.04
9 ENDTBL
3 STRUCT      02
8                    1696.      0.0        0.0
8                    1700.      10.2       172.1
8                    1701.4     10.7       273.25
8                    1704.      121.8      482.24
8                    1708.      138.4      871.3
8                    1710.      145.9      1101.52
8                    1710.5     147.7      1163.52
8                    1711.5     151.4      1294.09
8                    1712.2     154.       1390.2
8                    1712.5     155.       1432.05
8                    1712.6     156.       1446.11
8                    1713.5     390.       1578.77
8                    1714.5     820.       1733.61
8                    1716.      1950.      1980.33
8                    1720.      6600.      2712.23
8                    1722.      9500.      3121.
8                    1724.      12400.     3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86     80.        1.21       1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2      79.        .67        1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                           1 0 0 1 0 1
6 RUNOFF 1   2       6 1.24     75.        .59        1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                           1 0 0 1 0 1
6 RUNOFF 1   3       6 1.85     80.        .91        1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                        1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.       1.                  1 0 0 1 0 1
```

```
***********   ********80-80 LIST OF INPUT DATA (CONTINUED)**********************

 6 REACH  3 104   4   5 6700.                                  1 0 0 1 0 1
 6 RUNOFF 1   4       6 2.54        80.         .54          1 0 0 1 0 1
 6 ADDHYD 4   4   5 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 104   7 5 2 3454.       1.                        1 0 0 1 0 1
 6 ADDHYD 4 104   1 2 4                                       1 0 0 1 0 1
 6 REACH  3 106   5   3 3700.                                  1 0 0 1 0 1
 6 RUNOFF 1   5       6 2.          82.         .43          1 0 0 1 0 1
 6 ADDHYD 4   5   3 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 106   7 5 2 6296.       1.                        1 0 0 1 0 1
 6 RUNOFF 1   6       6 1.14        79.         .42          1 0 0 1 0 1
 6 ADDHYD 4   6   5 6 7                                       1 0 0 1 0 1
 6 SAVMOV 5   6   7   5
 6 ADDHYD 4 106   4 2 7                                       1 1 0 1 0 1
 6 SAVMOV 5 106   7   1
 6 RUNOFF 1   7       6 .96         75.         .23          1 0 0 1 0 1
 6 ADDHYD 4   7   5 6 7                                       1 1 0 1 0 1
 6 SAVMOV 5   7   7   2
 6 RUNOFF 1  13       5 .458        78.         .35          1 0 0 1 0 1
 6 REACH  3 113   5   6 6900.                                  1 0 0 1 0 1
 6 RUNOFF 1  12       5 .869        78.         .66          1 0 0 1 0 1
 6 ADDHYD 4 112   5 6 7                                       1 0 0 1 0 1
 6 REACH  3 112   7   5 7700.                                  1 0 0 1 0 1
 6 RUNOFF 1  11       6 1.957       78.         .68          1 0 0 1 0 1
 6 ADDHYD 4 111   5 6 7                                       1 0 0 1 0 1
 6 REACH  3 111   7   5 2000.                                  1 0 0 1 0 1
 6 RUNOFF 1  10       6 .67         78.         .89          1 0 0 1 0 1
 6 ADDHYD 4 110   5 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 110   7 5 3 1915.       1.                        1 0 0 1 0 1
 6 REACH  3 109   5   4 2700.                                  1 0 0 1 0 1
 6 RUNOFF 1   9       6 1.39        82.         .55          1 0 0 1 0 1
 6 ADDHYD 4 109   4 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 109   7 5 4 2546.       1.                        1 0 0 1 0 1
 6 REACH  3 108   5   6 2100.                                  1 0 0 1 0 1
 6 RUNOFF 1   8       5 1.92        84.         .42          1 0 0 1 0 1
 6 ADDHYD 4 108   5 6 7                                       1 1 0 1 0 1
 6 ADDHYD 4 109   3 4 5                                       1 1 0 1 0 1
 6 SAVMOV 5 106   5   3
 6 DIVERT 6 108   7 5 4 5253.       1.                        1 0 0 1 0 1
 6 REACH  3 107   5   6 5300.                                  1 1 0 1 0 1
 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                       1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                                 1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .20
 7 COMPUT 7 101       2             3.94        1.0          2 2  05  01
   ENDCMP 1
 7 COMPUT 7 101       2             7.06        1.0          5 2  05  04
   ENDCMP 1
 7 COMPUT 7 101       2             15.80       1.0          5 2  05  05
   ENDCMP 1
   ENDJOB 2

*********************************END OF 80-80 LIST*******************************
```

```
TR20 ---------------------------------------------------------------- ------ SCS -
         SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBTR-20c VERSION
09/19/**  ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNT2.04TEST
08:23:06                    PASS   1   JOB NO.   1                        PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =    .200 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =    .00       RAIN DEPTH =  3.94       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2        MAIN TIME INCREMENT =    .200 HOURS
    ALTERNATE NO. = 5            STORM NO. = 1            RAIN TABLE NO. = 2


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
       12.58                          1010.6                        (RUNOFF)
       21.76                            50.9                        (RUNOFF)
       23.77                            43.5                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.99 WATERSHED INCHES;    2390 CFS-HRS;     197.5 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     288    118     82     62     51     44     23      5

    DURATION(HRS)  18
    FLOW(CFS)       0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
       12.22                           900.0                        (RUNOFF)
       21.67                            32.7                        (RUNOFF)
       23.67                            28.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.91 WATERSHED INCHES;    1481 CFS-HRS;     122.4 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     129     69     51     39     32     28     14      1

    DURATION(HRS)  16
    FLOW(CFS)       0


OPERATION ADDHYD    XSECTION   1
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1728.9	(NULL)
21.68	83.5	(NULL)
23.69	71.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3870 CFS-HRS; 319.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	471	194	131	101	83	71	39	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	1690.5	4.81
21.91	83.5	.37
23.91	71.4	.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3871 CFS-HRS; 319.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	472	186	132	102	83	71	39	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	808.7	(RUNOFF)
19.31	36.6	(RUNOFF)
21.63	31.3	(RUNOFF)
23.63	27.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.62 WATERSHED INCHES; 1297 CFS-HRS; 107.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	113	63	46	36	30	26	6	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	2188.1	(NULL)
21.71	114.2	(NULL)
23.71	97.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	594	257	182	138	114	98	45	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.74	2124.9	5.64
21.92	114.1	.51
23.92	97.7	.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	621	261	178	138	114	98	47	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	1217.7	(RUNOFF)
21.78	50.8	(RUNOFF)
23.77	43.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 2377 CFS-HRS; 196.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	255	114	79	61	51	44	23	3

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	3125.4	(NULL)
21.80	164.8	(NULL)
23.80	140.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
8.60 CFS	.31	.92	2.12	4.01	6.94	10.81	15.99	22.50
10.20 CFS	30	40	54	70	91	119	157	236
11.80 CFS	493	1170	2128	2895	3125	2936	2561	2147
13.40 CFS	1751	1414	1156	961	813	703	619	555
15.00 CFS	507	468	437	410	386	364	343	325
16.60 CFS	309	296	286	279	273	267	260	252
18.20 CFS	244	235	226	218	211	206	203	201
19.80 CFS	199	195	190	186	182	178	174	168
21.40 CFS	165	164	165	164	162	159	156	153
23.00 CFS	149	144	141	140	141	140	136	125
24.60 CFS	104	79	56	39	26	17	11	7
26.20 CFS	4.36	2.81	1.80	1.15	.74	.48		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 7544 CFS-HRS; 623.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	961	386	260	201	165	141	70	11

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.52	112.2	1799.08

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
11.80 CFS	.00	.01	.01	.02	57.27	93.53	96.99	99.54
13.40 CFS	102	103	104	105	106	106	107	107
15.00 CFS	107	108	108	108	109	109	109	109
16.60 CFS	109	110	110	110	110	110	110	110
18.20 CFS	110	111	111	111	111	111	111	111
19.80 CFS	111	111	111	111	111	112	112	112
21.40 CFS	112	112	112	112	112	112	112	112
23.00 CFS	112	112	112	112	112	112	112	112

24.60 CFS	112	112	112	112	112	112	112	112
26.20 CFS	112	112	111	111	111	111	111	111
27.80 CFS	111	111	111	111	111	110	110	110
29.40 CFS	110	110	110	110	110	110	110	109
31.00 CFS	109	109	109	109	109	109	109	109
32.60 CFS	109	109	108	108	108	108	108	108
34.20 CFS	108	108	108	108	108	107	107	107
35.80 CFS	107	107	107	107	107	107	107	107
37.40 CFS	106	106	106	106	106	106	106	106
39.00 CFS	106	106	106	105	105	105	105	105
40.60 CFS	105	105	105	105	105	105	104	104
42.20 CFS	104	104	104	104	104	104	104	104
43.80 CFS	104	103	103	103	103	103	103	103
45.40 CFS	103	103	103	103	102	102	102	102
47.00 CFS	102	102	102	102	102	101	101	101
48.60 CFS	101	101	101	101	101	101	100	100
50.20 CFS	100	100	100	100	100	100	100	99
51.80 CFS	99.30	99.19	99.08	98.97	98.86	98.74	98.63	98.52
53.40 CFS	98.41	98.30	98.19	98.08	97.97	97.86	97.74	97.63
55.00 CFS	97.52	97.41	97.30	97.19	97.08	96.97	96.86	96.76
56.60 CFS	96.65	96.54	96.43	96.32	96.21	96.09	95.96	95.83
58.20 CFS	95.70	95.57	95.43	95.30	95.17	95.04	94.91	94.78
59.80 CFS	94.66	94.53	94.40	94.27	94.14	94.01	93.88	93.75
61.40 CFS	93.63	93.50	93.37	93.24	93.12	92.99	92.86	92.74
63.00 CFS	92.61	92.48	92.36	92.23	92.10	91.98	91.85	91.73
64.60 CFS	91.60	91.48	91.35	91.23	89.14	86.58	84.08	81.66
66.20 CFS	79.31	77.02	74.80	72.87	71.04	69.25	67.51	65.81
67.80 CFS	64.15	62.54	60.96	59.43	57.93	56.48	55.06	53.67
69.40 CFS	52.32	51.00	49.72	48.47	47.25	46.06	44.90	43.77
71.00 CFS	42.67	41.60	40.55	39.53	38.54	37.57	36.62	35.70
72.60 CFS	34.80	33.93	33.07	32.24	31.43	30.64	29.87	29.12
74.20 CFS	28.38	27.67	26.97	26.30	25.82	25.36	24.91	24.46
75.80 CFS	24.02	23.59	23.17	22.75	22.34	21.94	21.55	21.16
77.40 CFS	20.78	20.41	20.04	19.68	19.33	18.98	18.64	18.31
79.00 CFS	17.98	17.66	17.34	17.03	16.73	16.43	16.13	15.84
80.60 CFS	15.56	15.28	15.00	14.73	14.47	14.21	13.96	13.71
82.20 CFS	13.46	13.22	12.98	12.75	12.52	12.30	12.07	11.86
83.80 CFS	11.65	11.44	11.23	11.03	10.83	10.64	10.45	10.26
85.40 CFS	10.08	9.89	9.72	9.54	9.37	9.20	9.04	8.88
87.00 CFS	8.72	8.56	8.41	8.26				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6170 CFS-HRS; 509.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	99	94	57	22

DURATION(HRS)	72	75
FLOW(CFS)	11	8 TRUNCATED

```
OPERATION DIVERT    XSECTION 104
                    OUTPUT #1 HYDROGRAPH

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       24.52                          112.2                          .50

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.55 WATERSHED INCHES;    6170 CFS-HRS;     509.9 ACRE-FEET.

    DURATION(HRS)   8     16     24     32     40     48     56     64
    FLOW(CFS)     111    109    106    103     99     94     57     22

    DURATION(HRS)  72     75
    FLOW(CFS)      11      8 TRUNCATED

            OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION    0)

 *** MESSAGE - HYDROGRAPH CONTAINS NO FLOW                                  ***

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                      0 CFS-HRS;        .0 ACRE-FEET.

 *** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
               2ND TABLE VALUE.  THIS REACH ROUTING MAY BE INCORRECT,
               UNLESS NEW RATING TABLE VALUES ARE INSERTED.                 ***

OPERATION REACH     XSECTION 104

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       24.77                          112.2                          .50

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.55 WATERSHED INCHES;    6168 CFS-HRS;     509.8 ACRE-FEET.

    DURATION(HRS)   8     16     24     32     40     48     56     64
    FLOW(CFS)     111    109    106    103     98     94     57     22

    DURATION(HRS)  72     75
    FLOW(CFS)      11      8 TRUNCATED

OPERATION RUNOFF    XSECTION   4
```



```
    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.15                         2179.9                        (RUNOFF)
       19.31                           83.4                        (RUNOFF)
       21.61                           71.4                        (RUNOFF)
       23.61                           61.3                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.99 WATERSHED INCHES;    3255 CFS-HRS;     269.0 ACRE-FEET.

    DURATION(HRS)   2     4      6      8     10     12     14     16
    FLOW(CFS)     260   145    108     83     70     61     31      3

    DURATION(HRS)  17
    FLOW(CFS)       0

OPERATION ADDHYD    XSECTION   4

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.15                         2179.9                        (NULL)
       19.36                          194.3                        (NULL)
       21.61                          183.1                        (NULL)
       23.61                          173.4                        (NULL)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.68 WATERSHED INCHES;    9423 CFS-HRS;     778.8 ACRE-FEET.

    DURATION(HRS)   8     16     24     32     40     48     56     64
    FLOW(CFS)     194   111    107    104    100     95     74     29

    DURATION(HRS)  72     78
    FLOW(CFS)      15      8 TRUNCATED

OPERATION DIVERT    XSECTION 104
                    OUTPUT #1 HYDROGRAPH

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.15                         2179.9                        5.75
       19.36                          194.3                         .86
       21.61                          183.1                         .81
       23.61                          173.4                         .77

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.68 WATERSHED INCHES;    9423 CFS-HRS;     778.8 ACRE-FEET.
```

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29

DURATION(HRS)	72	78
FLOW(CFS)	15	8 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 104

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	4.13
19.36	194.3	.66
21.61	183.1	.62
23.61	173.4	.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29

DURATION(HRS)	72	78
FLOW(CFS)	15	8 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	2048.6	(RUNOFF)
19.33	68.2	(RUNOFF)
21.56	59.0	(RUNOFF)
23.56	50.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.14 WATERSHED INCHES; 2762 CFS-HRS; 228.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	121	91	68	59	51	34	5

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	4157.5	(NULL)
19.34	262.5	(NULL)
21.58	242.0	(NULL)
23.58	224.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 12182 CFS-HRS; 1006.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	262	112	108	104	100	96	80	32

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION DIVERT XSECTION 106
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	4157.5	6.38
19.34	262.5	.89
21.58	242.0	.82
23.58	224.0	.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 12182 CFS-HRS; 1006.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	262	112	108	104	100	96	80	32

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	1030.8	(RUNOFF)
19.33	36.7	(RUNOFF)
21.55	31.9	(RUNOFF)
23.55	27.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 1408 CFS-HRS; 116.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	119	65	47	37	31	27	13	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.09	5213.0	(NULL)
19.34	299.2	(NULL)
21.58	273.9	(NULL)
23.58	251.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.78 WATERSHED INCHES; 13582 CFS-HRS; 1122.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	299	112	108	104	100	96	82	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION ADDHYD XSECTION 106

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
399 CFS-HRS; 1122.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.93	833.8	(RUNOFF)
16.90	38.4	(RUNOFF)
19.31	28.4	(RUNOFF)
20.31	25.0	(RUNOFF)
21.43	25.0	(RUNOFF)
22.30	21.7	(RUNOFF)
23.43	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.61 WATERSHED INCHES; 996 CFS-HRS; 82.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	84	46	35	28	24	20	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	5926.2	(NULL)
19.33	327.6	(NULL)
21.56	298.5	(NULL)
23.56	272.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
7.60 CFS	.07	.64	1.12	2.62	5.55	7.58	13.30	18.66
9.20 CFS	25	36	43	57	68	87	113	133
10.80 CFS	182	221	297	410	898	3627	5784	5345

12.40 CFS	3395	2284	1618	1249	1045	893	815	732
14.00 CFS	677	638	601	580	554	536	517	494
15.60 CFS	479	454	437	424	411	405	403	403
17.20 CFS	397	386	379	367	357	347	335	329
18.80 CFS	328	327	327	327	326	315	307	303
20.40 CFS	302	300	289	281	284	294	298	289
22.00 CFS	281	278	277	275	264	255	258	269
23.60 CFS	272	263	255	217	158	129	118	114
25.20 CFS	113	112	112	112	112	112	112	112
26.80 CFS	112	111	111	111	111	111	111	111
28.40 CFS	111	111	111	110	110	110	110	110
30.00 CFS	110	110	110	110	110	110	109	109
31.60 CFS	109	109	109	109	109	109	109	109
33.20 CFS	109	108	108	108	108	108	108	108
34.80 CFS	108	108	108	107	107	107	107	107
36.40 CFS	107	107	107	107	107	107	106	106
38.00 CFS	106	106	106	106	106	106	106	106
39.60 CFS	106	105	105	105	105	105	105	105
41.20 CFS	105	105	105	105	104	104	104	104
42.80 CFS	104	104	104	104	104	104	104	103
44.40 CFS	103	103	103	103	103	103	103	103
46.00 CFS	103	103	103	102	102	102	102	102
47.60 CFS	102	102	102	102	101	101	101	101
49.20 CFS	101	101	101	101	100	100	100	100
50.80 CFS	100	100	100	100	100	99	99	99
52.40 CFS	99.12	99.01	98.90	98.79	98.67	98.56	98.45	98.34
54.00 CFS	98.23	98.12	98.01	97.90	97.79	97.68	97.57	97.46
55.60 CFS	97.34	97.23	97.12	97.01	96.90	96.80	96.69	96.58
57.20 CFS	96.47	96.36	96.25	96.13	96.00	95.88	95.74	95.61
58.80 CFS	95.48	95.35	95.22	95.09	94.96	94.83	94.70	94.57
60.40 CFS	94.44	94.32	94.19	94.06	93.93	93.80	93.67	93.55
62.00 CFS	93.42	93.29	93.16	93.04	92.91	92.78	92.65	92.53
63.60 CFS	92.40	92.28	92.15	92.02	91.90	91.77	91.65	91.52
65.20 CFS	91.40	91.27	89.72	87.43	84.99	82.57	80.19	77.89
66.80 CFS	75.64	73.63	71.74	69.93	68.17	66.45	64.78	63.15
68.40 CFS	61.56	60.01	58.50	57.03	55.59	54.19	52.83	51.50
70.00 CFS	50.21	48.94	47.71	46.51	45.34	44.20	43.09	42.00
71.60 CFS	40.95	39.92	38.91	37.93	36.98	36.05	35.14	34.26
73.20 CFS	33.39	32.55	31.74	30.94	30.16	29.40	28.66	27.94
74.80 CFS	27.24	26.55	26.02	25.54	25.08	24.63	24.18	23.75
76.40 CFS	23.33	22.91	22.50	22.09	21.70	21.31	20.92	20.55
78.00 CFS	20.18	19.82	19.46	19.11	18.77	18.43	18.10	17.78
79.60 CFS	17.46	17.15	16.84	16.54	16.24	15.95	15.66	15.38
81.20 CFS	15.11	14.84	14.57	14.31	14.05	13.80	13.55	13.31
82.80 CFS	13.07	12.84	12.60	12.38	12.16	11.94	11.73	11.52
84.40 CFS	11.31	11.10	10.91	10.71	10.52	10.33	10.14	9.96
86.00 CFS	9.78	9.61	9.44	9.27	9.10	8.94	8.78	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 14578 CFS-HRS; 1204.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	327	112	108	104	100	96	83	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.01	419.0	(RUNOFF)
16.90	19.6	(RUNOFF)
19.33	14.5	(RUNOFF)
21.52	12.6	(RUNOFF)
23.52	10.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.85 WATERSHED INCHES; 547 CFS-HRS; 45.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	45	25	18	14	12	11	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.2%. ***

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	258.6	1767.05
21.99	12.2	1764.05
23.99	10.5	1763.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.83 WATERSHED INCHES; 542 CFS-HRS; 44.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	61	27	19	15	12	10	4	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	633.2	(RUNOFF)
21.67	23.3	(RUNOFF)
23.67	19.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1032 CFS-HRS; 85.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	90	49	35	27	23	20	8	0

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	770.6	1769.81
21.71	35.2	1764.72
23.71	30.1	1764.64

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1575 CFS-HRS; 130.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	175	76	55	42	35	30	13	1

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.04	558.7	1768.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1574 CFS-HRS; 130.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	235	89	56	43	36	30	14	3

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	1395.6	(RUNOFF)
21.68	52.3	(RUNOFF)
23.68	44.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 2322 CFS-HRS; 191.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	207	110	78	62	52	44	18	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.28	1532.8	1772.75
21.59	88.5	1765.53
23.60	75.8	1765.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 3896 CFS-HRS; 322.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	515	207	140	107	88	75	33	6

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.49	1521.8	1772.71
21.79	88.5	1765.53
23.80	75.8	1765.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 3895 CFS-HRS; 321.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	507	208	140	107	88	75	33	6

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	405.0	(RUNOFF)
21.77	17.7	(RUNOFF)
23.76	15.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	86	38	27	21	18	15	7	0

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	1914.9	(NULL)
21.79	106.2	(NULL)
23.79	91.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 4689 CFS-HRS; 387.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	660	260	167	129	105	90	36	8

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	1914.9	(DIVERT)
21.79	106.2	(DIVERT)
23.79	91.0	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 4689 CFS-HRS; 387.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	660	260	167	129	105	90	36	8

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	1827.4	1773.89
21.99	106.1	1765.73
24.00	90.8	1765.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 4691 CFS-HRS; 387.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	667	246	168	128	105	90	38	8

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	1297.5	(RUNOFF)
21.61	40.5	(RUNOFF)
23.61	34.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.15 WATERSHED INCHES; 1926 CFS-HRS; 159.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	165	87	64	47	40	36	25	4

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	2406.8	1776.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 6615 CFS-HRS; 546.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	919	362	238	178	147	125	69	17

DURATION(HRS)	18	20
FLOW(CFS)	4	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	2406.8	1776.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 6615 CFS-HRS; 546.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	919	362	238	178	147	125	69	17

DURATION(HRS)	18	20
FLOW(CFS)	4	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	2406.8	1760.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 6615 CFS-HRS; 546.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	919	362	238	178	147	125	69	17

DURATION(HRS)	18	20
FLOW(CFS)	4	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	2151.5	(RUNOFF)
19.32	67.7	(RUNOFF)
21.55	58.5	(RUNOFF)
23.55	50.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.31 WATERSHED INCHES; 2867 CFS-HRS; 236.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	129	92	68	60	51	42	12

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	3856.5	1762.66
21.50	204.7	1755.67
23.51	175.0	1755.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
7.00 CFS	.03	.73	2.13	2.98	5.42	7.40	10.22	15.13
8.60 CFS	18.22	23.62	28.17	33.31	41.35	47.10	57.87	67.89
10.20 CFS	82	104	123	160	195	248	335	569
11.80 CFS	2060	3510	3852	3333	3114	2707	2255	1931
13.40 CFS	1656	1445	1255	1098	970	856	769	694
15.00 CFS	635	586	540	505	470	440	416	392
16.60 CFS	375	362	353	342	331	322	311	300

18.20 CFS	290	277	268	261	256	251	248	246
19.80 CFS	238	232	227	223	219	211	204	202
21.40 CFS	204	204	200	196	193	191	187	180
23.00 CFS	174	172	174	175	171	167	150	115
24.60 CFS	90.47	70.21	52.06	38.72	29.31	22.14	16.57	12.27
26.20 CFS	8.99	6.53	4.71	3.39	2.42	1.73	1.24	.88
27.80 CFS	.62	.44						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.02 WATERSHED INCHES; 9487 CFS-HRS; 784.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1255	505	331	248	204	175	104	33

DURATION(HRS)	18	20	21
FLOW(CFS)	9	1	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
114 CFS-HRS; 784.0 ACRE-FEET.

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	3856.5	1762.66
21.50	204.7	1755.67
23.51	175.0	1755.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.02 WATERSHED INCHES; 9487 CFS-HRS; 784.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1255	505	331	248	204	175	104	33

DURATION(HRS)	18	20	21
FLOW(CFS)	9	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	3645.4	1760.12
21.71	204.5	1751.52
23.72	174.7	1751.31

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
7.20 CFS	.03	.54	1.69	2.63	4.66	6.65	9.25	13.53
8.80 CFS	16.94	21.80	26.43	31.44	38.65	44.80	54.31	64.19
10.40 CFS	77	97	116	148	182	230	307	497
12.00 CFS	1634	2999	3620	3411	3195	2840	2414	2062
13.60 CFS	1767	1533	1331	1161	1022	901	805	725
15.20 CFS	659	606	558	520	484	452	425	401
16.80 CFS	382	368	357	346	335	326	315	304
18.40 CFS	294	282	272	264	258	253	250	247
20.00 CFS	241	234	229	225	221	214	207	204
21.60 CFS	204	204	201	197	194	192	189	183
23.20 CFS	176	173	174	174	172	168	155	125
24.80 CFS	100	78	59	44	33	25	19	14
26.40 CFS	10.37	7.57	5.49	3.96	2.84	2.04	1.45	1.03
28.00 CFS	.73	.52	.37					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.02 WATERSHED INCHES; 9475 CFS-HRS; 783.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1331	497	326	250	204	176	100	33

DURATION(HRS)	18	20	21
FLOW(CFS)	9	1	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	8353.5	1765.80
21.56	502.4	1753.13
23.57	446.7	1752.88

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
7.20 CFS	.03	.54	1.76	3.26	5.77	9.27	14.80	21.10
8.80 CFS	30	40	52	67	82	102	123	151
10.40 CFS	190	230	298	368	478	640	1204	4125
12.00 CFS	7419	8344	7015	5696	4813	4089	3459	2955
13.60 CFS	2582	2265	2008	1799	1623	1481	1359	1260

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
XSECTION 113	.46			
ALTERNATE 5		259	213	600

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = SBTR-20C.DAT , GIVEN DATA FILE
OUTPUT = SBTR-20C.OUT , DATED 09/19/**,08:23:06

FILES GENERATED - DATED 09/19/**,08:23:06

NONE!

TOTAL NUMBER OF WARNINGS = 30, MESSAGES = 21

JOB ENDED AT 08:23:06
*** TR-20 RUN COMPLETED ***

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
XSECTION 11	1.96			
ALTERNATE 5		1396	939	2655
XSECTION 12	.87			
ALTERNATE 5		633	417	1180
XSECTION 13	.46			
ALTERNATE 5		419	220	643
XSECTION 101	1.86			
ALTERNATE 5		1011	908	2475
XSECTION 102	3.06			
ALTERNATE 5		1691	1489	4073
XSECTION 103	4.30			
ALTERNATE 5		2125	2028	5646
XSECTION 104	.00			
ALTERNATE 5		0	1375	7308
XSECTION 106	.00			
ALTERNATE 5		0	1375	7308
XSECTION 107	20.05			
ALTERNATE 5		8353	6796	14388
XSECTION 108	7.26			
ALTERNATE 5		3856	3491	5253
XSECTION 109	.00			
ALTERNATE 5		0	0	4554
XSECTION 110	3.95			
ALTERNATE 5		1915	1821	1915
XSECTION 111	3.28			
ALTERNATE 5		1522	1507	4293
XSECTION 112	1.33			
ALTERNATE 5		559	598	1724

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
STRUCTURE 2	20.05			
ALTERNATE 5		155	2874	10147
STRUCTURE 1	6.15			
ALTERNATE 5		112	1490	7423
XSECTION 0	.00			
ALTERNATE 5		0	0	120
XSECTION 1	3.06			
ALTERNATE 5		1729	1492	4079
XSECTION 2	4.30			
ALTERNATE 5		2188	2032	5654
XSECTION 3	6.15			
ALTERNATE 5		3125	2930	8107
XSECTION 4	8.69			
ALTERNATE 5		2180	1377	3687
XSECTION 5	10.69			
ALTERNATE 5		4157	2431	6346
XSECTION 6	11.83			
ALTERNATE 5		5213	2994	7901
XSECTION 7	12.79			
ALTERNATE 5		5926	3421	9241
XSECTION 8	1.92			
ALTERNATE 5		2152	1076	2827
XSECTION 9	1.39			
ALTERNATE 5		1298	735	1990
XSECTION 10	.67			
ALTERNATE 5		405	319	895
XSECTION 11	1.96			

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
3.20 CFS	.00	.01	.04	.10	.22	.41	.70	1.10
4.80 CFS	1.64	2.37	3.32	4.53	6.00	7.75	9.79	10.37
6.40 CFS	11	32	69	112	125	130	135	140
8.00 CFS	145	150	156	559	1316	2348	3546	4624
9.60 CFS	5588	6447	7273	7997	8586	9052	9421	9712
11.20 CFS	9933	10074	10140	10136	10064	9941	9772	9571
12.80 CFS	9352	9120	8882	8633	8378	8123	7871	7620
14.40 CFS	7361	7095	6827	6561	6321	6085	5856	5631
16.00 CFS	5408	5188	4969	4752	4549	4369	4206	4053
17.60 CFS	3905	3769	3646	3531	3409	3277	3151	3043
19.20 CFS	2950	2861	2773	2684	2594	2506	2425	2355
20.80 CFS	2297	2251	2214	2174	2131	2088	2050	2015
22.40 CFS	1975	1934	1905	1886	1874	1858	1835	1815
24.00 CFS	1805	1795	1766	1713	1643	1564	1481	1396
25.60 CFS	1312	1231	1154	1081	1012	948	888	832
27.20 CFS	795	765	736	708	681	656	632	609
28.80 CFS	586	565	545	526	507	490	473	457
30.40 CFS	441	427	412	399	388	380	372	365
32.00 CFS	357	350	343	337	330	324	318	312
33.60 CFS	306	301	295	290	285	280	275	270
35.20 CFS	266	261	257	253	249	245	241	237
36.80 CFS	234	230	227	223	220	217	214	211
38.40 CFS	208	205	202	200	197	194	192	190
40.00 CFS	187	185	183	181	179	177	175	173
41.60 CFS	171	169	167	166	164	162	161	159
43.20 CFS	158	156	156	156	156	156	156	156
44.80 CFS	156	156	155	155	155	155	155	155
46.40 CFS	155	155	155	155	155	155	155	155
48.00 CFS	155	155	155	155	155	155	155	155
49.60 CFS	155	155	155	155	155	155	155	155
51.20 CFS	155	155	155	155	154	154	154	154
52.80 CFS	154	154	154	154	154	154	154	154
54.40 CFS	154	154	154	154	154	154	154	154
56.00 CFS	154	154	154	154	154	154	154	154
57.60 CFS	154	154	154	154	154	154	154	154
59.20 CFS	154	154	154	154	154	154	154	154
60.80 CFS	154	153	153	153	153	153	153	153
62.40 CFS	153	153	153	153	153	153	153	153
64.00 CFS	153	153	153	153	153	153	153	153
65.60 CFS	153	153	153	153	153	153	153	153
67.20 CFS	153	153	153	153	153	153	153	153
68.80 CFS	153	152	152	152	152	152	152	152
70.40 CFS	152	152	152	152	152	152	152	152
72.00 CFS	152	152	152	152	152	152	152	152
73.60 CFS	152	152	152	152	152	152	152	152
75.20 CFS	152	152	151	151	151	151	151	151
76.80 CFS	151	151	151	151	151	151	151	151
78.40 CFS	151	151	151	151	151	151	151	151

80.00 CFS	150	150	150	150	150	150	150	150
81.60 CFS	150	150	150	150				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.31 WATERSHED INCHES; 94665 CFS-HRS; 7823.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	4053	1564	337	181	155	154	153	152

DURATION(HRS)	72	74
FLOW(CFS)	150	150 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
RAINFALL OF 3.94 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
RAINTABLE NUMBER 2, ARC 2							
MAIN TIME INCREMENT .200 HOURS							
ALTERNATE 5 STORM 1							
XSECTION 101	RUNOFF	1.86	1.99	---	12.58	1011	543.5
XSECTION 1	RUNOFF	1.20	1.91	---	12.22	900	750.0
XSECTION 1	ADDHYD	3.06	1.96	---	12.37	1729	565.0
XSECTION 102	REACH	3.06	1.96	4.81	12.62	1691	552.6
XSECTION 2	RUNOFF	1.24	1.62	---	12.18	809	652.4
XSECTION 2	ADDHYD	4.30	1.86	---	12.48	2188	508.8
XSECTION 103	REACH	4.30	1.86	5.64	12.74	2125	494.2
XSECTION 3	RUNOFF	1.85	1.99	---	12.38	1218	658.4
XSECTION 3	ADDHYD	6.15	1.90	---	12.61	3125	508.1
STRUCTURE 1	RESVOR	6.15	1.55	1799.08	24.52	112	18.2
XSECTION 104	DIVERT	6.15	1.55	.50	24.52	112	18.2
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 104	REACH	6.15	1.55	.50	24.77	112	18.2
XSECTION 4	RUNOFF	2.54	1.99	---	12.15	2180	858.3
XSECTION 4	ADDHYD	8.69	1.68	---	12.15	2180	250.9
XSECTION 104	DIVERT	8.69	1.68	5.75	12.15	2180	250.9
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 104	ADDHYD	.00	.00	---	.00	0	********
XSECTION 106	REACH	8.69	1.68	4.13	12.15	2180	250.9
XSECTION 5	RUNOFF	2.00	2.14	---	12.07	2049	1024.5
XSECTION 5	ADDHYD	10.69	1.77	---	12.10	4157	388.9
XSECTION 106	DIVERT	10.69	1.77	6.38	12.10	4157	388.9
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 6	RUNOFF	1.14	1.91	---	12.06	1031	904.4
XSECTION 6	ADDHYD	11.83	1.78	---	12.09	5213	440.7
XSECTION 106	ADDHYD	.00	1.78	---	.00	0	********
XSECTION 7	RUNOFF	.96	1.61	---	11.93	834	868.8
XSECTION 7	ADDHYD	12.79	1.77	---	12.07	5926	463.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 1							
XSECTION 13	RUNOFF	.46	1.85	---	12.01	419	910.9
XSECTION 113	REACH	.46	1.83	1767.05	12.61	259	563.0
XSECTION 12	RUNOFF	.87	1.84	---	12.22	633	727.6
XSECTION 112	ADDHYD	1.33	1.84	1769.81	12.30	771	579.7
XSECTION 112	REACH	1.33	1.84	1768.86	13.04	559	420.3
XSECTION 11	RUNOFF	1.96	1.84	---	12.23	1396	712.2
XSECTION 111	ADDHYD	3.28	1.84	1772.75	12.28	1533	467.4
XSECTION 111	REACH	3.28	1.84	1772.71	12.49	1522	464.0
XSECTION 10	RUNOFF	.67	1.84	---	12.37	405	604.5
XSECTION 110	ADDHYD	3.95	1.84	---	12.47	1915	484.8
XSECTION 110	DIVERT	3.95	1.84	---	12.47	1915	484.8
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 109	REACH	3.95	1.84	1773.89	12.70	1827	462.5
XSECTION 9	RUNOFF	1.39	2.15	---	12.15	1298	933.8
XSECTION 109	ADDHYD	5.34	1.92	1776.13	12.59	2407	450.7
XSECTION 109	DIVERT	5.34	1.92	1776.13	12.59	2407	450.7
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 108	REACH	5.34	1.92	1760.84	12.59	2407	450.7
XSECTION 8	RUNOFF	1.92	2.31	---	12.06	2152	1120.8
XSECTION 108	ADDHYD	7.26	2.02	1762.66	12.18	3856	531.1
XSECTION 109	ADDHYD	.00	2.02	---	.00	0	********
XSECTION 108	DIVERT	7.26	2.02	1762.66	12.18	3856	531.1
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 107	REACH	7.26	2.02	1760.12	12.45	3645	502.1
XSECTION 107	ADDHYD	20.05	1.86	1765.80	12.18	8353	416.6
STRUCTURE 2	RESVOR	20.05	.86	1712.49	25.44T	155T	7.7

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

RAINFALL OF 7.06 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 5, ARC 2

ALTERNATE 5 STORM 4

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 101	RUNOFF	1.86	4.75	---	10.27	908	488.2
XSECTION 1	RUNOFF	1.20	4.64	---	9.92	590	491.7
XSECTION 1	ADDHYD	3.06	4.70	---	10.12	1492	487.6
XSECTION 102	REACH	3.06	4.70	4.41	10.36	1489	486.6
XSECTION 2	RUNOFF	1.24	4.20	---	9.98	554	446.8
XSECTION 2	ADDHYD	4.30	4.56	---	10.22	2032	472.6
XSECTION 103	REACH	4.30	4.56	5.46	10.46	2028	471.6
XSECTION 3	RUNOFF	1.85	4.75	---	10.05	920	497.3
XSECTION 3	ADDHYD	6.15	4.61	---	10.34	2930	476.4
STRUCTURE 1	RESVOR	6.15	4.24	1801.48	13.24	1490	242.3
XSECTION 104	DIVERT	6.15	1.81	.51	10.80F	115F	18.7
XSECTION 0	DIVERT	.00	1.81	---	13.24	1375	********
XSECTION 104	REACH	6.15	1.81	.51	12.20F	115F	18.7
XSECTION 4	RUNOFF	2.54	4.75	---	9.62	1280	503.9
XSECTION 4	ADDHYD	8.69	2.67	---	9.81	1377	158.5
XSECTION 104	DIVERT	8.69	2.67	4.18	9.81	1377	158.5
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 104	ADDHYD	.00	.00	4.18	13.24	1375	********
XSECTION 106	REACH	8.69	2.67	3.06	9.81	1377	158.5
XSECTION 5	RUNOFF	2.00	4.97	---	9.26	1067	533.5
XSECTION 5	ADDHYD	10.69	3.10	---	9.58	2431	227.4
XSECTION 106	DIVERT	10.69	3.10	4.45	9.58	2431	227.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

ALTERNATE 5 STORM 4

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 6	RUNOFF	1.14	4.64	---	9.49	562	493.0
XSECTION 6	ADDHYD	11.83	3.24	---	9.57	2994	253.1
XSECTION 106	ADDHYD	.00	3.24	3.05	13.24	1375	********
XSECTION 7	RUNOFF	.96	4.20	---	9.90	435	453.1
XSECTION 7	ADDHYD	12.79	3.32	---	9.61	3421	267.5
XSECTION 13	RUNOFF	.46	4.52	---	9.51	220	478.3
XSECTION 113	REACH	.46	4.52	1766.73	10.29	213	463.0
XSECTION 12	RUNOFF	.87	4.53	---	9.94	417	479.3
XSECTION 112	ADDHYD	1.33	4.53	1769.18	10.09	626	470.7
XSECTION 112	REACH	1.33	4.53	1769.05	10.66	598	449.6
XSECTION 11	RUNOFF	1.96	4.53	---	9.95	939	479.1
XSECTION 111	ADDHYD	3.28	4.52	1772.66	10.20	1508	459.8
XSECTION 111	REACH	3.28	4.53	1772.66	10.40	1507	459.5
XSECTION 10	RUNOFF	.67	4.53	---	10.10	319	476.1
XSECTION 110	ADDHYD	3.95	4.53	---	10.36	1821	461.0
XSECTION 110	DIVERT	3.95	4.53	---	10.36	1821	461.0
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 109	REACH	3.95	4.53	1773.86	10.59	1818	460.3
XSECTION 9	RUNOFF	1.39	4.97	---	9.48	735	528.8
XSECTION 109	ADDHYD	5.34	4.64	1776.44	10.30	2487	465.7
XSECTION 109	DIVERT	5.34	4.64	1776.44	10.30	2487	465.7
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 108	REACH	5.34	4.64	1760.95	10.30	2487	465.7
XSECTION 8	RUNOFF	1.92	5.19	---	9.22	1076	560.4
XSECTION 108	ADDHYD	7.26	4.79	1762.23	10.10	3491	480.9
XSECTION 109	ADDHYD	.00	4.79	---	.00	0	********
XSECTION 108	DIVERT	7.26	4.79	1762.23	10.10	3491	480.9
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 107	REACH	7.26	4.79	1759.88	10.37	3476	478.8

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 4							
XSECTION 107	ADDHYD	20.05	3.85	1763.95	10.06	6796	339.0
STRUCTURE 2	RESVOR	20.05	2.72	1716.79	13.59	2874	143.3
RAINFALL OF 15.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 5 STORM 5							
XSECTION 101	RUNOFF	1.86	13.14	---	9.97	2475	1330.6
XSECTION 1	RUNOFF	1.20	12.99	---	9.40	1645	1370.8
XSECTION 1	ADDHYD	3.06	13.08	---	9.81	4079	1333.0
XSECTION 102	REACH	3.06	13.08	9.07	10.06	4073	1331.0
XSECTION 2	RUNOFF	1.24	12.39	---	9.34	1635	1318.5
XSECTION 2	ADDHYD	4.30	12.88	---	9.94	5654	1314.9
XSECTION 103	REACH	4.30	12.88	11.79	10.19	5646	1313.0
XSECTION 3	RUNOFF	1.85	13.14	---	9.66	2515	1359.5
XSECTION 3	ADDHYD	6.15	12.96	---	10.07	8107	1318.2
STRUCTURE 1	RESVOR	6.15	12.57	1803.90	10.91	7423	1207.0
XSECTION 104	DIVERT	6.15	1.89	.51	8.60F	115F	18.7
XSECTION 0	DIVERT	.00	1.89	---	10.91	7308	********
XSECTION 104	REACH	6.15	1.89	.51	10.00F	115F	18.7
XSECTION 4	RUNOFF	2.54	13.14	---	9.24	3572	1406.3
XSECTION 4	ADDHYD	8.69	5.18	---	9.24	3687	424.3
XSECTION 104	DIVERT	8.69	5.15	8.00	9.00F	3454F	397.5
XSECTION 0	DIVERT	.00	5.15	---	9.24	233	********
XSECTION 104	ADDHYD	.00	5.15	14.66	10.91	7308	********
XSECTION 106	REACH	8.69	5.15	5.62	9.00F	3454F	397.5
XSECTION 5	RUNOFF	2.00	13.43	---	9.13	2892	1446.0
XSECTION 5	ADDHYD	10.69	6.70	---	9.13	6346	593.6
XSECTION 106	DIVERT	10.69	6.70	8.54	9.10	6333	592.4
XSECTION 0	DIVERT	.00	6.70	---	9.15	47	********
XSECTION 6	RUNOFF	1.14	12.99	---	9.14	1601	1404.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 5							
XSECTION 6	ADDHYD	11.83	7.30	---	9.12	7901	667.9
XSECTION 106	ADDHYD	.00	7.30	9.47	10.91	7308	********
XSECTION 7	RUNOFF	.96	12.38	---	8.98	1313	1367.7
XSECTION 7	ADDHYD	12.79	7.68	---	9.09	9241	722.5
XSECTION 13	RUNOFF	.46	12.84	---	9.07	643	1397.8
XSECTION 113	REACH	.46	12.84	1769.05	9.89	600	1304.3
XSECTION 12	RUNOFF	.87	12.84	---	9.40	1180	1356.3
XSECTION 112	ADDHYD	1.33	12.84	1773.65	9.57	1765	1327.1
XSECTION 112	REACH	1.33	12.84	1773.49	10.23	1724	1296.2
XSECTION 11	RUNOFF	1.96	12.85	---	9.42	2655	1354.6
XSECTION 111	ADDHYD	3.28	12.85	1783.41	9.85	4293	1308.8
XSECTION 111	REACH	3.28	12.85	1783.41	9.85	4293	1308.8
XSECTION 10	RUNOFF	.67	12.84	---	9.67	895	1335.8
XSECTION 110	ADDHYD	3.95	12.85	---	9.81	5184	1312.4
XSECTION 110	DIVERT	3.95	8.49	---	7.60F	1915F	484.8
XSECTION 0	DIVERT	.00	8.49	---	9.81	3269	********
XSECTION 109	REACH	3.95	8.49	1774.23	9.00F	1915F	484.8
XSECTION 9	RUNOFF	1.39	13.43	---	9.24	1990	1431.7
XSECTION 109	ADDHYD	5.34	9.78	1781.91	9.24	3905	731.3
XSECTION 109	DIVERT	5.34	8.49	1776.67	7.60F	2546F	476.8
XSECTION 0	DIVERT	.00	8.49	---	9.24	1359	********
XSECTION 108	REACH	5.34	8.49	1761.03	7.60F	2546F	476.8
XSECTION 8	RUNOFF	1.92	13.71	---	9.11	2827	1472.4
XSECTION 108	ADDHYD	7.26	9.87	1764.66	9.11	5373	740.1
XSECTION 109	ADDHYD	.00	9.87	1784.42	9.66	4554	********
XSECTION 108	DIVERT	7.26	9.86	1764.50	9.00F	5253F	723.6
XSECTION 0	DIVERT	.00	9.86	---	9.11	120	********
XSECTION 107	REACH	7.26	9.86	1762.11	9.57	5251	723.3
XSECTION 107	ADDHYD	20.05	8.47	1772.98	9.20	14388	717.6
STRUCTURE 2	RESVOR	20.05	7.31	1722.45	11.69	10147	506.1

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1726	12.4	1689	12.6	4.77	1.00	.065	.978	.81?
103	2500		2157	12.4	2116	12.8	4.78	1.00	.061	.981	.82?
104	6700		112	24.6	112	24.8	1.57	1.53	.000	1.000	.73?
106	3700		2151	12.2	2151	12.2	1.13	1.57	.001	1.000	1.00?
113	6900		419	12.0	259	12.6	.34	1.41	.413	.618	.34
112	7700		757	12.4	558	13.0	.44	1.35	.232	.737	.32
111	2000		1498	12.2	1480	12.4	.37	1.38	.019	.988	.96?
109	2700		1885	12.4	1804	12.8	.34	1.40	.028	.957	.85?
108	2100		2406	12.6	2406	12.6	.85	1.40	.006	1.000	1.00?
107	5300		3852	12.2	3620	12.4	.54	1.38	.041	.940	.73?
ALTERNATE 5 STORM 4											
102	2500		1490	10.2	1489	10.4	4.77	1.00	.023	.999	.81?
103	2500		2032	10.2	2026	10.4	4.78	1.00	.023	.997	.81?
104	6700		115	10.8	115	12.2	1.57	1.53	.000	1.000	.73?
106	3700		1377	9.8	1377	9.8	1.06	1.58	.000	1.000	1.00?
113	6900		220	9.6	212	10.2	.29	1.46	.054	.963	.30
112	7700		626	10.0	598	10.6	.47	1.33	.059	.956	.30
111	2000		1508	10.2	1507	10.4	.37	1.38	.006	1.000	.96?
109	2700		1820	10.4	1818	10.6	.35	1.39	.008	.999	.84?
108	2100		2483	10.2	2483	10.2	.85	1.40	.002	1.000	1.00?
107	5300		3483	10.2	3475	10.4	.54	1.38	.011	.998	.71?
ALTERNATE 5 STORM 5											
102	2500		4079	9.8	4071	10.0	4.78	1.00	.023	.998	.82?
103	2500		5652	10.0	5646	10.2	4.78	1.00	.023	.999	.82?
104	6700		115	8.6	115	10.0	1.57	1.53	.000	1.000	.73?
106	3700		3454	9.0	3454	9.0	1.25	1.55	.000	1.000	1.00?
113	6900		641	9.0	599	9.8	.47	1.34	.054	.936	.34

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (PT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 5 STORM 5											
112	7700		1764	9.6	1724	10.2	.35	1.39	.034	.977	.40
111	2000		4292	9.8	4292	9.8	.26	1.44	.003	1.000	1.00?
109	2700		1915	7.6	1915	9.0	.34	1.40	.003	1.000	.85?
108	2100		2546	7.6	2546	7.6	.86	1.39	.001	1.000	1.00?
107	5300		5253	9.0	5251	9.6	.54	1.38	.006	1.000	.77?

18.80 CFS	1039	1010	1025	1032	1008	975	925	872
20.40 CFS	838	831	838	866	902	914	886	851
22.00 CFS	837	837	822	775	734	753	804	827
23.60 CFS	794	754	771	817	796	650	494	352
25.20 CFS	238	158	103	68	44	29	19	12
26.80 CFS	7.95	5.19	3.38	2.22	1.47	.97	.64	.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.86 WATERSHED INCHES; 46231 CFS-HRS; 3820.5 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	4507	3396	1910	1235	866	771	131	2

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.20	14388.5	1772.98
17.01	2757.5	1758.77
17.93	2562.3	1758.44
19.08	2119.7	1757.63
21.07	1884.2	1757.16
21.96	1725.4	1756.82
23.10	1736.0	1756.85
23.99	1738.0	1756.85

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
2.80 CFS	0	1	5	16	36	87	156	241
4.40 CFS	350	458	651	853	1092	1378	1634	1948
6.00 CFS	2235	2679	3297	3869	4602	5276	6124	7165
7.60 CFS	8097	9242	10063	10928	11918	12669	13671	14320
9.20 CFS	14388	14322	14254	14123	13997	13619	13013	12571
10.80 CFS	12191	11917	11496	10909	10437	9769	9207	8691
12.40 CFS	8147	7771	7401	7122	6818	6457	6202	5952
14.00 CFS	5748	5453	5109	4819	4520	4264	4050	3862
15.60 CFS	3704	3495	3303	3101	2879	2722	2717	2758
17.20 CFS	2721	2615	2536	2535	2553	2431	2181	1999
18.80 CFS	2028	2112	2104	2016	1935	1830	1731	1693
20.40 CFS	1707	1735	1805	1879	1865	1773	1701	1703
22.00 CFS	1724	1670	1550	1476	1580	1720	1717	1592
23.60 CFS	1509	1606	1738	1592	1205	871	647	481
25.20 CFS	358	274	219	183	159	144	134	127
26.80 CFS	123	120	118	117	116	116	116	115
28.40 CFS	115	115	115	115	115	114	114	114
30.00 CFS	114	113	113	113	113	113	113	113
31.60 CFS	113	113	113	113	112	112	112	112
33.20 CFS	112	112	112	112	112	112	111	111

34.80 CFS	111	111	111	111	111	111	111	111
36.40 CFS	110	110	110	110	110	110	110	110
38.00 CFS	110	110	110	109	109	109	109	109
39.60 CFS	109	109	109	109	109	109	108	108
41.20 CFS	108	108	108	108	108	108	108	108
42.80 CFS	107	107	107	107	107	107	107	107
44.40 CFS	107	107	107	106	106	106	106	106
46.00 CFS	106	106	106	106	106	106	105	105
47.60 CFS	105	105	105	105	105	105	105	105
49.20 CFS	105	104	104	104	104	104	104	104
50.80 CFS	104	104	104	104	104	103	103	103
52.40 CFS	103	103	103	103	103	103	103	103
54.00 CFS	102	102	102	102	102	102	102	102
55.60 CFS	102	101	101	101	101	101	101	101
57.20 CFS	101	100	100	100	100	100	100	100
58.80 CFS	99.70	99.59	99.48	99.36	99.25	99.14	99.03	98.92
60.40 CFS	98.80	98.69	98.58	98.47	98.36	98.25	98.14	98.03
62.00 CFS	97.91	97.80	97.69	97.58	97.47	97.36	97.25	97.14
63.60 CFS	97.03	96.92	96.81	96.70	96.60	96.49	96.38	96.27
65.20 CFS	96.15	96.03	95.90	95.76	95.63	95.50	95.37	95.24
66.80 CFS	95.11	94.98	94.85	94.72	94.60	94.47	94.34	94.21
68.40 CFS	94.08	93.95	93.82	93.69	93.57	93.44	93.31	93.18
70.00 CFS	93.06	92.93	92.80	92.68	92.55	92.42	92.30	92.17
71.60 CFS	92.04	91.92	91.79	91.67	91.54	91.42	91.29	90.04
73.20 CFS	87.82	85.39	82.96	80.57	78.25	76.00	73.94	72.04
74.80 CFS	70.22	68.45	66.72	65.04	63.41	61.81	60.26	58.74
76.40 CFS	57.26	55.82	54.42	53.05	51.71	50.41	49.14	47.91
78.00 CFS	46.70	45.53	44.38	43.26	42.18	41.12	40.08	39.07
79.60 CFS	38.09	37.13	36.20	35.28	34.40	33.53	32.69	31.87
81.20 CFS	31.06	30.28	29.52	28.78	28.05	27.35		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.47 WATERSHED INCHES; 109648 CFS-HRS; 9061.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	4520	1717	116	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	62	27 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 1238.91 AC-FT (.10 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1711.08. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.69	10146.8	1722.45

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.87 WATERSHED INCHES; 46277 CFS-HRS; 3824.3 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	4529	3368	1892	1224	856	761	133	2

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	4553.9	1784.42

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
7.40 CFS	0	231	840	1342	1806	2359	2874	3416
9.00 CFS	3969	4347	4503	4551	4538	4485	4375	4133
10.60 CFS	3882	3656	3455	3248	2950	2655	2323	1969
12.20 CFS	1651	1316	1025	770	543	343	123	0

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
15535 CFS-HRS; 1283.9 ACRE-FEET.

DURATION(HRS)	2	4	6
FLOW(CFS)	3455	1651	0

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	5253.0 *	1764.50
17.01	1372.5	1759.10
17.91	1275.2	1758.91
19.13	1036.4	1758.38
21.12	921.0	1758.10
21.93	838.0	1757.90
23.14	836.4	1757.89
24.01	831.0	1757.88

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.86 WATERSHED INCHES; 46228 CFS-HRS; 3820.3 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	4529	3368	1892	1224	856	761	133	2

DURATION(HRS)	25
FLOW(CFS)	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET) (DIVERT)
9.11	119.7	

*** WARNING - STRUCTURE 0, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(119.74) EXCEEDS ADJACENT COORDINATE (110.61) BY 8 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
49 CFS-HRS; 4.1 ACRE-FEET.

DURATION(HRS)	2	6	9	12	15	18	21	24
FLOW(CFS)	4529	3368	1892	1224	856	761	133	2

DURATION(HRS)	1
FLOW(CFS)	0

*** WARNING - XSECTION 107, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	5251.5	1762.11
17.12	1372.9	1756.01
19.35	1032.7	1755.07
21.36	914.7	1754.70
23.38	827.2	1754.40
24.24	818.0	1754.37

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
2.80 CFS	.10	1.04	1.97	7.60	19.98	31.32	61.49	95.06
4.40 CFS	131	182	233	324	426	539	683	815
6.00 CFS	969	1121	1321	1621	1910	2263	2618	3008
7.60 CFS	3506	3878	4141	4330	4507	4744	4899	5121
9.20 CFS	5222	5246	5251	5241	5189	5141	5052	4896
10.80 CFS	4798	4710	4646	4556	4408	4306	4151	4020
12.40 CFS	3911	3779	3699	3615	3551	3487	3396	3306
14.00 CFS	3206	3051	2884	2699	2540	2380	2236	2116
15.60 CFS	2007	1919	1816	1716	1616	1500	1407	1371
17.20 CFS	1372	1364	1327	1289	1273	1271	1235	1135

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	2546	2497	1360	868	625	560	77	1

DURATION(HRS)	25
FLOW(CFS)	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	1359.4	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4431 CFS-HRS; 366.2 ACRE-FEET.

DURATION(HRS)	2	4	6
FLOW(CFS)	997	446	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.60	2546.0 *	1761.03
17.10	1000.1	1758.29
19.29	750.2	1757.68
21.25	668.5	1757.42
23.31	600.7	1757.21
24.13	593.1	1757.18

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 29289 CFS-HRS; 2420.4 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	2546	2497	1360	868	625	560	77	1

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	2826.7	(RUNOFF)
17.04	374.8	(RUNOFF)
17.95	342.6	(RUNOFF)
19.07	293.9	(RUNOFF)
21.00	263.6	(RUNOFF)
21.99	226.1	(RUNOFF)
23.04	253.9	(RUNOFF)
23.98	253.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.71 WATERSHED INCHES; 16988 CFS-HRS; 1403.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2270	1558	986	612	422	330	253	226

DURATION(HRS)	18	20	22	22
FLOW(CFS)	202	92	2	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	5372.7	1764.66
17.01	1372.5	1759.10
17.91	1275.2	1758.91
19.13	1036.4	1758.38
21.12	921.0	1758.10
21.93	838.0	1757.90
23.14	836.4	1757.89
24.01	831.0	1757.88

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS									
2.60	CFS	0	1	2	9	24	35	71	105
4.20	CFS	142	197	248	352	457	573	727	855
5.80	CFS	1016	1168	1381	1713	1997	2371	2726	3126
7.40	CFS	3657	3991	4221	4388	4561	4816	4946	5188
9.00	CFS	5360	5364	5281	5238	5173	5126	5025	4848
10.60	CFS	4769	4683	4627	4529	4363	4276	4104	3980
12.20	CFS	3878	3740	3674	3590	3532	3468	3368	3279
13.80	CFS	3175	3004	2833	2643	2491	2331	2192	2079
15.40	CFS	1974	1892	1785	1685	1585	1466	1378	1361
17.00	CFS	1372	1362	1316	1277	1268	1270	1224	1104
18.60	CFS	1010	1002	1029	1034	1001	965	910	856
20.20	CFS	828	829	840	875	913	917	877	841
21.80	CFS	833	837	817	761	721	758	820	834
23.40	CFS	784	742	776	831	789	606	446	309
25.00	CFS	204	133	87	57	37	24	16	10
26.60	CFS	6.66	4.35	2.84	1.87	1.24	.82	.55	.36

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	3269.5	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
11104 CFS-HRS; 917.6 ACRE-FEET.

DURATION(HRS)	2	4	6
FLOW(CFS)	2568	1092	0

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	1915.0 *	1774.23
17.36	740.1	1769.69
19.45	559.0	1768.86
21.42	497.5	1768.57
23.46	451.1	1768.29
24.33	444.6	1768.25

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 21672 CFS-HRS; 1791.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1915	1915	1884	1219	767	633	497	449

DURATION(HRS)	18	20	22	24
FLOW(CFS)	408	130	10	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	1990.4	(RUNOFF)
17.12	265.6	(RUNOFF)
17.98	242.8	(RUNOFF)
19.16	206.3	(RUNOFF)
21.07	185.8	(RUNOFF)
22.04	160.2	(RUNOFF)
23.12	175.5	(RUNOFF)
24.04	171.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 12047 CFS-HRS; 995.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1628	1089	689	432	288	235	183	162

DURATION(HRS)	18	20	22	22
FLOW(CFS)	147	58	1	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3905.4	1781.91
17.10	1000.1	1770.70
19.29	750.2	1769.73
21.25	668.5	1769.38
23.31	600.7	1769.06
24.13	593.1	1769.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.78 WATERSHED INCHES; 33720 CFS-HRS; 2786.6 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	3276	2497	1360	868	625	560	77	1

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.60	2546.0 *	1776.67
17.10	1000.1	1770.70
19.29	750.2	1769.73
21.25	668.5	1769.38
23.31	600.7	1769.06
24.13	593.1	1769.02

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 29289 CFS-HRS; 2420.4 ACRE-FEET.

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.85	4293.1	1783.41
17.14	618.0	1769.14
17.91	570.1	1768.91
19.22	467.9	1768.39
21.19	414.7	1768.07
22.00	374.0	1767.83
23.22	377.7	1767.85
24.12	373.4	1767.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 27224 CFS-HRS; 2249.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3730	2483	1576	1006	632	519	415	373

DURATION(HRS)	18	20	22	24
FLOW(CFS)	338	103	9	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	894.6	(RUNOFF)
17.24	123.5	(RUNOFF)
19.33	94.2	(RUNOFF)
21.23	85.1	(RUNOFF)
22.11	75.6	(RUNOFF)
23.28	77.4	(RUNOFF)
24.14	75.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 5554 CFS-HRS; 459.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	753	524	310	199	131	107	85	75

DURATION(HRS)	18	20	22	23
FLOW(CFS)	68	19	1	0

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	5184.5	(NULL)
17.16	741.1	(NULL)
17.90	684.8	(NULL)
19.24	561.4	(NULL)
21.19	499.8	(NULL)
21.98	449.1	(NULL)
23.23	454.9	(NULL)
24.12	448.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 32778 CFS-HRS; 2708.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4483	3007	1886	1204	757	625	500	448

DURATION(HRS)	18	20	22	24
FLOW(CFS)	406	119	10	0

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.60	1915.0 *	(DIVERT)
17.16	741.1	(DIVERT)
17.90	684.8	(DIVERT)
19.24	561.4	(DIVERT)
21.19	499.8	(DIVERT)
21.98	449.1	(DIVERT)
23.23	454.9	(DIVERT)
24.12	448.4	(DIVERT)

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 21674 CFS-HRS; 1791.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1915	1915	1886	1204	757	625	500	448

DURATION(HRS)	18	20	22	24
FLOW(CFS)	406	119	10	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

OPERATION ADDHYD XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	14.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42532 CFS-HRS; 3514.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1122	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	5.62
17.11	597.9	1.78
17.98	557.0	1.71
19.15	491.0	1.59
21.07	454.4	1.52
22.04	406.9	1.38
23.12	435.2	1.48
24.03	427.6	1.45

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 28888 CFS-HRS; 2387.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	2891.7	(RUNOFF)
17.05	387.9	(RUNOFF)
17.95	354.7	(RUNOFF)
19.07	304.5	(RUNOFF)
21.01	273.4	(RUNOFF)
21.99	234.1	(RUNOFF)
23.05	262.5	(RUNOFF)
23.99	260.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 17332 CFS-HRS; 1432.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2298	1621	987	636	413	335	261	229

DURATION(HRS)	18	20	22	22
FLOW(CFS)	210	83	1	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	6345.7	(NULL)
17.08	984.1	(NULL)
17.97	911.6	(NULL)
19.11	791.9	(NULL)
21.03	727.2	(NULL)
22.01	640.8	(NULL)
23.08	695.5	(NULL)
24.01	687.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.70 WATERSHED INCHES; 46217 CFS-HRS; 3819.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION DIVERT XSECTION 106
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.10	6332.9	8.54
17.08	984.1	2.48
17.97	911.6	2.35
19.11	791.9	2.13
21.03	727.2	2.02
22.01	640.8	1.86
23.08	695.5	1.96
24.01	687.2	1.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.70 WATERSHED INCHES; 46203 CFS-HRS; 3818.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.15	46.5	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
14 CFS-HRS; 1.1 ACRE-FEET.

DURATION(HRS)	2	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	0
FLOW(CFS)	60	0

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.14	1601.2	(RUNOFF)
17.04	219.9	(RUNOFF)
17.95	201.2	(RUNOFF)
19.07	172.6	(RUNOFF)
21.00	154.8	(RUNOFF)
21.99	132.8	(RUNOFF)
23.04	149.1	(RUNOFF)
23.98	149.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 9558 CFS-HRS; 789.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1288	901	539	342	220	187	148	127

DURATION(HRS)	18	20	22
FLOW(CFS)	117	34	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.12	7900.8	(NULL)
17.07	1203.7	(NULL)
17.96	1112.7	(NULL)
19.10	962.7	(NULL)
21.03	881.8	(NULL)
22.01	773.5	(NULL)
23.07	844.1	(NULL)
24.00	836.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.30 WATERSHED INCHES; 55759 CFS-HRS; 4608.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1846	758	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	9.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS									
8.40	CFS	0	72	555	1209	1868	3344	4530	5429
10.00	CFS	6094	6605	6972	7196	7297	7301	7235	7118
11.60	CFS	6954	6749	6505	6226	5920	5594	5259	4924
13.20	CFS	4600	4289	3995	3714	3452	3209	2987	2784
14.80	CFS	2596	2423	2262	2115	1981	1860	1750	1648
16.40	CFS	1550	1509	1475	1438	1403	1370	1338	1307
18.00	CFS	1277	1248	1220	1190	1157	1122	1088	1057
19.60	CFS	1029	1001	973	944	914	886	859	836
21.20	CFS	817	801	787	772	757	742	728	713
22.80	CFS	697	681	668	658	650	641	631	624
24.40	CFS	617	606	586	557	521	480	437	395

26.00 CFS	353	314	277	243	212	183	157	132
27.60 CFS	110	90	72	55	40	26	13	2
29.20 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42546 CFS-HRS; 3516.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1122	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.98	1313.1	(RUNOFF)
16.93	189.3	(RUNOFF)
17.91	174.5	(RUNOFF)
18.94	151.3	(RUNOFF)
20.91	134.2	(RUNOFF)
21.91	115.4	(RUNOFF)
22.93	134.2	(RUNOFF)
23.91	139.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.38 WATERSHED INCHES; 7673 CFS-HRS; 634.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1053	685	406	274	188	150	126	106

DURATION(HRS)	18	20	20
FLOW(CFS)	87	9	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.09	9241.1	(NULL)
17.03	1387.8	(NULL)
17.94	1285.9	(NULL)
19.07	1109.1	(NULL)
21.00	1013.0	(NULL)
21.98	886.9	(NULL)
23.04	970.1	(NULL)
23.98	969.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
3.00 CFS	0	3	9	16	56	94	146	219
4.60 CFS	276	418	528	665	839	951	1133	1266
6.20 CFS	1558	1976	2248	2693	3012	3506	4157	4591
7.80 CFS	5364	5922	6598	7411	7925	8772	9199	9166
9.40 CFS	9076	9003	8881	8809	8478	7961	7675	7393
11.00 CFS	7207	6850	6353	6029	5463	5055	4671	4236
12.60 CFS	3991	3703	3507	3267	2970	2805	2645	2542
14.20 CFS	2402	2225	2120	1980	1885	1814	1747	1697
15.80 CFS	1576	1487	1385	1264	1222	1310	1386	1349
17.40 CFS	1251	1209	1246	1280	1160	945	864	989
19.00 CFS	1102	1079	985	927	855	806	821	869
20.60 CFS	903	967	1013	963	859	815	851	886
22.20 CFS	833	728	701	847	967	912	765	715
23.80 CFS	852	967	776	409	220	154	129	120
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	115	115	115	115	115
28.60 CFS	115	115	115	115	114	114	114	114
30.20 CFS	113	113	113	113	113	113	113	113
31.80 CFS	113	113	113	112	112	112	112	112
33.40 CFS	112	112	112	112	112	111	111	111
35.00 CFS	111	111	111	111	111	111	111	110
36.60 CFS	110	110	110	110	110	110	110	110
38.20 CFS	110	110	109	109	109	109	109	109
39.80 CFS	109	109	109	109	109	108	108	108
41.40 CFS	108	108	108	108	108	108	108	107
43.00 CFS	107	107	107	107	107	107	107	107
44.60 CFS	107	107	106	106	106	106	106	106
46.20 CFS	106	106	106	106	106	105	105	105
47.80 CFS	105	105	105	105	105	105	105	105
49.40 CFS	104	104	104	104	104	104	104	104
51.00 CFS	104	104	104	104	103	103	103	103
52.60 CFS	103	103	103	103	103	103	103	102
54.20 CFS	102	102	102	102	102	102	102	102
55.80 CFS	101	101	101	101	101	101	101	101
57.40 CFS	100	100	100	100	100	100	100	100
59.00 CFS	99.59	99.48	99.36	99.25	99.14	99.03	98.92	98.80
60.60 CFS	98.69	98.58	98.47	98.36	98.25	98.14	98.03	97.91
62.20 CFS	97.80	97.69	97.58	97.47	97.36	97.25	97.14	97.03

63.80 CFS	96.92	96.81	96.70	96.60	96.49	96.38	96.27	96.15
65.40 CFS	96.03	95.90	95.76	95.63	95.50	95.37	95.24	95.11
67.00 CFS	94.98	94.85	94.72	94.60	94.47	94.34	94.21	94.08
68.60 CFS	93.95	93.82	93.69	93.57	93.44	93.31	93.18	93.06
70.20 CFS	92.93	92.80	92.68	92.55	92.42	92.30	92.17	92.04
71.80 CFS	91.92	91.79	91.67	91.54	91.42	91.29	90.04	87.82
73.40 CFS	85.39	82.96	80.57	78.25	76.00	73.94	72.04	70.22
75.00 CFS	68.45	66.72	65.04	63.41	61.81	60.26	58.74	57.26
76.60 CFS	55.82	54.42	53.05	51.71	50.41	49.14	47.91	46.70
78.20 CFS	45.53	44.38	43.26	42.18	41.12	40.08	39.07	38.09
79.80 CFS	37.13	36.20	35.28	34.40	33.53	32.69	31.87	31.06
81.40 CFS	30.28	29.52	28.78	28.05	27.35	26.66	26.10	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.68 WATERSHED INCHES; 63428 CFS-HRS; 5241.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	2120	859	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.07	643.0	(RUNOFF)
17.00	89.0	(RUNOFF)
17.93	81.6	(RUNOFF)
19.02	70.3	(RUNOFF)
20.96	63.0	(RUNOFF)
21.96	53.9	(RUNOFF)
23.00	61.3	(RUNOFF)
23.95	61.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 3796 CFS-HRS; 313.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	512	351	210	136	89	75	60	53

DURATION(HRS)	18	20	21
FLOW(CFS)	42	11	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.89	599.8	1769.05
17.23	86.3	1765.50
18.13	80.0	1765.40
19.32	65.4	1765.18
21.28	58.1	1765.07
22.16	52.5	1764.98
23.32	53.1	1764.99
24.20	52.8	1764.99

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 3796 CFS-HRS; 313.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	512	357	220	139	90	76	58	52

DURATION(HRS)	18	20	22	23
FLOW(CFS)	47	15	1	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1180.4	(RUNOFF)
17.17	162.5	(RUNOFF)
18.00	149.0	(RUNOFF)
19.21	125.5	(RUNOFF)
21.13	113.9	(RUNOFF)
22.09	98.1	(RUNOFF)
23.18	106.0	(RUNOFF)
24.10	102.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 7204 CFS-HRS; 595.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	977	672	403	258	163	146	109	98

DURATION(HRS)	18	20	22
FLOW(CFS)	87	21	0

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	1764.5	1773.65
17.18	248.7	1766.98
18.01	228.1	1766.84
19.23	190.5	1766.56
21.17	171.4	1766.37
22.11	151.1	1766.17
23.21	158.2	1766.24
24.12	156.1	1766.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 11000 CFS-HRS; 909.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1479	1022	636	401	260	222	167	150

DURATION(HRS)	18	20	22	23
FLOW(CFS)	133	41	2	0

*** WARNING - XSECTION 112, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.23	1724.1	1773.49
19.44	187.6	1766.53
21.48	164.8	1766.31
23.52	148.5	1766.15
24.35	147.4	1766.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 11000 CFS-HRS; 909.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1497	1035	631	403	267	219	164	151

DURATION(HRS)	18	20	22	24
FLOW(CFS)	139	42	5	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.42	2654.9	(RUNOFF)
17.18	366.1	(RUNOFF)
18.00	335.3	(RUNOFF)
19.22	282.3	(RUNOFF)
21.14	255.9	(RUNOFF)
22.10	222.4	(RUNOFF)
23.19	237.5	(RUNOFF)
24.10	232.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 16224 CFS-HRS; 1340.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2207	1500	914	584	369	329	248	220

DURATION(HRS)	18	20	22	22
FLOW(CFS)	196	46	1	0

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.85	4293.1	1783.41
17.14	618.0	1769.14
17.91	570.1	1768.91
19.22	467.9	1768.39
21.19	414.7	1768.07
22.00	374.0	1767.83
23.22	377.7	1767.85
24.12	373.4	1767.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 27224 CFS-HRS; 2249.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3730	2483	1576	1006	632	519	415	373

DURATION(HRS)	18	20	22	24
FLOW(CFS)	338	103	9	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 111. ***

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.89 WATERSHED INCHES; 7508 CFS-HRS; 620.5 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	112	109	105	101	97	92

DURATION(HRS)	72	75
FLOW(CFS)	39	26 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3571.8	(RUNOFF)
17.11	482.9	(RUNOFF)
17.98	442.0	(RUNOFF)
19.15	376.0	(RUNOFF)
21.07	339.4	(RUNOFF)
22.04	291.9	(RUNOFF)
23.12	320.2	(RUNOFF)
24.03	312.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 21539 CFS-HRS; 1780.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2928	1946	1248	783	503	424	319	294

DURATION(HRS)	18	20	22	22
FLOW(CFS)	263	76	1	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 23.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3686.8	(NULL)
17.11	597.9	(NULL)
17.98	557.0	(NULL)
19.15	491.0	(NULL)
21.07	454.4	(NULL)
22.04	406.9	(NULL)
23.12	435.2	(NULL)
24.03	427.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.18 WATERSHED INCHES; 29047 CFS-HRS; 2400.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	8.00
17.11	597.9	2.38
17.98	557.0	2.28
19.15	491.0	2.11
21.07	454.4	2.01
22.04	406.9	1.81
23.12	435.2	1.93
24.03	427.6	1.90

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 28888 CFS-HRS; 2387.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	232.8	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
158 CFS-HRS; 13.1 ACRE-FEET.

DURATION(HRS)	2	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	1
FLOW(CFS)	57	0

13.60 CFS	4110	3829	3567	3324	3102	2899	2711	2538
15.20 CFS	2377	2230	2096	1975	1865	1763	1665	1624
16.80 CFS	1590	1553	1518	1485	1453	1422	1392	1363
18.40 CFS	1335	1305	1272	1237	1203	1172	1144	1116
20.00 CFS	1088	1059	1029	1001	974	951	932	916
21.60 CFS	902	887	872	857	843	828	812	796
23.20 CFS	783	773	765	756	746	739	732	721
24.80 CFS	701	672	636	595	552	510	468	429
26.40 CFS	392	358	327	298	272	247	225	205
28.00 CFS	187	170	155	141	128	117	114	114
29.60 CFS	114	114	113	113	113	113	113	113
31.20 CFS	113	113	113	113	112	112	112	112
32.80 CFS	112	112	112	112	112	112	112	111
34.40 CFS	111	111	111	111	111	111	111	111
36.00 CFS	111	110	110	110	110	110	110	110
37.60 CFS	110	110	110	110	109	109	109	109
39.20 CFS	109	109	109	109	109	109	108	108
40.80 CFS	108	108	108	108	108	108	108	108
42.40 CFS	108	107	107	107	107	107	107	107
44.00 CFS	107	107	107	107	106	106	106	106
45.60 CFS	106	106	106	106	106	106	106	105
47.20 CFS	105	105	105	105	105	105	105	105
48.80 CFS	105	105	104	104	104	104	104	104
50.40 CFS	104	104	104	104	104	103	103	103
52.00 CFS	103	103	103	103	103	103	103	103
53.60 CFS	102	102	102	102	102	102	102	102
55.20 CFS	102	101	101	101	101	101	101	101
56.80 CFS	101	101	100	100	100	100	100	100
58.40 CFS	99.77	99.66	99.55	99.44	99.32	99.21	99.10	98.99
60.00 CFS	98.87	98.76	98.65	98.54	98.43	98.32	98.21	98.10
61.60 CFS	97.98	97.87	97.76	97.65	97.54	97.43	97.32	97.21
63.20 CFS	97.10	96.99	96.88	96.77	96.66	96.56	96.45	96.34
64.80 CFS	96.23	96.11	95.98	95.85	95.72	95.59	95.46	95.33
66.40 CFS	95.20	95.07	94.94	94.81	94.68	94.55	94.42	94.29
68.00 CFS	94.16	94.03	93.90	93.78	93.65	93.52	93.39	93.26
69.60 CFS	93.14	93.01	92.88	92.76	92.63	92.50	92.38	92.25
71.20 CFS	92.13	92.00	91.87	91.75	91.62	91.50	91.37	91.25
72.80 CFS	89.59	87.01	84.50	82.06	79.70	77.40	75.17	73.18
74.40 CFS	71.34	69.55	67.80	66.09	64.43	62.81	61.23	59.69
76.00 CFS	58.19	56.72	55.29	53.90	52.55	51.22	49.94	48.68
77.60 CFS	47.45	46.26	45.10	43.96	42.86	41.78	40.73	39.70
79.20 CFS	38.70	37.73	36.78	35.85	34.95	34.07	33.21	32.38
80.80 CFS	31.56	30.77	30.00	29.24	28.51	27.79	27.09	26.41
82.40 CFS	25.90	25.44						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.57 WATERSHED INCHES; 49889 CFS-HRS; 4122.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1518	672	112	108	105	101	97	92

DURATION(HRS)	72	76
FLOW(CFS)	39	25 TRUNCATED

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.60	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.89 WATERSHED INCHES; 7515 CFS-HRS; 621.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	112	108	105	101	97	92

DURATION(HRS)	72	76
FLOW(CFS)	39	25 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42373 CFS-HRS; 3501.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1088	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.00	115.0 *	.51

*** WARNING - XSECTION 103, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.19	5645.6	11.79
19.39	602.9	2.39
21.49	532.4	2.21
23.52	478.3	2.07
24.34	474.9	2.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4853	3404	2027	1297	869	706	531	492

DURATION(HRS)	18	20	22	24
FLOW(CFS)	450	132	13	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	2515.5	(RUNOFF)
17.24	343.0	(RUNOFF)
19.34	261.4	(RUNOFF)
21.23	236.0	(RUNOFF)
22.10	209.5	(RUNOFF)
23.30	213.7	(RUNOFF)
24.15	208.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15688 CFS-HRS; 1296.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2109	1485	892	573	376	315	236	209

DURATION(HRS)	18	20	22	23
FLOW(CFS)	196	71	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.07	8106.6	(NULL)
19.35	864.2	(NULL)
21.39	762.6	(NULL)
23.42	687.0	(NULL)
24.21	671.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
3.40 CFS	0	1	4	12	25	47	79	123
5.00 CFS	184	260	350	456	570	693	829	993
6.60 CFS	1206	1451	1728	2030	2364	2750	3171	3642
8.20 CFS	4149	4688	5271	5868	6481	7073	7549	7863
9.80 CFS	8034	8102	8089	7988	7793	7552	7302	7058
11.40 CFS	6797	6496	6168	5808	5431	5053	4679	4331
13.00 CFS	4015	3732	3471	3220	2988	2784	2607	2449
14.60 CFS	2297	2155	2022	1901	1795	1704	1622	1540
16.20 CFS	1455	1369	1280	1205	1163	1152	1145	1122
17.80 CFS	1093	1076	1065	1036	971	898	860	859
19.40 CFS	864	850	822	784	745	715	704	709
21.00 CFS	727	752	763	750	726	710	703	691
22.60 CFS	662	634	637	666	687	674	650	652
24.20 CFS	671	656	566	437	316	219	146	95
25.80 CFS	60.39	38.60	24.85	16.02	10.26	6.54	4.22	2.72
27.40 CFS	1.74	1.09	.65	.33				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.96 WATERSHED INCHES; 51438 CFS-HRS; 4250.8 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	5868	2988	1540	993	726	650	79	1

DURATION(HRS)	24
FLOW(CFS)	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7422.8	1803.90

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.60 CFS	.00	.01	.01	.01	.01	.02	2.65	33.05
7.20 CFS	80	94	97	100	103	107	110	187
8.80 CFS	670	1165	1709	3269	4505	5464	6189	6720
10.40 CFS	7087	7311	7412	7416	7350	7233	7069	6864
12.00 CFS	6620	6341	6035	5709	5374	5039	4715	4404

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 10062 CFS-HRS; 831.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1359	945	561	359	231	202	152	137

DURATION(HRS)	18	20	22
FLOW(CFS)	120	35	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	4079.1	(NULL)
17.12	574.5	(NULL)
19.22	432.3	(NULL)
21.21	385.5	(NULL)
23.24	349.2	(NULL)
24.11	344.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3522	2377	1482	944	625	514	386	350

DURATION(HRS)	18	20	22	24
FLOW(CFS)	319	103	12	0

*** WARNING - XSECTION 102, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.06	4073.5	9.07
17.30	574.5	2.32
19.43	430.9	1.91
21.44	383.5	1.70
23.47	346.0	1.54
24.32	341.7	1.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3519	2369	1509	958	604	497	383	350

DURATION(HRS)	18	20	22	24
FLOW(CFS)	320	114	13	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.34	1635.2	(RUNOFF)
17.14	231.2	(RUNOFF)
17.99	211.6	(RUNOFF)
19.18	179.4	(RUNOFF)
21.10	162.5	(RUNOFF)
22.06	139.7	(RUNOFF)
23.15	152.4	(RUNOFF)
24.06	147.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.39 WATERSHED INCHES; 9916 CFS-HRS; 819.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1353	926	554	358	230	196	152	138

DURATION(HRS)	18	20	21
FLOW(CFS)	123	17	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	5653.9	(NULL)
19.21	603.5	(NULL)
21.25	534.8	(NULL)
23.28	481.4	(NULL)
24.13	478.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4815	3359	2061	1304	855	698	530	491

DURATION(HRS)	18	20	22	24
FLOW(CFS)	445	142	13	0

17.60 CFS	1723	1680	1640	1602	1561	1516	1473	1435
19.20 CFS	1401	1367	1333	1298	1263	1229	1197	1168
20.80 CFS	1143	1121	1101	1081	1060	1040	1021	1004
22.40 CFS	985	965	947	933	923	912	897	884
24.00 CFS	876	868	853	827	805	784	761	737
25.60 CFS	713	689	665	642	619	597	576	556
27.20 CFS	536	518	500	482	466	450	435	421
28.80 CFS	407	394	384	377	369	362	354	348
30.40 CFS	341	334	328	322	316	310	304	299
32.00 CFS	293	288	283	278	273	269	264	260
33.60 CFS	255	251	247	243	239	236	232	229
35.20 CFS	225	222	219	216	213	210	207	204
36.80 CFS	201	199	196	194	191	189	186	184
38.40 CFS	182	180	178	176	174	172	170	168
40.00 CFS	167	165	163	162	160	159	157	156
41.60 CFS	156	156	156	156	156	156	156	156
43.20 CFS	155	155	155	155	155	155	155	155
44.80 CFS	155	155	155	155	155	155	155	155
46.40 CFS	155	155	155	155	155	155	155	155
48.00 CFS	155	155	155	155	155	155	155	155
49.60 CFS	155	155	154	154	154	154	154	154
51.20 CFS	154	154	154	154	154	154	154	154
52.80 CFS	154	154	154	154	154	154	154	154
54.40 CFS	154	154	154	154	154	154	154	154
56.00 CFS	154	154	154	154	154	154	154	154
57.60 CFS	154	154	154	154	154	154	154	153
59.20 CFS	153	153	153	153	153	153	153	153
60.80 CFS	153	153	153	153	153	153	153	153
62.40 CFS	153	153	153	153	153	153	153	153
64.00 CFS	153	153	153	153	153	153	153	153
65.60 CFS	153	153	153	153	153	153	153	152
67.20 CFS	152	152	152	152	152	152	152	152
68.80 CFS	152	152	152	152	152	152	152	152
70.40 CFS	152	152	152	152	152	152	152	152
72.00 CFS	152	152	152	152	152	152	152	152
73.60 CFS	152	151	151	151	151	151	151	151
75.20 CFS	151	151	151	151	151	151	151	151
76.80 CFS	151	151	151	151	151	151	150	150
78.40 CFS	150	150	150	150	150	150	150	150
80.00 CFS	150	150	150	150	150	150	150	150
81.60 CFS	149	149	149	149	149	149	149	149
83.20 CFS	149	149	149					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.72 WATERSHED INCHES; 35225 CFS-HRS; 2911.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1319	536	232	156	154	154	153	151
DURATION(HRS)	72	73						
FLOW(CFS)	149	149	TRUNCATED					

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 15.80 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 5 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.97	2474.7	(RUNOFF)
19.38	260.1	(RUNOFF)
21.37	231.2	(RUNOFF)
23.43	207.1	(RUNOFF)
24.14	201.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15772 CFS-HRS; 1303.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2130	1491	895	572	384	310	236	213
DURATION(HRS)	18	20	22	24				
FLOW(CFS)	199	74	8	0				

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1645.4	(RUNOFF)
17.18	225.3	(RUNOFF)
18.00	206.3	(RUNOFF)
19.22	173.6	(RUNOFF)
21.14	157.2	(RUNOFF)
22.10	136.8	(RUNOFF)
23.18	146.6	(RUNOFF)
24.10	143.4	(RUNOFF)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.95	938.8	(RUNOFF)
17.18	150.3	(RUNOFF)
18.00	138.0	(RUNOFF)
19.22	116.4	(RUNOFF)
21.14	105.8	(RUNOFF)
22.10	91.5	(RUNOFF)
23.19	98.6	(RUNOFF)
24.10	96.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 5715 CFS-HRS; 472.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	818	529	320	204	140	110	97	89

DURATION(HRS)	18	20	20
FLOW(CFS)	50	1	0

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.20	1508.1	1772.66
17.10	259.8	1767.06
17.90	237.6	1766.90
19.20	196.1	1766.61
21.17	171.8	1766.37
22.02	155.8	1766.22
23.21	157.3	1766.23
24.11	155.3	1766.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 9590 CFS-HRS; 792.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1333	887	545	355	252	192	158	151

DURATION(HRS)	18	20	22	23
FLOW(CFS)	87	10	1	0

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.40	1507.4	1772.66
17.30	259.7	1767.06
19.40	195.9	1766.61
21.38	171.6	1766.37
22.21	155.8	1766.22
23.42	157.0	1766.23
24.32	154.9	1766.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 9590 CFS-HRS; 792.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1335	882	547	352	252	192	159	151

DURATION(HRS)	18	20	22	23
FLOW(CFS)	86	10	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	318.8	(RUNOFF)
17.24	50.8	(RUNOFF)
19.32	38.9	(RUNOFF)
21.23	35.2	(RUNOFF)
22.12	31.4	(RUNOFF)
23.29	32.1	(RUNOFF)
24.15	31.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	280	179	110	70	49	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	19	1	0

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.36	1821.2	(NULL)
17.26	309.6	(NULL)
19.39	234.7	(NULL)
21.35	206.4	(NULL)
22.17	187.0	(NULL)
23.40	188.6	(NULL)
24.27	182.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 11547 CFS-HRS; 954.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1591	1099	674	431	301	229	190	181

DURATION(HRS)	18	20	22	23
FLOW(CFS)	107	12	1	0

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.36	1821.2	(DIVERT)
17.26	309.6	(DIVERT)
19.39	234.7	(DIVERT)
21.35	206.4	(DIVERT)
22.17	187.0	(DIVERT)
23.40	188.6	(DIVERT)
24.27	182.7	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 11547 CFS-HRS; 954.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1591	1099	674	431	301	229	190	181

DURATION(HRS)	18	20	22	23
FLOW(CFS)	107	12	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.59	1818.1	1773.86
19.61	233.9	1766.88
21.58	205.6	1766.68
22.31	187.2	1766.53
23.62	187.2	1766.53
24.49	181.2	1766.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 11547 CFS-HRS; 954.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1602	1077	652	433	302	229	192	180

DURATION(HRS)	18	20	22	23
FLOW(CFS)	107	11	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.48	734.9	(RUNOFF)
17.12	112.1	(RUNOFF)
17.98	102.8	(RUNOFF)
19.16	87.3	(RUNOFF)
21.07	79.0	(RUNOFF)
22.04	68.0	(RUNOFF)
23.13	74.8	(RUNOFF)
24.04	73.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 4457 CFS-HRS; 368.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	628	413	243	155	106	85	73	65

DURATION(HRS)	18	20	21
FLOW(CFS)	53	2	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.30	2487.0	1776.44
21.27	273.5	1767.16
23.93	244.8	1766.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 16004 CFS-HRS; 1322.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2184	1523	944	590	414	313	265	242

DURATION(HRS)	18	20	22	24
FLOW(CFS)	160	30	3	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.30	2487.0	1776.44
21.27	273.5	1767.16
23.93	244.8	1766.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 16004 CFS-HRS; 1322.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2184	1523	944	590	414	313	265	242

DURATION(HRS)	18	20	22	24
FLOW(CFS)	160	30	3	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.30	2487.0	1760.95
21.27	273.5	1755.98
23.93	244.8	1755.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 16004 CFS-HRS; 1322.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2184	1523	944	590	414	313	265	242

DURATION(HRS)	18	20	22	24
FLOW(CFS)	160	30	3	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.22	1075.7	(RUNOFF)
17.04	160.0	(RUNOFF)
17.95	146.7	(RUNOFF)
19.07	126.0	(RUNOFF)
21.00	113.1	(RUNOFF)
21.99	97.0	(RUNOFF)
23.04	108.9	(RUNOFF)
23.98	108.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.19 WATERSHED INCHES; 6435 CFS-HRS; 531.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	879	601	349	231	157	125	102	92

DURATION(HRS)	18	20	21
FLOW(CFS)	73	3	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	3490.8	1762.23
18.95	445.8	1756.72
21.08	382.9	1756.46
21.82	357.2	1756.34
23.06	349.0	1756.31
23.97	353.4	1756.33

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
HRS MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

4.40 CFS	0	1	9	15	28	53	70	101

6.00 CFS	129	176	259	322	430	532	655	834
7.60 CFS	979	1206	1423	1653	1957	2201	2529	2833
9.20 CFS	3042	3203	3338	3424	3482	3483	3420	3377
10.80 CFS	3311	3243	3150	3012	2906	2739	2579	2429
12.40 CFS	2247	2108	1963	1836	1717	1584	1485	1389
14.00 CFS	1305	1228	1145	1082	1014	953	904	857
15.60 CFS	819	771	729	688	638	603	595	591
17.20 CFS	577	555	544	543	540	516	466	438
18.80 CFS	442	445	435	418	409	391	370	359
20.40 CFS	358	358	369	382	380	364	356	357
22.00 CFS	357	344	321	311	330	348	344	322
23.60 CFS	315	336	353	324	251	206	163	118
25.20 CFS	81.98	57.70	41.11	29.60	21.47	15.58	11.30	8.20
26.80 CFS	5.97	4.35	3.18	2.32	1.69	1.23	.89	.64
28.40 CFS	.47							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.79 WATERSHED INCHES; 22437 CFS-HRS; 1854.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3042	2108	1305	834	577	438	364	344

DURATION(HRS)	18	20	22	24
FLOW(CFS)	251	53	6	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
132 CFS-HRS; 1854.2 ACRE-FEET.

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	3490.8	1762.23
18.95	445.8	1756.72
21.08	382.9	1756.46
21.82	357.2	1756.34
23.06	349.0	1756.31
23.97	353.4	1756.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.79 WATERSHED INCHES; 22437 CFS-HRS; 1854.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3042	2108	1305	834	577	438	364	344

DURATION(HRS)	18	20	22	24
FLOW(CFS)	251	53	6	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.37	3475.6	1759.88
19.12	445.8	1752.87
21.34	380.1	1752.54
23.32	344.4	1752.36
24.20	346.7	1752.37

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
4.60 CFS	.04	.72	6.36	12.53	23.80	44.99	62.77	89.94
6.20 CFS	118	160	230	296	391	492	609	770
7.80 CFS	919	1124	1338	1563	1845	2099	2406	2711
9.40 CFS	2948	3130	3279	3383	3454	3475	3435	3393
11.00 CFS	3334	3269	3184	3061	2950	2799	2642	2489
12.60 CFS	2317	2168	2021	1889	1766	1636	1528	1429
14.20 CFS	1341	1260	1178	1109	1041	978	925	876
15.80 CFS	835	789	746	705	657	618	601	594
17.40 CFS	582	562	549	544	542	523	483	451
19.00 CFS	444	445	438	424	413	397	377	364
20.60 CFS	360	358	366	377	379	369	360	358
22.20 CFS	357	348	329	316	326	342	343	328
23.80 CFS	319	331	347	331	274	225	181	136
25.40 CFS	97.27	68.99	49.06	35.15	25.37	18.38	13.32	9.66
27.00 CFS	7.02	5.11	3.73	2.72	1.98	1.44	1.05	.76
28.60 CFS	.55	.40						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.79 WATERSHED INCHES; 22436 CFS-HRS; 1854.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3061	2099	1338	835	582	444	366	342

DURATION(HRS)	18	20	22	24
FLOW(CFS)	230	49	6	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.06	6795.9	1763.95
16.98	1245.3	1755.66
17.93	1148.5	1755.39
19.07	973.9	1754.89
21.05	857.3	1754.50
21.97	796.6	1754.30
23.08	803.7	1754.32
24.00	804.4	1754.33

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
4.60 CFS	0	2	9	26	60	99	161	227
6.20 CFS	329	480	626	838	1043	1307	1642	1956
7.80 CFS	2403	2830	3322	3894	4401	5047	5653	6100
9.40 CFS	6364	6552	6696	6791	6765	6623	6494	6369
11.00 CFS	6255	6063	5795	5551	5222	4913	4605	4282
12.60 CFS	4012	3749	3525	3296	3053	2857	2685	2543
14.20 CFS	2399	2246	2121	1995	1888	1797	1716	1647
15.80 CFS	1557	1474	1389	1297	1232	1230	1245	1223
17.40 CFS	1170	1133	1135	1145	1092	985	909	931
19.00 CFS	971	963	916	878	838	801	788	795
20.60 CFS	805	830	856	847	806	777	783	796
22.20 CFS	773	720	690	737	798	792	731	695
23.80 CFS	743	804	740	570	433	356	302	253
25.40 CFS	213	184	164	150	140	133	128	125
27.00 CFS	122	120	119	117	116	115	115	114
28.60 CFS	114	114	113	113	113	113	113	113
30.20 CFS	113	113	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103

51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97
65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.85 WATERSHED INCHES; 49801 CFS-HRS; 4115.5 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1647	773	113	109	105	102	97	92

DURATION(HRS)	72	78
FLOW(CFS)	40	20 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 1204.49 AC-FT (.09 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1710.81. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.59	2873.9	1716.79

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
4.80 CFS	.00	.01	.02	.07	.14	.27	.46	.73
6.40 CFS	1.13	1.67	2.38	3.30	4.45	5.89	7.64	9.77
8.00 CFS	10	11	34	70	111	125	129	133
9.60 CFS	137	141	145	148	151	154	237	424
11.20 CFS	681	977	1319	1616	1868	2126	2357	2536
12.80 CFS	2670	2766	2831	2865	2874	2864	2839	2802
14.40 CFS	2754	2697	2634	2565	2492	2419	2345	2271
16.00 CFS	2196	2120	2042	1965	1907	1858	1813	1768

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.29	212.6	1766.73
17.19	35.8	1764.73
18.12	33.1	1764.69
19.31	27.1	1764.59
21.29	23.9	1764.47
22.15	21.8	1764.40
23.33	21.9	1764.40
24.21	21.8	1764.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 1337 CFS-HRS; 110.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	187	125	78	49	34	26	22	20

DURATION(HRS)	18	20	21
FLOW(CFS)	11	1	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	417.1	(RUNOFF)
17.17	66.8	(RUNOFF)
18.01	61.4	(RUNOFF)
19.21	51.9	(RUNOFF)
21.14	47.2	(RUNOFF)
22.09	40.7	(RUNOFF)
23.18	44.0	(RUNOFF)
24.10	43.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 2538 CFS-HRS; 209.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	365	233	141	90	62	49	43	39

DURATION(HRS)	18	20
FLOW(CFS)	23	0

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.09	626.4	1769.18
17.18	102.7	1765.70
18.00	94.2	1765.61
19.23	78.9	1765.39
21.17	70.9	1765.26
22.11	62.8	1765.14
23.21	65.5	1765.18
24.12	64.8	1765.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 3875 CFS-HRS; 320.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	550	349	216	138	100	75	64	61

DURATION(HRS)	18	20	21
FLOW(CFS)	31	2	0

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.66	598.2	1769.05
21.50	67.8	1765.22
23.53	61.2	1765.12
24.36	60.7	1765.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 3875 CFS-HRS; 320.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	529	362	226	142	102	79	65	59

DURATION(HRS)	18	20	22	22
FLOW(CFS)	34	5	1	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.61	3421.4	(NULL)
17.04	644.6	(NULL)
17.94	602.9	(NULL)
19.07	530.0	(NULL)
21.00	490.6	(NULL)
21.98	438.5	(NULL)
23.04	474.0	(NULL)
23.98	474.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS	0	2	3	14	36	54	98	137
4.60 CFS	211	320	396	542	652	815	1033	1186
7.80 CFS	1484	1705	1984	2332	2556	2948	3247	3389
9.40 CFS	3416	3421	3417	3408	3311	3148	3058	2975
11.00 CFS	2921	2795	2611	2490	2272	2114	1963	1792
12.60 CFS	1695	1581	1503	1407	1287	1221	1157	1115
14.20 CFS	1059	986	943	886	847	819	791	771
15.80 CFS	721	684	643	592	575	612	644	629
17.40 CFS	588	571	586	600	551	462	427	480
19.00 CFS	527	518	478	454	424	404	410	430
20.60 CFS	445	472	491	470	427	409	424	438
22.20 CFS	416	372	361	422	473	450	388	367
23.80 CFS	424	473	394	239	159	131	121	117
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	114	114	114	114	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	113	112	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103
51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97

65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20	19.83	19.48	19.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.32 WATERSHED INCHES; 27368 CFS-HRS; 2261.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	815	410	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.51	220.5	(RUNOFF)
17.00	36.6	(RUNOFF)
17.93	33.6	(RUNOFF)
19.02	29.1	(RUNOFF)
20.96	26.1	(RUNOFF)
21.96	22.4	(RUNOFF)
23.00	25.4	(RUNOFF)
23.95	25.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 1337 CFS-HRS; 110.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	190	121	73	47	35	26	22	20

DURATION(HRS)	18	19
FLOW(CFS)	12	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .2%. ***

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.49	562.3	(RUNOFF)
17.04	91.0	(RUNOFF)
17.95	83.5	(RUNOFF)
19.07	71.9	(RUNOFF)
21.00	64.6	(RUNOFF)
21.99	55.4	(RUNOFF)
23.04	62.2	(RUNOFF)
23.98	62.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	314	187	120	85	65	58	52

DURATION(HRS)	18	20
FLOW(CFS)	32	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	2993.5	(NULL)
17.07	570.6	(NULL)
17.96	533.1	(NULL)
19.10	470.7	(NULL)
21.03	437.4	(NULL)
22.01	392.4	(NULL)
23.07	422.8	(NULL)
24.00	419.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.24 WATERSHED INCHES; 24770 CFS-HRS; 2047.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	711	371	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	3.05

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
10.60 CFS	0	73	308	517	700	858	993	1105

12.20 CFS	1195	1265	1315	1349	1368	1375	1372	1360
13.80 CFS	1341	1315	1286	1252	1217	1179	1139	1099
15.40 CFS	1058	1017	977	937	898	859	821	783
17.00 CFS	746	712	680	651	623	597	573	550
18.60 CFS	528	505	482	460	441	423	406	389
20.20 CFS	372	356	340	325	313	302	293	284
21.80 CFS	276	268	260	252	245	236	229	222
23.40 CFS	217	213	208	204	200	196	191	183
25.00 CFS	170	155	137	119	101	84	67	51
26.60 CFS	36.92	23.59	11.34	.12				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	435.3	(RUNOFF)
16.93	76.1	(RUNOFF)
17.91	70.3	(RUNOFF)
18.94	61.1	(RUNOFF)
20.91	54.4	(RUNOFF)
21.92	46.9	(RUNOFF)
22.93	54.6	(RUNOFF)
23.91	57.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 2600 CFS-HRS; 214.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	373	227	141	93	66	53	46	39

DURATION(HRS)	18	19
FLOW(CFS)	19	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.7%. ***

OPERATION ADDHYD XSECTION 7

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.26	1067.2	(RUNOFF)
17.05	163.9	(RUNOFF)
17.95	150.0	(RUNOFF)
19.08	129.0	(RUNOFF)
21.01	116.0	(RUNOFF)
21.99	99.5	(RUNOFF)
23.05	111.6	(RUNOFF)
23.99	111.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 6412 CFS-HRS; 529.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	892	579	359	224	154	128	105	94

DURATION(HRS)	18	20	20
FLOW(CFS)	74	2	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.58	2431.4	(NULL)
17.08	479.7	(NULL)
17.97	449.6	(NULL)
19.11	399.6	(NULL)
21.04	372.9	(NULL)
22.01	337.0	(NULL)
23.08	360.7	(NULL)
24.01	357.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 21361 CFS-HRS; 1765.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION DIVERT XSECTION 106
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.58	2431.4	4.45
17.08	479.7	1.57
17.97	449.6	1.52
19.11	399.6	1.36
21.04	372.9	1.27
22.01	337.0	1.15
23.08	360.7	1.23
24.01	357.9	1.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 21361 CFS-HRS; 1765.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1087	722	434	275	190	145	131	115

DURATION(HRS)	18	20	20
FLOW(CFS)	71	2	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 16.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	(NULL)
17.11	316.4	(NULL)
17.98	299.7	(NULL)
19.15	272.1	(NULL)
21.07	257.2	(NULL)
22.04	237.6	(NULL)
23.12	250.1	(NULL)
24.03	247.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	4.18
17.11	316.4	1.41
17.98	299.7	1.33
19.15	272.1	1.21
21.07	257.2	1.14
22.04	237.6	1.06
23.12	250.1	1.11
24.03	247.1	1.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	4.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24

DURATION(HRS)	16
FLOW(CFS)	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	3.06
17.11	316.4	1.08
17.98	299.7	1.02
19.15	272.1	.93
21.07	257.2	.87
22.04	237.6	.81
23.12	250.1	.85
24.03	247.1	.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

15.20 CFS	1176	1099	1037	974	920	875	836	806
16.80 CFS	786	771	753	732	714	692	672	651
18.40 CFS	629	611	600	591	585	581	576	562
20.00 CFS	547	538	532	525	510	495	491	498
21.60 CFS	502	493	482	475	472	467	452	438
23.20 CFS	435	442	446	438	426	385	313	254
24.80 CFS	218	193	172	157	145	137	131	126
26.40 CFS	122	119	117	115	114	113	113	112
28.00 CFS	112	111	111	111	111	111	110	110
29.60 CFS	110	110	110	110	110	110	110	110
31.20 CFS	109	109	109	109	109	109	109	109
32.80 CFS	109	109	109	108	108	108	108	108
34.40 CFS	108	108	108	108	108	107	107	107
36.00 CFS	107	107	107	107	107	107	107	107
37.60 CFS	106	106	106	106	106	106	106	106
39.20 CFS	106	106	106	105	105	105	105	105
40.80 CFS	105	105	105	105	105	105	104	104
42.40 CFS	104	104	104	104	104	104	104	104
44.00 CFS	104	103	103	103	103	103	103	103
45.60 CFS	103	103	103	103	103	102	102	102
47.20 CFS	102	102	102	102	102	102	101	101
48.80 CFS	101	101	101	101	101	101	100	100
50.40 CFS	100	100	100	100	100	100	100	99
52.00 CFS	99.35	99.23	99.12	99.01	98.90	98.79	98.67	98.56
53.60 CFS	98.45	98.34	98.23	98.12	98.01	97.90	97.79	97.68
55.20 CFS	97.57	97.46	97.34	97.23	97.12	97.01	96.90	96.80
56.80 CFS	96.69	96.58	96.47	96.36	96.25	96.13	96.00	95.88
58.40 CFS	95.74	95.61	95.48	95.35	95.22	95.09	94.96	94.83
60.00 CFS	94.70	94.57	94.44	94.32	94.19	94.06	93.93	93.80
61.60 CFS	93.67	93.55	93.42	93.29	93.16	93.04	92.91	92.78
63.20 CFS	92.65	92.53	92.40	92.28	92.15	92.02	91.90	91.77
64.80 CFS	91.65	91.52	91.40	91.27	89.72	87.43	84.99	82.57
66.40 CFS	80.19	77.89	75.64	73.63	71.74	69.93	68.17	66.45
68.00 CFS	64.78	63.15	61.56	60.01	58.50	57.03	55.59	54.19
69.60 CFS	52.83	51.50	50.21	48.94	47.71	46.51	45.34	44.20
71.20 CFS	43.09	42.00	40.95	39.92	38.91	37.93	36.98	36.05
72.80 CFS	35.14	34.26	33.39	32.55	31.74	30.94	30.16	29.40
74.40 CFS	28.66	27.94	27.24	26.55	26.02	25.54	25.08	24.63
76.00 CFS	24.18	23.75	23.33	22.91	22.50	22.09	21.70	21.31
77.60 CFS	20.92	20.55	20.18	19.82	19.46	19.11	18.77	18.43
79.20 CFS	18.10	17.78	17.46	17.15	16.84	16.54	16.24	15.95
80.80 CFS	15.66	15.38	15.11	14.84	14.57	14.31	14.05	13.80
82.40 CFS	13.55	13.31	13.07	12.84	12.60	12.38	12.16	11.94
84.00 CFS	11.73	11.52	11.31	11.10	10.91	10.71	10.52	10.33
85.60 CFS	10.14	9.96	9.78	9.61				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 24104 CFS-HRS; 1991.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	581	126	108	104	101	96	87	34
DURATION(HRS)	72	78						
FLOW(CFS)	16	10 TRUNCATED						

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 1068.76 AC-FT (.08 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1709.72. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
25.44	155.0	1712.49

*** WARNING - STRUCTURE 2, HYDROGRAPH VOLUME TRUNCATED AT 145 CFS
RESVOR (93. % OF MAX. HYDROGRAPH COORDINATE)
MAIN TIME INCREMENT TOO SMALL. ***

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
7.80 CFS	.00	.01	.02	.03	.04	.07	.10	.15
9.40 CFS	.21	.28	.37	.48	.61	.78	.98	1.24
11.00 CFS	2	2	3	3	6	10	39	106
12.60 CFS	125	129	132	134	136	138	139	141
14.20 CFS	141	142	143	144	144	145	146	146
15.80 CFS	146	147	147	148	148	148	148	149
17.40 CFS	149	149	150	150	150	150	150	151
19.00 CFS	151	151	151	151	152	152	152	152
20.60 CFS	152	153	153	153	153	153	153	153
22.20 CFS	154	154	154	154	154	154	154	154
23.80 CFS	155	155	155	155	155	155	155	155
25.40 CFS	155	155	155	155	155	155	155	155
27.00 CFS	155	155	155	155	155	155	155	155
28.60 CFS	155	155	155	155	155	155	155	155
30.20 CFS	155	155	155	155	155	155	155	154
31.80 CFS	154	154	154	154	154	154	154	154
33.40 CFS	154	154	154	154	154	154	154	154
35.00 CFS	154	154	154	154	154	154	154	154
36.60 CFS	154	154	154	154	154	154	154	154
38.20 CFS	154	154	154	154	154	154	154	154
39.80 CFS	154	154	154	154	154	154	154	154
41.40 CFS	154	154	153	153	153	153	153	153
43.00 CFS	153	153	153	153	153	153	153	153
44.60 CFS	153	153	153	153	153	153	153	153
46.20 CFS	153	153	153	153	153	153	153	153
47.80 CFS	153	153	153	153	153	153	153	153
49.40 CFS	153	153	153	153	153	153	152	152
51.00 CFS	152	152	152	152	152	152	152	152

52.60 CFS	152	152	152	152	152	152	152	152
54.20 CFS	152	152	152	152	152	152	152	152
55.80 CFS	152	152	152	152	152	152	152	152
57.40 CFS	152	152	152	152	152	152	152	152
59.00 CFS	151	151	151	151	151	151	151	151
60.60 CFS	151	151	151	151	151	151	151	151
62.20 CFS	151	151	151	151	151	151	151	151
63.80 CFS	151	151	151	151	151	151	151	151
65.40 CFS	151	151	151	151	150	150	150	150
67.00 CFS	150	150	150	150	150	150	150	150
68.60 CFS	150	150	150	150	150	150	150	150
70.20 CFS	150	150	150	150	149	149	149	149
71.80 CFS	149	149	149	149	149	149	149	149
73.40 CFS	149	149	149	149	149	149	149	148
75.00 CFS	148	148	148	148	148	148	148	148
76.60 CFS	148	148	148	148	148	148	148	148
78.20 CFS	147	147	147	147	147	147	147	147
79.80 CFS	147	147	147	147	147	147	147	147
81.40 CFS	146	146	146	146	146	146	146	146
83.00 CFS	146	146	146	146	146	146	146	145
84.60 CFS	145	145	145	145	145	145	145	145
86.20 CFS	145							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
.86 WATERSHED INCHES; 11153 CFS-HRS; 921.6 ACRE-FEET.

DURATION(HRS)	6	12	18	24	30	36	42	48
FLOW(CFS)	155	154	154	153	152	152	151	150

DURATION(HRS)	54	60	66	71
FLOW(CFS)	149	148	146	145 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 7.06 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 4 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.27	907.9	(RUNOFF)
19.37	108.9	(RUNOFF)
21.37	96.9	(RUNOFF)
23.43	87.1	(RUNOFF)
24.14	85.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5697 CFS-HRS; 470.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	798	526	322	205	144	109	93	85

DURATION(HRS)	18	20	22
FLOW(CFS)	54	7	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.92	589.5	(RUNOFF)
17.18	93.2	(RUNOFF)
18.00	85.5	(RUNOFF)
19.22	72.3	(RUNOFF)
21.14	65.6	(RUNOFF)
22.09	56.6	(RUNOFF)
23.19	61.1	(RUNOFF)
24.10	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3590 CFS-HRS; 296.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	513	328	198	126	90	69	60	55

DURATION(HRS)	18	20	20
FLOW(CFS)	38	1	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.12	1492.3	(NULL)
17.12	238.5	(NULL)
19.22	180.6	(NULL)
21.21	161.4	(NULL)
23.24	146.2	(NULL)
24.11	145.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1296	868	531	334	238	178	151	143

DURATION(HRS)	18	20	22
FLOW(CFS)	91	8	0

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.36	1489.4	4.41
17.31	238.5	1.06
19.43	180.0	.80
21.44	160.5	.71
23.47	144.9	.64
24.32	143.7	.64

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1287	883	539	338	234	179	150	140

DURATION(HRS)	18	20	22
FLOW(CFS)	98	9	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.98	554.5	(RUNOFF)
17.14	92.9	(RUNOFF)
17.99	85.3	(RUNOFF)
19.18	72.5	(RUNOFF)
21.10	65.9	(RUNOFF)
22.06	56.7	(RUNOFF)
23.15	62.1	(RUNOFF)
24.06	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 3360 CFS-HRS; 277.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	311	182	119	85	65	59	54

DURATION(HRS)	18	20
FLOW(CFS)	18	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.22	2032.0	(NULL)
19.21	249.8	(NULL)
21.26	221.7	(NULL)
23.28	200.3	(NULL)
24.13	199.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1784	1153	712	450	326	248	208	195

DURATION(HRS)	18	20	22
FLOW(CFS)	105	9	0

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.46	2027.6	5.46
19.39	249.5	1.11
21.50	220.7	.98
23.52	198.8	.88
24.34	197.7	.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1773	1174	723	455	327	248	208	193

DURATION(HRS)	18	20	22
FLOW(CFS)	113	10	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.05	920.4	(RUNOFF)
17.25	143.0	(RUNOFF)
19.33	109.2	(RUNOFF)
21.24	98.9	(RUNOFF)
22.11	88.1	(RUNOFF)
23.29	89.9	(RUNOFF)
24.14	87.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5666 CFS-HRS; 468.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	801	512	311	204	140	108	92	86

DURATION(HRS)	18	20	21
FLOW(CFS)	55	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.34	2929.7	(NULL)
19.35	358.6	(NULL)
21.40	317.3	(NULL)
23.43	286.4	(NULL)
24.21	280.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.00 CFS	.00	.60	2.70	6.81	14.81	28.09	48.26	81.11
6.60 CFS	128	188	263	351	456	582	725	891
8.20 CFS	1078	1284	1515	1758	2018	2277	2502	2673
9.80 CFS	2792	2872	2920	2928	2897	2840	2776	2708
11.40 CFS	2630	2531	2419	2291	2153	2012	1871	1738
13.00 CFS	1616	1506	1405	1305	1214	1133	1063	1000
14.60 CFS	939	882	829	780	737	700	667	634
16.20 CFS	600	564	528	497	480	476	473	464
17.80 CFS	452	445	441	429	402	372	357	357
19.40 CFS	358	353	341	326	310	297	293	295
21.00 CFS	303	312	317	312	302	296	293	288
22.60 CFS	276	264	265	278	286	281	271	272
24.20 CFS	280	274	237	183	133	92	62	40
25.80 CFS	25.48	16.32	10.46	6.73	4.32	2.77	1.78	1.14
27.40 CFS	.73	.46						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.61 WATERSHED INCHES; 18313 CFS-HRS; 1513.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2531	1738	1063	667	464	357	302	278

DURATION(HRS)	18	20	22	22
FLOW(CFS)	183	16	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1490.3	1801.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
7.40 CFS	.00	.01	.01	.01	.01	.02	8.52	42.32
9.00 CFS	91	94	97	100	103	105	107	110
10.60 CFS	112	188	423	632	815	973	1108	1220
12.20 CFS	1310	1380	1430	1464	1483	1490	1487	1475
13.80 CFS	1456	1430	1401	1367	1332	1294	1254	1214
15.40 CFS	1173	1132	1092	1052	1013	974	936	898
17.00 CFS	861	827	795	766	738	712	688	665
18.60 CFS	643	620	597	575	556	538	521	504
20.20 CFS	487	471	455	440	428	417	408	399
21.80 CFS	391	383	375	367	360	351	344	337
23.40 CFS	332	328	323	319	315	311	306	298
25.00 CFS	285	270	252	234	216	199	182	166
26.60 CFS	152	139	126	115	114	114	114	114
28.20 CFS	113	113	113	113	113	113	113	113
29.80 CFS	113	113	112	112	112	112	112	112
31.40 CFS	112	112	112	112	111	111	111	111
33.00 CFS	111	111	111	111	111	111	111	110
34.60 CFS	110	110	110	110	110	110	110	110
36.20 CFS	110	110	109	109	109	109	109	109
37.80 CFS	109	109	109	109	108	108	108	108
39.40 CFS	108	108	108	108	108	108	108	107
41.00 CFS	107	107	107	107	107	107	107	107
42.60 CFS	107	107	106	106	106	106	106	106
44.20 CFS	106	106	106	106	106	105	105	105
45.80 CFS	105	105	105	105	105	105	105	105
47.40 CFS	104	104	104	104	104	104	104	104
49.00 CFS	104	104	104	103	103	103	103	103
50.60 CFS	103	103	103	103	103	103	102	102
52.20 CFS	102	102	102	102	102	102	102	101
53.80 CFS	101	101	101	101	101	101	101	101
55.40 CFS	100	100	100	100	100	100	100	100
57.00 CFS	99.53	99.42	99.31	99.20	99.09	98.97	98.86	98.75

58.60 CFS	98.64	98.53	98.42	98.30	98.19	98.08	97.97	97.86
60.20 CFS	97.75	97.64	97.53	97.42	97.31	97.20	97.09	96.98
61.80 CFS	96.87	96.76	96.65	96.54	96.43	96.32	96.22	96.10
63.40 CFS	95.96	95.83	95.70	95.57	95.44	95.31	95.18	95.05
65.00 CFS	94.92	94.79	94.66	94.53	94.40	94.28	94.15	94.02
66.60 CFS	93.89	93.76	93.63	93.51	93.38	93.25	93.12	93.00
68.20 CFS	92.87	92.74	92.62	92.49	92.36	92.24	92.11	91.98
69.80 CFS	91.86	91.73	91.61	91.48	91.36	91.23	89.28	86.71
71.40 CFS	84.21	81.78	79.43	77.14	74.92	72.97	71.13	69.34
73.00 CFS	67.60	65.90	64.24	62.62	61.05	59.51	58.01	56.55
74.60 CFS	55.13	53.74	52.39	51.07	49.79	48.53	47.31	46.12
76.20 CFS	44.96	43.83	42.73	41.65	40.60	39.58	38.59	37.62
77.80 CFS	36.67	35.75	34.85	33.97	33.12	32.28	31.47	30.68
79.40 CFS	29.91	29.15	28.42	27.71	27.01	26.33	25.85	25.38
81.00 CFS	24.93	24.48	24.04	23.61	23.19	22.77	22.36	21.96
82.60 CFS	21.57	21.18	20.80	20.43	20.06	19.70	19.35	19.00
84.20 CFS	18.66	18.33	18.00					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.24 WATERSHED INCHES; 16834 CFS-HRS; 1391.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	575	139	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	25	18 TRUNCATED

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.80	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.81 WATERSHED INCHES; 7184 CFS-HRS; 593.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	25	18 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24

DURATION(HRS)	16
FLOW(CFS)	0

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.81 WATERSHED INCHES; 7178 CFS-HRS; 593.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	26	18 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	1280.3	(RUNOFF)
17.11	201.4	(RUNOFF)
17.98	184.7	(RUNOFF)
19.15	157.1	(RUNOFF)
21.07	142.2	(RUNOFF)
22.04	122.6	(RUNOFF)
23.12	135.1	(RUNOFF)
24.03	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 7779 CFS-HRS; 642.9 ACRE-FEET.

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**********  **80-80 LIST OF INPUT DATA FOR TR-20 HYDROLOGY*****************

JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBTR20cT.DAT
TITLE 000 ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNTN
 5 RAINFL 1            .5
 8          0.0        .008       .017       .026       .035
 8          .045       .055       .065       .076       .087
 8          .099       .112       .125       .14        .156
 8          .174       .194       .219       .254       .303
 8          .515       .583       .624       .654       .682
 8          .705       .727       .748       .767       .784
 8          .8         .816       .83        .844       .857
 8          .87        .882       .893       .905       .916
 8          .926       .936       .946       .955       .965
 8          .974       .983       .992       1.         1.
 9 ENDTBL
 5 RAINFL 2            .5
 8          0.0        .005       .011       .016       .022
 8          .028       .035       .041       .048       .056
 8          .063       .071       .081       .089       .098
 8          .109       .12        .133       .147       .163
 8          .181       .204       .235       .283       .663
 8          .735       .772       .799       .82        .838
 8          .854       .868       .88        .891       .902
 8          .912       .921       .929       .937       .945
 8          .952       .959       .965       .972       .978
 8          .984       .989       .995       1.         1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8          0.0        .002       .004       .006       .008
 8          .01        .012       .014       .016       .018
 8          .02        .022       .025       .027       .03
 8          .032       .035       .038       .04        .043
 8          .046       .049       .052       .055       .058
 8          .061       .064       .069       .072       .076
 8          .08        .084       .089       .093       .098
 8          .102       .108       .114       .121       .127
 8          .133       .143       .153       .164       .174
 8          .184       .198       .215       .238       .275
 8          .707       .765       .793       .813       .829
 8          .841       .849       .856       .863       .871
 8          .879       .884       .889       .895       .9
 8          .905       .909       .913       .918       .922
 8          .926       .929       .932       .936       .939
 8          .942       .945       .948       .951       .954
 8          .957       .959       .962       .964       .967
 8          .969       .971       .973       .976       .978
 8          .98        .982       .984       .987       .989
 8          .991       .993       .996       .998       1.
 9 ENDTBL
 5 RAINFL 4            .25
 8          0.0        .006       .011       .017       .028
 8          .041       .057       .075       .09        .562
 8          .697       .763       .807       .839       .873
 8          .907       .937       .948       .958       .968
 8          .979       .984       .989       1.         1.
 9 ENDTBL
```

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**********************80-80 LIST OF INPUT DATA (CONTINUED)********  ************
 5 RAINFL 5            .5
 8          0.0        .004       .008       .011       .016
 8          .021       .027       .034       .044       .055
 8          .07        .088       .108       .137       .172
 8          .217       .273       .341       .42        .492
 8          .56        .618       .672       .717       .753
 8          .782       .807       .827       .845       .86
 8          .873       .885       .895       .903       .913
 8          .921       .93        .935       .943       .949
 8          .954       .96        .967       .972       .978
 8          .982       .989       .993       1.         1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       40.
 8                     3.         838.       60.
 8                     4.         1288.      80.
 8                     5.         1782.      120.
 8                     6.         2314.      130.
 8                     7.         2875.      140.
 8                     8.         3454.      160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0        0.0        0.0
 8                     1.5        441.       45.
 8                     2.5        995.       75.
 8                     3.5        1682.      105.
 8                     4.5        2468.      135.
 8                     5.5        3339.      165.
 8                     6.5        4272.      195.
 8                     7.5        5258.      225.
 8                     8.5        6296.      255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.      0.0        0.0
 8                     1750.      38.53      23.
```

```
8                       1751.       130.52      52.
8                       1752.       273.18      87.
8                       1753.       470.98      128.
8                       1754.       706.86      187.
8                       1755.       1005.62     240.
8                       1756.       1369.42     299.
8                       1757.       1801.8      364.
8                       1758.       2305.5      435.
8                       1759.       2892.8      512.
8                       1760.       3558.1      595.
8                       1761.       4316.04     684.
8                       1762.       5156.98     779.
9 ENDTBL
2 XSECTN   108          1.0
8                       1753.7      0.0         0.0
8                       1754.7      61.93       23.
8                       1755.7      209.35      52.
8                       1756.7      438.91      87.
8                       1757.7      757.01      128.
8                       1758.7      1167.41     175.
8                       1759.7      1678.56     228.
8                       1760.7      2302.39     287.
8                       1761.7      3038.91     352.
8                       1762.7      3894.74     435.
8                       1763.7      4647.76     512.
9 ENDTBL
2 XSECTN   109          1.0
8                       1763.6      0.0         0.0
8                       1764.6      27.47       23.
8                       1765.6      92.87       52.
8                       1766.6      194.7       87.
8                       1767.6      335.8       128.
8                       1768.6      503.22      187.
8                       1769.6      715.78      240.
8                       1770.6      974.81      299.
9 ENDTBL
2 XSECTN   111          1.0
8                       1763.6      0.0         0.0
8                       1764.6      27.47       23.
8                       1765.6      92.87       52.
8                       1766.6      194.7       87.
8                       1767.6      335.8       128.
8                       1768.6      503.22      187.
8                       1769.6      715.78      240.
8                       1770.6      974.81      299.
9 ENDTBL
2 XSECTN   112          1.0
8                       1763.6      0.0         0.0
8                       1764.6      27.47       23.
8                       1765.6      92.87       52.
8                       1766.6      194.7       87.
8                       1767.6      335.8       128.
8                       1768.6      503.22      187.
8                       1769.6      715.78      240.
8                       1770.6      974.81      299.
9 ENDTBL
```



```
2 XSECTN   113          1.0
8                       1763.6      0.0         0.0
8                       1764.6      27.47       23.
8                       1765.6      92.87       52.
8                       1766.6      194.7       87.
8                       1767.6      335.8       128.
8                       1768.6      503.22      187.
8                       1769.6      715.78      240.
8                       1770.6      974.81      299.
9 ENDTBL
3 STRUCT      01
8                       1791.94     0.00        0.0
8                       1793.       0.01        46.8
8                       1794.1      0.02        106.
8                       1794.5      26.3        130.
8                       1795.       74.4        161.2
8                       1795.14     91.2        170.7
8                       1796.       96.16       230.7
8                       1797.14     102.42      322.23
8                       1799.42     113.91      542.99
8                       1801.72     1650.       812.88
8                       1804.       7700.       1121.9
8                       1806.28     15200.      1470.09
8                       1808.57     26200.      1865.04
9 ENDTBL
3 STRUCT      02
8                       1696.       0.0         0.0
8                       1700.       10.2        172.1
8                       1701.4      10.7        273.25
8                       1704.       121.8       482.24
8                       1708.       138.4       871.3
8                       1710.       145.9       1101.52
8                       1710.5      147.7       1163.52
8                       1711.5      151.4       1294.09
8                       1712.2      154.        1390.2
8                       1712.5      155.        1432.05
8                       1712.6      156.        1446.11
8                       1713.5      390.        1578.77
8                       1714.5      820.        1733.61
8                       1716.       1950.       1980.33
8                       1720.       6600.       2712.23
8                       1722.       9500.       3121.
8                       1724.       12400.      3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86       65.         1.21        1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2        64.         .67         1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                    1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                               1 0 0 1 0 1
6 RUNOFF 1   2       6 1.24       58.         .59         1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                    1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                               1 0 0 1 0 1
6 RUNOFF 1   3       6 1.85       65.         .91         1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                    1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                             1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.       1.                      1 0 0 1 0 1
```

```
***********  ********80-80 LIST OF INPUT DATA (CONTINUED)**********************

 6 REACH  3 104   4   5 6700.                                  1 0 0 1 0 1
 6 RUNOFF 1   4       6 2.54        65.         .54          1 0 0 1 0 1
 6 ADDHYD 4   4   5 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 104   7 5 2 3454.       1.                        1 0 0 1 0 1
 6 ADDHYD 4 104   1 2 4                                       1 0 0 1 0 1
 6 REACH  3 106   5   3 3700.                                  1 0 0 1 0 1
 6 RUNOFF 1   5       6 2.          68.         .43          1 0 0 1 0 1
 6 ADDHYD 4   5   3 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 106   7 5 2 6296.       1.                        1 0 0 1 0 1
 6 RUNOFF 1   6       6 1.14        64.         .42          1 0 0 1 0 1
 6 ADDHYD 4   6   5 6 7                                       1 0 0 1 0 1
 6 SAVMOV 5   6   7   5
 6 ADDHYD 4 106   4 2 7                                       1 1 0 1 0 1
 6 SAVMOV 5 106   7   1
 6 RUNOFF 1   7       6 .96         58.         .23          1 0 0 1 0 1
 6 ADDHYD 4   7   5 6 7                                       1 1 0 1 0 1
 6 SAVMOV 5   7   7   2
 6 RUNOFF 1  13       5 .458        62.         .35          1 0 0 1 0 1
 6 REACH  3 113   5   6 6900.                                  1 0 0 1 0 1
 6 RUNOFF 1  12       5 .869        62.         .66          1 0 0 1 0 1
 6 ADDHYD 4 112   5 6 7                                       1 0 0 1 0 1
 6 REACH  3 112   7   5 7700.                                  1 0 0 1 0 1
 6 RUNOFF 1  11       6 1.957       62.         .68          1 0 0 1 0 1
 6 ADDHYD 4 111   5 6 7                                       1 0 0 1 0 1
 6 REACH  3 111   7   5 2000.                                  1 0 0 1 0 1
 6 RUNOFF 1  10       6 .67         62.         .89          1 0 0 1 0 1
 6 ADDHYD 4 110   5 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 110   7 5 3 1915.       1.                        1 0 0 1 0 1
 6 REACH  3 109   5   4 2700.                                  1 0 0 1 0 1
 6 RUNOFF 1   9       6 1.39        68.         .55          1 0 0 1 0 1
 6 ADDHYD 4 109   4 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 109   7 5 4 2546.       1.                        1 0 0 1 0 1
 6 REACH  3 108   5   6 2100.                                  1 0 0 1 0 1
 6 RUNOFF 1   8       5 1.92        71.         .42          1 0 0 1 0 1
 6 ADDHYD 4 108   5 6 7                                       1 1 0 1 0 1
 6 ADDHYD 4 109   3 4 5                                       1 1 0 1 0 1
 6 SAVMOV 5 106   5   3
 6 DIVERT 6 108   7 5 4 5253.       1.                        1 0 0 1 0 1
 6 REACH  3 107   5   6 5300.                                  1 1 0 1 0 1
 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                       1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                                 1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .60
 7 COMPUT 7 101       2             7.02        1.0          3 2  05  01
   ENDCMP 1
   ENDJOB 2

*********************************END OF 80-80 LIST*******************************
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TR20 ---------------------------------------------------------------  ------ SCS -
        SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBTR20cT VERSION
09/19/**  ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNT2.04TEST
08:57:37                    PASS   1   JOB NO.   1                        PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .600 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  7.02        RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =    .600 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1             RAIN TABLE NO. = 3


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
      119.83                          748.1                         (RUNOFF)
      143.41                           20.6                         (RUNOFF)
      151.01                           15.6                         (RUNOFF)
      155.41                           13.0                         (RUNOFF)
      163.01                           13.1                         (RUNOFF)
      167.18                           10.5                         (RUNOFF)
      175.01                           10.6                         (RUNOFF)
      191.20                            8.0                         (RUNOFF)
      223.00                            8.1                         (RUNOFF)
      232.61                            8.1                         (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                   3.12 WATERSHED INCHES;    3739 CFS-HRS;     309.0 ACRE-FEET.

    DURATION(HRS)  12     24     36     48     60     72     84     96
    FLOW(CFS)      38     19     13     11      8      8      8      6

    DURATION(HRS) 108    120    132    136
    FLOW(CFS)       5      5      2      0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
      119.62                          467.3                         (RUNOFF)
      143.12                           13.0                         (RUNOFF)
      150.79                            9.8                         (RUNOFF)
      155.12                            8.2                         (RUNOFF)
      162.90                            8.4                         (RUNOFF)
      167.13                            6.7                         (RUNOFF)
      174.81                            6.7                         (RUNOFF)
      210.79                            5.1                         (RUNOFF)
      222.85                            5.1                         (RUNOFF)
      232.50                            5.3                         (RUNOFF)
```

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.01 WATERSHED INCHES; 2329 CFS-HRS; 192.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	23	12	8	7	5	5	5	4

DURATION(HRS)	108	120	132	133
FLOW(CFS)	3	3	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.67) FOR SUBWATERSHED XSECTION 1.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .3%. ***

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.75	1239.7	(NULL)
143.22	33.6	(NULL)
150.94	25.5	(NULL)
155.20	21.3	(NULL)
162.94	21.5	(NULL)
167.16	17.2	(NULL)
174.94	17.4	(NULL)
210.94	13.3	(NULL)
222.94	13.3	(NULL)
232.55	13.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.07 WATERSHED INCHES; 6068 CFS-HRS; 501.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	59	31	21	17	13	13	13	11

DURATION(HRS)	108	120	132	137
FLOW(CFS)	9	9	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 102. ***

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.75	1239.7	3.89
143.22	33.6	.15
150.94	25.5	.11
155.20	21.3	.09
162.94	21.5	.10
167.16	17.2	.08
174.94	17.4	.08
210.94	13.3	.06
222.94	13.3	.06
232.55	13.4	.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.07 WATERSHED INCHES; 6068 CFS-HRS; 501.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	59	31	21	17	13	13	13	11

DURATION(HRS)	108	120	132	137
FLOW(CFS)	9	9	2	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.58	371.7	(RUNOFF)
143.12	11.8	(RUNOFF)
150.79	8.9	(RUNOFF)
155.20	7.5	(RUNOFF)
162.80	7.6	(RUNOFF)
167.11	6.1	(RUNOFF)
174.70	6.1	(RUNOFF)
210.78	4.7	(RUNOFF)
222.69	4.7	(RUNOFF)
232.29	4.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.41 WATERSHED INCHES; 1932 CFS-HRS; 159.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	10	8	6	5	5	5	3

DURATION(HRS)	108	120	125
FLOW(CFS)	3	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.59) FOR SUBWATERSHED XSECTION 2.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	1635.8	(NULL)
143.18	45.4	(NULL)
150.92	34.6	(NULL)
155.20	28.8	(NULL)
162.93	29.2	(NULL)
167.14	23.3	(NULL)
174.92	23.6	(NULL)
210.92	18.1	(NULL)
222.92	18.2	(NULL)
232.52	18.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.88 WATERSHED INCHES; 8000 CFS-HRS; 661.1 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	78	40	29	23	18	18	18	13

DURATION(HRS)	108	120	132	137
FLOW(CFS)	12	12	2	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 103. ***

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	1635.8	4.70
143.18	45.4	.20
150.92	34.6	.15
155.20	28.8	.13
162.93	29.2	.13
167.14	23.3	.10
174.92	23.6	.10
210.92	18.1	.08
222.92	18.2	.08
232.52	18.2	.08

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.88 WATERSHED INCHES; 8000 CFS-HRS; 661.1 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	78	40	29	23	18	18	18	13

DURATION(HRS)	108	120	132	137
FLOW(CFS)	12	12	2	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	776.5	(RUNOFF)
143.52	20.5	(RUNOFF)
150.92	15.6	(RUNOFF)
155.48	13.0	(RUNOFF)
162.92	13.2	(RUNOFF)
167.25	10.5	(RUNOFF)
174.92	10.6	(RUNOFF)
210.92	8.1	(RUNOFF)
222.92	8.2	(RUNOFF)
232.52	8.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.12 WATERSHED INCHES; 3719 CFS-HRS; 307.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	36	19	13	11	8	8	8	6

DURATION(HRS)	108	120	132	136
FLOW(CFS)	5	5	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.91) FOR SUBWATERSHED XSECTION 3.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.8%. ***

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.73	2412.3	(NULL)
143.20	65.9	(NULL)
150.92	50.2	(NULL)
155.23	41.8	(NULL)
162.93	42.4	(NULL)
167.16	33.8	(NULL)
174.92	34.2	(NULL)
210.92	26.2	(NULL)
222.92	26.4	(NULL)
232.52	26.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
101.40 CFS	.38	.86	1.00	1.04	1.95	2.89	3.15	3.23
106.20 CFS	4.17	5.12	5.38	5.47	7.85	10.33	11.00	11.20
111.00 CFS	14.57	17.94	18.83	19.14	26.93	33.98	35.81	36.52
115.80 CFS	57	76	81	95	1148	2045	2273	2319
120.60 CFS	1448	692	500	452	336	247	225	219
125.40 CFS	190	166	160	158	144	132	129	128
130.20 CFS	113	101	98	97	82	69	66	65
135.00 CFS	61.17	58.03	57.24	57.05	57.11	57.18	57.20	57.25
139.80 CFS	61.22	64.55	65.38	65.58	65.77	65.89	65.92	65.79
144.60 CFS	54.24	44.54	42.12	41.54	41.44	41.44	41.45	41.51
149.40 CFS	45.47	48.78	49.61	49.76	45.96	42.75	41.95	41.75
154.20 CFS	41.75	41.78	41.78	41.76	37.81	34.58	33.77	33.57
159.00 CFS	33.55	33.56	33.57	33.60	37.64	40.95	41.78	41.95
163.80 CFS	38.04	34.79	33.98	33.78	33.76	33.77	33.77	33.74
168.60 CFS	29.75	26.46	25.64	25.44	25.41	25.41	25.41	25.46
173.40 CFS	29.48	32.82	33.66	33.81	29.89	26.59	25.76	25.56
178.20 CFS	25.52	25.52	25.52	25.52	25.54	25.56	25.56	25.56
183.00 CFS	25.58	25.59	25.59	25.59	25.61	25.62	25.62	25.63
187.80 CFS	25.64	25.66	25.66	25.66	25.68	25.69	25.69	25.64
192.60 CFS	21.61	18.26	17.42	17.25	21.28	24.63	25.48	25.66
197.40 CFS	21.63	18.29	17.45	17.27	21.34	24.69	25.54	25.71
202.20 CFS	21.68	18.33	17.49	17.29	17.24	17.24	17.24	17.24
207.00 CFS	17.24	17.25	17.25	17.29	21.40	24.78	25.63	25.79
211.80 CFS	21.76	18.40	17.56	17.35	17.31	17.30	17.30	17.30
216.60 CFS	17.31	17.31	17.31	17.31	17.32	17.33	17.33	17.38
221.40 CFS	21.51	24.90	25.75	25.90	21.85	18.48	17.64	17.43
226.20 CFS	17.39	17.38	17.38	17.38	17.39	17.39	17.39	17.43
231.00 CFS	21.58	24.99	25.84	26.01	21.94	18.55	17.70	17.49
235.80 CFS	17.45	17.44	17.44	17.34	9.11	2.26	.54	.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.95 WATERSHED INCHES; 11719 CFS-HRS; 968.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	113	58	42	34	26	26	25	19

DURATION(HRS)	108	120	132	138
FLOW(CFS)	17	17	4	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	186.8	1799.53
223.52	23.8	1794.46
233.48	21.7	1794.43

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
117.00 CFS	0	0	0	35	97	104	108	111
121.80 CFS	112	113	114	144	167	181	187	184
126.60 CFS	179	174	168	161	153	147	141	132
131.40 CFS	124	117	114	114	114	114	113	113
136.20 CFS	113	113	113	113	113	112	112	112
141.00 CFS	112	112	112	112	112	111	111	111
145.80 CFS	111	111	111	110	110	110	110	110
150.60 CFS	110	109	109	109	109	109	109	108
155.40 CFS	108	108	108	108	108	107	107	107
160.20 CFS	107	107	106	106	106	106	106	106
165.00 CFS	105	105	105	105	105	104	104	104
169.80 CFS	104	104	103	103	103	103	103	102
174.60 CFS	102	102	102	102	101	101	101	100
179.40 CFS	100	100	100	99	99	99	99	98
184.20 CFS	98.24	98.00	97.75	97.51	97.27	97.02	96.78	96.54
189.00 CFS	96.30	96.04	95.75	95.47	95.18	94.90	94.61	94.30
193.80 CFS	93.99	93.67	93.37	93.08	92.80	92.53	92.25	91.95
198.60 CFS	91.65	91.34	88.09	82.62	77.79	73.53	69.86	66.19
203.40 CFS	62.63	59.30	56.21	53.34	50.68	48.22	45.94	43.82
208.20 CFS	41.87	40.06	38.53	37.39	36.50	35.70	34.82	33.74
213.00 CFS	32.58	31.46	30.42	29.46	28.56	27.73	26.97	26.27
217.80 CFS	25.79	25.35	24.92	24.52	24.14	23.78	23.55	23.53
222.60 CFS	23.63	23.74	23.75	23.56	23.27	22.97	22.67	22.39
227.40 CFS	22.13	21.88	21.64	21.42	21.20	21.00	20.92	21.05
232.20 CFS	21.28	21.52	21.65	21.58	21.40	21.20	21.00	20.81
237.00 CFS	20.63	20.46	20.08	19.32	18.37	17.42	16.50	15.63
241.80 CFS	14.80	14.02	13.28	12.58	11.91	11.28	10.69	10.12
246.60 CFS	9.59	9.08	8.60	8.15	7.71	7.31	6.92	6.55
251.40 CFS	6.21	5.88	5.57	5.27	5.00	4.73	4.48	4.24
256.20 CFS	4.02	3.81	3.61	3.42	3.24	3.06	2.90	2.75
261.00 CFS	2.60	2.47	2.34	2.21	2.10	1.98	1.88	1.78
265.80 CFS	1.69	1.60	1.51	1.43	1.36	1.29	1.22	1.15
270.60 CFS	1.09	1.03	.98	.93	.88	.83	.79	.75
275.40 CFS	.71	.67	.63	.60	.57	.54	.51	.48
280.20 CFS	.46	.43	.41	.39	.37	.35	.33	.31
285.00 CFS	.30	.28	.27	.25	.24	.23	.21	.20
289.80 CFS	.19	.18	.17	.16	.15	.15	.14	.13
294.60 CFS	.12	.12	.11	.11	.10	.09	.09	.09
299.40 CFS	.08	.08	.07	.07	.06	.06	.06	.06
304.20 CFS	.05	.05	.05	.04	.04	.04	.04	.04
309.00 CFS	.03	.03	.03	.03	.03	.03	.02	.02
313.80 CFS	.02	.02	.02	.02	.02	.02	.02	.02
318.60 CFS	.02	.02	.02	.02	.02	.02	.02	.02

323.40 CFS	.02	.02	.02	.02	.02	.02	.02	.02
328.20 CFS	.02	.02	.02	.02	.02	.02	.02	.02
333.00 CFS	.02	.02	.02	.02	.02	.02	.02	.02
337.80 CFS	.02	.02	.02	.02				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.63 WATERSHED INCHES; 10436 CFS-HRS; 862.4 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	161
FLOW(CFS)	111	104	95	29	19	2	0

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
123.60	115.0 *	.51
223.52	23.8	.11
233.48	21.7	.10

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.53 WATERSHED INCHES; 10053 CFS-HRS; 830.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	161
FLOW(CFS)	111	104	95	29	19	2	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	71.8	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
383 CFS-HRS; 31.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	9
FLOW(CFS)	62	48	29	7	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 104. ***

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
123.60	115.0 *	.51
223.52	23.8	.11
233.48	21.7	.10

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.53 WATERSHED INCHES; 10053 CFS-HRS; 830.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	161
FLOW(CFS)	111	104	95	29	19	2	0

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	1029.9	(RUNOFF)
143.11	28.1	(RUNOFF)
150.76	21.2	(RUNOFF)
155.14	17.8	(RUNOFF)
162.62	17.9	(RUNOFF)
167.06	14.4	(RUNOFF)
174.79	14.4	(RUNOFF)
210.76	11.0	(RUNOFF)
222.63	11.0	(RUNOFF)
232.23	11.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.11 WATERSHED INCHES; 5098 CFS-HRS; 421.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	53	25	18	14	11	11	11	8

DURATION(HRS)	108	120	132	137
FLOW(CFS)	7	7	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.54) FOR SUBWATERSHED XSECTION 4.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1208.0	(NULL)
140.64	140.1	(NULL)
150.21	130.9	(NULL)
162.20	124.1	(NULL)
174.16	116.8	(NULL)
195.70	104.0	(NULL)
209.56	48.8	(NULL)
222.91	35.1	(NULL)
232.54	32.8	(NULL)

*** WARNING - XSECTION 4, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1207.99) EXCEEDS ADJACENT COORDINATE (1127.25) BY 7 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 15151 CFS-HRS; 1252.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	178
FLOW(CFS)	137	119	107	39	28	5	1	0

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1208.0	3.82
140.64	140.1	.62
150.21	130.9	.58
162.20	124.1	.55
174.16	116.8	.52
195.70	104.0	.46
209.56	48.8	.22
222.91	35.1	.16
232.54	32.8	.15

*** WARNING - XSECTION 104, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1207.99) EXCEEDS ADJACENT COORDINATE (1127.25) BY 7 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 15151 CFS-HRS; 1252.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	178
FLOW(CFS)	137	119	107	39	28	5	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	71.8	.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
383 CFS-HRS; 31.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	9
FLOW(CFS)	62	48	29	7	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	1208.0	2.81
140.64	140.1	.48
150.21	130.9	.45
162.20	124.1	.42
174.16	116.8	.40
195.70	104.0	.35
209.56	48.8	.17
222.91	35.1	.12
232.54	32.8	.11

*** WARNING - XSECTION 106, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(1207.99) EXCEEDS ADJACENT COORDINATE (1127.25) BY 7 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.70 WATERSHED INCHES; 15151 CFS-HRS; 1252.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	178
FLOW(CFS)	137	119	107	39	28	5	1	0

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	900.4	(RUNOFF)
143.11	23.2	(RUNOFF)
150.53	17.5	(RUNOFF)
155.10	14.7	(RUNOFF)
162.40	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.39	11.9	(RUNOFF)
210.41	9.0	(RUNOFF)
222.39	9.1	(RUNOFF)
231.99	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.40 WATERSHED INCHES; 4392 CFS-HRS; 363.0 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	45	21	15	12	9	9	9	7

DURATION(HRS)	108	120	132	140
FLOW(CFS)	6	6	4	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.43) FOR SUBWATERSHED XSECTION 5.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	2027.3	(NULL)
142.06	163.1	(NULL)
150.25	148.5	(NULL)
162.25	138.9	(NULL)
174.22	128.8	(NULL)
195.79	113.0	(NULL)
199.70	106.9	(NULL)
209.70	57.4	(NULL)
222.74	43.7	(NULL)
232.51	42.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.83 WATERSHED INCHES; 19543 CFS-HRS; 1615.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	157	131	116	49	35	7	1	0

OPERATION DIVERT XSECTION 106

OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.54	2027.3	3.94
142.06	163.1	.55
150.25	148.5	.51
162.25	138.9	.47
174.22	128.8	.44
195.79	113.0	.38
199.70	106.9	.36
209.70	57.4	.20
222.74	43.7	.15
232.51	42.1	.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.83 WATERSHED INCHES; 19543 CFS-HRS; 1615.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	157	131	116	49	35	7	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.19	444.2	(RUNOFF)
143.10	12.3	(RUNOFF)
150.89	9.3	(RUNOFF)
155.10	7.8	(RUNOFF)
162.37	7.9	(RUNOFF)
167.15	6.3	(RUNOFF)
174.44	6.3	(RUNOFF)
210.41	4.8	(RUNOFF)
222.38	4.9	(RUNOFF)
231.99	4.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.98 WATERSHED INCHES; 2193 CFS-HRS; 181.3 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	19	11	8	6	5	5	5	3

DURATION(HRS)	108	120	132
FLOW(CFS)	3	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 6.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.50	2469.3	(NULL)
137.13	168.1	(NULL)
142.19	175.4	(NULL)
150.27	157.9	(NULL)
162.26	146.7	(NULL)
174.24	135.1	(NULL)
195.81	117.8	(NULL)
199.77	111.4	(NULL)
209.82	62.2	(NULL)
222.65	48.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.85 WATERSHED INCHES; 21737 CFS-HRS; 1796.3 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	168	138	121	53	38	7	1	0

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
125.54	71.8	.24

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
123.00 CFS	.00	29.45	52.08	65.68	71.58	69.43	64.13	59.20
127.80 CFS	53.49	45.91	38.36	32.19	25.60	17.28	9.11	2.47
132.60 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
383 CFS-HRS; 31.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	9
FLOW(CFS)	62	48	29	7	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.10	294.7	(RUNOFF)
128.70	17.9	(RUNOFF)
143.10	9.3	(RUNOFF)
150.30	7.0	(RUNOFF)
155.10	5.9	(RUNOFF)
162.30	6.0	(RUNOFF)
167.02	4.8	(RUNOFF)
174.30	4.8	(RUNOFF)
222.30	3.7	(RUNOFF)
231.90	3.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.42 WATERSHED INCHES; 1497 CFS-HRS; 123.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	17	8	6	5	4	4	4	2

DURATION(HRS)	108	120	125
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -1.3%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.42	2758.9	(NULL)
137.25	176.1	(NULL)
142.27	184.6	(NULL)
150.27	164.9	(NULL)
162.26	152.7	(NULL)
174.24	139.9	(NULL)
195.82	121.5	(NULL)
199.81	115.0	(NULL)
209.86	65.9	(NULL)
222.52	52.3	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
98.40 CFS	.45	1.36	1.50	1.51	1.53	3.24	3.55	3.57
103.20 CFS	3.62	5.54	5.93	5.96	6.01	8.11	8.53	8.56
108.00 CFS	8.74	14.87	16.08	16.16	16.36	24.31	25.87	25.98
112.80 CFS	27	43	46	47	49	92	100	101
117.60 CFS	168	2256	2672	2759	2685	939	619	599

122.40 CFS	587	395	359	357	354	301	291	290
127.20 CFS	289	262	257	257	255	228	222	222
132.00 CFS	221	191	186	185	185	178	176	176
136.80 CFS	176	176	176	176	176	183	185	185
141.60 CFS	184	185	185	184	183	161	157	157
146.40 CFS	156	156	156	156	156	164	165	165
151.20 CFS	164	157	155	155	155	155	155	154
156.00 CFS	154	146	145	145	144	144	144	144
160.80 CFS	144	151	153	152	152	144	143	143
165.60 CFS	142	142	142	142	141	134	132	132
170.40 CFS	132	131	131	131	131	139	140	140
175.20 CFS	139	131	130	129	129	129	129	128
180.00 CFS	128	128	128	127	127	127	127	126
184.80 CFS	126	126	126	126	125	125	125	125
189.60 CFS	124	124	124	124	123	115	113	113
194.40 CFS	113	120	121	121	121	113	111	111
199.20 CFS	111	115	111	106	102	90	85	82
204.00 CFS	78.28	75.20	72.33	69.68	67.21	64.94	62.83	60.88
208.80 CFS	59.45	65.55	65.84	65.04	63.94	55.40	52.88	51.63
213.60 CFS	50.51	49.48	48.52	47.63	46.80	46.04	45.34	44.87
218.40 CFS	44.42	44.01	43.61	43.23	43.07	50.72	52.10	52.29
223.20 CFS	51.96	44.39	42.79	42.40	42.10	41.81	41.54	41.27
228.00 CFS	41.02	40.79	40.57	40.36	40.52	48.17	49.71	50.04
232.80 CFS	49.82	42.41	40.87	40.59	40.39	40.20	40.02	39.84
237.60 CFS	39.03	23.17	19.51	18.37	17.42	16.50	15.63	14.80
242.40 CFS	14.02	13.28	12.58	11.91	11.28	10.69	10.12	9.59
247.20 CFS	9.08	8.60	8.15	7.71	7.31	6.92	6.55	6.21
252.00 CFS	5.88	5.57	5.27	5.00	4.73	4.48	4.24	4.02
256.80 CFS	3.81	3.61	3.42	3.24	3.06	2.90	2.75	2.60
261.60 CFS	2.47	2.34	2.21	2.10	1.98	1.88	1.78	1.69
266.40 CFS	1.60	1.51	1.43	1.36	1.29	1.22	1.15	1.09
271.20 CFS	1.03	.98	.93	.88	.83	.79	.75	.71
276.00 CFS	.67	.63	.60	.57	.54	.51	.48	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 23233 CFS-HRS; 1920.0 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	181
FLOW(CFS)	176	142	124	55	41	7	1	0

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.13	164.6	(RUNOFF)
122.10	33.2	(RUNOFF)
143.10	4.8	(RUNOFF)
155.14	3.0	(RUNOFF)
162.31	3.0	(RUNOFF)
167.04	2.4	(RUNOFF)
174.32	2.5	(RUNOFF)
236.51	1.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 828 CFS-HRS; 68.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	9	4	3	2	2	2	2	1

DURATION(HRS)	108	120	127
FLOW(CFS)	1	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.4%. ***

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
120.32	168.7	1766.34
143.74	4.8	1763.77
151.51	3.6	1763.73
163.50	3.1	1763.71
175.52	2.5	1763.69
233.10	1.9	1763.67

*** WARNING - XSECTION 113, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(168.73) EXCEEDS ADJACENT COORDINATE (159.95) BY 5 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 828 CFS-HRS; 68.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	9	4	3	2	2	2	2	1

DURATION(HRS)	108	120	127
FLOW(CFS)	1	1	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.70	332.3	(RUNOFF)
143.12	9.1	(RUNOFF)
150.87	6.9	(RUNOFF)
155.13	5.7	(RUNOFF)
162.79	5.8	(RUNOFF)
167.15	4.6	(RUNOFF)
174.78	4.7	(RUNOFF)
210.79	3.6	(RUNOFF)
222.77	3.6	(RUNOFF)
232.50	3.7	(RUNOFF)

*** WARNING - XSECTION 12, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(332.29) EXCEEDS ADJACENT COORDINATE (311.61) BY 6 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1573 CFS-HRS; 130.0 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	15	8	6	5	4	4	3	2

DURATION(HRS)	108	120	130
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.66) FOR SUBWATERSHED XSECTION 12.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -6.1%. ***

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.75	484.5	1768.49
143.21	13.8	1764.10
150.94	10.5	1763.98
155.13	8.8	1763.92
162.93	8.9	1763.92
174.93	7.2	1763.86
191.11	5.4	1763.80
210.93	5.5	1763.80
222.93	5.5	1763.80
232.54	5.5	1763.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 2402 CFS-HRS; 198.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	24	12	9	7	5	5	5	4

DURATION(HRS)	108	120	131
FLOW(CFS)	4	4	0

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
120.47	452.4	1768.30
143.99	13.8	1764.10
151.65	10.4	1763.98
163.65	8.7	1763.92
175.65	7.0	1763.86
191.75	5.4	1763.80
202.04	5.3	1763.79
211.65	5.3	1763.79
223.65	5.4	1763.80
233.25	5.4	1763.80

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.80 WATERSHED INCHES; 2402 CFS-HRS; 198.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	25	12	9	7	5	5	5	4

DURATION(HRS)	108	120	131
FLOW(CFS)	4	4	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.67	705.5	(RUNOFF)
143.14	20.4	(RUNOFF)
150.90	15.7	(RUNOFF)
155.15	13.0	(RUNOFF)
162.90	13.2	(RUNOFF)
167.13	10.5	(RUNOFF)
174.90	10.7	(RUNOFF)
210.90	8.3	(RUNOFF)
222.89	8.1	(RUNOFF)
232.49	8.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 3552 CFS-HRS; 293.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	33	18	13	10	8	8	8	5

DURATION(HRS)	108	120	130
FLOW(CFS)	5	5	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.68) FOR SUBWATERSHED XSECTION 11.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .1%. ***

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.83	1128.7	1771.19
143.49	34.2	1764.70
151.01	25.7	1764.54
163.01	21.7	1764.39
175.01	17.5	1764.24
191.25	13.4	1764.09
201.41	13.3	1764.08
211.01	13.3	1764.08
223.01	13.4	1764.09
232.61	13.4	1764.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 5954 CFS-HRS; 492.0 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	60	31	22	18	14	13	13	10

DURATION(HRS)	108	120	132	133
FLOW(CFS)	9	9	1	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 111. ***

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.83	1128.7	1771.19
143.49	34.2	1764.70
151.01	25.7	1764.54
163.01	21.7	1764.39
175.01	17.5	1764.24
191.25	13.4	1764.09
201.41	13.3	1764.08
211.01	13.3	1764.08
223.01	13.4	1764.09
232.61	13.4	1764.09

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 5954 CFS-HRS; 492.0 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	60	31	22	18	14	13	13	10

DURATION(HRS)	108	120	132	133
FLOW(CFS)	9	9	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	250.3	(RUNOFF)
143.24	7.0	(RUNOFF)
150.92	5.3	(RUNOFF)
155.27	4.4	(RUNOFF)
162.92	4.5	(RUNOFF)
167.25	3.6	(RUNOFF)
174.92	3.6	(RUNOFF)
210.92	2.8	(RUNOFF)
222.92	2.8	(RUNOFF)
232.52	2.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 1217 CFS-HRS; 100.5 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	12	6	4	4	3	3	3	2

DURATION(HRS)	108	120	130
FLOW(CFS)	2	2	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.89) FOR SUBWATERSHED XSECTION 10.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.7%. ***

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.81	1377.8	(NULL)
143.46	41.2	(NULL)
151.00	31.1	(NULL)
162.99	26.2	(NULL)
174.99	21.1	(NULL)
191.25	16.1	(NULL)
201.39	16.1	(NULL)
210.99	16.1	(NULL)
222.99	16.2	(NULL)
232.59	16.3	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 7171 CFS-HRS; 592.6 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	72	37	26	21	16	16	16	12

DURATION(HRS)	108	120	132	134
FLOW(CFS)	11	11	1	0

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.81	1377.8	(DIVERT)
143.46	41.2	(DIVERT)
151.00	31.1	(DIVERT)
162.99	26.2	(DIVERT)
174.99	21.1	(DIVERT)
191.25	16.1	(DIVERT)
201.39	16.1	(DIVERT)
210.99	16.1	(DIVERT)
222.99	16.2	(DIVERT)
232.59	16.3	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 7171 CFS-HRS; 592.6 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	72	37	26	21	16	16	16	12

DURATION(HRS)	108	120	132	134
FLOW(CFS)	11	11	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 109. ***

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.81	1377.8	1772.16
143.46	41.2	1764.81
151.00	31.1	1764.66
162.99	26.2	1764.55
174.99	21.1	1764.37
191.25	16.1	1764.19
201.39	16.1	1764.18
210.99	16.1	1764.19
222.99	16.2	1764.19
232.59	16.3	1764.19

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.81 WATERSHED INCHES; 7171 CFS-HRS; 592.6 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	72	37	26	21	16	16	16	12

DURATION(HRS)	108	120	132	134
FLOW(CFS)	11	11	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.53	626.6	(RUNOFF)
143.11	16.2	(RUNOFF)
150.70	12.2	(RUNOFF)
155.11	10.2	(RUNOFF)
162.78	10.3	(RUNOFF)
167.10	8.3	(RUNOFF)
174.87	8.3	(RUNOFF)
210.66	6.3	(RUNOFF)
222.64	6.3	(RUNOFF)
232.23	6.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.42 WATERSHED INCHES; 3066 CFS-HRS; 253.4 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	32	14	10	8	7	6	6	5

DURATION(HRS)	108	120	132	140
FLOW(CFS)	4	4	3	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.55) FOR SUBWATERSHED XSECTION 9.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.1%. ***

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.76	2046.6	1774.74
143.29	57.4	1765.06
150.95	43.5	1764.84
162.95	36.7	1764.74
174.96	29.6	1764.63
191.16	22.4	1764.41
201.35	22.5	1764.42
210.95	22.6	1764.42
222.95	22.7	1764.43
232.55	22.8	1764.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.97 WATERSHED INCHES; 10233 CFS-HRS; 845.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	98	53	36	30	23	22	22	17

DURATION(HRS)	108	120	132	142
FLOW(CFS)	15	15	3	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.76	2046.6	1774.74
143.29	57.4	1765.06
150.95	43.5	1764.84
162.95	36.7	1764.74
174.96	29.6	1764.63
191.16	22.4	1764.41
201.35	22.5	1764.42
210.95	22.6	1764.42
222.95	22.7	1764.43
232.55	22.8	1764.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.97 WATERSHED INCHES; 10233 CFS-HRS; 845.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	98	53	36	30	23	22	22	17

DURATION(HRS)	108	120	132	142
FLOW(CFS)	15	15	3	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.76	2046.6	1760.29
143.29	57.4	1754.63
150.95	43.5	1754.40
162.95	36.7	1754.29
174.96	29.6	1754.18
191.16	22.4	1754.06
201.35	22.5	1754.06
210.95	22.6	1754.06
222.95	22.7	1754.07
232.55	22.8	1754.07

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.97 WATERSHED INCHES; 10233 CFS-HRS; 845.7 ACRE-FEET.

DURATION(HRS)	12	24	36	48	60	72	84	96
FLOW(CFS)	98	53	36	30	23	22	22	17

DURATION(HRS)	108	120	132	142
FLOW(CFS)	15	15	3	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.20	950.6	(RUNOFF)
122.10	168.6	(RUNOFF)
143.10	23.4	(RUNOFF)
150.37	17.6	(RUNOFF)
155.19	14.7	(RUNOFF)
162.44	14.8	(RUNOFF)
167.10	11.9	(RUNOFF)
174.38	11.9	(RUNOFF)
222.82	9.1	(RUNOFF)
232.02	9.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.72 WATERSHED INCHES; 4612 CFS-HRS; 381.1 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	146
FLOW(CFS)	23	12	9	7	6	1	0

*** WARNING - MAIN TIME INCREMENT (.600) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.42) FOR SUBWATERSHED XSECTION 8.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.2%. ***

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	3056.3	1761.72
143.16	80.8	1754.83
150.92	61.3	1754.69
162.93	51.7	1754.54
174.92	41.7	1754.37
191.11	31.4	1754.21
201.32	31.8	1754.21
210.92	31.8	1754.21
222.93	32.1	1754.22
232.53	32.1	1754.22

*** WARNING - XSECTION 108, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(3056.35) EXCEEDS ADJACENT COORDINATE (2894.58) BY 5 %. ***

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40 CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20 CFS	9.87	10.36	10.49	10.72	17.17	19.19	19.74	20.18
111.00 CFS	28.06	30.84	31.70	32.34	48.13	53.67	55.38	56.85
115.80 CFS	97	112	116	167	1923	2603	2835	2895
120.60 CFS	1431	862	675	596	395	316	288	276
125.40 CFS	226	206	200	196	172	163	160	158
130.20 CFS	134	125	121	119	95	85	82	80
135.00 CFS	74.07	71.49	70.57	70.20	70.17	70.17	70.17	70.21
139.80 CFS	76.47	78.98	79.86	80.23	80.56	80.70	80.76	80.26
144.60 CFS	62.39	55.04	52.49	51.41	51.02	50.87	50.81	50.87
149.40 CFS	57.06	59.57	60.45	60.66	54.82	52.45	51.62	51.27
154.20 CFS	51.18	51.15	51.14	51.09	44.93	42.47	41.61	41.25
159.00 CFS	41.13	41.09	41.07	41.22	47.38	49.91	50.79	51.08
163.80 CFS	45.08	42.66	41.83	41.47	41.36	41.32	41.30	41.12
168.60 CFS	35.01	32.51	31.64	31.27	31.13	31.08	31.06	31.10
173.40 CFS	37.40	39.93	40.82	41.08	35.04	32.61	31.76	31.39
178.20 CFS	31.26	31.21	31.19	31.18	31.20	31.21	31.21	31.21
183.00 CFS	31.23	31.24	31.25	31.25	31.27	31.28	31.28	31.29
187.80 CFS	31.31	31.32	31.32	31.32	31.35	31.36	31.36	31.21
192.60 CFS	24.99	22.46	21.57	21.37	27.45	29.92	30.79	31.05
197.40 CFS	24.94	22.46	21.59	21.32	27.49	29.99	30.85	31.07
202.20 CFS	24.98	22.49	21.63	21.26	21.12	21.06	21.04	21.03
207.00 CFS	21.04	21.04	21.04	21.20	27.47	30.04	30.94	31.15
211.80 CFS	25.05	22.58	21.71	21.34	21.19	21.13	21.11	21.10
216.60 CFS	21.10	21.11	21.11	21.11	21.12	21.12	21.12	21.28
221.40 CFS	27.59	30.16	31.07	31.40	25.14	22.67	21.80	21.43
226.20 CFS	21.28	21.22	21.19	21.18	21.19	21.19	21.19	21.30
231.00 CFS	27.68	30.27	31.17	31.44	25.25	22.73	21.86	21.49
235.80 CFS	21.34	21.28	21.26	20.94	8.29	3.12	1.30	.54
240.60 CFS	.21							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.17 WATERSHED INCHES; 14845 CFS-HRS; 1226.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	148
FLOW(CFS)	74	42	31	25	21	1	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
246 CFS-HRS; 1226.8 ACRE-FEET.

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	3056.3	1761.72
143.16	80.8	1754.83
150.92	61.3	1754.69
162.93	51.7	1754.54
174.92	41.7	1754.37
191.11	31.4	1754.21
201.32	31.8	1754.21
210.92	31.8	1754.21
222.93	32.1	1754.22
232.53	32.1	1754.22

*** WARNING - XSECTION 108, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(3056.35) EXCEEDS ADJACENT COORDINATE (2894.58) BY 5 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.17 WATERSHED INCHES; 14845 CFS-HRS; 1226.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	148
FLOW(CFS)	74	42	31	25	21	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 107. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.72	3056.3	1759.25
143.16	80.8	1750.46
150.92	61.3	1750.25
162.93	51.7	1750.14
174.92	41.7	1750.03
191.11	31.4	1749.81
201.32	31.8	1749.82
210.92	31.8	1749.83
222.93	32.1	1749.83
232.53	32.1	1749.83

*** WARNING - XSECTION 107, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(3056.35) EXCEEDS ADJACENT COORDINATE (2894.58) BY 5 %. ***

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.56	2.83	2.84	2.87	4.35	4.65	4.67	4.75
101.40 CFS	6.74	7.12	7.15	7.18	8.05	8.24	8.25	8.26
106.20 CFS	9.87	10.36	10.49	10.72	17.17	19.19	19.74	20.18
111.00 CFS	28.06	30.84	31.70	32.34	48.13	53.67	55.38	56.85
115.80 CFS	97	112	116	167	1923	2603	2835	2895
120.60 CFS	1431	862	675	596	395	316	288	276
125.40 CFS	226	206	200	196	172	163	160	158
130.20 CFS	134	125	121	119	95	85	82	80
135.00 CFS	74.07	71.49	70.57	70.20	70.17	70.17	70.17	70.21
139.80 CFS	76.47	78.98	79.86	80.23	80.56	80.70	80.76	80.26
144.60 CFS	62.39	55.04	52.49	51.41	51.02	50.87	50.81	50.87
149.40 CFS	57.06	59.57	60.45	60.66	54.82	52.45	51.62	51.27
154.20 CFS	51.18	51.15	51.14	51.09	44.93	42.47	41.61	41.25
159.00 CFS	41.13	41.09	41.07	41.22	47.38	49.91	50.79	51.08
163.80 CFS	45.08	42.66	41.83	41.47	41.36	41.32	41.30	41.12
168.60 CFS	35.01	32.51	31.64	31.27	31.13	31.08	31.06	31.10
173.40 CFS	37.40	39.93	40.82	41.08	35.04	32.61	31.76	31.39
178.20 CFS	31.26	31.21	31.19	31.18	31.20	31.21	31.21	31.21
183.00 CFS	31.23	31.24	31.25	31.25	31.27	31.28	31.28	31.29
187.80 CFS	31.31	31.32	31.32	31.32	31.35	31.36	31.36	31.21
192.60 CFS	24.99	22.46	21.57	21.37	27.45	29.92	30.79	31.05
197.40 CFS	24.94	22.46	21.59	21.32	27.49	29.99	30.85	31.07
202.20 CFS	24.98	22.49	21.63	21.26	21.12	21.06	21.04	21.03
207.00 CFS	21.04	21.04	21.04	21.20	27.47	30.04	30.94	31.15
211.80 CFS	25.05	22.58	21.71	21.34	21.19	21.13	21.11	21.10
216.60 CFS	21.10	21.11	21.11	21.11	21.12	21.12	21.12	21.28

221.40 CFS	27.59	30.16	31.07	31.40	25.14	22.67	21.80	21.43
226.20 CFS	21.28	21.22	21.19	21.18	21.19	21.19	21.19	21.30
231.00 CFS	27.68	30.27	31.17	31.44	25.25	22.73	21.86	21.49
235.80 CFS	21.34	21.28	21.26	20.94	8.29	3.12	1.30	.54
240.60 CFS	.21							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.17 WATERSHED INCHES; 14845 CFS-HRS; 1226.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	148
FLOW(CFS)	74	42	31	25	21	1	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
119.67	5628.4	1762.56
137.17	246.2	1751.81
142.82	265.2	1751.94
150.83	225.2	1751.66
162.74	203.3	1751.51
174.73	180.5	1751.35
196.37	152.0	1751.15
200.02	143.4	1751.09
210.36	96.1	1750.63
222.90	85.1	1750.51

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
91.80 CFS	.50	.55	.56	.57	.92	.97	.98	1.01
96.60 CFS	2.94	3.26	3.28	3.32	5.71	6.15	6.18	6.28
101.40 CFS	9.97	10.68	10.72	10.80	13.59	14.17	14.21	14.27
106.20 CFS	17.98	18.89	19.05	19.45	32.04	35.28	35.90	36.53
111.00 CFS	52	57	58	59	91	100	102	106
115.80 CFS	189	212	217	334	4179	5276	5594	5580
120.60 CFS	2370	1481	1274	1183	790	675	645	630
125.40 CFS	527	497	490	485	434	420	416	413
130.20 CFS	362	347	343	340	287	271	267	266
135.00 CFS	252	248	247	246	246	246	246	246
139.80 CFS	260	264	264	265	265	265	265	264
144.60 CFS	224	212	209	208	207	207	207	207
149.40 CFS	221	224	225	225	212	208	207	206
154.20 CFS	206	206	206	205	191	187	186	186
159.00 CFS	185	185	185	185	199	202	203	203
163.80 CFS	189	185	184	184	184	183	183	182
168.60 CFS	169	165	163	163	163	162	162	162
173.40 CFS	176	180	180	180	166	162	161	161
178.20 CFS	160	160	160	159	159	159	159	158
183.00 CFS	158	158	158	157	157	157	157	157
187.80 CFS	156	156	156	156	155	155	155	154
192.60 CFS	140	136	134	134	148	151	152	152

197.40 CFS	138	133	132	132	143	141	137	133
202.20 CFS	115	108	103	100	96	93	91	88
207.00 CFS	85.98	83.87	81.92	80.65	93.02	95.88	95.98	95.10
211.80 CFS	80.45	75.45	73.34	71.85	70.67	69.65	68.73	67.90
216.60 CFS	67.14	66.45	65.98	65.53	65.13	64.73	64.36	64.35
221.40 CFS	78.31	82.27	83.36	83.37	69.53	65.46	64.20	63.52
226.20 CFS	63.09	62.75	62.46	62.20	61.98	61.76	61.55	61.82
231.00 CFS	75.84	79.98	81.21	81.27	67.66	63.60	62.45	61.88
235.80 CFS	61.55	61.30	61.10	59.97	31.45	22.63	19.68	17.95
240.60 CFS	16.71	15.71	14.83	14.03	13.28	12.58	11.91	11.28
245.40 CFS	10.69	10.12	9.59	9.08	8.60	8.15	7.71	7.31
250.20 CFS	6.92	6.55	6.21	5.88	5.57	5.27	5.00	4.73
255.00 CFS	4.48	4.24	4.02	3.81	3.61	3.42	3.24	3.06
259.80 CFS	2.90	2.75	2.60	2.47	2.34	2.21	2.10	1.98
264.60 CFS	1.88	1.78	1.69	1.60	1.51	1.43	1.36	1.29
269.40 CFS	1.22	1.15	1.09	1.03	.98	.93	.88	.83
274.20 CFS	.79	.75	.71	.67	.63	.60	.57	.54
279.00 CFS	.51	.48						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.94 WATERSHED INCHES; 38078 CFS-HRS; 3146.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	187
FLOW(CFS)	246	185	156	86	62	10	2	0

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
131.72	341.1	1713.31
162.90	203.1	1712.78
175.06	178.5	1712.69

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .600 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
92.40 CFS	.00	.01	.01	.01	.01	.01	.02	.02
97.20 CFS	.03	.04	.05	.06	.08	.10	.12	.14
102.00 CFS	.17	.20	.23	.27	.31	.35	.39	.44
106.80 CFS	.49	.54	.60	.67	.77	.87	.97	1.10
111.60 CFS	1.26	1.42	1.59	1.81	2.08	2.37	2.67	3.10
116.40 CFS	4	4	5	10	94	131	141	147
121.20 CFS	150	152	153	154	155	164	203	235
126.00 CFS	258	278	295	309	319	327	335	339
130.80 CFS	340	341	341	339	334	328	323	318
135.60 CFS	312	307	301	297	293	289	285	282
140.40 CFS	281	279	278	277	276	275	274	272
145.20 CFS	267	262	258	254	250	246	243	240
150.00 CFS	239	238	237	235	233	231	229	227
154.80 CFS	225	223	222	220	217	215	212	210
159.60 CFS	208	206	204	203	203	203	203	202
164.40 CFS	201	200	199	197	196	195	194	192

169.20 CFS	190	188	186	184	182	181	179	178
174.00 CFS	178	178	179	178	177	176	174	173
178.80 CFS	172	171	170	169	168	168	167	166
183.60 CFS	165	165	164	164	163	163	162	162
188.40 CFS	161	161	160	160	160	159	159	158
193.20 CFS	156	156	156	156	156	156	156	156
198.00 CFS	156	156	155	155	155	155	155	155
202.80 CFS	155	155	155	155	155	155	155	154
207.60 CFS	154	154	154	154	154	154	154	154
212.40 CFS	154	154	154	153	153	153	153	153
217.20 CFS	153	153	153	153	152	152	152	152
222.00 CFS	152	152	152	152	152	151	151	151
226.80 CFS	151	151	151	151	151	150	150	150
231.60 CFS	150	150	150	150	150	150	149	149
236.40 CFS	149	149	149	149	149	148	148	148
241.20 CFS	148	148	148	147	147	147	147	147
246.00 CFS	146	146	146	146	146	145	145	145
250.80 CFS	145	144	144	144	144	144	143	143
255.60 CFS	143	143	142	142	142	142	142	141
260.40 CFS	141	141	141	140	140	140	140	140
265.20 CFS	139	139	139	139	138	138	138	138
270.00 CFS	137	137	137	136	136	136	136	135
274.80 CFS	135	135	134	134	134	134	133	133
279.60 CFS	133	132	132	132	132	131	131	131
284.40 CFS	130	130	130	130	129	129	129	129
289.20 CFS	128	128	128	127	127	127	127	126
294.00 CFS	126	126	126	125	125	125	125	124
298.80 CFS	124	124	124	123	123	123	122	122
303.60 CFS	122	120	117	114	111	108	106	103
308.40 CFS	100	98	95	93	90	88	86	83
313.20 CFS	81.13	79.02	76.97	74.97	73.02	71.12	69.27	67.47
318.00 CFS	65.71	64.00	62.34	60.72	59.14	57.60	56.10	54.64
322.80 CFS	53.22	51.84	50.49	49.17	47.90	46.65	45.44	44.26
327.60 CFS	43.10							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.63 WATERSHED INCHES; 34048 CFS-HRS; 2813.8 ACRE-FEET.

DURATION(HRS)	24	48	72	96	120	144	168	192
FLOW(CFS)	239	179	156	153	148	140	129	90

DURATION(HRS) 209
FLOW(CFS) 43 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

RAINFALL OF 7.02 inches AND 237.60 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 3, ARC 2
MAIN TIME INCREMENT .600 HOURS

ALTERNATE 5 STORM 1

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 101	RUNOFF	1.86	3.12	---	119.83	748	402.2
XSECTION 1	RUNOFF	1.20	3.01	---	119.62	467	389.2
XSECTION 1	ADDHYD	3.06	3.07	---	119.75	1240	405.2
XSECTION 102	REACH	3.06	3.07	3.89	119.75	1240	405.2
XSECTION 2	RUNOFF	1.24	2.41	---	119.58	372	300.0
XSECTION 2	ADDHYD	4.30	2.88	---	119.73	1636	380.5
XSECTION 103	REACH	4.30	2.88	4.70	119.73	1636	380.5
XSECTION 3	RUNOFF	1.85	3.12	---	119.73	777	420.0
XSECTION 3	ADDHYD	6.15	2.95	---	119.73	2412	392.2
STRUCTURE 1	RESVOR	6.15	2.63	1799.53	125.54	187	30.4
XSECTION 104	DIVERT	6.15	2.53	.51	123.60F	115F	18.7
XSECTION 0	DIVERT	.00	2.53	---	125.54	72	********
XSECTION 104	REACH	6.15	2.53	.51	123.60F	115F	18.7
XSECTION 4	RUNOFF	2.54	3.11	---	119.54	1030	405.5
XSECTION 4	ADDHYD	8.69	2.70	---	119.70	1208	139.0
XSECTION 104	DIVERT	8.69	2.70	3.82	119.70	1208	139.0
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 104	ADDHYD	.00	.00	.32	125.54	72	********
XSECTION 106	REACH	8.69	2.70	2.81	119.70	1208	139.0
XSECTION 5	RUNOFF	2.00	3.40	---	119.20	900	450.0
XSECTION 5	ADDHYD	10.69	2.83	---	119.54	2027	189.6
XSECTION 106	DIVERT	10.69	2.83	3.94	119.54	2027	189.6
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 6	RUNOFF	1.14	2.98	---	119.19	444	389.5
XSECTION 6	ADDHYD	11.83	2.85	---	119.50	2469	208.7
XSECTION 106	ADDHYD	.00	2.85	.24	125.54	72	********
XSECTION 7	RUNOFF	.96	2.42	---	119.10	295	307.3
XSECTION 7	ADDHYD	12.79	2.81	---	119.42	2759	215.7

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

ALTERNATE 5 STORM 1

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 13	RUNOFF	.46	2.80	---	119.13	165	358.7
XSECTION 113	REACH	.46	2.80	1766.34	120.32	169	367.4
XSECTION 12	RUNOFF	.87	2.81	---	119.70	332	381.6
XSECTION 112	ADDHYD	1.33	2.80	1768.49	119.75	484	363.9
XSECTION 112	REACH	1.33	2.80	1768.30	120.47	452	339.8
XSECTION 11	RUNOFF	1.96	2.81	---	119.67	705	359.7
XSECTION 111	ADDHYD	3.28	2.81	1771.19	119.83	1129	344.2
XSECTION 111	REACH	3.28	2.81	1771.19	119.83	1129	344.2
XSECTION 10	RUNOFF	.67	2.81	---	119.72	250	373.1
XSECTION 110	ADDHYD	3.95	2.81	---	119.81	1378	348.9
XSECTION 110	DIVERT	3.95	2.81	---	119.81	1378	348.9
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 109	REACH	3.95	2.81	1772.16	119.81	1378	348.9
XSECTION 9	RUNOFF	1.39	3.42	---	119.53	627	451.1
XSECTION 109	ADDHYD	5.34	2.97	1774.74	119.76	2047	383.3
XSECTION 109	DIVERT	5.34	2.97	1774.74	119.76	2047	383.3
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 108	REACH	5.34	2.97	1760.29	119.76	2047	383.3
XSECTION 8	RUNOFF	1.92	3.72	---	119.20	951	495.3
XSECTION 108	ADDHYD	7.26	3.17	1761.72	119.72	3056	420.9
XSECTION 109	ADDHYD	.00	3.17	---	.00	0	********
XSECTION 108	DIVERT	7.26	3.17	1761.72	119.72	3056	420.9
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 107	REACH	7.26	3.17	1759.25	119.72	3056	420.9
XSECTION 107	ADDHYD	20.05	2.94	1762.56	119.67	5628	280.7
STRUCTURE 2	RESVOR	20.05	2.63	1713.31	131.72T	341T	17.0

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1203	120.0	1203	120.0	4.77	1.00	.029	1.000	1.00?
103	2500		1572	120.0	1572	120.0	4.77	1.00	.029	1.000	1.00?
104	6700		115	123.6	115	123.6	1.57	1.53	.000	1.000	1.00?
106	3700		1127	120.0	1127	120.0	1.04	1.59	.000	1.000	1.00?
113	6900		164	119.4	160	120.6	.27	1.47	.080	.974	.66
112	7700		469	120.0	449	120.6	.47	1.34	.083	.959	.67?
111	2000		1112	120.0	1112	120.0	.40	1.37	.008	1.000	1.00?
109	2700		1352	120.0	1352	120.0	.38	1.38	.012	1.000	1.00?
108	2100		1974	120.0	1974	120.0	.83	1.40	.003	1.000	1.00?
107	5300		2895	120.0	2895	120.0	.54	1.38	.017	1.000	1.00?

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
STRUCTURE 2	20.05	
ALTERNATE 5		341
STRUCTURE 1	6.15	
ALTERNATE 5		187
XSECTION 0	.00	
ALTERNATE 5		0
XSECTION 1	3.06	
ALTERNATE 5		1240
XSECTION 2	4.30	
ALTERNATE 5		1636
XSECTION 3	6.15	
ALTERNATE 5		2412
XSECTION 4	8.69	
ALTERNATE 5		1208
XSECTION 5	10.69	
ALTERNATE 5		2027
XSECTION 6	11.83	
ALTERNATE 5		2469
XSECTION 7	12.79	
ALTERNATE 5		2759
XSECTION 8	1.92	

ALTERN	5	951

XSECTION 1.39

ALTERNATE	5	627

XSECTION 10 .67

ALTERNATE	5	250

XSECTION 11 1.96

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 11	1.96	
ALTERNATE 5		705
XSECTION 12	.87	
ALTERNATE 5		332
XSECTION 13	.46	
ALTERNATE 5		165
XSECTION 101	1.86	
ALTERNATE 5		748
XSECTION 102	3.06	
ALTERNATE 5		1240
XSECTION 103	4.30	
ALTERNATE 5		1636
XSECTION 104	.00	
ALTERNATE 5		72
XSECTION 106	.00	
ALTERNATE 5		72
XSECTION 107	20.05	
ALTERNATE 5		5628
XSECTION 108	7.26	
ALTERNATE 5		3056
XSECTION 109	.00	

ALTERN	5		0
XSECTION		3.95	
ALTERNATE	5		1378
XSECTION 111		3.28	
ALTERNATE	5		1129
XSECTION 112		1.33	
ALTERNATE	5		452

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1
XSECTION 113	.46	
ALTERNATE 5		169

```
TR20 ------  ------------------------------------------------------------ SCS -
        SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBTR20cT VERSION
09/19/**  ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNT2.04TEST


END OF  1 JOBS IN THIS RUN


                    SCS  TR-20,  VERSION 2.04TEST
                                  FILES

     INPUT  = SBTR20CT.DAT                          , GIVEN DATA FILE
     OUTPUT = SBTR20CT.OUT                          , DATED 09/19/**,08:57:37

             FILES GENERATED - DATED 09/19/**,08:57:37

                              NONE!


          TOTAL NUMBER OF WARNINGS =  32,  MESSAGES =   7

                       JOB ENDED AT 08:57:37
                   *** TR-20 RUN COMPLETED ***
```

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	3125.4	(NULL)
21.80	164.8	(NULL)
23.80	140.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
8.60 CFS	.31	.92	2.12	4.01	6.94	10.81	15.99	22.50
10.20 CFS	30	40	54	70	91	119	157	236
11.80 CFS	493	1170	2128	2895	3125	2936	2561	2147
13.40 CFS	1751	1414	1156	961	813	703	619	555
15.00 CFS	507	468	437	410	386	364	343	325
16.60 CFS	309	296	286	279	273	267	260	252
18.20 CFS	244	235	226	218	211	206	203	201
19.80 CFS	199	195	190	186	182	178	174	168
21.40 CFS	165	164	165	164	162	159	156	153
23.00 CFS	149	144	141	140	141	140	136	125
24.60 CFS	104	79	56	39	26	17	11	7
26.20 CFS	4.36	2.81	1.80	1.15	.74	.48		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 7544 CFS-HRS; 623.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	961	386	260	201	165	141	70	11

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.52	112.2	1799.08

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
11.80 CFS	.00	.01	.01	.02	57.27	93.53	96.99	99.54
13.40 CFS	102	103	104	105	106	106	107	107
15.00 CFS	107	108	108	108	109	109	109	109
16.60 CFS	109	110	110	110	110	110	110	110
18.20 CFS	110	111	111	111	111	111	111	111
19.80 CFS	111	111	111	111	111	112	112	112
21.40 CFS	112	112	112	112	112	112	112	112
23.00 CFS	112	112	112	112	112	112	112	112

24.60 CFS	112	112	112	112	112	112	112	112
26.20 CFS	112	112	111	111	111	111	111	111
27.80 CFS	111	111	111	111	111	110	110	110
29.40 CFS	110	110	110	110	110	110	110	109
31.00 CFS	109	109	109	109	109	109	109	109
32.60 CFS	109	109	108	108	108	108	108	108
34.20 CFS	108	108	108	108	108	107	107	107
35.80 CFS	107	107	107	107	107	107	107	107
37.40 CFS	106	106	106	106	106	106	106	106
39.00 CFS	106	106	106	105	105	105	105	105
40.60 CFS	105	105	105	105	105	105	104	104
42.20 CFS	104	104	104	104	104	104	104	104
43.80 CFS	104	103	103	103	103	103	103	103
45.40 CFS	103	103	103	103	102	102	102	102
47.00 CFS	102	102	102	102	102	101	101	101
48.60 CFS	101	101	101	101	101	101	100	100
50.20 CFS	100	100	100	100	100	100	100	99
51.80 CFS	99.30	99.19	99.08	98.97	98.86	98.74	98.63	98.52
53.40 CFS	98.41	98.30	98.19	98.08	97.97	97.86	97.74	97.63
55.00 CFS	97.52	97.41	97.30	97.19	97.08	96.97	96.86	96.76
56.60 CFS	96.65	96.54	96.43	96.32	96.21	96.09	95.96	95.83
58.20 CFS	95.70	95.57	95.43	95.30	95.17	95.04	94.91	94.78
59.80 CFS	94.66	94.53	94.40	94.27	94.14	94.01	93.88	93.75
61.40 CFS	93.63	93.50	93.37	93.24	93.12	92.99	92.86	92.74
63.00 CFS	92.61	92.48	92.36	92.23	92.10	91.98	91.85	91.73
64.60 CFS	91.60	91.48	91.35	91.23	89.14	86.58	84.08	81.66
66.20 CFS	79.31	77.02	74.80	72.87	71.04	69.25	67.51	65.81
67.80 CFS	64.15	62.54	60.96	59.43	57.93	56.48	55.06	53.67
69.40 CFS	52.32	51.00	49.72	48.47	47.25	46.06	44.90	43.77
71.00 CFS	42.67	41.60	40.55	39.53	38.54	37.57	36.62	35.70
72.60 CFS	34.80	33.93	33.07	32.24	31.43	30.64	29.87	29.12
74.20 CFS	28.38	27.67	26.97	26.30	25.82	25.36	24.91	24.46
75.80 CFS	24.02	23.59	23.17	22.75	22.34	21.94	21.55	21.16
77.40 CFS	20.78	20.41	20.04	19.68	19.33	18.98	18.64	18.31
79.00 CFS	17.98	17.66	17.34	17.03	16.73	16.43	16.13	15.84
80.60 CFS	15.56	15.28	15.00	14.73	14.47	14.21	13.96	13.71
82.20 CFS	13.46	13.22	12.98	12.75	12.52	12.30	12.07	11.86
83.80 CFS	11.65	11.44	11.23	11.03	10.83	10.64	10.45	10.26
85.40 CFS	10.08	9.89	9.72	9.54	9.37	9.20	9.04	8.88
87.00 CFS	8.72	8.56	8.41	8.26				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6170 CFS-HRS; 509.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	99	94	57	22

DURATION(HRS)	72	75
FLOW(CFS)	11	8 TRUNCATED

```
OPERATION DIVERT    XSECTION 104
                    OUTPUT #1 HYDROGRAPH

   PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
      24.52                          112.2                          .50

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.55 WATERSHED INCHES;    6170 CFS-HRS;     509.9 ACRE-FEET.

   DURATION(HRS)   8     16     24     32     40     48     56     64
   FLOW(CFS)     111    109    106    103     99     94     57     22

   DURATION(HRS)  72     75
   FLOW(CFS)      11      8 TRUNCATED

          OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION    0)

 *** MESSAGE - HYDROGRAPH CONTAINS NO FLOW                                ***

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                    0 CFS-HRS;        .0 ACRE-FEET.

 *** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
               2ND TABLE VALUE.  THIS REACH ROUTING MAY BE INCORRECT,
               UNLESS NEW RATING TABLE VALUES ARE INSERTED.                ***

OPERATION REACH     XSECTION 104

   PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
      24.77                          112.2                          .50

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.55 WATERSHED INCHES;    6168 CFS-HRS;     509.8 ACRE-FEET.

   DURATION(HRS)   8     16     24     32     40     48     56     64
   FLOW(CFS)     111    109    106    103     98     94     57     22

   DURATION(HRS)  72     75
   FLOW(CFS)      11      8 TRUNCATED

OPERATION RUNOFF    XSECTION   4
```



```
   PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
      12.15                         2179.9                        (RUNOFF)
      19.31                           83.4                        (RUNOFF)
      21.61                           71.4                        (RUNOFF)
      23.61                           61.3                        (RUNOFF)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.99 WATERSHED INCHES;    3255 CFS-HRS;     269.0 ACRE-FEET.

   DURATION(HRS)   2     4     6     8    10    12    14    16
   FLOW(CFS)     260   145   108    83    70    61    31     3

   DURATION(HRS)  17
   FLOW(CFS)       0

OPERATION ADDHYD    XSECTION   4

   PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
      12.15                         2179.9                        (NULL)
      19.36                          194.3                        (NULL)
      21.61                          183.1                        (NULL)
      23.61                          173.4                        (NULL)

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.68 WATERSHED INCHES;    9423 CFS-HRS;     778.8 ACRE-FEET.

   DURATION(HRS)   8     16     24     32     40     48     56     64
   FLOW(CFS)     194    111    107    104    100     95     74     29

   DURATION(HRS)  72     78
   FLOW(CFS)      15      8 TRUNCATED

OPERATION DIVERT    XSECTION 104
                    OUTPUT #1 HYDROGRAPH

   PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
      12.15                         2179.9                          5.75
      19.36                          194.3                           .86
      21.61                          183.1                           .81
      23.61                          173.4                           .77

   RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                 1.68 WATERSHED INCHES;    9423 CFS-HRS;     778.8 ACRE-FEET.
```

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29

DURATION(HRS)	72	78
FLOW(CFS)	15	8 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 104

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	4.13
19.36	194.3	.66
21.61	183.1	.62
23.61	173.4	.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29

DURATION(HRS)	72	78
FLOW(CFS)	15	8 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	2048.6	(RUNOFF)
19.33	68.2	(RUNOFF)
21.56	59.0	(RUNOFF)
23.56	50.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.14 WATERSHED INCHES; 2762 CFS-HRS; 228.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	121	91	68	59	51	34	5

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	4157.5	(NULL)
19.34	262.5	(NULL)
21.58	242.0	(NULL)
23.58	224.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 12182 CFS-HRS; 1006.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	262	112	108	104	100	96	80	32

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION DIVERT XSECTION 106
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	4157.5	6.38
19.34	262.5	.89
21.58	242.0	.82
23.58	224.0	.76

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 12182 CFS-HRS; 1006.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	262	112	108	104	100	96	80	32

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	1030.8	(RUNOFF)
19.33	36.7	(RUNOFF)
21.55	31.9	(RUNOFF)
23.55	27.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 1408 CFS-HRS; 116.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	119	65	47	37	31	27	13	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.09	5213.0	(NULL)
19.34	299.2	(NULL)
21.58	273.9	(NULL)
23.58	251.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.78 WATERSHED INCHES; 13582 CFS-HRS; 1122.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	299	112	108	104	100	96	82	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION ADDHYD XSECTION 106

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
399 CFS-HRS; 1122.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.93	833.8	(RUNOFF)
16.90	38.4	(RUNOFF)
19.31	28.4	(RUNOFF)
20.31	25.0	(RUNOFF)
21.43	25.0	(RUNOFF)
22.30	21.7	(RUNOFF)
23.43	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.61 WATERSHED INCHES; 996 CFS-HRS; 82.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	84	46	35	28	24	20	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	5926.2	(NULL)
19.33	327.6	(NULL)
21.56	298.5	(NULL)
23.56	272.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
7.60 CFS	.07	.64	1.12	2.62	5.55	7.58	13.30	18.66
9.20 CFS	25	36	43	57	68	87	113	133
10.80 CFS	182	221	297	410	898	3627	5784	5345

12.40 CFS	3395	2284	1618	1249	1045	893	815	732
14.00 CFS	677	638	601	580	554	536	517	494
15.60 CFS	479	454	437	424	411	405	403	403
17.20 CFS	397	386	379	367	357	347	335	329
18.80 CFS	328	327	327	327	326	315	307	303
20.40 CFS	302	300	289	281	284	294	298	289
22.00 CFS	281	278	277	275	264	255	258	269
23.60 CFS	272	263	255	217	158	129	118	114
25.20 CFS	113	112	112	112	112	112	112	112
26.80 CFS	112	111	111	111	111	111	111	111
28.40 CFS	111	111	111	110	110	110	110	110
30.00 CFS	110	110	110	110	110	110	109	109
31.60 CFS	109	109	109	109	109	109	109	109
33.20 CFS	109	108	108	108	108	108	108	108
34.80 CFS	108	108	108	107	107	107	107	107
36.40 CFS	107	107	107	107	107	107	106	106
38.00 CFS	106	106	106	106	106	106	106	106
39.60 CFS	106	105	105	105	105	105	105	105
41.20 CFS	105	105	105	105	104	104	104	104
42.80 CFS	104	104	104	104	104	104	104	103
44.40 CFS	103	103	103	103	103	103	103	103
46.00 CFS	103	103	103	102	102	102	102	102
47.60 CFS	102	102	102	102	101	101	101	101
49.20 CFS	101	101	101	101	100	100	100	100
50.80 CFS	100	100	100	100	100	99	99	99
52.40 CFS	99.12	99.01	98.90	98.79	98.67	98.56	98.45	98.34
54.00 CFS	98.23	98.12	98.01	97.90	97.79	97.68	97.57	97.46
55.60 CFS	97.34	97.23	97.12	97.01	96.90	96.80	96.69	96.58
57.20 CFS	96.47	96.36	96.25	96.13	96.00	95.88	95.74	95.61
58.80 CFS	95.48	95.35	95.22	95.09	94.96	94.83	94.70	94.57
60.40 CFS	94.44	94.32	94.19	94.06	93.93	93.80	93.67	93.55
62.00 CFS	93.42	93.29	93.16	93.04	92.91	92.78	92.65	92.53
63.60 CFS	92.40	92.28	92.15	92.02	91.90	91.77	91.65	91.52
65.20 CFS	91.40	91.27	89.72	87.43	84.99	82.57	80.19	77.89
66.80 CFS	75.64	73.63	71.74	69.93	68.17	66.45	64.78	63.15
68.40 CFS	61.56	60.01	58.50	57.03	55.59	54.19	52.83	51.50
70.00 CFS	50.21	48.94	47.71	46.51	45.34	44.20	43.09	42.00
71.60 CFS	40.95	39.92	38.91	37.93	36.98	36.05	35.14	34.26
73.20 CFS	33.39	32.55	31.74	30.94	30.16	29.40	28.66	27.94
74.80 CFS	27.24	26.55	26.02	25.54	25.08	24.63	24.18	23.75
76.40 CFS	23.33	22.91	22.50	22.09	21.70	21.31	20.92	20.55
78.00 CFS	20.18	19.82	19.46	19.11	18.77	18.43	18.10	17.78
79.60 CFS	17.46	17.15	16.84	16.54	16.24	15.95	15.66	15.38
81.20 CFS	15.11	14.84	14.57	14.31	14.05	13.80	13.55	13.31
82.80 CFS	13.07	12.84	12.60	12.38	12.16	11.94	11.73	11.52
84.40 CFS	11.31	11.10	10.91	10.71	10.52	10.33	10.14	9.96
86.00 CFS	9.78	9.61	9.44	9.27	9.10	8.94	8.78	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 14578 CFS-HRS; 1204.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	327	112	108	104	100	96	83	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.01	419.0	(RUNOFF)
16.90	19.6	(RUNOFF)
19.33	14.5	(RUNOFF)
21.52	12.6	(RUNOFF)
23.52	10.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.85 WATERSHED INCHES; 547 CFS-HRS; 45.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	45	25	18	14	12	11	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.2%. ***

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	258.6	1767.05
21.99	12.2	1764.05
23.99	10.5	1763.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.83 WATERSHED INCHES; 542 CFS-HRS; 44.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	61	27	19	15	12	10	4	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	633.2	(RUNOFF)
21.67	23.3	(RUNOFF)
23.67	19.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1032 CFS-HRS; 85.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	90	49	35	27	23	20	8	0

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	770.6	1769.81
21.71	35.2	1764.72
23.71	30.1	1764.64

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1575 CFS-HRS; 130.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	175	76	55	42	35	30	13	1

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.04	558.7	1768.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1574 CFS-HRS; 130.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	235	89	56	43	36	30	14	3

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	1395.6	(RUNOFF)
21.68	52.3	(RUNOFF)
23.68	44.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 2322 CFS-HRS; 191.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	207	110	78	62	52	44	18	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.28	1532.8	1772.75
21.59	88.5	1765.53
23.60	75.8	1765.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 3896 CFS-HRS; 322.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	515	207	140	107	88	75	33	6

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.49	1521.8	1772.71
21.79	88.5	1765.53
23.80	75.8	1765.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 3895 CFS-HRS; 321.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	507	208	140	107	88	75	33	6

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	405.0	(RUNOFF)
21.77	17.7	(RUNOFF)
23.76	15.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	86	38	27	21	18	15	7	0

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	1914.9	(NULL)
21.79	106.2	(NULL)
23.79	91.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 4689 CFS-HRS; 387.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	660	260	167	129	105	90	36	8

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	1914.9	(DIVERT)
21.79	106.2	(DIVERT)
23.79	91.0	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 4689 CFS-HRS; 387.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	660	260	167	129	105	90	36	8

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	1827.4	1773.89
21.99	106.1	1765.73
24.00	90.8	1765.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 4691 CFS-HRS; 387.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	667	246	168	128	105	90	38	8

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	1297.5	(RUNOFF)
21.61	40.5	(RUNOFF)
23.61	34.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.15 WATERSHED INCHES; 1926 CFS-HRS; 159.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	165	87	64	47	40	36	25	4

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	2406.8	1776.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 6615 CFS-HRS; 546.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	919	362	238	178	147	125	69	17

DURATION(HRS)	18	20
FLOW(CFS)	4	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	2406.8	1776.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 6615 CFS-HRS; 546.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	919	362	238	178	147	125	69	17

DURATION(HRS)	18	20
FLOW(CFS)	4	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	2406.8	1760.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 6615 CFS-HRS; 546.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	919	362	238	178	147	125	69	17

DURATION(HRS)	18	20
FLOW(CFS)	4	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	2151.5	(RUNOFF)
19.32	67.7	(RUNOFF)
21.55	58.5	(RUNOFF)
23.55	50.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.31 WATERSHED INCHES; 2867 CFS-HRS; 236.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	129	92	68	60	51	42	12

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	3856.5	1762.66
21.50	204.7	1755.67
23.51	175.0	1755.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
7.00 CFS	.03	.73	2.13	2.98	5.42	7.40	10.22	15.13
8.60 CFS	18.22	23.62	28.17	33.31	41.35	47.10	57.87	67.89
10.20 CFS	82	104	123	160	195	248	335	569
11.80 CFS	2060	3510	3852	3333	3114	2707	2255	1931
13.40 CFS	1656	1445	1255	1098	970	856	769	694
15.00 CFS	635	586	540	505	470	440	416	392
16.60 CFS	375	362	353	342	331	322	311	300

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
XSECTION 113	.46			
ALTERNATE 5		259	213	600

END OF 1 JOBS IN THIS RUN

SCS TR-20, VERSION 2.04TEST
FILES

INPUT = SBT20CP2.DAT , GIVEN DATA FILE
OUTPUT = SBT20CP2.OUT , DATED 09/19/**,09:04:22

FILES GENERATED - DATED 09/19/**,09:04:22

NONE!

TOTAL NUMBER OF WARNINGS = 29, MESSAGES = 19

JOB ENDED AT 09:04:23
*** TR-20 RUN COMPLETED ***

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
XSECTION 11	1.96			
ALTERNATE 5		1396	939	2655
XSECTION 12	.87			
ALTERNATE 5		633	417	1180
XSECTION 13	.46			
ALTERNATE 5		419	220	643
XSECTION 101	1.86			
ALTERNATE 5		1011	908	2475
XSECTION 102	3.06			
ALTERNATE 5		1691	1489	4073
XSECTION 103	4.30			
ALTERNATE 5		2125	2028	5646
XSECTION 104	.00			
ALTERNATE 5		0	1375	7308
XSECTION 106	.00			
ALTERNATE 5		0	1375	7308
XSECTION 107	20.05			
ALTERNATE 5		8353	6796	14388
XSECTION 108	7.26			
ALTERNATE 5		3856	3491	5253
XSECTION 109	.00			
ALTERNATE 5		0	0	4554
XSECTION 110	3.95			
ALTERNATE 5		1915	1821	1915
XSECTION 111	3.28			
ALTERNATE 5		1522	1507	4293
XSECTION 112	1.33			
ALTERNATE 5		559	598	1724

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
STRUCTURE 2	20.05			
ALTERNATE 5		302	2855	10143
STRUCTURE 1	6.15			
ALTERNATE 5		112	1490	7423
XSECTION 0	.00			
ALTERNATE 5		0	0	120
XSECTION 1	3.06			
ALTERNATE 5		1729	1492	4079
XSECTION 2	4.30			
ALTERNATE 5		2188	2032	5654
XSECTION 3	6.15			
ALTERNATE 5		3125	2930	8107
XSECTION 4	8.69			
ALTERNATE 5		2180	1377	3687
XSECTION 5	10.69			
ALTERNATE 5		4157	2431	6346
XSECTION 6	11.83			
ALTERNATE 5		5213	2994	7901
XSECTION 7	12.79			
ALTERNATE 5		5926	3421	9241
XSECTION 8	1.92			
ALTERNATE 5		2152	1076	2827
XSECTION 9	1.39			
ALTERNATE 5		1298	735	1990
XSECTION 10	.67			
ALTERNATE 5		405	319	895
XSECTION 11	1.96			

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.07	643.0	(RUNOFF)
17.00	89.0	(RUNOFF)
17.93	81.6	(RUNOFF)
19.02	70.3	(RUNOFF)
20.96	63.0	(RUNOFF)
21.96	53.9	(RUNOFF)
23.00	61.3	(RUNOFF)
23.95	61.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 3796 CFS-HRS; 313.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	512	351	210	136	89	75	60	53

DURATION(HRS)	18	20	21
FLOW(CFS)	42	11	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.89	599.8	1769.05
17.23	86.3	1765.50
18.13	80.0	1765.40
19.32	65.4	1765.18
21.28	58.1	1765.07
22.16	52.5	1764.98
23.32	53.1	1764.99
24.20	52.8	1764.99

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 3796 CFS-HRS; 313.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	512	357	220	139	90	76	58	52

DURATION(HRS)	18	20	22	23
FLOW(CFS)	47	15	1	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1180.4	(RUNOFF)
17.17	162.5	(RUNOFF)
18.00	149.0	(RUNOFF)
19.21	125.5	(RUNOFF)
21.13	113.9	(RUNOFF)
22.09	98.1	(RUNOFF)
23.18	106.0	(RUNOFF)
24.10	102.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 7204 CFS-HRS; 595.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	977	672	403	258	163	146	109	98

DURATION(HRS)	18	20	22
FLOW(CFS)	87	21	0

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	1764.5	1773.65
17.18	248.7	1766.98
18.01	228.1	1766.84
19.23	190.5	1766.56
21.17	171.4	1766.37
22.11	151.1	1766.17
23.21	158.2	1766.24
24.12	156.1	1766.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 11000 CFS-HRS; 909.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1479	1022	636	401	260	222	167	150

DURATION(HRS)	18	20	22	23
FLOW(CFS)	133	41	2	0

*** WARNING - XSECTION 112, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.36	1821.2	(DIVERT)
17.26	309.6	(DIVERT)
19.39	234.7	(DIVERT)
21.35	206.4	(DIVERT)
22.17	187.0	(DIVERT)
23.40	188.6	(DIVERT)
24.27	182.7	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 11547 CFS-HRS; 954.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1591	1099	674	431	301	229	190	181

DURATION(HRS)	18	20	22	23
FLOW(CFS)	107	12	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.59	1818.1	1773.86
19.61	233.9	1766.88
21.58	205.6	1766.68
22.31	187.2	1766.53
23.62	187.2	1766.53
24.49	181.2	1766.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 11547 CFS-HRS; 954.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1602	1077	652	433	302	229	192	180

DURATION(HRS)	18	20	22	23
FLOW(CFS)	107	11	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.48	734.9	(RUNOFF)
17.12	112.1	(RUNOFF)
17.98	102.8	(RUNOFF)
19.16	87.3	(RUNOFF)
21.07	79.0	(RUNOFF)
22.04	68.0	(RUNOFF)
23.13	74.8	(RUNOFF)
24.04	73.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 4457 CFS-HRS; 368.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	628	413	243	155	106	85	73	65

DURATION(HRS)	18	20	21
FLOW(CFS)	53	2	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.30	2487.0	1776.44
21.27	273.5	1767.16
23.93	244.8	1766.95

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 16004 CFS-HRS; 1322.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2184	1523	944	590	414	313	265	242

DURATION(HRS)	18	20	22	24
FLOW(CFS)	160	30	3	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.30	2487.0	1776.44
21.27	273.5	1767.16
23.93	244.8	1766.95

18.20 CFS	290	277	268	261	256	251	248	246
19.80 CFS	238	232	227	223	219	211	204	202
21.40 CFS	204	204	200	196	193	191	187	180
23.00 CFS	174	172	174	175	171	167	150	115
24.60 CFS	90.47	70.21	52.06	38.72	29.31	22.14	16.57	12.27
26.20 CFS	8.99	6.53	4.71	3.39	2.42	1.73	1.24	.88
27.80 CFS	.62	.44						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.02 WATERSHED INCHES; 9487 CFS-HRS; 784.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1255	505	331	248	204	175	104	33

DURATION(HRS)	18	20	21
FLOW(CFS)	9	1	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
114 CFS-HRS; 784.0 ACRE-FEET.

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	3856.5	1762.66
21.50	204.7	1755.67
23.51	175.0	1755.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.02 WATERSHED INCHES; 9487 CFS-HRS; 784.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1255	505	331	248	204	175	104	33

DURATION(HRS)	18	20	21
FLOW(CFS)	9	1	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	3645.4	1760.12
21.71	204.5	1751.52
23.72	174.7	1751.31

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
7.20 CFS	.03	.54	1.69	2.63	4.66	6.65	9.25	13.53
8.80 CFS	16.94	21.80	26.43	31.44	38.65	44.80	54.31	64.19
10.40 CFS	77	97	116	148	182	230	307	497
12.00 CFS	1634	2999	3620	3411	3195	2840	2414	2062
13.60 CFS	1767	1533	1331	1161	1022	901	805	725
15.20 CFS	659	606	558	520	484	452	425	401
16.80 CFS	382	368	357	346	335	326	315	304
18.40 CFS	294	282	272	264	258	253	250	247
20.00 CFS	241	234	229	225	221	214	207	204
21.60 CFS	204	204	201	197	194	192	189	183
23.20 CFS	176	173	174	174	172	168	155	125
24.80 CFS	100	78	59	44	33	25	19	14
26.40 CFS	10.37	7.57	5.49	3.96	2.84	2.04	1.45	1.03
28.00 CFS	.73	.52	.37					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.02 WATERSHED INCHES; 9475 CFS-HRS; 783.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1331	497	326	250	204	176	100	33

DURATION(HRS)	18	20	21
FLOW(CFS)	9	1	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	8353.5	1765.80
21.56	502.4	1753.13
23.57	446.7	1752.88

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
7.20 CFS	.03	.54	1.76	3.26	5.77	9.27	14.80	21.10
8.80 CFS	30	40	52	67	82	102	123	151
10.40 CFS	190	230	298	368	478	640	1204	4125
12.00 CFS	7419	8344	7015	5696	4813	4089	3459	2955
13.60 CFS	2582	2265	2008	1799	1623	1481	1359	1260

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JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBT20cP2.DAT
TITLE 000 ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNTN
 5 RAINFL 1            .5
 8          0.0        .008       .017       .026       .035
 8          .045       .055       .065       .076       .087
 8          .099       .112       .125       .14        .156
 8          .174       .194       .219       .254       .303
 8          .515       .583       .624       .654       .682
 8          .705       .727       .748       .767       .784
 8          .8         .816       .83        .844       .857
 8          .87        .882       .893       .905       .916
 8          .926       .936       .946       .955       .965
 8          .974       .983       .992       1.         1.
 9 ENDTBL
 5 RAINFL 2            .5
 8          0.0        .005       .011       .016       .022
 8          .028       .035       .041       .048       .056
 8          .063       .071       .081       .089       .098
 8          .109       .12        .133       .147       .163
 8          .181       .204       .235       .283       .663
 8          .735       .772       .799       .82        .838
 8          .854       .868       .88        .891       .902
 8          .912       .921       .929       .937       .945
 8          .952       .959       .965       .972       .978
 8          .984       .989       .995       1.         1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8          0.0        .002       .004       .006       .008
 8          .01        .012       .014       .016       .018
 8          .02        .022       .025       .027       .03
 8          .032       .035       .038       .04        .043
 8          .046       .049       .052       .055       .058
 8          .061       .064       .069       .072       .076
 8          .08        .084       .089       .093       .098
 8          .102       .108       .114       .121       .127
 8          .133       .143       .153       .164       .174
 8          .184       .198       .215       .238       .275
 8          .707       .765       .793       .813       .829
 8          .841       .849       .856       .863       .871
 8          .879       .884       .889       .895       .9
 8          .905       .909       .913       .918       .922
 8          .926       .929       .932       .936       .939
 8          .942       .945       .948       .951       .954
 8          .957       .959       .962       .964       .967
 8          .969       .971       .973       .976       .978
 8          .98        .982       .984       .987       .989
 8          .991       .993       .996       .998       1.
 9 ENDTBL
 5 RAINFL 4            .25
 8          0.0        .006       .011       .017       .028
 8          .041       .057       .075       .09        .562
 8          .697       .763       .807       .839       .873
 8          .907       .937       .948       .958       .968
 8          .979       .984       .989       1.         1.
 9 ENDTBL
```



```
 5 RAINFL 5            .5
 8          0.0        .004       .008       .011       .016
 8          .021       .027       .034       .044       .055
 8          .07        .088       .108       .137       .172
 8          .217       .273       .341       .42        .492
 8          .56        .618       .672       .717       .753
 8          .782       .807       .827       .845       .86
 8          .873       .885       .895       .903       .913
 8          .921       .93        .935       .943       .949
 8          .954       .96        .967       .972       .978
 8          .982       .989       .993       1.         1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       40.
 8                     3.         838.       60.
 8                     4.         1288.      80.
 8                     5.         1782.      120.
 8                     6.         2314.      130.
 8                     7.         2875.      140.
 8                     8.         3454.      160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0        0.0        0.0
 8                     1.5        441.       45.
 8                     2.5        995.       75.
 8                     3.5        1682.      105.
 8                     4.5        2468.      135.
 8                     5.5        3339.      165.
 8                     6.5        4272.      195.
 8                     7.5        5258.      225.
 8                     8.5        6296.      255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.      0.0        0.0
 8                     1750.      38.53      23.
```

```
**********    *********80-80 LIST OF INPUT DATA (CONTINUED)**********************

 6 REACH  3 104   4   5 6700.                                  1 0 0 1 0 1
 6 RUNOFF 1   4       6 2.54        80.          .54          1 0 0 1 0 1
 6 ADDHYD 4   4   5 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 104   7 5 2 3454.       1.                        1 0 0 1 0 1
 6 ADDHYD 4 104   1 2 4                                       1 0 0 1 0 1
 6 REACH  3 106   5   3 3700.                                  1 0 0 1 0 1
 6 RUNOFF 1   5       6 2.          82.          .43          1 0 0 1 0 1
 6 ADDHYD 4   5   3 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 106   7 5 2 6296.       1.                        1 0 0 1 0 1
 6 RUNOFF 1   6       6 1.14        79.          .42          1 0 0 1 0 1
 6 ADDHYD 4   6   5 6 7                                       1 0 0 1 0 1
 6 SAVMOV 5   6   7   5
 6 ADDHYD 4 106   4 2 7                                       1 1 0 1 0 1
 6 SAVMOV 5 106   7   1
 6 RUNOFF 1   7       6 .96         75.          .23          1 0 0 1 0 1
 6 ADDHYD 4   7   5 6 7                                       1 1 0 1 0 1
 6 SAVMOV 5   7   7   2
 6 RUNOFF 1  13       5 .458        78.          .35          1 0 0 1 0 1
 6 REACH  3 113   5   6 6900.                                  1 0 0 1 0 1
 6 RUNOFF 1  12       5 .869        78.          .66          1 0 0 1 0 1
 6 ADDHYD 4 112   5 6 7                                       1 0 0 1 0 1
 6 REACH  3 112   7   5 7700.                                  1 0 0 1 0 1
 6 RUNOFF 1  11       6 1.957       78.          .68          1 0 0 1 0 1
 6 ADDHYD 4 111   5 6 7                                       1 0 0 1 0 1
 6 REACH  3 111   7   5 2000.                                  1 0 0 1 0 1
 6 RUNOFF 1  10       6 .67         78.          .89          1 0 0 1 0 1
 6 ADDHYD 4 110   5 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 110   7 5 3 1915.       1.                        1 0 0 1 0 1
 6 REACH  3 109   5   4 2700.                                  1 0 0 1 0 1
 6 RUNOFF 1   9       6 1.39        82.          .55          1 0 0 1 0 1
 6 ADDHYD 4 109   4 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 109   7 5 4 2546.       1.                        1 0 0 1 0 1
 6 REACH  3 108   5   6 2100.                                  1 0 0 1 0 1
 6 RUNOFF 1   8       5 1.92        84.          .42          1 0 0 1 0 1
 6 ADDHYD 4 108   5 6 7                                       1 1 0 1 0 1
 6 ADDHYD 4 109   3 4 5                                       1 1 0 1 0 1
 6 SAVMOV 5 106   5   3
 6 DIVERT 6 108   7 5 4 5253.       1.                        1 0 0 1 0 1
 6 REACH  3 107   5   6 5300.                                  1 1 0 1 0 1
 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                       1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                                 1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .20
 7 COMPUT 7 101       2             3.94         1.0          2 2  05  01
   ENDCMP 1
 7 COMPUT 7 101       2             7.06         1.0          5 2  05  04
   ENDCMP 1
 7 COMPUT 7 101       2             15.80        1.0          5 2  05  05
   ENDCMP 1
   ENDJOB 2

*******************************END OF 80-80 LIST*******************************
```

```
TR20 ------------------------------------------------------------  ------ SCS -
        SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBT20cP2 VERSION
09/19/**  ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNT2.04TEST
09:04:22                    PASS   1   JOB NO.   1                      PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =   .200 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =   .00       RAIN DEPTH =  3.94       RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2       MAIN TIME INCREMENT =   .200 HOURS
    ALTERNATE NO. = 5           STORM NO. = 1            RAIN TABLE NO. = 2


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.58                         1010.6                        (RUNOFF)
       21.76                           50.9                        (RUNOFF)
       23.77                           43.5                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.99 WATERSHED INCHES;    2390 CFS-HRS;     197.5 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     288    118     82     62     51     44     23      5

    DURATION(HRS)  18
    FLOW(CFS)       0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)          PEAK ELEVATION(FEET)
       12.22                          900.0                        (RUNOFF)
       21.67                           32.7                        (RUNOFF)
       23.67                           28.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =    .00 CFS)
                  1.91 WATERSHED INCHES;    1481 CFS-HRS;     122.4 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     129     69     51     39     32     28     14      1

    DURATION(HRS)  16
    FLOW(CFS)       0


OPERATION ADDHYD    XSECTION   1
```

```
8                    1751.      130.52     52.
8                    1752.      273.18     87.
8                    1753.      470.98     128.
8                    1754.      706.86     187.
8                    1755.      1005.62    240.
8                    1756.      1369.42    299.
8                    1757.      1801.8     364.
8                    1758.      2305.5     435.
8                    1759.      2892.8     512.
8                    1760.      3558.1     595.
8                    1761.      4316.04    684.
8                    1762.      5156.98    779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7     0.0        0.0
8                    1754.7     61.93      23.
8                    1755.7     209.35     52.
8                    1756.7     438.91     87.
8                    1757.7     757.01     128.
8                    1758.7     1167.41    175.
8                    1759.7     1678.56    228.
8                    1760.7     2302.39    287.
8                    1761.7     3038.91    352.
8                    1762.7     3894.74    435.
8                    1763.7     4647.76    512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
2 XSECTN   111       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
2 XSECTN   112       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
```



```
2 XSECTN   113       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
3 STRUCT      01
8                    1791.94    0.00       0.0
8                    1793.      0.01       46.8
8                    1794.1     0.02       106.
8                    1794.5     26.3       130.
8                    1795.      74.4       161.2
8                    1795.14    91.2       170.7
8                    1796.      96.16      230.7
8                    1797.14    102.42     322.23
8                    1799.42    113.91     542.99
8                    1801.72    1650.      812.88
8                    1804.      7700.      1121.9
8                    1806.28    15200.     1470.09
8                    1808.57    26200.     1865.04
9 ENDTBL
3 STRUCT      02
8                    1696.      0.0        0.0
8                    1700.      20.4       172.1
8                    1701.4     21.4       273.25
8                    1704.      243.6      482.24
8                    1708.      276.8      871.3
8                    1710.      291.8      1101.52
8                    1710.5     295.4      1163.52
8                    1711.5     302.8      1294.09
8                    1712.2     308.       1390.2
8                    1712.5     310.       1432.05
8                    1712.6     312.       1446.11
8                    1713.5     546.       1578.77
8                    1714.5     976.       1733.61
8                    1716.      2106.      1980.33
8                    1720.      6756.      2712.23
8                    1722.      9656.      3121.
8                    1724.      12556.     3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86     80.        1.21       1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2      79.        .67        1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                           1 0 0 1 0 1
6 RUNOFF 1   2       6 1.24     75.        .59        1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                           1 0 0 1 0 1
6 RUNOFF 1   3       6 1.85     80.        .91        1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                        1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.       1.                  1 0 0 1 0 1
```

15.20 CFS	1176	1099	1037	974	920	875	836	806
16.80 CFS	786	771	753	732	714	692	672	651
18.40 CFS	629	611	600	591	585	581	576	562
20.00 CFS	547	538	532	525	510	495	491	498
21.60 CFS	502	493	482	475	472	467	452	438
23.20 CFS	435	442	446	438	426	385	313	254
24.80 CFS	218	193	172	157	145	137	131	126
26.40 CFS	122	119	117	115	114	113	113	112
28.00 CFS	112	111	111	111	111	111	110	110
29.60 CFS	110	110	110	110	110	110	110	110
31.20 CFS	109	109	109	109	109	109	109	109
32.80 CFS	109	109	109	108	108	108	108	108
34.40 CFS	108	108	108	108	108	107	107	107
36.00 CFS	107	107	107	107	107	107	107	107
37.60 CFS	106	106	106	106	106	106	106	106
39.20 CFS	106	106	106	105	105	105	105	105
40.80 CFS	105	105	105	105	105	105	104	104
42.40 CFS	104	104	104	104	104	104	104	104
44.00 CFS	104	103	103	103	103	103	103	103
45.60 CFS	103	103	103	103	103	102	102	102
47.20 CFS	102	102	102	102	102	102	101	101
48.80 CFS	101	101	101	101	101	101	100	100
50.40 CFS	100	100	100	100	100	100	100	99
52.00 CFS	99.35	99.23	99.12	99.01	98.90	98.79	98.67	98.56
53.60 CFS	98.45	98.34	98.23	98.12	98.01	97.90	97.79	97.68
55.20 CFS	97.57	97.46	97.34	97.23	97.12	97.01	96.90	96.80
56.80 CFS	96.69	96.58	96.47	96.36	96.25	96.13	96.00	95.88
58.40 CFS	95.74	95.61	95.48	95.35	95.22	95.09	94.96	94.83
60.00 CFS	94.70	94.57	94.44	94.32	94.19	94.06	93.93	93.80
61.60 CFS	93.67	93.55	93.42	93.29	93.16	93.04	92.91	92.78
63.20 CFS	92.65	92.53	92.40	92.28	92.15	92.02	91.90	91.77
64.80 CFS	91.65	91.52	91.40	91.27	89.72	87.43	84.99	82.57
66.40 CFS	80.19	77.89	75.64	73.63	71.74	69.93	68.17	66.45
68.00 CFS	64.78	63.15	61.56	60.01	58.50	57.03	55.59	54.19
69.60 CFS	52.83	51.50	50.21	48.94	47.71	46.51	45.34	44.20
71.20 CFS	43.09	42.00	40.95	39.92	38.91	37.93	36.98	36.05
72.80 CFS	35.14	34.26	33.39	32.55	31.74	30.94	30.16	29.40
74.40 CFS	28.66	27.94	27.24	26.55	26.02	25.54	25.08	24.63
76.00 CFS	24.18	23.75	23.33	22.91	22.50	22.09	21.70	21.31
77.60 CFS	20.92	20.55	20.18	19.82	19.46	19.11	18.77	18.43
79.20 CFS	18.10	17.78	17.46	17.15	16.84	16.54	16.24	15.95
80.80 CFS	15.66	15.38	15.11	14.84	14.57	14.31	14.05	13.80
82.40 CFS	13.55	13.31	13.07	12.84	12.60	12.38	12.16	11.94
84.00 CFS	11.73	11.52	11.31	11.10	10.91	10.71	10.52	10.33
85.60 CFS	10.14	9.96	9.78	9.61				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 24104 CFS-HRS; 1991.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	581	126	108	104	101	96	87	34
DURATION(HRS)	72	78						
FLOW(CFS)	16	10 TRUNCATED						

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.44	302.1	1711.41

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
7.60 CFS	.00	.01	.02	.03	.05	.09	.14	.21
9.20 CFS	.30	.41	.56	.74	.96	1.22	1.55	1.96
10.80 CFS	2.48	3.12	3.94	5.03	6.83	12.03	20.64	77.55
12.40 CFS	210	250	257	263	267	272	275	278
14.00 CFS	280	282	283	284	286	287	288	289
15.60 CFS	290	290	291	292	292	293	293	294
17.20 CFS	294	295	295	295	296	296	296	297
18.80 CFS	297	297	298	298	298	298	299	299
20.40 CFS	299	299	299	300	300	300	300	300
22.00 CFS	301	301	301	301	301	301	301	302
23.60 CFS	302	302	302	302	302	302	302	302
25.20 CFS	302	302	302	301	301	301	301	301
26.80 CFS	301	300	300	300	300	300	300	299
28.40 CFS	299	299	299	299	298	298	298	298
30.00 CFS	298	298	297	297	297	297	297	297
31.60 CFS	296	296	296	296	296	295	295	295
33.20 CFS	295	295	295	294	294	294	294	294
34.80 CFS	294	293	293	293	293	293	292	292
36.40 CFS	292	292	292	292	291	291	291	291
38.00 CFS	291	290	290	290	290	290	289	289
39.60 CFS	289	289	289	288	288	288	288	288
41.20 CFS	287	287	287	287	287	286	286	286
42.80 CFS	286	286	285	285	285	285	285	284
44.40 CFS	284	284	284	284	283	283	283	283
46.00 CFS	283	283	282	282	282	282	282	281
47.60 CFS	281	281	281	281	280	280	280	280
49.20 CFS	280	279	279	279	279	279	278	278
50.80 CFS	278	278	278	277	277	277	277	277
52.40 CFS	276	276	276	276	275	275	275	275
54.00 CFS	274	274	274	274	273	273	273	273
55.60 CFS	272	272	272	272	271	271	271	271
57.20 CFS	271	270	270	270	270	269	269	269
58.80 CFS	269	268	268	268	268	267	267	267
60.40 CFS	267	266	266	266	266	265	265	265
62.00 CFS	265	264	264	264	264	263	263	263
63.60 CFS	263	263	262	262	262	262	261	261

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 16004 CFS-HRS; 1322.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2184	1523	944	590	414	313	265	242

DURATION(HRS)	18	20	22	24
FLOW(CFS)	160	30	3	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.30	2487.0	1760.95
21.27	273.5	1755.98
23.93	244.8	1755.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 16004 CFS-HRS; 1322.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2184	1523	944	590	414	313	265	242

DURATION(HRS)	18	20	22	24
FLOW(CFS)	160	30	3	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.22	1075.7	(RUNOFF)
17.04	160.0	(RUNOFF)
17.95	146.7	(RUNOFF)
19.07	126.0	(RUNOFF)
21.00	113.1	(RUNOFF)
21.99	97.0	(RUNOFF)
23.04	108.9	(RUNOFF)
23.98	108.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.19 WATERSHED INCHES; 6435 CFS-HRS; 531.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	879	601	349	231	157	125	102	92

DURATION(HRS)	18	20	21
FLOW(CFS)	73	3	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	3490.8	1762.23
18.95	445.8	1756.72
21.08	382.9	1756.46
21.82	357.2	1756.34
23.06	349.0	1756.31
23.97	353.4	1756.33

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
4.40 CFS	0	1	9	15	28	53	70	101
6.00 CFS	129	176	259	322	430	532	655	834
7.60 CFS	979	1206	1423	1653	1957	2201	2529	2833
9.20 CFS	3042	3203	3338	3424	3482	3483	3420	3377
10.80 CFS	3311	3243	3150	3012	2906	2739	2579	2429
12.40 CFS	2247	2108	1963	1836	1717	1584	1485	1389
14.00 CFS	1305	1228	1145	1082	1014	953	904	857
15.60 CFS	819	771	729	688	638	603	595	591
17.20 CFS	577	555	544	543	540	516	466	438
18.80 CFS	442	445	435	418	409	391	370	359
20.40 CFS	358	358	369	382	380	364	356	357
22.00 CFS	357	344	321	311	330	348	344	322
23.60 CFS	315	336	353	324	251	206	163	118
25.20 CFS	81.98	57.70	41.11	29.60	21.47	15.58	11.30	8.20
26.80 CFS	5.97	4.35	3.18	2.32	1.69	1.23	.89	.64
28.40 CFS	.47							

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.23	1724.1	1773.49
19.44	187.6	1766.53
21.48	164.8	1766.31
23.52	148.5	1766.15
24.35	147.4	1766.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 11000 CFS-HRS; 909.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1497	1035	631	403	267	219	164	151

DURATION(HRS)	18	20	22	24
FLOW(CFS)	139	42	5	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.42	2654.9	(RUNOFF)
17.18	366.1	(RUNOFF)
18.00	335.3	(RUNOFF)
19.22	282.3	(RUNOFF)
21.14	255.9	(RUNOFF)
22.10	222.4	(RUNOFF)
23.19	237.5	(RUNOFF)
24.10	232.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 16224 CFS-HRS; 1340.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2207	1500	914	584	369	329	248	220

DURATION(HRS)	18	20	22	22
FLOW(CFS)	196	46	1	0

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.85	4293.1	1783.41
17.14	618.0	1769.14
17.91	570.1	1768.91
19.22	467.9	1768.39
21.19	414.7	1768.07
22.00	374.0	1767.83
23.22	377.7	1767.85
24.12	373.4	1767.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 27224 CFS-HRS; 2249.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3730	2483	1576	1006	632	519	415	373

DURATION(HRS)	18	20	22	24
FLOW(CFS)	338	103	9	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 111. ***

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.85	4293.1	1783.41
17.14	618.0	1769.14
17.91	570.1	1768.91
19.22	467.9	1768.39
21.19	414.7	1768.07
22.00	374.0	1767.83
23.22	377.7	1767.85
24.12	373.4	1767.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 27224 CFS-HRS; 2249.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3730	2483	1576	1006	632	519	415	373

DURATION(HRS)	18	20	22	24
FLOW(CFS)	338	103	9	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	894.6	(RUNOFF)
17.24	123.5	(RUNOFF)
19.33	94.2	(RUNOFF)
21.23	85.1	(RUNOFF)
22.11	75.6	(RUNOFF)
23.28	77.4	(RUNOFF)
24.14	75.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 5554 CFS-HRS; 459.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	753	524	310	199	131	107	85	75

DURATION(HRS)	18	20	22	23
FLOW(CFS)	68	19	1	0

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	5184.5	(NULL)
17.16	741.1	(NULL)
17.90	684.8	(NULL)
19.24	561.4	(NULL)
21.19	499.8	(NULL)
21.98	449.1	(NULL)
23.23	454.9	(NULL)
24.12	448.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 32778 CFS-HRS; 2708.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4483	3007	1886	1204	757	625	500	448

DURATION(HRS)	18	20	22	24
FLOW(CFS)	406	119	10	0

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.60	1915.0 *	(DIVERT)
17.16	741.1	(DIVERT)
17.90	684.8	(DIVERT)
19.24	561.4	(DIVERT)
21.19	499.8	(DIVERT)
21.98	449.1	(DIVERT)
23.23	454.9	(DIVERT)
24.12	448.4	(DIVERT)

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 21674 CFS-HRS; 1791.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1915	1915	1886	1204	757	625	500	448

DURATION(HRS)	18	20	22	24
FLOW(CFS)	406	119	10	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	3269.5	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
11104 CFS-HRS; 917.6 ACRE-FEET.

DURATION(HRS)	2	4	6
FLOW(CFS)	2568	1092	0

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	1915.0 *	1774.23
17.36	740.1	1769.69
19.45	559.0	1768.86
21.42	497.5	1768.57
23.46	451.1	1768.29
24.33	444.6	1768.25

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.79 WATERSHED INCHES; 22437 CFS-HRS; 1854.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3042	2108	1305	834	577	438	364	344

DURATION(HRS)	18	20	22	24
FLOW(CFS)	251	53	6	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
132 CFS-HRS; 1854.2 ACRE-FEET.

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	3490.8	1762.23
18.95	445.8	1756.72
21.08	382.9	1756.46
21.82	357.2	1756.34
23.06	349.0	1756.31
23.97	353.4	1756.33

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.79 WATERSHED INCHES; 22437 CFS-HRS; 1854.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3042	2108	1305	834	577	438	364	344

DURATION(HRS)	18	20	22	24
FLOW(CFS)	251	53	6	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.37	3475.6	1759.88
19.12	445.8	1752.87
21.34	380.1	1752.54
23.32	344.4	1752.36
24.20	346.7	1752.37

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
4.60 CFS	.04	.72	6.36	12.53	23.80	44.99	62.77	89.94
6.20 CFS	118	160	230	296	391	492	609	770
7.80 CFS	919	1124	1338	1563	1845	2099	2406	2711
9.40 CFS	2948	3130	3279	3383	3454	3475	3435	3393
11.00 CFS	3334	3269	3184	3061	2950	2799	2642	2489
12.60 CFS	2317	2168	2021	1889	1766	1636	1528	1429
14.20 CFS	1341	1260	1178	1109	1041	978	925	876
15.80 CFS	835	789	746	705	657	618	601	594
17.40 CFS	582	562	549	544	542	523	483	451
19.00 CFS	444	445	438	424	413	397	377	364
20.60 CFS	360	358	366	377	379	369	360	358
22.20 CFS	357	348	329	316	326	342	343	328
23.80 CFS	319	331	347	331	274	225	181	136
25.40 CFS	97.27	68.99	49.06	35.15	25.37	18.38	13.32	9.66
27.00 CFS	7.02	5.11	3.73	2.72	1.98	1.44	1.05	.76
28.60 CFS	.55	.40						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.79 WATERSHED INCHES; 22436 CFS-HRS; 1854.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3061	2099	1338	835	582	444	366	342

DURATION(HRS)	18	20	22	24
FLOW(CFS)	230	49	6	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.06	6795.9	1763.95
16.98	1245.3	1755.66
17.93	1148.5	1755.39
19.07	973.9	1754.89
21.05	857.3	1754.50
21.97	796.6	1754.30
23.08	803.7	1754.32
24.00	804.4	1754.33

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
4.60 CFS	0	2	9	26	60	99	161	227
6.20 CFS	329	480	626	838	1043	1307	1642	1956

65.20 CFS	261	261	260	260	260	260	259	259
66.80 CFS	259	259	258	258	258	258	257	257
68.40 CFS	257	256	256	256	256	255	255	255
70.00 CFS	254	254	254	254	253	253	253	252
71.60 CFS	252	252	252	251	251	251	250	250
73.20 CFS	250	249	249	249	248	248	248	248
74.80 CFS	247	247	247	246	246	246	245	245
76.40 CFS	245	244	244	244	242	238	235	231
78.00 CFS	227	224	220	217	213	210	206	203
79.60 CFS	200	197	194	190	187	184	182	179
81.20 CFS	176	173	170	168	165	162	160	157
82.80 CFS	155	152	150	147	145	143	140	138
84.40 CFS	136	134	132	129	127	125	123	121
86.00 CFS	119	118						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.52 WATERSHED INCHES; 19684 CFS-HRS; 1626.6 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	299	295	289	282	275	266	256	244

DURATION(HRS)	72	74
FLOW(CFS)	136	118 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 7.06 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 4 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.27	907.9	(RUNOFF)
19.37	108.9	(RUNOFF)
21.37	96.9	(RUNOFF)
23.43	87.1	(RUNOFF)
24.14	85.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5697 CFS-HRS; 470.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	798	526	322	205	144	109	93	85

DURATION(HRS)	18	20	22
FLOW(CFS)	54	7	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.92	589.5	(RUNOFF)
17.18	93.2	(RUNOFF)
18.00	85.5	(RUNOFF)
19.22	72.3	(RUNOFF)
21.14	65.6	(RUNOFF)
22.09	56.6	(RUNOFF)
23.19	61.1	(RUNOFF)
24.10	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3590 CFS-HRS; 296.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	513	328	198	126	90	69	60	55

DURATION(HRS)	18	20	20
FLOW(CFS)	38	1	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.12	1492.3	(NULL)
17.12	238.5	(NULL)
19.22	180.6	(NULL)
21.21	161.4	(NULL)
23.24	146.2	(NULL)
24.11	145.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1296	868	531	334	238	178	151	143

DURATION(HRS)	18	20	22
FLOW(CFS)	91	8	0

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1728.9	(NULL)
21.68	83.5	(NULL)
23.69	71.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3870 CFS-HRS; 319.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	471	194	131	101	83	71	39	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.62	1690.5	4.81
21.91	83.5	.37
23.91	71.4	.32

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3871 CFS-HRS; 319.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	472	186	132	102	83	71	39	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	808.7	(RUNOFF)
19.31	36.6	(RUNOFF)
21.63	31.3	(RUNOFF)
23.63	27.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.62 WATERSHED INCHES; 1297 CFS-HRS; 107.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	113	63	46	36	30	26	6	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	2188.1	(NULL)
21.71	114.2	(NULL)
23.71	97.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	594	257	182	138	114	98	45	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.74	2124.9	5.64
21.92	114.1	.51
23.92	97.7	.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	621	261	178	138	114	98	47	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	1217.7	(RUNOFF)
21.78	50.8	(RUNOFF)
23.77	43.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 2377 CFS-HRS; 196.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	255	114	79	61	51	44	23	3

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.36	1489.4	4.41
17.31	238.5	1.06
19.43	180.0	.80
21.44	160.5	.71
23.47	144.9	.64
24.32	143.7	.64

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1287	883	539	338	234	179	150	140

DURATION(HRS)	18	20	22
FLOW(CFS)	98	9	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.98	554.5	(RUNOFF)
17.14	92.9	(RUNOFF)
17.99	85.3	(RUNOFF)
19.18	72.5	(RUNOFF)
21.10	65.9	(RUNOFF)
22.06	56.7	(RUNOFF)
23.15	62.1	(RUNOFF)
24.06	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 3360 CFS-HRS; 277.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	311	182	119	85	65	59	54

DURATION(HRS)	18	20
FLOW(CFS)	18	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.22	2032.0	(NULL)
19.21	249.8	(NULL)
21.26	221.7	(NULL)
23.28	200.3	(NULL)
24.13	199.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1784	1153	712	450	326	248	208	195

DURATION(HRS)	18	20	22
FLOW(CFS)	105	9	0

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.46	2027.6	5.46
19.39	249.5	1.11
21.50	220.7	.98
23.52	198.8	.88
24.34	197.7	.88

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1773	1174	723	455	327	248	208	193

DURATION(HRS)	18	20	22
FLOW(CFS)	113	10	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.05	920.4	(RUNOFF)
17.25	143.0	(RUNOFF)
19.33	109.2	(RUNOFF)
21.24	98.9	(RUNOFF)
22.11	88.1	(RUNOFF)
23.29	89.9	(RUNOFF)
24.14	87.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5666 CFS-HRS; 468.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	801	512	311	204	140	108	92	86

DURATION(HRS)	18	20	21
FLOW(CFS)	55	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.34	2929.7	(NULL)
19.35	358.6	(NULL)
21.40	317.3	(NULL)
23.43	286.4	(NULL)
24.21	280.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.00 CFS	.00	.60	2.70	6.81	14.81	28.09	48.26	81.11
6.60 CFS	128	188	263	351	456	582	725	891
8.20 CFS	1078	1284	1515	1758	2018	2277	2502	2673
9.80 CFS	2792	2872	2920	2928	2897	2840	2776	2708
11.40 CFS	2630	2531	2419	2291	2153	2012	1871	1738
13.00 CFS	1616	1506	1405	1305	1214	1133	1063	1000
14.60 CFS	939	882	829	780	737	700	667	634
16.20 CFS	600	564	528	497	480	476	473	464
17.80 CFS	452	445	441	429	402	372	357	357
19.40 CFS	358	353	341	326	310	297	293	295
21.00 CFS	303	312	317	312	302	296	293	288
22.60 CFS	276	264	265	278	286	281	271	272
24.20 CFS	280	274	237	183	133	92	62	40
25.80 CFS	25.48	16.32	10.46	6.73	4.32	2.77	1.78	1.14
27.40 CFS	.73	.46						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.61 WATERSHED INCHES; 18313 CFS-HRS; 1513.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2531	1738	1063	667	464	357	302	278

DURATION(HRS)	18	20	22	22
FLOW(CFS)	183	16	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1490.3	1801.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
7.40 CFS	.00	.01	.01	.01	.01	.02	8.52	42.32
9.00 CFS	91	94	97	100	103	105	107	110
10.60 CFS	112	188	423	632	815	973	1108	1220
12.20 CFS	1310	1380	1430	1464	1483	1490	1487	1475
13.80 CFS	1456	1430	1401	1367	1332	1294	1254	1214
15.40 CFS	1173	1132	1092	1052	1013	974	936	898
17.00 CFS	861	827	795	766	738	712	688	665
18.60 CFS	643	620	597	575	556	538	521	504
20.20 CFS	487	471	455	440	428	417	408	399
21.80 CFS	391	383	375	367	360	351	344	337
23.40 CFS	332	328	323	319	315	311	306	298
25.00 CFS	285	270	252	234	216	199	182	166
26.60 CFS	152	139	126	115	114	114	114	114
28.20 CFS	113	113	113	113	113	113	113	113
29.80 CFS	113	113	112	112	112	112	112	112
31.40 CFS	112	112	112	112	111	111	111	111
33.00 CFS	111	111	111	111	111	111	111	110
34.60 CFS	110	110	110	110	110	110	110	110
36.20 CFS	110	110	109	109	109	109	109	109
37.80 CFS	109	109	109	109	108	108	108	108
39.40 CFS	108	108	108	108	108	108	108	107
41.00 CFS	107	107	107	107	107	107	107	107
42.60 CFS	107	107	106	106	106	106	106	106
44.20 CFS	106	106	106	106	106	105	105	105
45.80 CFS	105	105	105	105	105	105	105	105
47.40 CFS	104	104	104	104	104	104	104	104
49.00 CFS	104	104	104	103	103	103	103	103
50.60 CFS	103	103	103	103	103	103	102	102
52.20 CFS	102	102	102	102	102	102	102	101
53.80 CFS	101	101	101	101	101	101	101	101
55.40 CFS	100	100	100	100	100	100	100	100
57.00 CFS	99.53	99.42	99.31	99.20	99.09	98.97	98.86	98.75
58.60 CFS	98.64	98.53	98.42	98.30	98.19	98.08	97.97	97.86
60.20 CFS	97.75	97.64	97.53	97.42	97.31	97.20	97.09	96.98
61.80 CFS	96.87	96.76	96.65	96.54	96.43	96.32	96.22	96.10
63.40 CFS	95.96	95.83	95.70	95.57	95.44	95.31	95.18	95.05
65.00 CFS	94.92	94.79	94.66	94.53	94.40	94.28	94.15	94.02
66.60 CFS	93.89	93.76	93.63	93.51	93.38	93.25	93.12	93.00
68.20 CFS	92.87	92.74	92.62	92.49	92.36	92.24	92.11	91.98
69.80 CFS	91.86	91.73	91.61	91.48	91.36	91.23	89.28	86.71
71.40 CFS	84.21	81.78	79.43	77.14	74.92	72.97	71.13	69.34
73.00 CFS	67.60	65.90	64.24	62.62	61.05	59.51	58.01	56.55

74.60 CFS	55.13	53.74	52.39	51.07	49.79	48.53	47.31	46.12
76.20 CFS	44.96	43.83	42.73	41.65	40.60	39.58	38.59	37.62
77.80 CFS	36.67	35.75	34.85	33.97	33.12	32.28	31.47	30.68
79.40 CFS	29.91	29.15	28.42	27.71	27.01	26.33	25.85	25.38
81.00 CFS	24.93	24.48	24.04	23.61	23.19	22.77	22.36	21.96
82.60 CFS	21.57	21.18	20.80	20.43	20.06	19.70	19.35	19.00
84.20 CFS	18.66	18.33	18.00					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.24 WATERSHED INCHES; 16834 CFS-HRS; 1391.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	575	139	110	107	103	99	95	68
DURATION(HRS)	72	76						
FLOW(CFS)	25	18 TRUNCATED						

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.80	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.81 WATERSHED INCHES; 7184 CFS-HRS; 593.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	110	107	103	99	95	68
DURATION(HRS)	72	76						
FLOW(CFS)	25	18 TRUNCATED						

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24
DURATION(HRS)	16							
FLOW(CFS)	0							

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.81 WATERSHED INCHES; 7178 CFS-HRS; 593.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	110	107	103	99	95	68
DURATION(HRS)	72	76						
FLOW(CFS)	26	18 TRUNCATED						

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	1280.3	(RUNOFF)
17.11	201.4	(RUNOFF)
17.98	184.7	(RUNOFF)
19.15	157.1	(RUNOFF)
21.07	142.2	(RUNOFF)
22.04	122.6	(RUNOFF)
23.12	135.1	(RUNOFF)
24.03	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 7779 CFS-HRS; 642.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1087	722	434	275	190	145	131	115
DURATION(HRS)	18	20	20					
FLOW(CFS)	71	2	0					

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 16.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	(NULL)
17.11	316.4	(NULL)
17.98	299.7	(NULL)
19.15	272.1	(NULL)
21.07	257.2	(NULL)
22.04	237.6	(NULL)
23.12	250.1	(NULL)
24.03	247.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	4.18
17.11	316.4	1.41
17.98	299.7	1.33
19.15	272.1	1.21
21.07	257.2	1.14
22.04	237.6	1.06
23.12	250.1	1.11
24.03	247.1	1.10

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION ADDHYD XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	4.18

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24

DURATION(HRS)	16
FLOW(CFS)	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	3.06
17.11	316.4	1.08
17.98	299.7	1.02
19.15	272.1	.93
21.07	257.2	.87
22.04	237.6	.81
23.12	250.1	.85
24.03	247.1	.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.26	1067.2	(RUNOFF)
17.05	163.9	(RUNOFF)
17.95	150.0	(RUNOFF)
19.08	129.0	(RUNOFF)
21.01	116.0	(RUNOFF)
21.99	99.5	(RUNOFF)
23.05	111.6	(RUNOFF)
23.99	111.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 6412 CFS-HRS; 529.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	892	579	359	224	154	128	105	94

DURATION(HRS)	18	20	20
FLOW(CFS)	74	2	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.58	2431.4	(NULL)
17.08	479.7	(NULL)
17.97	449.6	(NULL)
19.11	399.6	(NULL)
21.04	372.9	(NULL)
22.01	337.0	(NULL)
23.08	360.7	(NULL)
24.01	357.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 21361 CFS-HRS; 1765.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION DIVERT XSECTION 106
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.58	2431.4	4.45
17.08	479.7	1.57
17.97	449.6	1.52
19.11	399.6	1.36
21.04	372.9	1.27
22.01	337.0	1.15
23.08	360.7	1.23
24.01	357.9	1.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 21361 CFS-HRS; 1765.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
0 CFS-HRS; .0 ACRE-FEET.

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.49	562.3	(RUNOFF)
17.04	91.0	(RUNOFF)
17.95	83.5	(RUNOFF)
19.07	71.9	(RUNOFF)
21.00	64.6	(RUNOFF)
21.99	55.4	(RUNOFF)
23.04	62.2	(RUNOFF)
23.98	62.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	314	187	120	85	65	58	52

DURATION(HRS)	18	20
FLOW(CFS)	32	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	2993.5	(NULL)
17.07	570.6	(NULL)
17.96	533.1	(NULL)
19.10	470.7	(NULL)
21.03	437.4	(NULL)
22.01	392.4	(NULL)
23.07	422.8	(NULL)
24.00	419.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.24 WATERSHED INCHES; 24770 CFS-HRS; 2047.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	711	371	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	3.05

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
10.60 CFS	0	73	308	517	700	858	993	1105
12.20 CFS	1195	1265	1315	1349	1368	1375	1372	1360
13.80 CFS	1341	1315	1286	1252	1217	1179	1139	1099
15.40 CFS	1058	1017	977	937	898	859	821	783
17.00 CFS	746	712	680	651	623	597	573	550
18.60 CFS	528	505	482	460	441	423	406	389
20.20 CFS	372	356	340	325	313	302	293	284
21.80 CFS	276	268	260	252	245	236	229	222
23.40 CFS	217	213	208	204	200	196	191	183
25.00 CFS	170	155	137	119	101	84	67	51
26.60 CFS	36.92	23.59	11.34	.12				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	435.3	(RUNOFF)
16.93	76.1	(RUNOFF)
17.91	70.3	(RUNOFF)
18.94	61.1	(RUNOFF)
20.91	54.4	(RUNOFF)
21.92	46.9	(RUNOFF)
22.93	54.6	(RUNOFF)
23.91	57.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 2600 CFS-HRS; 214.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	373	227	141	93	66	53	46	39

DURATION(HRS)	18	19
FLOW(CFS)	19	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.7%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.61	3421.4	(NULL)
17.04	644.6	(NULL)
17.94	602.9	(NULL)
19.07	530.0	(NULL)
21.00	490.6	(NULL)
21.98	438.5	(NULL)
23.04	474.0	(NULL)
23.98	474.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
4.60 CFS	0	2	3	14	36	54	98	137
6.20 CFS	211	320	396	542	652	815	1033	1186
7.80 CFS	1484	1705	1984	2332	2556	2948	3247	3389
9.40 CFS	3416	3421	3417	3408	3311	3148	3058	2975
11.00 CFS	2921	2795	2611	2490	2272	2114	1963	1792
12.60 CFS	1695	1581	1503	1407	1287	1221	1157	1115
14.20 CFS	1059	986	943	886	847	819	791	771
15.80 CFS	721	684	643	592	575	612	644	629
17.40 CFS	588	571	586	600	551	462	427	480

19.00 CFS	527	518	478	454	424	404	410	430
20.60 CFS	445	472	491	470	427	409	424	438
22.20 CFS	416	372	361	422	473	450	388	367
23.80 CFS	424	473	394	239	159	131	121	117
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	114	114	114	114	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	113	112	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103
51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97
65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20	19.83	19.48	19.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.32 WATERSHED INCHES; 27368 CFS-HRS; 2261.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	815	410	113	109	105	101	97	92
DURATION(HRS)	72	79						
FLOW(CFS)	39	19 TRUNCATED						

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.51	220.5	(RUNOFF)
17.00	36.6	(RUNOFF)
17.93	33.6	(RUNOFF)
19.02	29.1	(RUNOFF)
20.96	26.1	(RUNOFF)
21.96	22.4	(RUNOFF)
23.00	25.4	(RUNOFF)
23.95	25.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 1337 CFS-HRS; 110.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	190	121	73	47	35	26	22	20
DURATION(HRS)	18	19						
FLOW(CFS)	12	0						

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .2%. ***

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.29	212.6	1766.73
17.19	35.8	1764.73
18.12	33.1	1764.69
19.31	27.1	1764.59
21.29	23.9	1764.47
22.15	21.8	1764.40
23.33	21.9	1764.40
24.21	21.8	1764.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 1337 CFS-HRS; 110.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	187	125	78	49	34	26	22	20

DURATION(HRS)	18	20	21
FLOW(CFS)	11	1	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	417.1	(RUNOFF)
17.17	66.8	(RUNOFF)
18.01	61.4	(RUNOFF)
19.21	51.9	(RUNOFF)
21.14	47.2	(RUNOFF)
22.09	40.7	(RUNOFF)
23.18	44.0	(RUNOFF)
24.10	43.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 2538 CFS-HRS; 209.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	365	233	141	90	62	49	43	39

DURATION(HRS)	18	20
FLOW(CFS)	23	0

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.09	626.4	1769.18
17.18	102.7	1765.70
18.00	94.2	1765.61
19.23	78.9	1765.39
21.17	70.9	1765.26
22.11	62.8	1765.14
23.21	65.5	1765.18
24.12	64.8	1765.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 3875 CFS-HRS; 320.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	550	349	216	138	100	75	64	61

DURATION(HRS)	18	20	21
FLOW(CFS)	31	2	0

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.66	598.2	1769.05
21.50	67.8	1765.22
23.53	61.2	1765.12
24.36	60.7	1765.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 3875 CFS-HRS; 320.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	529	362	226	142	102	79	65	59

DURATION(HRS)	18	20	22	22
FLOW(CFS)	34	5	1	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.95	938.8	(RUNOFF)
17.18	150.3	(RUNOFF)
18.00	138.0	(RUNOFF)
19.22	116.4	(RUNOFF)
21.14	105.8	(RUNOFF)
22.10	91.5	(RUNOFF)
23.19	98.6	(RUNOFF)
24.10	96.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 5715 CFS-HRS; 472.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	818	529	320	204	140	110	97	89

DURATION(HRS)	18	20	20
FLOW(CFS)	50	1	0

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.20	1508.1	1772.66
17.10	259.8	1767.06
17.90	237.6	1766.90
19.20	196.1	1766.61
21.17	171.8	1766.37
22.02	155.8	1766.22
23.21	157.3	1766.23
24.11	155.3	1766.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 9590 CFS-HRS; 792.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1333	887	545	355	252	192	158	151

DURATION(HRS)	18	20	22	23
FLOW(CFS)	87	10	1	0

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.40	1507.4	1772.66
17.30	259.7	1767.06
19.40	195.9	1766.61
21.38	171.6	1766.37
22.21	155.8	1766.22
23.42	157.0	1766.23
24.32	154.9	1766.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 9590 CFS-HRS; 792.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1335	882	547	352	252	192	159	151

DURATION(HRS)	18	20	22	23
FLOW(CFS)	86	10	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	318.8	(RUNOFF)
17.24	50.8	(RUNOFF)
19.32	38.9	(RUNOFF)
21.23	35.2	(RUNOFF)
22.12	31.4	(RUNOFF)
23.29	32.1	(RUNOFF)
24.15	31.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	280	179	110	70	49	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	19	1	0

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.36	1821.2	(NULL)
17.26	309.6	(NULL)
19.39	234.7	(NULL)
21.35	206.4	(NULL)
22.17	187.0	(NULL)
23.40	188.6	(NULL)
24.27	182.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 11547 CFS-HRS; 954.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1591	1099	674	431	301	229	190	181

DURATION(HRS)	18	20	22	23
FLOW(CFS)	107	12	1	0

OPERATION DIVERT XSECTION 110
OUTPUT #1 HYDROGRAPH

7.80 CFS	2403	2830	3322	3894	4401	5047	5653	6100
9.40 CFS	6364	6552	6696	6791	6765	6623	6494	6369
11.00 CFS	6255	6063	5795	5551	5222	4913	4605	4282
12.60 CFS	4012	3749	3525	3296	3053	2857	2685	2543
14.20 CFS	2399	2246	2121	1995	1888	1797	1716	1647
15.80 CFS	1557	1474	1389	1297	1232	1230	1245	1223
17.40 CFS	1170	1133	1135	1145	1092	985	909	931
19.00 CFS	971	963	916	878	838	801	788	795
20.60 CFS	805	830	856	847	806	777	783	796
22.20 CFS	773	720	690	737	798	792	731	695
23.80 CFS	743	804	740	570	433	356	302	253
25.40 CFS	213	184	164	150	140	133	128	125
27.00 CFS	122	120	119	117	116	115	115	114
28.60 CFS	114	114	113	113	113	113	113	113
30.20 CFS	113	113	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103
51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97
65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.85 WATERSHED INCHES; 49801 CFS-HRS; 4115.5 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1647	773	113	109	105	102	97	92

DURATION(HRS)	72	78
FLOW(CFS)	40	20 TRUNCATED

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.61	2855.4	1716.64

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
4.80 CFS	.00	.01	.05	.13	.29	.54	.92	1.46
6.40 CFS	2.25	3.33	4.76	6.59	8.87	11.74	15.24	19.48
8.00 CFS	21	21	68	139	218	249	257	265
9.60 CFS	274	281	288	295	301	307	347	518
11.20 CFS	756	996	1337	1632	1883	2093	2322	2504
12.80 CFS	2642	2741	2808	2844	2855	2847	2824	2788
14.40 CFS	2742	2686	2624	2556	2484	2412	2339	2265
16.00 CFS	2191	2115	2056	1998	1942	1891	1843	1796
17.60 CFS	1749	1704	1663	1623	1581	1534	1490	1450
19.20 CFS	1415	1380	1345	1310	1274	1239	1206	1176
20.80 CFS	1150	1128	1108	1087	1066	1045	1026	1009
22.40 CFS	990	972	960	951	944	936	926	917
24.00 CFS	910	904	893	875	854	830	806	780
25.60 CFS	754	728	702	677	653	629	607	585
27.20 CFS	564	545	533	521	509	498	487	476
28.80 CFS	466	456	446	436	427	418	409	401
30.40 CFS	392	384	376	369	361	354	347	341
32.00 CFS	334	328	321	315	312	311	311	310
33.60 CFS	310	310	310	310	309	309	309	309
35.20 CFS	309	309	308	308	308	308	308	308
36.80 CFS	307	307	307	307	307	307	306	306
38.40 CFS	306	306	306	305	305	305	305	305
40.00 CFS	305	304	304	304	304	304	304	303
41.60 CFS	303	303	303	303	302	302	302	302
43.20 CFS	302	302	301	301	301	301	301	300
44.80 CFS	300	300	300	300	300	299	299	299
46.40 CFS	299	299	298	298	298	298	298	298
48.00 CFS	297	297	297	297	297	296	296	296
49.60 CFS	296	296	296	295	295	295	295	295
51.20 CFS	294	294	294	294	294	294	293	293
52.80 CFS	293	293	293	292	292	292	292	292
54.40 CFS	291	291	291	291	291	290	290	290
56.00 CFS	290	290	289	289	289	289	289	288

57.60 CFS	288	288	288	288	287	287	287	287
59.20 CFS	287	286	286	286	286	286	285	285
60.80 CFS	285	285	285	284	284	284	284	284
62.40 CFS	283	283	283	283	283	282	282	282
64.00 CFS	282	282	281	281	281	281	281	280
65.60 CFS	280	280	280	280	279	279	279	279
67.20 CFS	279	278	278	278	278	278	277	277
68.80 CFS	277	277	277	276	276	276	275	275
70.40 CFS	275	275	274	274	274	274	273	273
72.00 CFS	273	273	272	272	272	271	271	271
73.60 CFS	271	270	270	270	269	269	269	269
75.20 CFS	268	268	268	267	267	267	266	266
76.80 CFS	266	265	265	265	264	264	264	264
78.40 CFS	263	263	263	262	262	262	261	261
80.00 CFS	261	260	260	260	259	259	259	258
81.60 CFS	258	258	257	257	257	256	256	256
83.20 CFS	255	255	255					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.28 WATERSHED INCHES; 42396 CFS-HRS; 3503.6 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1337	564	309	302	295	288	280	271

DURATION(HRS)	72	75
FLOW(CFS)	258	255 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 15.80 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 5 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.97	2474.7	(RUNOFF)
19.38	260.1	(RUNOFF)
21.37	231.2	(RUNOFF)
23.43	207.1	(RUNOFF)
24.14	201.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15772 CFS-HRS; 1303.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2130	1491	895	572	384	310	236	213

DURATION(HRS)	18	20	22	24
FLOW(CFS)	199	74	8	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1645.4	(RUNOFF)
17.18	225.3	(RUNOFF)
18.00	206.3	(RUNOFF)
19.22	173.6	(RUNOFF)
21.14	157.2	(RUNOFF)
22.10	136.8	(RUNOFF)
23.18	146.6	(RUNOFF)
24.10	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 10062 CFS-HRS; 831.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1359	945	561	359	231	202	152	137

DURATION(HRS)	18	20	22
FLOW(CFS)	120	35	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	4079.1	(NULL)
17.12	574.5	(NULL)
19.22	432.3	(NULL)
21.21	385.5	(NULL)
23.24	349.2	(NULL)
24.11	344.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3522	2377	1482	944	625	514	386	350

DURATION(HRS)	18	20	22	24
FLOW(CFS)	319	103	12	0

*** WARNING - XSECTION 102, INFLOW EXCEEDS MAX TABLE DISCHARGE, EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 102

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.06	4073.5	9.07
17.30	574.5	2.32
19.43	430.9	1.91
21.44	383.5	1.70
23.47	346.0	1.54
24.32	341.7	1.52

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3519	2369	1509	958	604	497	383	350

DURATION(HRS)	18	20	22	24
FLOW(CFS)	320	114	13	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.34	1635.2	(RUNOFF)
17.14	231.2	(RUNOFF)
17.99	211.6	(RUNOFF)
19.18	179.4	(RUNOFF)
21.10	162.5	(RUNOFF)
22.06	139.7	(RUNOFF)
23.15	152.4	(RUNOFF)
24.06	147.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.39 WATERSHED INCHES; 9916 CFS-HRS; 819.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1353	926	554	358	230	196	152	138

DURATION(HRS)	18	20	21
FLOW(CFS)	123	17	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	5653.9	(NULL)
19.21	603.5	(NULL)
21.25	534.8	(NULL)
23.28	481.4	(NULL)
24.13	478.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4815	3359	2061	1304	855	698	530	491

DURATION(HRS)	18	20	22	24
FLOW(CFS)	445	142	13	0

*** WARNING - XSECTION 103, INFLOW EXCEEDS MAX TABLE DISCHARGE, EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 103

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.19	5645.6	11.79
19.39	602.9	2.39
21.49	532.4	2.21
23.52	478.3	2.07
24.34	474.9	2.06

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4853	3404	2027	1297	869	706	531	492

DURATION(HRS)	18	20	22	24
FLOW(CFS)	450	132	13	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	2515.5	(RUNOFF)
17.24	343.0	(RUNOFF)
19.34	261.4	(RUNOFF)
21.23	236.0	(RUNOFF)
22.10	209.5	(RUNOFF)
23.30	213.7	(RUNOFF)
24.15	208.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15688 CFS-HRS; 1296.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2109	1485	892	573	376	315	236	209

DURATION(HRS)	18	20	22	23
FLOW(CFS)	196	71	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.07	8106.6	(NULL)
19.35	864.2	(NULL)
21.39	762.6	(NULL)
23.42	687.0	(NULL)
24.21	671.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
3.40 CFS	0	1	4	12	25	47	79	123
5.00 CFS	184	260	350	456	570	693	829	993
6.60 CFS	1206	1451	1728	2030	2364	2750	3171	3642
8.20 CFS	4149	4688	5271	5868	6481	7073	7549	7863
9.80 CFS	8034	8102	8089	7988	7793	7552	7302	7058
11.40 CFS	6797	6496	6168	5808	5431	5053	4679	4331
13.00 CFS	4015	3732	3471	3220	2988	2784	2607	2449
14.60 CFS	2297	2155	2022	1901	1795	1704	1622	1540
16.20 CFS	1455	1369	1280	1205	1163	1152	1145	1122
17.80 CFS	1093	1076	1065	1036	971	898	860	859
19.40 CFS	864	850	822	784	745	715	704	709
21.00 CFS	727	752	763	750	726	710	703	691
22.60 CFS	662	634	637	666	687	674	650	652
24.20 CFS	671	656	566	437	316	219	146	95
25.80 CFS	60.39	38.60	24.85	16.02	10.26	6.54	4.22	2.72
27.40 CFS	1.74	1.09	.65	.33				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.96 WATERSHED INCHES; 51438 CFS-HRS; 4250.8 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	5868	2988	1540	993	726	650	79	1

DURATION(HRS)	24
FLOW(CFS)	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7422.8	1803.90

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.60 CFS	.00	.01	.01	.01	.01	.02	2.65	33.05
7.20 CFS	80	94	97	100	103	107	110	187
8.80 CFS	670	1165	1709	3269	4505	5464	6189	6720
10.40 CFS	7087	7311	7412	7416	7350	7233	7069	6864
12.00 CFS	6620	6341	6035	5709	5374	5039	4715	4404
13.60 CFS	4110	3829	3567	3324	3102	2899	2711	2538
15.20 CFS	2377	2230	2096	1975	1865	1763	1665	1624
16.80 CFS	1590	1553	1518	1485	1453	1422	1392	1363
18.40 CFS	1335	1305	1272	1237	1203	1172	1144	1116
20.00 CFS	1088	1059	1029	1001	974	951	932	916
21.60 CFS	902	887	872	857	843	828	812	796
23.20 CFS	783	773	765	756	746	739	732	721
24.80 CFS	701	672	636	595	552	510	468	429
26.40 CFS	392	358	327	298	272	247	225	205
28.00 CFS	187	170	155	141	128	117	114	114
29.60 CFS	114	114	113	113	113	113	113	113
31.20 CFS	113	113	113	113	112	112	112	112
32.80 CFS	112	112	112	112	112	112	112	111
34.40 CFS	111	111	111	111	111	111	111	111
36.00 CFS	111	110	110	110	110	110	110	110
37.60 CFS	110	110	110	110	109	109	109	109
39.20 CFS	109	109	109	109	109	109	108	108
40.80 CFS	108	108	108	108	108	108	108	108
42.40 CFS	108	107	107	107	107	107	107	107
44.00 CFS	107	107	107	107	106	106	106	106
45.60 CFS	106	106	106	106	106	106	106	105
47.20 CFS	105	105	105	105	105	105	105	105
48.80 CFS	105	105	104	104	104	104	104	104
50.40 CFS	104	104	104	104	104	103	103	103

52.00 CFS	103	103	103	103	103	103	103	103
53.60 CFS	102	102	102	102	102	102	102	102
55.20 CFS	102	101	101	101	101	101	101	101
56.80 CFS	101	101	100	100	100	100	100	100
58.40 CFS	99.77	99.66	99.55	99.44	99.32	99.21	99.10	98.99
60.00 CFS	98.87	98.76	98.65	98.54	98.43	98.32	98.21	98.10
61.60 CFS	97.98	97.87	97.76	97.65	97.54	97.43	97.32	97.21
63.20 CFS	97.10	96.99	96.88	96.77	96.66	96.56	96.45	96.34
64.80 CFS	96.23	96.11	95.98	95.85	95.72	95.59	95.46	95.33
66.40 CFS	95.20	95.07	94.94	94.81	94.68	94.55	94.42	94.29
68.00 CFS	94.16	94.03	93.90	93.78	93.65	93.52	93.39	93.26
69.60 CFS	93.14	93.01	92.88	92.76	92.63	92.50	92.38	92.25
71.20 CFS	92.13	92.00	91.87	91.75	91.62	91.50	91.37	91.25
72.80 CFS	89.59	87.01	84.50	82.06	79.70	77.40	75.17	73.18
74.40 CFS	71.34	69.55	67.80	66.09	64.43	62.81	61.23	59.69
76.00 CFS	58.19	56.72	55.29	53.90	52.55	51.22	49.94	48.68
77.60 CFS	47.45	46.26	45.10	43.96	42.86	41.78	40.73	39.70
79.20 CFS	38.70	37.73	36.78	35.85	34.95	34.07	33.21	32.38
80.80 CFS	31.56	30.77	30.00	29.24	28.51	27.79	27.09	26.41
82.40 CFS	25.90	25.44						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.57 WATERSHED INCHES; 49889 CFS-HRS; 4122.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1518	672	112	108	105	101	97	92

DURATION(HRS)	72	76
FLOW(CFS)	39	25 TRUNCATED

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.60	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.89 WATERSHED INCHES; 7515 CFS-HRS; 621.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	112	108	105	101	97	92

DURATION(HRS)	72	76
FLOW(CFS)	39	25 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42373 CFS-HRS; 3501.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1088	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.00	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.89 WATERSHED INCHES; 7508 CFS-HRS; 620.5 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	112	109	105	101	97	92

DURATION(HRS)	72	75
FLOW(CFS)	39	26 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3571.8	(RUNOFF)
17.11	482.9	(RUNOFF)
17.98	442.0	(RUNOFF)
19.15	376.0	(RUNOFF)
21.07	339.4	(RUNOFF)
22.04	291.9	(RUNOFF)
23.12	320.2	(RUNOFF)
24.03	312.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 21539 CFS-HRS; 1780.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2928	1946	1248	783	503	424	319	294

DURATION(HRS)	18	20	22	22
FLOW(CFS)	263	76	1	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 23.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3686.8	(NULL)
17.11	597.9	(NULL)
17.98	557.0	(NULL)
19.15	491.0	(NULL)
21.07	454.4	(NULL)
22.04	406.9	(NULL)
23.12	435.2	(NULL)
24.03	427.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.18 WATERSHED INCHES; 29047 CFS-HRS; 2400.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OPERATION DIVERT XSECTION 104
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	8.00
17.11	597.9	2.38
17.98	557.0	2.28
19.15	491.0	2.11
21.07	454.4	2.01
22.04	406.9	1.81
23.12	435.2	1.93
24.03	427.6	1.90

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 28888 CFS-HRS; 2387.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET) (DIVERT)
9.24	232.8	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
158 CFS-HRS; 13.1 ACRE-FEET.

DURATION(HRS)	2	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	1
FLOW(CFS)	57	0

OPERATION ADDHYD XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	14.66

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42532 CFS-HRS; 3514.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1122	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	5.62
17.11	597.9	1.78
17.98	557.0	1.71
19.15	491.0	1.59
21.07	454.4	1.52
22.04	406.9	1.38
23.12	435.2	1.48
24.03	427.6	1.45

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 28888 CFS-HRS; 2387.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	2891.7	(RUNOFF)
17.05	387.9	(RUNOFF)
17.95	354.7	(RUNOFF)
19.07	304.5	(RUNOFF)
21.01	273.4	(RUNOFF)
21.99	234.1	(RUNOFF)
23.05	262.5	(RUNOFF)
23.99	260.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 17332 CFS-HRS; 1432.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2298	1621	987	636	413	335	261	229

DURATION(HRS)	18	20	22	22
FLOW(CFS)	210	83	1	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	6345.7	(NULL)
17.08	984.1	(NULL)
17.97	911.6	(NULL)
19.11	791.9	(NULL)
21.03	727.2	(NULL)
22.01	640.8	(NULL)
23.08	695.5	(NULL)
24.01	687.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.70 WATERSHED INCHES; 46217 CFS-HRS; 3819.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION DIVERT XSECTION 106
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.10	6332.9	8.54
17.08	984.1	2.48
17.97	911.6	2.35
19.11	791.9	2.13
21.03	727.2	2.02
22.01	640.8	1.86
23.08	695.5	1.96
24.01	687.2	1.94

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.70 WATERSHED INCHES; 46203 CFS-HRS; 3818.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.15	46.5	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
14 CFS-HRS; 1.1 ACRE-FEET.

DURATION(HRS)	2	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	0
FLOW(CFS)	60	0

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.14	1601.2	(RUNOFF)
17.04	219.9	(RUNOFF)
17.95	201.2	(RUNOFF)
19.07	172.6	(RUNOFF)
21.00	154.8	(RUNOFF)
21.99	132.8	(RUNOFF)
23.04	149.1	(RUNOFF)
23.98	149.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 9558 CFS-HRS; 789.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1288	901	539	342	220	187	148	127

DURATION(HRS)	18	20	22
FLOW(CFS)	117	34	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.12	7900.8	(NULL)
17.07	1203.7	(NULL)
17.96	1112.7	(NULL)
19.10	962.7	(NULL)
21.03	881.8	(NULL)
22.01	773.5	(NULL)
23.07	844.1	(NULL)
24.00	836.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.30 WATERSHED INCHES; 55759 CFS-HRS; 4608.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1846	758	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	9.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.40 CFS	0	72	555	1209	1868	3344	4530	5429
10.00 CFS	6094	6605	6972	7196	7297	7301	7235	7118
11.60 CFS	6954	6749	6505	6226	5920	5594	5259	4924
13.20 CFS	4600	4289	3995	3714	3452	3209	2987	2784
14.80 CFS	2596	2423	2262	2115	1981	1860	1750	1648
16.40 CFS	1550	1509	1475	1438	1403	1370	1338	1307
18.00 CFS	1277	1248	1220	1190	1157	1122	1088	1057
19.60 CFS	1029	1001	973	944	914	886	859	836
21.20 CFS	817	801	787	772	757	742	728	713
22.80 CFS	697	681	668	658	650	641	631	624
24.40 CFS	617	606	586	557	521	480	437	395
26.00 CFS	353	314	277	243	212	183	157	132
27.60 CFS	110	90	72	55	40	26	13	2
29.20 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42546 CFS-HRS; 3516.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1122	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.98	1313.1	(RUNOFF)
16.93	189.3	(RUNOFF)
17.91	174.5	(RUNOFF)
18.94	151.3	(RUNOFF)
20.91	134.2	(RUNOFF)
21.91	115.4	(RUNOFF)
22.93	134.2	(RUNOFF)
23.91	139.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.38 WATERSHED INCHES; 7673 CFS-HRS; 634.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1053	685	406	274	188	150	126	106

DURATION(HRS)	18	20	20
FLOW(CFS)	87	9	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.09	9241.1	(NULL)
17.03	1387.8	(NULL)
17.94	1285.9	(NULL)
19.07	1109.1	(NULL)
21.00	1013.0	(NULL)
21.98	886.9	(NULL)
23.04	970.1	(NULL)
23.98	969.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
3.00 CFS	0	3	9	16	56	94	146	219
4.60 CFS	276	418	528	665	839	951	1133	1266
6.20 CFS	1558	1976	2248	2693	3012	3506	4157	4591
7.80 CFS	5364	5922	6598	7411	7925	8772	9199	9166
9.40 CFS	9076	9003	8881	8809	8478	7961	7675	7393
11.00 CFS	7207	6850	6353	6029	5463	5055	4671	4236
12.60 CFS	3991	3703	3507	3267	2970	2805	2645	2542
14.20 CFS	2402	2225	2120	1980	1885	1814	1747	1697
15.80 CFS	1576	1487	1385	1264	1222	1310	1386	1349
17.40 CFS	1251	1209	1246	1280	1160	945	864	989
19.00 CFS	1102	1079	985	927	855	806	821	869
20.60 CFS	903	967	1013	963	859	815	851	886
22.20 CFS	833	728	701	847	967	912	765	715
23.80 CFS	852	967	776	409	220	154	129	120
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	115	115	115	115	115
28.60 CFS	115	115	115	115	114	114	114	114
30.20 CFS	113	113	113	113	113	113	113	113
31.80 CFS	113	113	113	112	112	112	112	112
33.40 CFS	112	112	112	112	112	111	111	111
35.00 CFS	111	111	111	111	111	111	111	110
36.60 CFS	110	110	110	110	110	110	110	110

38.20 CFS	110	110	109	109	109	109	109	109
39.80 CFS	109	109	109	109	109	108	108	108
41.40 CFS	108	108	108	108	108	108	108	107
43.00 CFS	107	107	107	107	107	107	107	107
44.60 CFS	107	107	106	106	106	106	106	106
46.20 CFS	106	106	106	106	106	105	105	105
47.80 CFS	105	105	105	105	105	105	105	105
49.40 CFS	104	104	104	104	104	104	104	104
51.00 CFS	104	104	104	104	103	103	103	103
52.60 CFS	103	103	103	103	103	103	103	102
54.20 CFS	102	102	102	102	102	102	102	102
55.80 CFS	101	101	101	101	101	101	101	101
57.40 CFS	100	100	100	100	100	100	100	100
59.00 CFS	99.59	99.48	99.36	99.25	99.14	99.03	98.92	98.80
60.60 CFS	98.69	98.58	98.47	98.36	98.25	98.14	98.03	97.91
62.20 CFS	97.80	97.69	97.58	97.47	97.36	97.25	97.14	97.03
63.80 CFS	96.92	96.81	96.70	96.60	96.49	96.38	96.27	96.15
65.40 CFS	96.03	95.90	95.76	95.63	95.50	95.37	95.24	95.11
67.00 CFS	94.98	94.85	94.72	94.60	94.47	94.34	94.21	94.08
68.60 CFS	93.95	93.82	93.69	93.57	93.44	93.31	93.18	93.06
70.20 CFS	92.93	92.80	92.68	92.55	92.42	92.30	92.17	92.04
71.80 CFS	91.92	91.79	91.67	91.54	91.42	91.29	90.04	87.82
73.40 CFS	85.39	82.96	80.57	78.25	76.00	73.94	72.04	70.22
75.00 CFS	68.45	66.72	65.04	63.41	61.81	60.26	58.74	57.26
76.60 CFS	55.82	54.42	53.05	51.71	50.41	49.14	47.91	46.70
78.20 CFS	45.53	44.38	43.26	42.18	41.12	40.08	39.07	38.09
79.80 CFS	37.13	36.20	35.28	34.40	33.53	32.69	31.87	31.06
81.40 CFS	30.28	29.52	28.78	28.05	27.35	26.66	26.10	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.68 WATERSHED INCHES; 63428 CFS-HRS; 5241.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	2120	859	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 21672 CFS-HRS; 1791.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1915	1915	1884	1219	767	633	497	449

DURATION(HRS)	18	20	22	24
FLOW(CFS)	408	130	10	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	1990.4	(RUNOFF)
17.12	265.6	(RUNOFF)
17.98	242.8	(RUNOFF)
19.16	206.3	(RUNOFF)
21.07	185.8	(RUNOFF)
22.04	160.2	(RUNOFF)
23.12	175.5	(RUNOFF)
24.04	171.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 12047 CFS-HRS; 995.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1628	1089	689	432	288	235	183	162

DURATION(HRS)	18	20	22	22
FLOW(CFS)	147	58	1	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3905.4	1781.91
17.10	1000.1	1770.70
19.29	750.2	1769.73
21.25	668.5	1769.38
23.31	600.7	1769.06
24.13	593.1	1769.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.78 WATERSHED INCHES; 33720 CFS-HRS; 2786.6 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	3276	2497	1360	868	625	560	77	1

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION DIVERT XSECTION 109
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.60	2546.0 *	1776.67
17.10	1000.1	1770.70
19.29	750.2	1769.73
21.25	668.5	1769.38
23.31	600.7	1769.06
24.13	593.1	1769.02

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 29289 CFS-HRS; 2420.4 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	2546	2497	1360	868	625	560	77	1

DURATION(HRS)	25
FLOW(CFS)	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	1359.4	(DIVERT)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4431 CFS-HRS; 366.2 ACRE-FEET.

DURATION(HRS)	2	4	6
FLOW(CFS)	997	446	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.60	2546.0 *	1761.03
17.10	1000.1	1758.29
19.29	750.2	1757.68
21.25	668.5	1757.42
23.31	600.7	1757.21
24.13	593.1	1757.18

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 29289 CFS-HRS; 2420.4 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	2546	2497	1360	868	625	560	77	1

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	2826.7	(RUNOFF)
17.04	374.8	(RUNOFF)
17.95	342.6	(RUNOFF)
19.07	293.9	(RUNOFF)
21.00	263.6	(RUNOFF)
21.99	226.1	(RUNOFF)
23.04	253.9	(RUNOFF)
23.98	253.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.71 WATERSHED INCHES; 16988 CFS-HRS; 1403.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2270	1558	986	612	422	330	253	226

DURATION(HRS)	18	20	22	22
FLOW(CFS)	202	92	2	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	5372.7	1764.66
17.01	1372.5	1759.10
17.91	1275.2	1758.91
19.13	1036.4	1758.38
21.12	921.0	1758.10
21.93	838.0	1757.90
23.14	836.4	1757.89
24.01	831.0	1757.88

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
2.60 CFS	0	1	2	9	24	35	71	105
4.20 CFS	142	197	248	352	457	573	727	855
5.80 CFS	1016	1168	1381	1713	1997	2371	2726	3126
7.40 CFS	3657	3991	4221	4388	4561	4816	4946	5188
9.00 CFS	5360	5364	5281	5238	5173	5126	5025	4848
10.60 CFS	4769	4683	4627	4529	4363	4276	4104	3980
12.20 CFS	3878	3740	3674	3590	3532	3468	3368	3279
13.80 CFS	3175	3004	2833	2643	2491	2331	2192	2079
15.40 CFS	1974	1892	1785	1685	1585	1466	1378	1361
17.00 CFS	1372	1362	1316	1277	1268	1270	1224	1104
18.60 CFS	1010	1002	1029	1034	1001	965	910	856
20.20 CFS	828	829	840	875	913	917	877	841
21.80 CFS	833	837	817	761	721	758	820	834
23.40 CFS	784	742	776	831	789	606	446	309
25.00 CFS	204	133	87	57	37	24	16	10
26.60 CFS	6.66	4.35	2.84	1.87	1.24	.82	.55	.36

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.87 WATERSHED INCHES; 46277 CFS-HRS; 3824.3 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	4529	3368	1892	1224	856	761	133	2

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	4553.9	1784.42

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
7.40 CFS	0	231	840	1342	1806	2359	2874	3416
9.00 CFS	3969	4347	4503	4551	4538	4485	4375	4133
10.60 CFS	3882	3656	3455	3248	2950	2655	2323	1969
12.20 CFS	1651	1316	1025	770	543	343	123	0

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
15535 CFS-HRS; 1283.9 ACRE-FEET.

DURATION(HRS)	2	4	6
FLOW(CFS)	3455	1651	0

OPERATION DIVERT XSECTION 108
OUTPUT #1 HYDROGRAPH

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	5253.0 *	1764.50
17.01	1372.5	1759.10
17.91	1275.2	1758.91
19.13	1036.4	1758.38
21.12	921.0	1758.10
21.93	838.0	1757.90
23.14	836.4	1757.89
24.01	831.0	1757.88

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.86 WATERSHED INCHES; 46228 CFS-HRS; 3820.3 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	4529	3368	1892	1224	856	761	133	2

DURATION(HRS)	25
FLOW(CFS)	0

OUTPUT #2 DIVERTED HYDROGRAPH (XSECTION 0)

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	119.7	(DIVERT)

*** WARNING - STRUCTURE 0, MAIN TIME INCREMENT TOO LARGE, COMPUTED PEAK
(119.74) EXCEEDS ADJACENT COORDINATE (110.61) BY 8 %. ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
49 CFS-HRS; 4.1 ACRE-FEET.

DURATION(HRS)	2	6	9	12	15	18	21	24
FLOW(CFS)	4529	3368	1892	1224	856	761	133	2

DURATION(HRS)	1
FLOW(CFS)	0

*** WARNING - XSECTION 107, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	5251.5	1762.11
17.12	1372.9	1756.01
19.35	1032.7	1755.07
21.36	914.7	1754.70
23.38	827.2	1754.40
24.24	818.0	1754.37

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
2.80 CFS	.10	1.04	1.97	7.60	19.98	31.32	61.49	95.06
4.40 CFS	131	182	233	324	426	539	683	815
6.00 CFS	969	1121	1321	1621	1910	2263	2618	3008
7.60 CFS	3506	3878	4141	4330	4507	4744	4899	5121
9.20 CFS	5222	5246	5251	5241	5189	5141	5052	4896
10.80 CFS	4798	4710	4646	4556	4408	4306	4151	4020
12.40 CFS	3911	3779	3699	3615	3551	3487	3396	3306
14.00 CFS	3206	3051	2884	2699	2540	2380	2236	2116
15.60 CFS	2007	1919	1816	1716	1616	1500	1407	1371
17.20 CFS	1372	1364	1327	1289	1273	1271	1235	1135
18.80 CFS	1039	1010	1025	1032	1008	975	925	872
20.40 CFS	838	831	838	866	902	914	886	851
22.00 CFS	837	837	822	775	734	753	804	827
23.60 CFS	794	754	771	817	796	650	494	352
25.20 CFS	238	158	103	68	44	29	19	12
26.80 CFS	7.95	5.19	3.38	2.22	1.47	.97	.64	.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.86 WATERSHED INCHES; 46231 CFS-HRS; 3820.5 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	4507	3396	1910	1235	866	771	131	2

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.20	14388.5	1772.98
17.01	2757.5	1758.77
17.93	2562.3	1758.44
19.08	2119.7	1757.63
21.07	1884.2	1757.16
21.96	1725.4	1756.82
23.10	1736.0	1756.85
23.99	1738.0	1756.85

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
2.80 CFS	0	1	5	16	36	87	156	241
4.40 CFS	350	458	651	853	1092	1378	1634	1948
6.00 CFS	2235	2679	3297	3869	4602	5276	6124	7165
7.60 CFS	8097	9242	10063	10928	11918	12669	13671	14320
9.20 CFS	14388	14322	14254	14123	13997	13619	13013	12571
10.80 CFS	12191	11917	11496	10909	10437	9769	9207	8691
12.40 CFS	8147	7771	7401	7122	6818	6457	6202	5952
14.00 CFS	5748	5453	5109	4819	4520	4264	4050	3862
15.60 CFS	3704	3495	3303	3101	2879	2722	2717	2758
17.20 CFS	2721	2615	2536	2535	2553	2431	2181	1999
18.80 CFS	2028	2112	2104	2016	1935	1830	1731	1693
20.40 CFS	1707	1735	1805	1879	1865	1773	1701	1703
22.00 CFS	1724	1670	1550	1476	1580	1720	1717	1592
23.60 CFS	1509	1606	1738	1592	1205	871	647	481
25.20 CFS	358	274	219	183	159	144	134	127
26.80 CFS	123	120	118	117	116	116	116	115
28.40 CFS	115	115	115	115	115	114	114	114
30.00 CFS	114	113	113	113	113	113	113	113
31.60 CFS	113	113	113	113	112	112	112	112
33.20 CFS	112	112	112	112	112	112	111	111
34.80 CFS	111	111	111	111	111	111	111	111
36.40 CFS	110	110	110	110	110	110	110	110
38.00 CFS	110	110	110	109	109	109	109	109
39.60 CFS	109	109	109	109	109	109	108	108
41.20 CFS	108	108	108	108	108	108	108	108
42.80 CFS	107	107	107	107	107	107	107	107
44.40 CFS	107	107	107	106	106	106	106	106
46.00 CFS	106	106	106	106	106	106	105	105
47.60 CFS	105	105	105	105	105	105	105	105
49.20 CFS	105	104	104	104	104	104	104	104
50.80 CFS	104	104	104	104	104	103	103	103
52.40 CFS	103	103	103	103	103	103	103	103
54.00 CFS	102	102	102	102	102	102	102	102
55.60 CFS	102	101	101	101	101	101	101	101
57.20 CFS	101	100	100	100	100	100	100	100
58.80 CFS	99.70	99.59	99.48	99.36	99.25	99.14	99.03	98.92
60.40 CFS	98.80	98.69	98.58	98.47	98.36	98.25	98.14	98.03
62.00 CFS	97.91	97.80	97.69	97.58	97.47	97.36	97.25	97.14

63.60 CFS	97.03	96.92	96.81	96.70	96.60	96.49	96.38	96.27
65.20 CFS	96.15	96.03	95.90	95.76	95.63	95.50	95.37	95.24
66.80 CFS	95.11	94.98	94.85	94.72	94.60	94.47	94.34	94.21
68.40 CFS	94.08	93.95	93.82	93.69	93.57	93.44	93.31	93.18
70.00 CFS	93.06	92.93	92.80	92.68	92.55	92.42	92.30	92.17
71.60 CFS	92.04	91.92	91.79	91.67	91.54	91.42	91.29	90.04
73.20 CFS	87.82	85.39	82.96	80.57	78.25	76.00	73.94	72.04
74.80 CFS	70.22	68.45	66.72	65.04	63.41	61.81	60.26	58.74
76.40 CFS	57.26	55.82	54.42	53.05	51.71	50.41	49.14	47.91
78.00 CFS	46.70	45.53	44.38	43.26	42.18	41.12	40.08	39.07
79.60 CFS	38.09	37.13	36.20	35.28	34.40	33.53	32.69	31.87
81.20 CFS	31.06	30.28	29.52	28.78	28.05	27.35		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.47 WATERSHED INCHES; 109648 CFS-HRS; 9061.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	4520	1717	116	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	62	27 TRUNCATED

*** MESSAGE - RESERVOIR ROUTING, STRUCTURE 2, TRUNCATED AT 400 POINTS
WITH 678.64 AC-FT (.05 WATERSHED INCHES) FLOOD STORAGE
REMAINING IN RESERVOIR AT ELEV. 1706.02. ***

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.69	10142.8	1722.34

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
3.00 CFS	.00	.01	.03	.08	.20	.44	.82	1.40
4.60 CFS	2.19	3.27	4.74	6.63	9.03	11.96	15.45	19.51
6.20 CFS	21	21	63	136	219	249	258	269
7.80 CFS	280	290	300	310	656	1369	2358	3555
9.40 CFS	4632	5596	6453	7262	7987	8577	9044	9414
11.00 CFS	9706	9928	10069	10136	10132	10061	9938	9770
12.60 CFS	9569	9349	9118	8880	8632	8377	8122	7870
14.20 CFS	7619	7360	7095	6826	6576	6335	6097	5867
15.80 CFS	5640	5417	5196	4976	4759	4555	4374	4211
17.40 CFS	4057	3909	3772	3649	3534	3411	3280	3153
19.00 CFS	3045	2952	2863	2774	2685	2595	2507	2426
20.60 CFS	2356	2297	2252	2214	2175	2131	2093	2065
22.20 CFS	2038	2007	1971	1939	1918	1903	1885	1861
23.80 CFS	1839	1826	1815	1784	1730	1659	1579	1495
25.40 CFS	1409	1324	1242	1164	1090	1021	963	926
27.00 CFS	890	855	822	790	760	731	704	677
28.60 CFS	652	628	605	583	562	543	531	519

30.20 CFS	507	496	485	474	464	454	444	435
31.80 CFS	425	416	408	399	391	383	375	368
33.40 CFS	360	353	346	339	333	326	320	314
35.00 CFS	312	311	311	310	310	310	310	309
36.60 CFS	309	309	309	309	309	309	308	308
38.20 CFS	308	308	308	308	307	307	307	307
39.80 CFS	307	306	306	306	306	306	306	305
41.40 CFS	305	305	305	305	305	304	304	304
43.00 CFS	304	304	303	303	303	303	303	303
44.60 CFS	302	302	302	302	302	301	301	301
46.20 CFS	301	301	301	300	300	300	300	300
47.80 CFS	299	299	299	299	299	299	298	298
49.40 CFS	298	298	298	297	297	297	297	297
51.00 CFS	297	296	296	296	296	296	296	295
52.60 CFS	295	295	295	295	294	294	294	294
54.20 CFS	294	293	293	293	293	293	293	292
55.80 CFS	292	292	292	292	291	291	291	291
57.40 CFS	291	290	290	290	290	290	289	289
59.00 CFS	289	289	289	288	288	288	288	288
60.60 CFS	287	287	287	287	287	286	286	286
62.20 CFS	286	286	285	285	285	285	285	284
63.80 CFS	284	284	284	283	283	283	283	283
65.40 CFS	282	282	282	282	282	281	281	281
67.00 CFS	281	281	280	280	280	280	280	279
68.60 CFS	279	279	279	279	278	278	278	278
70.20 CFS	278	277	277	277	277	277	276	276
71.80 CFS	276	276	275	275	275	275	274	274
73.40 CFS	274	274	273	273	273	272	272	272
75.00 CFS	272	271	271	271	270	270	270	270
76.60 CFS	269	269	269	268	268	268	267	267
78.20 CFS	267	266	266	266	266	265	265	265
79.80 CFS	264	264	264	263	263	263	262	262
81.40 CFS	262	261	261	261	260			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.84 WATERSHED INCHES; 101444 CFS-HRS; 8383.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	4057	1579	391	306	299	292	284	276

DURATION(HRS)	72	75
FLOW(CFS)	265	260 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
P-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

RAINFALL OF 3.94 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 2, ARC 2
MAIN TIME INCREMENT .200 HOURS

ALTERNATE 5 STORM 1

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 101	RUNOFF	1.86	1.99	---	12.58	1011	543.5
XSECTION 1	RUNOFF	1.20	1.91	---	12.22	900	750.0
XSECTION 1	ADDHYD	3.06	1.96	---	12.37	1729	565.0
XSECTION 102	REACH	3.06	1.96	4.81	12.62	1691	552.6
XSECTION 2	RUNOFF	1.24	1.62	---	12.18	809	652.4
XSECTION 2	ADDHYD	4.30	1.86	---	12.48	2188	508.8
XSECTION 103	REACH	4.30	1.86	5.64	12.74	2125	494.2
XSECTION 3	RUNOFF	1.85	1.99	---	12.38	1218	658.4
XSECTION 3	ADDHYD	6.15	1.90	---	12.61	3125	508.1
STRUCTURE 1	RESVOR	6.15	1.55	1799.08	24.52	112	18.2
XSECTION 104	DIVERT	6.15	1.55	.50	24.52	112	18.2
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 104	REACH	6.15	1.55	.50	24.77	112	18.2
XSECTION 4	RUNOFF	2.54	1.99	---	12.15	2180	858.3
XSECTION 4	ADDHYD	8.69	1.68	---	12.15	2180	250.9
XSECTION 104	DIVERT	8.69	1.68	5.75	12.15	2180	250.9
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 104	ADDHYD	.00	.00	---	.00	0	********
XSECTION 106	REACH	8.69	1.68	4.13	12.15	2180	250.9
XSECTION 5	RUNOFF	2.00	2.14	---	12.07	2049	1024.5
XSECTION 5	ADDHYD	10.69	1.77	---	12.10	4157	388.9
XSECTION 106	DIVERT	10.69	1.77	6.38	12.10	4157	388.9
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 6	RUNOFF	1.14	1.91	---	12.06	1031	904.4
XSECTION 6	ADDHYD	11.83	1.78	---	12.09	5213	440.7
XSECTION 106	ADDHYD	.00	1.78	---	.00	0	********
XSECTION 7	RUNOFF	.96	1.61	---	11.93	834	868.8
XSECTION 7	ADDHYD	12.79	1.77	---	12.07	5926	463.3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
P-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

ALTERNATE 5 STORM 1

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 13	RUNOFF	.46	1.85	---	12.01	419	910.9
XSECTION 113	REACH	.46	1.83	1767.05	12.61	259	563.0
XSECTION 12	RUNOFF	.87	1.84	---	12.22	633	727.6
XSECTION 112	ADDHYD	1.33	1.84	1769.81	12.30	771	579.7
XSECTION 112	REACH	1.33	1.84	1768.86	13.04	559	420.3
XSECTION 11	RUNOFF	1.96	1.84	---	12.23	1396	712.2
XSECTION 111	ADDHYD	3.28	1.84	1772.75	12.28	1533	467.4
XSECTION 111	REACH	3.28	1.84	1772.71	12.49	1522	464.0
XSECTION 10	RUNOFF	.67	1.84	---	12.37	405	604.5
XSECTION 110	ADDHYD	3.95	1.84	---	12.47	1915	484.8
XSECTION 110	DIVERT	3.95	1.84	---	12.47	1915	484.8
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 109	REACH	3.95	1.84	1773.89	12.70	1827	462.5
XSECTION 9	RUNOFF	1.39	2.15	---	12.15	1298	933.8
XSECTION 109	ADDHYD	5.34	1.92	1776.13	12.59	2407	450.7
XSECTION 109	DIVERT	5.34	1.92	1776.13	12.59	2407	450.7
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 108	REACH	5.34	1.92	1760.84	12.59	2407	450.7
XSECTION 8	RUNOFF	1.92	2.31	---	12.06	2152	1120.8
XSECTION 108	ADDHYD	7.26	2.02	1762.66	12.18	3856	531.1
XSECTION 109	ADDHYD	.00	2.02	---	.00	0	********
XSECTION 108	DIVERT	7.26	2.02	1762.66	12.18	3856	531.1
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 107	REACH	7.26	2.02	1760.12	12.45	3645	502.1
XSECTION 107	ADDHYD	20.05	1.86	1765.80	12.18	8353	416.6
STRUCTURE 2	RESVOR	20.05	1.52	1711.41	24.44T	302T	15.1

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

RAINFALL OF 7.06 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 5, ARC 2

ALTERNATE 5 STORM 4

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 101	RUNOFF	1.86	4.75	---	10.27	908	488.2
XSECTION 1	RUNOFF	1.20	4.64	---	9.92	590	491.7
XSECTION 1	ADDHYD	3.06	4.70	---	10.12	1492	487.6
XSECTION 102	REACH	3.06	4.70	4.41	10.36	1489	486.6
XSECTION 2	RUNOFF	1.24	4.20	---	9.98	554	446.8
XSECTION 2	ADDHYD	4.30	4.56	---	10.22	2032	472.6
XSECTION 103	REACH	4.30	4.56	5.46	10.46	2028	471.6
XSECTION 3	RUNOFF	1.85	4.75	---	10.05	920	497.3
XSECTION 3	ADDHYD	6.15	4.61	---	10.34	2930	476.4
STRUCTURE 1	RESVOR	6.15	4.24	1801.48	13.24	1490	242.3
XSECTION 104	DIVERT	6.15	1.81	.51	10.80F	115F	18.7
XSECTION 0	DIVERT	.00	1.81	---	13.24	1375	********
XSECTION 104	REACH	6.15	1.81	.51	12.20F	115F	18.7
XSECTION 4	RUNOFF	2.54	4.75	---	9.62	1280	503.9
XSECTION 4	ADDHYD	8.69	2.67	---	9.81	1377	158.5
XSECTION 104	DIVERT	8.69	2.67	4.18	9.81	1377	158.5
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 104	ADDHYD	.00	.00	4.18	13.24	1375	********
XSECTION 106	REACH	8.69	2.67	3.06	9.81	1377	158.5
XSECTION 5	RUNOFF	2.00	4.97	---	9.26	1067	533.5
XSECTION 5	ADDHYD	10.69	3.10	---	9.58	2431	227.4
XSECTION 106	DIVERT	10.69	3.10	4.45	9.58	2431	227.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

ALTERNATE 5 STORM 4

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 6	RUNOFF	1.14	4.64	---	9.49	562	493.0
XSECTION 6	ADDHYD	11.83	3.24	---	9.57	2994	253.1
XSECTION 106	ADDHYD	.00	3.24	3.05	13.24	1375	********
XSECTION 7	RUNOFF	.96	4.20	---	9.90	435	453.1
XSECTION 7	ADDHYD	12.79	3.32	---	9.61	3421	267.5
XSECTION 13	RUNOFF	.46	4.52	---	9.51	220	478.3
XSECTION 113	REACH	.46	4.52	1766.73	10.29	213	463.0
XSECTION 12	RUNOFF	.87	4.53	---	9.94	417	479.3
XSECTION 112	ADDHYD	1.33	4.53	1769.18	10.09	626	470.7
XSECTION 112	REACH	1.33	4.53	1769.05	10.66	598	449.6
XSECTION 11	RUNOFF	1.96	4.53	---	9.95	939	479.1
XSECTION 111	ADDHYD	3.28	4.52	1772.66	10.20	1508	459.8
XSECTION 111	REACH	3.28	4.53	1772.66	10.40	1507	459.5
XSECTION 10	RUNOFF	.67	4.53	---	10.10	319	476.1
XSECTION 110	ADDHYD	3.95	4.53	---	10.36	1821	461.0
XSECTION 110	DIVERT	3.95	4.53	---	10.36	1821	461.0
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 109	REACH	3.95	4.53	1773.86	10.59	1818	460.3
XSECTION 9	RUNOFF	1.39	4.97	---	9.48	735	528.8
XSECTION 109	ADDHYD	5.34	4.64	1776.44	10.30	2487	465.7
XSECTION 109	DIVERT	5.34	4.64	1776.44	10.30	2487	465.7
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 108	REACH	5.34	4.64	1760.95	10.30	2487	465.7
XSECTION 8	RUNOFF	1.92	5.19	---	9.22	1076	560.4
XSECTION 108	ADDHYD	7.26	4.79	1762.23	10.10	3491	480.9
XSECTION 109	ADDHYD	.00	4.79	---	.00	0	********
XSECTION 108	DIVERT	7.26	4.79	1762.23	10.10	3491	480.9
XSECTION 0	DIVERT	.00	.00	---	.00	0	********
XSECTION 107	REACH	7.26	4.79	1759.88	10.37	3476	478.8

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 4							
XSECTION 107	ADDHYD	20.05	3.85	1763.95	10.06	6796	339.0
STRUCTURE 2	RESVOR	20.05	3.28	1716.64	13.61	2855	142.4
RAINFALL OF 15.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.							
ALTERNATE 5 STORM 5							
XSECTION 101	RUNOFF	1.86	13.14	---	9.97	2475	1330.6
XSECTION 1	RUNOFF	1.20	12.99	---	9.40	1645	1370.8
XSECTION 1	ADDHYD	3.06	13.08	---	9.81	4079	1333.0
XSECTION 102	REACH	3.06	13.08	9.07	10.06	4073	1331.0
XSECTION 2	RUNOFF	1.24	12.39	---	9.34	1635	1318.5
XSECTION 2	ADDHYD	4.30	12.88	---	9.94	5654	1314.9
XSECTION 103	REACH	4.30	12.88	11.79	10.19	5646	1313.0
XSECTION 3	RUNOFF	1.85	13.14	---	9.66	2515	1359.5
XSECTION 3	ADDHYD	6.15	12.96	---	10.07	8107	1318.2
STRUCTURE 1	RESVOR	6.15	12.57	1803.90	10.91	7423	1207.0
XSECTION 104	DIVERT	6.15	1.89	.51	8.60F	115F	18.7
XSECTION 0	DIVERT	.00	1.89	---	10.91	7308	********
XSECTION 104	REACH	6.15	1.89	.51	10.00F	115F	18.7
XSECTION 4	RUNOFF	2.54	13.14	---	9.24	3572	1406.3
XSECTION 4	ADDHYD	8.69	5.18	---	9.24	3687	424.3
XSECTION 104	DIVERT	8.69	5.15	8.00	9.00F	3454F	397.5
XSECTION 0	DIVERT	.00	5.15	---	9.24	233	********
XSECTION 104	ADDHYD	.00	5.15	14.66	10.91	7308	********
XSECTION 106	REACH	8.69	5.15	5.62	9.00F	3454F	397.5
XSECTION 5	RUNOFF	2.00	13.43	---	9.13	2892	1446.0
XSECTION 5	ADDHYD	10.69	6.70	---	9.13	6346	593.6
XSECTION 106	DIVERT	10.69	6.70	8.54	9.10	6333	592.4
XSECTION 0	DIVERT	.00	6.70	---	9.15	47	********
XSECTION 6	RUNOFF	1.14	12.99	---	9.14	1601	1404.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 5							
XSECTION 6	ADDHYD	11.83	7.30	---	9.12	7901	667.9
XSECTION 106	ADDHYD	.00	7.30	9.47	10.91	7308	********
XSECTION 7	RUNOFF	.96	12.38	---	8.98	1313	1367.7
XSECTION 7	ADDHYD	12.79	7.68	---	9.09	9241	722.5
XSECTION 13	RUNOFF	.46	12.84	---	9.07	643	1397.8
XSECTION 113	REACH	.46	12.84	1769.05	9.89	600	1304.3
XSECTION 12	RUNOFF	.87	12.84	---	9.40	1180	1356.3
XSECTION 112	ADDHYD	1.33	12.84	1773.65	9.57	1765	1327.1
XSECTION 112	REACH	1.33	12.84	1773.49	10.23	1724	1296.2
XSECTION 11	RUNOFF	1.96	12.85	---	9.42	2655	1354.6
XSECTION 111	ADDHYD	3.28	12.85	1783.41	9.85	4293	1308.8
XSECTION 111	REACH	3.28	12.85	1783.41	9.85	4293	1308.8
XSECTION 10	RUNOFF	.67	12.84	---	9.67	895	1335.8
XSECTION 110	ADDHYD	3.95	12.85	---	9.81	5184	1312.4
XSECTION 110	DIVERT	3.95	8.49	---	7.60F	1915F	484.8
XSECTION 0	DIVERT	.00	8.49	---	9.81	3269	********
XSECTION 109	REACH	3.95	8.49	1774.23	9.00F	1915F	484.8
XSECTION 9	RUNOFF	1.39	13.43	---	9.24	1990	1431.7
XSECTION 109	ADDHYD	5.34	9.78	1781.91	9.24	3905	731.3
XSECTION 109	DIVERT	5.34	8.49	1776.67	7.60F	2546F	476.8
XSECTION 0	DIVERT	.00	8.49	---	9.24	1359	********
XSECTION 108	REACH	5.34	8.49	1761.03	7.60F	2546F	476.8
XSECTION 8	RUNOFF	1.92	13.71	---	9.11	2827	1472.4
XSECTION 108	ADDHYD	7.26	9.87	1764.66	9.11	5373	740.1
XSECTION 109	ADDHYD	.00	9.87	1784.42	9.66	4554	********
XSECTION 108	DIVERT	7.26	9.86	1764.50	9.00F	5253F	723.6
XSECTION 0	DIVERT	.00	9.86	---	9.11	120	********
XSECTION 107	REACH	7.26	9.86	1762.11	9.57	5251	723.3
XSECTION 107	ADDHYD	20.05	8.47	1772.98	9.20	14388	717.6
STRUCTURE 2	RESVOR	20.05	7.84	1722.34	11.69	10143	505.9

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION: INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS: Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1726	12.4	1689	12.6	4.77	1.00	.065	.978	.81?
103	2500		2157	12.4	2116	12.8	4.78	1.00	.061	.981	.82?
104	6700		112	24.6	112	24.8	1.57	1.53	.000	1.000	.73?
106	3700		2151	12.2	2151	12.2	1.13	1.57	.001	1.000	1.00?
113	6900		419	12.0	259	12.6	.34	1.41	.413	.618	.34
112	7700		757	12.4	558	13.0	.44	1.35	.232	.737	.32
111	2000		1498	12.2	1480	12.4	.37	1.38	.019	.988	.96?
109	2700		1885	12.4	1804	12.8	.34	1.40	.028	.957	.85?
108	2100		2406	12.6	2406	12.6	.85	1.40	.006	1.000	1.00?
107	5300		3852	12.2	3620	12.4	.54	1.38	.041	.940	.73?
ALTERNATE 5 STORM 4											
102	2500		1490	10.2	1489	10.4	4.77	1.00	.023	.999	.81?
103	2500		2032	10.2	2026	10.4	4.78	1.00	.023	.997	.81?
104	6700		115	10.8	115	12.2	1.57	1.53	.000	1.000	.73?
106	3700		1377	9.8	1377	9.8	1.06	1.58	.000	1.000	1.00?
113	6900		220	9.6	212	10.2	.29	1.46	.054	.963	.30
112	7700		626	10.0	598	10.6	.47	1.33	.059	.956	.30
111	2000		1508	10.2	1507	10.4	.37	1.38	.006	1.000	.96?
109	2700		1820	10.4	1818	10.6	.35	1.39	.008	.999	.84?
108	2100		2483	10.2	2483	10.2	.85	1.40	.002	1.000	1.00?
107	5300		3483	10.2	3475	10.4	.54	1.38	.011	.998	.71?
ALTERNATE 5 STORM 5											
102	2500		4079	9.8	4071	10.0	4.78	1.00	.023	.998	.82?
103	2500		5652	10.0	5646	10.2	4.78	1.00	.023	.999	.82?
104	6700		115	8.6	115	10.0	1.57	1.53	.000	1.000	.73?
106	3700		3454	9.0	3454	9.0	1.25	1.55	.000	1.000	1.00?
113	6900		641	9.0	599	9.8	.47	1.34	.054	.936	.34

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION: INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS: Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 5 STORM 5											
112	7700		1764	9.6	1724	10.2	.35	1.39	.034	.977	.40
111	2000		4292	9.8	4292	9.8	.26	1.44	.003	1.000	1.00?
109	2700		1915	7.6	1915	9.0	.34	1.40	.003	1.000	.85?
108	2100		2546	7.6	2546	7.6	.86	1.39	.001	1.000	1.00?
107	5300		5253	9.0	5251	9.6	.54	1.38	.006	1.000	.77?

```
8                    1751.      130.52     52.
8                    1752.      273.18     87.
8                    1753.      470.98     128.
8                    1754.      706.86     187.
8                    1755.      1005.62    240.
8                    1756.      1369.42    299.
8                    1757.      1801.8     364.
8                    1758.      2305.5     435.
8                    1759.      2892.8     512.
8                    1760.      3558.1     595.
8                    1761.      4316.04    684.
8                    1762.      5156.98    779.
9 ENDTBL
2 XSECTN   108       1.0
8                    1753.7     0.0        0.0
8                    1754.7     61.93      23.
8                    1755.7     209.35     52.
8                    1756.7     438.91     87.
8                    1757.7     757.01     128.
8                    1758.7     1167.41    175.
8                    1759.7     1678.56    228.
8                    1760.7     2302.39    287.
8                    1761.7     3038.91    352.
8                    1762.7     3894.74    435.
8                    1763.7     4647.76    512.
9 ENDTBL
2 XSECTN   109       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
2 XSECTN   111       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
2 XSECTN   112       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
```



```
2 XSECTN   113       1.0
8                    1763.6     0.0        0.0
8                    1764.6     27.47      23.
8                    1765.6     92.87      52.
8                    1766.6     194.7      87.
8                    1767.6     335.8      128.
8                    1768.6     503.22     187.
8                    1769.6     715.78     240.
8                    1770.6     974.81     299.
9 ENDTBL
3 STRUCT     01
8                    1791.94    0.00       0.0
8                    1793.      0.01       46.8
8                    1794.1     0.02       106.
8                    1794.5     26.3       130.
8                    1795.      74.4       161.2
8                    1795.14    91.2       170.7
8                    1796.      96.16      230.7
8                    1797.14    102.42     322.23
8                    1799.42    113.91     542.99
8                    1801.72    1650.      812.88
8                    1804.      7700.      1121.9
8                    1806.28    15200.     1470.09
8                    1808.57    26200.     1865.04
9 ENDTBL
3 STRUCT     02
8                    1696.      0.0        0.0
8                    1700.      40.8       172.1
8                    1701.4     42.8       273.25
8                    1704.      487.2      482.24
8                    1708.      553.6      871.3
8                    1710.      583.6      1101.52
8                    1710.5     590.8      1163.52
8                    1711.5     605.6      1294.09
8                    1712.2     616.       1390.2
8                    1712.5     620.       1432.05
8                    1712.6     624.       1446.11
8                    1713.5     858.       1578.77
8                    1714.5     1288.      1733.61
8                    1716.      2418.      1980.33
8                    1720.      7068.      2712.23
8                    1722.      9968.      3121.
8                    1724.      12868.     3530.
9 ENDTBL
6 RUNOFF 1 101       5 1.86     80.        1.21       1 0 0 1 0 1
6 RUNOFF 1   1       6 1.2      79.        .67        1 0 0 1 0 1
6 ADDHYD 4   1   5 6 7                                1 0 0 1 0 1
6 REACH  3 102   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   2       6 1.24     75.        .59        1 0 0 1 0 1
6 ADDHYD 4   2   5 6 7                                1 0 0 1 0 1
6 REACH  3 103   7   5 2500.                           0 0 0 0 0 0
6 RUNOFF 1   3       6 1.85     80.        .91        1 0 0 1 0 1
6 ADDHYD 4   3   5 6 7                                1 1 0 1 0 1
6 SAVMOV 5     1 7   6
6 RESVOR 2     1 6   7 1791.94                        1 1 0 1 0 1
6 DIVERT 6 104   7 4 1 115.     1.                    0 0 0 0 0 0
```

```
**********   *********80-80 LIST OF INPUT DATA (CONTINUED)**********************

 6 REACH  3 104   4   5 6700.                                  1 0 0 1 0 1
 6 RUNOFF 1   4       6 2.54        80.         .54          1 0 0 1 0 1
 6 ADDHYD 4   4   5 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 104   7 5 2 3454.       1.                        0 0 0 0 0 0
 6 ADDHYD 4 104   1 2 4                                       0 0 0 0 0 0
 6 REACH  3 106   5   3 3700.                                  1 0 0 1 0 1
 6 RUNOFF 1   5       6 2.          82.         .43          1 0 0 1 0 1
 6 ADDHYD 4   5   3 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 106   7 5 2 6296.       1.                        0 0 0 0 0 0
 6 RUNOFF 1   6       6 1.14        79.         .42          1 0 0 1 0 1
 6 ADDHYD 4   6   5 6 7                                       1 0 0 1 0 1
 6 SAVMOV 5   6   7   5
 6 ADDHYD 4 106   4 2 7                                       1 1 0 1 0 1
 6 SAVMOV 5 106   7   1
 6 RUNOFF 1   7       6 .96         75.         .23          1 0 0 1 0 1
 6 ADDHYD 4   7   5 6 7                                       1 1 0 1 0 1
 6 SAVMOV 5   7   7   2
 6 RUNOFF 1  13       5 .458        78.         .35          1 0 0 1 0 1
 6 REACH  3 113   5   6 6900.                                  1 0 0 1 0 1
 6 RUNOFF 1  12       5 .869        78.         .66          1 0 0 1 0 1
 6 ADDHYD 4 112   5 6 7                                       1 0 0 1 0 1
 6 REACH  3 112   7   5 7700.                                  1 0 0 1 0 1
 6 RUNOFF 1  11       6 1.957       78.         .68          1 0 0 1 0 1
 6 ADDHYD 4 111   5 6 7                                       1 0 0 1 0 1
 6 REACH  3 111   7   5 2000.                                  1 0 0 1 0 1
 6 RUNOFF 1  10       6 .67         78.         .89          1 0 0 1 0 1
 6 ADDHYD 4 110   5 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 110   7 5 3 1915.       1.                        0 0 0 0 0 0
 6 REACH  3 109   5   4 2700.                                  1 0 0 1 0 1
 6 RUNOFF 1   9       6 1.39        82.         .55          1 0 0 1 0 1
 6 ADDHYD 4 109   4 6 7                                       1 0 0 1 0 1
 6 DIVERT 6 109   7 5 4 2546.       1.                        0 0 0 0 0 0
 6 REACH  3 108   5   6 2100.                                  1 0 0 1 0 1
 6 RUNOFF 1   8       5 1.92        84.         .42          1 0 0 1 0 1
 6 ADDHYD 4 108   5 6 7                                       1 1 0 1 0 1
 6 ADDHYD 4 109   3 4 5                                       1 1 0 1 0 1
 6 SAVMOV 5 106   5   3
 6 DIVERT 6 108   7 5 4 5253.       1.                        0 0 0 0 0 0
 6 REACH  3 107   5   6 5300.                                  1 1 0 1 0 1
 6 SAVMOV 5 107   2   5
 6 ADDHYD 4 107   5 6 7                                       1 1 0 1 0 1
 6 SAVMOV 5     2 7   6
 6 RESVOR 2     2 6   7 1696.                                 1 1 0 1 0 1
   ENDATA
 7 INCREM 6             .20
 7 COMPUT 7 101       2             3.94        1.0          2 2  05  01
   ENDCMP 1
 7 COMPUT 7 101       2             7.06        1.0          5 2  05  04
   ENDCMP 1
 7 COMPUT 7 101       2             15.80       1.0          5 2  05  05
   ENDCMP 1
   ENDJOB 2

*********************************END OF 80-80 LIST*******************************
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TR20 ---------------------------------------------------------------  ------ SCS -
        SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBT20cP4 VERSION
09/18/**  ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNT2.04TEST
09:29:51                    PASS   1   JOB NO.   1                        PAGE   1


EXECUTIVE CONTROL  INCREM    MAIN TIME INCREMENT =    .200 HOURS


EXECUTIVE CONTROL  COMPUT    FROM XSECTION 101  TO STRUCTURE  2
    STARTING TIME =    .00       RAIN DEPTH =  3.94        RAIN DURATION =  1.00
    ANT. RUNOFF COND. = 2        MAIN TIME INCREMENT =    .200 HOURS
    ALTERNATE NO. = 5            STORM NO. = 1             RAIN TABLE NO. = 2


OPERATION RUNOFF    XSECTION 101

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
       12.58                          1010.6                        (RUNOFF)
       21.76                            50.9                        (RUNOFF)
       23.77                            43.5                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =     .00 CFS)
                  1.99 WATERSHED INCHES;    2390 CFS-HRS;     197.5 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     288    118     82     62     51     44     23      5

    DURATION(HRS)  18
    FLOW(CFS)       0


OPERATION RUNOFF    XSECTION   1

    PEAK TIME(HRS)              PEAK DISCHARGE(CFS)           PEAK ELEVATION(FEET)
       12.22                           900.0                        (RUNOFF)
       21.67                            32.7                        (RUNOFF)
       23.67                            28.1                        (RUNOFF)

    RUNOFF ABOVE BASEFLOW  (BASEFLOW =     .00 CFS)
                  1.91 WATERSHED INCHES;    1481 CFS-HRS;     122.4 ACRE-FEET.

    DURATION(HRS)   2      4      6      8     10     12     14     16
    FLOW(CFS)     129     69     51     39     32     28     14      1

    DURATION(HRS)  16
    FLOW(CFS)       0


OPERATION ADDHYD    XSECTION   1
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	1728.9	(NULL)
21.68	83.5	(NULL)
23.69	71.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.96 WATERSHED INCHES; 3870 CFS-HRS; 319.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	471	194	131	101	83	71	39	7

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	808.7	(RUNOFF)
19.31	36.6	(RUNOFF)
21.63	31.3	(RUNOFF)
23.63	27.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.62 WATERSHED INCHES; 1297 CFS-HRS; 107.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	113	63	46	36	30	26	6	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.48	2188.1	(NULL)
21.71	114.2	(NULL)
23.71	97.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 5167 CFS-HRS; 427.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	594	257	182	138	114	98	45	6

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.38	1217.7	(RUNOFF)
21.78	50.8	(RUNOFF)
23.77	43.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 2377 CFS-HRS; 196.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	255	114	79	61	51	44	23	3

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	3125.4	(NULL)
21.80	164.8	(NULL)
23.80	140.9	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
8.60 CFS	.31	.92	2.12	4.01	6.94	10.81	15.99	22.50
10.20 CFS	30	40	54	70	91	119	157	236
11.80 CFS	493	1170	2128	2895	3125	2936	2561	2147
13.40 CFS	1751	1414	1156	961	813	703	619	555
15.00 CFS	507	468	437	410	386	364	343	325
16.60 CFS	309	296	286	279	273	267	260	252
18.20 CFS	244	235	226	218	211	206	203	201
19.80 CFS	199	195	190	186	182	178	174	168
21.40 CFS	165	164	165	164	162	159	156	153
23.00 CFS	149	144	141	140	141	140	136	125
24.60 CFS	104	79	56	39	26	17	11	7
26.20 CFS	4.36	2.81	1.80	1.15	.74	.48		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.90 WATERSHED INCHES; 7544 CFS-HRS; 623.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	961	386	260	201	165	141	70	11

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.52	112.2	1799.08

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
11.80 CFS	.00	.01	.01	.02	57.27	93.53	96.99	99.54
13.40 CFS	102	103	104	105	106	106	107	107
15.00 CFS	107	108	108	108	109	109	109	109
16.60 CFS	109	110	110	110	110	110	110	110
18.20 CFS	110	111	111	111	111	111	111	111
19.80 CFS	111	111	111	111	111	112	112	112
21.40 CFS	112	112	112	112	112	112	112	112
23.00 CFS	112	112	112	112	112	112	112	112
24.60 CFS	112	112	112	112	112	112	112	112
26.20 CFS	112	112	111	111	111	111	111	111
27.80 CFS	111	111	111	111	111	110	110	110
29.40 CFS	110	110	110	110	110	110	110	109
31.00 CFS	109	109	109	109	109	109	109	109
32.60 CFS	109	109	108	108	108	108	108	108
34.20 CFS	108	108	108	108	108	107	107	107
35.80 CFS	107	107	107	107	107	107	107	107
37.40 CFS	106	106	106	106	106	106	106	106
39.00 CFS	106	106	106	105	105	105	105	105
40.60 CFS	105	105	105	105	105	105	104	104
42.20 CFS	104	104	104	104	104	104	104	104
43.80 CFS	104	103	103	103	103	103	103	103
45.40 CFS	103	103	103	103	102	102	102	102
47.00 CFS	102	102	102	102	102	101	101	101
48.60 CFS	101	101	101	101	101	101	100	100
50.20 CFS	100	100	100	100	100	100	100	99
51.80 CFS	99.30	99.19	99.08	98.97	98.86	98.74	98.63	98.52
53.40 CFS	98.41	98.30	98.19	98.08	97.97	97.86	97.74	97.63
55.00 CFS	97.52	97.41	97.30	97.19	97.08	96.97	96.86	96.76
56.60 CFS	96.65	96.54	96.43	96.32	96.21	96.09	95.96	95.83
58.20 CFS	95.70	95.57	95.43	95.30	95.17	95.04	94.91	94.78
59.80 CFS	94.66	94.53	94.40	94.27	94.14	94.01	93.88	93.75
61.40 CFS	93.63	93.50	93.37	93.24	93.12	92.99	92.86	92.74
63.00 CFS	92.61	92.48	92.36	92.23	92.10	91.98	91.85	91.73
64.60 CFS	91.60	91.48	91.35	91.23	89.14	86.58	84.08	81.66
66.20 CFS	79.31	77.02	74.80	72.87	71.04	69.25	67.51	65.81
67.80 CFS	64.15	62.54	60.96	59.43	57.93	56.48	55.06	53.67
69.40 CFS	52.32	51.00	49.72	48.47	47.25	46.06	44.90	43.77
71.00 CFS	42.67	41.60	40.55	39.53	38.54	37.57	36.62	35.70
72.60 CFS	34.80	33.93	33.07	32.24	31.43	30.64	29.87	29.12
74.20 CFS	28.38	27.67	26.97	26.30	25.82	25.36	24.91	24.46
75.80 CFS	24.02	23.59	23.17	22.75	22.34	21.94	21.55	21.16
77.40 CFS	20.78	20.41	20.04	19.68	19.33	18.98	18.64	18.31

79.00 CFS	17.98	17.66	17.34	17.03	16.73	16.43	16.13	15.84
80.60 CFS	15.56	15.28	15.00	14.73	14.47	14.21	13.96	13.71
82.20 CFS	13.46	13.22	12.98	12.75	12.52	12.30	12.07	11.86
83.80 CFS	11.65	11.44	11.23	11.03	10.83	10.64	10.45	10.26
85.40 CFS	10.08	9.89	9.72	9.54	9.37	9.20	9.04	8.88
87.00 CFS	8.72	8.56	8.41	8.26				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6170 CFS-HRS; 509.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	99	94	57	22

DURATION(HRS)	72	75
FLOW(CFS)	11	8 TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
24.77	112.2	.50

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.55 WATERSHED INCHES; 6168 CFS-HRS; 509.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	111	109	106	103	98	94	57	22

DURATION(HRS)	72	75
FLOW(CFS)	11	8 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	(RUNOFF)
19.31	83.4	(RUNOFF)
21.61	71.4	(RUNOFF)
23.61	61.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.99 WATERSHED INCHES; 3255 CFS-HRS; 269.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	260	145	108	83	70	61	31	3

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	(NULL)
19.36	194.3	(NULL)
21.61	183.1	(NULL)
23.61	173.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29

DURATION(HRS)	72	78
FLOW(CFS)	15	8 TRUNCATED

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	2179.9	4.13
19.36	194.3	.66
21.61	183.1	.62
23.61	173.4	.59

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.68 WATERSHED INCHES; 9423 CFS-HRS; 778.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	194	111	107	104	100	95	74	29

DURATION(HRS)	72	78
FLOW(CFS)	15	8 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	2048.6	(RUNOFF)
19.33	68.2	(RUNOFF)
21.56	59.0	(RUNOFF)
23.56	50.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.14 WATERSHED INCHES; 2762 CFS-HRS; 228.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	121	91	68	59	51	34	5

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.10	4157.5	(NULL)
19.34	262.5	(NULL)
21.58	242.0	(NULL)
23.58	224.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 12182 CFS-HRS; 1006.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	262	112	108	104	100	96	80	32

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	1030.8	(RUNOFF)
19.33	36.7	(RUNOFF)
21.55	31.9	(RUNOFF)
23.55	27.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.91 WATERSHED INCHES; 1408 CFS-HRS; 116.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	119	65	47	37	31	27	13	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.09	5213.0	(NULL)
19.34	299.2	(NULL)
21.58	273.9	(NULL)
23.58	251.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.78 WATERSHED INCHES; 13582 CFS-HRS; 1122.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	299	112	108	104	100	96	82	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION ADDHYD XSECTION 106

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
399 CFS-HRS; 1122.4 ACRE-FEET.

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.93	833.8	(RUNOFF)
16.90	38.4	(RUNOFF)
19.31	28.4	(RUNOFF)
20.31	25.0	(RUNOFF)
21.43	25.0	(RUNOFF)
22.30	21.7	(RUNOFF)
23.43	21.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.61 WATERSHED INCHES; 996 CFS-HRS; 82.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	84	46	35	28	24	20	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -3.0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.07	5926.2	(NULL)
19.33	327.6	(NULL)
21.56	298.5	(NULL)
23.56	272.7	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
7.60 CFS	.07	.64	1.12	2.62	5.55	7.58	13.30	18.66
9.20 CFS	25	36	43	57	68	87	113	133
10.80 CFS	182	221	297	410	898	3627	5784	5345
12.40 CFS	3395	2284	1618	1249	1045	893	815	732
14.00 CFS	677	638	601	580	554	536	517	494
15.60 CFS	479	454	437	424	411	405	403	403
17.20 CFS	397	386	379	367	357	347	335	329
18.80 CFS	328	327	327	327	326	315	307	303
20.40 CFS	302	300	289	281	284	294	298	289
22.00 CFS	281	278	277	275	264	255	258	269
23.60 CFS	272	263	255	217	158	129	118	114
25.20 CFS	113	112	112	112	112	112	112	112
26.80 CFS	112	111	111	111	111	111	111	111
28.40 CFS	111	111	111	110	110	110	110	110
30.00 CFS	110	110	110	110	110	110	109	109
31.60 CFS	109	109	109	109	109	109	109	109
33.20 CFS	109	108	108	108	108	108	108	108
34.80 CFS	108	108	108	107	107	107	107	107
36.40 CFS	107	107	107	107	107	107	106	106
38.00 CFS	106	106	106	106	106	106	106	106
39.60 CFS	106	105	105	105	105	105	105	105
41.20 CFS	105	105	105	105	104	104	104	104
42.80 CFS	104	104	104	104	104	104	104	103
44.40 CFS	103	103	103	103	103	103	103	103
46.00 CFS	103	103	103	102	102	102	102	102
47.60 CFS	102	102	102	102	101	101	101	101
49.20 CFS	101	101	101	101	100	100	100	100
50.80 CFS	100	100	100	100	100	99	99	99
52.40 CFS	99.12	99.01	98.90	98.79	98.67	98.56	98.45	98.34
54.00 CFS	98.23	98.12	98.01	97.90	97.79	97.68	97.57	97.46
55.60 CFS	97.34	97.23	97.12	97.01	96.90	96.80	96.69	96.58
57.20 CFS	96.47	96.36	96.25	96.13	96.00	95.88	95.74	95.61

58.80 CFS	95.48	95.35	95.22	95.09	94.96	94.83	94.70	94.57
60.40 CFS	94.44	94.32	94.19	94.06	93.93	93.80	93.67	93.55
62.00 CFS	93.42	93.29	93.16	93.04	92.91	92.78	92.65	92.53
63.60 CFS	92.40	92.28	92.15	92.02	91.90	91.77	91.65	91.52
65.20 CFS	91.40	91.27	89.72	87.43	84.99	82.57	80.19	77.89
66.80 CFS	75.64	73.63	71.74	69.93	68.17	66.45	64.78	63.15
68.40 CFS	61.56	60.01	58.50	57.03	55.59	54.19	52.83	51.50
70.00 CFS	50.21	48.94	47.71	46.51	45.34	44.20	43.09	42.00
71.60 CFS	40.95	39.92	38.91	37.93	36.98	36.05	35.14	34.26
73.20 CFS	33.39	32.55	31.74	30.94	30.16	29.40	28.66	27.94
74.80 CFS	27.24	26.55	26.02	25.54	25.08	24.63	24.18	23.75
76.40 CFS	23.33	22.91	22.50	22.09	21.70	21.31	20.92	20.55
78.00 CFS	20.18	19.82	19.46	19.11	18.77	18.43	18.10	17.78
79.60 CFS	17.46	17.15	16.84	16.54	16.24	15.95	15.66	15.38
81.20 CFS	15.11	14.84	14.57	14.31	14.05	13.80	13.55	13.31
82.80 CFS	13.07	12.84	12.60	12.38	12.16	11.94	11.73	11.52
84.40 CFS	11.31	11.10	10.91	10.71	10.52	10.33	10.14	9.96
86.00 CFS	9.78	9.61	9.44	9.27	9.10	8.94	8.78	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.77 WATERSHED INCHES; 14578 CFS-HRS; 1204.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	327	112	108	104	100	96	83	33

DURATION(HRS)	72	79
FLOW(CFS)	15	9 TRUNCATED

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.01	419.0	(RUNOFF)
16.90	19.6	(RUNOFF)
19.33	14.5	(RUNOFF)
21.52	12.6	(RUNOFF)
23.52	10.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.85 WATERSHED INCHES; 547 CFS-HRS; 45.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	15
FLOW(CFS)	45	25	18	14	12	11	4	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT 1.2%. ***

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.61	258.6	1767.05
21.99	12.2	1764.05
23.99	10.5	1763.98

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.83 WATERSHED INCHES; 542 CFS-HRS; 44.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	61	27	19	15	12	10	4	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.22	633.2	(RUNOFF)
21.67	23.3	(RUNOFF)
23.67	19.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1032 CFS-HRS; 85.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	90	49	35	27	23	20	8	0

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.30	770.6	1769.81
21.71	35.2	1764.72
23.71	30.1	1764.64

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1575 CFS-HRS; 130.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	175	76	55	42	35	30	13	1

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.04	558.7	1768.86

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 1574 CFS-HRS; 130.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	235	89	56	43	36	30	14	3

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.23	1395.6	(RUNOFF)
21.68	52.3	(RUNOFF)
23.68	44.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 2322 CFS-HRS; 191.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	207	110	78	62	52	44	18	1

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.28	1532.8	1772.75
21.59	88.5	1765.53
23.60	75.8	1765.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 3896 CFS-HRS; 322.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	515	207	140	107	88	75	33	6

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.49	1521.8	1772.71
21.79	88.5	1765.53
23.80	75.8	1765.34

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 3895 CFS-HRS; 321.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	507	208	140	107	88	75	33	6

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.37	405.0	(RUNOFF)
21.77	17.7	(RUNOFF)
23.76	15.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 794 CFS-HRS; 65.6 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	86	38	27	21	18	15	7	0

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.47	1914.9	(NULL)
21.79	106.2	(NULL)
23.79	91.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 4689 CFS-HRS; 387.5 ACRE-FEET.

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JOB TR-20
TITLE 000 SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBT20cP4.DAT
TITLE 000 ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNTN
 5 RAINFL 1            .5
 8          0.0        .008       .017       .026       .035
 8          .045       .055       .065       .076       .087
 8          .099       .112       .125       .14        .156
 8          .174       .194       .219       .254       .303
 8          .515       .583       .624       .654       .682
 8          .705       .727       .748       .767       .784
 8          .8         .816       .83        .844       .857
 8          .87        .882       .893       .905       .916
 8          .926       .936       .946       .955       .965
 8          .974       .983       .992       1.         1.
 9 ENDTBL
 5 RAINFL 2            .5
 8          0.0        .005       .011       .016       .022
 8          .028       .035       .041       .048       .056
 8          .063       .071       .081       .089       .098
 8          .109       .12        .133       .147       .163
 8          .181       .204       .235       .283       .663
 8          .735       .772       .799       .82        .838
 8          .854       .868       .88        .891       .902
 8          .912       .921       .929       .937       .945
 8          .952       .959       .965       .972       .978
 8          .984       .989       .995       1.         1.
 9 ENDTBL
 5 RAINFL 3            2.4
 8          0.0        .002       .004       .006       .008
 8          .01        .012       .014       .016       .018
 8          .02        .022       .025       .027       .03
 8          .032       .035       .038       .04        .043
 8          .046       .049       .052       .055       .058
 8          .061       .064       .069       .072       .076
 8          .08        .084       .089       .093       .098
 8          .102       .108       .114       .121       .127
 8          .133       .143       .153       .164       .174
 8          .184       .198       .215       .238       .275
 8          .707       .765       .793       .813       .829
 8          .841       .849       .856       .863       .871
 8          .879       .884       .889       .895       .9
 8          .905       .909       .913       .918       .922
 8          .926       .929       .932       .936       .939
 8          .942       .945       .948       .951       .954
 8          .957       .959       .962       .964       .967
 8          .969       .971       .973       .976       .978
 8          .98        .982       .984       .987       .989
 8          .991       .993       .996       .998       1.
 9 ENDTBL
 5 RAINFL 4            .25
 8          0.0        .006       .011       .017       .028
 8          .041       .057       .075       .09        .562
 8          .697       .763       .807       .839       .873
 8          .907       .937       .948       .958       .968
 8          .979       .984       .989       1.         1.
 9 ENDTBL
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 5 RAINFL 5            .5
 8          0.0        .004       .008       .011       .016
 8          .021       .027       .034       .044       .055
 8          .07        .088       .108       .137       .172
 8          .217       .273       .341       .42        .492
 8          .56        .618       .672       .717       .753
 8          .782       .807       .827       .845       .86
 8          .873       .885       .895       .903       .913
 8          .921       .93        .935       .943       .949
 8          .954       .96        .967       .972       .978
 8          .982       .989       .993       1.         1.
 9 ENDTBL
 2 XSECTN   102        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   103        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       93.8
 8                     3.         838.       175.5
 8                     4.         1288.      270.
 8                     5.         1782.      373.2
 8                     6.         2314.      484.4
 8                     7.         2875.      601.7
 8                     8.         3454.      722.9
 9 ENDTBL
 2 XSECTN   104        1.0
 8                     0.0        0.0        0.0
 8                     2.         450.       40.
 8                     3.         838.       60.
 8                     4.         1288.      80.
 8                     5.         1782.      120.
 8                     6.         2314.      130.
 8                     7.         2875.      140.
 8                     8.         3454.      160.
 9 ENDTBL
 2 XSECTN   106        1.0
 8                     0.0        0.0        0.0
 8                     1.5        441.       45.
 8                     2.5        995.       75.
 8                     3.5        1682.      105.
 8                     4.5        2468.      135.
 8                     5.5        3339.      165.
 8                     6.5        4272.      195.
 8                     7.5        5258.      225.
 8                     8.5        6296.      255.
 9 ENDTBL
 2 XSECTN   107        1.0
 8                     1749.      0.0        0.0
 8                     1750.      38.53      23.
```

	454	173.	12.13	23.	6.	2.	.18		
2 COMBINED AT	C119	809.	12.13	121.	35.	14.	1.10		
ROUTED TO	R454	782.	12.20	121.	35.	14.	1.10	3.70	12.20
HYDROGRAPH AT	415	620.	12.17	85.	24.	9.	.61		
HYDROGRAPH AT	RT385	384.	12.23	47.	13.	5.	.00		
ROUTED TO	RR395	340.	12.57	47.	13.	5.	.00	2.24	12.57
3 COMBINED AT	415C	1571.	12.20	252.	71.	27.	1.71		
ROUTED TO	R415	1549.	12.27	252.	71.	27.	1.71	6.42	12.27
HYDROGRAPH AT	455	1509.	12.13	160.	48.	17.	1.11		
DIVERSION TO	BS455	1509.	12.60	140.	37.	13.	1.11		
HYDROGRAPH AT	D455	324.	12.60	35.	11.	4.	1.11		
HYDROGRAPH AT	RT455	1509.	12.13	140.	37.	13.	.00		
ROUTED TO	SR455	25.	10.27	25.	25.	13.	.00		
2 COMBINED AT	C455	349.	12.60	60.	36.	17.	1.11		
3 COMBINED AT	455C	8008.	12.60	1590.	566.	280.	30.22		
ROUTED TO	SR440	373.	15.10	363.	309.	191.	30.22	580.13	15.10
ROUTED TO	RR455	373.	15.53	363.	309.	190.	30.22	2.44	16.53
HYDROGRAPH AT	456	507.	12.07	39.	11.	4.	.26		
DIVERSION TO	BASIN1	207.	12.07	9.	2.	1.	.26		
HYDROGRAPH AT	DIV1	300.	12.07	30.	8.	3.	.26		
DIVERSION TO	WA30	60.	12.07	10.	4.	1.	.26		
HYDROGRAPH AT	DIV2	240.	12.07	19.	5.	2.	.26		
ROUTED TO	R456	227.	12.13	19.	5.	2.	.26	11.86	12.13
HYDROGRAPH AT	457	289.	12.07	22.	6.	2.	.19		
2 COMBINED AT	C101	505.	12.10	42.	11.	4.	.45		
DIVERSION TO	BASIN2	194.	12.10	9.	2.	1.	.45		
HYDROGRAPH AT	DIV3	311.	12.10	33.	9.	3.	.45		

HYDROGRAPH AT	RTDIV3	194.	12.10	9.	2.	1.	.00		
ROUTED TO	RPDIV3	2.	11.87	2.	2.	1.	.00		
2 COMBINED AT	CDIV3	313.	12.10	34.	10.	4.	.45		
ROUTED TO	R101	311.	12.10	34.	10.	4.	.45	12.09	12.10
HYDROGRAPH AT	458	384.	12.03	28.	7.	3.	.19		
2 COMBINED AT	C103	682.	12.07	61.	17.	6.	.64		
ROUTED TO	R103	678.	12.07	61.	17.	6.	.64	12.24	12.07
HYDROGRAPH AT	RT30	69.	12.07	10.	4.	1.	.00		
ROUTED TO	R30	69.	12.10	10.	4.	1.	.00	10.93	12.10
HYDROGRAPH AT	RTB1	207.	12.07	9.	2.	1.	.00		
ROUTED TO	B1	42.	12.23	9.	2.	1.	.00	4.56	12.23
ROUTED TO	RB1	42.	12.30	9.	2.	1.	.00	10.79	12.30
2 COMBINED AT	CDIV	91.	12.20	19.	6.	2.	.00		
HYDROGRAPH AT	459	47.	12.03	3.	1.	0.	.03		
2 COMBINED AT	C52	123.	12.10	22.	7.	2.	.03		
ROUTED TO	R52	121.	12.17	22.	7.	2.	.03	11.34	12.17
HYDROGRAPH AT	460	233.	12.07	21.	6.	2.	.14		
2 COMBINED AT	C102	341.	12.07	43.	13.	5.	.17		
ROUTED TO	BASIN3	73.	12.67	43.	13.	5.	.17	1805.42	12.67
ROUTED TO	R3	73.	12.80	43.	13.	5.	.17	10.35	12.80
HYDROGRAPH AT	461	174.	12.10	18.	5.	2.	.12		
2 COMBINED AT	C104	229.	12.10	61.	18.	7.	.29		
2 COMBINED AT	C106	904.	12.07	122.	35.	13.	.93		
ROUTED TO	R106	867.	12.13	122.	35.	13.	.93	12.49	12.13
HYDROGRAPH AT	462	585.	12.07	44.	12.	4.	.30		
2 COMBINED AT	C56	1380.	12.10	167.	47.	18.	1.23		

	442	112.	12.10	10.	3.	1.	.10		
2 COMBINED AT	C67	205.	12.10	17.	5.	2.	.19		
DIVERSION TO	BASIN4	130.	12.10	7.	2.	1.	.19		
HYDROGRAPH AT	DIV6	75.	12.10	10.	3.	1.	.19		
HYDROGRAPH AT	RTDIV6	130.	12.10	7.	2.	1.	.00		
ROUTED TO	RFDIV6	1.	11.87	1.	1.	1.	.00		
2 COMBINED AT	CDIV6	76.	12.10	11.	4.	2.	.19		
HYDROGRAPH AT	443	157.	12.07	16.	4.	1.	.08		
DIVERSION TO	WSH66	78.	12.07	12.	3.	1.	.08		
HYDROGRAPH AT	DIV66	79.	12.07	3.	1.	0.	.08		
ROUTED TO	R113	78.	12.07	3.	1.	0.	.08	10.94	12.07
2 COMBINED AT	C114	153.	12.07	14.	5.	3.	.27		
HYDROGRAPH AT	444	87.	12.03	5.	1.	0.	.04		
ROUTED TO	R58	80.	12.07	5.	1.	0.	.04	11.06	12.07
HYDROGRAPH AT	445	325.	12.03	20.	5.	2.	.19		
2 COMBINED AT	C107	402.	12.03	25.	6.	2.	.23		
ROUTED TO	R107	400.	12.07	25.	6.	2.	.23	12.28	12.07
HYDROGRAPH AT	RTB2	102.	12.07	7.	2.	1.	.00		
ROUTED TO	RSPLIT	101.	12.07	7.	2.	1.	.00	11.20	12.07
HYDROGRAPH AT	446	69.	12.03	6.	2.	1.	.04		
3 COMBINED AT	C108	669.	12.07	38.	10.	4.	.27		
DIVERSION TO	WSH404	35.	12.07	8.	2.	1.	.27		
HYDROGRAPH AT	DIV5	634.	12.07	31.	8.	3.	.27		
ROUTED TO	R109	617.	12.10	31.	8.	3.	.27	11.58	12.10
HYDROGRAPH AT	447	149.	12.07	13.	4.	1.	.09		
HYDROGRAPH AT	RT404	35.	11.67	8.	2.	1.	.00		
ROUTED TO	R404	35.	11.83	8.	2.	1.	.00	10.59	11.83

3 COMBINED AT	C110	700.	12.07	51.	14.	5.	.36		
ROUTED TO	R110	696.	12.07	51.	14.	5.	.36	11.78	12.07
2 COMBINED AT	C115	848.	12.07	56.	19.	7.	.63		
ROUTED TO	R115	849.	12.10	56.	19.	7.	.63	11.98	12.10
HYDROGRAPH AT	448	94.	12.03	6.	2.	1.	.05		
HYDROGRAPH AT	449	86.	12.03	5.	1.	1.	.05		
2 COMBINED AT	C6364	179.	12.03	12.	3.	1.	.09		
ROUTED TO	R6364	149.	12.17	12.	3.	1.	.09	11.00	12.17
HYDROGRAPH AT	450	67.	12.20	7.	2.	1.	.07		
HYDROGRAPH AT	451	19.	12.17	2.	1.	0.	.03		
HYDROGRAPH AT	RT66	78.	11.87	12.	3.	1.	.00		
HYDROGRAPH AT	452	66.	12.03	5.	1.	0.	.04		
3 COMBINED AT	C6466	144.	12.03	17.	5.	2.	.04		
ROUTED TO	R6566	139.	12.10	17.	5.	2.	.04	11.17	12.10
4 COMBINED AT	C116	368.	12.17	38.	10.	4.	.23		
ROUTED TO	BASIN6	167.	12.47	38.	10.	4.	.23	4.53	12.47
ROUTED TO	R116	166.	12.53	38.	10.	4.	.23	10.57	12.53
HYDROGRAPH AT	453	67.	12.10	7.	2.	1.	.06		
2 COMBINED AT	C117	188.	12.47	45.	12.	4.	.29		
2 COMBINED AT	C118	951.	12.10	110.	31.	12.	.92		
ROUTED TO	R118	945.	12.10	110.	31.	12.	.92	12.19	12.10
DIVERSION TO	BASIN6	304.	12.10	13.	3.	1.	.92		
HYDROGRAPH AT	DIV7	640.	12.10	97.	28.	10.	.92		
HYDROGRAPH AT	RTDIV7	304.	12.10	13.	3.	1.	.00		
ROUTED TO	RFDIV7	1.	11.93	1.	1.	1.	.00		
2 COMBINED AT	CDIV7	642.	12.10	98.	28.	11.	.92		
HYDROGRAPH AT									

	RT340	1657.	12.17	103.	28.	10.	.00		
ROUTED TO	SR340	19.	8.63	19.	19.	10.	.00		
3 COMBINED AT	C340	4374.	12.27	694.	293.	168.	22.00		
HYDROGRAPH AT	RT350	668.	12.30	58.	15.	5.	.00		
ROUTED TO	RR350	593.	12.43	58.	15.	5.	.00	2.52	12.43
HYDROGRAPH AT	355	561.	12.33	78.	20.	7.	.66		
2 COMBINED AT	C355	1104.	12.40	136.	35.	13.	.66		
ROUTED TO	R355	1004.	12.70	136.	35.	13.	.66	2.93	12.70
HYDROGRAPH AT	360	563.	12.23	94.	28.	10.	.67		
DIVERSION TO	BS360	563.	12.50	53.	14.	5.	.67		
HYDROGRAPH AT	D360	431.	12.50	48.	13.	5.	.67		
HYDROGRAPH AT	RT360	563.	12.23	53.	14.	5.	.00		
ROUTED TO	SR360	10.	9.43	10.	10.	5.	.00		
4 COMBINED AT	360C	4589.	12.30	887.	351.	191.	33.33		
HYDROGRAPH AT	370	554.	12.30	38.	24.	9.	.67		
HYDROGRAPH AT	395	198.	12.23	27.	7.	3.	.20		
2 COMBINED AT	370C	946.	12.30	115.	31.	11.	.87		
ROUTED TO	R370	743.	12.63	115.	31.	11.	.87	3.72	12.63
HYDROGRAPH AT	380	759.	12.27	112.	30.	11.	.97		
DIVERSION TO	BS380	759.	12.43	55.	14.	5.	.97		
HYDROGRAPH AT	D380	631.	12.43	60.	16.	6.	.97		
HYDROGRAPH AT	RT380	759.	12.27	56.	14.	5.	.00		
ROUTED TO	SR380	10.	11.17	10.	10.	5.	.00		
4 COMBINED AT	380C	5423.	12.50	1071.	405.	213.	25.17		
HYDROGRAPH AT	390	501.	12.03	36.	10.	4.	.24		
DIVERSION TO	BS390	96.	12.03	6.	2.	1.	.24		
HYDROGRAPH AT	D390	501.	12.03	33.	9.	3.	.24		
HYDROGRAPH AT	RT390	96.	11.70	6.	2.	1.	.00		
ROUTED TO	SR390	1.	.63	1.	1.	1.	.00		
2 COMBINED AT	390C	602.	12.03	34.	10.	4.	.24		
ROUTED TO	RR390	369.	12.47	34.	10.	4.	.24	2.39	12.47
HYDROGRAPH AT	400	400.	12.23	54.	15.	5.	.62		
DIVERSION TO	BS400	300.	12.23	10.	3.	1.	.62		
HYDROGRAPH AT	D400	400.	12.23	46.	12.	4.	.62		
HYDROGRAPH AT	RT400	300.	12.10	10.	3.	1.	.00		
ROUTED TO	SR400	2.	8.47	2.	2.	1.	.00		
2 COMBINED AT	C400	402.	12.23	48.	14.	5.	.62		
3 COMBINED AT	400C	5968.	12.60	1162.	429.	222.	26.03		
HYDROGRAPH AT	385	641.	12.23	78.	21.	8.	.52		
DIVERSION TO	SF385	384.	12.23	47.	13.	5.	.52		
HYDROGRAPH AT	D385	256.	12.23	31.	9.	3.	.52		
ROUTED TO	385R	215.	12.70	31.	9.	3.	.52	1.95	12.70
HYDROGRAPH AT	420	849.	12.20	104.	29.	11.	.85		
DIVERSION TO	BS420	294.	12.20	14.	4.	2.	.85		
HYDROGRAPH AT	D420	849.	12.20	96.	25.	9.	.85		
HYDROGRAPH AT	RT420	294.	11.93	14.	4.	2.	.00		
ROUTED TO	SR420	13.	10.90	12.	4.	2.	.00		
4 COMBINED AT	420C	6586.	12.60	1286.	464.	235.	27.40		
HYDROGRAPH AT	440	192.	12.03	13.	4.	1.	.08		
ROUTED TO	R70	187.	12.07	13.	4.	1.	.08	11.42	12.07
HYDROGRAPH AT	441	17.	12.03	1.	0.	0.	.01		
2 COMBINED AT	C108	204.	12.07	15.	4.	1.	.09		
DIVERSION TO	SPLIT	102.	12.07	7.	2.	1.	.09		
HYDROGRAPH AT	DIV4	102.	12.07	7.	2.	1.	.09		
ROUTED TO	R108	94.	12.13	7.	2.	1.	.09	11.00	12.13
HYDROGRAPH AT									

HYDROGRAPH AT	140	706.	12.13	71.	19.	7.	.60		
HYDROGRAPH AT	150	628.	12.17	54.	14.	5.	.41		
ROUTED TO	R150	601.	12.23	54.	14.	5.	.41	3.01	12.23
ROUTED TO	R152	560.	12.33	54.	14.	5.	.41	1.94	12.33
HYDROGRAPH AT	160	244.	12.40	40.	10.	4.	.37		
HYDROGRAPH AT	180	895.	12.37	104.	26.	9.	1.00		
5 COMBINED AT	180C	8088.	12.30	981.	325.	143.	12.34		
HYDROGRAPH AT	210	951.	12.20	89.	23.	8.	.58		
ROUTED TO	R210	896.	12.27	89.	23.	8.	.58	2.69	12.27
HYDROGRAPH AT	240	1581.	12.30	177.	45.	16.	1.40		
2 COMBINED AT	240C	2455.	12.30	266.	68.	25.	1.98		
ROUTED TO	SR240	755.	12.77	219.	67.	21.	1.98	8.30	12.77
HYDROGRAPH AT	220	1234.	12.17	110.	28.	10.	.73		
2 COMBINED AT	220C	1305.	12.20	327.	86.	31.	2.71		
ROUTED TO	SR220	1075.	12.47	320.	83.	30.	2.71	6.12	12.47
HYDROGRAPH AT	190	1552.	12.17	131.	35.	13.	.92		
ROUTED TO	R190	1496.	12.23	131.	35.	13.	.92	3.26	12.23
ROUTED TO	R192	1412.	12.30	131.	35.	13.	.92	3.59	12.30
HYDROGRAPH AT	200	886.	12.17	77.	21.	8.	.54		
3 COMBINED AT	200C	3018.	12.27	524.	138.	50.	4.16		
ROUTED TO	SR200	2865.	12.37	519.	135.	49.	4.16	7.17	12.37
ROUTED TO	200SR	2250.	12.57	398.	104.	38.	4.16	9.07	12.57
2 COMBINED AT	C180	8088.	12.30	1375.	429.	180.	16.50		
ROUTED TO	SR180	129.	20.93	129.	129.	101.	16.50	705.74	21.20
ROUTED TO	R180	129.	21.07	129.	129.	101.	16.50	1.63	21.30

HYDROGRAPH AT	260	450.	12.10	47.	13.	5.	.27		
2 COMBINED AT	260C	452.	12.10	152.	135.	106.	16.76		
ROUTED TO	R260	427.	12.20	152.	135.	106.	16.76	2.92	12.20
HYDROGRAPH AT	280	520.	12.10	46.	13.	5.	.30		
2 COMBINED AT	280C	912.	12.13	194.	146.	110.	17.07		
ROUTED TO	R280	871.	12.20	193.	146.	110.	17.07	4.27	12.20
HYDROGRAPH AT	300	985.	12.20	123.	33.	12.	.99		
2 COMBINED AT	300C	1856.	12.20	313.	176.	122.	18.06		
ROUTED TO	R300	1816.	12.27	312.	176.	122.	18.06	5.15	12.27
ROUTED TO	RR300	1779.	12.33	311.	176.	121.	18.06	5.35	12.33
HYDROGRAPH AT	350	1336.	12.20	116.	30.	11.	.97		
DIVERSION TO	SD350	668.	12.20	58.	15.	5.	.97		
HYDROGRAPH AT	D350	668.	12.20	58.	15.	5.	.97		
ROUTED TO	350R	596.	12.40	58.	15.	5.	.97	2.53	12.40
HYDROGRAPH AT	310	426.	12.33	56.	14.	5.	.56		
2 COMBINED AT	C310	998.	12.37	114.	29.	10.	1.53		
ROUTED TO	R310	888.	12.70	114.	29.	10.	1.53	2.89	12.70
HYDROGRAPH AT	320	1075.	12.20	137.	38.	14.	.97		
DIVERSION TO	DS320	425.	12.20	21.	6.	2.	.97		
HYDROGRAPH AT	D320	1075.	12.20	124.	32.	12.	.97		
HYDROGRAPH AT	RT320	425.	11.93	21.	6.	2.	.00		
ROUTED TO	SR320	4.	3.93	4.	4.	2.	.00		
4 COMBINED AT	C320	2898.	12.30	553.	241.	146.	20.55		
HYDROGRAPH AT	340	1657.	12.17	209.	61.	22.	1.46		
DIVERSION TO	DS340	1657.	12.27	103.	28.	10.	1.45		
HYDROGRAPH AT	D340	1519.	12.27	123.	33.	12.	1.45		
HYDROGRAPH AT									

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WARNING --- ROUTED OUTFLOW (    904.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    862.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    899.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    931.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    938.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    924.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    894.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
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WARNING --- ROUTED OUTFLOW (    924.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    929.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    914.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
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WARNING --- ROUTED OUTFLOW (    891.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
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WARNING --- ROUTED OUTFLOW (    921.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    905.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    874.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    887.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    911.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    912.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    896.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    865.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    882.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (    904.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
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WARNING --- ROUTED OUTFLOW (   1323.) IS GREATER THAN MAXIMUM OUTFLOW (   1317.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1418.) IS GREATER THAN MAXIMUM OUTFLOW (   1317.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1453.) IS GREATER THAN MAXIMUM OUTFLOW (   1317.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1423.) IS GREATER THAN MAXIMUM OUTFLOW (   1317.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1340.) IS GREATER THAN MAXIMUM OUTFLOW (   1317.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1373.) IS GREATER THAN MAXIMUM OUTFLOW (   1317.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1412.) IS GREATER THAN MAXIMUM OUTFLOW (   1317.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1394.) IS GREATER THAN MAXIMUM OUTFLOW (   1317.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1326.) IS GREATER THAN MAXIMUM OUTFLOW (   1317.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (   1091.) IS GREATER THAN MAXIMUM OUTFLOW (   1082.) IN STORAGE-OUTFLOW TABLE
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
WARNING --- ROUTED OUTFLOW (     38.) IS GREATER THAN MAXIMUM OUTFLOW (     37.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (     40.) IS GREATER THAN MAXIMUM OUTFLOW (     37.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (     42.) IS GREATER THAN MAXIMUM OUTFLOW (     37.) IN STORAGE-OUTFLOW TABLE
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WARNING --- ROUTED OUTFLOW (     41.) IS GREATER THAN MAXIMUM OUTFLOW (     37.) IN STORAGE-OUTFLOW TABLE
WARNING --- ROUTED OUTFLOW (     40.) IS GREATER THAN MAXIMUM OUTFLOW (     37.) IN STORAGE-OUTFLOW TABLE
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WARNING --- ROUTED OUTFLOW (     38.) IS GREATER THAN MAXIMUM OUTFLOW (     37.) IN STORAGE-OUTFLOW TABLE
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	10	1037.	12.27	126.	35.	13.	.70		
+	ROUTED TO	R10	966.	12.40	126.	35.	13.	.70		
+									3.66	12.40
+	ROUTED TO	R12	904.	12.60	126.	35.	13.	.70		
+									3.05	12.60
+	HYDROGRAPH AT	20	1076.	12.43	146.	37.	13.	1.12		
+	2 COMBINED AT	C20	1824.	12.53	272.	71.	26.	1.82		
+	ROUTED TO	R20	1822.	12.57	272.	71.	26.	1.82		
+									3.99	12.57
+	HYDROGRAPH AT	40	2912.	12.30	288.	76.	27.	2.23		
+	HYDROGRAPH AT	60	1739.	12.40	257.	69.	25.	1.75		
+	3 COMBINED AT	60C	5915.	12.37	817.	216.	78.	5.80		
+	ROUTED TO	SR60	106.	14.40	105.	102.	67.	5.80		
+									797.84	14.43
+	ROUTED TO	R60	106.	14.50	105.	102.	57.	5.80		
+									2.74	14.50
+	ROUTED TO	RR60	106.	14.53	105.	102.	67.	5.80		
+									2.66	14.57
+	HYDROGRAPH AT	80	2085.	12.27	203.	53.	19.	1.48		
+	2 COMBINED AT	80C	2085.	12.27	291.	149.	76.	7.28		
+	ROUTED TO	R80	2056.	12.27	291.	149.	76.	7.28		
+									4.72	12.27
+	HYDROGRAPH AT	100	447.	12.20	64.	17.	6.	.48		
+	2 COMBINED AT	100C	2494.	12.27	354.	165.	82.	7.76		
+	ROUTED TO	R100	2488.	12.30	354.	165.	82.	7.76		
+									3.54	12.30
+	HYDROGRAPH AT	120	3575.	12.27	367.	99.	36.	2.20		
+	2 COMBINED AT	120C	6051.	12.27	713.	257.	118.	9.96		
+	ROUTED TO	R120	5976.	12.30	713.	257.	118.	9.96		
+									6.05	12.30

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1281                .<-------   WA30
1279              RT30
                    V
                    V
1282              R30
                    .
1290                .          .<-------  BASIN1
1288                .        RB1
                    .          V
                    .          V
1291                .         B1
                    .          V
                    .          V
1298                .        RB1
                    .          .
                    .          .
1304              CDIV............
                    .
                    .
1307                .         459
                    .          .
                    .          .
1317              C52............
                    V
                    V
1320              R52
                    .
                    .
1326                .         460
                    .          .
                    .          .
1336              C102...........
                    V
                    V
1339            BASIN3
                    V
                    V
1346              R3
                    .
                    .
1352                .         461
                    .          .
                    .          .
1362              C104...........
                    .
                    .
1365          C106............
                V
                V
1368          R106
                .
                .
1374              .         462
                    .
                    .
1384          C56............
                .
                .
1387              .         480
                    .
                    .
1402                .------->  BS480
1397              D480
                    .
                    .
1407                .          .<-------  BS480
1405                .       RT480
                    .          V
                    .          V
1408                .       SR480
                    .          .
                    .          .
1414              C480...........
                    .
                    .
1417      480C......................
            V
            V
1420      R480
            V
            V
1426     RR480
            .
```

```
1432                .         500
                    .          .
                    .          .
1442        500C............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*************************************
*                                   *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1) *
*            JUN  1998              *
*          VERSION 4.1              *
*                                   *
* RUN DATE  31OCT00  TIME  17:03:12 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*  HYDROLOGIC ENGINEERING CENTER    *
*        609 SECOND STREET          *
*     DAVIS, CALIFORNIA 95616       *
*        (916) 756-1104             *
*                                   *
*************************************
```

EXISTING LAND USE CALCULATIONS WERE BASED ON 1 YR. FROM 11/5/99
FOR LAS SENDAS AND LANDISCOR JAN.1999 AERIAL PHOTOGRAPHS

ALL DAMS WERE ANALYZED WITH NO STORAGE BELOW PRINCIPLE SPILLWAY ELEVATIONS

A CONSERVATIVE ESTIMATE WAS USED FOR THE LOCATION OF THE CENTROID FOR
PRECIPITATION VALUES

ALL CHANNEL ROUTING INFORMATION WAS OBTAINED FROM MCFCD SPOOK HILL SIGNAL
BUTTE AND BULLDOG FLOODWAY PLANS

UPDATE TO EXISTING CONDITION 24-HR 100-YR MODEL RUN BASED ON RE-ALIGNMENT
OF SUB-BASIN BOUNDARIES FOR SUB-BASINS 385 (REDUCED) & 415 (ENLARGED)
UPDATE BASED ON INFORMATION FROM 2' CONTOUR MAPPING.

ANALYSIS PERFORMED BY WOOD/PATEL; RH; 10/10/00 FILE: S24CE30X.DAT

DDM MCUHP1 SPOOK HILL AMDP - EXISTING CONDITIONS MODEL - 100YR, 24HR STORM

```
 20 IO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT        HYDROGRAPH TIME DATA
                     NMIN          2  MINUTES IN COMPUTATION INTERVAL
                    IDATE      1   0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ       2000  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE      3   0  ENDING DATE
                   NDTIME       1838  ENDING TIME
                    ICENT         19  CENTURY MARK

              COMPUTATION INTERVAL     .03 HOURS
                  TOTAL TIME BASE   66.63 HOURS

        ENGLISH UNITS
            DRAINAGE AREA          SQUARE MILES
            PRECIPITATION DEPTH    INCHES
            LENGTH, ELEVATION      FEET
            FLOW                   CUBIC FEET PER SECOND
            STORAGE VOLUME         ACRE-FEET
            SURFACE AREA           ACRES
            TEMPERATURE            DEGREES FAHRENHEIT

WARNING --- ROUTED OUTFLOW (    904.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    944.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    956.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    945.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    916.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    872.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    902.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    938.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    947.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (    934.) IS GREATER THAN MAXIMUM OUTFLOW (    862.) IN STORAGE-OUTFLOW TABLE
```

```
954                 R110
960        C115.............
           V
           V
963        R115

970                 448
980                           449
990                 C6364.............
                    V
                    V
993                 R6364

999                           450
1009                                    451
1021                                                  .<-------   WSH66
1019                                              RT66
1022                                                            452
1032                                              C6466.............
                                                  V
                                                  V
1035                                              R6566
1041                C116.................................
                    V
                    V
1044                BASIN6
                    V
                    V
1051                R116

1057                          453

1067                C117.............

1070       C118.............
           V
           V
1073       R118

1082                .-------> BASIN6
1079       DIV7

1087                        .<-------  BASIN6
1085                RTDIV7
                    V
                    V
1088                RFDIV7

1094       CDIV7.............

1097                  454

1107       C119.............
           V
           V
1110       R454
```

```
1117                  415

1129                                        .<-------   SP385
1127                                  RT385
                                        V
                                        V
1130                                  RR385

1137       415C........................
           V
           V
1140       R415

1147                  455

1162                                  .------->   BS455
1157                D455

1167                                        .<-------   BS455
1166                                  RT455
                                        V
                                        V
1168                                  SR455

1174                D456.............

1177       456C........................
           V
           V
1180       SR440
           V
           V
1189       RR455

1195         456

1208                .------->  BASIN1
1205       DIV1

1214                .------->    WA30
1211       DIV2
           V
           V
1217       R456

1223                  457

1233       C101............

1239                .------->  BASIN2
1236       DIV3

1244                        .<-------  BASIN2
1242                RTDIV3
                      V
                      V
1245                RFDIV3

1251       CDIV3............
           V
           V
1254       R101

1260                  458

1270       C103............
           V
           V
1273       R103
```

```
639                                  V
                                  SR380
                                     .
645   380C...................................
                                     .
648          390                     .
                                     .
662                  .-------> BS390 .
658          D390                    .
                                     .
667                                  .<------- BS390
665                           RT390  .
                                  V  .
                                  V  .
668                           SR390  .
                                     .
674          390C...........         .
                 V                   .
                 V                   .
677          RR390                   .
                                     .
684                   400            .
                                     .
698                                  .-------> BS400
694                           D400   .
                                     .
703                                  .<------- BS400
701                                  .
                                  RT400
                                     V
                                     V
704                                  .
                                  SR400
                                     .
710                           C400...........
                                     .
713   400C...................................
                                     .
716          385                     .
                                     .
728                  .-------> SF385 .
726          D385                    .
                 V                   .
                 V                   .
731          385R                    .
                                     .
738                   420            .
                                     .
752                                  .-------> BS420
748                           D420   .
                                     .
757                                  .<------- BS420
755                                  .
                                  RT420
                                     V
                                     V
759                                  .
                                  SR420
                                     .
764   420C...................................
                                     .
767          440                     .
                 V                   .
                 V                   .
777          R70                     .
                                     .
783                   441            .
                                     .
793          C108...........         .
                                     .
```

```
798                  .-------> SPLIT
796          DIV4                    .
                 V                   .
                 V                   .
801          R108                    .
                                     .
807                   442            .
                                     .
817          C87............         .
                                     .
823                  .-------> BASIN4 .
820          DIV6                    .
                                     .
828                                  .<------- BASIN4
826                           RTDIV6 .
                                  V  .
                                  V  .
829                           RFDIV6 .
                                     .
835          CDIV6..........         .
                                     .
838                   443            .
                                     .
851                                  .-------> WSH66
848                           DIV66  .
                                  V  .
                                  V  .
854                           R113   .
                                     .
860          C114...........         .
                                     .
863                   444            .
                                  V  .
                                  V  .
873                           R68    .
                                     .
879                                  .       445
                                     .        .
889                           C107...........
                                  V  .
                                  V  .
892                           R107   .
                                     .
900                                  .<------- SPLIT
898                                  .       RTB2
                                     .         V
                                     .         V
901                                  .     RSPLIT
                                     .
907                                  .        446
                                     .
917                           C109...........
                                     .
923                                  .-------> WSH404
920                           DIV5   .
                                  V  .
                                  V  .
926                           R109   .
                                     .
932                                  .       447
                                     .
944                                  .<------- WSH404
942                                  .     RT404
                                     .       V
                                     .       V
945                                  .     R404
                                     .
951                           C110...........
```

```
282          .        V
             .     SR220
             .        .
289          .        .        190
             .        .         V
             .        .         V
299          .        .       R190
             .        .         V
             .        .         V
305          .        .       R192
             .        .         .
             .        .         .
311          .        .         .        200
             .        .         .         .
             .        .         .         .
321          .     200C.......................
             .        V
             .        V
324          .     SR200
             .        V
             .        V
331          .     200SR
             .        .
             .        .
338       C180............
             V
             V
341      SR180
             V
             V
353       R180
             .
             .
360          .        260
             .         .
             .         .
370       260C...........
             V
             V
373       R260
             .
             .
380          .        280
             .         .
             .         .
390       280C...........
             V
             V
393       R280
             .
             .
400          .        300
             .         .
             .         .
410       300C...........
             V
             V
413       R300
             V
             V
420      RR300
             .
             .
427          .        350
             .         .
             .         .
440          .         .-------> SF350
437          .     D350
             .        V
             .        V
443          .     350R
             .        .
             .        .
450          .        .        310
             .        .         .
             .        .         .
460          .     C310...........
             .        V
             .        V
463          .     R310
             .        .
             .        .
470          .        .        320
             .        .         .
             .        .         .
```

```
486          .        .         .-------> BS320
480          .        .      D320
             .        .        .
             .        .        .
490          .        .        .         .<------- BS320
488          .        .        .     RT320
             .        .        .        V
             .        .        .        V
491          .        .        .     SR320
             .        .        .        .
             .        .        .        .
497       C320.................................
             .
             .
500          .      340
             .        .
             .        .
516          .        .-------> BS340
510          .      D340
             .        .
             .        .
520          .        .         .<------- BS340
518          .        .      RT340
             .        .        V
             .        .        V
521          .        .      SR340
             .        .        .
             .        .        .
527       C340........................
             .
             .
532          .        .<------- SF360
530          .     RT350
             .        V
             .        V
533          .     RR350
             .        .
             .        .
540          .        .      355
             .        .       .
             .        .       .
550          .     C355...........
             .        V
             .        V
553          .     R355
             .        .
             .        .
560          .        .      360
             .        .       .
             .        .       .
574          .        .       .-------> BS360
570          .        .      D360
             .        .       .
             .        .       .
579          .        .       .         .<------- BS360
577          .        .       .     RT360
             .        .       .        V
             .        .       .        V
580          .        .       .     SR360
             .        .       .        .
             .        .       .        .
586       360C.................................
             .
             .
589          .      370
             .        .
             .        .
599          .        .      395
             .        .       .
             .        .       .
609          .     370C...........
             .        V
             .        V
612          .     R370
             .        .
             .        .
619          .        .      380
             .        .       .
             .        .       .
633          .        .       .-------> BS380
629          .        .      D380
             .        .       .
             .        .       .
638          .        .       .         .<------- BS380
636          .        .       .     RT380
             .        .       .        V
```

```
                * DDM   ***** Preserved *****

1405            KK   RT480
1406            KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
1407            DR   BS480
                * DDM   ***** Preserved *****

1408            KK   SR480
1409            KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1410            KM    16.5 ACRE-FEETx43560/36x3600=5.5cfs
1411            RS       1    STOR       0
1412            SV       0     .01    16.5
1413            SQ       0     5.6     5.6
                * DDM   ***** Preserved *****

1414            KK    C480
1415            KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
1416            HC       2
                * DDM   ***** Preserved *****

1417            KK    480C
1418            KM   HYDROGRAPH COMBINATION FOR THE ENTIRE WATERSHED AT THE SALT RIVER
1419            HC       2    2.09
                * DDM   ***** Preserved *****

1420            KK    R480
1421            KM   ROUTE FLOW FROM SUB-BASIN 480 TO RR480
1422            RS       1    FLOW      -1
1423            RC    .025    .025    .025    1800     .05
1424            RX       0       1      20      32      62      74      93      94
1425            RY      13      12      12       0       0      12      12      13
                * DDM   ***** Preserved *****

1426            KK   RR480
1427            KM   ROUTE FLOW FROM SUB-BASIN 480 TO SUB-BASIN 500
1428            RS       3    FLOW      -1
1429            RC    .056     .05    .055    6500     .05
1430            RX       0       1       2      28      58      84      85      86
1431            RY    13.5    13.5    13.5       0       0    13.5    13.5    13.5
                * DDM   ***** Updated *****
```



```
LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1432            KK     500
1433            KM   SUB-BASIN 500
1434            KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1435            KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
1436            KM     L = 2.77  Kb = .042  Adj. Slope =  286.8
1437            BA    .930
1438            LG    .350    .400   6.000    .170   9.000
1439            UC    .421    .333
1440            UA       0       3       5       8      12      20      43      75      90      96
1441            UA     100
                * DDM   ***** Preserved *****

1442            KK    500C
1443            KM   HYDROGRAPH COMBINATION FOR THE ENTIRE WATERSHED AT THE SALT RIVER
1444            HC       2    3.02
1445            ZZ
```


SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (+-->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   22          10
                V
                V
   43         R10
                V
                V
   49         R12
                .
                .
   55           .          20
                .           .
                .           .
   65         C20............
                V
                V
   68         R20
                .
                .
   74           .          40
                .           .
                .           .
   84           .           .          60
                .           .           .
                .           .           .
   94         60C.......................
                V
                V
   97        SR60
                V
                V
  109         R60
                V
                V
  115        RR60
                .
                .
  121           .          80
                .           .
                .           .
  131         80C............
                V
                V
  134         R80
                .
                .
  140           .         100
                .           .
                .           .
  150        100C............
                V
                V
  153        R100
                .
                .
  159           .         120
                .           .
                .           .
  169        120C............
                V
                V
  172        R120
                .
                .
  178           .         140
                .           .
                .           .
  188           .           .         160
                .           .           V
                .           .           V
  198           .           .        R160
                .           .           V
                .           .           V
  204           .           .        R162
                .           .           .
                .           .           .
  210           .           .           .         160
                .           .           .           .
                .           .           .           .
  220           .           .           .           .         180
                .           .           .           .           .
                .           .           .           .           .
  230        180C.......................................................
                .
                .
  233           .         210
                .           V
                .           V
  243           .        R210
                .           .
                .           .
  249           .           .         240
                .           .           .
                .           .           .
  259           .         240C............
                .           V
                .           V
  262           .        SR240
                .           .
                .           .
  269           .           .         220
                .           .           .
                .           .           .
  279           .         220C............
                .           V
```

```
          * DDM   ***** Preserved *****

1288      KK    RTB1
1289      KM        RETRIEVE DIVERTED FLOW FROM BASIN 1
          *      1       2
1290      DR  BASIN1
          * DDM   ***** Preserved *****

1291      KK      B1
1292      KM        ROUTE FLOW THROUGH OFFLINE DETENTION BASIN
1293      KM        FLOW OUTLETS THROUGH A 30 INCH OUTLET PIPE
          *      1       2
1294      RS       1    ELEV       0
1295      SV              .7     1.4     2.3     2.7     3.2
1296      SQ       0       5      16      28    32.5      37
1297      SE       0       1       2       3     3.5       4
          * DDM   ***** Preserved *****

1298      KK     RB1
1299      KM        ROUTE FLOW FROM BASIN DIVERSION TO COMBINE C52
1300      RS       2    FLOW      -1
1301      RC     .05    .035     .05    1720     .05
1302      RX    1000    1010    1020    1036    1041    1057    1067    1077
1303      RY      15    14.5      14      10      10      14    14.5      15
          * DDM   ***** Preserved *****

1304      KK    CDIV
1305      KM        COMBINE FLOWS FROM WA30 AND BASIN 1
1306      HC       2     .12
          * DDM   ***** Updated *****

1307      KK     459
1308      KM   SUB-BASIN 459
1309      KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1310      KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1311      KM     L =   .35  Kb = .052  Adj. Slope =  251.6
1312      BA    .030
1313      LG    .220    .300   3.330    .710   8.000
1314      UC    .162    .157
1315      UA       0       5      16      30      65      77      84      90      94      97
1316      UA     100
          * DDM   ***** Preserved *****
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1317      KK     C52
1318      KM        COMBINE FLOWS FROM SUB-BASIN 52 WA30 AND BASIN 1
1319      HC       2
          * DDM   ***** Preserved *****

1320      KK     R52
1321      KM        ROUTE FLOW FROM SUBBASIN 52 TO C102
1322      RS       2    FLOW      -1
1323      RC     .05    .035     .05    2000     .05
1324      RX    1000    1010    1020    1036    1041    1057    1067    1077
1325      RY      15    14.5      14      10      10      14    14.5      15
          * DDM   ***** Updated *****

1326      KK     460
1327      KM   SUB-BASIN 460
1328      KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1329      KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1330      KM     L =  .62  Kb = .058  Adj. Slope =  194.0
1331      BA    .140
1332      LG    .250    .260   3.740    .690  27.000
1333      UC    .242    .160
1334      UA       0       5      16      30      65      77      84      90      94      97
1335      UA     100
          * DDM   ***** Preserved *****

1336      KK    C102
1337      KM        COMBINE HYDROGRAPHS FROM SUB-BASINS 52 AND 53
1338      HC       2
          * DDM   ***** Preserved *****

1339      KK  BASIN3
1340      KM        RESERVOIR AT CLUBHOUSE LOCATION 1-30 INCH PIPE AT OUTFALL
1341      KM        BOTTOM OF BASIN AT 6 FEET ABOVE 1795 ELEVATION
1342      RS       1    ELEV       0
1343      SA       0       0       0       0     .34    1.59    1.81    1.96    2.13     2.3
          *      0       0       0       0    1.14    3.25    5.52    9.23
1344      SQ       0      22      45    47.4      48      51      57      62      67      73
1345      SE    1795  1797.5    1800  1800.4  1800.5    1801    1802    1803    1804  1805.5
          * DDM   ***** Preserved *****
```

```
1346      KK      R3
1347      KM        ROUTE FLOW FROM C102 to C106
1348      RS       4    FLOW      -1
1349      RC     .05     .03     .05    2750   .0375
1350      RX    1000    1010    1020    1052    1096    1118    1128    1138
1351      RY    19.2    18.4      18      10      10      18    18.4    19.2
          * DDM   ***** Updated *****

1352      KK     461
1353      KM   SUB-BASIN 461
1354      KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1355      KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1356      KM     L =  .83  Kb = .052  Adj. Slope =  181.0
1357      BA    .120
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1358      LG    .270    .250   4.250    .450  21.000
1359      UC    .271    .250
1360      UA       0       5      16      30      65      77      84      90      94      97
1361      UA     100
          * DDM   ***** Preserved *****

1362      KK    C104
1363      KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 54 AND R102
1364      HC       2
          * DDM   ***** Preserved *****

1365      KK    C106
1366      KM        COMBINE HYDROGRAPHS FROM SUB-BASIN C102 AND C104
1367      HC       2
          * DDM   ***** Preserved *****

1368      KK    R106
1369      KM        ROUTE FLOW FROM C106 TO C49
1370      RS       2    FLOW      -1
1371      RC     .05    .035     .05    3950    .032
1372      RX    1000    1010    1020    1030    1050    1060    1070    1080
1373      RY   13.16   12.83    12.5      10      10    12.5   12.83   13.16
          * DDM   ***** Updated *****

1374      KK     462
1375      KM   SUB-BASIN 462
1376      KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1377      KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
1378      KM     L =  .97  Kb = .045  Adj. Slope =  297.7
1379      BA    .301
1380      LG    .300    .330   5.300    .340  12.000
1381      UC    .225    .137
1382      UA       0       5      16      30      65      77      84      90      94      97
1383      UA     100
          * DDM   ***** Preserved *****

1384      KK     C56
1385      KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 56 AND C106
          *      1       2
1386      HC       2
          * DDM   ***** Updated *****

1387      KK     480
1388      KM   SUB-BASIN 480
1389      KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1390      KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
1391      KM     L = 1.21  Kb = .042  Adj. Slope =  165.0
1392      BA    .731
1393      LG    .270    .270   3.580    .730  27.000
1394      UC    .326    .148
1395      UA       0       5      16      30      65      77      84      90      94      97
1396      UA     100
          * DDM   ***** Preserved *****
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1397      KK    D480
1398      KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
1399      KM   DETENTION/RETENTION BASINS LOCATED WITHIN LAS SENDAS ADDENDUM III
1400      KM   FOR BASIN #: 18 & 26
1401      KM        MAXIMUM VOLUME DIVERSION = 16.5 acre-feet
          *      1
1402      DT   BS480    16.5
1403      DI       0   10000
1404      DQ       0   10000
```

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3905.4	1781.91
17.10	1000.1	1770.70
19.29	750.2	1769.73
21.25	668.5	1769.38
23.31	600.7	1769.06
24.13	593.1	1769.02

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.78 WATERSHED INCHES; 33720 CFS-HRS; 2786.6 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	3276	2497	1360	868	625	560	77	1

DURATION(HRS)	25
FLOW(CFS)	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
7.60	2546.0 *	1761.03
17.10	1000.1	1758.29
19.29	750.2	1757.68
21.25	668.5	1757.42
23.31	600.7	1757.21
24.13	593.1	1757.18

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 29289 CFS-HRS; 2420.4 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	2546	2497	1360	868	625	560	77	1

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	2826.7	(RUNOFF)
17.04	374.8	(RUNOFF)
17.95	342.6	(RUNOFF)
19.07	293.9	(RUNOFF)
21.00	263.6	(RUNOFF)
21.99	226.1	(RUNOFF)
23.04	253.9	(RUNOFF)
23.98	253.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.71 WATERSHED INCHES; 16988 CFS-HRS; 1403.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2270	1558	986	612	422	330	253	226

DURATION(HRS)	18	20	22	22
FLOW(CFS)	202	92	2	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.11	5372.7	1764.66
17.01	1372.5	1759.10
17.91	1275.2	1758.91
19.13	1036.4	1758.38
21.12	921.0	1758.10
21.93	838.0	1757.90
23.14	836.4	1757.89
24.01	831.0	1757.88

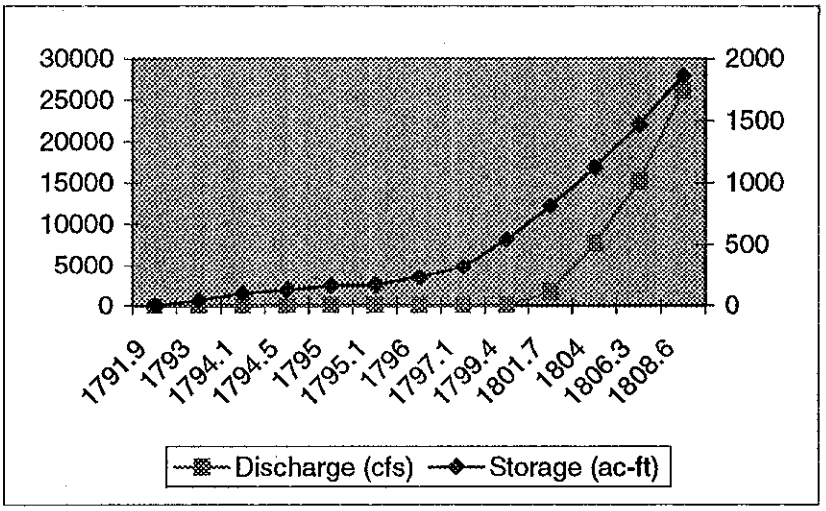
HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS									
2.60	CFS	0	1	2	9	24	35	71	105
4.20	CFS	142	197	248	352	457	573	727	855
5.80	CFS	1016	1168	1381	1713	1997	2371	2726	3126
7.40	CFS	3657	3991	4221	4388	4561	4816	4946	5188
9.00	CFS	5360	5364	5281	5238	5173	5126	5025	4848
10.60	CFS	4769	4683	4627	4529	4363	4276	4104	3980
12.20	CFS	3878	3740	3674	3590	3532	3468	3368	3279
13.80	CFS	3175	3004	2833	2643	2491	2331	2192	2079
15.40	CFS	1974	1892	1785	1685	1585	1466	1378	1361
17.00	CFS	1372	1362	1316	1277	1268	1270	1224	1104
18.60	CFS	1010	1002	1029	1034	1001	965	910	856
20.20	CFS	828	829	840	875	913	917	877	841
21.80	CFS	833	837	817	761	721	758	820	834
23.40	CFS	784	742	776	831	789	606	446	309
25.00	CFS	204	133	87	57	37	24	16	10
26.60	CFS	6.66	4.35	2.84	1.87	1.24	.82	.55	.36

TR-20 & HEC-1 Stage-Storage-Discharge Curves

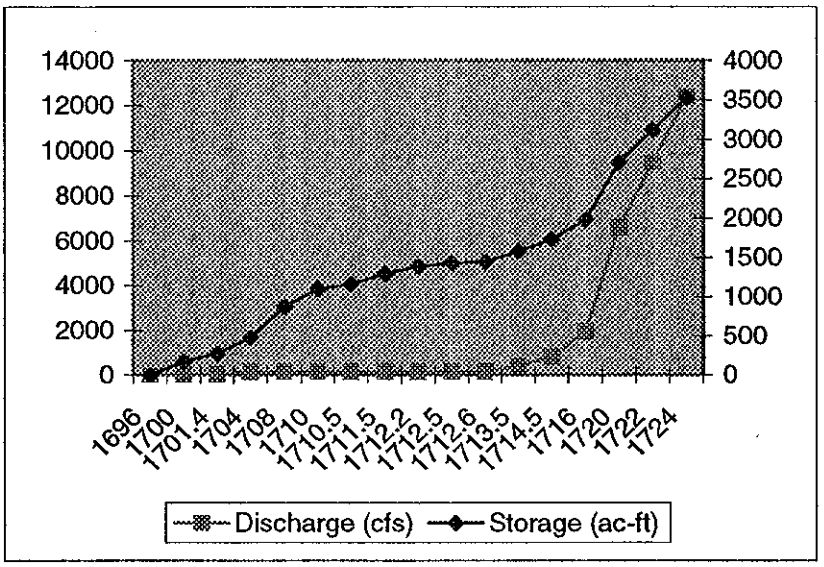
Apache Junction FRS

Elevation	Discharge	Storage
1791.94	0	0
1793	0.01	46.8
1794.1	0.02	106
1794.5	26.3	130
1795	74.4	161.2
1795.14	91.2	170.7
1796	96.16	230.7
1797.14	102.42	322.23
1799.42	113.91	542.99
1801.72	1650	812.88
1804	7700	1121.9
1806.28	15200	1470.09
1808.57	26200	1865.04



Signal Butte FRS

Elevation	Discharge	Storage
1696	0	0
1700	10.2	172.1
1701.4	10.7	273.25
1704	121.8	482.24
1708	138.4	871.3
1710	145.9	1101.52
1710.5	147.7	1163.52
1711.5	151.4	1294.09
1712.2	154	1390.2
1712.5	155	1432.05
1712.6	156	1446.11
1713.5	390	1578.77
1714.5	820	1733.61
1716	1950	1980.33
1720	6600	2712.23
1722	9500	3121
1724	12400	3530



```
1*************************************
*                                   *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*          JUN   1998               *
*        VERSION 4.1                *
*                                   *
*  RUN DATE   310CT00  TIME  17:03:12  *
*                                   *
*************************************
```

```
*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*   HYDROLOGIC ENGINEERING CENTER   *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*         (916) 756-1104            *
*                                   *
*************************************
```

```
X    X  XXXXXXX  XXXXX        X
X    X  X       X    X       XX
X    X  X       X            X
XXXXXX  XXXX    X      XXXXX X
X    X  X       X            X
X    X  X       X    X       X
X    X  XXXXXXX  XXXXX       XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1EW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

   1          ID   EXISTING LAND USE CALCULATIONS WERE BASED ON 1 YR. FROM 11/5/99
   2          ID   FOR LAS SENDAS       AND LANDISCOR JAN.1999 AERIAL PHOTOGRAPHS
   3          ID
   4          ID   ALL DAMS WERE ANALYZED WITH NO STORAGE BELOW PRINCIPLE SPILLWAY ELEVATIONS
   5          ID
   6          ID   A CONSERVATIVE ESTIMATE WAS USED FOR THE LOCATION OF THE CENTROID FOR
   7          ID   PRECIPITATION VALUES
   8          ID
   9          ID   ALL CHANNEL ROUTING INFORMATION WAS OBTAINED FROM MCFCD SPOOK HILL   SIGNAL
  10          ID   BUTTE         AND BULLDOG FLOODWAY PLANS
  11          ID
  12          ID   UPDATE TO EXISTING CONDITION 24-HR 100-YR MODEL RUN BASED ON RE-ALIGNMENT
  13          ID   OF SUB-BASIN BOUNDARIES FOR SUB-BASINS 385 (REDUCED) & 415 (ENLARGED)
  14          ID   UPDATE BASED ON INFORMATION FROM 2' CONTOUR MAPPING.
  15          ID
  16          ID   ANALYSIS PERFORMED BY WOOD/PATEL; RH;        10/10/00  FILE: S24CE30X.DAT
  17          ID
  18          ID   DDM MCCHP1 SPOOK HILL ANDP - EXISTING CONDITIONS MODEL - 100YR, 24HR STORM
               *      Original File Name: S24CE30Z.DAT
               *      Modified File Name: S24CE30X.DAT
               *      Changes: 1) No. of Hydrograph Ordinates Increased to 2000
               *               2) SE, SV and SQ Cards for FRSs Updated to match TR-20
               *               3) Sediment Volumes Subtracted from Storage Volumes
               *               4) Old Elevation Datum Restored to NAVD 1927 to match TR-20
               *               5) JD cards were removed - No aerial reduction factor used.
               *      Wood/Patel, October 10, 2000.  RH.
               *
               *
               *DIAGRAM
  19          IT       2                    2000
  20          IO       5
  21          IN      15
               * DDM   ***** Updated *****

  22          KK      10
  23          KM   SUB-BASIN 10
  24          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
  25          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
  26          KM     L = 2.00  Kb = .044  Adj. Slope =  165.0
  27          BA   3.94
  28          PC   .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
  29          PC   .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
  30          PC   .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
  31          PC   .110    .115    .120    .126    .133    .140    .147    .155    .163    .172
  32          PC   .181    .191    .203    .218    .236    .257    .283    .387    .663    .707
  33          PC   .735    .758    .776    .791    .804    .815    .825    .834    .842    .849
  34          PC   .856    .863    .869    .875    .881    .887    .893    .898    .903    .908
  35          PC   .913    .918    .922    .926    .930    .934    .938    .942    .946    .950
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1 HEC-1 INPUT PAGE 2

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  36          PC   .953    .956    .959    .962    .965    .968    .971    .974    .977    .980
  37          PC   .983    .986    .989    .992    .995    .998   1.000
  38          BA   .702
  39          LG   .350    .320   7.600    .090  15.000
  40          UC   .421    .302
  41          UA     0       3       5       8      12      20      43      75      90      96
  42          UA   100
               * DDM   ***** Preserved *****

  43          KK    R10
  44          KM   ROUTING OF FLOW FROM SUB-BASIN 10 TO R12
  45          RS     4    FLOW      -1
  46          RC   .045    .03    .045    8700    .021
  47          RX     0      1       2      17      27      42      43      44
  48          RY     5      5       5       0       0       5       5       5
               * DDM   ***** Preserved *****

  49          KK    R12
  50          KM   ROUTING OF FLOW FROM R12 TO SUB-BASIN 20
  51          RS     7    FLOW      -1
  52          RC   .045    .03    .045    4500    .01
  53          RX     0      1      45    52.5    72.5      80     124     125
  54          RY     3    2.5     2.5       0       0     2.5     2.5       3
               * DDM   ***** Updated *****

  55          KK    20
  56          KM   SUB-BASIN 20
  57          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
  58          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .993
  59          KM     L = 2.50  Kb = .041  Adj. Slope =   88.0
  60          BA   1.120
  61          LG   .350    .390   5.800    .190   1.000
  62          UC   .658    .454
  63          UA     0       3       5       8      12      20      43      75      90      96
  64          UA   100
               * DDM   ***** Preserved *****

  65          KK    C20
  66          KM   HYDROGRAPH COMBINATION OF SUB-BASINS 10 AND 20
  67          HC     2
               * DDM   ***** Preserved *****

  68          KK    R20
  69          KM       ROUTE FLOW THROUGH BULLDOG FLOODWAY FROM APACHE JUNCTION FRS
  70          RS     1    FLOW      -1
  71          RC   .016    .016    .016     990    .004
  72          RX     0      5       7    14.5    34.5      42      44      50
  73          RY     4      2       2       0       0       2       2       4
               * DDM   ***** Updated *****

  74          KK    40
  75          KM   SUB-BASIN 40
  76          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
  77          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .987
  78          KM     L = 3.08  Kb = .036  Adj. Slope =  189.0
  79          BA   2.233
  80          LG   .340    .340   4.900    .280   5.000
  81          UC   .495    .264
  82          UA     0       3       5       8      12      20      43      75      90      96
  83          UA   100
               * DDM   ***** Updated *****
```

1 HEC-1 INPUT PAGE 3

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  84          KK    60
  85          KM   SUB-BASIN 60
  86          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
  87          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .990
  88          KM     L = 4.19  Kb = .038  Adj. Slope =  209.6
  89          BA   1.746
  90          LG   .330    .350   5.800    .190   9.000
  91          UC   .696    .477
  92          UA     0       3       5       8      12      20      43      75      90      96
  93          UA   100
               * DDM   ***** Preserved *****

  94          KK    60C
  95          KM   HYDROGRAPH COMBINATION FOR APACHE JUNCTION FRS
               *     1       2
  96          HC     3
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* DDM   ***** Preserved *****

KK    SR60
KM   APACHE JUNCTION FRS AS-BUILT PLANS 12/19/88
KM   OUTLET PIPE=30"RCP; L=136.6'; INLET INV.=1783.5; OUTLET INV.=1783
KM   EMERGENCY SPILLWAY ELEV.=1799.77'; PRINCIPLE SPILLWAY ELEV.=1793.5'
KM   STORAGE VOLUME BELOW PRINCIPLE SPILLWAY FOR SEDIMENT = 100 ACRE-FEET
*  ESE = 1799.77 ft; PSE = 1793.5 ft; Sediment Vol. = 130 Ac-Ft.
RS       1    STOR       0
SV       0    46.8     106     130    161.2    170.7    230.7    322.2     543    812.9
SV    1122  1470.1    1865
SQ       0    0.01    0.02    26.3     74.4     91.2     96.2    102.4   113.9    1650
SQ    7700   15200   26200
SE   791.4     793   794.1   794.5      795    795.1      796    797.1   799.4   801.7
SE     804   806.3   808.5
* DDM   ***** Preserved *****

KK     R60
KM      ROUTE FLOW THROUGH BULLDOG FLOODWAY FROM APACHE JUNCTION FRS
RS       2    FLOW      -1
RC    .016    .016    .016    2850    .012
RX       0       1       2     2.1     5.6     5.7       6       7
RY     3.5     3.5     3.5       0       0     3.5     3.5     3.5
* DDM   ***** Preserved *****

KK    KR60
KM   ROUTE FLOW FROM BULLDOG FLOODWAY TO SUB-BASIN 80
RS       3    FLOW      -1
RC    .016    .016    .016    3500    .005
RX       0       1       2     2.1     7.1     7.2       8       9
RY     3.5     3.5     3.5       0       0     3.5     3.5     3.5
* DDM   ***** Updated *****
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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK      80
KM   SUB-BASIN 80
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
KM     L = 2.69  Kb = .039  Adj. Slope =  229.8
BA   1.475
LG    .330    .330   5.600    .210   4.000
UC    .433    .269
UA       0       3       5       8      12      20      43      75      90      96
UA     100
* DDM   ***** Preserved *****

KK     80C
KM   HYDROGRAPH COMBINATION FOR FLOW FROM APACHE JUNCTION FRS & SUB-BASIN 80
HC       2   1.475
* DDM   ***** Preserved *****

KK     R80
KM   ROUTE FLOW FROM SUB-BASIN 80 TO SUB-BASIN 100
RS       1    FLOW      -1
RC    .025    .016    .025    1200    .003
RX       0       2       6     6.1    41.1    41.2    56.2    58.2
RY     5.5     4.5     4.5       0       0     4.5     4.5     5.5
* DDM   ***** Updated *****

KK     100
KM   SUB-BASIN 100
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
KM     L = 1.94  Kb = .046  Adj. Slope =  108.0
BA    .484
LG    .320    .390   5.100    .260   3.000
UC    .533    .473
UA       0       5      16      30      66      77      84      90      94      97
UA     100
* DDM   ***** Preserved *****

KK    100C
KM   HYDROGRAPH COMBINATION FOR FLOW FROM SUB-BASIN 80 & 100
HC       2
* DDM   ***** Preserved *****

KK    R100
KM   ROUTE FLOW FROM SUB-BASIN 100 TO SUB-BASIN 120
RS       1    FLOW      -1
RC    .016    .016    .016     940    .005
RX       0       1       2     2.1    52.1    52.2      53      54
RY     4.5     4.5     4.5       0       0     4.5     4.5     4.5
* DDM   ***** Updated *****
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK     120
KM   SUB-BASIN 120
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .987
KM     L = 3.07  Kb = .037  Adj. Slope =  239.0
BA   2.202
LG    .330    .280   6.800    .130  11.000
UC    .429    .226
UA       0       3       5       8      12      20      43      75      90      96
UA     100
* DDM   ***** Preserved *****

KK    120C
KM   HYDROGRAPH COMBINATION FOR FLOW FROM SUB-BASIN 100 & 120
HC       2
* DDM   ***** Preserved *****

KK    R120
KM   ROUTE FLOW FROM SUB-BASIN 120 TO SIGNAL BUTTE FRS
RS       1    FLOW      -1
RC    .025    .016    .025    2100    .005
RX       0       6      10    10.1    60.1    60.2    74.2    80.2
RY       8       5       5       0       0       5       5       8
* DDM   ***** Updated *****

KK     140
KM   SUB-BASIN 140
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
KM     L = 1.61  Kb = .044  Adj. Slope =  149.0
BA    .698
LG    .310    .280   4.200    .440   5.000
UC    .421    .278
UA       0       5      16      30      65      77      84      90      94      97
UA     100
* DDM   ***** Updated *****

KK     150
KM   SUB-BASIN 150
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
KM     L = 1.50  Kb = .047  Adj. Slope =  314.6
BA    .408
LG    .350    .360   5.100    .260   7.000
UC    .295    .221
UA       0       3       5       8      12      20      43      75      90      96
UA     100
* DDM   ***** Preserved *****
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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK    R150
KM   ROUTING OF FLOW FROM SUB-BASIN 150 TO R152
RS       2    FLOW      -1
RC    .045     .04    .045    3100    .032
RX       0       1       2      23      33      54      55      56
RY       7       7       7       0       0       7       7       7
* DDM   ***** Preserved *****

KK    R152
KM   ROUTING OF FLOW FROM R152 TO SUB-BASIN 160
RS       4    FLOW      -1
RC    .045     .03    .045    5900    .019
RX       0       1       2       8      33      39      40      41
RY       2       2       2       0       0       2       2       2
* DDM   ***** Updated *****

KK     160
KM   SUB-BASIN 160
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
KM     L = 2.10  Kb = .047  Adj. Slope =  129.0
BA    .369
LG    .340    .320   4.150    .440   1.000
UC    .587    .655
UA       0       3       5       8      12      20      43      75      90      96
UA     100
* DDM   ***** Updated *****
```

```
220          KK    180
221          KM   SUB-BASIN 180
222          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
223          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
224          KM     L = 2.42  Kb = .041  Adj. Slope =  140.0
225          BA   1.000
226          LG    .350    .350   4.150    .430    .000
227          UC    .571    .403
228          UA      0       3       5       8      12      20      43      75      90      96
229          UA    100
             * DDM   ***** Preserved *****

230          KK    180C
231          KM   HYDROGRAPH COMBINATION FOR SIGNAL BUTTE FRS
232          HC      5
             * DDM   ***** Updated *****

233          KK    210
234          KM   SUB-BASIN 210
235          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
236          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
237          KM     L = 1.84  Kb = .046  Adj. Slope =  316.0
238          BA    .583
239          LG    .350    .350   7.000    .120   5.000
240          UC    .321    .232
241          UA      0       3       5       8      12      20      43      75      90      96
1                                          HEC-1 INPUT                                          PAGE  7
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

242          UA    100
             * DDM   ***** Preserved *****

243          KK    R210
244          KM   ROUTING OF FLOW FROM SUB-BASIN 210 TO SUB-BASIN 220
245          RS      2    FLOW      -1
246          RC    .045     .03    .045    5100    .022
247          RX      0       1       2      14      34      46      47      48
248          RY      4       4       4       0       0       4       4       4
             * DDM   ***** Updated *****

249          KK    240
250          KM   SUB-BASIN 240
251          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
252          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .992
253          KM     L = 3.50  Kb = .039  Adj. Slope =  298.6
254          BA   1.398
255          LG    .350    .370   5.200    .240   2.000
256          UC    .471    .361
257          UA      0       3       5       8      12      20      43      75      90      96
258          UA    100
             * DDM   ***** Preserved *****

259          KK    240C
260          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 240 & 220
261          HC      2
             * DDM   ***** Preserved *****

262          KK   SR240
263          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
264          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
265          RS      1    STOR       0
266          SA   1.38    14.2    36.6
267          SE    1.7       5      11
268          SS      6      42       3     1.5
             * DDM   ***** Updated *****

269          KK    220
270          KM   SUB-BASIN 220
271          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
272          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
273          KM     L = 1.92  Kb = .043  Adj. Slope =  315.0
274          BA    .725
275          LG    .350    .350   7.000    .120   4.000
276          UC    .317    .209
277          UA      0       3       5       8      12      20      43      75      90      96
278          UA    100
             * DDM   ***** Preserved *****

279          KK    220C
280          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 240 & 220
281          HC      2
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE  8
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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282          KK   SR220
283          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
284          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
285          RS      1    STOR       0
286          SA    .78     4.1    13.7
287          SE      1       3      10
288          SS      3      65       3     1.5
             * DDM   ***** Updated *****

289          KK    190
290          KM   SUB-BASIN 190
291          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
292          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
293          KM     L = 1.91  Kb = .042  Adj. Slope =  316.0
294          BA    .918
295          LG    .350    .390   5.800    .190   8.000
296          UC    .321    .186
297          UA      0       3       5       8      12      20      43      75      90      96
298          UA    100
             * DDM   ***** Preserved *****

299          KK   R190
300          KM   ROUTING OF FLOW FROM SUB-BASIN 190 TO SUB-BASIN 200
301          RS      2    FLOW      -1
302          RC    .045     .03    .045    4740     .03
303          RX      0       1       2      17      37      52      63      64
304          RY      5       5       5       0       0       5       5       5
             * DDM   ***** Preserved *****

305          KK   R192
306          KM   ROUTING OF FLOW FROM SUB-BASIN 190 TO SUB-BASIN 200
307          RS      2    FLOW      -1
308          RC    .045    .035    .045    2200    .018
309          RX      0       1      50      59      79      88     137     138
310          RY    3.5       3       3       0       0       3       3     3.5
             * DDM   ***** Updated *****

311          KK    200
312          KM   SUB-BASIN 200
313          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
314          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
315          KM     L = 1.58  Kb = .046  Adj. Slope =  305.6
316          BA    .535
317          LG    .350    .390   5.700    .200  10.000
318          UC    .300    .200
319          UA      0       3       5       8      12      20      43      75      90      96
320          UA    100
             * DDM   ***** Preserved *****
1                                          HEC-1 INPUT                                          PAGE  9
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

321          KK    200C
322          KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 220 & 200
323          HC      3
             * DDM   ***** Preserved *****

324          KK   SR200
325          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
326          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
327          RS      1    STOR       0
328          SA   2.56     3.1     9.4
329          SE      0       3      10
330          SS      3     112       3     1.5
             * DDM   ***** Preserved *****

331          KK   200SR
332          KM    WEIR GEOMETRY OBTAINED FROM AS-BUILT PLANS @ PASS MTN. DIVERSION.
333          KM   WEIR STORAGE DATA OBTAINED FROM 2' CONTOUR MAPPING.
334          RS      1    STOR       0
335          SA      8     9.2     9.2
336          SE      0       7      10
337          SS      7     251       3     1.5
             * DDM   ***** Preserved *****

338          KK    C180
339          KM   HYDROGRAPH COMBINATION FOR SIGNAL BUTTE FRS
             *      1       2
340          HC      2
             * DDM   ***** Preserved *****

341          KK   SR180
342          KM   SIGNAL BUTTE FRS DATED 1/29/95
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KM   OUTLET PIPE=36'RCP; L= 147';  INLET INV.=1690; OUTLET INV.=1687
KM   EMERGENCY SPILLWAY ELEV.=1712.4; PRINCIPLE SPILLWAY ELEV.=1701
KM   STORAGE VOLUME BELOW PRINCIPLE SPILLWAY FOR SEDIMENT = 250 ACRE-FEET
*  ESE = 1712.4 ft; PSE = 1701.0 ft; Sediment Vol. = 247 Ac-Ft.
RS      1    STOR      0
SV      0   172.1   273.3   482.2   871.3  1101.5  1163.5  1294.1  1390.2  1432.1
SV 1446.1  1578.8  1733.5  1980.2  2712.2   3121    3530
SQ      0    10.2    10.7   121.8   138.4   145.9   147.7   151.4     154     155
SQ    156     390     820    1950    6600    9500   12400
SE    696     700   701.4     704     708     710   710.5   711.5   712.2   712.5
SE  712.6   713.5   714.5     716     720     722     724
* DDM   ***** Preserved *****

KK    R180
KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
KM   ROUTE FLOW FROM SIGNAL BUTTE FRS TO SUB-BASIN 260
RS      3    FLOW     -1
RC    .035    .025    .035    1500    .003
RX      0       1       2    22.6    38.6    59.2      60      61
RY    9.3     9.3     9.3       0       0     9.3     9.3     9.3
* DDM   ***** Updated *****
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LINE  ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK     260
KM   SUB-BASIN 260
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
KM     L =  .81  Kb = .049  Adj. Slope =   68.0
BA    .267
LG    .300    .170   6.800    .160  15.000
UC    .363    .216
UA      0       5      16      30      66      77      84      90      94      97
UA    100
* DDM   ***** Preserved *****

KK    260C
KM   HYDROGRAPH COMBINATION FOR OUTFLOW OF SIGNAL BUTTE FRS & SUB-BASIN 260
HC      2    .267
* DDM   ***** Preserved *****

KK    R260
KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
KM   ROUTE FLOW FROM SUB-BASIN 260 TO SUB-BASIN 280
RS      3    FLOW     -1
RC    .035    .025    .035    2300    .003
RX      0       1       2    23.4    43.4    64.8      65      66
RY    9.7     9.7     9.7       0       0     9.7     9.7     9.7
* DDM   ***** Updated *****

KK     280
KM   SUB-BASIN 280
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
KM     L =  .77  Kb = .049  Adj. Slope =   84.0
BA    .304
LG    .300    .250   5.300    .290  15.000
UC    .333    .175
UA      0       5      16      30      66      77      84      90      94      97
UA    100
* DDM   ***** Preserved *****

KK    280C
KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 260 & SUB-BASIN 280
HC      2
* DDM   ***** Preserved *****

KK    R280
KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
KM   ROUTE FLOW FROM SUB-BASIN 280 TO SUB-BASIN 300
RS      2    FLOW     -1
RC    .035    .025    .035    2500    .003
RX      0       1       2    23.4    43.4    64.8      65      66
RY    9.7     9.7     9.7       0       0     9.7     9.7     9.7
* DDM   ***** Updated *****
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LINE  ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK     300
KM   SUB-BASIN 300
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
KM     L = 2.28  Kb = .041  Adj. Slope =  127.0
BA    .988
LG    .340    .320   4.500    .370   7.000
UC    .538    .362
UA      0       5      16      30      65      77      84      90      94      97
UA    100
* DDM   ***** Preserved *****

KK    300C
KM   HYDROGRAPH COMBINATION OF SUB-BASIN 280 & 300
HC      2
* DDM   ***** Preserved *****

KK    R300
KM   CHANNEL GEOMETRY FOR SIGNAL BUTTE FRS OBTAINED FROM AS-BUILT PLANS.
KM   ROUTE FLOW FROM SUB-BASIN 300 TO START OF FLOODWAY CONCRETE CHANNEL
RS      2    FLOW     -1
RC    .035    .025    .035    2200    .003
RX      0       1       2    23.4    55.4    76.9      77      78
RY    9.7     9.7     9.7       0       0     9.7     9.7     9.7
* DDM   ***** Preserved *****

KK   RR300
KM   CHANNEL GEOMETRY FOR SPOOK HILL FRS OBTAINED FROM AS-BUILTS PLANS.
KM   CONTINUE TO ROUTE FLOW WITHIN CONCRETE CHANNEL TO SPOOK HILL FRS
RS      2    FLOW     -1
RC    .016    .016    .016    6050   .0146
RX      0       1       2     2.1    16.1    16.2      17      18
RY    7.5     7.5     7.5       0       0     7.5     7.5     7.5
*     1       2
* DDM   ***** Updated *****

KK     350
KM   SUB-BASIN 350
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
KM     L = 2.22  Kb = .042  Adj. Slope =  315.0
BA    .970
LG    .350    .350   4.550    .340   4.000
UC    .367    .234
UA      0       3       5       8      12      20      43      75      90      96
UA    100
* DDM   ***** Preserved *****

KK    D350
KM   DIVERT FLOW FROM SUB-BASIN 350. FOR MODELING PURPOSES THE SPLIT FLOW WILL
KM   BE ROUTED BETWEEN SUB-BASINS 355 & 310. THE MAIN FLOW WILL ROUTED TO 310
DT    SF350
DI      0    5000
DQ      0    2500
* DDM   ***** Preserved *****
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LINE  ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK    350R
KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING
KM   ROUTING OF MAIN FLOW FROM DIVERSION OF SUB-BASIN 350 TO SUB-BASIN 310
RS      5    FLOW     -1
RC    .045    .035    .045    5150    .025
RX      0       1      40      46      56      62     102     103
RY      3       2       2       0       0       2       2       2
* DDM   ***** Updated *****

KK     310
KM   SUB-BASIN 310
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
KM     L = 2.70  Kb = .045  Adj. Slope =  283.5
BA    .565
LG    .350    .350   3.910    .480    .000
UC    .483    .511
UA      0       3       5       8      12      20      43      75      90      96
UA    100
* DDM   ***** Preserved *****

KK    C310
KM   HYDROGRAPH COMBINATION OF SUB-BASINS 350 & 310
HC      2    .943
* DDM   ***** Preserved *****

KK    R310
KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
KM   ROUTING OF FLOW FROM SUB-BASIN 310 TO 320
RS     10    FLOW     -1
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RC    .045    .035    .045   10050    .022
RX      0       1      40      46      56      62     102     103
RY      3       2       2       0       0       2       2       3
* DDM   ***** Updated *****

KK     320
KM   SUB-BASIN 320
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
KM     L = 2.20  Kb = .042  Adj. Slope =  132.0
BA    .972
LG    .310    .300   4.550    .360  14.000
UC    .508    .333
UA      0       5      16      30      65      77      84      90      94      97
UA    100
* DDM   ***** Preserved *****

KK    D320
KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
KM   DETENTION/RETENTION BASINS LOCATED WITHIN THREE SUBDIVISIONS
KM   SIERRA HEIGHTS        FALCON RIDGE    & MARMLE CREEK
KM        MAXIMUM VOLUME DIVERSION = 12.27acre-feet
*      1
DT   BS320   12.27
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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

DI       0   10000
DQ       0   10000
* DDM   ***** Preserved *****

KK   RT320
KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
DR   BS320
* DDM   ***** Preserved *****

KK   SR320
KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
KM   12.27 ACRE-FEETx43560/36x3600=4.1cfs
*      1
RS       1    STOR       0
SV       0     .01    12.3
SQ       0     4.2     4.2
* DDM   ***** Preserved *****

KK    C320
KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
HC       4
* DDM   ***** Updated *****

KK     340
KM   SUB-BASIN 340
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .991
KM     L = 2.40  Kb = .042  Adj. Slope =  160.0
BA   1.449
LG    .280    .280   4.160    .520  21.000
UC    .512    .287
UA      0       5      16      30      65      77      84      90      94      97
UA    100
* DDM   ***** Preserved *****

KK    D340
KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
KM   DETENTION/RETENTION BASINS LOCATED WITHIN THREE SUBDIVISIONS
KM   GRANDVIEW ESTATES    BOULDER MOUNTAIN & 33% OF MESA HIGHLANDS
KM        MAXIMUM VOLUME DIVERSION = 56.0 acre-feet
*      1
DT   BS340      56
DI       0   10000
DQ       0   10000
* DDM   ***** Preserved *****

KK   RT340
KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
DR   BS340
* DDM   ***** Preserved *****
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1 HEC-1 INPUT PAGE 14

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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK   SR340
KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
KM    56.0 ACRE-FEETx43560/36x3600=18.9cfs
*      1
RS       1    STOR       0
SV       0     .01      56
SQ       0    18.9    18.9
* DDM   ***** Preserved *****

KK    C340
KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
HC       3
* DDM   ***** Preserved *****

KK   RT350
KM   RETRIEVE SPLIT FLOW FROM DIVERSION OF SUB-BASIN 350
DR   SF350
* DDM   ***** Preserved *****

KK   RR350
KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
KM   ROUTING OF FLOW FROM SPLIT OF SUB-BASIN 350 TO 355
RS       9    FLOW      -1
RC    .045    .035    .045    6050    .025
RX      0       1      40      46      56      62     102     103
RY      3       2       2       0       0       2       2       3
* DDM   ***** Updated *****

KK     355
KM   SUB-BASIN 355
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
KM     L = 2.00  Kb = .044  Adj. Slope =  284.0
BA    .669
LG    .340    .340   4.450    .370   4.000
UC    .488    .509
UA      0       3       5       8      12      20      43      75      90      96
UA    100
* DDM   ***** Preserved *****

KK    C355
KM   HYDROGRAPH COMBINATION OF SUB-BASIN 355 AND THE SPLIT FLOW FROM SUB-BASIN 350
HC       2    1.24
* DDM   ***** Preserved *****

KK    R355
KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
KM   ROUTING OF FLOW FROM SUB-BASIN 355 TO SUB-BASIN 360
RS       9    FLOW      -1
RC    .045    .035    .045   10100    .026
RX      0       1      40      46      56      62     102     103
RY      3       2       2       0       0       2       2       3
* DDM   ***** Updated *****
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1 HEC-1 INPUT PAGE 15

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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK     360
KM   SUB-BASIN 360
KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
KM     L = 2.10  Kb = .048  Adj. Slope =  124.0
BA    .670
LG    .260    .270   4.100    .560  20.000
UC    .587    .466
UA      0       5      16      30      65      77      84      90      94      97
UA    100
* DDM   ***** Preserved *****

KK    D360
KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
KM   DETENTION/RETENTION BASINS LOCATED WITHIN 33% OF MESA HIGHLANDS
KM        MAXIMUM VOLUME DIVERSION = 28.6 acre-feet
*      1
DT   BS360    28.6
DI       0   10000
DQ       0   10000
* DDM   ***** Preserved *****

KK   RT360
KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
DR   BS360
* DDM   ***** Preserved *****

KK   SR360
KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
KM    28.6 ACRE-FEETx43560/36x3600=9.6cfs
RS       1    STOR       0
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584          SV       0     .01    28.6
585          SQ       0     9.6     9.6
             * DDM   ***** Preserved *****

586          KK    360C
587          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
588          HC       4
             * DDM   ***** Updated *****

589          KK     370
590          KM   SUB-BASIN 370
591          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
592          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
593          KM     L = 2.90  Kb = .044  Adj. Slope =  294.6
594          BA    .667
595          LG    .340    .320   4.650    .330   9.000
596          UC    .454    .455
597          UA      0       3       5       8      12      20      43      75      90      96
598          UA    100
             * DDM   ***** Updated *****
1                                    HEC-1 INPUT                                          PAGE 16
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

599          KK     395
600          KM   SUB-BASIN 395
601          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
602          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
603          KM     L = 1.60  Kb = .051  Adj. Slope =  215.8
604          BA    .198
605          LG    .330    .320   4.900    .300  10.000
606          UC    .383    .468
607          UA      0       3       5       8      12      20      43      75      90      96
608          UA    100
             * DDM   ***** Preserved *****

609          KK    370C
610          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
611          HC       2
             * DDM   ***** Preserved *****

612          KK    R370
613          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
614          KM   ROUTING OF FLOW FROM SUB-BASINS 370 AND 395 TO SUB-BASIN 380.
615          RS      11    FLOW      -1
616          RC    .045    .035    .045   10250    .023
617          RX       0       1      40      46      56      62     102     103
618          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

619          KK     380
620          KM   SUB-BASIN 380
621          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
622          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .994
623          KM     L = 2.20  Kb = .048  Adj. Slope =  114.0
624          BA    .972
625          LG    .300    .310   4.150    .500   7.000
626          UC    .658    .444
627          UA      0       5      16      30      65      77      84      90      94      97
628          UA    100
             * DDM   ***** Preserved *****

629          KK    D380
630          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
631          KM   DETENTION/RETENTION BASINS LOCATED WITHIN 33% OF MESA HIGHLANDS
632          KM        MAXIMUM VOLUME DIVERSION = 28.6 acre-feet
             *      1
633          DT   BS380    28.6
634          DI       0   10000
635          DQ       0   10000
             * DDM   ***** Preserved *****

636          KK   RT380
637          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
638          DR   BS380
             * DDM   ***** Preserved *****
1                                    HEC-1 INPUT                                          PAGE 17
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

639          KK   SR380
640          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
641          KM     28.6 ACRE-FEETx43560/36x3600=9.6cfs
642          RS       1    STOR       0
643          SV       0     .01    28.6
644          SQ       0     9.6     9.6
             * DDM   ***** Preserved *****

645          KK    380C
646          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
647          HC       4
             * DDM   ***** Updated *****

648          KK     390
649          KM   SUB-BASIN 390
650          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
651          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
652          KM     L =  .70  Kb = .050  Adj. Slope =  299.4
653          BA    .244
654          LG    .300    .250   4.700    .380  18.000
655          UC    .204    .107
656          UA      0       5      16      30      65      77      84      90      94      97
657          UA    100
             * DDM   ***** Preserved *****

658          KK    D390
659          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
660          KM   DETENTION/RETENTION BASINS LOCATED WITHIN THUNDER MOUNTAIN ESTATES
661          KM        MAXIMUM VOLUME DIVERSION  = 3.5 acre-feet
             *      1
662          DT   BS390     3.5
663          DI       0   10000
664          DQ       0   10000
             * DDM   ***** Preserved *****

665          KK   RT390
666          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
667          DR   BS390
             * DDM   ***** Preserved *****

668          KK   SR390
669          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
670          KM     3.5 ACRE-FEETx43560/36x3600=1.2cfs
671          RS       1    STOR       0
672          SV       0     .01     3.5
673          SQ       0     1.2     1.2
             * DDM   ***** Preserved *****

674          KK    390C
675          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
676          HC       2
             * DDM   ***** Preserved *****
1                                    HEC-1 INPUT                                          PAGE 18
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

677          KK   RR390
678          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
679          KM   FROM SUB-BASIN 390 TO SUB-BASIN 400
680          RS      14    FLOW      -1
681          RC    .045    .045    .045    8800    .020
682          RX       0       1      40      46      56      62     102     103
683          RY       3       2       2       0       0       2       2       3
             * DDM   ***** Updated *****

684          KK     400
685          KM   SUB-BASIN 400
686          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
687          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
688          KM     L = 1.64  Kb = .046  Adj. Slope =  110.0
689          BA    .616
690          LG    .320    .320   3.130    .930   6.000
691          UC    .592    .405
692          UA      0       5      16      30      65      77      84      90      94      97
693          UA    100
             * DDM   ***** Preserved *****

694          KK    D400
695          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
696          KM   DETENTION/RETENTION BASIN LOCATED WITHIN SAGUARO VISTA SUBDIVISION
697          KM        MAXIMUM VOLUME DIVERSION = 5.6 ACRE-FEET
             *      1
698          DT   BS400     5.6
699          DI       0   10000
700          DQ       0   10000
             * DDM   ***** Preserved *****

701          KK   RT400
702          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
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703          DR   BS400
             * DDM   ***** Preserved *****

704          KK   SR400
705          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
706          KM     5.6 ACRE-FEETx43560/36x3600 = 2 cfs
707          BS       1    STOR       0
708          SV       0     .01     5.6
709          SQ       0       2       2
             * DDM   ***** Preserved *****

710          KK    C400
711          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
712          HC       2
             * DDM   ***** Preserved *****
1                                    HEC-1 INPUT                                          PAGE 19

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

713          KK    400C
714          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
715          HC       3
             * DDM   ***** Updated *****

716          KK     385
717          KM   SUB-BASIN 385
718          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
719          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .997
720          KM     L = 2.30  Xb = .045  Adj. Slope =  303.0
721          BA    .523
722          LG    .340    .360   5.600    .220  13.000
723          UC    .383    .360
724          UA       0       3       5       8      12      20      43      75      90      96
725          UA     100
             * DDM   ***** Preserved *****

726          KK    D385
727          KM   DIVERT FLOW INTO SUB-BASINS 415 & 420
728          DT   SF385
729          DI       0    5000
730          DQ       0    3000
             * DDM   ***** Preserved *****

731          KK    385R
732          KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
733          KM   ROUTING OF FLOW DIVERSION FROM SUB-BASIN 385 INTO SUB-BASIN 420
734          RS      12    FLOW      -1
735          RC    .045     .04    .045   10250    .022
736          RX       0       1      40      46      55      62     102     103
737          RY       3       2       2       0       0       3       2       3
             * DDM   ***** Updated *****

738          KK     420
739          KM   SUB-BASIN 420
740          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
741          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .995
742          KM     L = 1.91  Xb = .042  Adj. Slope =  120.0
743          BA    .849
744          LG    .310    .270   3.880    .580  12.000
745          UC    .512    .325
746          UA       0       5      16      30      55      77      84      90      94      97
747          UA     100
             * DDM   ***** Preserved *****

748          KK    D420
749          KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
750          KM   DETENTION/RETENTION BASINS LOCATED WITHIN GRAY FOX SUBDIVISION
751          KM        MAXIMUM VOLUME DIVERSION = 8.65 acre-feet
             *      1
752          DT   BS420     8.65
753          DI       0   10000
754          DQ       0   10000
             * DDM   ***** Preserved *****
1                                    HEC-1 INPUT                                          PAGE 20

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

755          KK   RT420
756          KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
757          DR   BS420
             * DDM   ***** Preserved *****

758          KK   SR420
759          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
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760          KM   38.55 ACRE-FEETx43560/36x3600=13cfs
761          KS       1    STOR       0
762          SV       0     .01    38.55
763          SQ       0      13      13
             * DDM   ***** Preserved *****

764          KK    420C
765          KM   HYDROGRAPH COMBINATION FOR SPOOK HILL FRS
766          HC       4   10.87
             * DDM   ***** Updated *****

767          KK     440
768          KM   SUB-BASIN 440
769          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
770          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
771          KM     L =  .40  Xb = .039  Adj. Slope =  316.0
772          BA    .080
773          LG    .190    .380   5.400    .140  13.000
774          UC    .129    .077
775          UA       0       3       5       8      12      20      43      75      90      96
776          UA     100
             * DDM   ***** Preserved *****

777          KK     R70
778          KM   ROUTE FLOW FROM SUB-BASIN 440 TO C108
779          RS       1    FLOW      -1
780          RC     .05    .035     .05    2250     .08
781          RX    1000    1025    1050    1070    1075    1095    1120    1145
782          RY      30    22.9    15.7      10      10    15.7    22.9      30
             * DDM   ***** Updated *****

783          KK     441
784          KM   SUB-BASIN 441
785          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
786          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
787          KM     L =  .28  Xb = .069  Adj. Slope =  316.0
788          BA    .010
789          LG    .300    .250   5.600    .220   5.000
790          UC    .150    .225
791          UA       0       5      16      30      55      77      84      90      94      97
792          UA     100
             * DDM   ***** Preserved *****
1                                    HEC-1 INPUT                                          PAGE 21

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

793          KK    C108
794          KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 440 & 441
795          HC       2
             * DDM   ***** Preserved *****

796          KK    DIV4
797          KM        SPLIT FLOW WITH TWO 42 INCH PIPES TO WEST AND SOUTH
             *      1
798          DT   SPLIT
799          DI       0      14      40      82     120     154     180
800          DQ       0       7      20      41      60      77      90
             * DDM   ***** Preserved *****

801          KK    R108
802          KM        ROUTE FLOW FROM SUB-BASIN C108 TO C67
803          RS       2    FLOW      -1
804          RC     .05    .035     .05    3200      .1
805          RX    1000    1025    1050    1070    1075    1095    1120    1145
806          RY      30    22.9    15.7      10      10    15.7    22.9      30
             * DDM   ***** Updated *****

807          KK     442
808          KM   SUB-BASIN 442
809          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
810          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
811          KM     L =  .83  Xb = .056  Adj. Slope =  274.2
812          BA    .100
813          LG    .300    .270   3.290    .770   5.000
814          UC    .258    .254
815          UA       0       5      16      30      55      77      84      90      94      97
816          UA     100
             * DDM   ***** Preserved *****

817          KK     C67
818          KM   COMBINE FLOW FROM SUB-BASIN 442 & DIV4
819          HC       2
             * DDM   ***** Preserved *****

820          KK    DIV6
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821          KM       OFFLINE BASIN WITH 25 FOOT WEIR SET AT 2.5 FEET ABOVE BOTTOM OF CHANNEL
822          KM       FLOW CONTINUES BEYOND BASIN THROUGH 2-30' PIPES
             *     1
823          DT  BASIN4
824          DI      0      10      32      44    79.9   132.5     198   272.9   356.8
825          DQ      0       0       0       0    23.9    67.5     124   190.9   266.8
             * DDM   ***** Preserved *****

826          KK  RTDIV6
827          KM   RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
828          DR  BASIN4
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 22

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

829          KK  RFDIV6
830          KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
831          KM     3.3 ACRE-FEETx43560/36x3600=1.1cfs
             *     1
832          RS      1    STOR       0
833          SV      0     .01     3.3
834          SQ      0     1.1     1.1
             * DDM   ***** Preserved *****

835          KK   CDIV6
836          KM   HYDROGRAPH COMBINATION FOR OFFLINE BASIN BLEEDOFF
837          HC      2
             * DDM   ***** Updated *****

838          KK    443
839          KM   SUB-BASIN 443
840          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
841          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
842          KM     L =  .71  Kb = .050  Adj. Slope =  315.0
843          BA   .080
844          LG   .250    .190   8.000    .080  10.000
845          UC   .196    .194
846          UA      0       5      16      30      65      77      84      90      94      97
847          UA    100
             * DDM   ***** Preserved *****

848          KK   DIV66
849          KM       DIVERT FLOW INTO 3 NATURAL WASHES WITH ONE 24" PIPE IN EACH WASH.
850          KM       EACH PIPE CAPACITY BASED ON 4 FEET OF HEAD
851          DT   WSH66
852          DI      0      78     100     200
853          DQ      0      78      78      78
             * DDM   ***** Preserved *****

854          KK    R113
855          KM       ROUTE FLOW FROM C113 TO C114
856          RS      1    FLOW      -1
857          RC   .019    .019    .019    1300    .029
858          RX   1000    1004    1008    1012    1018    1022    1026    1030
859          RY     17   15.33   12.67      10      10   12.67   15.33      17
             * DDM   ***** Preserved *****

860          KK    C114
861          KM       COMBINE HYDROGRAPHS FROM SUB-BASIN 67 AND C113
862          HC      2
             * DDM   ***** Updated *****

863          KK    444
864          KM   SUB-BASIN 444
865          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
866          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
867          KM     L =  .33  Kb = .034  Adj. Slope =  315.0
868          BA   .040
869          LG   .130    .350   4.450    .320   1.000
1                                        HEC-1 INPUT                                          PAGE 23

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

870          UC   .112    .084
871          UA      0       3       5       8      12      20      43      75      90      96
872          UA    100
             * DDM   ***** Preserved *****

873          KK    R58
874          KM   ROUTE FLOW FROM SUB-BASIN 444 TO C107
875          RS      1    FLOW      -1
876          RC   .05    .035     .05    2370   .0616
877          RX   1000    1010    1020    1050    1055    1085    1095    1105
878          RY     19      18      17      10      10      17      18      19
             * DDM   ***** Updated *****

879          KK    445
880          KM   SUB-BASIN 445
881          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
882          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
883          KM     L =  .82  Kb = .036  Adj. Slope =  315.0
884          BA   .190
885          LG   .170    .320   3.470    .590   3.000
886          UC   .192    .130
887          UA      0       5      16      30      65      77      84      90      94      97
888          UA    100
             * DDM   ***** Preserved *****

889          KK   C107
890          KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 444 & 445
891          HC      2
             * DDM   ***** Preserved *****

892          KK   R107
893          KM       ROUTE FLOW FROM C107 TO C109
894          RS      1    FLOW      -1
895          RC   .05    .035     .05     700   .0616
896          RX   1000    1010    1020    1050    1055    1085    1095    1105
897          RY     19      18      17      10      10      17      18      19
             * DDM   ***** Preserved *****

898          KK   RTB2
899          KM       RETRIEVE DIVERTED FLOW FROM BASIN 1
             *     1
900          DR   SPLIT
             * DDM   ***** Preserved *****

901          KK  RSPLIT
902          KM       ROUTE FLOW FROM SPLIT TO C109
903          RS      1    FLOW      -1
904          RC   .05    .035     .05     800    .05
905          RX   1000    1025    1050    1070    1075    1095    1120    1145
906          RY     30    22.9    15.7      10      10    15.7    22.9      30
             * DDM   ***** Updated *****
1                                        HEC-1 INPUT                                          PAGE 24

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

907          KK    446
908          KM   SUB-BASIN 446
909          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
910          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
911          KM     L =  .46  Kb = .061  Adj. Slope =  303.9
912          BA   .040
913          LG   .270    .250   4.500    .400  19.000
914          UC   .193    .189
915          UA      0       5      16      30      65      77      84      90      94      97
916          UA    100
             * DDM   ***** Preserved *****

917          KK   C109
918          KM       COMBINE HYDROGRAPHS FROM COMBINES C107 AND C108
919          HC      3
             * DDM   ***** Preserved *****

920          KK   DIV5
921          KM       DIVERT FLOW INTO WASHES TOWARDS WEST
922          KM       DIVERSION THROUGH 36" PIPE WITH 3 FEET OF HEAD
             *     1
923          DT  WSH404
924          DI      0    40.7    71.2   121.6     190     276   379.4   500.6
925          DQ      0      35      35      35      35      35      35      35
             * DDM   ***** Preserved *****

926          KK   R109
927          KM       ROUTE FLOW FROM C109 TO C110
928          RS      1    FLOW      -1
929          RC   .019    .019    .019    3080    .05
930          RX   1000    1005    1010    1015    1025    1030    1035    1040
931          RY   13.75    12.5   11.25      10      10   11.25    12.5   13.75
             * DDM   ***** Updated *****

932          KK    447
933          KM   SUB-BASIN 447
934          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
935          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
936          KM     L =  .49  Kb = .056  Adj. Slope =  221.0
937          BA   .090
938          LG   .250    .270   3.350    .870  30.000
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939          UC    .208    .145
940          UA      0       5      16      30      65      77      84      90      94      97
941          UA    100
             * DDM   ***** Preserved *****

942          KK   RT404
943          KM        RETRIEVE DIVERTED FLOW FOR WASH 109
944          DR  WSH404
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 25

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


945          KK    R404
946          KM        ROUTE FLOW FROM C110 TO C110
947          RS      6    FLOW      -1
948          RC    .019    .019    .019    3540     .03
949          RX    1000    1012    1016    1020    1025    1029    1033    1045
950          RY      15      12      11      10      10      11      12      15
             * DDM   ***** Preserved *****

951          KK    C110
952          KM   COMBINE HYDROGRAPHS FROM SUB-BASIN 447 AND R404
953          HC      3
             * DDM   ***** Preserved *****

954          KK    R110
955          KM        ROUTE FLOW FROM C110 TO C115
956          RS      1    FLOW      -1
957          RC    .019    .019    .019     580   .0291
958          RX    1000    1012    1016    1020    1035    1039    1043    1055
959          RY      15      12      11      10      10      11      12      15
             * DDM   ***** Preserved *****

960          KK    C115
961          KM        COMBINE HYDROGRAPHS FROM C114 AND C110
962          HC      2
             * DDM   ***** Preserved *****

963          KK    R115
             * ******OUTFLOW FROM THIS ROUTING IS GREATER THAN INFLOW TO THE
             * ******ROUTING BY 2cfs.  THIS IS NOTED BUT LEFT UNCHANGED WITHIN THE MODEL
964          KM        ROUTE FLOW FROM C115 TO C119
965          RS      1    FLOW      -1
966          RC    .019    .019    .019    2125    .029
967          RC    .019    .019    .019     580   .0291
968          RX    1000    1012    1016    1020    1035    1039    1043    1055
969          RY      15      12      11      10      10      11      12      15
             * DDM   ***** Updated *****

970          KK     448
971          KM   SUB-BASIN 448
972          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
973          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
974          KM     L =  .36  Kb = .042  Adj. Slope =  315.0
975          BA    .045
976          LG    .170    .310   4.200    .390  11.000
977          UC    .133    .102
978          UA      0       5      16      30      65      77      84      90      94      97
979          UA    100
             * DDM   ***** Updated *****
1                                        HEC-1 INPUT                                          PAGE 26

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


980          KK     449
981          KM   SUB-BASIN 449
982          KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
983          KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
984          KM     L =  .40  Kb = .054  Adj. Slope =  315.0
985          BA    .050
986          LG    .260    .280   3.500    .640   6.000
987          UC    .167    .134
988          UA      0       5      16      30      65      77      84      90      94      97
989          UA    100
             * DDM   ***** Preserved *****

990          KK   C6364
991          KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 448 & 449
992          HC      2
             * DDM   ***** Preserved *****

993          KK   R6364
994          KM   ROUTE FLOW FROM C116 AND SUB-BASINS 448 AND 449
995          RS      4    FLOW      -1
996          RC    .05    .035     .05    4375   .0333
997          RX   1000    1027    1053    1080    1090    1117    1143    1170
998          RY     15   13.33   11.67      10      10   11.67   13.33      15
             * DDM   ***** Updated *****

999          KK    450
1000         KM   SUB-BASIN 450
1001         KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1002         KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1003         KM     L =  .85  Kb = .057  Adj. Slope =  310.5
1004         BA    .070
1005         LG    .340    .350   3.630    .570   4.000
1006         UC    .296    .383
1007         UA      0       3       5       8      12      20      43      75      90      96
1008         UA    100
             * DDM   ***** Updated *****

1009         KK    451
1010         KM   SUB-BASIN 451
1011         KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1012         KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1013         KM     L =  .67  Kb = .063  Adj. Slope =  175.0
1014         BA    .025
1015         LG    .340    .340   3.290    .750   3.000
1016         UC    .271    .453
1017         UA      0       3       5       8      12      20      43      75      90      96
1018         UA    100
             * DDM   ***** Preserved *****
1                                        HEC-1 INPUT                                          PAGE 27

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1019         KK   RT66
1020         KM        RETRIEVE DIVERTED FLOW FROM SUB-BASIN 66
1021         DR   WSH66
             * DDM   ***** Updated *****

1022         KK    452
1023         KM   SUB-BASIN 452
1024         KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1025         KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1026         KM     L =  .43  Kb = .055  Adj. Slope =  315.0
1027         BA    .040
1028         LG    .260    .280   3.700    .550   9.000
1029         UC    .171    .166
1030         UA      0       5      16      30      65      77      84      90      94      97
1031         UA    100
             * DDM   ***** Preserved *****

1032         KK   C6465
1033         KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 443 AND 452
1034         HC      2
             * DDM   ***** Preserved *****

1035         KK   R6566
1036         KM        ROUTE FLOW FROM DIVERSIONS 55 AND 56 TO C116
1037         RS      2    FLOW      -1
1038         RC    .05    .035     .05    2435   .0282
1039         RX   1000    1045    1090    1150    1160    1220    1265    1310
1040         RY     25      23      20      10      10      20      23      25
             * DDM   ***** Preserved *****

1041         KK   C116
1042         KM   COMBINE HYDROGRAPHS FROM SUB-BASINS 450 & 451 AND R6364 & R6465
1043         HC      4
             * DDM   ***** Preserved *****

1044         KK   BASIN5
1045         KM        RESERVOIR WITHIN PARCEL 31      2-48 INCH PIPES AT OUTFALL
1046         KM        BASIN 5 FEET DEEP
1047         RS      1    ELEV       0
1048         SV      0     4.5     9.9
1049         SQ      0      69     190
1050         SE      0     2.5       5
             * DDM   ***** Preserved *****

1051         KK   R116
1052         KM   ROUTE FLOW FROM C116 TO C117
1053         RS      2    FLOW      -1
1054         RC    .05    .035     .05    1300   .0333
1055         RX   1000    1100    1200    1300    1320    1420    1520    1620
1056         RY     13      12      11      10      10      11      12      13
             * DDM   ***** Updated *****
1                                        HEC-1 INPUT                                          PAGE 28
```

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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1057        KK    453
1058        KM   SUB-BASIN 453
1059        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1060        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF 1.000
1061        KM     L =  .58  Kb = .058  Adj. Slope =  138.0
1062        BA    .060
1063        LG    .290    .300   3.290    .820  18.000
1064        UC    .275    .284
1065        UA       0       5      16      30      65      77      84      90      94      97
1066        UA     100
            * DDM   ***** Preserved *****

1067        KK    C117
1068        KM   COMBINE HYDROGRAPHS FROM SUB-BASIN 453 AND R116
1069        HC       2
            * DDM   ***** Preserved *****

1070        KK    C118
1071        KM   COMBINE HYDROGRAPHS FROM R115 AND C117
1072        HC       2
            * DDM   ***** Preserved *****

1073        KK    R118
1074        KM        ROUTE FLOW FROM C118 TO  DIV7
1075        RS       1    FLOW      -1
1076        RC    .019    .019    .019    1500    .024
1077        RX    1000    1012    1016    1020    1035    1039    1043    1055
1078        RY      16      12      11      10      10      11      12      15
            * DDM   ***** Preserved *****

1079        KK    DIV7
1080        KM        OFFLINE BASIN AT NORTH MOUNTAIN RIDGE   FLOWS ENTER BASIN OVER
1081        KM        30' WEIR SET AT 5.3' ABOVE THE CHANNEL BOTTOM
            *       1
1082        DT  BASIN6
1083        DI       0     363     487     563     646     844
1084        DQ       0       3      47      83     125     244
            * DDM   ***** Preserved *****

1085        KK  RTDIV7
1086        KM  RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
1087        DR  BASIN6
            * DDM   ***** Preserved *****

1088        KK  RFDIV7
1089        KM  RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1090        KM    3.6 ACRE-FEETx43560/36x3600=1.2cfs
1091        RS       1    STOR       0
1092        SV       0     .01     3.6
1093        SQ       0     1.2     1.2
            * DDM   ***** Preserved *****
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1094        KK   CDIV7
1095        KM   HYDROGRAPH COMBINATION FOR OFFLINE BASIN BLEEDOFF
1096        HC       2
            * DDM   ***** Updated *****

1097        KK    454
1098        KM   SUB-BASIN 454
1099        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1100        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1101        KM     L = 1.23  Kb = .061  Adj. Slope =  163.0
1102        BA    .180
1103        LG    .300    .310   3.780    .560  14.000
1104        UC    .379    .395
1105        UA       0       5      16      30      65      77      84      90      94      97
1106        UA     100
            * DDM   ***** Preserved *****

1107        KK    C119
1108        KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 454 AND C119
            *       1       2
1109        HC       2
            * DDM   ***** Preserved *****

1110        KK    R454
1111        KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
1112        KM   ROUTE FLOW FROM C119 TO 415C
1113        RS       2    FLOW      -1
1114        RC    .045    .035    .045    2200    .009
1115        RX       0      .5       1      33      42      67    67.5      68
1116        RY       5       4       4       0       0       6       6       6
            * DDM   ***** Updated *****

1117        KK    415
1118        KM   SUB-BASIN 415
1119        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1120        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .996
1121        KM     L = 2.58  Kb = .044  Adj. Slope =  298.5
1122        BA    .606
1123        LG    .320    .290   4.500    .400  16.000
1124        UC    .421    .402
1125        UA       0       5      16      30      65      77      84      90      94      97
1126        UA     100
            * DDM   ***** Preserved *****

1127        KK   RT385
1128        KM   RETRIEVE FLOW FROM DIVERSION OF SUB-BASIN 385 INTO SUB-BASIN 415
1129        DR   ST385
            * DDM   ***** Preserved *****
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1130        KK   RE385
1131        KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
1132        KM   ROUTING OF SPLIT FLOW FROM SUB-BASIN 385 TO SUB-BASIN 415
1133        RS      11    FLOW      -1
1134        RC    .045     .04    .045    5878    .024
1135        RX       0       1      40      46      56      62     102     103
1136        RY       3       2       2       0       0       2       2       3
            * DDM   ***** Preserved *****

1137        KK   415C
1138        KM   HYDROGRAPH COMBINATION OF SUB-BASINS 415, R454 & SPLIT FLOW FROM 385
1139        HC       3    1.71
            * DDM   ***** Preserved *****

1140        KK   R415
1141        KM   CHANNEL GEOMETRY OBTAINED FROM 2' CONTOUR MAPPING.
1142        KM   ROUTING OF FLOW FROM 415C TO 455C
1143        RS       2    FLOW      -1
1144        RC    .045     .03    .045    4100    .024
1145        RX       0      .5       1       8      15      23    23.5      24
1146        RY       8       8       8       0       0       8       8       8
            * DDM   ***** Updated *****

1147        KK    455
1148        KM   SUB-BASIN 455
1149        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1150        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .993
1151        KM     L = 1.70  Kb = .041  Adj. Slope =  146.0
1152        BA   1.111
1153        LG    .270    .280   3.700    .640  24.000
1154        UC    .421    .204
1155        UA       0       5      16      30      65      77      84      90      94      97
1156        UA     100
            * DDM   ***** Preserved *****

1157        KK   D455
1158        KM        DIVERT FLOW INTO ONLINE  DETENTION BASIN
1159        KM   DETENTION/RETENTION BASINS LOCATED WITHIN LAS SENDAS ADDENDUM III
1160        KM   FOR BASIN #: 30      34      43      47&58
1161        KM        MAXIMUM VOLUME DIVERSION = 74.1 acre-feet
            *       1
1162        DT   BS455    74.1
1163        DI       0   10000
1164        DQ       0   10000
            * DDM   ***** Preserved *****

1165        KK   RT455
1166        KM   RETRIEVE FLOW FROM DIVERSION INTO ONLINE BASIN
1167        DR   BS455
            * DDM   ***** Preserved *****
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1168        KK   SR455
1169        KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1170        KM    74.1 ACRE-FEETx43560/36x3600=25cfs
1171        RS       1    STOR       0
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1172        SV       0     .01    74.1
1173        SQ       0      25      25
            * DDM   ***** Preserved *****

1174        KK    C455
1175        KM   HYDROGRAPH COMBINATION FOR SUB-BASIN 455 AND DIVERTED BASIN STORAGE OF 455
1176        HC       2
            * DDM   ***** Preserved *****

1177        KK    455C
1178        KM  HYDROGRAPH COMBINATION OF 420C, R415 AND C455
            *      1      2
1179        HC       3
            * DDM   ***** Preserved *****

1180        KK   SR440
1181        KM   SPOOK HILL FRS PLANS DATED 6/15/77
1182        KM   OUTLET PIPE=7'x7.5'RCBC; L=70 INLET INV.=1566; OUTLET INV.=1566
1183        KM   EMERGENCY SPILLWAY ELEV.=1582; PRINCIPLE SPILLWAY ELEV.=1577.6
1184        KM   STORAGE VOLUME BELOW PRINCIPLE SPILLWAY FOR SEDIMENT = 200 ACRE-FEET
            *    ESE = 1582 ft; PSE = 1577.6 ft; Sediment Vol. = 271 Ac-Ft.
1185        RS       1    STOR       0
1186        SV       0      81     363     533     719     925    1120    1399    1668    4051
1187        SQ       0       0      10     180     367     595     800    1231    2625   24500
1188        SE   574.1   576.1   578.1   579.1   580.1   581.1     582   583.1   584.1   590.1
            * DDM   ***** Preserved *****

1189        KK   RR455
1190        KM   ROUTE FLOW FROM SPOOK HILL FRS TO SUB-BASIN 462
1191        RS      14    FLOW      -1
1192        RC    .035    .026    .035    9200    .002
1193        RX       0       1       2      28      58      84      85      86
1194        RY    13.5    13.6    13.5       0       0    13.5    13.5    13.5
            * DDM   ***** Updated *****

1195        KK     456
1196        KM   SUB-BASIN 456
1197        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1198        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .998
1199        KM     L =  .94  Kb = .045  Adj. Slope =  315.0
1200        BA    .260
1201        LG    .300    .380   5.600    .200  12.000
1202        UC    .217    .139
1203        UA       0       5      16      30      65      77      84      90      94      97
1204        UA     100
            * DDM   ***** Preserved *****
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1205        KK    DIV1
1206        KM        DIVERT FLOW INTO OFFLINE DETENTION BASIN
1207        KM        WEIR FOR BASIN SET AT 4 FEET ABOVE CHANNEL BOTTOM
            *      1
1208        DT  BASIN1
1209        DI       0    11.1   127.9   234.4   577.7   789.9  1025.5  1280.9  1555.7
1210        DQ       0       0       0    47.7     248   381.8   533.6   701.5     884
            * DDM   ***** Preserved *****

1211        KK    DIV2
1212        KM        SPLIT OUT FLOW FOR WASHES THAT FLOW TO THE SOUTH FROM
1213        KM        WASHES THAT DRAIN TO THE WES, SOUTHERN WASHES FED BY 30" & 24" PIPE
1214        DT    WA30
1215        DI       0    11.1   127.9   189.6   329.7     408   491.9   579.4   671.7
1216        DQ       0    11.1    38.4    48.2      63    69.5      76      81      86
            * DDM   ***** Preserved *****

1217        KK    R456
1218        KM        ROUTE FLOW FROM SUB-BASIN 51 TO C101
1219        RS       2    FLOW      -1
1220        RC     .05    .035     .05    3800    .044
1221        RX    1000    1010    1020    1036    1041    1057    1067    1077
1222        RY   14.38   14.44      14      10      10      14   14.44   14.88
            * DDM   ***** Updated *****

1223        KK     457
1224        KM   SUB-BASIN 457
1225        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1226        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1227        KM     L = 1.01  Kb = .045  Adj. Slope =  308.8
1228        BA    .190
1229        LG    .270    .330   3.950    .460   6.000
1230        UC    .237    .195
1231        UA       0       5      16      30      65      77      84      90      94      97
1232        UA     100
            * DDM   ***** Preserved *****

1233        KK    C101
1234        KM        COMBINE HYDROGRAPHS FROM SUB-BASINS 50 AND 51
1235        HC       2
            * DDM   ***** Preserved *****

1236        KK    DIV3
1237        KM        RESERVOIR AT THE EDGE OF THE PROPERTY   FLOW FROM CHANNEL
1238        KM        DIVERTED  INTO OFFLINE BASIN A 25' WEIR SET AT ELEVATION 1808 FT
            *      1
1239        DT  BASIN2
1240        DI       0      36      70     110     180   313.5     402   500.9
1241        DQ       0       0       0       0       0    67.5     124   190.9
            * DDM   ***** Preserved *****
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1242        KK  RTDIV3
1243        KM   RETRIEVE FLOW FROM DIVERSION INTO OFFLINE BASIN
1244        DR  BASIN2
            * DDM   ***** Preserved *****

1245        KK  RFDIV3
1246        KM   RETRIEVE FLOW INTO FICTICIOUS BASIN AND BLEED OFF WITHIN 36 HOURS.
1247        KM     6.0 ACRE-FEETx43560/36x3600=1.7cfs
1248        RS       1    STOR       0
1249        SV       0     .01       6
1250        SQ       0     1.7     1.7
            * DDM   ***** Preserved *****

1251        KK   CDIV3
1252        KM   HYDROGRAPH COMBINATION FOR OFFLINE BASIN BLEEDOFF
1253        HC       2
            * DDM   ***** Preserved *****

1254        KK    R101
1255        KM        ROUTE FLOW FROM SUBBASIN C101 TO C103
1256        RS       1    FLOW      -1
1257        RC     .05    .035     .05    1450    .05
1258        RX    1000    1010    1020    1036    1041    1057    1067    1077
1259        RY      15    14.5      14      10      10      14    14.5      15
            * DDM   ***** Updated *****

1260        KK     458
1261        KM   SUB-BASIN 458
1262        KM   24-HOUR SCS TYPE II RAINFALL WAS USED TO FIND TC & R FOR THIS BASIN
1263        KM   THIS BASIN USED RAINFALL REDUCTION FACTOR OF  .999
1264        KM     L =  .76  Kb = .048  Adj. Slope =  299.0
1265        BA    .190
1266        LG    .290    .330   5.800    .190   6.000
1267        UC    .204    .131
1268        UA       0       5      16      30      65      77      84      90      94      97
1269        UA     100
            * DDM   ***** Preserved *****

1270        KK    C103
1271        KM        COMBINE HYDROGRAPHS FROM SUB-BASIN 55 AND C101
1272        HC       2
            * DDM   ***** Preserved *****

1273        KK    R103
1274        KM        ROUTE FLOW FROM SUBBASIN C103 TO C106
1275        RS       1    FLOW      -1
1276        RC     .05    .035     .05     900    .03
1277        RX    1000    1010    1020    1030    1050    1060    1070    1080
1278        RY   13.16   12.83    12.5      10      10    12.5   12.83   13.16
            * DDM   ***** Preserved *****
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1279        KK    RT30
1280        KM        RETRIEVE DIVERTED FLOW FOR WASH BELOW 30 INCH PIPE
1281        DR    WA30
            * DDM   ***** Preserved *****

1282        KK     R30
1283        KM        ROUTE FLOW FROM WASH DIVERSION TO COMBINE C52
1284        RS       1    FLOW      -1
1285        RC     .05    .035     .05    1630    .05
1286        RX    1000    1010    1020    1036    1041    1057    1067    1077
1287        RY      15    14.5      14      10      10      14    14.5      15
```

TR-20 vs. HEC-1

Apache Junction FRS

		Recreated TR-20 Model w/Actual Storage	HEC-1 Model w/ Actual Storage & no JD Records	Difference
PSH	Maximum Stage	1799.08	1797.84	-1.24 ft
	Peak Inflow	3125.4	5915.0	89.256%
	Inflow Volume	623.4	429.0	-31.184%
	Peak Storage	601.8	393.0	-34.696%
	Peak Outflow	112.2	106.0	-5.526%

Signal Butte FRS

		Recreated TR-20 Model w/Actual Storage	HEC-1 Model w/ Actual Storage & no JD Records	Difference
PSH	Maximum Stage	1710.15	1705.74	-4.41 ft
	Peak Inflow	8209.2	8088.0	-1.476%
	Inflow Volume	1703.3	994.0	-41.643%
	Peak Storage	1120.1	651.0	-41.880%
	Peak Outflow	146.4	129.0	-11.885%

Spook Hill ADMP Update

Effect of Increased Signal Butte Principal Spillway Outflow on the Downstream Q

Concentration Point	Existing PS Outflow S24CE30Z.DAT		Doubled PS Outflow S24CE30D.DAT		Tripled PS Outflow S24CE30E.DAT		Quadrupled PS Outflow S24CE30F.DAT	
	Discharge	Time	Discharge	Time	Discharge	Time	Discharge	Time
SR180	113	28.53	212	16.23	308	15.10	402	14.60
260C	428	12.10	432	12.10	437	12.13	446	12.13
280C	851	12.13	855	12.13	859	12.13	863	12.13
300C	1699	12.20	1703	12.20	1707	12.20	1712	12.20
C320	2613	12.33	2617	12.33	2622	12.33	2628	12.33
C340	3861		3866		3870		3875	
360C	4027		4032		4036		4042	
380C	4507		4515		4524		4533	
400C	4909		4917		4926		4934	
420C	5335		5343		5352		5360	
455C	6531	**Peak Stage**	6535	**Peak Stage**	6539	**Peak Stage**	6545	**Peak Stage**
SR440	256	1581.40	306	1581.67	350	1581.91	378	1582.05
		608.00		658.00		702.00		729.00

Spook Hill FRS Emergency Spillway Crest 1583.86

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TR20 ------   ------------------------------------------------------------ SCS -
          SIGNAL BUTTE FRS W/PASS MTN - RECREATED BY WOOD/PATEL SBT20cP4 VERSION
09/18/**  ORIGINAL DSGN COND. + NEW STAGE-STORAGE CURVES + ADDL PASS MNT2.04TEST


END OF  1 JOBS IN THIS RUN


                    SCS  TR-20,  VERSION 2.04TEST
                                   FILES

     INPUT  = SBT20CP4.DAT                          , GIVEN DATA FILE
     OUTPUT = SBT20CP4.OUT                          , DATED 09/18/**,09:29:51

              FILES GENERATED - DATED 09/18/**,09:29:51

                                NONE!


           TOTAL NUMBER OF WARNINGS =  28,  MESSAGES =   6

                        JOB ENDED AT 09:29:52
                    *** TR-20 RUN COMPLETED ***
```

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
XSECTION 12	.87			
ALTERNATE 5		633	417	1180
XSECTION 13	.46			
ALTERNATE 5		419	220	643
XSECTION 101	1.86			
ALTERNATE 5		1011	908	2475
XSECTION 104	6.15			
ALTERNATE 5		112	115	115
XSECTION 106	.00			
ALTERNATE 5		0	1375	7308
XSECTION 107	20.05			
ALTERNATE 5		8353	6796	14388
XSECTION 108	7.26			
ALTERNATE 5		3856	3491	5373
XSECTION 109	.00			
ALTERNATE 5		0	0	4554
XSECTION 110	3.95			
ALTERNATE 5		1915	1821	5184
XSECTION 111	3.28			
ALTERNATE 5		1522	1507	4293
XSECTION 112	1.33			
ALTERNATE 5		559	598	1724
XSECTION 113	.46			
ALTERNATE 5		259	213	600

SUMMARY TABLE 3

STORM DISCHARGES (CFS) AT XSECTIONS AND STRUCTURES FOR ALL ALTERNATES
QUESTION MARK (?) AFTER: OUTFLOW PEAK - RISING TRUNCATED HYDROGRAPH.

XSECTION/ STRUCTURE ID	DRAINAGE AREA (SQ MI)	STORM NUMBERS..... 1	4	5
STRUCTURE 2	20.05			
ALTERNATE 5		576	2806	10135
STRUCTURE 1	6.15			
ALTERNATE 5		112	1490	7423
XSECTION 1	3.06			
ALTERNATE 5		1729	1492	4079
XSECTION 2	4.30			
ALTERNATE 5		2188	2032	5654
XSECTION 3	6.15			
ALTERNATE 5		3125	2930	8107
XSECTION 4	8.69			
ALTERNATE 5		2180	1377	3687
XSECTION 5	10.69			
ALTERNATE 5		4157	2431	6346
XSECTION 6	11.83			
ALTERNATE 5		5213	2994	7901
XSECTION 7	12.79			
ALTERNATE 5		5926	3421	9241
XSECTION 8	1.92			
ALTERNATE 5		2152	1076	2827
XSECTION 9	1.39			
ALTERNATE 5		1298	735	1990
XSECTION 10	.67			
ALTERNATE 5		405	319	895
XSECTION 11	1.96			
ALTERNATE 5		1396	939	2655
XSECTION 12	.87			

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
BASEFLOW IS .0 CFS											
ALTERNATE 5 STORM 1											
102	2500		1726	12.4	1689	12.6	4.77	1.00	.065	.978	.81?
103	2500		2157	12.4	2116	12.8	4.78	1.00	.061	.981	.82?
104	6700		112	24.6	112	24.8	1.57	1.53	.000	1.000	.73?
106	3700		2151	12.2	2151	12.2	1.13	1.57	.001	1.000	1.00?
113	6900		419	12.0	259	12.6	.34	1.41	.413	.618	.34
112	7700		757	12.4	558	13.0	.44	1.35	.232	.737	.32
111	2000		1498	12.2	1480	12.4	.37	1.38	.019	.988	.96?
109	2700		1885	12.4	1804	12.8	.34	1.40	.028	.957	.85?
108	2100		2406	12.6	2406	12.6	.85	1.40	.006	1.000	1.00?
107	5300		3852	12.2	3620	12.4	.54	1.38	.041	.940	.73?
ALTERNATE 5 STORM 4											
102	2500		1490	10.2	1489	10.4	4.77	1.00	.023	.999	.81?
103	2500		2032	10.2	2026	10.4	4.78	1.00	.023	.997	.81?
104	6700		115	10.8	115	12.2	1.57	1.53	.000	1.000	.73?
106	3700		1377	9.8	1377	9.8	1.06	1.58	.000	1.000	1.00?
113	6900		220	9.6	212	10.2	.29	1.46	.054	.963	.30
112	7700		626	10.0	598	10.6	.47	1.33	.059	.956	.30
111	2000		1508	10.2	1507	10.4	.37	1.38	.006	1.000	.96?
109	2700		1820	10.4	1818	10.6	.35	1.39	.008	.999	.84?
108	2100		2483	10.2	2483	10.2	.85	1.40	.002	1.000	1.00?
107	5300		3483	10.2	3475	10.4	.54	1.38	.011	.998	.71?
ALTERNATE 5 STORM 5											
102	2500		4079	9.8	4071	10.0	4.78	1.00	.023	.998	.82?
103	2500		5652	10.0	5646	10.2	4.78	1.00	.023	.999	.82?
104	6700		115	8.6	115	10.0	1.57	1.53	.000	1.000	.73?
106	3700		3454	9.0	3454	9.0	1.25	1.55	.000	1.000	1.00?
113	6900		641	9.0	599	9.8	.47	1.34	.054	.936	.34

SUMMARY TABLE 2

MODIFIED ATT-KIN REACH ROUTING IN ORDER PERFORMED.
QUESTION MARK (?) AFTER: OUTFLOW PEAK - MAX. NUMBER ROUTING ITERATIONS USED;
LENGTH FACTOR - VALUE k* GREATER THAN 1.0;
ATT-KIN COEFF - VALUE C GREATER THAN 0.667.

XSEC ID	REACH LENGTH (FT)	FLOOD PLAIN LENGTH (FT)	HYDROGRAPH INFORMATION INFLOW PEAK (CFS)	INFLOW TIME (HR)	OUTFLOW PEAK (CFS)	OUTFLOW TIME (HR)	ROUTING PARAMETERS Q-A EQ. COEFF (X)	Q-A EQ. POWER (M)	LENGTH FACTOR (k*)	PEAK RATIO Q/I (Q*)	ATT-KIN COEFF (C)
ALTERNATE 5 STORM 5											
112	7700		1764	9.6	1724	10.2	.35	1.39	.034	.977	.40
111	2000		4292	9.8	4292	9.8	.26	1.44	.003	1.000	1.00?
109	2700		1915	7.6	1915	9.0	.34	1.40	.003	1.000	.85?
108	2100		2546	7.6	2546	7.6	.86	1.39	.001	1.000	1.00?
107	5300		5253	9.0	5251	9.6	.54	1.38	.006	1.000	.77?

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 5							
XSECTION 1	RUNOFF	1.20	12.99	---	9.40	1645	1370.8
XSECTION 1	ADDHYD	3.06	13.08	---	9.81	4079	1333.0
XSECTION 2	RUNOFF	1.24	12.39	---	9.34	1635	1318.5
XSECTION 2	ADDHYD	4.30	12.88	---	9.94	5654	1314.9
XSECTION 3	RUNOFF	1.85	13.14	---	9.66	2515	1359.5
XSECTION 3	ADDHYD	6.15	12.96	---	10.07	8107	1318.2
STRUCTURE 1	RESVOR	6.15	12.57	1803.90	10.91	7423	1207.0
XSECTION 104	REACH	6.15	1.89	.51	10.00F	115F	18.7
XSECTION 4	RUNOFF	2.54	13.14	---	9.24	3572	1406.3
XSECTION 4	ADDHYD	8.69	5.18	---	9.24	3687	424.3
XSECTION 106	REACH	8.69	5.15	5.62	9.00F	3454F	397.5
XSECTION 5	RUNOFF	2.00	13.43	---	9.13	2892	1446.0
XSECTION 5	ADDHYD	10.69	6.70	---	9.13	6346	593.6
XSECTION 6	RUNOFF	1.14	12.99	---	9.14	1601	1404.4
XSECTION 6	ADDHYD	11.83	7.30	---	9.12	7901	667.9
XSECTION 106	ADDHYD	.00	7.30	9.47	10.91	7308	********
XSECTION 7	RUNOFF	.96	12.38	---	8.98	1313	1367.7
XSECTION 7	ADDHYD	12.79	7.68	---	9.09	9241	722.5
XSECTION 13	RUNOFF	.46	12.84	---	9.07	643	1397.8
XSECTION 113	REACH	.46	12.84	1769.05	9.89	600	1304.3
XSECTION 12	RUNOFF	.87	12.84	---	9.40	1180	1356.3
XSECTION 112	ADDHYD	1.33	12.84	1773.65	9.57	1765	1327.1
XSECTION 112	REACH	1.33	12.84	1773.49	10.23	1724	1296.2
XSECTION 11	RUNOFF	1.96	12.85	---	9.42	2655	1354.6
XSECTION 111	ADDHYD	3.28	12.85	1783.41	9.85	4293	1308.8
XSECTION 111	REACH	3.28	12.85	1783.41	9.85	4293	1308.8
XSECTION 10	RUNOFF	.67	12.84	---	9.67	895	1335.8
XSECTION 110	ADDHYD	3.95	12.85	---	9.81	5184	1312.4
XSECTION 109	REACH	3.95	8.49	1774.23	9.00F	1915F	484.8
XSECTION 9	RUNOFF	1.39	13.43	---	9.24	1990	1431.7

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 5							
XSECTION 109	ADDHYD	5.34	9.78	1781.91	9.24	3905	731.3
XSECTION 108	REACH	5.34	8.49	1761.03	7.60F	2546F	476.8
XSECTION 8	RUNOFF	1.92	13.71	---	9.11	2827	1472.4
XSECTION 108	ADDHYD	7.26	9.87	1764.66	9.11	5373	740.1
XSECTION 109	ADDHYD	.00	9.87	1784.42	9.66	4554	********
XSECTION 107	REACH	7.26	9.86	1762.11	9.57	5251	723.3
XSECTION 107	ADDHYD	20.05	8.47	1772.98	9.20	14388	717.6
STRUCTURE 2	RESVOR	20.05	8.21	1722.12	11.69	10135	505.5

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 1							
XSECTION 110	ADDHYD	3.95	1.84	---	12.47	1915	484.8
XSECTION 109	REACH	3.95	1.84	1773.89	12.70	1827	462.5
XSECTION 9	RUNOFF	1.39	2.15	---	12.15	1298	933.8
XSECTION 109	ADDHYD	5.34	1.92	1776.13	12.59	2407	450.7
XSECTION 108	REACH	5.34	1.92	1760.84	12.59	2407	450.7
XSECTION 8	RUNOFF	1.92	2.31	---	12.06	2152	1120.8
XSECTION 108	ADDHYD	7.26	2.02	1762.66	12.18	3856	531.1
XSECTION 109	ADDHYD	.00	2.02	---	.00	0	********
XSECTION 107	REACH	7.26	2.02	1760.12	12.45	3645	502.1
XSECTION 107	ADDHYD	20.05	1.86	1765.80	12.18	8353	416.6
STRUCTURE 2	RESVOR	20.05	1.62	1709.50	19.55	576	28.7

RAINFALL OF 7.06 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 5, ARC 2

ALTERNATE 5 STORM 4							
XSECTION 101	RUNOFF	1.86	4.75	---	10.27	908	488.2
XSECTION 1	RUNOFF	1.20	4.64	---	9.92	590	491.7
XSECTION 1	ADDHYD	3.06	4.70	---	10.12	1492	487.6
XSECTION 2	RUNOFF	1.24	4.20	---	9.98	554	446.8
XSECTION 2	ADDHYD	4.30	4.56	---	10.22	2032	472.6
XSECTION 3	RUNOFF	1.85	4.75	---	10.05	920	497.3
XSECTION 3	ADDHYD	6.15	4.61	---	10.34	2930	476.4
STRUCTURE 1	RESVOR	6.15	4.24	1801.48	13.24	1490	242.3
XSECTION 104	REACH	6.15	1.81	.51	12.20F	115F	18.7
XSECTION 4	RUNOFF	2.54	4.75	---	9.62	1280	503.9
XSECTION 4	ADDHYD	8.69	2.67	---	9.81	1377	158.5
XSECTION 106	REACH	8.69	2.67	3.06	9.81	1377	158.5
XSECTION 5	RUNOFF	2.00	4.97	---	9.26	1067	533.5
XSECTION 5	ADDHYD	10.69	3.10	---	9.58	2431	227.4

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
ALTERNATE 5 STORM 4							
XSECTION 6	RUNOFF	1.14	4.64	---	9.49	562	493.0
XSECTION 6	ADDHYD	11.83	3.24	---	9.57	2994	253.1
XSECTION 106	ADDHYD	.00	3.24	3.05	13.24	1375	********
XSECTION 7	RUNOFF	.96	4.20	---	9.90	435	453.1
XSECTION 7	ADDHYD	12.79	3.32	---	9.61	3421	267.5
XSECTION 13	RUNOFF	.46	4.52	---	9.51	220	478.3
XSECTION 113	REACH	.46	4.52	1766.73	10.29	213	463.0
XSECTION 12	RUNOFF	.87	4.53	---	9.94	417	479.3
XSECTION 112	ADDHYD	1.33	4.53	1769.18	10.09	626	470.7
XSECTION 112	REACH	1.33	4.53	1769.05	10.66	598	449.6
XSECTION 11	RUNOFF	1.96	4.53	---	9.95	939	479.1
XSECTION 111	ADDHYD	3.28	4.52	1772.66	10.20	1508	459.8
XSECTION 111	REACH	3.28	4.53	1772.66	10.40	1507	459.5
XSECTION 10	RUNOFF	.67	4.53	---	10.10	319	476.1
XSECTION 110	ADDHYD	3.95	4.53	---	10.36	1821	461.0
XSECTION 109	REACH	3.95	4.53	1773.86	10.59	1818	460.3
XSECTION 9	RUNOFF	1.39	4.97	---	9.48	735	528.8
XSECTION 109	ADDHYD	5.34	4.64	1776.44	10.30	2487	465.7
XSECTION 108	REACH	5.34	4.64	1760.95	10.30	2487	465.7
XSECTION 8	RUNOFF	1.92	5.19	---	9.22	1076	560.4
XSECTION 108	ADDHYD	7.26	4.79	1762.23	10.10	3491	480.9
XSECTION 109	ADDHYD	.00	4.79	---	.00	0	********
XSECTION 107	REACH	7.26	4.79	1759.88	10.37	3476	478.8
XSECTION 107	ADDHYD	20.05	3.85	1763.95	10.06	6796	339.0
STRUCTURE 2	RESVOR	20.05	3.59	1716.33	13.67	2806	140.0

RAINFALL OF 15.80 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.

ALTERNATE 5 STORM 5							
XSECTION 101	RUNOFF	1.86	13.14	---	9.97	2475	1330.6

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.21 WATERSHED INCHES; 106258 CFS-HRS; 8781.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	4065	1599	613	577	535	493	221	125

DURATION(HRS)	72	76
FLOW(CFS)	80	59 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 3

SUMMARY TABLE 1

SELECTED RESULTS OF STANDARD AND EXECUTIVE CONTROL IN ORDER PERFORMED.
A CHARACTER FOLLOWING THE PEAK DISCHARGE TIME AND RATE (CFS) INDICATES:
F-FLAT TOP HYDROGRAPH T-TRUNCATED HYDROGRAPH R-RISING TRUNCATED HYDROGRAPH

RAINFALL OF 3.94 inches AND 24.00 hr DURATION, BEGINS AT .0 hrs.
RAINTABLE NUMBER 2, ARC 2
MAIN TIME INCREMENT .200 HOURS

ALTERNATE 5 STORM 1

XSECTION/ STRUCTURE ID	STANDARD CONTROL OPERATION	DRAINAGE AREA (SQ MI)	RUNOFF AMOUNT (IN)	PEAK DISCHARGE ELEVATION (FT)	TIME (HR)	RATE (CFS)	RATE (CSM)
XSECTION 101	RUNOFF	1.86	1.99	---	12.58	1011	543.5
XSECTION 1	RUNOFF	1.20	1.91	---	12.22	900	750.0
XSECTION 1	ADDHYD	3.06	1.96	---	12.37	1729	565.0
XSECTION 2	RUNOFF	1.24	1.62	---	12.18	809	652.4
XSECTION 2	ADDHYD	4.30	1.86	---	12.48	2188	508.8
XSECTION 3	RUNOFF	1.85	1.99	---	12.38	1218	658.4
XSECTION 3	ADDHYD	6.15	1.90	---	12.61	3125	508.1
STRUCTURE 1	RESVOR	6.15	1.55	1799.08	24.52	112	18.2
XSECTION 104	REACH	6.15	1.55	.50	24.77	112	18.2
XSECTION 4	RUNOFF	2.54	1.99	---	12.15	2180	858.3
XSECTION 4	ADDHYD	8.69	1.68	---	12.15	2180	250.9
XSECTION 106	REACH	8.69	1.68	4.13	12.15	2180	250.9
XSECTION 5	RUNOFF	2.00	2.14	---	12.07	2049	1024.5
XSECTION 5	ADDHYD	10.69	1.77	---	12.10	4157	388.9
XSECTION 6	RUNOFF	1.14	1.91	---	12.06	1031	904.4
XSECTION 6	ADDHYD	11.83	1.78	---	12.09	5213	440.7
XSECTION 106	ADDHYD	.00	1.78	---	.00	0	********
XSECTION 7	RUNOFF	.96	1.61	---	11.93	834	868.8
XSECTION 7	ADDHYD	12.79	1.77	---	12.07	5926	463.3
XSECTION 13	RUNOFF	.46	1.85	---	12.01	419	910.9
XSECTION 113	REACH	.46	1.83	1767.05	12.61	259	563.0
XSECTION 12	RUNOFF	.87	1.84	---	12.22	633	727.6
XSECTION 112	ADDHYD	1.33	1.84	1769.81	12.30	771	579.7
XSECTION 112	REACH	1.33	1.84	1768.86	13.04	559	420.3
XSECTION 11	RUNOFF	1.96	1.84	---	12.23	1396	712.2
XSECTION 111	ADDHYD	3.28	1.84	1772.75	12.28	1533	467.4
XSECTION 111	REACH	3.28	1.84	1772.71	12.49	1522	464.0
XSECTION 10	RUNOFF	.67	1.84	---	12.37	405	604.5

31.60 CFS	113	113	113	113	112	112	112	112
33.20 CFS	112	112	112	112	112	112	111	111
34.80 CFS	111	111	111	111	111	111	111	111
36.40 CFS	110	110	110	110	110	110	110	110
38.00 CFS	110	110	110	109	109	109	109	109
39.60 CFS	109	109	109	109	109	109	108	108
41.20 CFS	108	108	108	108	108	108	108	108
42.80 CFS	107	107	107	107	107	107	107	107
44.40 CFS	107	107	107	106	106	106	106	106
46.00 CFS	106	106	106	106	106	106	105	105
47.60 CFS	105	105	105	105	105	105	105	105
49.20 CFS	105	104	104	104	104	104	104	104
50.80 CFS	104	104	104	104	104	103	103	103
52.40 CFS	103	103	103	103	103	103	103	103
54.00 CFS	102	102	102	102	102	102	102	102
55.60 CFS	102	101	101	101	101	101	101	101
57.20 CFS	101	100	100	100	100	100	100	100
58.80 CFS	99.70	99.59	99.48	99.36	99.25	99.14	99.03	98.92
60.40 CFS	98.80	98.69	98.58	98.47	98.36	98.25	98.14	98.03
62.00 CFS	97.91	97.80	97.69	97.58	97.47	97.36	97.25	97.14
63.60 CFS	97.03	96.92	96.81	96.70	96.60	96.49	96.38	96.27
65.20 CFS	96.15	96.03	95.90	95.76	95.63	95.50	95.37	95.24
66.80 CFS	95.11	94.98	94.85	94.72	94.60	94.47	94.34	94.21
68.40 CFS	94.08	93.95	93.82	93.69	93.57	93.44	93.31	93.18
70.00 CFS	93.06	92.93	92.80	92.68	92.55	92.42	92.30	92.17
71.60 CFS	92.04	91.92	91.79	91.67	91.54	91.42	91.29	90.04
73.20 CFS	87.82	85.39	82.96	80.57	78.25	76.00	73.94	72.04
74.80 CFS	70.22	68.45	66.72	65.04	63.41	61.81	60.26	58.74
76.40 CFS	57.26	55.82	54.42	53.05	51.71	50.41	49.14	47.91
78.00 CFS	46.70	45.53	44.38	43.26	42.18	41.12	40.08	39.07
79.60 CFS	38.09	37.13	36.20	35.28	34.40	33.53	32.69	31.87
81.20 CFS	31.06	30.28	29.52	28.78	28.05	27.35		

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.47 WATERSHED INCHES; 109648 CFS-HRS; 9061.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	4520	1717	116	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	62	27 TRUNCATED

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
11.69	10135.4	1722.12

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
3.00 CFS	.00	.01	.05	.16	.40	.87	1.64	2.79

4.60 CFS	4.36	6.51	9.43	13.19	17.97	23.79	30.70	38.76
6.20 CFS	41	42	121	263	425	497	514	534
7.80 CFS	556	576	596	615	854	1477	2390	3574
9.40 CFS	4649	5611	6467	7242	7969	8561	9030	9401
11.00 CFS	9695	9918	10060	10128	10125	10055	9932	9765
12.60 CFS	9565	9345	9115	8877	8629	8374	8120	7868
14.20 CFS	7617	7358	7093	6849	6604	6360	6120	5887
15.80 CFS	5658	5433	5210	4989	4771	4566	4383	4219
17.40 CFS	4065	3916	3778	3655	3539	3416	3284	3157
19.00 CFS	3049	2955	2865	2777	2687	2597	2509	2428
20.60 CFS	2374	2330	2294	2263	2231	2195	2159	2126
22.20 CFS	2095	2060	2020	1984	1960	1942	1921	1894
23.80 CFS	1869	1855	1841	1809	1753	1680	1599	1513
25.40 CFS	1425	1339	1269	1219	1171	1125	1080	1038
27.00 CFS	996	957	919	883	852	831	811	791
28.60 CFS	771	752	734	716	699	682	666	650
30.20 CFS	634	623	621	619	619	618	617	616
31.80 CFS	615	615	614	613	612	611	610	609
33.40 CFS	608	607	607	606	605	604	603	602
35.00 CFS	601	600	599	598	597	596	596	595
36.60 CFS	594	593	592	591	590	589	588	587
38.20 CFS	586	586	585	584	583	582	581	580
39.80 CFS	579	578	577	576	575	574	573	572
41.40 CFS	571	570	569	568	567	566	565	564
43.00 CFS	563	562	561	560	559	558	557	556
44.60 CFS	555	554	553	552	550	549	548	547
46.20 CFS	545	544	543	542	540	539	538	537
47.80 CFS	535	534	533	532	531	529	528	527
49.40 CFS	526	525	523	522	521	520	519	518
51.00 CFS	516	515	514	513	512	511	510	508
52.60 CFS	507	506	505	504	503	502	500	499
54.20 CFS	498	497	496	495	494	493	492	490
55.80 CFS	489	488	487	474	461	448	436	425
57.40 CFS	414	403	392	382	372	363	354	345
59.00 CFS	337	329	321	313	306	298	292	285
60.60 CFS	278	272	266	260	255	249	244	239
62.20 CFS	234	230	225	221	216	212	208	204
63.80 CFS	201	197	194	190	187	184	181	178
65.40 CFS	175	172	170	167	165	162	160	158
67.00 CFS	156	154	152	150	148	146	144	142
68.60 CFS	141	139	137	136	134	133	132	130
70.20 CFS	129	128	127	125	124	123	122	121
71.80 CFS	120	119	118	117	116	115	115	114
73.40 CFS	113	112	111	110	109	107	106	105
75.00 CFS	104	103	101	100	99	97	96	95
76.60 CFS	93.44	92.12	90.79	89.47	88.14	86.82	85.49	84.17
78.20 CFS	82.86	81.55	80.25	78.95	77.66	76.38	75.11	73.85
79.80 CFS	72.60	71.36	70.13	68.91	67.70	66.51	65.32	64.15
81.40 CFS	63.00	61.85	60.72	59.61	58.51			

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.87 WATERSHED INCHES; 46277 CFS-HRS; 3824.3 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	4529	3368	1892	1224	856	761	133	2

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	4553.9	1784.42

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
7.40 CFS	0	231	840	1342	1806	2359	2874	3416
9.00 CFS	3969	4347	4503	4551	4538	4485	4375	4133
10.60 CFS	3882	3656	3455	3248	2950	2655	2323	1969
12.20 CFS	1651	1316	1025	770	543	343	123	0

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
15535 CFS-HRS; 1283.9 ACRE-FEET.

DURATION(HRS)	2	4	6
FLOW(CFS)	3455	1651	0

*** WARNING - XSECTION 107, INFLOW EXCEEDS MAX TABLE DISCHARGE, EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	5251.5	1762.11
17.12	1372.9	1756.01
19.35	1032.7	1755.07
21.36	914.7	1754.70
23.38	827.2	1754.40
24.24	818.0	1754.37

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
2.80 CFS	.10	1.04	1.97	7.60	19.98	31.32	61.49	95.06
4.40 CFS	131	182	233	324	426	539	683	815
6.00 CFS	969	1121	1321	1621	1910	2263	2618	3008
7.60 CFS	3506	3878	4141	4330	4507	4744	4899	5121
9.20 CFS	5222	5246	5251	5241	5189	5141	5052	4896
10.80 CFS	4798	4710	4646	4556	4408	4306	4151	4020
12.40 CFS	3911	3779	3699	3615	3551	3487	3396	3306
14.00 CFS	3206	3051	2884	2699	2540	2380	2236	2116

15.60 CFS	2007	1919	1816	1716	1616	1500	1407	1371
17.20 CFS	1372	1364	1327	1289	1273	1271	1235	1135
18.80 CFS	1039	1010	1025	1032	1008	975	925	872
20.40 CFS	838	831	838	866	902	914	886	851
22.00 CFS	837	837	822	775	734	753	804	827
23.60 CFS	794	754	771	817	796	650	494	352
25.20 CFS	238	158	103	68	44	29	19	12
26.80 CFS	7.95	5.19	3.38	2.22	1.47	.97	.64	.43

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9.86 WATERSHED INCHES; 46231 CFS-HRS; 3820.5 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	4507	3396	1910	1235	866	771	131	2

DURATION(HRS)	25
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.20	14388.5	1772.98
17.01	2757.5	1758.77
17.93	2562.3	1758.44
19.08	2119.7	1757.63
21.07	1884.2	1757.16
21.96	1725.4	1756.82
23.10	1736.0	1756.85
23.99	1738.0	1756.85

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
2.80 CFS	0	1	5	16	36	87	156	241
4.40 CFS	350	458	651	853	1092	1378	1634	1948
6.00 CFS	2235	2679	3297	3869	4602	5276	6124	7165
7.60 CFS	8097	9242	10063	10928	11918	12669	13671	14320
9.20 CFS	14388	14322	14254	14123	13997	13619	13013	12571
10.80 CFS	12191	11917	11496	10909	10437	9769	9207	8691
12.40 CFS	8147	7771	7401	7122	6818	6457	6202	5952
14.00 CFS	5748	5453	5109	4819	4520	4264	4050	3862
15.60 CFS	3704	3495	3303	3101	2879	2722	2717	2758
17.20 CFS	2721	2615	2536	2535	2553	2431	2181	1999
18.80 CFS	2028	2112	2104	2016	1935	1830	1731	1693
20.40 CFS	1707	1735	1805	1879	1865	1773	1701	1703
22.00 CFS	1724	1670	1550	1476	1580	1720	1717	1592
23.60 CFS	1509	1606	1738	1592	1205	871	647	481
25.20 CFS	358	274	219	183	159	144	134	127
26.80 CFS	123	120	118	117	116	116	116	115
28.40 CFS	115	115	115	115	115	114	114	114
30.00 CFS	114	113	113	113	113	113	113	113

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 16004 CFS-HRS; 1322.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2184	1523	944	590	414	313	265	242

DURATION(HRS)	18	20	22	24
FLOW(CFS)	160	30	3	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.30	2487.0	1760.95
21.27	273.5	1755.98
23.93	244.8	1755.85

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 16004 CFS-HRS; 1322.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2184	1523	944	590	414	313	265	242

DURATION(HRS)	18	20	22	24
FLOW(CFS)	160	30	3	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.22	1075.7	(RUNOFF)
17.04	160.0	(RUNOFF)
17.95	146.7	(RUNOFF)
19.07	126.0	(RUNOFF)
21.00	113.1	(RUNOFF)
21.99	97.0	(RUNOFF)
23.04	108.9	(RUNOFF)
23.98	108.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.19 WATERSHED INCHES; 6435 CFS-HRS; 531.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	879	601	349	231	157	125	102	92

DURATION(HRS)	18	20	21
FLOW(CFS)	73	3	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	3490.8	1762.23
18.95	445.8	1756.72
21.08	382.9	1756.46
21.82	357.2	1756.34
23.06	349.0	1756.31
23.97	353.4	1756.33

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
4.40 CFS	0	1	9	15	28	53	70	101
6.00 CFS	129	176	259	322	430	532	655	834
7.60 CFS	979	1206	1423	1653	1957	2201	2529	2833
9.20 CFS	3042	3203	3338	3424	3482	3483	3420	3377
10.80 CFS	3311	3243	3150	3012	2906	2739	2579	2429
12.40 CFS	2247	2108	1963	1836	1717	1584	1485	1389
14.00 CFS	1305	1228	1145	1082	1014	953	904	857
15.60 CFS	819	771	729	688	638	603	595	591
17.20 CFS	577	555	544	543	540	516	466	438
18.80 CFS	442	445	435	418	409	391	370	359
20.40 CFS	358	358	369	382	380	364	356	357
22.00 CFS	357	344	321	311	330	348	344	322
23.60 CFS	315	336	353	324	251	206	163	118
25.20 CFS	81.98	57.70	41.11	29.60	21.47	15.58	11.30	8.20
26.80 CFS	5.97	4.35	3.18	2.32	1.69	1.23	.89	.64
28.40 CFS	.47							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.79 WATERSHED INCHES; 22437 CFS-HRS; 1854.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3042	2108	1305	834	577	438	364	344

DURATION(HRS)	18	20	22	24
FLOW(CFS)	251	53	6	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	660	260	167	129	105	90	36	8

DURATION(HRS)	18	18
FLOW(CFS)	1	0

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.70	1827.4	1773.89
21.99	106.1	1765.73
24.00	90.8	1765.57

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.84 WATERSHED INCHES; 4691 CFS-HRS; 387.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	667	246	168	128	105	90	38	8

DURATION(HRS)	18	18
FLOW(CFS)	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.15	1297.5	(RUNOFF)
21.61	40.5	(RUNOFF)
23.61	34.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.15 WATERSHED INCHES; 1926 CFS-HRS; 159.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	165	87	64	47	40	36	25	4

DURATION(HRS)	17
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	2406.8	1776.13

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 6615 CFS-HRS; 546.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	919	362	238	178	147	125	69	17

DURATION(HRS)	18	20
FLOW(CFS)	4	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 108. ***

OPERATION REACH XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.59	2406.8	1760.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.92 WATERSHED INCHES; 6615 CFS-HRS; 546.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	919	362	238	178	147	125	69	17

DURATION(HRS)	18	20
FLOW(CFS)	4	0

OPERATION RUNOFF XSECTION 8

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.06	2151.5	(RUNOFF)
19.32	67.7	(RUNOFF)
21.55	58.5	(RUNOFF)
23.55	50.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.31 WATERSHED INCHES; 2867 CFS-HRS; 236.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	224	129	92	68	60	51	42	12

DURATION(HRS)	18
FLOW(CFS)	0

OPERATION ADDHYD XSECTION 108

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	3856.5	1762.66
21.50	204.7	1755.67
23.51	175.0	1755.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
7.00 CFS	.03	.73	2.13	2.98	5.42	7.40	10.22	15.13
8.60 CFS	18.22	23.62	28.17	33.31	41.35	47.10	57.87	67.89
10.20 CFS	82	104	123	160	195	248	335	569
11.80 CFS	2060	3510	3852	3333	3114	2707	2255	1931
13.40 CFS	1656	1445	1255	1098	970	856	769	694
15.00 CFS	635	586	540	505	470	440	416	392
16.60 CFS	375	362	353	342	331	322	311	300
18.20 CFS	290	277	268	261	256	251	248	246
19.80 CFS	238	232	227	223	219	211	204	202
21.40 CFS	204	204	200	196	193	191	187	180
23.00 CFS	174	172	174	175	171	167	150	115
24.60 CFS	90.47	70.21	52.06	38.72	29.31	22.14	16.57	12.27
26.20 CFS	8.99	6.53	4.71	3.39	2.42	1.73	1.24	.88
27.80 CFS	.62	.44						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.02 WATERSHED INCHES; 9487 CFS-HRS; 784.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1255	505	331	248	204	175	104	33

DURATION(HRS)	18	20	21
FLOW(CFS)	9	1	0

OPERATION ADDHYD XSECTION 109

*** MESSAGE - HYDROGRAPH CONTAINS NO FLOW ***

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
114 CFS-HRS; 784.0 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.45	3645.4	1760.12
21.71	204.5	1751.52
23.72	174.7	1751.31

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
7.20 CFS	.03	.54	1.69	2.63	4.66	6.65	9.25	13.53
8.80 CFS	16.94	21.80	26.43	31.44	38.65	44.80	54.31	64.19
10.40 CFS	77	97	116	148	182	230	307	497

12.00 CFS	1634	2999	3620	3411	3195	2840	2414	2062
13.60 CFS	1767	1533	1331	1161	1022	901	805	725
15.20 CFS	659	606	558	520	484	452	425	401
16.80 CFS	382	368	357	346	335	326	315	304
18.40 CFS	294	282	272	264	258	253	250	247
20.00 CFS	241	234	229	225	221	214	207	204
21.60 CFS	204	204	201	197	194	192	189	183
23.20 CFS	176	173	174	174	172	168	155	125
24.80 CFS	100	78	59	44	33	25	19	14
26.40 CFS	10.37	7.57	5.49	3.96	2.84	2.04	1.45	1.03
28.00 CFS	.73	.52	.37					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.02 WATERSHED INCHES; 9475 CFS-HRS; 783.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1331	497	326	250	204	176	100	33

DURATION(HRS)	18	20	21
FLOW(CFS)	9	1	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.18	8353.5	1765.80
21.56	502.4	1753.13
23.57	446.7	1752.88

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
7.20 CFS	.03	.54	1.76	3.26	5.77	9.27	14.80	21.10
8.80 CFS	30	40	52	67	82	102	123	151
10.40 CFS	190	230	298	368	478	640	1204	4125
12.00 CFS	7419	8344	7015	5696	4813	4089	3459	2955
13.60 CFS	2582	2265	2008	1799	1623	1481	1359	1260
15.20 CFS	1176	1099	1037	974	920	875	836	806
16.80 CFS	786	771	753	732	714	692	672	651
18.40 CFS	629	611	600	591	585	581	576	562
20.00 CFS	547	538	532	525	510	495	491	498
21.60 CFS	502	493	482	475	472	467	452	438
23.20 CFS	435	442	446	438	426	385	313	254
24.80 CFS	218	193	172	157	145	137	131	126
26.40 CFS	122	119	117	115	114	113	113	112
28.00 CFS	112	111	111	111	111	111	110	110
29.60 CFS	110	110	110	110	110	110	110	110
31.20 CFS	109	109	109	109	109	109	109	109
32.80 CFS	109	109	109	108	108	108	108	108
34.40 CFS	108	108	108	108	108	107	107	107
36.00 CFS	107	107	107	107	107	107	107	107
37.60 CFS	106	106	106	106	106	106	106	106

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
132 CFS-HRS; 1854.2 ACRE-FEET.

OPERATION REACH XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.37	3475.6	1759.88
19.12	445.8	1752.87
21.34	380.1	1752.54
23.32	344.4	1752.36
24.20	346.7	1752.37

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 7.26 SQ.MI.

HRS								
4.60 CFS	.04	.72	6.36	12.53	23.80	44.99	62.77	89.94
6.20 CFS	118	160	230	296	391	492	609	770
7.80 CFS	919	1124	1338	1563	1845	2099	2406	2711
9.40 CFS	2948	3130	3279	3383	3454	3475	3435	3393
11.00 CFS	3334	3269	3184	3061	2950	2799	2642	2489
12.60 CFS	2317	2168	2021	1889	1766	1636	1528	1429
14.20 CFS	1341	1260	1178	1109	1041	978	925	876
15.80 CFS	835	789	746	705	657	618	601	594
17.40 CFS	582	562	549	544	542	523	483	451
19.00 CFS	444	445	438	424	413	397	377	364
20.60 CFS	360	358	366	377	379	369	360	358
22.20 CFS	357	348	329	316	326	342	343	328
23.80 CFS	319	331	347	331	274	225	181	136
25.40 CFS	97.27	68.99	49.06	35.15	25.37	18.38	13.32	9.66
27.00 CFS	7.02	5.11	3.73	2.72	1.98	1.44	1.05	.76
28.60 CFS	.55	.40						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.79 WATERSHED INCHES; 22436 CFS-HRS; 1854.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3061	2099	1338	835	582	444	366	342

DURATION(HRS)	18	20	22	24
FLOW(CFS)	230	49	6	0

OPERATION ADDHYD XSECTION 107

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.06	6795.9	1763.95
16.98	1245.3	1755.66
17.93	1148.5	1755.39
19.07	973.9	1754.89
21.05	857.3	1754.50
21.97	796.6	1754.30
23.08	803.7	1754.32
24.00	804.4	1754.33

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
4.60 CFS	0	2	9	26	60	99	161	227
6.20 CFS	329	480	626	838	1043	1307	1642	1956
7.80 CFS	2403	2830	3322	3894	4401	5047	5653	6100
9.40 CFS	6364	6552	6696	6791	6765	6623	6494	6369
11.00 CFS	6255	6063	5795	5551	5222	4913	4605	4282
12.60 CFS	4012	3749	3525	3296	3053	2857	2685	2543
14.20 CFS	2399	2246	2121	1995	1888	1797	1716	1647
15.80 CFS	1557	1474	1389	1297	1232	1230	1245	1223
17.40 CFS	1170	1133	1135	1145	1092	985	909	931
19.00 CFS	971	963	916	878	838	801	788	795
20.60 CFS	805	830	856	847	806	777	783	796
22.20 CFS	773	720	690	737	798	792	731	695
23.80 CFS	743	804	740	570	433	356	302	253
25.40 CFS	213	184	164	150	140	133	128	125
27.00 CFS	122	120	119	117	116	115	115	114
28.60 CFS	114	114	113	113	113	113	113	113
30.20 CFS	113	113	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103
51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97

65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.85 WATERSHED INCHES; 49801 CFS-HRS; 4115.5 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1647	773	113	109	105	102	97	92

DURATION(HRS)	72	78
FLOW(CFS)	40	20 TRUNCATED

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.67	2806.4	1716.33

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
4.60 CFS	.00	.01	.03	.10	.27	.58	1.08	1.84
6.20 CFS	2.92	4.48	6.63	9.47	13.11	17.65	23.35	30.29
7.80 CFS	39	41	42	130	269	422	496	511
9.40 CFS	527	544	559	572	586	597	608	618
11.00 CFS	732	905	1130	1363	1656	1905	2113	2283
12.60 CFS	2420	2566	2672	2746	2789	2805	2802	2783
14.20 CFS	2752	2709	2657	2597	2532	2463	2399	2347
15.80 CFS	2293	2236	2177	2116	2054	1994	1939	1888
17.40 CFS	1837	1787	1739	1696	1654	1609	1561	1514
19.00 CFS	1473	1436	1400	1363	1326	1289	1267	1245
20.60 CFS	1225	1207	1191	1175	1160	1143	1127	1112
22.20 CFS	1097	1081	1065	1049	1036	1025	1013	1000
23.80 CFS	987	978	969	955	934	910	884	857
25.40 CFS	839	821	802	784	765	747	730	712
27.00 CFS	695	679	663	647	632	623	620	619
28.60 CFS	619	618	617	616	615	614	614	613
30.20 CFS	612	611	610	609	608	607	606	605
31.80 CFS	605	604	603	602	601	600	599	598
33.40 CFS	597	596	595	595	594	593	592	591
35.00 CFS	590	589	588	587	586	585	584	584
36.60 CFS	583	582	581	580	578	577	576	575

38.20 CFS	574	573	572	571	570	569	568	567
39.80 CFS	567	566	565	564	563	562	561	560
41.40 CFS	559	558	557	556	555	554	553	551
43.00 CFS	550	549	548	546	545	544	543	541
44.60 CFS	540	539	538	537	535	534	533	532
46.20 CFS	531	529	528	527	526	525	523	522
47.80 CFS	521	520	519	518	516	515	514	513
49.40 CFS	512	511	509	508	507	506	505	504
51.00 CFS	503	501	500	499	498	497	496	495
52.60 CFS	494	493	491	490	489	488	486	473
54.20 CFS	460	447	435	424	413	402	392	382
55.80 CFS	372	362	353	345	336	328	320	313
57.40 CFS	305	298	291	285	278	272	266	260
59.00 CFS	255	249	244	239	234	229	225	220
60.60 CFS	216	212	208	204	201	197	194	190
62.20 CFS	187	184	181	178	175	172	170	167
63.80 CFS	165	162	160	158	156	154	152	150
65.40 CFS	148	146	144	142	141	139	138	136
67.00 CFS	135	133	132	131	129	128	127	126
68.60 CFS	125	123	122	121	120	119	118	118
70.20 CFS	117	116	115	114	113	113	112	111
71.80 CFS	110	109	108	107	106	105	103	102
73.40 CFS	101	100	99	97	96	95	94	92
75.00 CFS	90.95	89.66	88.36	87.07	85.78	84.49	83.20	81.91
76.60 CFS	80.63	79.35	78.08	76.82	75.57	74.32	73.08	71.85
78.20 CFS	70.63	69.42	68.23	67.04	65.86	64.70	63.55	62.41
79.80 CFS	61.28	60.17	59.07	57.99	56.91	55.86	54.82	53.80
81.40 CFS	52.80	51.82	50.86	49.92	48.99	48.08	47.19	46.32
83.00 CFS	45.46	44.62	43.80	42.99				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.59 WATERSHED INCHES; 46489 CFS-HRS; 3841.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1363	695	593	557	512	328	156	107

DURATION(HRS)	72	75
FLOW(CFS)	58	43 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 2

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 15.80 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 5 RAIN TABLE NO. = 5

39.20 CFS	106	106	106	105	105	105	105	105
40.80 CFS	105	105	105	105	105	105	104	104
42.40 CFS	104	104	104	104	104	104	104	104
44.00 CFS	104	103	103	103	103	103	103	103
45.60 CFS	103	103	103	103	103	102	102	102
47.20 CFS	102	102	102	102	102	102	101	101
48.80 CFS	101	101	101	101	101	101	100	100
50.40 CFS	100	100	100	100	100	100	100	99
52.00 CFS	99.35	99.23	99.12	99.01	98.90	98.79	98.67	98.56
53.60 CFS	98.45	98.34	98.23	98.12	98.01	97.90	97.79	97.68
55.20 CFS	97.57	97.46	97.34	97.23	97.12	97.01	96.90	96.80
56.80 CFS	96.69	96.58	96.47	96.36	96.25	96.13	96.00	95.88
58.40 CFS	95.74	95.61	95.48	95.35	95.22	95.09	94.96	94.83
60.00 CFS	94.70	94.57	94.44	94.32	94.19	94.06	93.93	93.80
61.60 CFS	93.67	93.55	93.42	93.29	93.16	93.04	92.91	92.78
63.20 CFS	92.65	92.53	92.40	92.28	92.15	92.02	91.90	91.77
64.80 CFS	91.65	91.52	91.40	91.27	89.72	87.43	84.99	82.57
66.40 CFS	80.19	77.89	75.64	73.63	71.74	69.93	68.17	66.45
68.00 CFS	64.78	63.15	61.56	60.01	58.50	57.03	55.59	54.19
69.60 CFS	52.83	51.50	50.21	48.94	47.71	46.51	45.34	44.20
71.20 CFS	43.09	42.00	40.95	39.92	38.91	37.93	36.98	36.05
72.80 CFS	35.14	34.26	33.39	32.55	31.74	30.94	30.16	29.40
74.40 CFS	28.66	27.94	27.24	26.55	26.02	25.54	25.08	24.63
76.00 CFS	24.18	23.75	23.33	22.91	22.50	22.09	21.70	21.31
77.60 CFS	20.92	20.55	20.18	19.82	19.46	19.11	18.77	18.43
79.20 CFS	18.10	17.78	17.46	17.15	16.84	16.54	16.24	15.95
80.80 CFS	15.66	15.38	15.11	14.84	14.57	14.31	14.05	13.80
82.40 CFS	13.55	13.31	13.07	12.84	12.60	12.38	12.16	11.94
84.00 CFS	11.73	11.52	11.31	11.10	10.91	10.71	10.52	10.33
85.60 CFS	10.14	9.96	9.78	9.61				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.86 WATERSHED INCHES; 24104 CFS-HRS; 1991.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	581	126	108	104	101	96	87	34

DURATION(HRS)	72	78
FLOW(CFS)	16	10 TRUNCATED

OPERATION RESVOR STRUCTURE 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
19.55	576.0	1709.50

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 1
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 20.05 SQ.MI.

HRS								
7.40 CFS	.00	.01	.02	.03	.06	.11	.18	.28
9.00 CFS	.42	.59	.83	1.11	1.47	1.90	2.43	3.09
10.60 CFS	3.90	4.91	6.20	7.83	9.98	13.55	23.92	41.27

12.20 CFS	152	412	498	511	522	531	539	545
13.80 CFS	551	555	558	560	562	564	566	567
15.40 CFS	568	569	570	571	572	572	573	573
17.00 CFS	574	574	575	575	575	575	576	576
18.60 CFS	576	576	576	576	576	576	576	576
20.20 CFS	576	576	576	576	575	575	575	575
21.80 CFS	575	575	574	574	574	574	573	573
23.40 CFS	573	573	572	572	572	571	570	570
25.00 CFS	569	568	567	566	565	565	564	563
26.60 CFS	562	561	560	559	558	557	556	555
28.20 CFS	554	553	552	550	549	548	547	546
29.80 CFS	544	543	542	541	539	538	537	536
31.40 CFS	535	533	532	531	530	529	527	526
33.00 CFS	525	524	523	522	520	519	518	517
34.60 CFS	516	515	514	512	511	510	509	508
36.20 CFS	507	506	504	503	502	501	500	499
37.80 CFS	498	497	496	494	493	492	491	490
39.40 CFS	489	488	483	470	458	445	434	422
41.00 CFS	411	401	391	381	371	362	353	344
42.60 CFS	336	328	320	313	306	299	292	285
44.20 CFS	279	273	267	262	256	251	246	241
45.80 CFS	236	231	227	223	219	215	211	207
47.40 CFS	203	200	196	193	190	187	184	181
49.00 CFS	178	176	173	171	168	166	164	161
50.60 CFS	159	157	155	153	151	150	148	146
52.20 CFS	145	143	142	140	139	137	136	135
53.80 CFS	133	132	131	130	129	128	127	126
55.40 CFS	125	124	123	122	121	120	119	119
57.00 CFS	118	117	116	116	115	114	114	113
58.60 CFS	113	112	111	111	110	110	109	109
60.20 CFS	108	108	107	107	106	106	106	105
61.80 CFS	105	104	104	104	103	103	103	102
63.40 CFS	102	102	101	101	101	100	100	100
65.00 CFS	99.47	99.19	98.92	98.63	98.28	97.87	97.38	96.83
66.60 CFS	96.21	95.54	94.82	94.06	93.25	92.42	91.55	90.65
68.20 CFS	89.73	88.79	87.82	86.83	85.83	84.81	83.78	82.73
69.80 CFS	81.67	80.61	79.54	78.46	77.38	76.29	75.20	74.11
71.40 CFS	73.02	71.93	70.84	69.76	68.68	67.60	66.52	65.46
73.00 CFS	64.39	63.34	62.29	61.25	60.21	59.19	58.17	57.17
74.60 CFS	56.17	55.18	54.21	53.24	52.29	51.36	50.44	49.55
76.20 CFS	48.66	47.79	46.94	46.10	45.28	44.47	43.68	42.90
77.80 CFS	42.79	42.79	42.78	42.77	42.76	42.76	42.75	42.74
79.40 CFS	42.73	42.72	42.72	42.71	42.70	42.69	42.68	42.67
81.00 CFS	42.66	42.65	42.65	42.64	42.63	42.62	42.61	42.60
82.60 CFS	42.59	42.58	42.57	42.56	42.55	42.54	42.53	42.52
84.20 CFS	42.51	42.50	42.49	42.48	42.47	42.46	42.45	42.44
85.80 CFS	42.43	42.42	42.41					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.62 WATERSHED INCHES; 21017 CFS-HRS; 1736.9 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	572	545	503	273	145	108	90	49

DURATION(HRS)	72	72
FLOW(CFS)	43	42 TRUNCATED

EXECUTIVE CONTROL ENDCMP COMPUTATIONS COMPLETED FOR PASS 1

EXECUTIVE CONTROL COMPUT FROM XSECTION 101 TO STRUCTURE 2
STARTING TIME = .00 RAIN DEPTH = 7.06 RAIN DURATION = 1.00
ANT. RUNOFF COND. = 2 MAIN TIME INCREMENT = .200 HOURS
ALTERNATE NO. = 5 STORM NO. = 4 RAIN TABLE NO. = 5

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.27	907.9	(RUNOFF)
19.37	108.9	(RUNOFF)
21.37	96.9	(RUNOFF)
23.43	87.1	(RUNOFF)
24.14	85.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5697 CFS-HRS; 470.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	798	526	322	205	144	109	93	85

DURATION(HRS)	18	20	22
FLOW(CFS)	54	7	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.92	589.5	(RUNOFF)
17.18	93.2	(RUNOFF)
18.00	85.5	(RUNOFF)
19.22	72.3	(RUNOFF)
21.14	65.6	(RUNOFF)
22.09	56.6	(RUNOFF)
23.19	61.1	(RUNOFF)
24.10	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3590 CFS-HRS; 296.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	513	328	198	126	90	69	60	55

DURATION(HRS)	18	20	20
FLOW(CFS)	38	1	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.12	1492.3	(NULL)
17.12	238.5	(NULL)
19.22	180.6	(NULL)
21.21	161.4	(NULL)
23.24	146.2	(NULL)
24.11	145.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.70 WATERSHED INCHES; 9287 CFS-HRS; 767.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1296	868	531	334	238	178	151	143

DURATION(HRS)	18	20	22
FLOW(CFS)	91	8	0

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.98	554.5	(RUNOFF)
17.14	92.9	(RUNOFF)
17.99	85.3	(RUNOFF)
19.18	72.5	(RUNOFF)
21.10	65.9	(RUNOFF)
22.06	56.7	(RUNOFF)
23.15	62.1	(RUNOFF)
24.06	60.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 3360 CFS-HRS; 277.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	311	182	119	85	65	59	54

DURATION(HRS)	18	20
FLOW(CFS)	18	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.22	2032.0	(NULL)
19.21	249.8	(NULL)
21.26	221.7	(NULL)
23.28	200.3	(NULL)
24.13	199.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.56 WATERSHED INCHES; 12647 CFS-HRS; 1045.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1784	1153	712	450	326	248	208	195

DURATION(HRS)	18	20	22
FLOW(CFS)	105	9	0

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.05	920.4	(RUNOFF)
17.25	143.0	(RUNOFF)
19.33	109.2	(RUNOFF)
21.24	98.9	(RUNOFF)
22.11	88.1	(RUNOFF)
23.29	89.9	(RUNOFF)
24.14	87.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 5666 CFS-HRS; 468.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	801	512	311	204	140	108	92	86

DURATION(HRS)	18	20	21
FLOW(CFS)	55	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.34	2929.7	(NULL)
19.35	358.6	(NULL)
21.40	317.3	(NULL)
23.43	286.4	(NULL)
24.21	280.1	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.00 CFS	.00	.60	2.70	6.81	14.81	28.09	48.26	81.11
6.60 CFS	128	188	263	351	456	582	725	891
8.20 CFS	1078	1284	1515	1758	2018	2277	2502	2673
9.80 CFS	2792	2872	2920	2928	2897	2840	2776	2708
11.40 CFS	2630	2531	2419	2291	2153	2012	1871	1738
13.00 CFS	1616	1506	1405	1305	1214	1133	1063	1000
14.60 CFS	939	882	829	780	737	700	667	634
16.20 CFS	600	564	528	497	480	476	473	464
17.80 CFS	452	445	441	429	402	372	357	357
19.40 CFS	358	353	341	326	310	297	293	295
21.00 CFS	303	312	317	312	302	296	293	288
22.60 CFS	276	264	265	278	286	281	271	272
24.20 CFS	280	274	237	183	133	92	62	40
25.80 CFS	25.48	16.32	10.46	6.73	4.32	2.77	1.78	1.14
27.40 CFS	.73	.46						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.61 WATERSHED INCHES; 18313 CFS-HRS; 1513.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2531	1738	1063	667	464	357	302	278

DURATION(HRS)	18	20	22	22
FLOW(CFS)	183	16	1	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1490.3	1801.48

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
7.40 CFS	.00	.01	.01	.01	.01	.02	8.52	42.32
9.00 CFS	91	94	97	100	103	105	107	110
10.60 CFS	112	188	423	632	815	973	1108	1220
12.20 CFS	1310	1380	1430	1464	1483	1490	1487	1475
13.80 CFS	1456	1430	1401	1367	1332	1294	1254	1214
15.40 CFS	1173	1132	1092	1052	1013	974	936	898
17.00 CFS	861	827	795	766	738	712	688	665
18.60 CFS	643	620	597	575	556	538	521	504
20.20 CFS	487	471	455	440	428	417	408	399
21.80 CFS	391	383	375	367	360	351	344	337
23.40 CFS	332	328	323	319	315	311	306	298
25.00 CFS	285	270	252	234	216	199	182	166
26.60 CFS	152	139	126	115	114	114	114	114
28.20 CFS	113	113	113	113	113	113	113	113
29.80 CFS	113	113	112	112	112	112	112	112
31.40 CFS	112	112	112	112	111	111	111	111
33.00 CFS	111	111	111	111	111	111	111	110
34.60 CFS	110	110	110	110	110	110	110	110
36.20 CFS	110	110	109	109	109	109	109	109
37.80 CFS	109	109	109	109	108	108	108	108
39.40 CFS	108	108	108	108	108	108	108	107
41.00 CFS	107	107	107	107	107	107	107	107
42.60 CFS	107	107	106	106	106	106	106	106
44.20 CFS	106	106	106	106	106	105	105	105
45.80 CFS	105	105	105	105	105	105	105	105
47.40 CFS	104	104	104	104	104	104	104	104
49.00 CFS	104	104	104	103	103	103	103	103
50.60 CFS	103	103	103	103	103	103	102	102
52.20 CFS	102	102	102	102	102	102	102	101
53.80 CFS	101	101	101	101	101	101	101	101
55.40 CFS	100	100	100	100	100	100	100	100
57.00 CFS	99.53	99.42	99.31	99.20	99.09	98.97	98.86	98.75

58.60 CFS	98.64	98.53	98.42	98.30	98.19	98.08	97.97	97.86
60.20 CFS	97.75	97.64	97.53	97.42	97.31	97.20	97.09	96.98
61.80 CFS	96.87	96.76	96.65	96.54	96.43	96.32	96.22	96.10
63.40 CFS	95.96	95.83	95.70	95.57	95.44	95.31	95.18	95.05
65.00 CFS	94.92	94.79	94.66	94.53	94.40	94.28	94.15	94.02
66.60 CFS	93.89	93.76	93.63	93.51	93.38	93.25	93.12	93.00
68.20 CFS	92.87	92.74	92.62	92.49	92.36	92.24	92.11	91.98
69.80 CFS	91.86	91.73	91.61	91.48	91.36	91.23	89.28	86.71
71.40 CFS	84.21	81.78	79.43	77.14	74.92	72.97	71.13	69.34
73.00 CFS	67.60	65.90	64.24	62.62	61.05	59.51	58.01	56.55
74.60 CFS	55.13	53.74	52.39	51.07	49.79	48.53	47.31	46.12
76.20 CFS	44.96	43.83	42.73	41.65	40.60	39.58	38.59	37.62
77.80 CFS	36.67	35.75	34.85	33.97	33.12	32.28	31.47	30.68
79.40 CFS	29.91	29.15	28.42	27.71	27.01	26.33	25.85	25.38
81.00 CFS	24.93	24.48	24.04	23.61	23.19	22.77	22.36	21.96
82.60 CFS	21.57	21.18	20.80	20.43	20.06	19.70	19.35	19.00
84.20 CFS	18.66	18.33	18.00					

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.24 WATERSHED INCHES; 16834 CFS-HRS; 1391.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	575	139	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	25	18 TRUNCATED

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN
2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT,
UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
12.20	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.81 WATERSHED INCHES; 7178 CFS-HRS; 593.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	110	107	103	99	95	68

DURATION(HRS)	72	76
FLOW(CFS)	26	18 TRUNCATED

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.62	1280.3	(RUNOFF)
17.11	201.4	(RUNOFF)
17.98	184.7	(RUNOFF)
19.15	157.1	(RUNOFF)
21.07	142.2	(RUNOFF)
22.04	122.6	(RUNOFF)
23.12	135.1	(RUNOFF)
24.03	132.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.75 WATERSHED INCHES; 7779 CFS-HRS; 642.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1087	722	434	275	190	145	131	115

DURATION(HRS)	18	20	20
FLOW(CFS)	71	2	0

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 16.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	(NULL)
17.11	316.4	(NULL)
17.98	299.7	(NULL)
19.15	272.1	(NULL)
21.07	257.2	(NULL)
22.04	237.6	(NULL)
23.12	250.1	(NULL)
24.03	247.1	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	1376.6	3.06
17.11	316.4	1.08
17.98	299.7	1.02
19.15	272.1	.93
21.07	257.2	.87
22.04	237.6	.81
23.12	250.1	.85
24.03	247.1	.84

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
2.67 WATERSHED INCHES; 14957 CFS-HRS; 1236.1 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	372	228	112	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	37	18 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.26	1067.2	(RUNOFF)
17.05	163.9	(RUNOFF)
17.95	150.0	(RUNOFF)
19.08	129.0	(RUNOFF)
21.01	116.0	(RUNOFF)
21.99	99.5	(RUNOFF)
23.05	111.6	(RUNOFF)
23.99	111.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 6412 CFS-HRS; 529.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	892	579	359	224	154	128	105	94

DURATION(HRS)	18	20	20
FLOW(CFS)	74	2	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.58	2431.4	(NULL)
17.08	479.7	(NULL)
17.97	449.6	(NULL)
19.11	399.6	(NULL)
21.04	372.9	(NULL)
22.01	337.0	(NULL)
23.08	360.7	(NULL)
24.01	357.9	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.10 WATERSHED INCHES; 21361 CFS-HRS; 1765.2 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	586	319	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.49	562.3	(RUNOFF)
17.04	91.0	(RUNOFF)
17.95	83.5	(RUNOFF)
19.07	71.9	(RUNOFF)
21.00	64.6	(RUNOFF)
21.99	55.4	(RUNOFF)
23.04	62.2	(RUNOFF)
23.98	62.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.64 WATERSHED INCHES; 3410 CFS-HRS; 281.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	485	314	187	120	85	65	58	52

DURATION(HRS)	18	20
FLOW(CFS)	32	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	2993.5	(NULL)
17.07	570.6	(NULL)
17.96	533.1	(NULL)
19.10	470.7	(NULL)
21.03	437.4	(NULL)
22.01	392.4	(NULL)
23.07	422.8	(NULL)
24.00	419.8	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.24 WATERSHED INCHES; 24770 CFS-HRS; 2047.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	711	371	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
13.24	1375.3	3.05

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
10.60 CFS	0	73	308	517	700	858	993	1105
12.20 CFS	1195	1265	1315	1349	1368	1375	1372	1360
13.80 CFS	1341	1315	1286	1252	1217	1179	1139	1099
15.40 CFS	1058	1017	977	937	898	859	821	783
17.00 CFS	746	712	680	651	623	597	573	550
18.60 CFS	528	505	482	460	441	423	406	389
20.20 CFS	372	356	340	325	313	302	293	284
21.80 CFS	276	268	260	252	245	236	229	222
23.40 CFS	217	213	208	204	200	196	191	183
25.00 CFS	170	155	137	119	101	84	67	51
26.60 CFS	36.92	23.59	11.34	.12				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
9650 CFS-HRS; 797.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1252	977	680	460	308	229	170	24

DURATION(HRS)	16
FLOW(CFS)	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.90	435.3	(RUNOFF)
16.93	76.1	(RUNOFF)
17.91	70.3	(RUNOFF)
18.94	61.1	(RUNOFF)
20.91	54.4	(RUNOFF)
21.92	46.9	(RUNOFF)
22.93	54.6	(RUNOFF)
23.91	57.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.20 WATERSHED INCHES; 2600 CFS-HRS; 214.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	373	227	141	93	66	53	46	39

DURATION(HRS)	18	19
FLOW(CFS)	19	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT -.7%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.61	3421.4	(NULL)
17.04	644.6	(NULL)
17.94	602.9	(NULL)
19.07	530.0	(NULL)
21.00	490.6	(NULL)
21.98	438.5	(NULL)
23.04	474.0	(NULL)
23.98	474.2	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 4
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
4.60 CFS	0	2	3	14	36	54	98	137
6.20 CFS	211	320	396	542	652	815	1033	1186
7.80 CFS	1484	1705	1984	2332	2556	2948	3247	3389
9.40 CFS	3416	3421	3417	3408	3311	3148	3058	2975
11.00 CFS	2921	2795	2611	2490	2272	2114	1963	1792
12.60 CFS	1695	1581	1503	1407	1287	1221	1157	1115
14.20 CFS	1059	986	943	886	847	819	791	771
15.80 CFS	721	684	643	592	575	612	644	629
17.40 CFS	588	571	586	600	551	462	427	480
19.00 CFS	527	518	478	454	424	404	410	430
20.60 CFS	445	472	491	470	427	409	424	438
22.20 CFS	416	372	361	422	473	450	388	367

23.80 CFS	424	473	394	239	159	131	121	117
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	114	114	114	114	113
28.60 CFS	113	113	113	113	113	113	113	113
30.20 CFS	113	112	112	112	112	112	112	112
31.80 CFS	112	112	112	112	111	111	111	111
33.40 CFS	111	111	111	111	111	111	110	110
35.00 CFS	110	110	110	110	110	110	110	110
36.60 CFS	110	109	109	109	109	109	109	109
38.20 CFS	109	109	109	109	108	108	108	108
39.80 CFS	108	108	108	108	108	108	107	107
41.40 CFS	107	107	107	107	107	107	107	107
43.00 CFS	107	106	106	106	106	106	106	106
44.60 CFS	106	106	106	106	105	105	105	105
46.20 CFS	105	105	105	105	105	105	105	104
47.80 CFS	104	104	104	104	104	104	104	104
49.40 CFS	104	104	103	103	103	103	103	103
51.00 CFS	103	103	103	103	103	103	102	102
52.60 CFS	102	102	102	102	102	102	102	101
54.20 CFS	101	101	101	101	101	101	101	100
55.80 CFS	100	100	100	100	100	100	100	100
57.40 CFS	99.46	99.35	99.24	99.13	99.01	98.90	98.79	98.68
59.00 CFS	98.57	98.46	98.35	98.23	98.12	98.01	97.90	97.79
60.60 CFS	97.68	97.57	97.46	97.35	97.24	97.13	97.02	96.91
62.20 CFS	96.80	96.69	96.58	96.47	96.36	96.25	96.14	96.01
63.80 CFS	95.88	95.75	95.62	95.49	95.36	95.23	95.10	94.97
65.40 CFS	94.84	94.71	94.58	94.45	94.32	94.19	94.06	93.94
67.00 CFS	93.81	93.68	93.55	93.42	93.30	93.17	93.04	92.92
68.60 CFS	92.79	92.66	92.54	92.41	92.28	92.16	92.03	91.90
70.20 CFS	91.78	91.65	91.53	91.40	91.28	89.82	87.54	85.10
71.80 CFS	82.68	80.30	77.99	75.74	73.71	71.82	70.01	68.24
73.40 CFS	66.53	64.85	63.22	61.63	60.08	58.57	57.09	55.66
75.00 CFS	54.26	52.89	51.56	50.26	49.00	47.76	46.56	45.39
76.60 CFS	44.25	43.14	42.05	40.99	39.96	38.96	37.97	37.02
78.20 CFS	36.09	35.18	34.29	33.43	32.59	31.77	30.97	30.19
79.80 CFS	29.43	28.69	27.97	27.27	26.58	26.04	25.56	25.10
81.40 CFS	24.65	24.20	23.77	23.34	22.92	22.51	22.11	21.71
83.00 CFS	21.32	20.94	20.57	20.20	19.83	19.48	19.13	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
3.32 WATERSHED INCHES; 27368 CFS-HRS; 2261.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	815	410	113	109	105	101	97	92

DURATION(HRS)	72	79
FLOW(CFS)	39	19 TRUNCATED

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.51	220.5	(RUNOFF)
17.00	36.6	(RUNOFF)
17.93	33.6	(RUNOFF)
19.02	29.1	(RUNOFF)
20.96	26.1	(RUNOFF)
21.96	22.4	(RUNOFF)
23.00	25.4	(RUNOFF)
23.95	25.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 1337 CFS-HRS; 110.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	190	121	73	47	35	26	22	20

DURATION(HRS)	18	19
FLOW(CFS)	12	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .2%. ***

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.29	212.6	1766.73
17.19	35.8	1764.73
18.12	33.1	1764.69
19.31	27.1	1764.59
21.29	23.9	1764.47
22.15	21.8	1764.40
23.33	21.9	1764.40
24.21	21.8	1764.39

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 1337 CFS-HRS; 110.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	187	125	78	49	34	26	22	20

DURATION(HRS)	18	20	21
FLOW(CFS)	11	1	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	417.1	(RUNOFF)
17.17	66.8	(RUNOFF)
18.01	61.4	(RUNOFF)
19.21	51.9	(RUNOFF)
21.14	47.2	(RUNOFF)
22.09	40.7	(RUNOFF)
23.18	44.0	(RUNOFF)
24.10	43.3	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 2538 CFS-HRS; 209.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	365	233	141	90	62	49	43	39

DURATION(HRS)	18	20
FLOW(CFS)	23	0

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.09	626.4	1769.18
17.18	102.7	1765.70
18.00	94.2	1765.61
19.23	78.9	1765.39
21.17	70.9	1765.26
22.11	62.8	1765.14
23.21	65.5	1765.18
24.12	64.8	1765.17

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 3875 CFS-HRS; 320.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	550	349	216	138	100	75	64	61

DURATION(HRS)	18	20	21
FLOW(CFS)	31	2	0

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.66	598.2	1769.05
21.50	67.8	1765.22
23.53	61.2	1765.12
24.36	60.7	1765.11

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 3875 CFS-HRS; 320.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	529	362	226	142	102	79	65	59

DURATION(HRS)	18	20	22	22
FLOW(CFS)	34	5	1	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.95	938.8	(RUNOFF)
17.18	150.3	(RUNOFF)
18.00	138.0	(RUNOFF)
19.22	116.4	(RUNOFF)
21.14	105.8	(RUNOFF)
22.10	91.5	(RUNOFF)
23.19	98.6	(RUNOFF)
24.10	96.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 5715 CFS-HRS; 472.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	818	529	320	204	140	110	97	89

DURATION(HRS)	18	20	20
FLOW(CFS)	50	1	0

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.20	1508.1	1772.66
17.10	259.8	1767.06
17.90	237.6	1766.90
19.20	196.1	1766.61
21.17	171.8	1766.37
22.02	155.8	1766.22
23.21	157.3	1766.23
24.11	155.3	1766.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.52 WATERSHED INCHES; 9590 CFS-HRS; 792.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1333	887	545	355	252	192	158	151

DURATION(HRS)	18	20	22	23
FLOW(CFS)	87	10	1	0

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.40	1507.4	1772.66
17.30	259.7	1767.06
19.40	195.9	1766.61
21.38	171.6	1766.37
22.21	155.8	1766.22
23.42	157.0	1766.23
24.32	154.9	1766.21

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 9590 CFS-HRS; 792.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1335	882	547	352	252	192	159	151

DURATION(HRS)	18	20	22	23
FLOW(CFS)	86	10	1	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.10	318.8	(RUNOFF)
17.24	50.8	(RUNOFF)
19.32	38.9	(RUNOFF)
21.23	35.2	(RUNOFF)
22.12	31.4	(RUNOFF)
23.29	32.1	(RUNOFF)
24.15	31.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 1957 CFS-HRS; 161.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	280	179	110	70	49	38	32	30

DURATION(HRS)	18	20	20
FLOW(CFS)	19	1	0

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.36	1821.2	(NULL)
17.26	309.6	(NULL)
19.39	234.7	(NULL)
21.35	206.4	(NULL)
22.17	187.0	(NULL)
23.40	188.6	(NULL)
24.27	182.7	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 11547 CFS-HRS; 954.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1591	1099	674	431	301	229	190	181

DURATION(HRS)	18	20	22	23
FLOW(CFS)	107	12	1	0

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.59	1818.1	1773.86
19.61	233.9	1766.88
21.58	205.6	1766.68
22.31	187.2	1766.53
23.62	187.2	1766.53
24.49	181.2	1766.47

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.53 WATERSHED INCHES; 11547 CFS-HRS; 954.2 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1602	1077	652	433	302	229	192	180

DURATION(HRS)	18	20	22	23
FLOW(CFS)	107	11	1	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.48	734.9	(RUNOFF)
17.12	112.1	(RUNOFF)
17.98	102.8	(RUNOFF)
19.16	87.3	(RUNOFF)
21.07	79.0	(RUNOFF)
22.04	68.0	(RUNOFF)
23.13	74.8	(RUNOFF)
24.04	73.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
4.97 WATERSHED INCHES; 4457 CFS-HRS; 368.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	628	413	243	155	106	85	73	65

DURATION(HRS)	18	20	21
FLOW(CFS)	53	2	0

OPERATION ADDHYD XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.30	2487.0	1776.44
21.27	273.5	1767.16
23.93	244.8	1766.95

OPERATION RUNOFF XSECTION 101

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.97	2474.7	(RUNOFF)
19.38	260.1	(RUNOFF)
21.37	231.2	(RUNOFF)
23.43	207.1	(RUNOFF)
24.14	201.2	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15772 CFS-HRS; 1303.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2130	1491	895	572	384	310	236	213

DURATION(HRS)	18	20	22	24
FLOW(CFS)	199	74	8	0

OPERATION RUNOFF XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1645.4	(RUNOFF)
17.18	225.3	(RUNOFF)
18.00	206.3	(RUNOFF)
19.22	173.6	(RUNOFF)
21.14	157.2	(RUNOFF)
22.10	136.8	(RUNOFF)
23.18	146.6	(RUNOFF)
24.10	143.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 10062 CFS-HRS; 831.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1359	945	561	359	231	202	152	137

DURATION(HRS)	18	20	22
FLOW(CFS)	120	35	0

OPERATION ADDHYD XSECTION 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	4079.1	(NULL)
17.12	574.5	(NULL)
19.22	432.3	(NULL)
21.21	385.5	(NULL)
23.24	349.2	(NULL)
24.11	344.5	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.08 WATERSHED INCHES; 25834 CFS-HRS; 2134.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3522	2377	1482	944	625	514	386	350

DURATION(HRS)	18	20	22	24
FLOW(CFS)	319	103	12	0

*** WARNING - XSECTION 102, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION RUNOFF XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.34	1635.2	(RUNOFF)
17.14	231.2	(RUNOFF)
17.99	211.6	(RUNOFF)
19.18	179.4	(RUNOFF)
21.10	162.5	(RUNOFF)
22.06	139.7	(RUNOFF)
23.15	152.4	(RUNOFF)
24.06	147.4	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.39 WATERSHED INCHES; 9916 CFS-HRS; 819.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1353	926	554	358	230	196	152	138

DURATION(HRS)	18	20	21
FLOW(CFS)	123	17	0

OPERATION ADDHYD XSECTION 2

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.94	5653.9	(NULL)
19.21	603.5	(NULL)
21.25	534.8	(NULL)
23.28	481.4	(NULL)
24.13	478.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.88 WATERSHED INCHES; 35750 CFS-HRS; 2954.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4815	3359	2061	1304	855	698	530	491

DURATION(HRS)	18	20	22	24
FLOW(CFS)	445	142	13	0

*** WARNING - XSECTION 103, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION RUNOFF XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.66	2515.5	(RUNOFF)
17.24	343.0	(RUNOFF)
19.34	261.4	(RUNOFF)
21.23	236.0	(RUNOFF)
22.10	209.5	(RUNOFF)
23.30	213.7	(RUNOFF)
24.15	208.7	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 15688 CFS-HRS; 1296.4 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2109	1485	892	573	376	315	236	209

DURATION(HRS)	18	20	22	23
FLOW(CFS)	196	71	4	0

OPERATION ADDHYD XSECTION 3

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.07	8106.6	(NULL)
19.35	864.2	(NULL)
21.39	762.6	(NULL)
23.42	687.0	(NULL)
24.21	671.5	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
3.40 CFS	0	1	4	12	25	47	79	123
5.00 CFS	184	260	350	456	570	693	829	993
6.60 CFS	1206	1451	1728	2030	2364	2750	3171	3642
8.20 CFS	4149	4688	5271	5868	6481	7073	7549	7863
9.80 CFS	8034	8102	8089	7988	7793	7552	7302	7058
11.40 CFS	6797	6496	6168	5808	5431	5053	4679	4331
13.00 CFS	4015	3732	3471	3220	2988	2784	2607	2449
14.60 CFS	2297	2155	2022	1901	1795	1704	1622	1540
16.20 CFS	1455	1369	1280	1205	1163	1152	1145	1122
17.80 CFS	1093	1076	1065	1036	971	898	860	859
19.40 CFS	864	850	822	784	745	715	704	709
21.00 CFS	727	752	763	750	726	710	703	691
22.60 CFS	662	634	637	666	687	674	650	652
24.20 CFS	671	656	566	437	316	219	146	95
25.80 CFS	60.39	38.60	24.85	16.02	10.26	6.54	4.22	2.72
27.40 CFS	1.74	1.09	.65	.33				

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.96 WATERSHED INCHES; 51438 CFS-HRS; 4250.8 ACRE-FEET.

DURATION(HRS)	3	6	9	12	15	18	21	24
FLOW(CFS)	5868	2988	1540	993	726	650	79	1

DURATION(HRS)	24
FLOW(CFS)	0

*** MESSAGE - STRUCTURE 1, USER ENTERED STARTING ELEVATION OR STRUCTURE TABLE
STARTS 2.16 FEET BELOW ASSUMED CREST ELEVATION AT 1794.10.
THIS CAN DECREASE OUTFLOW HYDROGRAPH VOLUME. ***

OPERATION RESVOR STRUCTURE 1

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7422.8	1803.90

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 6.15 SQ.MI.

HRS								
5.60 CFS	.00	.01	.01	.01	.01	.02	2.65	33.05
7.20 CFS	80	94	97	100	103	107	110	187
8.80 CFS	670	1165	1709	3269	4505	5464	6189	6720
10.40 CFS	7087	7311	7412	7416	7350	7233	7069	6864
12.00 CFS	6620	6341	6035	5709	5374	5039	4715	4404

13.60 CFS	4110	3829	3567	3324	3102	2899	2711	2538
15.20 CFS	2377	2230	2096	1975	1865	1763	1665	1624
16.80 CFS	1590	1553	1518	1485	1453	1422	1392	1363
18.40 CFS	1335	1305	1272	1237	1203	1172	1144	1116
20.00 CFS	1088	1059	1029	1001	974	951	932	916
21.60 CFS	902	887	872	857	843	828	812	796
23.20 CFS	783	773	765	756	746	739	732	721
24.80 CFS	701	672	636	595	552	510	468	429
26.40 CFS	392	358	327	298	272	247	225	205
28.00 CFS	187	170	155	141	128	117	114	114
29.60 CFS	114	114	113	113	113	113	113	113
31.20 CFS	113	113	113	113	112	112	112	112
32.80 CFS	112	112	112	112	112	112	112	111
34.40 CFS	111	111	111	111	111	111	111	111
36.00 CFS	111	110	110	110	110	110	110	110
37.60 CFS	110	110	110	110	109	109	109	109
39.20 CFS	109	109	109	109	109	109	108	108
40.80 CFS	108	108	108	108	108	108	108	108
42.40 CFS	108	107	107	107	107	107	107	107
44.00 CFS	107	107	107	107	106	106	106	106
45.60 CFS	106	106	106	106	106	106	106	105
47.20 CFS	105	105	105	105	105	105	105	105
48.80 CFS	105	105	104	104	104	104	104	104
50.40 CFS	104	104	104	104	104	103	103	103
52.00 CFS	103	103	103	103	103	103	103	103
53.60 CFS	102	102	102	102	102	102	102	102
55.20 CFS	102	101	101	101	101	101	101	101
56.80 CFS	101	101	100	100	100	100	100	100
58.40 CFS	99.77	99.66	99.55	99.44	99.32	99.21	99.10	98.99
60.00 CFS	98.87	98.76	98.65	98.54	98.43	98.32	98.21	98.10
61.60 CFS	97.98	97.87	97.76	97.65	97.54	97.43	97.32	97.21
63.20 CFS	97.10	96.99	96.88	96.77	96.66	96.56	96.45	96.34
64.80 CFS	96.23	96.11	95.98	95.85	95.72	95.59	95.46	95.33
66.40 CFS	95.20	95.07	94.94	94.81	94.68	94.55	94.42	94.29
68.00 CFS	94.16	94.03	93.90	93.78	93.65	93.52	93.39	93.26
69.60 CFS	93.14	93.01	92.88	92.76	92.63	92.50	92.38	92.25
71.20 CFS	92.13	92.00	91.87	91.75	91.62	91.50	91.37	91.25
72.80 CFS	89.59	87.01	84.50	82.06	79.70	77.40	75.17	73.18
74.40 CFS	71.34	69.55	67.80	66.09	64.43	62.81	61.23	59.69
76.00 CFS	58.19	56.72	55.29	53.90	52.55	51.22	49.94	48.68
77.60 CFS	47.45	46.26	45.10	43.96	42.86	41.78	40.73	39.70
79.20 CFS	38.70	37.73	36.78	35.85	34.95	34.07	33.21	32.38
80.80 CFS	31.56	30.77	30.00	29.24	28.51	27.79	27.09	26.41
82.40 CFS	25.90	25.44						

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.57 WATERSHED INCHES; 49889 CFS-HRS; 4122.8 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1518	672	112	108	105	101	97	92
DURATION(HRS)	72	76						
FLOW(CFS)	39	25 TRUNCATED						

*** WARNING - XSECTION 104, INSUFFICIENT LOW FLOW RATING, PEAK FLOW LESS THAN 2ND TABLE VALUE. THIS REACH ROUTING MAY BE INCORRECT, UNLESS NEW RATING TABLE VALUES ARE INSERTED. ***

OPERATION REACH XSECTION 104

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.00	115.0 *	.51

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
1.89 WATERSHED INCHES; 7508 CFS-HRS; 620.5 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	115	115	112	109	105	101	97	92
DURATION(HRS)	72	75						
FLOW(CFS)	39	26 TRUNCATED						

OPERATION RUNOFF XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3571.8	(RUNOFF)
17.11	482.9	(RUNOFF)
17.98	442.0	(RUNOFF)
19.15	376.0	(RUNOFF)
21.07	339.4	(RUNOFF)
22.04	291.9	(RUNOFF)
23.12	320.2	(RUNOFF)
24.03	312.6	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.14 WATERSHED INCHES; 21539 CFS-HRS; 1780.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2928	1946	1248	783	503	424	319	294
DURATION(HRS)	18	20	22	22				
FLOW(CFS)	263	76	1	0				

*** WARNING - XSECTION 4
VOLUME TRUNCATED AT 23.% IN LOCATION 5 ADDING HYDROGRAPHS. ***

OPERATION ADDHYD XSECTION 4

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	3686.8	(NULL)
17.11	597.9	(NULL)
17.98	557.0	(NULL)
19.15	491.0	(NULL)
21.07	454.4	(NULL)
22.04	406.9	(NULL)
23.12	435.2	(NULL)
24.03	427.6	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.18 WATERSHED INCHES; 29047 CFS-HRS; 2400.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 106. ***

OPERATION REACH XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	3454.0 *	5.62
17.11	597.9	1.78
17.98	557.0	1.71
19.15	491.0	1.59
21.07	454.4	1.52
22.04	406.9	1.38
23.12	435.2	1.48
24.03	427.6	1.45

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
5.15 WATERSHED INCHES; 28888 CFS-HRS; 2387.3 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	851	402	115	110	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	57	26 TRUNCATED

OPERATION RUNOFF XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	2891.7	(RUNOFF)
17.05	387.9	(RUNOFF)
17.95	354.7	(RUNOFF)
19.07	304.5	(RUNOFF)
21.01	273.4	(RUNOFF)
21.99	234.1	(RUNOFF)
23.05	262.5	(RUNOFF)
23.99	260.8	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 17332 CFS-HRS; 1432.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2298	1621	987	636	413	335	261	229

DURATION(HRS)	18	20	22	22
FLOW(CFS)	210	83	1	0

OPERATION ADDHYD XSECTION 5

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.13	6345.7	(NULL)
17.08	984.1	(NULL)
17.97	911.6	(NULL)
19.11	791.9	(NULL)
21.03	727.2	(NULL)
22.01	640.8	(NULL)
23.08	695.5	(NULL)
24.01	687.2	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
6.70 WATERSHED INCHES; 46217 CFS-HRS; 3819.4 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1504	632	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.14	1601.2	(RUNOFF)
17.04	219.9	(RUNOFF)
17.95	201.2	(RUNOFF)
19.07	172.6	(RUNOFF)
21.00	154.8	(RUNOFF)
21.99	132.8	(RUNOFF)
23.04	149.1	(RUNOFF)
23.98	149.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.99 WATERSHED INCHES; 9558 CFS-HRS; 789.9 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1288	901	539	342	220	187	148	127

DURATION(HRS)	18	20	22
FLOW(CFS)	117	34	0

OPERATION ADDHYD XSECTION 6

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.12	7900.8	(NULL)
17.07	1203.7	(NULL)
17.96	1112.7	(NULL)
19.10	962.7	(NULL)
21.03	881.8	(NULL)
22.01	773.5	(NULL)
23.07	844.1	(NULL)
24.00	836.0	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.30 WATERSHED INCHES; 55759 CFS-HRS; 4608.0 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	1846	758	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION ADDHYD XSECTION 106

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.91	7307.8	9.47

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = .00 SQ.MI.

HRS								
8.40 CFS	0	72	555	1209	1868	3344	4530	5429
10.00 CFS	6094	6605	6972	7196	7297	7301	7235	7118
11.60 CFS	6954	6749	6505	6226	5920	5594	5259	4924
13.20 CFS	4600	4289	3995	3714	3452	3209	2987	2784
14.80 CFS	2596	2423	2262	2115	1981	1860	1750	1648
16.40 CFS	1550	1509	1475	1438	1403	1370	1338	1307
18.00 CFS	1277	1248	1220	1190	1157	1122	1088	1057
19.60 CFS	1029	1001	973	944	914	886	859	836
21.20 CFS	817	801	787	772	757	742	728	713
22.80 CFS	697	681	668	658	650	641	631	624
24.40 CFS	617	606	586	557	521	480	437	395
26.00 CFS	353	314	277	243	212	183	157	132
27.60 CFS	110	90	72	55	40	26	13	2
29.20 CFS	.00							

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
42546 CFS-HRS; 3516.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	6226	3995	2115	1403	1122	836	681	557

DURATION(HRS)	18	20	21
FLOW(CFS)	212	26	0

OPERATION RUNOFF XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
8.98	1313.1	(RUNOFF)
16.93	189.3	(RUNOFF)
17.91	174.5	(RUNOFF)
18.94	151.3	(RUNOFF)
20.91	134.2	(RUNOFF)
21.91	115.4	(RUNOFF)
22.93	134.2	(RUNOFF)
23.91	139.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.38 WATERSHED INCHES; 7673 CFS-HRS; 634.1 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1053	685	406	274	188	150	126	106

DURATION(HRS)	18	20	20
FLOW(CFS)	87	9	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.23) FOR SUBWATERSHED XSECTION 7.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION ADDHYD XSECTION 7

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.09	9241.1	(NULL)
17.03	1387.8	(NULL)
17.94	1285.9	(NULL)
19.07	1109.1	(NULL)
21.00	1013.0	(NULL)
21.98	886.9	(NULL)
23.04	970.1	(NULL)
23.98	969.6	(NULL)

HYDROGRAPH POINTS FOR ALTERNATE = 5, STORM = 5
MAIN TIME INCREMENT = .200 hr, DRAINAGE AREA = 12.79 SQ.MI.

HRS								
3.00 CFS	0	3	9	16	56	94	146	219
4.60 CFS	276	418	528	665	839	951	1133	1266
6.20 CFS	1558	1976	2248	2693	3012	3506	4157	4591
7.80 CFS	5364	5922	6598	7411	7925	8772	9199	9166
9.40 CFS	9076	9003	8881	8809	8478	7961	7675	7393
11.00 CFS	7207	6850	6353	6029	5463	5055	4671	4236
12.60 CFS	3991	3703	3507	3267	2970	2805	2645	2542
14.20 CFS	2402	2225	2120	1980	1885	1814	1747	1697
15.80 CFS	1576	1487	1385	1264	1222	1310	1386	1349
17.40 CFS	1251	1209	1246	1280	1160	945	864	989
19.00 CFS	1102	1079	985	927	855	806	821	869
20.60 CFS	903	967	1013	963	859	815	851	886
22.20 CFS	833	728	701	847	967	912	765	715
23.80 CFS	852	967	776	409	220	154	129	120
25.40 CFS	116	115	115	115	115	115	115	115
27.00 CFS	115	115	115	115	115	115	115	115
28.60 CFS	115	115	115	115	114	114	114	114
30.20 CFS	113	113	113	113	113	113	113	113
31.80 CFS	113	113	113	112	112	112	112	112
33.40 CFS	112	112	112	112	112	111	111	111
35.00 CFS	111	111	111	111	111	111	111	110
36.60 CFS	110	110	110	110	110	110	110	110

38.20 CFS	110	110	109	109	109	109	109	109
39.80 CFS	109	109	109	109	109	108	108	108
41.40 CFS	108	108	108	108	108	108	108	107
43.00 CFS	107	107	107	107	107	107	107	107
44.60 CFS	107	107	106	106	106	106	106	106
46.20 CFS	106	106	106	106	106	105	105	105
47.80 CFS	105	105	105	105	105	105	105	105
49.40 CFS	104	104	104	104	104	104	104	104
51.00 CFS	104	104	104	104	103	103	103	103
52.60 CFS	103	103	103	103	103	103	103	102
54.20 CFS	102	102	102	102	102	102	102	102
55.80 CFS	101	101	101	101	101	101	101	101
57.40 CFS	100	100	100	100	100	100	100	100
59.00 CFS	99.59	99.48	99.36	99.25	99.14	99.03	98.92	98.80
60.60 CFS	98.69	98.58	98.47	98.36	98.25	98.14	98.03	97.91
62.20 CFS	97.80	97.69	97.58	97.47	97.36	97.25	97.14	97.03
63.80 CFS	96.92	96.81	96.70	96.60	96.49	96.38	96.27	96.15
65.40 CFS	96.03	95.90	95.76	95.63	95.50	95.37	95.24	95.11
67.00 CFS	94.98	94.85	94.72	94.60	94.47	94.34	94.21	94.08
68.60 CFS	93.95	93.82	93.69	93.57	93.44	93.31	93.18	93.06
70.20 CFS	92.93	92.80	92.68	92.55	92.42	92.30	92.17	92.04
71.80 CFS	91.92	91.79	91.67	91.54	91.42	91.29	90.04	87.82
73.40 CFS	85.39	82.96	80.57	78.25	76.00	73.94	72.04	70.22
75.00 CFS	68.45	66.72	65.04	63.41	61.81	60.26	58.74	57.26
76.60 CFS	55.82	54.42	53.05	51.71	50.41	49.14	47.91	46.70
78.20 CFS	45.53	44.38	43.26	42.18	41.12	40.08	39.07	38.09
79.80 CFS	37.13	36.20	35.28	34.40	33.53	32.69	31.87	31.06
81.40 CFS	30.28	29.52	28.78	28.05	27.35	26.66	26.10	

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
7.68 WATERSHED INCHES; 63428 CFS-HRS; 5241.7 ACRE-FEET.

DURATION(HRS)	8	16	24	32	40	48	56	64
FLOW(CFS)	2120	859	115	111	107	103	99	94

DURATION(HRS)	72	79
FLOW(CFS)	60	26 TRUNCATED

OPERATION RUNOFF XSECTION 13

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.07	643.0	(RUNOFF)
17.00	89.0	(RUNOFF)
17.93	81.6	(RUNOFF)
19.02	70.3	(RUNOFF)
20.96	63.0	(RUNOFF)
21.96	53.9	(RUNOFF)
23.00	61.3	(RUNOFF)
23.95	61.9	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 3796 CFS-HRS; 313.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	512	351	210	136	89	75	60	53

DURATION(HRS)	18	20	21
FLOW(CFS)	42	11	0

*** WARNING - MAIN TIME INCREMENT (.200) IS GREATER THAN 50% OF THE
TIME OF CONCENTRATION (.35) FOR SUBWATERSHED XSECTION 13.
THIS WILL REDUCE THE COMPUTED PEAK BY ABOUT .0%. ***

OPERATION REACH XSECTION 113

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.89	599.8	1769.05
17.23	86.3	1765.50
18.13	80.0	1765.40
19.32	65.4	1765.18
21.28	58.1	1765.07
22.16	52.5	1764.98
23.32	53.1	1764.99
24.20	52.8	1764.99

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 3796 CFS-HRS; 313.7 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	512	357	220	139	90	76	58	52

DURATION(HRS)	18	20	22	23
FLOW(CFS)	47	15	1	0

OPERATION RUNOFF XSECTION 12

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.40	1180.4	(RUNOFF)
17.17	162.5	(RUNOFF)
18.00	149.0	(RUNOFF)
19.21	125.5	(RUNOFF)
21.13	113.9	(RUNOFF)
22.09	98.1	(RUNOFF)
23.18	106.0	(RUNOFF)
24.10	102.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 7204 CFS-HRS; 595.3 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	977	672	403	258	163	146	109	98

DURATION(HRS)	18	20	22
FLOW(CFS)	87	21	0

OPERATION ADDHYD XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.57	1764.5	1773.65
17.18	248.7	1766.98
18.01	228.1	1766.84
19.23	190.5	1766.56
21.17	171.4	1766.37
22.11	151.1	1766.17
23.21	158.2	1766.24
24.12	156.1	1766.22

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 11000 CFS-HRS; 909.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1479	1022	636	401	260	222	167	150

DURATION(HRS)	18	20	22	23
FLOW(CFS)	133	41	2	0

*** WARNING - XSECTION 112, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 112

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
10.23	1724.1	1773.49
19.44	187.6	1766.53
21.48	164.8	1766.31
23.52	148.5	1766.15
24.35	147.4	1766.14

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 11000 CFS-HRS; 909.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1497	1035	631	403	267	219	164	151

DURATION(HRS)	18	20	22	24
FLOW(CFS)	139	42	5	0

OPERATION RUNOFF XSECTION 11

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.42	2654.9	(RUNOFF)
17.18	366.1	(RUNOFF)
18.00	335.3	(RUNOFF)
19.22	282.3	(RUNOFF)
21.14	255.9	(RUNOFF)
22.10	222.4	(RUNOFF)
23.19	237.5	(RUNOFF)
24.10	232.5	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 16224 CFS-HRS; 1340.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	2207	1500	914	584	369	329	248	220

DURATION(HRS)	18	20	22	22
FLOW(CFS)	196	46	1	0

OPERATION ADDHYD XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.85	4293.1	1783.41
17.14	618.0	1769.14
17.91	570.1	1768.91
19.22	467.9	1768.39
21.19	414.7	1768.07
22.00	374.0	1767.83
23.22	377.7	1767.85
24.12	373.4	1767.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 27224 CFS-HRS; 2249.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3730	2483	1576	1006	632	519	415	373

DURATION(HRS)	18	20	22	24
FLOW(CFS)	338	103	9	0

*** WARNING - ROUTING COEFFICIENT (C) EQUALS 1.0,
CONSIDER SMALLER MAIN TIME INCREMENT FOR XSECTION 111. ***

*** WARNING - XSECTION 111, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 111

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.85	4293.1	1783.41
17.14	618.0	1769.14
17.91	570.1	1768.91
19.22	467.9	1768.39
21.19	414.7	1768.07
22.00	374.0	1767.83
23.22	377.7	1767.85
24.12	373.4	1767.82

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 27224 CFS-HRS; 2249.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	3730	2483	1576	1006	632	519	415	373

DURATION(HRS)	18	20	22	24
FLOW(CFS)	338	103	9	0

OPERATION RUNOFF XSECTION 10

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.67	894.6	(RUNOFF)
17.24	123.5	(RUNOFF)
19.33	94.2	(RUNOFF)
21.23	85.1	(RUNOFF)
22.11	75.6	(RUNOFF)
23.28	77.4	(RUNOFF)
24.14	75.1	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.84 WATERSHED INCHES; 5554 CFS-HRS; 459.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	753	524	310	199	131	107	85	75

DURATION(HRS)	18	20	22	23
FLOW(CFS)	68	19	1	0

OPERATION ADDHYD XSECTION 110

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.81	5184.5	(NULL)
17.16	741.1	(NULL)
17.90	684.8	(NULL)
19.24	561.4	(NULL)
21.19	499.8	(NULL)
21.98	449.1	(NULL)
23.23	454.9	(NULL)
24.12	448.4	(NULL)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
12.85 WATERSHED INCHES; 32778 CFS-HRS; 2708.8 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	4483	3007	1886	1204	757	625	500	448

DURATION(HRS)	18	20	22	24
FLOW(CFS)	406	119	10	0

*** WARNING - XSECTION 109, INFLOW EXCEEDS MAX TABLE DISCHARGE,
EXTRAPOLATION USED. ***

OPERATION REACH XSECTION 109

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.00	1915.0 *	1774.23
17.36	740.1	1769.69
19.45	559.0	1768.86
21.42	497.5	1768.57
23.46	451.1	1768.29
24.33	444.6	1768.25

* FIRST POINT OF FLAT PEAK

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
8.49 WATERSHED INCHES; 21672 CFS-HRS; 1791.0 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1915	1915	1884	1219	767	633	497	449

DURATION(HRS)	18	20	22	24
FLOW(CFS)	408	130	10	0

OPERATION RUNOFF XSECTION 9

PEAK TIME(HRS)	PEAK DISCHARGE(CFS)	PEAK ELEVATION(FEET)
9.24	1990.4	(RUNOFF)
17.12	265.6	(RUNOFF)
17.98	242.8	(RUNOFF)
19.16	206.3	(RUNOFF)
21.07	185.8	(RUNOFF)
22.04	160.2	(RUNOFF)
23.12	175.5	(RUNOFF)
24.04	171.0	(RUNOFF)

RUNOFF ABOVE BASEFLOW (BASEFLOW = .00 CFS)
13.43 WATERSHED INCHES; 12047 CFS-HRS; 995.5 ACRE-FEET.

DURATION(HRS)	2	4	6	8	10	12	14	16
FLOW(CFS)	1628	1089	689	432	288	235	183	162

DURATION(HRS)	18	20	22	22
FLOW(CFS)	147	58	1	0

OPERATION ADDHYD XSECTION 109

+	HYDROGRAPH AT	480	1167.	12.10	106.	33.	12.	.73	
+	DIVERSION TO	BS480	419.	12.10	27.	8.	3.	.73	
+	HYDROGRAPH AT	D480	1167.	12.10	90.	24.	9.	.73	
+	HYDROGRAPH AT	RT480	419.	11.90	27.	8.	3.	.00	
+	ROUTED TO	SR480	6.	.70	6.	6.	3.	.00	
+	2 COMBINED AT	C480	1172.	12.10	96.	30.	12.	.73	
+	3 COMBINED AT	480C	2553.	12.10	518.	365.	219.	32.18	
+	ROUTED TO	R480	2544.	12.10	518.	365.	219.	32.18	3.04 12.10
+	ROUTED TO	RR480	2402.	12.20	515.	365.	218.	32.18	4.23 12.20
+	HYDROGRAPH AT	500	1189.	12.27	136.	37.	13.	.93	
+	2 COMBINED AT	500C	3512.	12.20	643.	398.	231.	33.11	

*** NORMAL END OF HEC-1 ***