State Engr } concerns
COE } etc.

FEASIBILITY STUDY

HUFFAKER DETENTION FACILITY

near the City of Reno,
Washoe County, Nevada

DRAFT
Dec 29, 1989

Prepared for:

Washoe County Public Works
1001 E. 9th Street
Reno, Nevada 89512

In cooperation with:

City of Reno Engineering
450 Sinclair Street
Reno, Nevada 89502

DECEMBER 1989

NIMBUS JOB #8909

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LETTER OF TRANSMITTAL

DATE 12/29/89	JOB NO. 8909
ATTENTION Steve Varela	
RE: Huffaker Hills Detention Basin	

TO City of Reno Engineering

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via ________ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☒ Report

COPIES	DATE	NO.	DESCRIPTION
1	12/89		Huffaker Hills Feasibility Report-DRAFT

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit ____ copies for approval

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REMARKS Please let us know when your review is complete.

COPY TO F. Vice

SIGNED: Peggy Bowker

If enclosures are not as noted, kindly notify us at once.

HUFFAKER HILLS DETENTION BASIN FEASIBILITY STUDY

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Executive Summary

APPENDIX

✓ - No discussion on sources
- No Dam X-SEC
- No Prelim low level outlet size
- Print to small
✓ - No geotech. info
- No CORP REQ
✓ - No Discussion about State Engr. concerns
✓ - No plan showing relationship btwn. Tahoe/Pyramid Link and proposed dam
✓ - Not enough review of feasibility of earth or rock dam for overtopping
- MPF estimate

STEVE –

2 questions:

What is HEC 1?

Is the dam feasible?

Thanks –

Kathryn

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INTRODUCTION

In February 1986, the Truckee Meadows area suffered one of the largest floods of recent record. During the flooding the residents of Hidden Valley, an unincorporated subdivision within Washoe County and directly adjacent to the City of Reno, were isolated for an extended period of time. As a result of that flooding and the associated isolation of the area, Washoe County undertook a study of alternatives to provide all weather access to the area.

The study was performed by Nimbus Engineers in 1987. Numerous system modifications and combinations of those modifications were evaluated. Pembroke Drive, which is presently the only access to the area was the focus of the study. The present bridge on Pembroke was inadequate to convey the flows of Steamboat Creek beneath the roadway during the 1986 event and overtopping of the roadway occurred over a considerable length. During the evaluation of the roadway and structure, it was confirmed that not only was the structure inadequate to convey high flows in Steamboat Creek but that the roadway would be inundated during a 100 year event on the Truckee River.

The most effective alternative identified in the study, and the only one which would provide access during major flow events was to utilize an alternative alignment at the extension of Mira Loma Drive and detain flows at the Huffaker Narrows in order to lower the peak flows on Steamboat Creek. The Mira Loma alignment lies beyond the limit of the Truckee River flooding, thus making it possible to only address one source of inundation (Steamboat Creek). The detention site which is the subject of this study lies upstream of the proposed Mira Loma crossing of Steamboat Creek at a site known as the Huffaker Narrows.

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SMRC

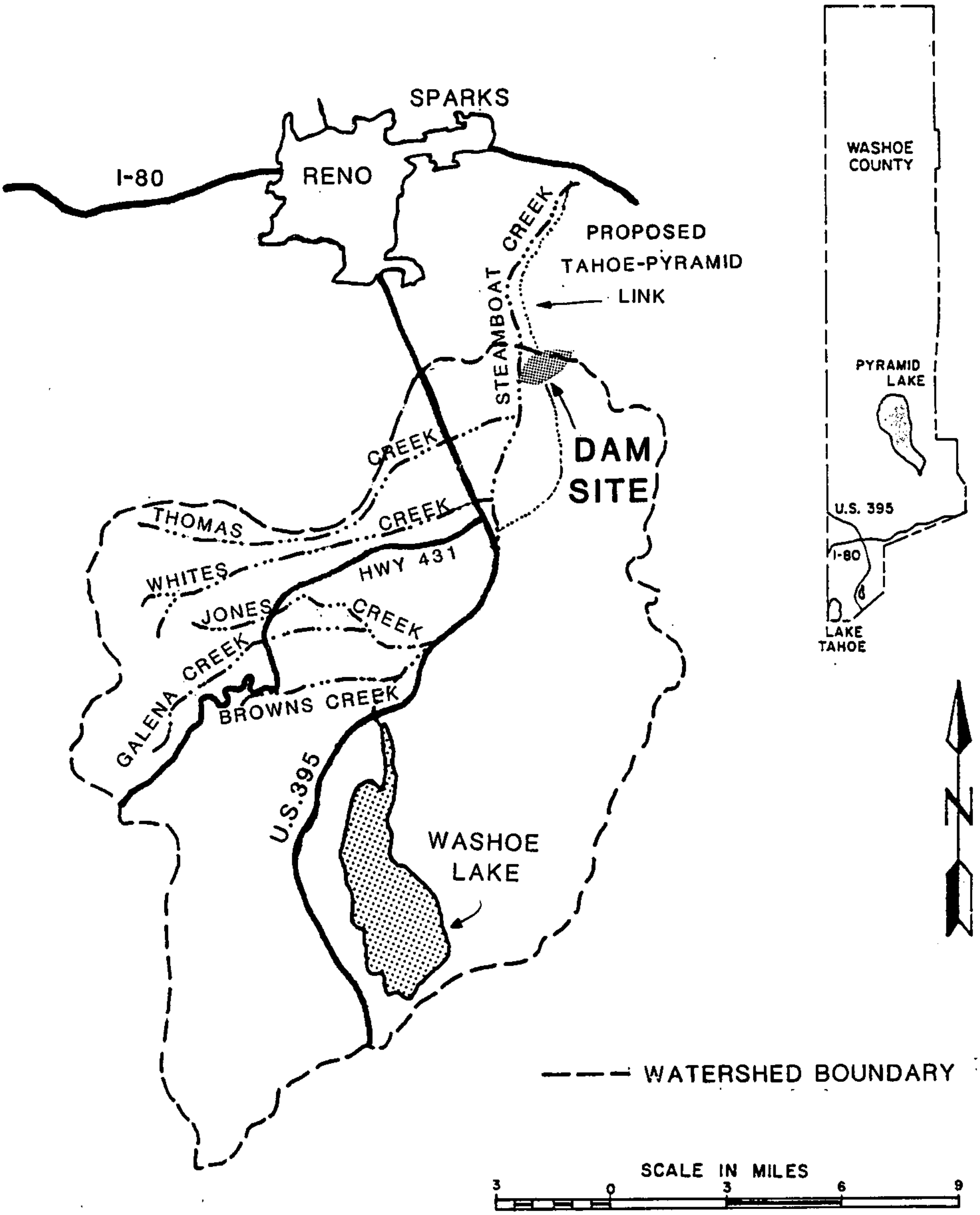

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FIGURE 1

VICINITY MAP

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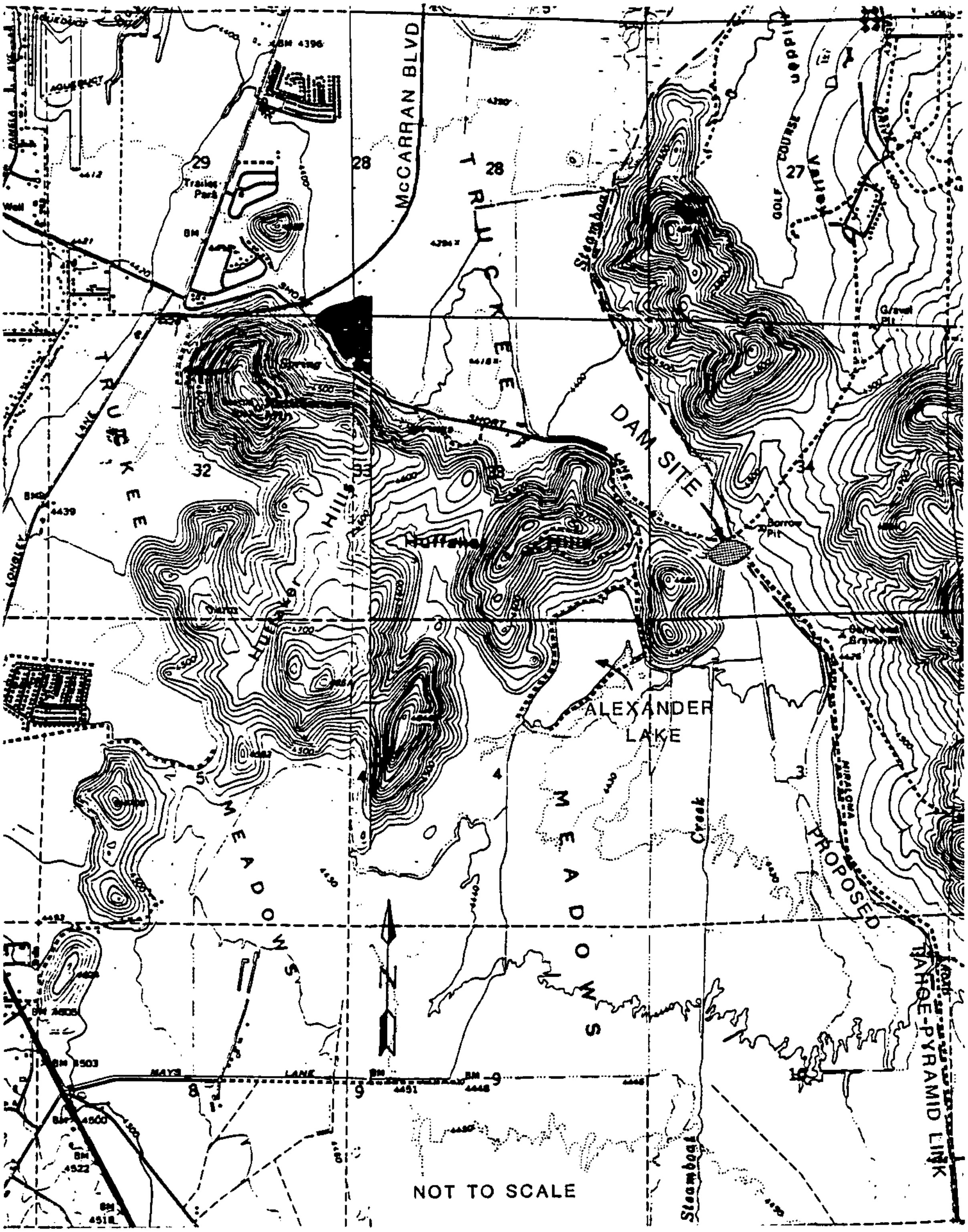

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FIGURE 2

LOCATION MAP

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PURPOSE

Washoe County, the City of Reno and Dermody Properties have cooperated to fund this study, and the contract was administered by Washoe County. The study was undertaken in order to examine the feasibility of construction of a detention dam at the site identified in the earlier study. A location map is included as Figure 1 and the Dam Site is shown on Figure 2.

The focus of this study was the development of detailed hydrology for the 109 square mile watershed that is tributary to the dam site. This analysis was performed in order to determine the height and type of structure that would achieve the most benefit and require the least amount of acreage. Also included was a geotechnical investigation of the proposed dam site which was prepared by Harding Lawson and Associates, along with recommendations for the type of dam to be constructed and the placement of a spillway. Other aspects of the study included a preliminary assessment of alternative configurations for the dam itself and the proposed flood pool, and evaluation of the benefits of the facility and an investigation of possible delivery systems for Thomas Creek. Thomas Creek presently breaks out of its channel during moderate flows and during high flows approximately one third of the flow will affect a developed portion of the City of Reno.

How was this determined?

During the course of the study, continuing coordination efforts with the Corps of Engineers Design Team and Hydrology Staff were an integral part of the technical analysis. This coordination was important to assure that the project could be incorporated into the Corp's Truckee Meadows Project and that the technical data used was compatible.

HYDROLOGIC EVALUATION

Numerous hydrologic investigations of the Steamboat Creek Watershed have been performed by federal agencies; the results of these studies are presented in tabular form in Table No. 1. The Corps of Engineers developed two Floodplain Information Reports, one in 1972 (Ref. 25) which dealt primarily with flooding in the Pleasant Valley area and developed peak flows for Steamboat Creek, Galena Creek and Bailey Canyon and a second in 1974 (Ref. 26) which developed peak flows for Thomas, Whites, Evans and Dry Creeks. As part of the proposed Truckee Meadows project, the Corps of Engineers prepared a comprehensive hydrology study of the entire Washoe County area (Ref. 20).

The Soil Conservation Service has prepared a series of reports on flows from streams in the southwest Reno area. The most recent of these was written in February 1980 and was prepared to present runoff values for a number of watersheds and to examine stormwater management requirements and erosion potential (Ref. 27). The Federal Emergency Management Agency performed a Flood Insurance Study which was published in 1984 (Ref.5). Peak discharges were developed for the areas of interest by using a regional regression method.

The hydrologic evaluation for the Huffaker Narrows detention dam site was performed using the Corps of Engineers Computer Model HEC-1. This model incorporates a number of options for watershed evaluation to determine runoff quantities and peak flows. The values developed for this study were calculated using 100 year 24 hour rainfall from the NOAA Atlas, the SCS Curve number method for determining excess rainfall, the Upland method and channel routing to determine time of concentration, and the Muskingum and Modified Puls Methods for routing of hydrographs. The watershed areas are shown on Figure 4.

Existing Conditions

Presently the watershed areas are sparsely developed and remain "semi-rural," and in the upper watershed areas largely undeveloped. Steamboat Creek begins at the outflow of Little Washoe Lake which is about 13 miles upstream from the proposed dam site. From its outlet, the stream flows through Pleasant Valley, Steamboat Valley, and the Upper Truckee Meadows. The tributary area includes the watersheds of Thomas, Whites, Browns, Jones, and Galena Creeks which originate in the Carson Range and flow northeasterly to join Steamboat Creek from the west. Bailey Canyon Creek, which originates in the Virginia Range, flows northwesterly and joins Steamboat Creek from the east. The maximum elevations in the tributary areas range from about 10,800 feet in the headwater regions of Galena to 7,400 feet in the upper reaches of Bailey Canyon Creek. In the lower study area the elevations range from about 5000 feet at the outlet of Little Washoe Lake to 4410 at the Huffaker Detention site.

Annual precipitation in the study area ranges from about 40 inches in the headwaters of the tributary streams to 7 inches on the valley floor. Winter time precipitation usually occurs as snow in the upper areas and a snow pack accumulates during the winter season. In the lower areas snow frequently occurs but generally does not remain on the ground for long periods of time. During the summer months, high intensity convective type storms that produce extremely heavy rainfall of a short duration commonly occur on the valley floor and in the upper areas.

Presently the watersheds in the southern end of the study area are largely undeveloped or developed with low density residential uses, with the highest densities in the Steamboat Valley. The lower fans of Thomas and Whites Creek are also being developed for residential uses; however, the parcels tend to be larger than one acre. Until the infrastructure which will allow smaller lots, such as sewer and water service, is extended to this area it is likely that it will remain rural in character. Residents of the area seem to prefer the type of life style which they presently maintain to that of the more urbanized lower Truckee Meadows.

TABLE I
100 - YEAR DISCHARGES (cfs) FROM PREVIOUS STUDIES

CONCENTRATION POINTS	CURRENT FEMA VALUES (Ref 5)	CORPS 74 STUDY (Ref ~~25~~) 26	CORPS 72 STUDY (Ref 25)	CORPS 80 STUDY (Ref 20)	SCS 80 STUDY (Ref 27)	SEA REPORT (Ref 28)
GALENA CREEK above confluence with Steamboat Creek	2560	—	6000	3640	—	—
STEAMBOAT CREEK @ HWY 395	—	—	1700	—	—	—
below confluence with Galena Creek	3150	—	8100	—	—	—
@ USGS Gauge (Rhodes Road)	—		7600	4600	—	—
@ HWY 17	4410	—	7400			
@ Narrows (Short Lane)	5000	—	5400	4900	—	—
BAILEY CANYON above confluence with Steamboat Creek	1120	—	4600	—	—	—
THOMAS CREEK @ Steamboat Creek	1500	3500		2500	3400	2500
@ HWY 395	—	3900		—	—	—
WHITE CREEK @ Steamboat Ditch	—	2000	—	3900	2930	—
@ HWY 395	—	2300	—	—	—	—

Future Conditions

Several large medium to high density developments are presently proposed for watershed 60 (see Figure 4) and for the valley between Steamboat and State Route 341 near the at the mouth of Bailey Canyon.

The Double Diamond Ranch is situated at the northwest corner of watershed 60. That property has a Master Plan which has been approved by the City of Reno and Washoe County. The developer has presented a tentative map for the first phase of the development which will ultimately encompass 1800 acres with 1270 acres as residential, 106 acres commercial, 85 acres for schools and the remainder for open space and recreational uses. The flood control concept which has been presented for this development is to channelize Whites and Thomas Creeks through the subdivision in a golf course and to provide detention areas for increased runoff.

The Damonte Ranch Development lies at the southern end of watershed 60. The Master Plan which was submitted to the Regional Planning Commission in March 1979 proposed a 2200 acre development with an ultimate 6000 dwelling units to be developed over a fifteen to twenty year period. Since the submittal of that plan, ownership of that property has undergone several changes and the parcel has been split into several holdings. For purposes of this study the original Master plan was used to develop impervious cover and channelization schemes for that property. While it is doubtful that the property will be developed to the density proposed in the original report, this was considered to be the density possible given the fact that it had once been approved by the local agencies.

A development which has been proposed for the confluence of Bailey Creek and Steamboat Creeks is Steamboat Station. This is a 106 acre development which will provide 456 mobile home spaces on 60+ acres. The remaining 46 acres will provide open space for floodplain and recreational use. The development proposes significant floodplain encroachment and channelization of Steamboat and Bailey Canyon Creek.

A major arterial roadway, the Tahoe-Pyramid Link, is proposed to be built to serve the South Truckee Meadows Area. Within the area of interset, the original alignment study identified a route which would extend from State Route 341 through the central portion of the valley. While no data is presently available on an alternative alignment, the current proposed alignment shown on the Southeast Area Plan places the roadway on the easterly edge of the valley, in the vicinity of the present alignment of the Mira Loma Haul Road. This project will have minimal impact on that alignment except that elevation of the flood pool will have to be taken into consideration during final design of the project and compensation for any reduced storage will have to be made.

Methodology

Precipitation

Precipitation depths for this study were taken from the NOAA Atlas and depth-duration data were generated using the guidelines set forth in that document. These partial duration series were then converted by the program into equivalent annual series. This data was then incorporated into a rainfall distribution, triangular in shape, which is representative of a "balanced storm." This storm will produce a mass curve which is area specific. The mass curve is developed by assuming that the most intense rainfall occurs at the midpoint of the storm, in this case at the 12th hour. The shape of the mass curve which is produced is similar to the SCS Type II curve; Figure 3 is a plot of typical rainfall distributions and is included for quick reference. A more detailed discussion of synthetic storms can be found in Ref. 16.

The intensities which are used depend upon the time interval that is selected. During the course of this study both a five and fifteen minute interval were used to develop hydrographs. The five minute hydrograph produced a higher peak flow but because of limitations with the number of time steps allowed by HEC-1 for hydrograph calculation, it truncated the hydrograph at the end of 24 hours and did not compute the entire volume which could be expected from the storm. Models with 5 and 15 minute time intervals were produced for both present and future conditions and are included in the technical appendix for comparison; however, the model with 15 minute time interval was used in this preliminary design.

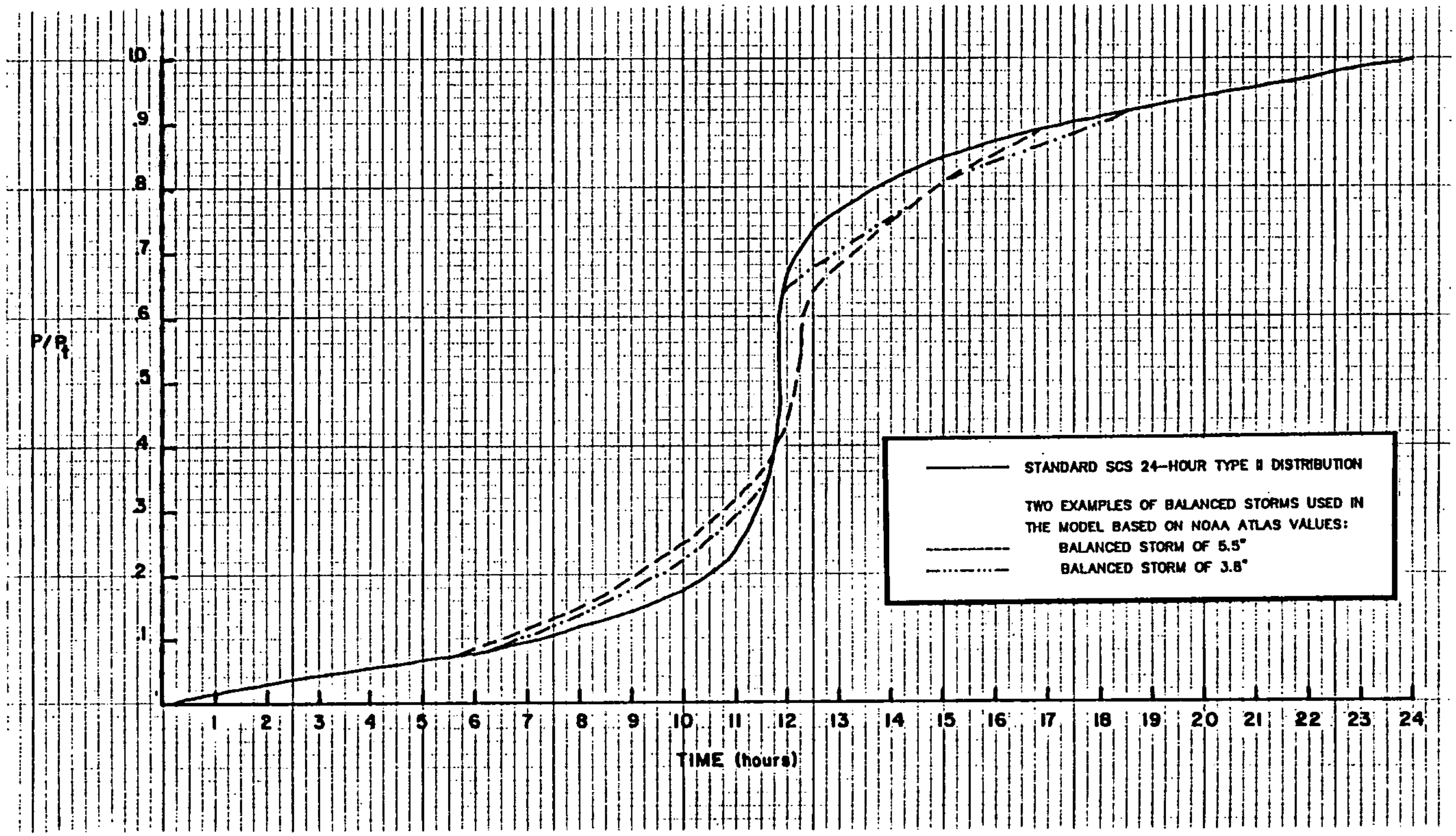

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FIGURE 3

MASS CURVES
SCS TYPE II and BALANCED STORM

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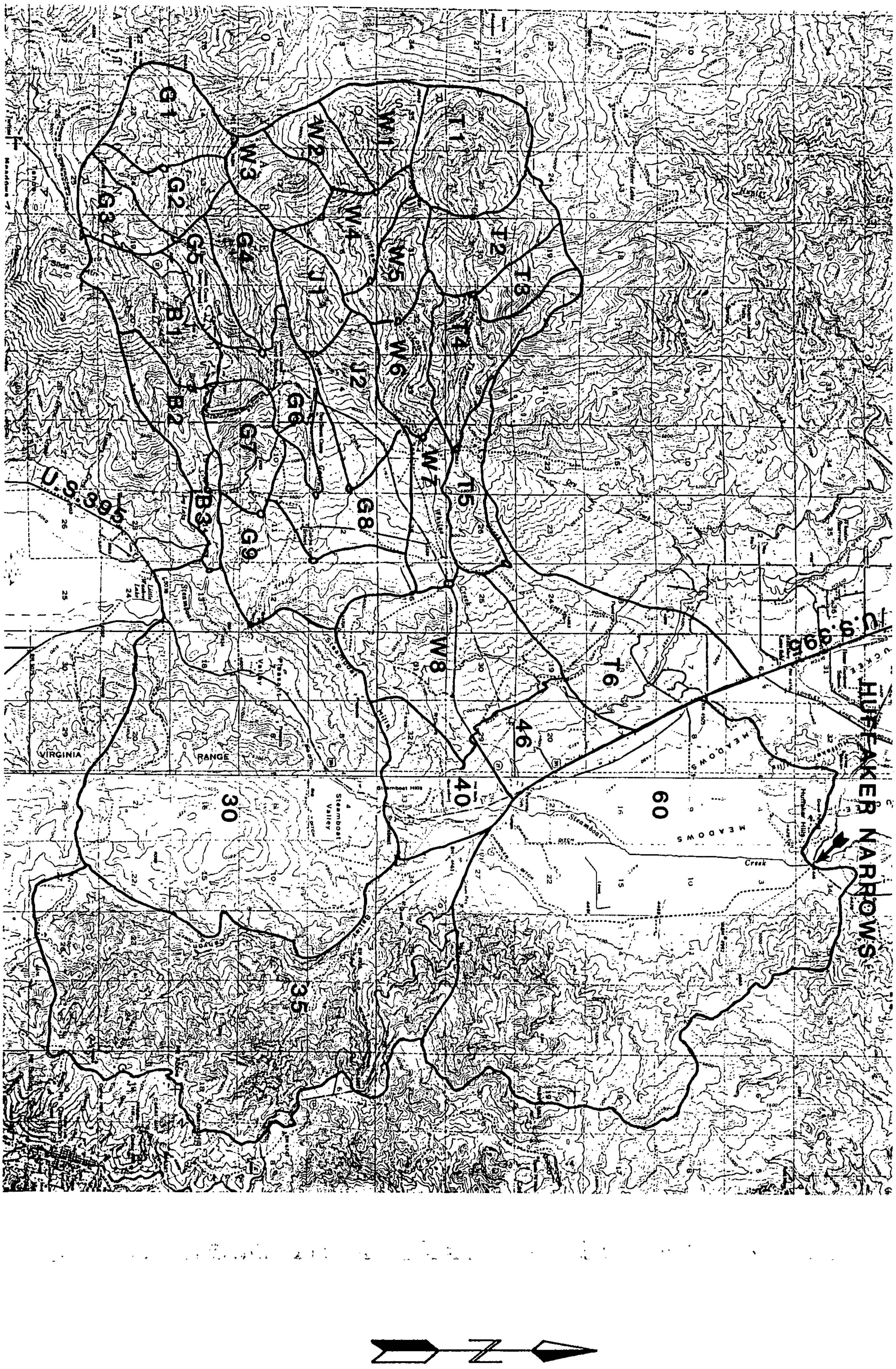

FIGURE 4

WATERSHED MAP

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The models developed were quite detailed, with each subwatershed broken into a number of smaller areas which displayed similar characteristics, i.e., easily averaged rainfall amounts, uniform vegetation, ground cover and soil types. Since the area tributary to the proposed basin covers 109 square miles, an aerial reduction factor was applied as recommended in the HEC-1 manual. The reduction factor for a watershed of this size produce excess precipitation which is 92.5% of point rainfall.

Several discussions were held with Washoe County and the City of Reno to develop a consensus on rainfall values. As a result of these discussions, the National Weather Service was consulted on past storm patterns. They concurred that for an area of this size, that the most probable storm to cause severe flooding would be a general storm which would involve the entire watershed and which is void of snow except in the uppermost reaches. This is the type of storm which produced the floods of 1963 and is one of the largest storms of record. Warm storms which occur with a snowpack in the upper watershed will in most cases produce lower peak flows, as the higher amounts of rainfall occur in the upper slopes and are initially absorbed by the snow. Earlier studies by the Corps of Engineers also adopted this approach.

The design model produced for this study is based upon an antecedent moisture condition (AMC) which is referred to as AMC II. This condition is an average condition with 0.5 to 1.1 inches of rainfall for the preceding five days of the dormant season and 1.4 to 2.1 inches in the growing season.

SCS Methodology

The entire watershed was delineated on USGS 7.5 minute quadrangles. The major watersheds were delineated and then broken into smaller subwatersheds. Figure 4 is a reduced copy of the quadrangles with the watersheds delineated. The subwatersheds were developed by reviewing watershed slope, soil types, vegetation types and cover, and rainfall amounts. The areas were planimetered to determine basin area and slopes for use in the determination of time of concentration were calculated. Curve numbers were developed from soil types set forth in the Soil Conservation Survey for Southern Washoe County (Ref. 14). Aerial photographs were used to identify cover types and densities where they were available and by detailed field investigation where they were not.

Future conditions were simulated by increasing the percent impervious cover in the existing conditions model based upon the proposed densities which are set forth in Area Plans prepared by the Washoe County Department of Comprehensive Planning. These plans were reviewed in a number of public hearings and then approved by the Planning Commissions and the Board of Supervisors. In addition to impervious areas, routing reaches were also modified to reflect channelization proposed by a number of large developments which have Master Plan documents on file with the Reno and Washoe County Planning Departments. Times of concentration for those reaches proposed for channelization were also recomputed.

Once the parameters for the computer model were established, a calibration run was produced to verify results. The calibration runs were simulations of the February 1986 event, and the rainfall used in this effort was extracted from the isohyets shown on Figure 5. This rainfall distribution was developed by Nimbus Engineers, in cooperation with the National Weather Service from raingauge data (Ref. 29) collected during the February 1986 flood event.

Time of Concentration- Times of concentration were calculated using the Upland method where appropriate. In many of the upper watershed areas the channels are well incised and in those areas Manning's equation was used to develop travel time. Basin lag was calculated as 0.6 of the time of concentration.

Hydrograph Routing-The Muskingum routing method was used to route hydrographs and combined hydrographs through most of the subwatersheds. This method determines the storage within a stable river or stream reach based upon hydraulic characteristics of the channel section and the inflow. The formula for computing storage is

$$S=K[XI+(1-X)O]$$

where K=the storage time constant for the reach
x=the weighing factor which varies between
0 and 0.5 for a given river section with the value of
0.5 causing almost a pure translation of the hydrograph.

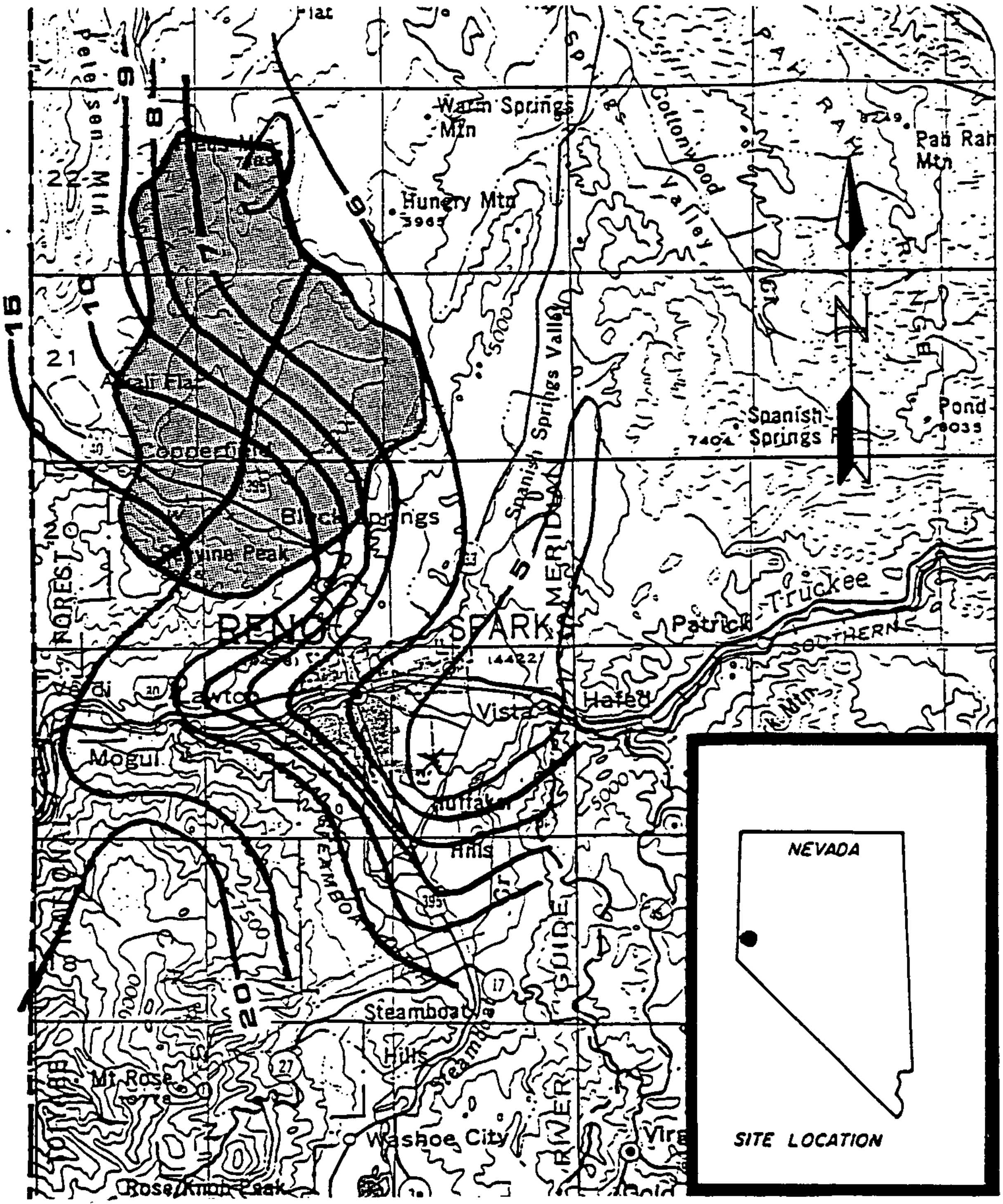

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FIGURE 5
ISOHYETAL MAP FOR FEBRUARY 1986 FLOODS

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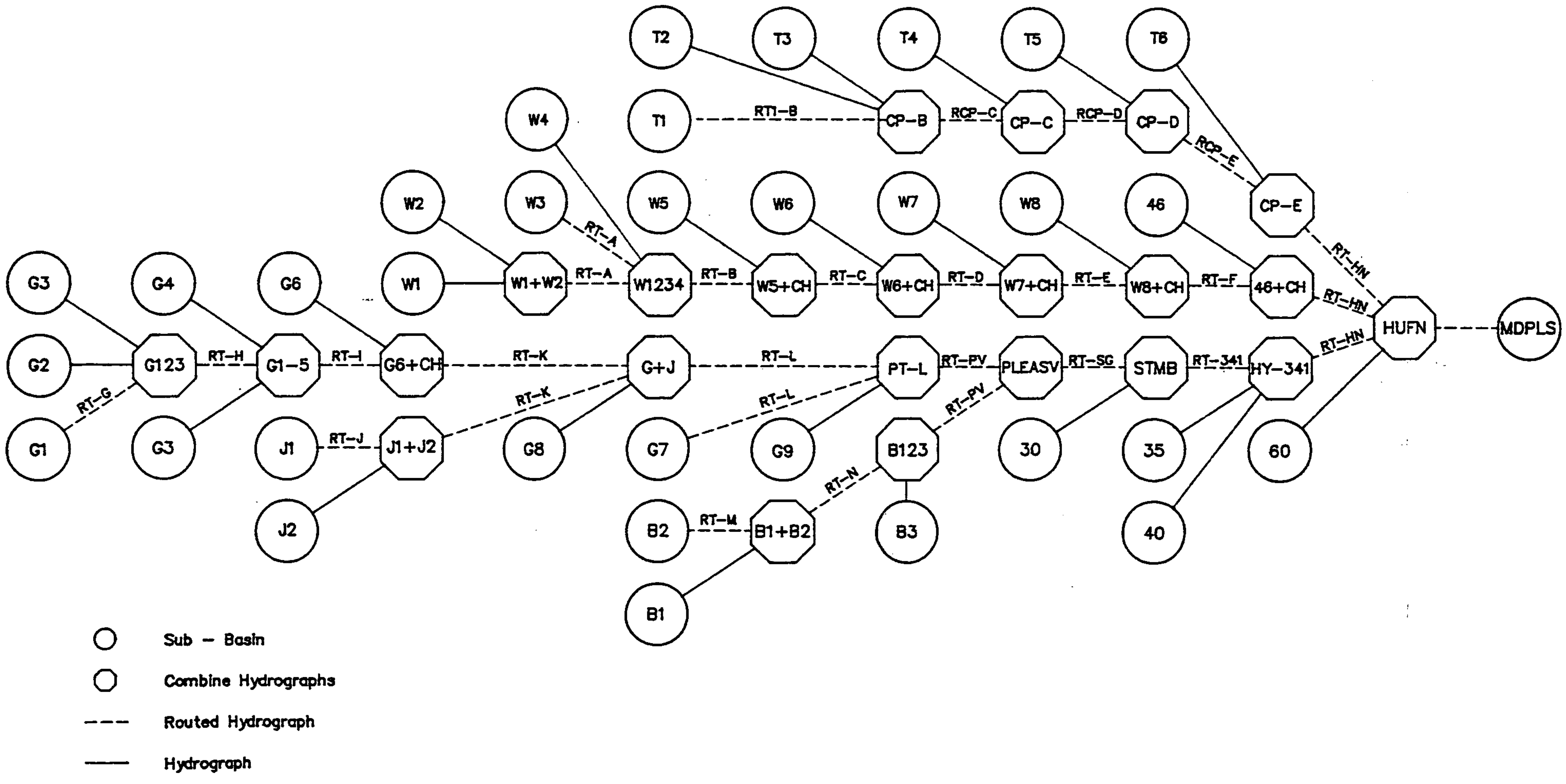

FIGURE 6

ROUTING DIAGRAM
for HEC 1 MODEL

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TABLE 2
PARAMETERS FOR BASINS

			EXISTING		FUTURE	
BASIN	BASIN AREA SQ. MILES	POINT PRECIPITATION (INCHES)	CN	LAG (HOURS)	IMPERVIOUS %	LAG (HOURS)
Thomas Creek						
T1	2.5	5.44	69	.35	--	--
T2	1.82	4.92	58	.29	--	--
T3	.82	4.73	59	.3	--	--
T4	2.16	4.2	58	.54	--	--
T5	1.19	3.4	71	.49	8	--
T6	3.15	2.8	75	.85	16	--
Whites Creek						
W1	1.36	5.52	73	.21	--	--
W2	.84	5.39	80	.17	--	--
W3	1.38	5.17	72	.23	--	--
W4	1.47	4.94	62	.27	--	--
W5	1.27	4.77	62	.28	--	--
W6	1.43	4.12	61	.44	--	--
W7	1.3	3.36	68	.5	8	--
W8	4.37	2.79	68	.53	--	--
46	2.69	2.75	66	.5	25	--
Galena Creek						
G1	1.63	5.6	75	.2	--	--
G2	1.3	5.12	75	.2	--	--
G3	1.15	4.99	69	.36	--	--
G4	1.54	4.74	63	.25	--	--
G5	1.02	4.64	55	.32	--	--
G6	1.37	4.1	59	.58	--	--
Jones Creek						
J1	1.29	4.62	63	.23	--	--
J2	1.95	3.98	64	.43	--	--
Galena Creek						
G7	1.5	3.8	62	.36	5	--
G8	2.19	3.41	69	.35	6	--
G9	3.07	3.16	69	.67	--	--
Browns Creek						
B1	2.18	4.53	62	.44	--	--
B2	1.42	4.0	60	.35	--	--
B3	.53	3.42	67	.36	--	--
30	17.8	2.82	77	.82	3	--
Bailey Canyon Creek						
35	15.5	3.04	82	.72	2	--
Upper Meadows						
40	2.63	2.81	77	.49	15	.3
60	23.15	2.83	76	3.70	12	1.0

TABLE 3
MUSKINGUM ROUTING PARAMETERS

		EXISTING			FUTURE		
		STEP	K	X	STEP	K	X
RT1-B	Route T1 to CP-B	1	.1	.4	1	.1	.4
RCP-C	Route T1/T2/T3 to CP-C	2	.15	.4	2	.15	.4
RCP-D	Route T1-T4 to CP-D	2	.14	.4	2	.14	.4
RCP-E	Route flow to CP-E	5	.64	.2	3	.27	.4
RT-HN	Route flows to HUFN	5	1.5	.1	2	.35	.4
RT-A	Route W1,W2 to W1234	1	.12	.4	1	.12	.4
RT-A	Route W3 to W1234	1	.1	.4	1	.1	.4
RT-B	Route flows to W5+CH	1	.06	.4	1	.06	.4
RT-C	Route flows to W6+CH	2	.2	.4	2	.2	.4
RT-D	Route flows to W7+CH	3	.3	.4	3	.3	.4
RT-E	Route flows to W8+CH	2	.14	.4	2	.14	.4
RT-F	Route flows to 46+CH	1	.24	.2	1	.24	.4
RT-HN	Route flows to HUFN	5	1.8	.1	4	.4	.4
RT-G	Route G! to G123	1	.1	.4	1	.1	.4
RT-H	Route flows to G1-5	2	.17	.4	2	.17	.4
RT-I	Route flows to GG+CH	2	.17	.4	2	.17	.4
RT-K	Route flows to G+J	1	.07	.4	1	.07	.4
RT-J	Route J1 to J1+J2	2	.20	.4	2	.20	.4
RT-K	Route J1,J2 to G+J	1	.14	.4	1	.14	.4
RT-L	Route flows to PT-L	1	.13	.4	1	.13	.4
RT-L	Route G7 to PT-L	1	.13	.4	1	.13	.4
RT-PV	Route flows to PLEASV	2	.17	.2	2	.17	.4
RT-M	Route B2 to B1+B2	2	.17	.4	2	.17	.4
Rt-N	Route flows to B123	1	.1	.4	1	.1	.4
RT-PV	Route flows to PLEASV	3	.31	.2	3	.31	.4
RT-SG	Route Steamboat flows to STMB	3	.21	.2	3	.21	.4
RT-341	Route flows to HY-341	2	.41	.2	2	.41	.4
Rt-HN	Route Steamboat to HUFN	5	2.3	.1	5	.44	.4

In this application K was determined utilizing the Manning equation and calculating the travel time for each reach. A ratio of wave velocity to channel velocity was then applied to the channel velocity. For future conditions an average value of 10 feet per second was used for channelized reaches in two of the models This value was taken from the Master Plans of the Damonte and Double Diamond Developments. The value of X was chosen as follows:

.4 for reaches in which the flow remains in the channel
.2 for reaches with overbank flooding
.1 for flows with no defined channel (width over 1000').

The Modified Puls Method was used to route flows through the structure at State Route 341 on Steamboat Creek, and at Huffaker Narrows where the Mira Loma Haul Road crosses Steamboat Creek. These concentration points were the only areas where ponding occurs under existing conditions. Routing through proposed detention facilities was also performed using the Modified Puls method. Storage and outflow data for these routings were developed by creating a rating curve for the low flow structures and by weir flow calculations for roadway overtopping. Storage data was developed from available topographic mapping.

Figure 6 is a schematic or routing diagram which summarizes the HEC 1 models and Tables 2 and 3 give detailed information on the parameter values for watershed evaluation and routing respectively. The input and output of the HEC 1 models are included in the Technical Appendix.

Results

Two models were produced for each condition, existing and future, one with a five minute computational interval and the other with a fifteen minute interval. An additional model was prepared for a modified future condition. This model was based upon the assumption that grass lined or earthen channels are preferred for the proposed developments. These channels could not withstand velocities in excess of 6 feet per second.

The model HEX5.909 is a simulation of the existing condition with a five minute computational interval and HEX15.909 the same conditions with a fifteen minute interval. These models as noted earlier were prepared using aerial reduction of the point rainfall. Discharges calculated for subwatersheds are not appropriate to utilize for design purposes for channels or structures which will improve tributaries. The following table presents in tabular form the discharges from this analysis:

?

Table 4

Model	Tp hrs.	@SR 341 cfs	@Narrows cfs	Volume ac-ft	Stage elev.
Exist. cond. (5 min)	15.75	8949	10537		4420.13
Exist. cond. (15 min.)	15.75	8495	10492	8634	4420.12
Future (5min)	13.80	9574	17220		4421.41
Future (15 min)	14.00	8939	16402	9307	4421.29
Modified future (15 min)	14.50	8939	13909	9307	4420.79

The dramatic increase in peak flows at the Narrows for future conditions is largely attributable to the assumed channelization on the Double Diamond and Damonte Ranches. Presently these properties have ill defined channels and as Thomas, Whites and Steamboat Creeks reach this area, the majority of the flow is sheet flow across meadow or pasture land and the velocity ranges from 1 to 3 feet per second. If the flow were to be confined to channels as set forth in the Master Plans for those properties, the average velocity becomes approximately 10 feet per second. As noted earlier the future conditions model was modified to reflect velocities in the range of 6 feet per second for grass lined channels.

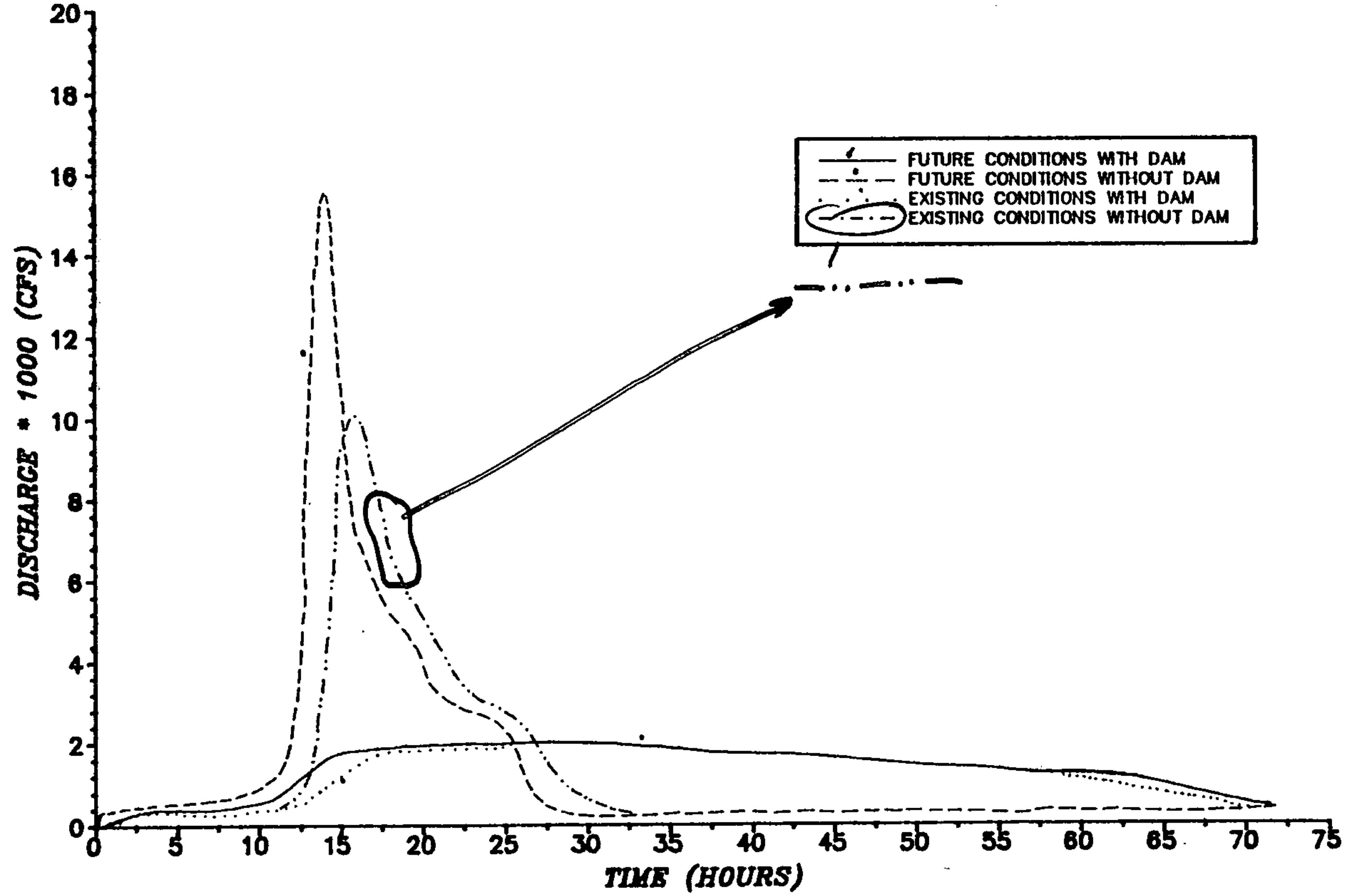

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FIGURE 7

100-YR HYDROGRAPH
at Dam Site

DATE: DECEMBER 1989

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Figure 7 is a hydrograph comparison of the two conditions which demonstrates the increased peak and the shorter time to peak of the flows at the outlet of the Narrows. The increase in flood stage from Table 4 is also noteworthy.

It is our understanding that conditions placed on the tentative map for the first-phase of the Double Diamond Development require that the developer mitigate any increase in peak flows to Thomas and Whites Creeks. This requirement was not taken into consideration when modeling the future condition. It is assumed that it will be to the developers benefit to participate in this project and that the participation will be deemed mitigation.

The dam structure suggested by the geotechnical report (see Appendix) is either a rock fill or earthen fill dam. Several low flow outlets were considered for the dam. The approach was to try to balance the outflow and the height of the structure to minimize the flood pool and not exceed the capacity of the Brookside Lakes Golf Course Flood Control Channel. A double 4'x10' reinforced concrete box was chosen.

HYDRAULIC EVALUATION

Bella Vista Ranch

A hydraulic evaluation of the present condition and of the proposed condition on the downstream properties was performed utilizing HEC 2. The location of crossections used in the evaluation are shown on Figure 8. The data for the analysis was developed from orthophotos developed for the Corps of Engineers in summer 1989.

The width of floodplain on the Bella Vista property does not dramatically decrease with the addition of the detention facility at the Narrows; however, the depth of flow is lowered approximately three to four feet. Under present conditions almost the entire floodplain is need for conveyance of the flood, yet under proposed conditions, with the dam in place, much of the floodplain can be developed by encroachment, without extensive channelization. Figures 9 and 10 show the reduction in depth of flow for a typical cross section. A preliminary floodway analysis shows that more than 190 acres of the Bella Vista could be removed from the future condition floodplain by encroachment, under FEMA criteria.

A preliminary channel design through the Bella Vista Ranch, downstream of the dam was developed in order to size the box culverts which would be needed for the Mira Loma Drive extension. Since minimal headwater area is available, the culverts were sized to maintain open channel flow. In final design, the possibility of developing a greater headwater depth to provide pressure flow should be investigated. If that is possible, the structure sizes could be significantly reduced and result in lower costs.

The channel used to size the structures has a 100 foot bottom width with 3:1 side slopes and a flow depth of 3.5 to 5 feet. This is a section similar to the channel downstream on the Brookside Lakes project.

Thomas Creek Fan

One of the primary reasons for this study was to evaluate the possibility of diverting Thomas Creek flows to the Huffaker Narrows. This diversion would relieve flooding near Patriot Boulevard and in the Longley Lane area. A hydraulic analysis of Thomas Creek at South Virginia Street was performed in order to evaluate the flow split under existing conditions. Presently approximately 1260 cfs flows northeasterly over Holcomb Lane and across Virginia Street and an additional 250 cfs flows easterly across Virginia Street. Those flows combine and will become concentrated at the newly constructed Interstate 580 and proceed northeasterly through the freeway and concentrate near Longley.

During the course of this study several channel alignments were identified to serve as a remedy for this situation. Due to the length of the channel improvements that would have to be constructed, the development in the lower watershed, the right-of-way needed and the lack of capacity at South Virginia Street full channelization of Thomas Creek appears to be too costly to consider at this time. In lieu of channelization, a preliminary assessment of possible detention sites was conducted.

The concept of detention for Thomas Creek would be to limit the peak discharge to the capacity of the present channel, approximately 300 cfs. The site which was identified for a basin on Thomas Creek is shown on Figure 11. This concept has a number of advantages to a number of different parties. The Thomas Creek fan has been identified in the preliminary draft of the Regional Water Resource Plan and by Westpac Utilities as a potential site for a spreading basin to promote ground water recharge. The Nevada Department of Transportation has reviewed the concept and is interested in further study to determine the cost savings which may be achieved in structures planned for South Virginia Street widening and for the extension of Interstate 580. The developers of the Double Diamond Ranch and the Double Diamond commercial site would save a considerable sum in channel excavation costs and in needed channel rights of way, if the flows were reduced to ten percent of present.

This detention facility would not significantly affect the design for the Huffaker Basin, but it would allow the Thomas Creek flows to ultimately be delivered there. The combination of the two basins would solve a number of flooding problems in the South Truckee Meadows. Further study is needed to investigate this proposal and recommendations are included in the final section of this report for further action.

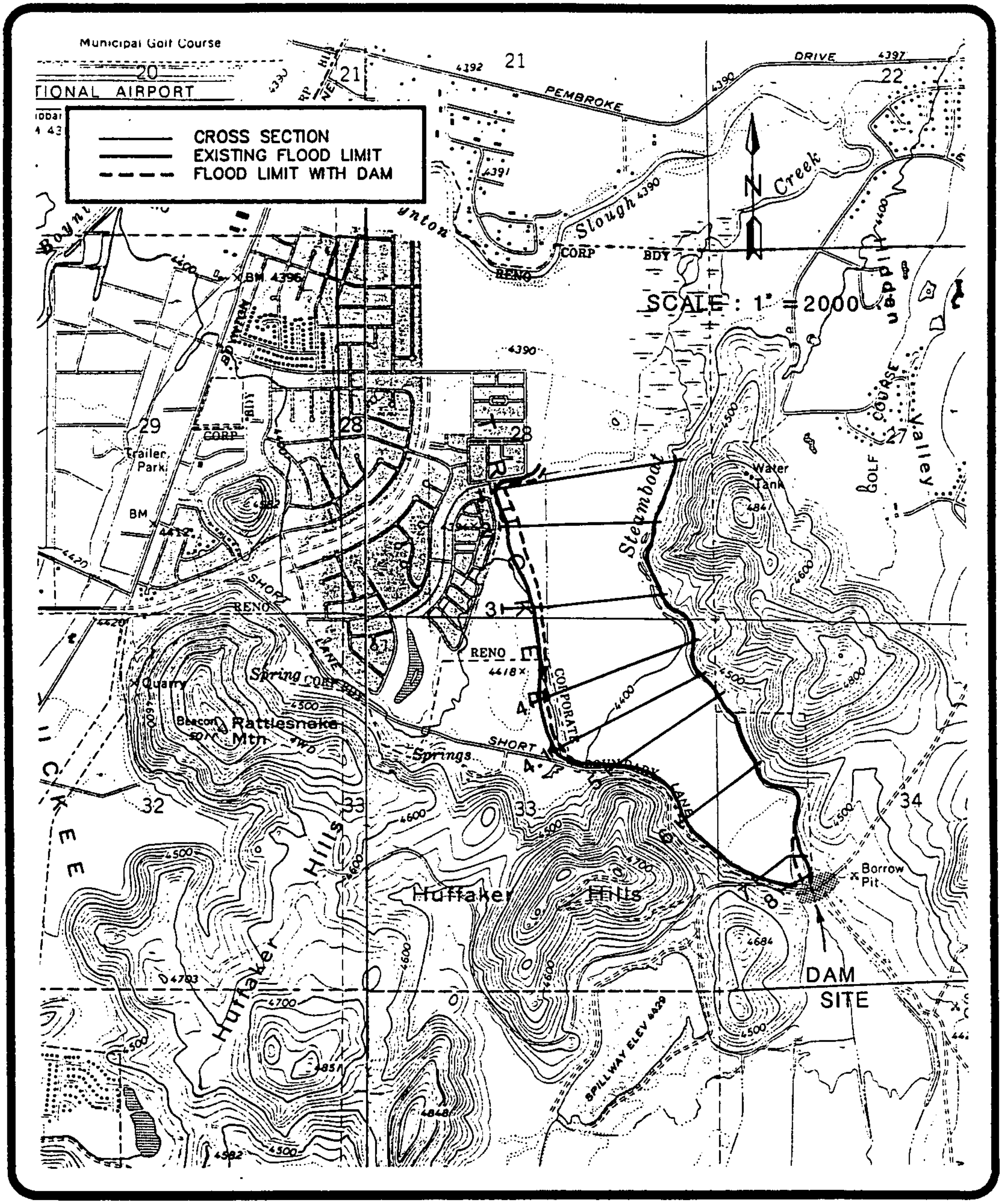

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FIGURE 8
HEC 2 CROSSECTION LOCATIONS

DATE: DECEMBER 1989
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TYPICAL CROSS SECTION
DOWNSTREAM OF HUFFAKER DAM SITE

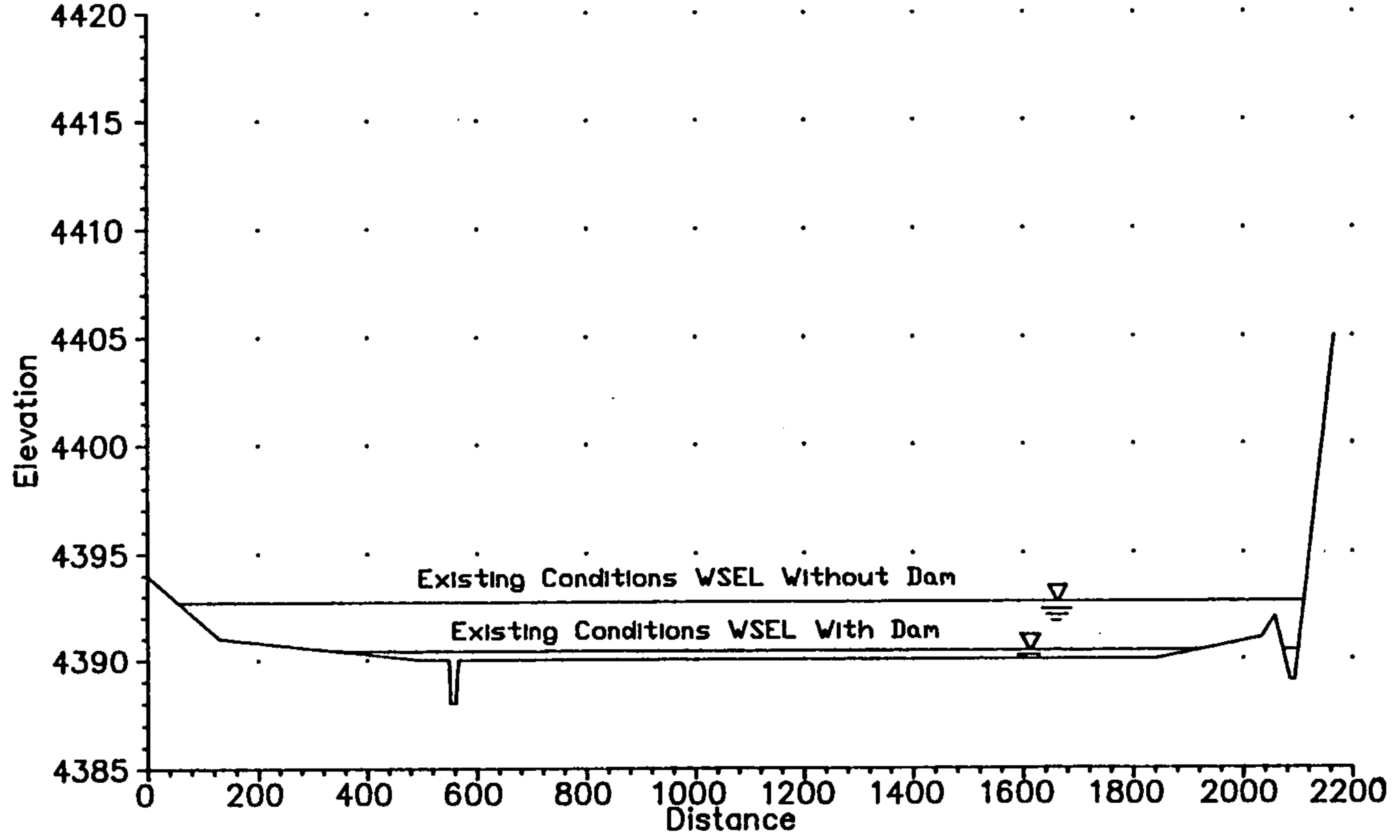

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FIGURE 9

EXISTING CONDITIONS

DATE: DECEMBER 1989 JOB #: 8909

TYPICAL CROSS SECTION

DOWNSTREAM OF HUFFAKER DAM SITE

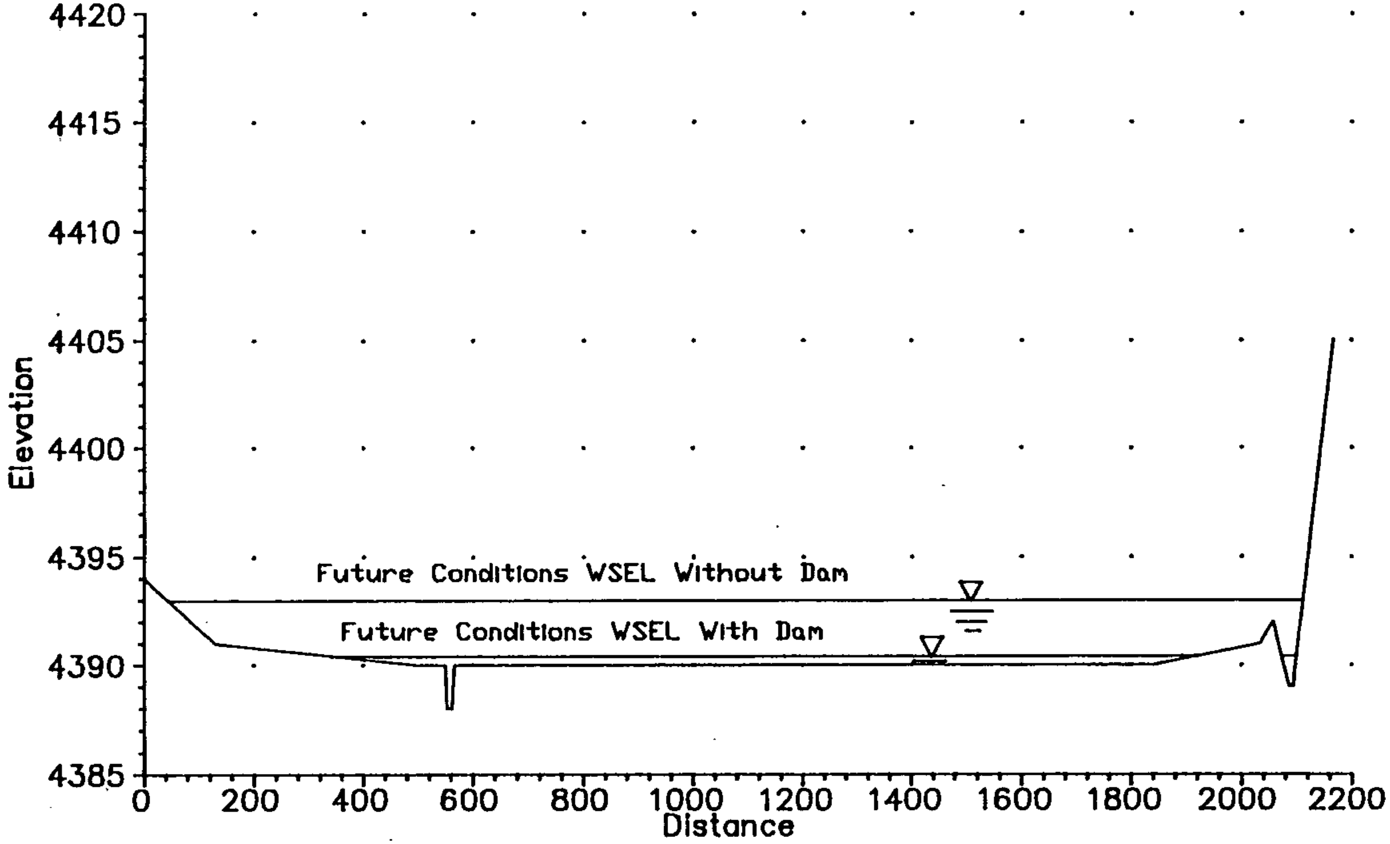

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FIGURE 10

FUTURE CONDITIONS

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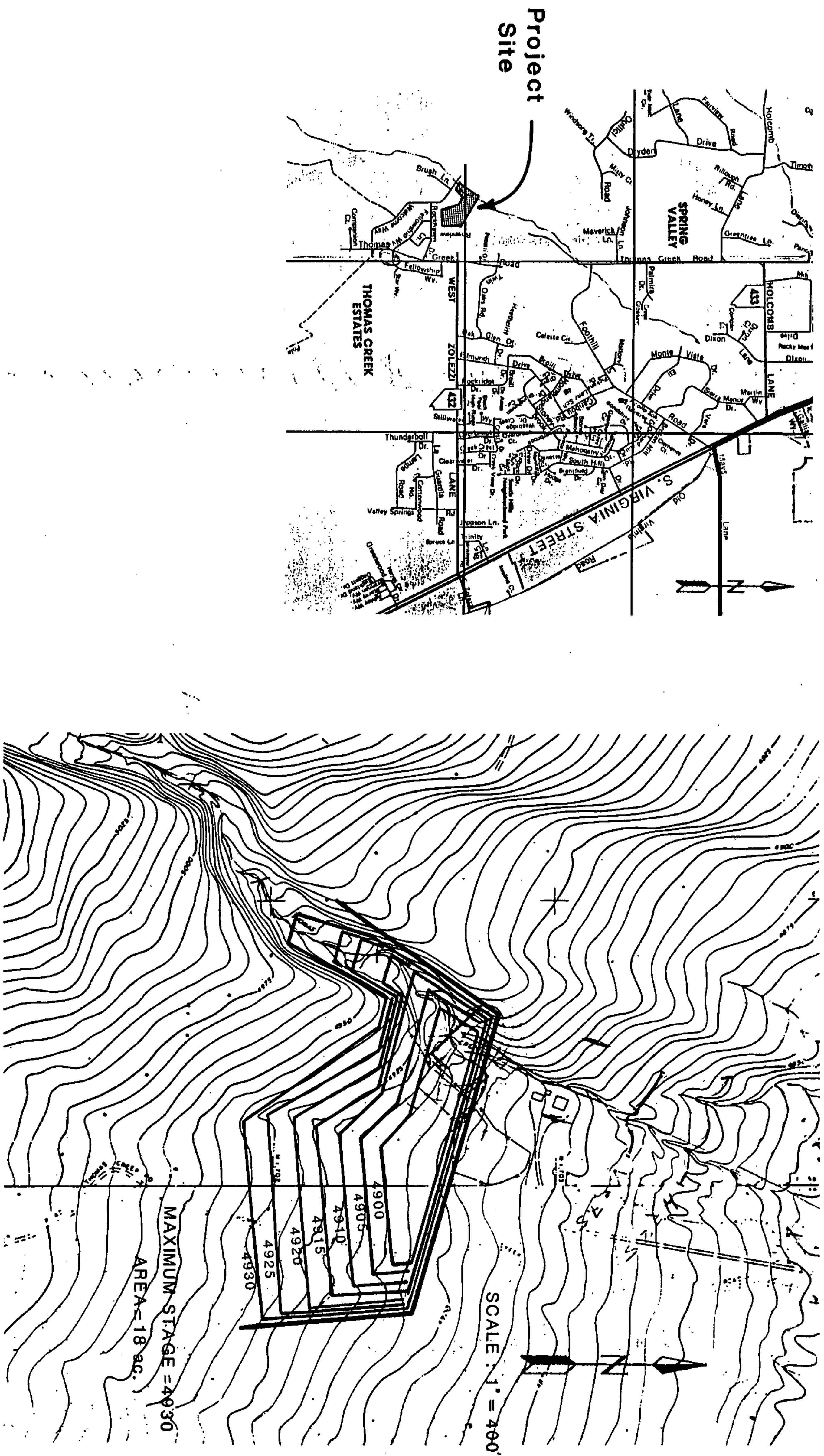

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FIGURE 11

PROPOSED THOMAS CREEK
DETENTION BASIN

DATE: DECEMBER 1989 JOB #: 8909

STRUCTURE SITING AND CONFIGURATION

The site proposed for the Huffaker Hills Detention Facility is the present alignment of the Mira Loma Haul Road between the Huffaker Hills and the western slope of the Virginia Range. This area is known as the Huffaker Narrows and is a natural constriction in the Steamboat Creek floodplain. The site is also the confluence of Whites, Thomas and Steamboat Creeks.

The area immediately upstream of the dam is undeveloped and presently used as pasture for cattle grazing. The adjacent areas are also undeveloped, although as previously noted plans are underway for large scale residential and commercial development. Since the land is not developed, plans can be prepared to be compatible with the detention basin as building occurs.

Immediately downstream of the dam site the Bella Vista property is still being utilized for agriculture, but a portion of the property has been annexed to the City of Reno. Utility services are available on the properties to the north and west of the Bella Vista, and those services have been sized to accommodate full development of that portion of the property. It is quite likely that in the near future this parcel will be developed. The siting of the dam upstream of that property will provide the benefit of a decreased flood depth and velocity and a flow that can be easily contained in a channel, if desired.

Adjacent to the Bella Vista Ranch's northern boundary is the Brookside Lakes Golf Course, which is currently being constructed by the City of Reno and completion is imminent. The golf course was developed within the floodway of Steamboat Creek and the greatest portion of the flow is now contained within a flood control channel and the central wetlands. Property adjacent to the golf course has been master planned for residential development and a tentative map has been approved for the first phase. The developer of that project is required to build a portion of Mira Loma Drive as a condition of project approval. That project would certainly benefit from a reduced discharge and structures that are now planned as bridges could be downsized to box culverts.

Two configurations were examined for the actual dam structure. The first alignment follows the present alignment of the Mira Loma Haul Road and a portion of the structure will be within the 80 foot right-of-way presently owned by Washoe County. The concept is to use the top of the dam to replace the present roadway. This configuration will involve the least environmental impacts and the area of wetlands to be filled would be less than one acre. A 404 Permit would not be required for a public agency, if the wetlands impacted are less than an acre, as it can be constructed under a nationwide permit.

[illegible] spillway cost. see below

The second alignment evaluated is shown on Figure 12. It appeared to be a preferable alignment because it would involve less fill; however, the savings in fill, 7,000 cubic yards will be more than offset by the cost of relocating Mira Loma Haul Road. This alignment will also require the purchase of a greater amount of right-of-way for the structure itself.

Due to the extensive amount of right-of-way that would be required to build a dam with a Probable Maximum Flood (PMF) Spillway, it is assumed that the dam to be built should be a structure that is capable of being overtopped in the events greater than a 100 year flood. The analysis prepared for this report is based upon a 100 year 24 hour design storm. No calculation of PMF flows were included in the scope of services. The values which have been developed by the Corps of Engineers have been utilized for preliminary analyses. A rockfill structure can withstand overtopping for some period of time, however it will not withstand prolonged overtopping.

Not good!

Preliminary analysis of the impacts of a PMF event, indicates that the detention structure will have very little effect on the flooding downstream.

?

Dam breach assumed?

No dam x-sec

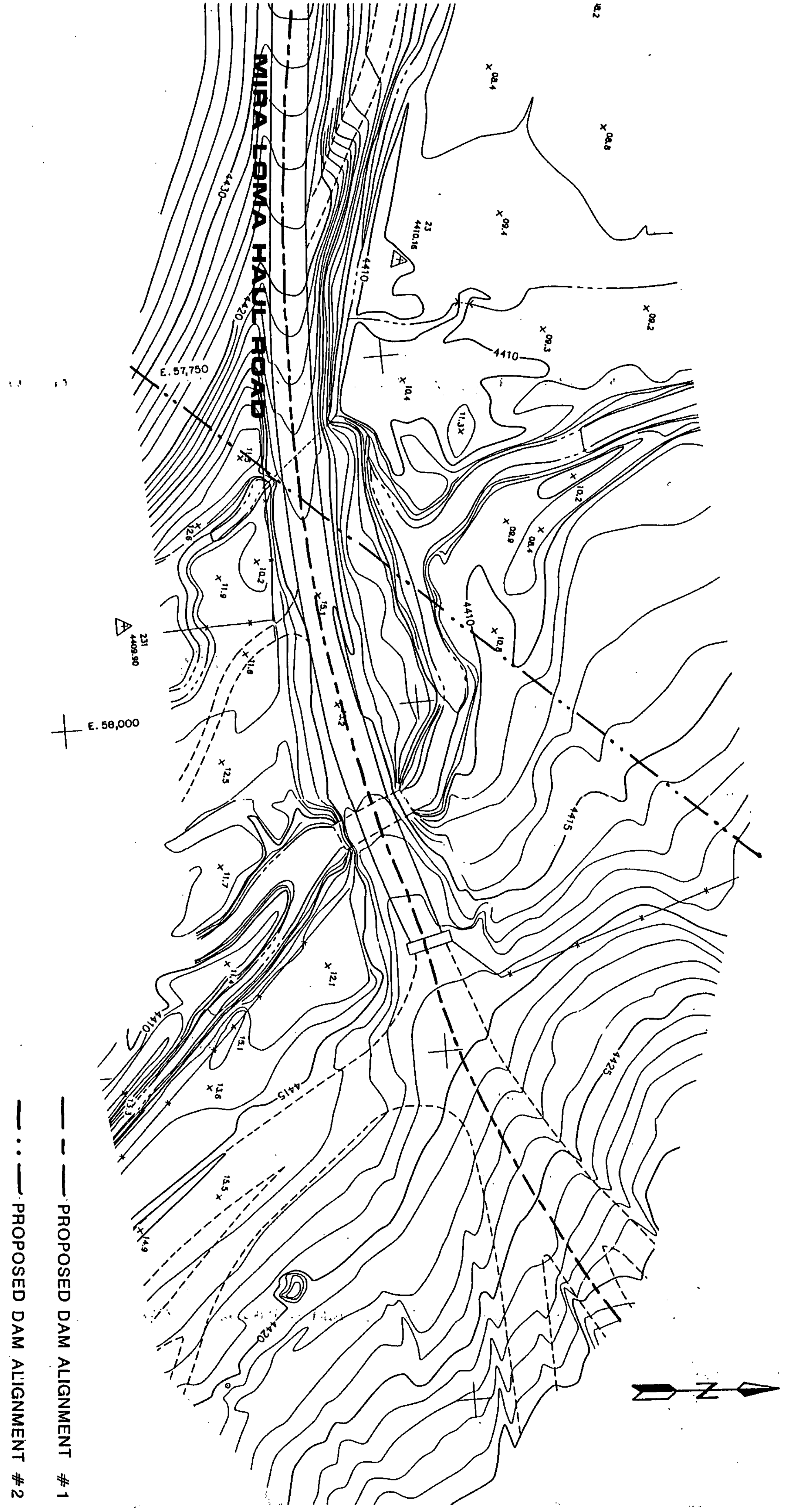

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FIGURE 12

PROPOSED DAM ALIGNMENT

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ALTERNATIVES

Three alternatives were evaluated for the flood pool configuration. The first was construction of the dam with no other structural improvements except the protection of the existing sand and gravel mining operation. This alternative is shown on Figure 13. As can be noted on the figure this alternative will inundate a large area of the Double Diamond project which has already been master planned. It is assumed the cost of that property would be much greater than the cost of the Bella Vista which is presently in agricultural use.

This first alternative would produce a project with the greatest amount of flexibility and with the least amount of environmental impact. If the entire holdings of the Bella Vista which are upstream of the dam structure could be acquired, perhaps a trade could be developed for some of the affected Double Diamond property. This configuration would allow the Double Diamond to develop a more natural drainage pattern. A portion of that development also includes a golf course which could be placed within the fringe of the proposed flood pool.

The second option, which is shown on Figure 14, includes the dam, levee protection for the sand and gravel operation and the Double Diamond project. This would be a feasible option; however, it will require the addition of drainage structures through the levee or a pumping station in order to provide drainage for the northern part of the Double Diamond. That area could be completely filled and regraded to drain to the southwest. The Thomas Creek channel would have to remain on its present alignment along Mays Lane in order reach the basin with this option. No official wetlands delineation exists for the Bella Vista property so the impacts of the levees on wetlands, and the possible complications of meeting Section 404 requirements would have to be addressed.

The height of the levee that would protect the Double Diamond development would be an average of 10 feet high with a maximum height of 18.7 feet. This would certainly have a visual impact on the proposed development. It would also impact the grading and drainage scheme. Currently no grading plans are available for the project. It is assumed that some fill would be required for the lower elevations near the north east property corner, but in general the present contour of the land would be maintained.

The third alternative includes the dam, levee protection for the sand and gravel operation, inundation of the northern forty acres of the Double Diamond, and a levee to protect the remainder. The configuration for the option is shown on Figure 15. This option appears to be much more desireable than option 2, because it would give some flexibility to the Double Diamond for drainage, and Thomas Creek could enter the detention pool at the northwesterly corner of the levee or on the Mays Lane alignment. The levees required for this option are quite high but not as extensive as those for option 2, with a maximum levee height of 10 feet and an average height of 6 feet.

Cost Estimates for each option have been prepared and are summarized in Table 5.

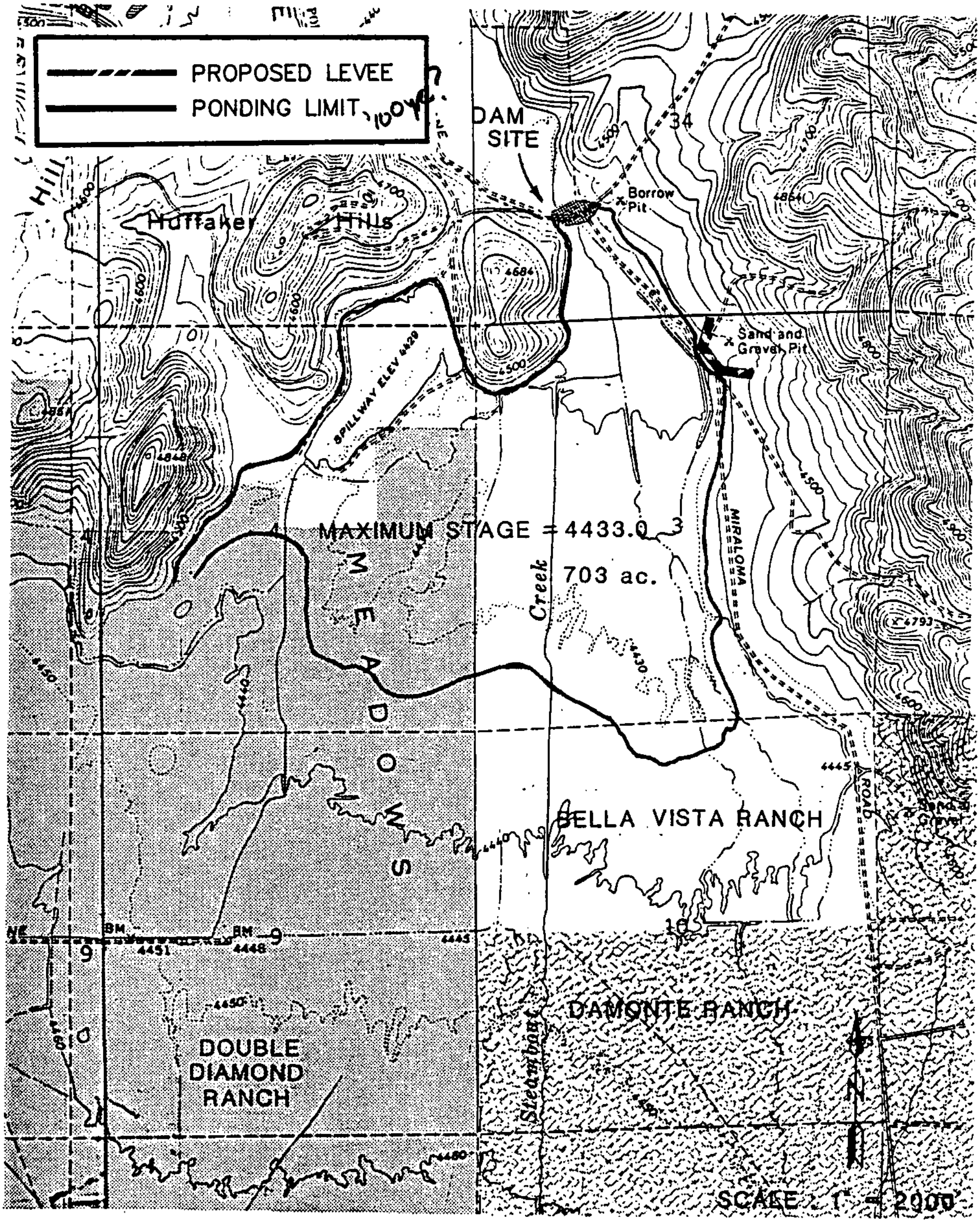

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FIGURE 13
DETENTION DAM
without levee
OPTION 1

DATE: DECEMBER 1989
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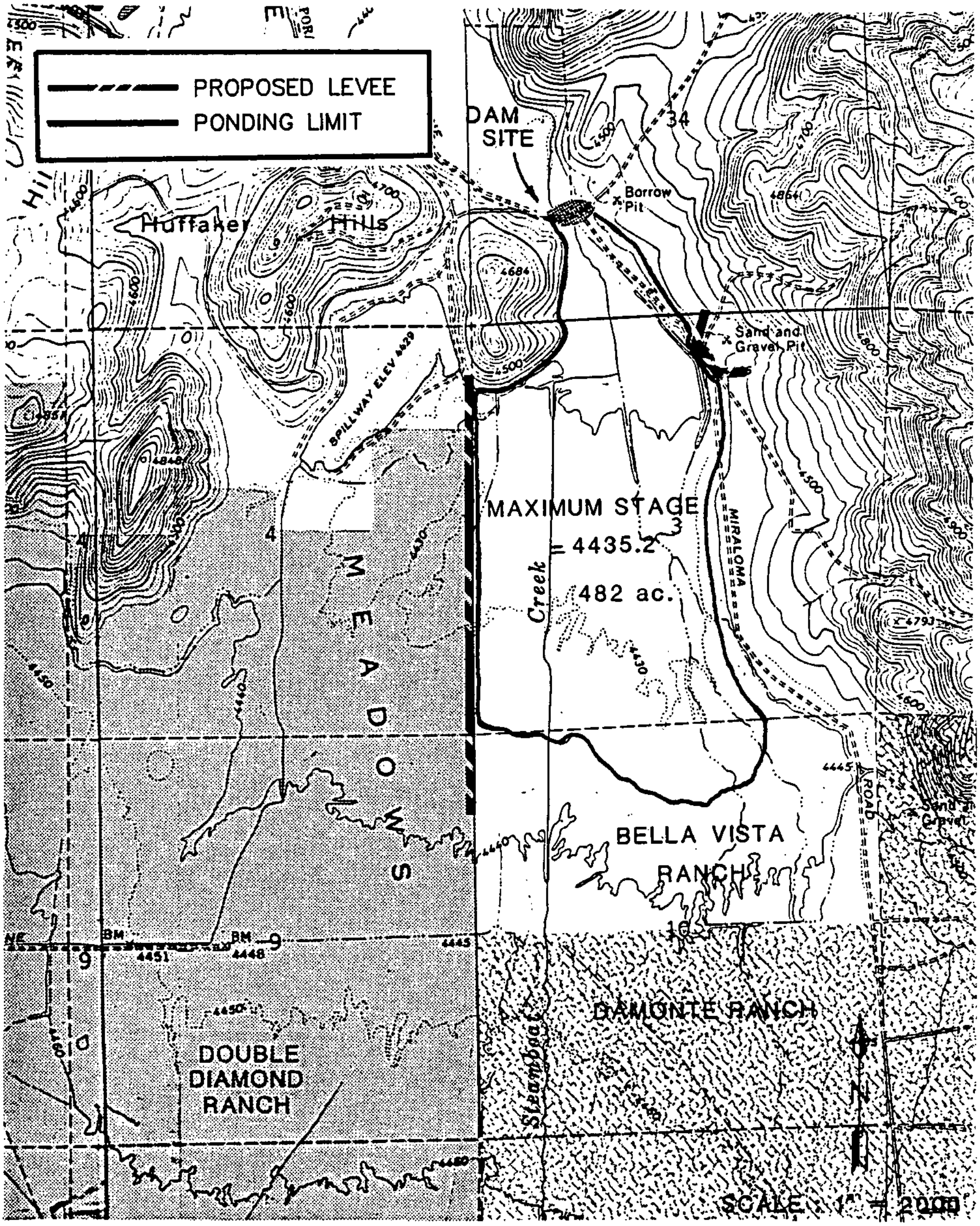

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FIGURE 14
DETENTION DAM with levee OPTION 2

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JOB #: 8909

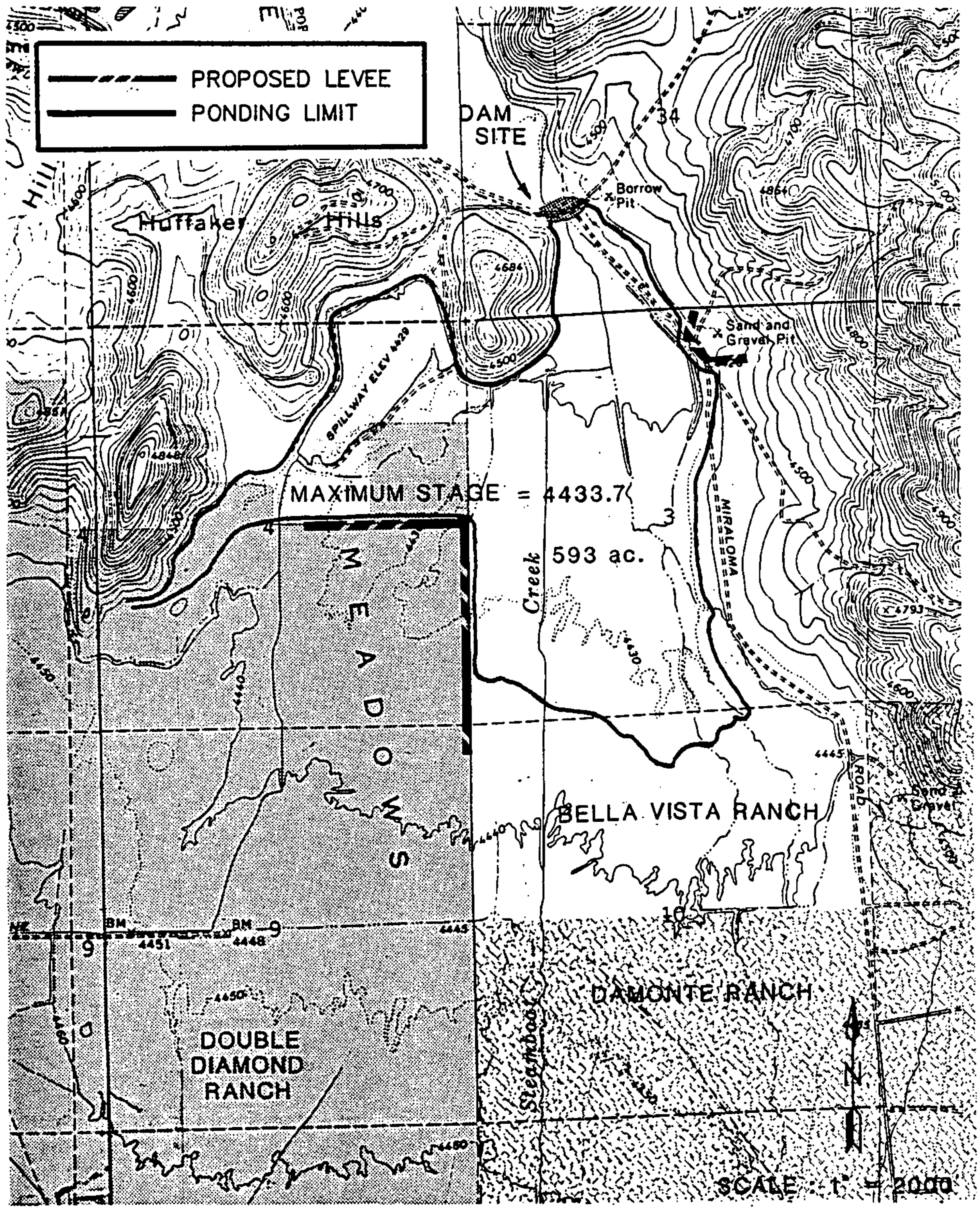

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FIGURE 15

DETENTION DAM
with levee
OPTION 3

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Table 5: Cost Estimates

EARTHEN DAM

Not feasible no spillway!

ITEM DESCRIPTION	COST / UNIT	UNITS	COST
STRUCTURES			
- 2-4x10 at Dam Outlet - Concrete	375 / yd	259	97125
- Steel	1200 / ton	27.8	33360
EARTHWORK			
- Compacted Fill of Dam	6 / yd	65571	393426
- Excavation at Dam	5 / yd	2500	12500
ROADWAYS			
- Dirt road to gravel pit (Scraper)	1500 / day	1	1500
- 4" AC on top of Dam	100 / yd	370	37000
- 6" ABC on top of Dam	27 / yd	556	15012
- Prime Coat	0.39 / sq.yd.	3333	1300
- Dust Palative	0.33 / sq.yd.	8000	2640
- Scale Relocation	1500 ea.	1	1500
- Guard Rail	11.55 / lf	1900	21945
MISCELLANEOUS			
- Clearing and Grubbbing	3500 / acre	7	24500
- Hydroseeding of Dam	0.36 / sq.yd.	15212	5476
		SUB TOTAL =	647284

ROCKFILL DAM

ITEM DESCRIPTION	COST / UNIT	UNITS	COST
STRUCTURES			
- 2-4x10 at Dam Outlet - Concrete	375 / yd	259	97125
- Steel	1200 / ton	27.8	33360
EARTHWORK			
- Compacted Fill of Dam	6 / yd	35600	213600
- Excavation at Dam	5 / yd	1852	9260
ROADWAYS			
- Dirt road to gravel pit (Scraper)	1500 / day	1	1500
- 4" AC on top of Dam	100 / yd	370	37000
- 6" ABC on top of Dam	27 / yd	556	15012
- Prime Coat	0.39 / sq.yd.	3333	1300
- Dust Palative	0.33 / sq.yd.	8000	2640
- Scale Relocation	1500 ea.	1	1500
- Guard Rail	11.55 / lf	1900	21945
MISCELLANEOUS			
- Clearing and Grubbbing	3500 / acre	7	24500
		SUB TOTAL =	458742

LEVEE COST ESTIMATES

ITEM DESCRIPTION	COST / UNIT	UNITS	COST
**** OPTION 1 ****			
- Compacted levee around gravel pit	5 / yd	15986	79930
- Hydroseeding	0.36 / sq.yd	6333	2280
		TOTAL =	82210
**** OPTION 2 ****			
- Compacted levee around Double Diamond	5 / yd	69502	347510
- Compacted levee around gravel pit	5 / yd	15986	79930
- Hydroseeding	0.36 / sq.yd.	43045	15496
		TOTAL =	442936
**** OPTION 3 ****			
- Compacted levee around Double Diamond	5 / yd	36125	180625
- Compacted levee around gravel pit	5 / yd	15986	79930
- Hydroseeding	0.36 / sq.yd.	31236	11245
		TOTAL =	271800

TOTAL PROJECT COST

OPTION	DAM TYPE	MIRA LOMA	DAM	LEVEES	20%	TOTAL
1	Earthen	731637	458742	82210	254518	1,527,107
1	Rockfill	731637	647284	82210	292226	1,753,357
2	Earthen	731637	458742	442936	326663	1959,978
2	Rockfill	731637	647284	442936	364371	2186228
3	Earthen	731637	458742	271800	292436	1754615
3	Rockfill	731637	647284	271800	330144	1980865

MIRA LOMA ROAD

ITEM DESCRIPTION		COST / UNIT	UNITS	COST
STRUCTURES				
- 1-5x10 at Mira Loma	- Concrete	375 / yd	72	27000
	- Steel	1200 / ton	8.6	10320
- 5-5x10 at Mira Loma	- Concrete	375 / yd	356	133500
	- Steel	1200 / ton	41.6	49920
EARTHWORK				
- Compacted Fill		5 / yd	52800	264000
- Excavation		5 / yd	21000	105000
ROADWAY				
- 4" AC		100 / yd	2300	230000
- 6" ABC		27 / yd	3500	94500
- Prime Coat		0.39 / sq.yd.	20400	7956
- Dust Palative		0.33 / sq.yd.	7700	2541
MISCELLANEOUS				
- Clearing and Grubbing		3500 / acre	1	3500
- Hydroseeding		0.36 / sq.yd.	12000	4320
			SUB TOTAL =	932557

No explanation

RECOMMENDATIONS AND CONCLUSIONS

The purpose of this study was to assess the feasibility of a detention facility for flood control in the Upper Truckee Meadows. Three possible options have been identified for the facility and each are feasible. Other considerations for this facility which have not been discussed are:

1. the preservation of open space and wetlands.
2. potential wetlands enhancement.
3. possible water quality improvement.
4. possible open space recreational uses.
5. reduction of peak flood stage at Vista on the Truckee.

The Upper Truckee Meadows is currently the site of a local controversy involving the preservation of wetlands. The Nevada State Highway Department, Double Diamond Commercial Site, and the Double Diamond Development are all required to meet the provisions of Section 404 of the Clean Water Act and preserve wetlands now existing on properties where construction is proposed. If the wetlands cannot be preserved, the creation of new wetlands will be required. The area which will be reserved for a flood pool if this facility is built would be an ideal area in which to construct new wetlands.

The construction of new wetlands will have a beneficial effect on water quality in the Steamboat Creek and the Truckee River. Other options which could be explored for the water quality improvement would be the construction of sedimentation ponds. These ponds would reduce the amount of sediment in Steamboat Creek and provide open water areas for waterfowl.

The upper elevations of the proposed detention area may be suitable for use as recreational facilities, i.e. soccer fields, baseball diamonds, etc. With the incorporation of open water ponds, a possible interperative center could be developed for wildlife observation.

The Corps of Engineers is currently proceeding with preparation of a General Design Memorandum for construction of a large flood control facility within the Truckee Meadows. The design concept includes the construction of a detention basin on the University Farms property adjacent to the Truckee River. This basin is intended to store the increase in peak flows which will occur at the Vista gauge as a result of channelization and construction of levees which will confine overbank flows to the channel.

It is possible that the detention facility at Huffaker Hills could lower those peak flows sufficiently to eliminate the need for the basin proposed at the University Farms. In order for Huffaker Hills to be incorporated into the Corps of Engineers Project, an agreement would have to be signed prior to construction of the facility. The Huffaker basin and the construction of Mira Loma Drive could be considered to be a replacement of the Pembroke Bridge relocation.

Listed below are the advantages and disadvantages of all three options along with a no build option.

Option No. 1

Advantages
-No levees required to protect residential uses
-Lower construction cost
-Preservation of all existing wetlands
-Natural drainage can be maintained
-Lower maintenance cost
-Lower flood pool
-Reduced floodway on northern Bella Vista (190+acres)

Disadvantages
-Large amount of Double Diamond inundated

Option 2

Advantages
-All flood pool remains on southern Bella Vista
-Reduced floodway on northern Bella Vista (190+acres)

Disadvantages
-Pumping station or other special drainage structures required
-Levee heights excessive
-Thomas and Whites Creeks must enter south end

Option 3

Advantages
-Lower construction cost than option 2
-Drainage patterns for Whites and Thomas Creeks maintained
-Reduced floodway on northern Bella Vista (190+acres)

Disadvantages
-Levees protect residential development
-40 acres of Double Diamond needed
-Restricts Double Diamond grading and drainage

No Build Option

Advantages
-No capital cost to county or City

Disadvantages
-Detention required for Damonte and Double Diamond
-Structural measures to return channelized flow to sheet flow
-Increased cost for all weather access to Hidden Valley
-University Farms detention basin required for Corps project
-The major portion of the Bella Vista remains in the floodway

It is our recommendation that the options one and three be further explored. Either option would develop a project which would benefit the Truckee Meadows area. The rock filled dam should be used as the basis for design. Further study will be required in the design phase to determine the desirability, location, and size of an emergency spillway. A sensitivity analysis should be performed to determine if a probable maximum flood would cause more damage upstream or downstream with the addition of a spillway.

Further action that needs to be taken prior to beginning final design of a structure includes preparing a submittal to the Corps of Engineers. This submittal should request a formal statement from the Corps on inclusion of the basin into the Truckee Meadows project and their design requirements. To date informal discussions have been held with them, but no written information has been exchanged.

The cost of right-of-way has not been included in any project costs. If the detention basin is built only as a local project, it may be possible to purchase only the right-of-way which is needed for the dam and the levees, and obtain an easement for the flood pool. If an easement is obtained, the landowner could have the option of continuing to use the flood pool area for agricultural purposes.

A further geotechnical investigation is needed prior to beginning design, in order to establish the extent of unsuitable foundation material that must be excavated. Borings will also be needed along levee alignments to determine the potential settlement of those structures.

The Thomas Creek basin should be pursued as a separate project. This basin would remove a number of residences from the floodplain and would benefit downstream developers. Preliminary discussions were held with the Nevada Department of Transportation during the course of this study, and they have indicated that they would endorse the proposal and possibly participate in funding. The basin was also discussed with representatives of large parcel owners and they indicated that they felt that the project should be pursued.

The Thomas Creek basin could possibly qualify for a fifty cost sharing as a small watershed project with the Corps of Engineers. This funding can be pursued by requesting a reconnaissance level study and letting the Corps do the preliminary work which will take about 2 1/2 years, or the predesign can be done by a local sponsor working with the Corps and the project could be funded within one year.

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APPENDIX

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*********************************************                    ******************************************
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)         *                    *        U.S. ARMY CORPS OF ENGINEERS    *
*              FEBRUARY 1981                *                    * THE HYDROLOGIC ENGINEERING CENTER      *
*           REVISED 01 JUN 88               *                    *          609 SECOND STREET             *
*                                           *                    *        DAVIS, CALIFORNIA 95616         *
*  RUN DATE 12/07/1989  TIME  16:38:15      *                    *           (916)551-1748                *
*********************************************                    ******************************************


                    *     *  *******   *******            *******
                    *     *  *        *                      *
                    *     *  *        *                      *
                    *     *  *        *                      *
                    *******  *****    *       *******        *
                    *     *  *        *                      *
                    *     *  *        *                      *
                    *     *  *        *                      *
                    *     *  *******   *******            *******


               *****************************************************************
               PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION
               FACILITY DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER
               PURPOSE WITHOUT CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

               HUFFAKER NARROWS HYDROLOGY MODEL OF EXISTING CONDITION
               THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURRING SUMMER 1989
               THE PARAMETERS ARE BASED ON THE 100 YEAR POINT RAINFALL FROM
               THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
               NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
               METHOD AND MANNING EQUATION ARE USED FOR THE DETERMINATION OF LAG TIME.
               CURVE NUMBERS WERE ESTIMATED FROM USFS PHOTOGRAPHS
               AERIAL REDUCTION FOR 109 SQUARE MILES 5 MINUTE TIME STEP.


1                                  HEC-1 INPUT

      LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                 *DIAGRAM
        1         ID  ******************************************************************
        2         ID
        3         ID
        4         ID
        5         ID
        6         ID
        7         ID
        8         ID
        9         ID
       10         ID
       11         ID
       12         ID
       13         ID                FILE NAME: HEX5.909
       14         ID
       15         ID  ******************************************************************
       16         IT      5                 289
       17         IO      4       1

       18         KK     T1   THOMAS CREEK WATERSHED T1
       19         BA    2.5
       20         PH      1     109     .42     .83    1.45    1.87    2.26    3.18    4.31    5.44
       21         LS             69
       22         UD    .35

       23         KK  RT1-B   ROUTE T1 TO CONCENTRATION POINT B
       24         RM      1 .09568      .4

       25         KK     T2   THOMAS CREEK WATERSHED T2
       26         BA   1.82
       27         PH      1     109      .4     .79    1.39    1.75     2.1     2.9    3.91    4.92
       28         LS             58
       29         UD    .29

       30         KK     T3   THOMAS CREEK WATERSHED T3
       31         BA    .82
       32         PH      1     109     .41      .8     1.4    1.73    2.04    2.76    3.75    4.73
       33         LS             59
       34         UD     .3

       35         KK   CP-B   COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCCENTRATION PT B
       36         HC      3

       37         KK  RCP-C   ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
       38         RM      2 .14576      .4

       39         KK     T4   THOMAS CREEK WATERSHED T4
       40         BA   2.16
       41         PH      1     109     .39     .77    1.35    1.64    1.91    2.55    3.38     4.2
       42         LS             58
       43         UD    .54
       44         KK   CP-C   COMBINE ROUTED T1-T3 W/ T4
       45         HC      2
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1                                   HEC-1 INPUT

     LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

       46         KK  RCP-D   ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
       47         RM      2  .1408     .4

       48         KK     T5  THOMAS CREEK WATERSHED T5
       49         BA   1.19
       50         PH     1.    109    .35    .68    1.2    1.4   1.59   2.04   2.75    3.4
       51         LS            71
       52         UD    .49

       53         KK   CP-D   COMBINE ROUTED T1-T4 W/ T5
       54         HC      2
       55         KO      1

       56         KK  RCP-E   ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
       57         RM      5  .836      .2

       58         KK     T6  THOMAS CREEK WATERSHED T6
       59         BA   3.15
       60         PH      1    109    .35    .69   1.21   1.34   1.48    1.8    2.3    2.8
       61         LS            75      5
       62         UD    .85

       63         KK  CP-E   COMBINE ROUTED T1-T5 W/ T6
       64         HC      2

       65         KK  RT-HN  ROUTE THOMAS CK WATERSHED TO HUFFAKER NARROWS
       66         RM      5   1.49     .1

       67         KK    W1 WHITES CREEK WATERSHED NO. 1
       68         BA   1.36
       69         PH      1    109    .39    .77   1.35   1.83   2.28   3.34   4.43   5.52
       70         LS            73
       71         UD    .21

       72         KK     W2 WHITES CREEK WATERSHED NO. 2
       73         BA    .84
       74         PH      1    109    .39    .77   1.35    1.8   2.23   3.22   4.31   5.39
       75         LS            80
       76         UD    .17

       77         KK  W1+W2 COMBINE FLOW FROM W1 AND W2
       78         HC      2

       79         KK  RT-A  ROUTE COMBINED W1 AND W2 TO POINT A
       80         RM      1  .122     .4
       81         KK    W3  WHITES CREEK WATERSHED NO. 3
       82         BA   1.38
       83         PH      1    109    .39    .77   1.36   1.78   2.18   3.12   4.15   5.17
       84         LS            72
       85         UD    .23

       86         KK   RT-A ROUTE W3 TO POINT A
       87         RM      1  .0950     .4

       88         KK    W4  WHITES CREEK WATERSHED NO. 4
       89         BA   1.47
       90         PH      1    109    .38    .75   1.32   1.71   2.08   2.95   3.94   4.94
       91         LS            62
       92         UD    .27

       93         KK  W1234 COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
       94         HC      3

       95         KK  RT-B  ROUTE COMBINED HYDROGRAPH TO POINT B
       96         RM      1  .0597     .4

       97         KK    W5  WHITES CREEK WATERSHED NO. 5
       98         BA   1.27
       99         PH      1    109    .38    .75   1.31   1.67   2.01    2.8   3.78   4.77
      100         LS            62
      101         UD    .28

      102         KK  W5+CH COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
      103         HC      2

      104         KK  RT-C  ROUTE COMBINED HYDROGRAPH TO POINT C
      105         RM      2   .185     .4

      106         KK    W6  WHITES CREEK WATERSHED N0. 6
      107         BA   1.43
      108         PH      1    109    .36    .71   1.24   1.55   1.86   2.56   3.34   4.12
      109         LS            61
      110         UD    .44

      111         KK  W6+CH COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
      112         HC      2

      113         KK  RT-D  ROUTE COMBINED HYDROGRAPH TO POINT D
      114         RM      3   .298     .4

      115         KK    W7  WHITES CREEK WATERSHED NO.7
      116         BA    1.3
      117         PH      1    109    .33    .64   1.12   1.34   1.55   2.03   2.69   3.36
      118         LS            68
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1                                  HEC-1 INPUT

 LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  119         UD     .5
  120         KK  W7+CH COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
  121         HC      2

  122         KK  RT-E  ROUTE COMBINED HYDROGRAPH TO POINT E
  123         RM      2   .139     .4

  124         KK    W8  WHITES CREEK WATERSHED NO. 8
  125         BA   4.37
  126         PH      1    109    .32    .64   1.12   1.28   1.43   1.79   2.29   2.79
  127         LS            68
  128         UD    .53

  129         KK  W8+CH COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
  130         HC      2

  131         KK  RT-F  ROUTE COMBINED HYDROGRAPH TO POINT F
  132         RM      1    .24     .2

  133         KK    46  WHITES CREEK WATERSHED 46
  134         BA   2.69
  135         PH      1    109    .36     .7   1.23   1.39   1.52   1.78   2.26   2.75
  136         LS            66
  137         UD     .5

  138         KK  46+CH COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
  139         HC      2

  140         KK  RT-HN ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
  141         RM      5   1.76     .1

  142         KK    G1   GLENA CREEK WATERSHED NO.1
  143         BA   1.63
  144         PH      1    109     .4    .79   1.39   1.85   2.29   3.31   4.46    5.6
  145         LS            75
  146         UD     .2

  147         KK  RT-G  ROUTE G1 TO POINT G
  148         RM      1   .096     .4

  149         KK     G2  GALENA CREEK WATERSHED NO. 2
  150         BA    1.3
  151         PH      1    109    .39    .77   1.35   1.76   2.16   3.08    4.1   5.12
  152         LS            75
  153         UD     .2

  154         KK     G3  GALENA CREEK WATERSHED NO. 3
  155         BA   1.15
  156         PH      1    109    .38    .74    1.3   1.69   2.05    2.9   3.95   4.99
  157         LS            69
  158         UD    .36
  159         KK  G123  COMBINE ROUTED G1 WITH G2 AND G3
  160         HC      3

  161         KK  RT-H  ROUTE COMBINED HYDROGRAPH TO POINT H
  162         RM      2   .174     .4

  163         KK     G4  GALENA CREEK WATERSHED NO. 4
  164         BA   1.54
  165         PH      1    109    .38    .75   1.32   1.68   2.02   2.83   3.79   4.74
  166         LS            63
  167         UD    .25

  168         KK     G5  GALENA CREEK WATERSHED NO. 5
  169         BA   1.02
  170         PH      1    109    .38    .75   1.32   1.67   1.99   2.75    3.7   4.64
  171         LS            55
  172         UD    .32

  173         KK   G1-5 COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
  174         HC      3

  175         KK  RT-I  ROUTE COMBINED HYDROGRAPHS TO POINT I
  176         RM      2   .167     .4

  177         KK     G6  GALENA CREEK WATERSHED N0.6
  178         BA   1.37
  179         PH      1    109    .37    .72   1.26   1.57   1.67   2.56   3.33    4.1
  180         LS            59
  181         UD    .58

  182         KK  G6+CH COMBINE G6 WITH COMBINED HYDROGRAPH AT POINT I
  183         HC      2

  184         KK  RT-K  ROUTE COMBINED HYDROGRAPH TO POINT K
  185         RM      1   .066     .4

  186         KK     J1  JONES CREEK WATERSHED NO. 1
  187         BA   1.29
  188         PH      1    109    .39    .76   1.33   1.67      2   2.75   3.69   4.62
  189         LS            63
  190         UD    .23

  191         KK  RT-J  ROUTE JI TO POINT J
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1                                   HEC-1 INPUT

  LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

   192       RM      2   .195      .4

   193       KK    J2  JONES CREEK WATERSHED NO. 2
   194       BA    1.95
   195       PH      1     109     .35      .7    1.22    1.52     1.8    2.45    3.22    3.98
   196       LS             84
   197       UD     .43

   198       KK  J1+J2 COMBINE ROUTED J1 WITH J2 AT POINT J
   199       HC      2

   200       KK  RT-K  ROUTE COMBINED J1 AND J2 TO POINT K
   201       RM      1   .104      .4

   202       KK    G8  GALENA CREEK WATERSHED NO.8
   203       BA    2.19
   204       PH      1     109     .34     .66    1.16     1.4    1.62    2.13    2.77    3.41
   205       LS             69
   206       UD     .35

   207       KK  G+J   COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
   208       HC      3

   209       KK  RT-L  ROUTE COMBINED HYDROGRAPH TO PT L
   210       RM      1   .132      .4

   211       KK    G7  GALENA CREEK WATERSHED NO. 7
   212       BA     1.5
   213       PH      1     109     .35     .69    1.22     1.5    1.77     2.4     3.1     3.8
   214       LS             62
   215       UD     .36

   216       KK  RT-L  ROUTE G7 TO POINT L
   217       RM      1   .129      .4

   218       KK    G9  GALENA CREEK WATERSHED NO. 9
   219       BA    3.07
   220       PH      1     109     .33     .65    1.14    1.35    1.56    2.04     2.6    3.16
   221       LS             69
   222       UD    1.67

   223       KK  PT-L  COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
   224       HC      3

   225       KK  RT-PV ROUTE COMBINED HYDROGRAPH TO PLEASENT VALLEY
   226       RM      2    .17      .2

   227       KK    B1  BROWNS CREEK WATERSHED NO. 1
   228       BA    2.18
   229       PH      1     109     .38     .74     1.3    1.63    1.95     2.7    3.62    4.53
   230       LS             62
   231       UD     .44

   232       KK  RT-M  ROUTE B1 TO POINT M
   233       RM      2   .187      .4

   234       KK    B2  BROWNS CREEK WATERSHED NO. 2
   235       BA    1.42
   236       PH      1     109     .36     .71    1.25    1.55    1.83    2.49    3.25       4
   237       LS             60
   238       UD     .35
   239       KK  B1+B2 COMBINE ROUTED B1 WITH B2 AT POINT M
   240       HC      2

   241       KK  RT-N  ROUTE COMBINED HYDROGRAPH TO POINT N
   242       RM      1   .104      .4

   243       KK    B3  BROWNS CREEK WATERSHED NO. 3
   244       BA     .53
   245       PH      1     109     .34     .67    1.18    1.43    1.66    2.22    2.82    3.42
   246       LS             67
   247       UD     .36

   248       KK  B123  COMBINE ROUTED B1 AND B2 WITH B3
   249       HC      2

   250       KK  RT-PV ROUTE BROWNS CREEK HYDROGRAPH TO PLEASENT VALLEY
   251       RM      3    .31      .2

   252       KK PLEASV COMBINE GALENA CK AND BROWNS CK AT PLEASENT VALLEY
   253       HC      2

   254       KK  RT-SG ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
   255       RM      3    .21      .2

   256       KK    30  STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
   257       BA    17.8
   258       BF     500     500       1
   259       PH      1     109     .32     .64    1.12    1.28    1.44     1.8    2.34    2.87
   260       LS             77
   261       UD    0.82

   262       KK  STMBT COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
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1                                  HEC-1 INPUT

      LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


       263         HC      2

       264         KK  RT-341 ROUTE COMBINED HYDROGRAPH TO HWY 341
       265         RM      2   .413    .2

       266         KK    35  WATERSHED 35 AKA BAILEY CANYON
       267         BA    15.5
       268         BF      0       0       1
       269         PH      1     109     .39     .77    1.34    1.53    1.68    1.98    2.51    3.04
       270         LS              82
       271         UD    .72

       272         KK    40  WATERSHED NO.40
       273         BA    2.63
       274         PH      1     109     .35     .69    1.21    1.38    1.51    1.78    2.29    2.81
       275         LS              77
       276         UD     .49
       277         KK  HY-341  COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
       278         HC      3

       279         KK  RT-HN  ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
       280         RM      5   2.26     .1

       281         KK    60  WATERSHED NO. 60
       282         BA   23.15
       283         PH      1     109     .35     .68    1.19    1.36    1.49    1.77     2.3    2.83
       284         LS              76
       285         UD    3.70

       286         KK   HUFN  COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
       287         HC      4
       288         KO      1       2

       289         KK   MDPLS ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
       290         RS      1    STOR       0
       291         SA     .6     1.9     8.6    18.1      40      80     131     196
       292         SE   4410    4412    4414    4416    4418    4420    4422    4424
       293         SQ    200     480     783    1411    4191    9772   19163   31000
       294         ZZ
```

```
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE    (V) ROUTING         (--->) DIVERSION OR PUMP FLOW

  NO.    (.) CONNECTOR       (<---) RETURN OF DIVERTED OR PUMPED FLOW

   18     T1
          V
          V
   23    RT1-B
          .
          .
   25     .     T2
          .     .
          .     .
   30     .     .     T3
          .     .     .
          .     .     .
   35     CP-B.........
          V
          V
   37    RCP-C
          .
          .
   39     .     T4
          .     .
          .     .
   44     CP-C...
          V
          V
   46    RCP-D
          .
          .
   48     .     T5
          .     .
          .     .
   53     CP-D...
          V
          V
   56    RCP-E
          .
          .
   58     .     T6
          .     .
          .     .
   63    CP-E ...
          V
          V
   65    RT-HN
          .
          .

   67     .     W1
          .     .
          .     .
   72     .     .     W2
          .     .     .
          .     .     .
   77     .   W1+W2...
          .     V
          .     V
   79     .   RT-A
          .     .
          .     .
   81     .     .     W3
          .     .     V
          .     .     V
   86     .     .    RT-A
          .     .     .
          .     .     .
   88     .     .     .     W4
          .     .     .     .
          .     .     .     .
   93     .   W1234.........
          .     V
          .     V
   95     .   RT-B
          .     .
          .     .
   97     .     .     W5
          .     .     .
          .     .     .
  102     .   W5+CH...
          .     V
          .     V
  104     .   RT-C
          .     .
          .     .
  106     .     .     W6
          .     .     .
          .     .     .
  111     .   W6+CH...
          .     V
          .     V
```

```
INPUT
LINE   (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

NO.    (.) CONNECTOR      (<---) RETURN OF DIVERTED OR PUMPED FLOW

 113       .     RT-D
          .       .
          .       .
 115       .       .     W7
          .       .       .
          .       .       .
 120       .     W7+CH............
          .       V
          .       V
 122       .     RT-E
          .       .
          .       .
 124       .       .     W8
          .       .       .
          .       .       .
 129       .     W8+CH............
          .       V
          .       V
 131       .     RT-F
          .       .
          .       .
 133       .       .     46
          .       .       .
          .       .       .
 138       .     46+CH............
          .       V
          .       V
 140       .     RT-HN
          .       .
          .       .
 142       .       .     G1
          .       .       V
          .       .       V
 147       .       .     RT-G
          .       .       .
          .       .       .
 149       .       .       .     G2
          .       .       .       .
          .       .       .       .
 154       .       .       .       .     G3
          .       .       .       .       .
          .       .       .       .       .
 159       .       .     G123 ........................
          .       .       V
          .       .       V
 161       .       .     RT-H
          .       .       .
          .       .       .
 163       .       .       .     G4
          .       .       .       .
          .       .       .       .
 168       .       .       .       .     G5
          .       .       .       .       .
          .       .       .       .       .

 173       .       .     G1-5.........................
          .       .       V
          .       .       V
 175       .       .     RT-I
          .       .       .
          .       .       .
 177       .       .       .     G6
          .       .       .       .
          .       .       .       .
 182       .       .     G6+CH............
          .       .       V
          .       .       V
 184       .       .     RT-K
          .       .       .
          .       .       .
 186       .       .       .     J1
          .       .       .       V
          .       .       .       V
 191       .       .       .     RT-J
          .       .       .       .
          .       .       .       .
 193       .       .       .       .     J2
          .       .       .       .       .
          .       .       .       .       .
 198       .       .       .     J1+J2............
          .       .       .       V
          .       .       .       V
 200       .       .       .     RT-K
          .       .       .       .
          .       .       .       .
 202       .       .       .       .     G8
          .       .       .       .       .
          .       .       .       .       .
 207       .       .     G+J ........................
          .       .       V
          .       .       V
```

```
INPUT
 LINE   (V) ROUTING       (--->) DIVERSION OR PUMP FLOW

  NO.   (.) CONNECTOR      (<---) RETURN OF DIVERTED OR PUMPED FLOW

 209       .     .    RT-L
          .     .      .
          .     .      .
 211       .     .      .     G7
          .     .      .      V
          .     .      .      V
 216       .     .      .    RT-L
          .     .      .      .
          .     .      .      .
 218       .     .      .      .     G9
          .     .      .      .      .
          .     .      .      .      .
 223       .     .    PT-L ......................
          .     .      V
          .     .      V
 225       .     .    RT-PV
          .     .      .
          .     .      .
 227       .     .      .     B1
          .     .      .      V
          .     .      .      V
 232       .     .      .    RT-M
          .     .      .      .
          .     .      .      .
 234       .     .      .      .     B2
          .     .      .      .      .
          .     .      .      .      .
 239       .     .      .    B1+B2...........
          .     .      .      V
          .     .      .      V
 241       .     .      .    RT-N
          .     .      .      .
          .     .      .      .
 243       .     .      .      .     B3
          .     .      .      .      .
          .     .      .      .      .
 248       .     .      .    B123 ...........
          .     .      .      V
          .     .      .      V
 250       .     .      .    RT-PV
          .     .      .      .
          .     .      .      .
 252       .     .    PLEASV...........
          .     .      V
          .     .      V
 254       .     .    RT-SG
          .     .      .
          .     .      .
 256       .     .      .     30
          .     .      .      .
          .     .      .      .
 262       .     .    STMBT...........
          .     .      V
          .     .      V
 264       .     .    RT-341
          .     .      .
          .     .      .
 266       .     .      .     35
          .     .      .      .
          .     .      .      .

 272       .     .      .      .     40
          .     .      .      .      .
          .     .      .      .      .
 277       .     .    HY-341.......................
          .     .      V
          .     .      V
 279       .     .    RT-HN
          .     .      .
          .     .      .
 281       .     .      .     60
          .     .      .      .
          .     .      .      .
 286      HUFN ...................................
          V
          V
 289      MDPLS
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
*******************************************                          *******************************************
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)       *                          *      U.S. ARMY CORPS OF ENGINEERS       *
*          FEBRUARY 1981                  *                          * THE HYDROLOGIC ENGINEERING CENTER       *
*        REVISED 01 JUN 88                *                          *          609 SECOND STREET              *
*                                         *                          *        DAVIS, CALIFORNIA 95616          *
*   RUN DATE 12/07/1989  TIME  16:38:15   *                          *            (916)551-1748                *
*******************************************                          *******************************************



              ***************************************************************************
              PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION
              FACILITY DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER
              PURPOSE WITHOUT CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

              HUFFAKER NARROWS HYDROLOGY MODEL OF EXISTING CONDITION
              THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURRING SUMMER 1989
              THE PARAMETERS ARE BASED ON THE 100 YEAR POINT RAINFALL FROM
              THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
              NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
              METHOD AND MANNING EQUATION ARE USED FOR THE DETERMINATION OF LAG TIME.
              CURVE NUMBERS WERE ESTIMATED FROM USFS PHOTOGRAPHS
              AERIAL REDUCTION FOR 109 SQUARE MILES 5 MINUTE TIME STEP.

                             FILE NAME: HEX5.909

              ***************************************************************************

 17 IO       OUTPUT CONTROL VARIABLES
                IPRNT        4  PRINT CONTROL
                IPLOT        1  PLOT CONTROL
                QSCAL        0.  HYDROGRAPH PLOT SCALE

   IT        HYDROGRAPH TIME DATA
                NMIN         5  MINUTES IN COMPUTATION INTERVAL
                IDATE     1  0  STARTING DATE
                ITIME      0000  STARTING TIME
                  NQ        289  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE     2  0  ENDING DATE
               NDTIME      0000  ENDING TIME
               ICENT        19  CENTURY MARK

             COMPUTATION INTERVAL      .08 HOURS
                 TOTAL TIME BASE   24.00 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


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 18 KK    *     T1      *     THOMAS CREEK WATERSHED T1
          *             *
          ***************

            SUBBASIN RUNOFF DATA

 19 BA          SUBBASIN CHARACTERISTICS
                  TAREA        2.50  SUBBASIN AREA

             PRECIPITATION DATA

 20 PH                              DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .42    .83    1.45   1.87   2.26   3.18   4.31   5.44    .00    .00    .00    .00

                                      STORM AREA =  109.00
 21 LS          SCS LOSS RATE
                  STRTL        .90  INITIAL ABSTRACTION
                 CRVNBR      69.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

 22 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .35  LAG

                                          ***

                                             UNIT HYDROGRAPH
                                         23 END-OF-PERIOD ORDINATES
           344.    1083.   2226.   2965.   3067.   2705.   2132.   1415.    996.    720.
           509.     359.    253.    177.    125.     89.     63.     44.     32.     24.
            17.      10.      3.
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 23 KK   *   RT1-B     *      ROUTE T1 TO CONCENTRATION POINT B
         *             *
         ***************

           HYDROGRAPH ROUTING DATA

 24 RM         MUSKINGUM ROUTING
                 NSTPS        1 NUMBER OF SUBREACHES
                 AMSKK      .10 MUSKINGUM K
                   X        .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 25 KK   *      T2     *      THOMAS CREEK WATERSHED T2
         *             *
         ***************

           SUBBASIN RUNOFF DATA

 26 BA         SUBBASIN CHARACTERISTICS
                 TAREA       1.82  SUBBASIN AREA

             PRECIPITATION DATA

 27 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .40     .79    1.39    1.75    2.10    2.90    3.91    4.92     .00     .00     .00     .00

                                     STORM AREA =  109.00

 28 LS         SCS LOSS RATE
                 STRTL       1.45  INITIAL ABSTRACTION
                CRVNBR      58.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

 29 UD         SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .29  LAG

                                        ***

                                    UNIT HYDROGRAPH
                                 19 END-OF-PERIOD ORDINATES
           388.    1261.    2334.    2654.    2365.    1782.    1112.     734.     501.     331.
           219.     143.      97.      65.      42.      29.      21.      13.       8.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 30 KK   *      T3     *      THOMAS CREEK WATERSHED T3
         *             *
         ***************

           SUBBASIN RUNOFF DATA

 31 BA         SUBBASIN CHARACTERISTICS
                 TAREA        .82  SUBBASIN AREA

             PRECIPITATION DATA

 32 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .41     .80    1.40    1.73    2.04    2.76    3.75    4.73     .00     .00     .00     .00

                                     STORM AREA =  109.00

 33 LS         SCS LOSS RATE
                 STRTL       1.39  INITIAL ABSTRACTION
                CRVNBR      59.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

 34 UD         SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .30  LAG

                                        ***

                                    UNIT HYDROGRAPH
                                 20 END-OF-PERIOD ORDINATES
           162.     524.     994.    1159.    1065.     833.     529.     354.     243.     162.
           110.      73.      49.      33.      22.      15.      11.       7.       4.       1.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 35 KK        *    CP-B    *    COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCCENTRATION PT B
              *            *
              **************

 36 HC            HYDROGRAPH COMBINATION
                    ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 37 KK        *   RCP-C    *    ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
              *            *
              **************

             HYDROGRAPH ROUTING DATA

 38 RM            MUSKINGUM ROUTING
                    NSTPS          2 NUMBER OF SUBREACHES
                    AMSKK        .15 MUSKINGUM K
                        X        .40 MUSKINGUM X

                                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 39 KK        *     T4     *    THOMAS CREEK WATERSHED T4
              *            *
              **************

             SUBBASIN RUNOFF DATA

 40 BA            SUBBASIN CHARACTERISTICS
                    TAREA        2.16  SUBBASIN AREA

               PRECIPITATION DATA

 41 PH                                DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .39    .77    1.35    1.64   1.91   2.55   3.38    4.20     .00     .00     .00     .00

                                           STORM AREA =  109.00

 42 LS            SCS LOSS RATE
                    STRTL        1.45  INITIAL ABSTRACTION
                   CRVNBR       58.00  CURVE NUMBER
                    RTIMP         .00  PERCENT IMPERVIOUS AREA

 43 UD            SCS DIMENSIONLESS UNITGRAPH
                     TLAG         .54  LAG

                                                        ***

                                                UNIT HYDROGRAPH
                                            34 END-OF-PERIOD ORDINATES
              106.      319.      642.     1093.     1504.     1733.     1794.     1727.     1557.     1341.
             1057.      801.      633.      499.      405.      322.      251.      200.      159.      125.
               98.       78.       62.       49.       39.       31.       24.       19.       16.       13.
               10.        7.        5.        2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 44 KK        *    CP-C    *    COMBINE ROUTED T1-T3 W/ T4
              *            *
              **************

 45 HC            HYDROGRAPH COMBINATION
                    ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                        ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 46 KK     *   RCP-D     *      ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
           *             *
           ***************

              HYDROGRAPH ROUTING DATA

 47 RM          MUSKINGUM ROUTING
                  NSTPS         2 NUMBER OF SUBREACHES
                  AMSKK       .14 MUSKINGUM K
                      X       .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 48 KK     *      T5     *     THOMAS CREEK WATERSHED T5
           *             *
           ***************

              SUBBASIN RUNOFF DATA

 49 BA          SUBBASIN CHARACTERISTICS
                  TAREA        1.19  SUBBASIN AREA

                PRECIPITATION DATA

 50 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .35     .68    1.20    1.40    1.59    2.04    2.75    3.40     .00     .00     .00     .00

                                      STORM AREA =  109.00

 51 LS          SCS LOSS RATE
                  STRTL        .82  INITIAL ABSTRACTION
                 CRVNBR      71.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

 52 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG        .49  LAG

                                        ***

                                           UNIT HYDROGRAPH
                                       31 END-OF-PERIOD ORDINATES
              75.     223.     457.     760.     986.    1075.    1070.     965.     832.     648.
             479.     369.     288.     226.     175.     136.     105.      81.      62.      49.
              38.      29.      23.      17.      14.      11.       9.       7.       5.       3.
               2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 53 KK     *    CP-D     *      COMBINE ROUTED T1-T4 W/ T5
           *             *
           ***************

 55 KO          OUTPUT CONTROL VARIABLES
                  IPRNT          1  PRINT CONTROL
                  IPLOT          1  PLOT CONTROL
                  QSCAL         0.  HYDROGRAPH PLOT SCALE

 54 HC          HYDROGRAPH COMBINATION
                  ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***
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*******************************************************************************************************************

                                        HYDROGRAPH AT STATION     CP-D
                                          SUM OF  2 HYDROGRAPHS

*******************************************************************************************************************
                    *                       *                        *
  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW
                    *                       *                        *
   1    0000    1      0.  *   1   0605   74      0.  *   1   1210  147    450.  *   1   1815  220    411.
   1    0005    2      0.  *   1   0610   75      0.  *   1   1215  148    552.  *   1   1820  221    407.
   1    0010    3      0.  *   1   0615   76      0.  *   1   1220  149    696.  *   1   1825  222    401.
   1    0015    4      0.  *   1   0620   77      0.  *   1   1225  150    899.  *   1   1830  223    391.
   1    0020    5      0.  *   1   0625   78      0.  *   1   1230  151   1157.  *   1   1835  224    378.
   1    0025    6      0.  *   1   0630   79      0.  *   1   1235  152   1421.  *   1   1840  225    363.
   1    0030    7      0.  *   1   0635   80      0.  *   1   1240  153   1619.  *   1   1845  226    348.
   1    0035    8      0.  *   1   0640   81      0.  *   1   1245  154   1709.  *   1   1850  227    334.
   1    0040    9      0.  *   1   0645   82      0.  *   1   1250  155   1694.  *   1   1855  228    323.
   1    0045   10      0.  *   1   0650   83      0.  *   1   1255  156   1608.  *   1   1900  229    314.
   1    0050   11      0.  *   1   0655   84      0.  *   1   1300  157   1486.  *   1   1905  230    307.
   1    0055   12      0.  *   1   0700   85      0.  *   1   1305  158   1354.  *   1   1910  231    301.
   1    0100   13      0.  *   1   0705   86      0.  *   1   1310  159   1231.  *   1   1915  232    297.
   1    0105   14      0.  *   1   0710   87      0.  *   1   1315  160   1124.  *   1   1920  233    293.
   1    0110   15      0.  *   1   0715   88      0.  *   1   1320  161   1032.  *   1   1925  234    290.
   1    0115   16      0.  *   1   0720   89      0.  *   1   1325  162    957.  *   1   1930  235    287.
   1    0120   17      0.  *   1   0725   90      0.  *   1   1330  163    898.  *   1   1935  236    285.
   1    0125   18      0.  *   1   0730   91      0.  *   1   1335  164    854.  *   1   1940  237    282.
   1    0130   19      0.  *   1   0735   92      0.  *   1   1340  165    822.  *   1   1945  238    280.
   1    0135   20      0.  *   1   0740   93      0.  *   1   1345  166    796.  *   1   1950  239    278.
   1    0140   21      0.  *   1   0745   94      0.  *   1   1350  167    775.  *   1   1955  240    276.
   1    0145   22      0.  *   1   0750   95      0.  *   1   1355  168    757.  *   1   2000  241    275.
   1    0150   23      0.  *   1   0755   96      0.  *   1   1400  169    739.  *   1   2005  242    273.
   1    0155   24      0.  *   1   0800   97      0.  *   1   1405  170    722.  *   1   2010  243    271.
   1    0200   25      0.  *   1   0805   98      0.  *   1   1410  171    706.  *   1   2015  244    270.
   1    0205   26      0.  *   1   0810   99      0.  *   1   1415  172    691.  *   1   2020  245    268.
   1    0210   27      0.  *   1   0815  100      0.  *   1   1420  173    677.  *   1   2025  246    267.
   1    0215   28      0.  *   1   0820  101      0.  *   1   1425  174    665.  *   1   2030  247    265.
   1    0220   29      0.  *   1   0825  102      0.  *   1   1430  175    653.  *   1   2035  248    264.
   1    0225   30      0.  *   1   0830  103      1.  *   1   1435  176    643.  *   1   2040  249    262.
   1    0230   31      0.  *   1   0835  104      2.  *   1   1440  177    633.  *   1   2045  250    261.
   1    0235   32      0.  *   1   0840  105      3.  *   1   1445  178    624.  *   1   2050  251    259.
   1    0240   33      0.  *   1   0845  106      5.  *   1   1450  179    615.  *   1   2055  252    258.
   1    0245   34      0.  *   1   0850  107      6.  *   1   1455  180    607.  *   1   2100  253    257.
   1    0250   35      0.  *   1   0855  108      8.  *   1   1500  181    599.  *   1   2105  254    255.
   1    0255   36      0.  *   1   0900  109     11.  *   1   1505  182    592.  *   1   2110  255    254.
   1    0300   37      0.  *   1   0905  110     13.  *   1   1510  183    585.  *   1   2115  256    253.
   1    0305   38      0.  *   1   0910  111     15.  *   1   1515  184    579.  *   1   2120  257    252.
   1    0310   39      0.  *   1   0915  112     18.  *   1   1520  185    573.  *   1   2125  258    250.
   1    0315   40      0.  *   1   0920  113     20.  *   1   1525  186    567.  *   1   2130  259    249.
   1    0320   41      0.  *   1   0925  114     23.  *   1   1530  187    560.  *   1   2135  260    248.
   1    0325   42      0.  *   1   0930  115     26.  *   1   1535  188    551.  *   1   2140  261    247.
   1    0330   43      0.  *   1   0935  116     29.  *   1   1540  189    541.  *   1   2145  262    246.
   1    0335   44      0.  *   1   0940  117     33.  *   1   1545  190    531.  *   1   2150  263    245.
   1    0340   45      0.  *   1   0945  118     37.  *   1   1550  191    521.  *   1   2155  264    243.
   1    0345   46      0.  *   1   0950  119     41.  *   1   1555  192    512.  *   1   2200  265    242.
   1    0350   47      0.  *   1   0955  120     45.  *   1   1600  193    504.  *   1   2205  266    241.
   1    0355   48      0.  *   1   1000  121     50.  *   1   1605  194    498.  *   1   2210  267    240.
   1    0400   49      0.  *   1   1005  122     54.  *   1   1610  195    492.  *   1   2215  268    239.
   1    0405   50      0.  *   1   1010  123     58.  *   1   1615  196    487.  *   1   2220  269    238.
   1    0410   51      0.  *   1   1015  124     63.  *   1   1620  197    482.  *   1   2225  270    237.
   1    0415   52      0.  *   1   1020  125     68.  *   1   1625  198    477.  *   1   2230  271    236.
   1    0420   53      0.  *   1   1025  126     73.  *   1   1630  199    473.  *   1   2235  272    235.
   1    0425   54      0.  *   1   1030  127     78.  *   1   1635  200    469.  *   1   2240  273    234.
   1    0430   55      0.  *   1   1035  128     84.  *   1   1640  201    466.  *   1   2245  274    233.
   1    0435   56      0.  *   1   1040  129     90.  *   1   1645  202    462.  *   1   2250  275    232.
   1    0440   57      0.  *   1   1045  130     96.  *   1   1650  203    459.  *   1   2255  276    231.
   1    0445   58      0.  *   1   1050  131    102.  *   1   1655  204    455.  *   1   2300  277    230.
   1    0450   59      0.  *   1   1055  132    109.  *   1   1700  205    452.  *   1   2305  278    229.
   1    0455   60      0.  *   1   1100  133    117.  *   1   1705  206    449.  *   1   2310  279    228.
   1    0500   61      0.  *   1   1105  134    125.  *   1   1710  207    446.  *   1   2315  280    227.
   1    0505   62      0.  *   1   1110  135    135.  *   1   1715  208    443.  *   1   2320  281    226.
   1    0510   63      0.  *   1   1115  136    145.  *   1   1720  209    440.  *   1   2325  282    225.
   1    0515   64      0.  *   1   1120  137    157.  *   1   1725  210    437.  *   1   2330  283    224.
   1    0520   65      0.  *   1   1125  138    170.  *   1   1730  211    434.  *   1   2335  284    224.
   1    0525   66      0.  *   1   1130  139    184.  *   1   1735  212    432.  *   1   2340  285    223.
   1    0530   67      0.  *   1   1135  140    198.  *   1   1740  213    429.  *   1   2345  286    222.
   1    0535   68      0.  *   1   1140  141    213.  *   1   1745  214    427.  *   1   2350  287    221.
   1    0540   69      0.  *   1   1145  142    230.  *   1   1750  215    424.  *   1   2355  288    220.
   1    0545   70      0.  *   1   1150  143    252.  *   1   1755  216    422.  *   2   0000  289    219.
   1    0550   71      0.  *   1   1155  144    281.  *   1   1800  217    419.  *
   1    0555   72      0.  *   1   1200  145    320.  *   1   1805  218    417.  *
   1    0600   73      0.  *   1   1205  146    375.  *   1   1810  219    414.  *
                       *                       *                        *
******************************************************************************************

  PEAK FLOW     TIME                      MAXIMUM AVERAGE FLOW
                                6-HR      24-HR      72-HR    24.00-HR
+  (CFS)      (HR)
                        (CFS)
+    1709.    12.75                 699.      256.       256.       256.
                      (INCHES)     .766      1.120      1.120      1.120
                       (AC-FT)    347.       507.       507.       507.

                   CUMULATIVE AREA =    8.49 SQ MI
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
56 KK       *    RCP-E    *     ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
            *             *
            ***************

              HYDROGRAPH ROUTING DATA

57 RM           MUSKINGUM ROUTING
                  NSTPS        5 NUMBER OF SUBREACHES
                  AMSKK      .64 MUSKINGUM K
                    X        .20 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
58 KK       *     T6      *     THOMAS CREEK WATERSHED T6
            *             *
            ***************

              SUBBASIN RUNOFF DATA

59 BA           SUBBASIN CHARACTERISTICS
                  TAREA       3.15  SUBBASIN AREA

              PRECIPITATION DATA

60 PH                          DEPTHS FOR  1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                .35    .69    1.21    1.34   1.48   1.80   2.30   2.80    .00    .00    .00    .00

                                     STORM AREA =  109.00

61 LS           SCS LOSS RATE
                  STRTL        .67  INITIAL ABSTRACTION
                  CRVNBR     75.00  CURVE NUMBER
                  RTIMP       5.00  PERCENT IMPERVIOUS AREA

62 UD           SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .85  LAG

                                        ***

                                        UNIT HYDROGRAPH
                                    53 END-OF-PERIOD ORDINATES
              48.     155.     294.     476.     713.     999.    1275.    1490.    1630.    1698.
            1703.    1668.    1570.    1457.    1329.    1169.     979.     816.     695.     595.
             510.     443.     385.     331.     284.     241.     209.     178.     154.     131.
             113.      96.      83.      71.      62.      53.      46.      39.      34.      29.
              25.      21.      18.      16.      15.      13.      11.       9.       7.       6.
               4.       2.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
63 KK       *    CP-E     *     COMBINE ROUTED T1-T5 W/ T6
            *             *
            ***************

64 HC           HYDROGRAPH COMBINATION
                  ICOMP        2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
65 KK       *    RT-HN    *     ROUTE THOMAS CK WATERSHED TO HUFFAKER NARROWS
            *             *
            ***************

              HYDROGRAPH ROUTING DATA

66 RM           MUSKINGUM ROUTING
                  NSTPS        5 NUMBER OF SUBREACHES
                  AMSKK     1.49 MUSKINGUM K
                    X        .10 MUSKINGUM X

                                        ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
 67 KK       *     W1      *   WHITES CREEK WATERSHED NO. 1
             *             *
             ***************

              SUBBASIN RUNOFF DATA

 68 BA           SUBBASIN CHARACTERISTICS
                   TAREA       1.36  SUBBASIN AREA

                PRECIPITATION DATA

 69 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
                  .39    .77    1.35   1.83   2.28   3.34   4.43   5.52    .00    .00    .00    .00

                                       STORM AREA =  109.00

 70 LS           SCS LOSS RATE
                   STRTL        .74  INITIAL ABSTRACTION
                  CRVNBR       73.00  CURVE NUMBER
                   RTIMP        .00  PERCENT IMPERVIOUS AREA

 71 UD            SCS DIMENSIONLESS UNITGRAPH
                    TLAG        .21  LAG

                                          ***

                                             UNIT HYDROGRAPH
                                         15 END-OF-PERIOD ORDINATES
              595.    1989.    2618.    2200.    1321.     750.     449.     281.     150.      89.
               52.      30.      19.      10.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
 72 KK       *     W2      *   WHITES CREEK WATERSHED NO. 2
             *             *
             ***************

              SUBBASIN RUNOFF DATA

 73 BA           SUBBASIN CHARACTERISTICS
                   TAREA        .84  SUBBASIN AREA

                PRECIPITATION DATA

 74 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
                  .39    .77    1.35   1.80   2.23   3.22   4.31   5.39    .00    .00    .00    .00

                                       STORM AREA =  109.00

 75 LS           SCS LOSS RATE
                   STRTL        .50  INITIAL ABSTRACTION
                  CRVNBR       80.00  CURVE NUMBER
                   RTIMP        .00  PERCENT IMPERVIOUS AREA

 76 UD            SCS DIMENSIONLESS UNITGRAPH
                    TLAG        .17  LAG

                                          ***

                                             UNIT HYDROGRAPH
                                         12 END-OF-PERIOD ORDINATES
              583.    1765.    1813.    1137.     570.     305.     161.      84.      45.      24.
               14.       5.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
 77 KK       *   W1+W2     *   COMBINE FLOW FROM W1 AND W2
             *             *
             ***************

 78 HC            HYDROGRAPH COMBINATION
                   ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
79 KK     *    RT-A    *   ROUTE COMBINED W1 AND W2 TO POINT A
          *            *
          **************

              HYDROGRAPH ROUTING DATA

80 RM          MUSKINGUM ROUTING
                 NSTPS         1 NUMBER OF SUBREACHES
                 AMSKK       .12 MUSKINGUM K
                     X       .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
81 KK     *     W3     *   WHITES CREEK WATERSHED NO. 3
          *            *
          **************

              SUBBASIN RUNOFF DATA

82 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.38  SUBBASIN AREA

               PRECIPITATION DATA

83 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
                .39     .77    1.36   1.78   2.18   3.12   4.15   5.17    .00    .00    .00    .00

                                         STORM AREA =  109.00

84 LS          SCS LOSS RATE
                 STRTL          .78  INITIAL ABSTRACTION
                 CRVNBR       72.00  CURVE NUMBER
                 RTIMP          .00  PERCENT IMPERVIOUS AREA

85 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG           .23  LAG

                                        ***

                                                UNIT HYDROGRAPH
                                           16 END-OF-PERIOD ORDINATES
             486.    1672.    2434.    2235.    1569.     897.     555.     334.     203.     123.
              75.      46.      28.      18.      10.       2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
86 KK     *    RT-A    *   ROUTE W3 TO POINT A
          *            *
          **************

              HYDROGRAPH ROUTING DATA

87 RM          MUSKINGUM ROUTING
                 NSTPS         1 NUMBER OF SUBREACHES
                 AMSKK       .09 MUSKINGUM K
                     X       .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
88 KK     *     W4     *   WHITES CREEK WATERSHED NO. 4
          *            *
          **************

              SUBBASIN RUNOFF DATA

89 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.47  SUBBASIN AREA
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           PRECIPITATION DATA

 90 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .38     .75    1.32    1.71    2.08    2.95    3.94    4.94     .00     .00     .00     .00

                                         STORM AREA =  109.00

 91 LS        SCS LOSS RATE
                STRTL       1.23  INITIAL ABSTRACTION
               CRVNBR      62.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

 92 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .27  LAG

                                                ***

                                           UNIT HYDROGRAPH
                                       18 END-OF-PERIOD ORDINATES
          366.    1222.    2123.    2264.    1893.    1267.     791.     523.     332.     219.
          140.      90.      59.      38.      25.      17.      10.       4.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 93 KK   *    W1234    *   COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
         *             *
         ***************

 94 HC        HYDROGRAPH COMBINATION
                ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 95 KK   *    RT-B     *   ROUTE COMBINED HYDROGRAPH TO POINT B
         *             *
         ***************

          HYDROGRAPH ROUTING DATA

 96 RM        MUSKINGUM ROUTING
                NSTPS          1  NUMBER OF SUBREACHES
                AMSKK        .06  MUSKINGUM K
                    X        .40  MUSKINGUM X

                                                ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 97 KK   *     W5      *   WHITES CREEK WATERSHED NO. 5
         *             *
         ***************

          SUBBASIN RUNOFF DATA

 98 BA        SUBBASIN CHARACTERISTICS
                TAREA       1.27  SUBBASIN AREA

           PRECIPITATION DATA

 99 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .38     .75    1.31    1.67    2.01    2.80    3.78    4.77     .00     .00     .00     .00

                                         STORM AREA =  109.00

100 LS        SCS LOSS RATE
                STRTL       1.23  INITIAL ABSTRACTION
               CRVNBR      62.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

101 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .28  LAG

                                                ***

                                           UNIT HYDROGRAPH
                                       19 END-OF-PERIOD ORDINATES
          292.     963.    1728.    1902.    1648.    1174.     729.     484.     320.     208.
          137.      89.      59.      39.      25.      18.      12.       6.       1.
```

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

           **************
           *            *
102 KK     *   W5+CH    *   COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
           *            *
           **************

103 HC          HYDROGRAPH COMBINATION
                 ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
104 KK     *    RT-C    *   ROUTE COMBINED HYDROGRAPH TO POINT C
           *            *
           **************

             HYDROGRAPH ROUTING DATA

105 RM          MUSKINGUM ROUTING
                 NSTPS         2 NUMBER OF SUBREACHES
                 AMSKK       .19 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
106 KK     *     W6     *   WHITES CREEK WATERSHED NO. 6
           *            *
           **************

             SUBBASIN RUNOFF DATA

107 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.43  SUBBASIN AREA

               PRECIPITATION DATA

108 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .36    .71    1.24    1.55    1.86    2.56    3.34    4.12     .00     .00     .00     .00

                                     STORM AREA =  109.00

109 LS          SCS LOSS RATE
                 STRTL       1.28  INITIAL ABSTRACTION
                CRVNBR      61.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

110 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .44  LAG

                                        ***

                                     UNIT HYDROGRAPH
                                  28 END-OF-PERIOD ORDINATES
             116.     352.     726.    1158.    1390.    1429.    1323.    1137.     877.     630.
             471.     362.     276.     205.     155.     117.      88.      67.      51.      38.
              29.      21.      16.      13.      10.       7.       5.       2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
111 KK     *   W6+CH    *   COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
           *            *
           **************

112 HC          HYDROGRAPH COMBINATION
                 ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
113 KK     *   RT-D     *   ROUTE COMBINED HYDROGRAPH TO POINT D
           *            *
           **************

             HYDROGRAPH ROUTING DATA

114 RM          MUSKINGUM ROUTING
                 NSTPS         3 NUMBER OF SUBREACHES
                 AMSKK       .30 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
115 KK     *    W7      *   WHITES CREEK WATERSHED NO.7
           *            *
           **************

             SUBBASIN RUNOFF DATA

116 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.30  SUBBASIN AREA

              PRECIPITATION DATA

117 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
                .33    .64    1.12    1.34   1.55   2.03   2.69   3.38    .00    .00    .00    .00

                                         STORM AREA =  109.00

118 LS          SCS LOSS RATE
                 STRTL        .94  INITIAL ABSTRACTION
                CRVNBR       68.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

119 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .50  LAG

                                              ***

                                            UNIT HYDROGRAPH
                                         32 END-OF-PERIOD ORDINATES
             78.     231.     474.     794.    1039.    1151.    1151.    1053.     919.     735.
            542.     420.     325.     260.     203.     156.     121.      95.      74.      57.
             44.      35.      27.      21.      16.      13.      11.       8.       6.       4.
              3.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
120 KK     *   W7+CH    *   COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
           *            *
           **************

121 HC          HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
122 KK     *   RT-E     *   ROUTE COMBINED HYDROGRAPH TO POINT E
           *            *
           **************

             HYDROGRAPH ROUTING DATA

123 RM          MUSKINGUM ROUTING
                 NSTPS         2 NUMBER OF SUBREACHES
                 AMSKK       .14 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                              ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
124 KK       *     W8      *   WHITES CREEK WATERSHED NO. 8
             *             *
             ***************

              SUBBASIN RUNOFF DATA

125 BA           SUBBASIN CHARACTERISTICS
                  TAREA       4.37  SUBBASIN AREA

               PRECIPITATION DATA

126 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                 .32    .64    1.12   1.28   1.43   1.79   2.29   2.79    .00    .00    .00    .00

                                        STORM AREA =  109.00

127 LS           SCS LOSS RATE
                  STRTL         .94  INITIAL ABSTRACTION
                 CRVNBR       68.00  CURVE NUMBER
                  RTIMP         .00  PERCENT IMPERVIOUS AREA

128 UD           SCS DIMENSIONLESS UNITGRAPH
                  TLAG          .53  LAG

                                               ***

                                          UNIT HYDROGRAPH
                                       34 END-OF-PERIOD ORDINATES
               229.     674.    1366.    2320.    3147.    3602.    3887.    3511.    3142.    2669.
              2056.    1572.    1230.     980.     783.     618.     485.     382.     301.     238.
               188.     146.     117.      93.      73.      57.      45.      37.      31.      24.
                18.      12.       7.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
129 KK       *    W8+CH    *   COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
             *             *
             ***************

130 HC           HYDROGRAPH COMBINATION
                  ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                               ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
131 KK       *    RT-F     *   ROUTE COMBINED HYDROGRAPH TO POINT F
             *             *
             ***************

              HYDROGRAPH ROUTING DATA

132 RM           MUSKINGUM ROUTING
                  NSTPS            1  NUMBER OF SUBREACHES
                  AMSKK          .24  MUSKINGUM K
                      X          .20  MUSKINGUM X

                                               ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
133 KK       *     48      *   WHITES CREEK WATERSHED 48
             *             *
             ***************

              SUBBASIN RUNOFF DATA

134 BA           SUBBASIN CHARACTERISTICS
                  TAREA       2.69  SUBBASIN AREA

               PRECIPITATION DATA

135 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                 .38    .70    1.23   1.39   1.52   1.78   2.26   2.75    .00    .00    .00    .00

                                        STORM AREA =  109.00
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```
136 LS        SCS LOSS RATE
               STRTL       1.03  INITIAL ABSTRACTION
              CRVNBR        66.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

137 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .50  LAG

                                        ***

                                    UNIT HYDROGRAPH
                                 32 END-OF-PERIOD ORDINATES
         162.    478.    980.   1643.   2150.   2381.   2381.   2180.   1901.   1521.
        1122.    869.    672.    537.    419.    323.    251.    196.    152.    118.
          92.     72.     58.     44.     34.     26.     22.     18.     13.      9.
           6.      2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
138 KK      *   46+CH    *   COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
            *            *
            **************

139 HC        HYDROGRAPH COMBINATION
               ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
140 KK      *   RT-HN    *   ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
            *            *
            **************

         HYDROGRAPH ROUTING DATA

141 RM        MUSKINGUM ROUTING
               NSTPS         5  NUMBER OF SUBREACHES
               AMSKK      1.78  MUSKINGUM K
                   X       .10  MUSKINGUM X

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            *            *
142 KK      *     G1     *   GLENA CREEK WATERSHED NO.1
            *            *
            **************

         SUBBASIN RUNOFF DATA

143 BA        SUBBASIN CHARACTERISTICS
               TAREA        1.63  SUBBASIN AREA

          PRECIPITATION DATA

144 PH                     DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
          ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
          5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
            .40    .79    1.39    1.85   2.29   3.31   4.46   5.60    .00    .00    .00    .00

                                  STORM AREA =  109.00

145 LS        SCS LOSS RATE
               STRTL        .67  INITIAL ABSTRACTION
              CRVNBR       75.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

146 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .20  LAG

                                        ***

                                    UNIT HYDROGRAPH
                                 14 END-OF-PERIOD ORDINATES
         795.   2620.   3249.   2597.   1445.    831.    470.    271.    154.     88.
          50.     30.     17.      6.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
147 KK    *   RT-G     *    ROUTE G1 TO POINT G
          *            *
          **************

            HYDROGRAPH ROUTING DATA

148 RM          MUSKINGUM ROUTING
                 NSTPS.       1 NUMBER OF SUBREACHES
                 AMSKK      .10 MUSKINGUM K
                    X       .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
149 KK    *     G2     *    GALENA CREEK WATERSHED NO. 2
          *            *
          **************

            SUBBASIN RUNOFF DATA

150 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.30  SUBBASIN AREA

             PRECIPITATION DATA

151 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
               .39    .77    1.35    1.76   2.16   3.08   4.10   5.12    .00    .00    .00    .00

                                    STORM AREA =  109.00

152 LS          SCS LOSS RATE
                 STRTL        .67  INITIAL ABSTRACTION
                CRVNBR      75.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

153 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .20  LAG

                                        ***

                                     UNIT HYDROGRAPH
                                  14 END-OF-PERIOD ORDINATES
           634.   2089.   2591.   2071.   1152.    663.    375.    216.    123.     70.
            40.     24.     14.      4.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
154 KK    *     G3     *    GALENA CREEK WATERSHED NO. 3
          *            *
          **************

            SUBBASIN RUNOFF DATA

155 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.15  SUBBASIN AREA

             PRECIPITATION DATA

156 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
               .38    .74    1.30    1.69   2.05   2.90   3.95   4.99    .00    .00    .00    .00

                                    STORM AREA =  109.00

157 LS          SCS LOSS RATE
                 STRTL        .90  INITIAL ABSTRACTION
                CRVNBR      69.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

158 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .36  LAG

                                        ***

                                     UNIT HYDROGRAPH
                                  24 END-OF-PERIOD ORDINATES
           148.    462.    983.   1312.   1379.   1244.   1007.    692.    484.    350.
           252.    179.    128.     91.     64.     46.     33.     23.     17.     13.
             9.      6.      3.      0.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
159 KK    *    G123    *    COMBINE ROUTED G1 WITH G2 AND G3
          *            *
          **************

160 HC         HYDROGRAPH COMBINATION
                ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
161 KK    *    RT-H    *    ROUTE COMBINED HYDROGRAPH TO POINT H
          *            *
          **************

           HYDROGRAPH ROUTING DATA

162 RM          MUSKINGUM ROUTING
                 NSTPS         2  NUMBER OF SUBREACHES
                 AMSKK       .17  MUSKINGUM K
                     X       .40  MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
163 KK    *     G4     *    GALENA CREEK WATERSHED NO. 4
          *            *
          **************

           SUBBASIN RUNOFF DATA

164 BA         SUBBASIN CHARACTERISTICS
                TAREA       1.54  SUBBASIN AREA

            PRECIPITATION DATA

165 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .38    .75    1.32   1.68   2.02   2.83   3.79   4.74    .00    .00    .00     .00

                                   STORM AREA =  109.00

166 LS         SCS LOSS RATE
                STRTL       1.17  INITIAL ABSTRACTION
               CRVNBR      63.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

167 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .25  LAG

                                        ***

                                       UNIT HYDROGRAPH
                                   17 END-OF-PERIOD ORDINATES
          452.    1546.    2462.    2462.    1918.    1149.     715.     463.     288.     181.
          113.      71.      45.      28.      19.      11.       4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
168 KK    *     G5     *    GALENA CREEK WATERSHED NO. 5
          *            *
          **************

           SUBBASIN RUNOFF DATA

169 BA         SUBBASIN CHARACTERISTICS
                TAREA       1.02  SUBBASIN AREA

            PRECIPITATION DATA

170 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .38    .75    1.32   1.67   1.99   2.75   3.70   4.64    .00    .00    .00     .00

                                   STORM AREA =  109.00
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171 LS        SCS LOSS RATE
                STRTL        1.64  INITIAL ABSTRACTION
               CRVNBR        55.00  CURVE NUMBER
                RTIMP         .00  PERCENT IMPERVIOUS AREA

172 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG          .32  LAG

                                        ***

                                     UNIT HYDROGRAPH
                                 21 END-OF-PERIOD ORDINATES
        173.     555.    1097.    1351.    1305.    1081.     745.     496.     345.     239.
        164.     112.      76.      53.      36.      25.      17.      13.       9.       5.
          2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
173 KK      *    G1-5    *   COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
            *            *
            **************

174 HC        HYDROGRAPH COMBINATION
                ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
175 KK      *    RT-I    *   ROUTE COMBINED HYDROGRAPHS TO POINT I
            *            *
            **************

          HYDROGRAPH ROUTING DATA

176 RM        MUSKINGUM ROUTING
                NSTPS          2  NUMBER OF SUBREACHES
                AMSKK        .17  MUSKINGUM K
                    X        .40  MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
177 KK      *     G6     *   GALENA CREEK WATERSHED N0.6
            *            *
            **************

          SUBBASIN RUNOFF DATA

178 BA        SUBBASIN CHARACTERISTICS
                TAREA       1.37  SUBBASIN AREA

            PRECIPITATION DATA

179 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
          5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
            .37     .72    1.26    1.57    1.87    2.56    3.33    4.10     .00     .00     .00     .00

                                  STORM AREA =   109.00

180 LS        SCS LOSS RATE
                STRTL        1.39  INITIAL ABSTRACTION
               CRVNBR       59.00  CURVE NUMBER
                RTIMP         .00  PERCENT IMPERVIOUS AREA

181 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG          .58  LAG

                                        ***

                                     UNIT HYDROGRAPH
                                 37 END-OF-PERIOD ORDINATES
         57.     172.     334.     574.     823.     993.    1059.    1057.     986.     882.
        751.     587.     458.     366.     294.     242.     195.     154.     125.     101.
         80.      65.      52.      42.      34.      27.      22.      17.      14.      11.
         10.       8.       6.       5.       3.       2.       0.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
182 KK    *    G6+CH   *     COMBINE G6 WITH COMBINED HYDROGRAPH AT POINT I
          *            *
          **************

183 HC          HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
184 KK    *    RT-K    *     ROUTE COMBINED HYDROGRAPH TO POINT K
          *            *
          **************

          HYDROGRAPH ROUTING DATA

185 RM          MUSKINGUM ROUTING
                 NSTPS         1 NUMBER OF SUBREACHES
                 AMSKK       .07 MUSKINGUM K
                    X      .40 MUSKINGUM X

                                              ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
186 KK    *     J1     *     JONES CREEK WATERSHED NO. 1
          *            *
          **************

          SUBBASIN RUNOFF DATA

187 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.29  SUBBASIN AREA

           PRECIPITATION DATA

188 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .39     .76    1.33    1.67    2.00    2.75    3.89    4.82     .00     .00     .00     .00

                                        STORM AREA =  109.00

189 LS          SCS LOSS RATE
                 STRTL        1.17  INITIAL ABSTRACTION
                CRVNBR       63.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

190 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .23  LAG

                                              ***

                                         UNIT HYDROGRAPH
                                     16 END-OF-PERIOD ORDINATES
          454.    1583.    2275.    2089.    1467.     839.     519.     312.     190.     115.
           70.      43.      26.      17.       9.       2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
191 KK    *    RT-J    *     ROUTE JI TO POINT J
          *            *
          **************

          HYDROGRAPH ROUTING DATA

192 RM          MUSKINGUM ROUTING
                 NSTPS         2 NUMBER OF SUBREACHES
                 AMSKK       .19 MUSKINGUM K
                    X      .40 MUSKINGUM X

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
193 KK      *     J2     *     JONES CREEK WATERSHED NO. 2
            *            *
            **************

             SUBBASIN RUNOFF DATA

194 BA          SUBBASIN CHARACTERISTICS
                  TAREA       1.95  SUBBASIN AREA

              PRECIPITATION DATA

195 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                .35    .70    1.22   1.52   1.80   2.45   3.22   3.98    .00    .00    .00    .00

                                      STORM AREA =  109.00

196 LS          SCS LOSS RATE
                  STRTL       1.13  INITIAL ABSTRACTION
                 CRVNBR      64.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

197 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .43  LAG

                                            ***

                                         UNIT HYDROGRAPH
                                      28 END-OF-PERIOD ORDINATES
           167.     507.    1052.    1652.    1957.    1984.    1805.    1530.    1142.     825.
           615.     471.     355.     264.     199.     148.     109.      83.      63.      47.
            35.      26.      20.      16.      12.       8.       5.       1.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
198 KK      *   J1+J2    *     COMBINE ROUTED J1 WITH J2 AT POINT J
            *            *
            **************

199 HC          HYDROGRAPH COMBINATION
                  ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                            ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
200 KK      *    RT-K    *     ROUTE COMBINED J1 AND J2 TO POINT K
            *            *
            **************

             HYDROGRAPH ROUTING DATA

201 RM          MUSKINGUM ROUTING
                  NSTPS          1  NUMBER OF SUBREACHES
                  AMSKK        .10  MUSKINGUM K
                      X        .40  MUSKINGUM X

                                            ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
202 KK      *     G8     *     GALENA CREEK WATERSHED NO.8
            *            *
            **************

             SUBBASIN RUNOFF DATA

203 BA          SUBBASIN CHARACTERISTICS
                  TAREA       2.19  SUBBASIN AREA

              PRECIPITATION DATA

204 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                .34    .66    1.16   1.40   1.62   2.13   2.77   3.41    .00    .00    .00    .00

                                      STORM AREA =  109.00
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```
205 LS        SCS LOSS RATE
                STRTL        .90  INITIAL ABSTRACTION
               CRVNBR       69.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

206 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .35  LAG

                                          ***

                                     UNIT HYDROGRAPH
                                  23 END-OF-PERIOD ORDINATES
           301.     949.    1950.    2597.    2687.    2370.    1867.    1240.     872.     631.
           446.     315.     222.     155.     110.      78.      55.      39.      28.      21.
            15.       9.       3.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                **************
                *            *
207 KK          *     G+J    *    COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
                *            *
                **************

208 HC        HYDROGRAPH COMBINATION
               ICOMP         3  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                **************
                *            *
209 KK          *    RT-L    *    ROUTE COMBINED HYDROGRAPH TO PT L
                *            *
                **************

            HYDROGRAPH ROUTING DATA

210 RM        MUSKINGUM ROUTING
               NSTPS         1  NUMBER OF SUBREACHES
               AMSKK       .13  MUSKINGUM K
                   X       .40  MUSKINGUM X

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


                **************
                *            *
211 KK          *     G7     *    GALENA CREEK WATERSHED NO. 7
                *            *
                **************

            SUBBASIN RUNOFF DATA

212 BA        SUBBASIN CHARACTERISTICS
               TAREA      1.50  SUBBASIN AREA

             PRECIPITATION DATA

213 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .35     .69    1.22    1.50    1.77    2.40    3.10    3.80     .00     .00     .00     .00

                                     STORM AREA =  109.00

214 LS        SCS LOSS RATE
                STRTL       1.23  INITIAL ABSTRACTION
               CRVNBR       62.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

215 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .36  LAG

                                          ***

                                     UNIT HYDROGRAPH
                                  24 END-OF-PERIOD ORDINATES
           193.     603.    1258.    1711.    1798.    1622.    1314.     903.     631.     458.
           329.     233.     167.     118.      84.      60.      43.      31.      22.      17.
            12.       8.       4.       0.
```

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

          ***************
          *             *
216 KK    *   RT-L      *    ROUTE G7 TO POINT L
          *             *
          ***************

          HYDROGRAPH ROUTING DATA

217 RM          MUSKINGUM ROUTING
                 NSTPS        1 NUMBER OF SUBREACHES
                 AMSKK      .13 MUSKINGUM K
                    X       .40 MUSKINGUM X

                                                  ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
218 KK    *     G9      *   GALENA CREEK WATERSHED NO. 9
          *             *
          ***************

          SUBBASIN RUNOFF DATA

219 BA          SUBBASIN CHARACTERISTICS
                 TAREA       3.07  SUBBASIN AREA

            PRECIPITATION DATA

220 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .33    .65    1.14    1.35   1.56   2.04   2.60   3.16    .00    .00    .00    .00

                                          STORM AREA =  109.00

221 LS          SCS LOSS RATE
                 STRTL        .90  INITIAL ABSTRACTION
                CRVNBR       69.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

222 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG       1.67  LAG

                                                  ***

                                             UNIT HYDROGRAPH
                                        102 END-OF-PERIOD ORDINATES
           13.      25.      54.      83.     121.     159.     207.     258.     322.     389.
          466.     546.     618.     685.     740.     786.     820.     846.     860.     864.
          865.     861.     848.     822.     798.     766.     735.     702.     666.     624.
          580.     529.     480.     437.     396.     367.     337.     312.     287.     265.
          244.     229.     213.     198.     182.     169.     156.     144.     131.     121.
          113.     105.      96.      89.      83.      76.      70.      64.      60.      55.
           51.      46.      43.      40.      37.      34.      32.      29.      27.      25.
           23.      21.      20.      18.      17.      16.      14.      13.      12.      11.
           11.      10.       9.       9.       8.       8.       7.       7.       6.       6.
            5.       5.       4.       4.       3.       3.       2.       2.       2.       1.
            1.       0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
223 KK    *   PT-L      *    COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
          *             *
          ***************

224 HC          HYDROGRAPH COMBINATION
                 ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                  ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
225 KK     *   RT-PV    *     ROUTE COMBINED HYDROGRAPH TO PLEASENT VALLEY
           *            *
           **************

            HYDROGRAPH ROUTING DATA

226 RM          MUSKINGUM ROUTING
                 NSTPS         2 NUMBER OF SUBREACHES
                 AMSKK       .17 MUSKINGUM K
                    X        .20 MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
227 KK     *     B1     *     BROWNS CREEK WATERSHED NO. 1
           *            *
           **************

            SUBBASIN RUNOFF DATA

228 BA          SUBBASIN CHARACTERISTICS
                 TAREA        2.18  SUBBASIN AREA

             PRECIPITATION DATA

229 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .38    .74    1.30    1.63   1.95   2.70    3.62    4.53    .00     .00     .00     .00

                                      STORM AREA =  109.00

230 LS          SCS LOSS RATE
                 STRTL        1.23  INITIAL ABSTRACTION
                CRVNBR       82.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

231 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .44  LAG

                                         ***

                                           UNIT HYDROGRAPH
                                        28 END-OF-PERIOD ORDINATES
            177.     536.    1107.    1766.    2120.    2179.    2017.    1734.    1338.     960.
            718.     552.     421.     312.     236.     179.     134.     102.      77.      58.
             44.      33.      25.      20.      16.      11.       7.       3.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
232 KK     *    RT-M    *     ROUTE B1 TO POINT M
           *            *
           **************

            HYDROGRAPH ROUTING DATA

233 RM          MUSKINGUM ROUTING
                 NSTPS         2 NUMBER OF SUBREACHES
                 AMSKK       .17 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
234 KK     *     B2     *     BROWNS CREEK WATERSHED NO. 2
           *            *
           **************

            SUBBASIN RUNOFF DATA

235 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.42  SUBBASIN AREA
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        PRECIPITATION DATA

236 PH                     DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
        ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
        5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
          .36    .71    1.25   1.55   1.83   2.49   3.25   4.00    .00    .00    .00    .00

                              STORM AREA =  109.00

237 LS        SCS LOSS RATE
               STRTL       1.33  INITIAL ABSTRACTION
              CRVNBR       60.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

238 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .35  LAG

                                      ***

                                  UNIT HYDROGRAPH
                              23 END-OF-PERIOD ORDINATES
         195.     815.    1264.    1684.    1742.    1536.    1211.     804.     585.     409.
         289.     204.     144.     101.      71.      51.      36.      25.      18.      14.
           9.       6.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
239 KK    *   B1+B2    *   COMBINE ROUTED B1 WITH B2 AT POINT M
          *            *
          **************

240 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                      ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
241 KK    *    RT-N    *   ROUTE COMBINED HYDROGRAPH TO POINT N
          *            *
          **************

        HYDROGRAPH ROUTING DATA

242 RM        MUSKINGUM ROUTING
               NSTPS          1  NUMBER OF SUBREACHES
               AMSKK        .10  MUSKINGUM K
                   X        .40  MUSKINGUM X

                                      ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
243 KK    *     B3     *   BROWNS CREEK WATERSHED NO. 3
          *            *
          **************

        SUBBASIN RUNOFF DATA

244 BA        SUBBASIN CHARACTERISTICS
               TAREA        .53  SUBBASIN AREA

        PRECIPITATION DATA

245 PH                     DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
        ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
        5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
          .34    .67    1.18   1.43   1.66   2.22   2.82   3.42    .00    .00    .00    .00

                              STORM AREA =  109.00

246 LS        SCS LOSS RATE
               STRTL        .99  INITIAL ABSTRACTION
              CRVNBR       67.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

247 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .36  LAG
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                                         ***

                                    UNIT HYDROGRAPH
                                 24 END-OF-PERIOD ORDINATES
         68.     213.     444.     605.     635.     573.     464.     319.     223.     161.
        116.      82.      59.      42.      30.      21.      15.      11.       8.       6.
          4.       3.       1.       0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
248 KK      *    B123     *     COMBINE ROUTED B1 AND B2 WITH B3
            *             *
            ***************

249 HC          HYDROGRAPH COMBINATION
                 ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
250 KK      *    RT-PV    *     ROUTE BROWNS CREEK HYDROGRAPH TO PLEASENT VALLEY
            *             *
            ***************

             HYDROGRAPH ROUTING DATA

251 RM          MUSKINGUM ROUTING
                 NSTPS         3 NUMBER OF SUBREACHES
                 AMSKK       .31 MUSKINGUM K
                     X       .20 MUSKINGUM X

                                         ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
252 KK      *   PLEASV    *     COMBINE GALENA CK AND BROWNS CK AT PLEASENT VALLEY
            *             *
            ***************

253 HC          HYDROGRAPH COMBINATION
                 ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
254 KK      *    RT-SG    *     ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
            *             *
            ***************

             HYDROGRAPH ROUTING DATA

255 RM          MUSKINGUM ROUTING
                 NSTPS         3 NUMBER OF SUBREACHES
                 AMSKK       .21 MUSKINGUM K
                     X       .20 MUSKINGUM X

                                         ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
256 KK      *     30      *     STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
            *             *
            ***************

             SUBBASIN RUNOFF DATA

257 BA          SUBBASIN CHARACTERISTICS
                 TAREA       17.80  SUBBASIN AREA
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258 BF         BASE FLOW CHARACTERISTICS
                 STRTQ      500.00  INITIAL FLOW
                 QRCSN       500.00  BEGIN BASE FLOW RECESSION
                 RTIOR     1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

259 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .32     .64    1.12   1.28   1.44   1.80   2.34   2.87    .00    .00    .00    .00

                                     STORM AREA =  109.00

260 LS         SCS LOSS RATE
                 STRTL         .60  INITIAL ABSTRACTION
                CRVNBR       77.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

261 UD         SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .82  LAG

                                               ***

                                          UNIT HYDROGRAPH
                                      51 END-OF-PERIOD ORDINATES
           290.     953.    1809.    2939.    4432.    6218..   7822.    9000.    9711.    9955.
          9824.    9525.    8889.    8159.    7285.    6224.    5153.    4309.    3670.    3125.
          2684.    2331.    1994.    1705.    1433.    1240.    1052.     907.     764.     658.
           551.     478.     406.     351.     298.     257.     218.     187.     158.     136.
           117.     102.      91.      79.      68.      56.      45.      36.      26.      16.
             7.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
262 KK    *   STMBT     *    COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
          *             *
          ***************

283 HC         HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                               ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
264 KK    *   RT-341    *    ROUTE COMBINED HYDROGRAPH TO HWY 341
          *             *
          ***************

          HYDROGRAPH ROUTING DATA

265 RM         MUSKINGUM ROUTING
                 NSTPS          2 NUMBER OF SUBREACHES
                 AMSKK        .41 MUSKINGUM K
                    X       .20 MUSKINGUM X

                                               ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
266 KK    *     35      *    WATERSHED 35 AKA BAILEY CANYON
          *             *
          ***************

          SUBBASIN RUNOFF DATA

267 BA         SUBBASIN CHARACTERISTICS
                 TAREA      15.50  SUBBASIN AREA

268 BF         BASE FLOW CHARACTERISTICS
                 STRTQ         .00  INITIAL FLOW
                 QRCSN         .00  BEGIN BASE FLOW RECESSION
                 RTIOR     1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

269 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .39     .77    1.34   1.53   1.68   1.98   2.51   3.04    .00    .00    .00    .00

                                     STORM AREA =  109.00
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270 LS        SCS LOSS RATE
               STRTL       .44  INITIAL ABSTRACTION
              CRVNBR      82.00  CURVE NUMBER
               RTIMP       .00  PERCENT IMPERVIOUS AREA

271 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG       .72  LAG

                                    ***

                                 UNIT HYDROGRAPH
                              45 END-OF-PERIOD ORDINATES
      380.    1149.   2201.   3639.   5499.   7376.   8773.   9586.   9815.   9738.
     9118.    8352.   7448.   6310.   5100.   4174.   3480.   2903.   2470.   2077.
     1747.    1431.   1216.   1014.    852.    709.    590.    494.    413.    349.
      290.     245.    203.    171.    142.    120.    102.     80.     77.     64.
       51.      40.     29.     18.      8.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
272 KK    *     40     *    WATERSHED NO.40
          *            *
          **************

          SUBBASIN RUNOFF DATA

273 BA        SUBBASIN CHARACTERISTICS
                TAREA      2.63  SUBBASIN AREA

268 BF        BASE FLOW CHARACTERISTICS
                STRTQ       .00  INITIAL FLOW
                QRCSN        .00  BEGIN BASE FLOW RECESSION
                RTIOR   1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

274 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .35    .69    1.21   1.38   1.51   1.78   2.29   2.81    .00    .00    .00    .00

                                     STORM AREA =  109.00

275 LS        SCS LOSS RATE
               STRTL       .60  INITIAL ABSTRACTION
              CRVNBR      77.00  CURVE NUMBER
               RTIMP       .00  PERCENT IMPERVIOUS AREA

276 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG       .49  LAG

                                    ***

                                 UNIT HYDROGRAPH
                              31 END-OF-PERIOD ORDINATES
      167.     493.   1009.   1680.   2179.   2375.   2366.   2132.   1838.   1431.
     1059.     816.    636.    499.    386.    300.    232.    178.    137.    107.
       84.      65.     50.     39.     30.     24.     20.     15.     11.      7.
        3.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
277 KK    *   HY-341   *    COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
          *            *
          **************

278 HC        HYDROGRAPH COMBINATION
               ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                    ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
279 KK    *   RT-HN    *    ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
          *            *
          **************

          HYDROGRAPH ROUTING DATA

280 RM        MUSKINGUM ROUTING
               NSTPS          5  NUMBER OF SUBREACHES
               AMSKK       2.26  MUSKINGUM K
                  X         .10  MUSKINGUM X

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
281 KK   *     60      *    WATERSHED NO. 60
         *             *
         ***************

           SUBBASIN RUNOFF DATA

282 BA         SUBBASIN CHARACTERISTICS
                TAREA       23.15  SUBBASIN AREA

268 BF         BASE FLOW CHARACTERISTICS
                STRTQ         .00  INITIAL FLOW
                QRCSN         .00  BEGIN BASE FLOW RECESSION
                RTIOR     1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

283 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .35     .68    1.19   1.36   1.49   1.77   2.30   2.83    .00    .00    .00    .00

                                    STORM AREA =  109.00

284 LS         SCS LOSS RATE
                STRTL         .63  INITIAL ABSTRACTION
               CRVNBR       76.00  CURVE NUMBER
                RTIMP         .00  PERCENT IMPERVIOUS AREA

285 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG        3.70  LAG

                                              ***

                                         UNIT HYDROGRAPH
                                    224 END-OF-PERIOD ORDINATES
        20.      40.      60.      80.     113.     160.     207.     253.     300.     360.
       420.     480.     540.     610.     690.     770.     850.     931.    1037.    1144.
      1250.    1357.    1474.    1601.    1727.    1854.    1979.    2085.    2192.    2298.
      2405.    2492.    2566.    2639.    2712.    2783.    2823.    2863.    2903.    2942.
      2963.    2969.    2976.    2983.    2988.    2981.    2975.    2968.    2961.    2934.
      2895.    2855.    2815.    2774.    2727.    2681.    2634.    2588.    2537.    2483.
      2430.    2377.    2322.    2255.    2189.    2122.    2056.    1980.    1901.    1821.
      1741.    1663.    1598.    1530.    1463.    1397.    1344.    1297.    1250.    1204.
      1158.    1118.    1079.    1039.     999.     963.     930.     897.     863.     832.
       808.     783.     759.     735.     710.     686.     662.     638.     614.     594.
       574.     554.     534.     514.     494.     474.     455.     436.     423.     410.
       396.     383.     370.     356.     343.     330.     317.     307.     297.     287.
       277.     267.     257.     247.     237.     228.     221.     213.     206.     199.
       191.     184.     177.     170.     163.     158.     153.     148.     143.     138.
       133.     128.     123.     118.     115.     111.     107.     104.     100.      96.
        93.      89.      86.      83.      80.      78.      75.      72.      70.      67.
        64.      62.      60.      58.      56.      54.      52.      50.      48.      46.
        44.      43.      42.      40.      39.      38.      36.      35.      34.      33.
        32.      31.      30.      29.      29.      28.      27.      26.      25.      25.
        24.      23.      22.      21.      21.      20.      19.      18.      17.      17.
        16.      15.      14.      14.      13.      12.      12.      11.      10.      10.
         9.       8.       8.       7.       6.       6.       5.       4.       4.       3.
         2.       2.       1.       0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
286 KK   *    HUFN     *    COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
         *             *
         ***************

288 KO         OUTPUT CONTROL VARIABLES
                IPRNT           1  PRINT CONTROL
                IPLOT           2  PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE

287 HC         HYDROGRAPH COMBINATION
                ICOMP           4  NUMBER OF HYDROGRAPHS TO COMBINE

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*******************************************************************************************************************************

                                         HYDROGRAPH AT STATION    HUFN
                                          SUM OF  4 HYDROGRAPHS

*******************************************************************************************************************************
                     *                        *                          *
 DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW
                     *                        *                          *
  1   0000    1     500.  *   1   0605   74     505.  *   1   1210  147     934.  *   1   1815  220    6316.
  1   0005    2     500.  *   1   0610   75     505.  *   1   1215  148     973.  *   1   1820  221    6225.
  1   0010    3     500.  *   1   0615   76     505.  *   1   1220  149    1015.  *   1   1825  222    6138.
  1   0015    4     500.  *   1   0620   77     505.  *   1   1225  150    1063.  *   1   1830  223    6056.
  1   0020    5     500.  *   1   0625   78     505.  *   1   1230  151    1116.  *   1   1835  224    5977.
  1   0025    6     500.  *   1   0630   79     505.  *   1   1235  152    1175.  *   1   1840  225    5901.
  1   0030    7     500.  *   1   0635   80     505.  *   1   1240  153    1240.  *   1   1845  226    5828.
  1   0035    8     500.  *   1   0640   81     505.  *   1   1245  154    1314.  *   1   1850  227    5759.
  1   0040    9     500.  *   1   0645   82     505.  *   1   1250  155    1398.  *   1   1855  228    5692.
  1   0045   10     500.  *   1   0650   83     505.  *   1   1255  156    1494.  *   1   1900  229    5628.
  1   0050   11     500.  *   1   0655   84     505.  *   1   1300  157    1606.  *   1   1905  230    5566.
  1   0055   12     500.  *   1   0700   85     505.  *   1   1305  158    1737.  *   1   1910  231    5507.
  1   0100   13     500.  *   1   0705   86     505.  *   1   1310  159    1890.  *   1   1915  232    5450.
  1   0105   14     500.  *   1   0710   87     505.  *   1   1315  160    2069.  *   1   1920  233    5394.
  1   0110   15     500.  *   1   0715   88     505.  *   1   1320  161    2278.  *   1   1925  234    5340.
  1   0115   16     500.  *   1   0720   89     505.  *   1   1325  162    2519.  *   1   1930  235    5287.
  1   0120   17     500.  *   1   0725   90     505.  *   1   1330  163    2795.  *   1   1935  236    5236.
  1   0125   18     500.  *   1   0730   91     505.  *   1   1335  164    3110.  *   1   1940  237    5185.
  1   0130   19     500.  *   1   0735   92     505.  *   1   1340  165    3483.  *   1   1945  238    5134.
  1   0135   20     500.  *   1   0740   93     506.  *   1   1345  166    3852.  *   1   1950  239    5083.
  1   0140   21     500.  *   1   0745   94     506.  *   1   1350  167    4276.  *   1   1955  240    5032.
  1   0145   22     501.  *   1   0750   95     506.  *   1   1355  168    4730.  *   1   2000  241    4981.
  1   0150   23     501.  *   1   0755   96     506.  *   1   1400  169    5209.  *   1   2005  242    4928.
  1   0155   24     501.  *   1   0800   97     506.  *   1   1405  170    5704.  *   1   2010  243    4875.
  1   0200   25     501.  *   1   0805   98     507.  *   1   1410  171    6208.  *   1   2015  244    4821.
  1   0205   26     501.  *   1   0810   99     507.  *   1   1415  172    6710.  *   1   2020  245    4766.
  1   0210   27     501.  *   1   0815  100     507.  *   1   1420  173    7203.  *   1   2025  246    4711.
  1   0215   28     501.  *   1   0820  101     508.  *   1   1425  174    7678.  *   1   2030  247    4655.
  1   0220   29     502.  *   1   0825  102     508.  *   1   1430  175    8129.  *   1   2035  248    4598.
  1   0225   30     502.  *   1   0830  103     509.  *   1   1435  176    8549.  *   1   2040  249    4541.
  1   0230   31     502.  *   1   0835  104     509.  *   1   1440  177    8933.  *   1   2045  250    4483.
  1   0235   32     502.  *   1   0840  105     510.  *   1   1445  178    9276.  *   1   2050  251    4426.
  1   0240   33     502.  *   1   0845  106     510.  *   1   1450  179    9579.  *   1   2055  252    4369.
  1   0245   34     502.  *   1   0850  107     511.  *   1   1455  180    9839.  *   1   2100  253    4313.
  1   0250   35     502.  *   1   0855  108     512.  *   1   1500  181   10056.  *   1   2105  254    4257.
  1   0255   36     503.  *   1   0900  109     513.  *   1   1505  182   10229.  *   1   2110  255    4202.
  1   0300   37     503.  *   1   0905  110     514.  *   1   1510  183   10361.  *   1   2115  256    4149.
  1   0305   38     503.  *   1   0910  111     515.  *   1   1515  184   10455.  *   1   2120  257    4096.
  1   0310   39     503.  *   1   0915  112     516.  *   1   1520  185   10513.  *   1   2125  258    4045.
  1   0315   40     503.  *   1   0920  113     517.  *   1   1525  186   10537.  *   1   2130  259    3995.
  1   0320   41     503.  *   1   0925  114     518.  *   1   1530  187   10529.  *   1   2135  260    3946.
  1   0325   42     503.  *   1   0930  115     520.  *   1   1535  188   10495.  *   1   2140  261    3899.
  1   0330   43     503.  *   1   0935  116     522.  *   1   1540  189   10436.  *   1   2145  262    3853.
  1   0335   44     503.  *   1   0940  117     524.  *   1   1545  190   10356.  *   1   2150  263    3809.
  1   0340   45     503.  *   1   0945  118     527.  *   1   1550  191   10257.  *   1   2155  264    3766.
  1   0345   46     504.  *   1   0950  119     529.  *   1   1555  192   10143.  *   1   2200  265    3725.
  1   0350   47     504.  *   1   0955  120     533.  *   1   1600  193   10015.  *   1   2205  266    3685.
  1   0355   48     504.  *   1   1000  121     537.  *   1   1605  194    9878.  *   1   2210  267    3646.
  1   0400   49     504.  *   1   1005  122     541.  *   1   1610  195    9730.  *   1   2215  268    3609.
  1   0405   50     504.  *   1   1010  123     546.  *   1   1615  196    9576.  *   1   2220  269    3573.
  1   0410   51     504.  *   1   1015  124     551.  *   1   1620  197    9417.  *   1   2225  270    3539.
  1   0415   52     504.  *   1   1020  125     557.  *   1   1625  198    9256.  *   1   2230  271    3506.
  1   0420   53     504.  *   1   1025  126     563.  *   1   1630  199    9093.  *   1   2235  272    3474.
  1   0425   54     504.  *   1   1030  127     571.  *   1   1635  200    8930.  *   1   2240  273    3443.
  1   0430   55     504.  *   1   1035  128     578.  *   1   1640  201    8768.  *   1   2245  274    3414.
  1   0435   56     504.  *   1   1040  129     587.  *   1   1645  202    8608.  *   1   2250  275    3385.
  1   0440   57     504.  *   1   1045  130     596.  *   1   1650  203    8451.  *   1   2255  276    3358.
  1   0445   58     504.  *   1   1050  131     606.  *   1   1655  204    8296.  *   1   2300  277    3331.
  1   0450   59     504.  *   1   1055  132     617.  *   1   1700  205    8145.  *   1   2305  278    3306.
  1   0455   60     504.  *   1   1100  133     629.  *   1   1705  206    7997.  *   1   2310  279    3281.
  1   0500   61     504.  *   1   1105  134     642.  *   1   1710  207    7854.  *   1   2315  280    3257.
  1   0505   62     504.  *   1   1110  135     655.  *   1   1715  208    7713.  *   1   2320  281    3234.
  1   0510   63     504.  *   1   1115  136     670.  *   1   1720  209    7576.  *   1   2325  282    3212.
  1   0515   64     504.  *   1   1120  137     686.  *   1   1725  210    7443.  *   1   2330  283    3190.
  1   0520   65     504.  *   1   1125  138     703.  *   1   1730  211    7313.  *   1   2335  284    3169.
  1   0525   66     504.  *   1   1130  139     721.  *   1   1735  212    7188.  *   1   2340  285    3149.
  1   0530   67     504.  *   1   1135  140     741.  *   1   1740  213    7065.  *   1   2345  286    3129.
  1   0535   68     504.  *   1   1140  141     762.  *   1   1745  214    6946.  *   1   2350  287    3110.
  1   0540   69     504.  *   1   1145  142     785.  *   1   1750  215    6831.  *   1   2355  288    3091.
  1   0545   70     504.  *   1   1150  143     809.  *   1   1755  216    6720.  *   2   0000  289    3073.
  1   0550   71     504.  *   1   1155  144     836.  *   1   1800  217    6612.  *
  1   0555   72     504.  *   1   1200  145     865.  *   1   1805  218    6510.  *
  1   0600   73     505.  *   1   1205  146     898.  *   1   1810  219    6411.  *
                     *                        *                          *
******************************************************************************************

  PEAK FLOW     TIME                   MAXIMUM AVERAGE FLOW
                               6-HR      24-HR     72-HR    24.00-HR
+  (CFS)      (HR)
                      (CFS)
+  10537.     15.42            7685.     3000.     3000.     3000.
                    (INCHES)    .656     1.024     1.024     1.024
                    (AC-FT)    3811.     5950.     5950.     5950.

                 CUMULATIVE AREA =  108.97 SQ MI
```

```
1                                    STATION    HUFN

                      (O) OUTFLOW
        0.     1000.     2000.     3000.     4000.     5000.     6000.     7000.     8000.     9000.    10000.    11000.        0.
DAHRMN PER
10000  1.----O----.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
10005  2.    O  .     .     .     .     .     .     .     .     .     .     .
10010  3.    O  .     .     .     .     .     .     .     .     .     .     .
10015  4.    O  .     .     .     .     .     .     .     .     .     .     .
10020  5.    O  .     .     .     .     .     .     .     .     .     .     .
10025  6.    O  .     .     .     .     .     .     .     .     .     .     .
10030  7.    O  .     .     .     .     .     .     .     .     .     .     .
10035  8.    O  .     .     .     .     .     .     .     .     .     .     .
10040  9.    O  .     .     .     .     .     .     .     .     .     .     .
10045 10.    O  .     .     .     .     .     .     .     .     .     .     .
10050 11. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10055 12.    O  .     .     .     .     .     .     .     .     .     .     .
10100 13.    O  .     .     .     .     .     .     .     .     .     .     .
10105 14.    O  .     .     .     .     .     .     .     .     .     .     .
10110 15.    O  .     .     .     .     .     .     .     .     .     .     .
10115 16.    O  .     .     .     .     .     .     .     .     .     .     .
10120 17.    O  .     .     .     .     .     .     .     .     .     .     .
10125 18.    O  .     .     .     .     .     .     .     .     .     .     .
10130 19.    O  .     .     .     .     .     .     .     .     .     .     .
10135 20.    O  .     .     .     .     .     .     .     .     .     .     .
10140 21. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10145 22.    O  .     .     .     .     .     .     .     .     .     .     .
10150 23.    O  .     .     .     .     .     .     .     .     .     .     .
10155 24.    O  .     .     .     .     .     .     .     .     .     .     .
10200 25.    O  .     .     .     .     .     .     .     .     .     .     .
10205 26.    O  .     .     .     .     .     .     .     .     .     .     .
10210 27.    O  .     .     .     .     .     .     .     .     .     .     .
10215 28.    O  .     .     .     .     .     .     .     .     .     .     .
10220 29.    O  .     .     .     .     .     .     .     .     .     .     .
10225 30.    O  .     .     .     .     .     .     .     .     .     .     .
10230 31. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10235 32.    O  .     .     .     .     .     .     .     .     .     .     .
10240 33.    O  .     .     .     .     .     .     .     .     .     .     .
10245 34.    O  .     .     .     .     .     .     .     .     .     .     .
10250 35.    O  .     .     .     .     .     .     .     .     .     .     .
10255 36.    O  .     .     .     .     .     .     .     .     .     .     .
10300 37.    O  .     .     .     .     .     .     .     .     .     .     .
10305 38.    O  .     .     .     .     .     .     .     .     .     .     .
10310 39.    O  .     .     .     .     .     .     .     .     .     .     .
10315 40.    O  .     .     .     .     .     .     .     .     .     .     .
10320 41. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10325 42.    O  .     .     .     .     .     .     .     .     .     .     .
10330 43.    O  .     .     .     .     .     .     .     .     .     .     .
10335 44.    O  .     .     .     .     .     .     .     .     .     .     .
10340 45.    O  .     .     .     .     .     .     .     .     .     .     .
10345 46.    O  .     .     .     .     .     .     .     .     .     .     .
10350 47.    O  .     .     .     .     .     .     .     .     .     .     .
10355 48.    O  .     .     .     .     .     .     .     .     .     .     .
10400 49.    O  .     .     .     .     .     .     .     .     .     .     .
10405 50.    O  .     .     .     .     .     .     .     .     .     .     .
10410 51. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10415 52.    O  .     .     .     .     .     .     .     .     .     .     .
10420 53.    O  .     .     .     .     .     .     .     .     .     .     .
10425 54.    O  .     .     .     .     .     .     .     .     .     .     .
10430 55.    O  .     .     .     .     .     .     .     .     .     .     .
10435 56.    O  .     .     .     .     .     .     .     .     .     .     .
10440 57.    O  .     .     .     .     .     .     .     .     .     .     .
10445 58.    O  .     .     .     .     .     .     .     .     .     .     .
10450 59.    O  .     .     .     .     .     .     .     .     .     .     .
10455 60.    O  .     .     .     .     .     .     .     .     .     .     .
10500 61. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10505 62.    O  .     .     .     .     .     .     .     .     .     .     .
10510 63.    O  .     .     .     .     .     .     .     .     .     .     .
10515 64.    O  .     .     .     .     .     .     .     .     .     .     .
10520 65.    O  .     .     .     .     .     .     .     .     .     .     .
10525 66.    O  .     .     .     .     .     .     .     .     .     .     .
10530 67.    O  .     .     .     .     .     .     .     .     .     .     .
10535 68.    O  .     .     .     .     .     .     .     .     .     .     .
10540 69.    O  .     .     .     .     .     .     .     .     .     .     .
10545 70.    O  .     .     .     .     .     .     .     .     .     .     .
10550 71. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10555 72.    O  .     .     .     .     .     .     .     .     .     .     .
10600 73.    O  .     .     .     .     .     .     .     .     .     .     .
10605 74.    O  .     .     .     .     .     .     .     .     .     .     .
10610 75.    O  .     .     .     .     .     .     .     .     .     .     .
10615 76.    O  .     .     .     .     .     .     .     .     .     .     .
10620 77.    O  .     .     .     .     .     .     .     .     .     .     .
10625 78.    O  .     .     .     .     .     .     .     .     .     .     .
10630 79.    O  .     .     .     .     .     .     .     .     .     .     .
10635 80.    O  .     .     .     .     .     .     .     .     .     .     .
10640 81. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10645 82.    O  .     .     .     .     .     .     .     .     .     .     .
10650 83.    O  .     .     .     .     .     .     .     .     .     .     .
10655 84.    O  .     .     .     .     .     .     .     .     .     .     .
10700 85.    O  .     .     .     .     .     .     .     .     .     .     .
10705 86.    O  .     .     .     .     .     .     .     .     .     .     .
10710 87.    O  .     .     .     .     .     .     .     .     .     .     .
10715 88.    O  .     .     .     .     .     .     .     .     .     .     .
10720 89.    O  .     .     .     .     .     .     .     .     .     .     .
10725 90.    O  .     .     .     .     .     .     .     .     .     .     .
10730 91. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
10735 92.    O  .     .     .     .     .     .     .     .     .     .     .
10740 93.    O  .     .     .     .     .     .     .     .     .     .     .
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```
                 (O) OUTFLOW
           0.     1000.     2000.     3000.     4000.     5000.     6000.     7000.     8000.     9000.    10000.    11000.        0.
DAHRMN PER
10745  94.   O     .         .         .         .         .         .         .         .         .         .         .         .
10750  95.   O     .         .         .         .         .         .         .         .         .         .         .         .
10755  96.   O     .         .         .         .         .         .         .         .         .         .         .         .
10800  97.   O     .         .         .         .         .         .         .         .         .         .         .         .
10805  98.   O     .         .         .         .         .         .         .         .         .         .         .         .
10810  99.   O     .         .         .         .         .         .         .         .         .         .         .         .
10815 100.    O    .         .         .         .         .         .         .         .         .         .         .         .
10820 101....O...................................................................................................................
10825 102.    O    .         .         .         .         .         .         .         .         .         .         .         .
10830 103.    O    .         .         .         .         .         .         .         .         .         .         .         .
10835 104.    O    .         .         .         .         .         .         .         .         .         .         .         .
10840 105.    O    .         .         .         .         .         .         .         .         .         .         .         .
10845 106.    O    .         .         .         .         .         .         .         .         .         .         .         .
10850 107.    O    .         .         .         .         .         .         .         .         .         .         .         .
10855 108.    O    .         .         .         .         .         .         .         .         .         .         .         .
10900 109.    O    .         .         .         .         .         .         .         .         .         .         .         .
10905 110.    O    .         .         .         .         .         .         .         .         .         .         .         .
10910 111....O...................................................................................................................
10915 112.    O    .         .         .         .         .         .         .         .         .         .         .         .
10920 113.    O    .         .         .         .         .         .         .         .         .         .         .         .
10925 114.    O    .         .         .         .         .         .         .         .         .         .         .         .
10930 115.    O    .         .         .         .         .         .         .         .         .         .         .         .
10935 116.    O    .         .         .         .         .         .         .         .         .         .         .         .
10940 117.    O    .         .         .         .         .         .         .         .         .         .         .         .
10945 118.    O    .         .         .         .         .         .         .         .         .         .         .         .
10950 119.    O    .         .         .         .         .         .         .         .         .         .         .         .
10955 120.    O    .         .         .         .         .         .         .         .         .         .         .         .
11000 121....O...................................................................................................................
11005 122.    O    .         .         .         .         .         .         .         .         .         .         .         .
11010 123.    O    .         .         .         .         .         .         .         .         .         .         .         .
11015 124.     O   .         .         .         .         .         .         .         .         .         .         .         .
11020 125.     O   .         .         .         .         .         .         .         .         .         .         .         .
11025 126.     O   .         .         .         .         .         .         .         .         .         .         .         .
11030 127.     O   .         .         .         .         .         .         .         .         .         .         .         .
11035 128.     O   .         .         .         .         .         .         .         .         .         .         .         .
11040 129.     O   .         .         .         .         .         .         .         .         .         .         .         .
11045 130.     O   .         .         .         .         .         .         .         .         .         .         .         .
11050 131.....O..................................................................................................................
11055 132.     O   .         .         .         .         .         .         .         .         .         .         .         .
11100 133.     O   .         .         .         .         .         .         .         .         .         .         .         .
11105 134.     O   .         .         .         .         .         .         .         .         .         .         .         .
11110 135.       O .         .         .         .         .         .         .         .         .         .         .         .
11115 136.       O .         .         .         .         .         .         .         .         .         .         .         .
11120 137.       O .         .         .         .         .         .         .         .         .         .         .         .
11125 138.       O .         .         .         .         .         .         .         .         .         .         .         .
11130 139.       O .         .         .         .         .         .         .         .         .         .         .         .
11135 140.       O .         .         .         .         .         .         .         .         .         .         .         .
11140 141.......O................................................................................................................
11145 142.        O.         .         .         .         .         .         .         .         .         .         .         .
11150 143.        O.         .         .         .         .         .         .         .         .         .         .         .
11155 144.        O.         .         .         .         .         .         .         .         .         .         .         .
11200 145.        O.         .         .         .         .         .         .         .         .         .         .         .
11205 146.        O.         .         .         .         .         .         .         .         .         .         .         .
11210 147.        O.         .         .         .         .         .         .         .         .         .         .         .
11215 148.         O         .         .         .         .         .         .         .         .         .         .         .
11220 149.         O         .         .         .         .         .         .         .         .         .         .         .
11225 150.         .O        .         .         .         .         .         .         .         .         .         .         .
11230 151..........O.............................................................................................................
11235 152.         . O       .         .         .         .         .         .         .         .         .         .         .
11240 153.         . O       .         .         .         .         .         .         .         .         .         .         .
11245 154.         .  O      .         .         .         .         .         .         .         .         .         .         .
11250 155.         .    O    .         .         .         .         .         .         .         .         .         .         .
11255 156.         .     O   .         .         .         .         .         .         .         .         .         .         .
11300 157.         .      O  .         .         .         .         .         .         .         .         .         .         .
11305 158.         .       O .         .         .         .         .         .         .         .         .         .         .
11310 159.         .        O.         .         .         .         .         .         .         .         .         .         .
11315 160.         .         .O        .         .         .         .         .         .         .         .         .         .
11320 161.....................O..............................................................................................
11325 162.         .         .     O   .         .         .         .         .         .         .         .         .         .
11330 163.         .         .        O.         .         .         .         .         .         .         .         .         .
11335 164.         .         .         .O        .         .         .         .         .         .         .         .         .
11340 165.         .         .         .     O   .         .         .         .         .         .         .         .         .
11345 166.         .         .         .        O.         .         .         .         .         .         .         .         .
11350 167.         .         .         .         .   O     .         .         .         .         .         .         .         .
11355 168.         .         .         .         .       O .         .         .         .         .         .         .         .
11400 169.         .         .         .         .         . O       .         .         .         .         .         .         .
11405 170.         .         .         .         .         .       O .         .         .         .         .         .         .
11410 171...........................................................O........................................................
11415 172.         .         .         .         .         .         .       O .         .         .         .         .         .
11420 173.         .         .         .         .         .         .         .  O      .         .         .         .         .
11425 174.         .         .         .         .         .         .         .       O .         .         .         .         .
11430 175.         .         .         .         .         .         .         .         .O        .         .         .         .
11435 176.         .         .         .         .         .         .         .         .     O   .         .         .         .
11440 177.         .         .         .         .         .         .         .         .        O.         .         .         .
11445 178.         .         .         .         .         .         .         .         .         .   O     .         .         .
11450 179.         .         .         .         .         .         .         .         .         .      O  .         .         .
11455 180.         .         .         .         .         .         .         .         .         .       O .         .         .
11500 181................................................................................................O...................
11505 182.         .         .         .         .         .         .         .         .         .         . O       .         .
11510 183.         .         .         .         .         .         .         .         .         .         .   O     .         .
11515 184.         .         .         .         .         .         .         .         .         .         .    O    .         .
11520 185.         .         .         .         .         .         .         .         .         .         .    O    .         .
11525 186.         .         .         .         .         .         .         .         .         .         .    O    .         .
11530 187.         .         .         .         .         .         .         .         .         .         .    O    .         .
11535 188.         .         .         .         .         .         .         .         .         .         .    O    .         .
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                      (O) OUTFLOW
      0.   1000.   2000.   3000.   4000.   5000.   6000.   7000.   8000.   9000.  10000.  11000.      0.
DAHRMN PER
11540 189.     .     .     .     .     .     .     .     .     .     .  O  .     .
11545 190.     .     .     .     .     .     .     .     .     .     .  O  .     .
11550 191.........................................................O...........
11555 192.     .     .     .     .     .     .     .     .     .     .O    .     .
11600 193.     .     .     .     .     .     .     .     .     .     O     .     .
11605 194.     .     .     .     .     .     .     .     .     .     O     .     .
11610 195.     .     .     .     .     .     .     .     .     .    O.     .     .
11615 196.     .     .     .     .     .     .     .     .     .   O .     .     .
11620 197.     .     .     .     .     .     .     .     .     .  O  .     .     .
11625 198.     .     .     .     .     .     .     .     .     . O   .     .     .
11630 199.     .     .     .     .     .     .     .     .     .O    .     .     .
11635 200.     .     .     .     .     .     .     .     .     O     .     .     .
11640 201..................................................O...................
11645 202.     .     .     .     .     .     .     .     .   O .     .     .     .
11650 203.     .     .     .     .     .     .     .     .  O  .     .     .     .
11655 204.     .     .     .     .     .     .     .     . O   .     .     .     .
11700 205.     .     .     .     .     .     .     .     .O    .     .     .     .
11705 206.     .     .     .     .     .     .     .     O     .     .     .     .
11710 207.     .     .     .     .     .     .     .     O     .     .     .     .
11715 208.     .     .     .     .     .     .     .    O.     .     .     .     .
11720 209.     .     .     .     .     .     .     .   O .     .     .     .     .
11725 210.     .     .     .     .     .     .     .  O  .     .     .     .     .
11730 211.........................................O............................
11735 212.     .     .     .     .     .     .     . O   .     .     .     .     .
11740 213.     .     .     .     .     .     .     .O    .     .     .     .     .
11745 214.     .     .     .     .     .     .     O     .     .     .     .     .
11750 215.     .     .     .     .     .     .    O.     .     .     .     .     .
11755 216.     .     .     .     .     .     .    O.     .     .     .     .     .
11800 217.     .     .     .     .     .     .   O .     .     .     .     .     .
11805 218.     .     .     .     .     .     .   O .     .     .     .     .     .
11810 219.     .     .     .     .     .     .  O  .     .     .     .     .     .
11815 220.     .     .     .     .     .     . O   .     .     .     .     .     .
11820 221...................................O..................................
11825 222.     .     .     .     .     .     .O    .     .     .     .     .     .
11830 223.     .     .     .     .     .     .O    .     .     .     .     .     .
11835 224.     .     .     .     .     .     .O    .     .     .     .     .     .
11840 225.     .     .     .     .     .     O     .     .     .     .     .     .
11845 226.     .     .     .     .     .     O     .     .     .     .     .     .
11850 227.     .     .     .     .     .     O     .     .     .     .     .     .
11855 228.     .     .     .     .     .    O.     .     .     .     .     .     .
11900 229.     .     .     .     .     .   O .     .     .     .     .     .     .
11905 230.     .     .     .     .     .   O .     .     .     .     .     .     .
11910 231...............................O......................................
11915 232.     .     .     .     .     .  O  .     .     .     .     .     .     .
11920 233.     .     .     .     .     .  O  .     .     .     .     .     .     .
11925 234.     .     .     .     .     .  O  .     .     .     .     .     .     .
11930 235.     .     .     .     .     .  O  .     .     .     .     .     .     .
11935 236.     .     .     .     .     . O   .     .     .     .     .     .     .
11940 237.     .     .     .     .     . O   .     .     .     .     .     .     .
11945 238.     .     .     .     .     .O    .     .     .     .     .     .     .
11950 239.     .     .     .     .     .O    .     .     .     .     .     .     .
11955 240.     .     .     .     .     .O    .     .     .     .     .     .     .
12000 241............................O.........................................
12005 242.     .     .     .     .     O     .     .     .     .     .     .     .
12010 243.     .     .     .     .     O     .     .     .     .     .     .     .
12015 244.     .     .     .     .    O.     .     .     .     .     .     .     .
12020 245.     .     .     .     .    O.     .     .     .     .     .     .     .
12025 246.     .     .     .     .    O.     .     .     .     .     .     .     .
12030 247.     .     .     .     .    O.     .     .     .     .     .     .     .
12035 248.     .     .     .     .   O .     .     .     .     .     .     .     .
12040 249.     .     .     .     .   O .     .     .     .     .     .     .     .
12045 250.     .     .     .     .   O .     .     .     .     .     .     .     .
12050 251.........................O............................................
12055 252.     .     .     .     .  O  .     .     .     .     .     .     .     .
12100 253.     .     .     .     .  O  .     .     .     .     .     .     .     .
12105 254.     .     .     .     .  O  .     .     .     .     .     .     .     .
12110 255.     .     .     .     . O   .     .     .     .     .     .     .     .
12115 256.     .     .     .     .O    .     .     .     .     .     .     .     .
12120 257.     .     .     .     .O    .     .     .     .     .     .     .     .
12125 258.     .     .     .     .O    .     .     .     .     .     .     .     .
12130 259.     .     .     .     .O    .     .     .     .     .     .     .     .
12135 260.     .     .     .     O     .     .     .     .     .     .     .     .
12140 261......................O...............................................
12145 262.     .     .     .     O     .     .     .     .     .     .     .     .
12150 263.     .     .     .    O.     .     .     .     .     .     .     .     .
12155 264.     .     .     .    O.     .     .     .     .     .     .     .     .
12200 265.     .     .     .    O.     .     .     .     .     .     .     .     .
12205 266.     .     .     .    O.     .     .     .     .     .     .     .     .
12210 267.     .     .     .   O .     .     .     .     .     .     .     .     .
12215 268.     .     .     .   O .     .     .     .     .     .     .     .     .
12220 269.     .     .     .   O .     .     .     .     .     .     .     .     .
12225 270.     .     .     .  O  .     .     .     .     .     .     .     .     .
12230 271...................O..................................................
12235 272.     .     .     .  O  .     .     .     .     .     .     .     .     .
12240 273.     .     .     .  O  .     .     .     .     .     .     .     .     .
12245 274.     .     .     .  O  .     .     .     .     .     .     .     .     .
12250 275.     .     .     .  O  .     .     .     .     .     .     .     .     .
12255 276.     .     .     .  O  .     .     .     .     .     .     .     .     .
12300 277.     .     .     . O   .     .     .     .     .     .     .     .     .
12305 278.     .     .     . O   .     .     .     .     .     .     .     .     .
12310 279.     .     .     . O   .     .     .     .     .     .     .     .     .
12315 280.     .     .     . O   .     .     .     .     .     .     .     .     .
12320 281..................O...................................................
12325 282.     .     .     . O   .     .     .     .     .     .     .     .     .
12330 283.     .     .     . O   .     .     .     .     .     .     .     .     .
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12335 284.     .     .     . O    .     .     .     .     .     .     .     .     .
12340 285.     .     .     .O     .     .     .     .     .     .     .     .     .
12345 286.     .     .     .O     .     .     .     .     .     .     .     .     .
12350 287.     .     .     .O     .     .     .     .     .     .     .     .     .
12355 288.     .     .     .O     .     .     .     .     .     .     .     .     .
20000 289.---------.---------.---------.O--------.---------.---------.---------.---------.---------.---------.---------.---------.
1


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          ***************
          *             *
289 KK    *    MOPLS    *    ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
          *             *
          ***************

           HYDROGRAPH ROUTING DATA

290 RS       STORAGE ROUTING
               NSTPS         1  NUMBER OF SUBREACHES
                ITYP      STOR  TYPE OF INITIAL CONDITION
              RSVRIC       .00  INITIAL CONDITION
                   X       .00 WORKING R AND D COEFFICIENT

291 SA          AREA        .6      1.9      8.6     18.1     40.0     80.0    131.0    196.0

292 SE       ELEVATION   4410.00  4412.00  4414.00  4416.00  4418.00  4420.00  4422.00  4424.00

293 SQ       DISCHARGE      200.     480.     783.    1411.    4191.    9772.   19163.   31000.

                                          ***

                               COMPUTED STORAGE-ELEVATION DATA

          STORAGE      .00     2.38    12.07    38.19    94.86   212.57   421.49   746.31
        ELEVATION  4410.00  4412.00  4414.00  4416.00  4418.00  4420.00  4422.00  4424.00
1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                TIME IN HOURS,  AREA IN SQUARE MILES

                            PEAK   TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD     BASIN    MAXIMUM     TIME OF
         OPERATION        STATION    FLOW    PEAK                                 AREA     STAGE     MAX STAGE
+                                              6-HOUR    24-HOUR    72-HOUR

         HYDROGRAPH AT
+                            T1      966.   12.42       354.       132.       132.      2.50

         ROUTED TO
+                          RT1-B      955.   12.50       353.       132.       132.      2.50

         HYDROGRAPH AT
+                            T2      305.   12.42       124.        45.        45.      1.82

         HYDROGRAPH AT
+                            T3      138.   12.42        54.        20.        20.       .82

         3 COMBINED AT
+                           CP-B    1375.   12.50       530.       196.       196.      5.14

         ROUTED TO
+                          RCP-C    1357.   12.67       530.       195.       195.      5.14

         HYDROGRAPH AT
+                            T4      180.   12.75        96.        35.        35.      2.16

         2 COMBINED AT
+                           CP-C    1531.   12.67       624.       230.       230.      7.30

         ROUTED TO
+                          RCP-D    1513.   12.75       624.       229.       229.      7.30

         HYDROGRAPH AT
+                            T5      203.   12.67        76.        27.        27.      1.19

         2 COMBINED AT
+                           CP-D    1709.   12.75       699.       256.       256.      8.49

         ROUTED TO
+                          RCP-E    1482.   13.42       696.       250.       250.      8.49

         HYDROGRAPH AT
+                            T6      454.   13.00       186.        66.        66.      3.15

         2 COMBINED AT
+                           CP-E    1860.   13.42       877.       316.       316.     11.64

         ROUTED TO
+                          RT-HN    1368.   14.92       855.       298.       298.     11.64

         HYDROGRAPH AT
+                            W1      728.   12.25       231.        86.        86.      1.36

         HYDROGRAPH AT
+                            W2      598.   12.25       170.        65.        65.       .84
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                         PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD     BASIN    MAXIMUM    TIME OF
      OPERATION       STATION     FLOW     PEAK                       AREA     STAGE    MAX STAGE
+                                            6-HOUR   24-HOUR   72-HOUR

      2 COMBINED AT
+                  W1+W2    1326.   12.25     400.     151.      151.      2.20

      ROUTED TO
+                  RT-A     1271.   12.33     400.     151.      151.      2.20

      HYDROGRAPH AT
+                  W3       641.   12.25     203.      75.       75.      1.38

      ROUTED TO
+                  RT-A      623.   12.42     203.      75.       75.      1.38

      HYDROGRAPH AT
+                  W4       341.   12.33     127.      46.       46.      1.47

      3 COMBINED AT
+                  W1234    2233.   12.33     725.     272.      272.      5.05

      ROUTED TO
+                  RT-B     2231.   12.42     725.     272.      272.      5.05

      HYDROGRAPH AT
+                  W5       271.   12.33     101.      37.       37.      1.27

      2 COMBINED AT
+                  W5+CH    2498.   12.42     823.     308.      308.      6.32

      ROUTED TO
+                  RT-C     2401.   12.58     823.     307.      307.      6.32

      HYDROGRAPH AT
+                  W6       160.   12.58      77.      27.       27.      1.43

      2 COMBINED AT
+                  W6+CH    2561.   12.58     898.     334.      334.      7.75

      ROUTED TO
+                  RT-D     2448.   12.92     897.     331.      331.      7.75

      HYDROGRAPH AT
+                  W7       157.   12.67      66.      23.       23.      1.30

      2 COMBINED AT
+                  W7+CH    2583.   12.92     963.     354.      354.      9.05

      ROUTED TO
+                  RT-E     2536.   13.08     963.     353.      353.      9.05

      HYDROGRAPH AT
+                  W8       330.   12.75     139.      49.       49.      4.37

      2 COMBINED AT
+                  W8+CH    2814.   13.00    1102.     402.      402.     13.42

      ROUTED TO
+                  RT-F     2535.   13.25    1100.     399.      399.     13.42

      HYDROGRAPH AT
+                  46       170.   12.75      68.      24.       24.      2.69

      2 COMBINED AT
+                  46+CH    2654.   13.25    1168.     423.      423.     16.11

      ROUTED TO
+                  RT-HN    1719.   15.08    1135.     398.      398.     16.11

      HYDROGRAPH AT
+                  G1       994.   12.25     298.     114.      114.      1.63

      ROUTED TO
+                  RT-G      968.   12.33     298.     113.      113.      1.63

      HYDROGRAPH AT
+                  G2       724.   12.25     209.      78.       78.      1.30

      HYDROGRAPH AT
+                  G3       359.   12.42     138.      52.       52.      1.15

      3 COMBINED AT
+                  G123     1964.   12.33     643.     243.      243.      4.08

      ROUTED TO
+                  RT-H     1910.   12.50     643.     242.      242.      4.08

      HYDROGRAPH AT
+                  G4       369.   12.33     129.      47.       47.      1.54

      HYDROGRAPH AT
+                  G5        94.   12.50      48.      18.       18.      1.02

      3 COMBINED AT
+                  G1-5     2306.   12.50     813.     306.      306.      6.64
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                          PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD    BASIN    MAXIMUM    TIME OF
     OPERATION       STATION    FLOW     PEAK                                AREA     STAGE    MAX STAGE
+                                           6-HOUR   24-HOUR   72-HOUR
     ROUTED TO
+                 RT-I     2261.  12.67      813.     304.      304.     6.64

     HYDROGRAPH AT
+                   G6      109.  12.83       62.      22.       22.     1.37

     2 COMBINED AT
+                 G6+CH     2363.  12.67      873.     327.      327.     8.01

     ROUTED TO
+                 RT-K     2342.  12.75      873.     326.      326.     8.01

     HYDROGRAPH AT
+                   J1      305.  12.33      102.      37.       37.     1.29

     ROUTED TO
+                 RT-J      297.  12.50      102.      37.       37.     1.29

     HYDROGRAPH AT
+                   J2      289.  12.58      117.      41.       41.     1.95

     2 COMBINED AT
+                 J1+J2     561.  12.50      219.      78.       78.     3.24

     ROUTED TO
+                 RT-K      549.  12.67      219.      78.       78.     3.24

     HYDROGRAPH AT
+                   G8      357.  12.50      127.      44.       44.     2.19

     3 COMBINED AT
+                 G+J      3157.  12.67     1217.     448.      448.    13.44

     ROUTED TO
+                 RT-L     3123.  12.83     1217.     446.      446.    13.44

     HYDROGRAPH AT
+                   G7      162.  12.50       71.      25.       25.     1.50

     ROUTED TO
+                 RT-L      159.  12.67       71.      25.       25.     1.50

     HYDROGRAPH AT
+                   G9      193.  14.25      137.      48.       48.     3.07

     3 COMBINED AT
+                 PT-L     3334.  12.83     1417.     519.      519.    18.01

     ROUTED TO
+                 RT-PV    3210.  13.00     1416.     516.      516.    18.01

     HYDROGRAPH AT
+                   B1      347.  12.58      155.      56.       56.     2.18

     ROUTED TO
+                 RT-M      344.  12.75      155.      55.       55.     2.18

     HYDROGRAPH AT
+                   B2      145.  12.50       66.      23.       23.     1.42

     2 COMBINED AT
+                 B1+B2     470.  12.67      221.      79.       79.     3.60

     ROUTED TO
+                 RT-N      468.  12.83      221.      79.       79.     3.60

     HYDROGRAPH AT
+                   B3       73.  12.50       28.       9.        9.      .53

     2 COMBINED AT
+                 B123      525.  12.75      248.      88.       88.     4.13

     ROUTED TO
+                 RT-PV     502.  13.08      247.      87.       87.     4.13

     2 COMBINED AT
+                PLEASV    3700.  13.00     1662.     603.      603.    22.14

     ROUTED TO
+                 RT-SG    3596.  13.25     1660.     598.      598.    22.14

     HYDROGRAPH AT
+                   30     3158.  13.00     1644.     891.      891.    17.80

     2 COMBINED AT
+                 STMBT    6592.  13.17     3292.    1489.     1489.    39.94

     ROUTED TO
+                RT-341    6085.  13.58     3279.    1475.     1475.    39.94

     HYDROGRAPH AT
+                   35     4341.  12.83     1514.     504.      504.    15.50
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                        PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD    BASIN    MAXIMUM    TIME OF
   OPERATION        STATION    FLOW     PEAK                               AREA     STAGE    MAX STAGE
+                                   6-HOUR    24-HOUR    72-HOUR

   HYDROGRAPH AT
+                 40      539.  12.67       166.       56.       56.     2.63

   3 COMBINED AT
+              HY-341     6949.  13.42      4894.      2036.     2036.     58.07

   ROUTED TO
+              RT-HN      6578.  15.58      4670.      1916.     1916.     58.07

   HYDROGRAPH AT
+                 60     1239.  16.58      1056.       390.      390.     23.15

   4 COMBINED AT
+               HUFN     10537.  15.42      7885.      3000.     3000.    108.97

   ROUTED TO
+              MDPLS     10373.  15.75      7656.      2963.     2963.    108.97
+                                                                   4420.13      15.75


*** NORMAL END OF HEC-1 ***
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**************************************************             ***********************************************
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)             *             *      U.S. ARMY CORPS OF ENGINEERS          *
*          FEBRUARY 1981                        *             * THE HYDROLOGIC ENGINEERING CENTER          *
*          REVISED 01 JUN 88                    *             *           609 SECOND STREET                *
*                                               *             *       DAVIS, CALIFORNIA 95616              *
*  RUN DATE 12/07/1989  TIME  16:38:15          *             *            (916)551-1748                   *
**************************************************             ***********************************************


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                 *     *  *         *                        *
                 *     *  *         *                        *
                 *     *  *         *                        *
                 *******   ******   *        ********        *
                 *     *  *         *                        *
                 *     *  *         *                        *
                 *     *  *         *                        *
                 *     *  ********  ********            ***********

          ****************************************************************
          PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION
          FACILITY DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER
          PURPOSE WITHOUT CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

          HUFFAKER NARROWS HYDROLOGY MODEL OF EXISTING CONDITION
          THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURRING SUMMER 1989
          THE PARAMETERS ARE BASED ON THE 100 YEAR POINT RAINFALL FROM
          THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
          NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
          METHOD AND MANNING EQUATINS ARE USED FOR THE DETERMINATION OF LAG TIME.
          CURVE NUMBERS WERE ESTIMATED FROM USFS PHOTOGRAPHS AND FIELD INVESTIGATIONS
          AERIAL REDUCTION FOR 109 SQUARE MILES 15 MINUTE TIME STEP.


1                                   HEC-1 INPUT

   LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

            *DIAGRAM
     1       ID   ****************************************************************
     2       ID
     3       ID
     4       ID
     5       ID
     6       ID
     8       ID
     9       ID
    10       ID
    11       ID
    12       ID
    13       ID                 FILE NAME: HEX15.909
    14       ID
    15       ID   ****************************************************************
    16       IT    15              289
    17       IO     4     1

    18       KK     T1   THOMAS CREEK WATERSHED T1
    19       BA    2.5
    20       PH      1     109    .42    .83   1.45   1.87   2.26   3.18   4.31   5.44
    21       LS             69
    22       UD    .35

    23       KK   RT1-B   ROUTE T1 TO CONCENTRATION POINT B
    24       RM      1 .09568     .4

    25       KK     T2   THOMAS CREEK WATERSHED T2
    26       BA   1.82
    27       PH      1     109     .4    .79   1.39   1.75    2.1    2.9   3.91   4.92
    28       LS             58
    29       UD    .29

    30       KK     T3   THOMAS CREEK WATERSHED T3
    31       BA    .82
    32       PH      1     109    .41     .8    1.4   1.73   2.04   2.76   3.75   4.73
    33       LS             59
    34       UD     .3

    35       KK    CP-B   COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCCENTRATION PT B
    36       HC      3

    37       KK   RCP-C   ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
    38       RM      2 .14576     .4

    39       KK     T4   THOMAS CREEK WATERSHED T4
    40       BA   2.16
    41       PH      1     109    .39    .77   1.35   1.64   1.91   2.55   3.38    4.2
    42       LS             58
    43       UD    .54
    44       KK    CP-C   COMBINE ROUTED T1-T3 W/ T4
    45       HC      2

    46       KK   RCP-D   ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
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1                                      HEC-1 INPUT

         LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          47        RM      2  .1406     .4

          48        KK     T5   THOMAS CREEK WATERSHED T5
          49        BA    1.19
          50        PH     1.    109    .35    .66    1.2    1.4   1.59   2.04   2.75    3.4

          51        LS           71
          52        UD     .49

          53        KK    CP-D   COMBINE ROUTED T1-T4 W/ T5
          54        HC      2
          55        KO      1

          56        KK   RCP-E   ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
          57        RM      5  .636     .2

          58        KK     T6   THOMAS CREEK WATERSHED T6
          59        BA    3.15
          60        PH      1    109    .35    .69   1.21   1.34   1.46    1.8    2.3    2.8
          61        LS           75      5
          62        UD     .85

          63        KK   CP-E   COMBINE ROUTED T1-T5 W/ T6
          64        HC      2

          65        KK   RT-HN  ROUTE THOMAS CK WATERSHED TO HUFFAKER NARROWS
          66        RM      5   1.49     .1

          67        KK     W1 WHITES CREEK WATERSHED NO. 1
          68        BA    1.36
          69        PH      1    109    .39    .77   1.35   1.83   2.28   3.34   4.43   5.52
          70        LS           73
          71        UD     .21

          72        KK      W2 WHITES CREEK WATERSHED NO. 2
          73        BA     .84
          74        PH      1    109    .39    .77   1.35    1.8   2.23   3.22   4.31   5.39
          75        LS           80
          76        UD     .17

          77        KK   W1+W2 COMBINE FLOW FROM W1 AND W2
          78        HC      2

          79        KK   RT-A  ROUTE COMBINED W1 AND W2 TO POINT A
          80        RM      1   .122     .4
          81        KK     W3  WHITES CREEK WATERSHED NO. 3
          82        BA    1.38
          83        PH      1    109    .39    .77   1.36   1.78   2.18   3.12   4.15   5.17
          84        LS           72
          85        UD     .23

          86        KK    RT-A ROUTE W3 TO POINT A
          87        RM      1  .0950     .4

          88        KK     W4  WHITES CREEK WATERSHED NO. 4
          89        BA    1.47
          90        PH      1    109    .38    .75   1.32   1.71   2.08   2.95   3.94   4.94
          91        LS           62
          92        UD     .27

          93        KK   W1234 COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
          94        HC      3

          95        KK   RT-B  ROUTE COMBINED HYDROGRAPH TO POINT B
          96        RM      1  .0597     .4

          97        KK     W5  WHITES CREEK WATERSHED NO. 5
          98        BA    1.27
          99        PH      1    109    .38    .75   1.31   1.67   2.01    2.8   3.78   4.77
         100        LS           62
         101        UD     .28

         102        KK   W5+CH COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
         103        HC      2

         104        KK   RT-C  ROUTE COMBINED HYDROGRAPH TO POINT C
         105        RM      2   .185     .4

         106        KK      W6  WHITES CREEK WATERSHED N0. 6
         107        BA    1.43
         108        PH      1    109    .36    .71   1.24   1.55   1.86   2.56   3.34   4.12
         109        LS           61
         110        UD     .44

         111        KK   W6+CH COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
         112        HC      2

         113        KK   RT-D  ROUTE COMBINED HYDROGRAPH TO POINT D
         114        RM      3   .296     .4

         115        KK     W7   WHITES CREEK WATERSHED NO.7
         116        BA     1.3
         117        PH      1    109    .33    .64   1.12   1.34   1.55   2.03   2.69   3.36
         118        LS           68
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                         HEC-1 INPUT

 LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  119        UD     .5
  120        KK  W7+CH COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
  121        HC      2

  122        KK  RT-E  ROUTE COMBINED HYDROGRAPH TO POINT E
  123        RM      2   .139     .4

  124        KK   W8   WHITES CREEK WATERSHED NO. 8
  125        BA   4.37
  126        PH      1    109    .32    .64   1.12   1.28   1.43   1.79   2.29   2.79
  127        LS             68
  128        UD    .53

  129        KK  W8+CH COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
  130        HC      2

  131        KK  RT-F  ROUTE COMBINED HYDROGRAPH TO POINT F
  132        RM      1    .24     .2

  133        KK    46  WHITES CREEK WATERSHED 46
  134        BA   2.69
  135        PH      1    109    .36     .7   1.23   1.39   1.52   1.78   2.26   2.75
  136        LS             66
  137        UD     .5

  138        KK  46+CH COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
  139        HC      2

  140        KK  RT-HN ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
  141        RM      5   1.76     .1

  142        KK   G1   GLENA CREEK WATERSHED NO.1
  143        BA   1.63
  144        PH      1    109     .4    .79   1.39   1.85   2.29   3.31   4.46    5.6
  145        LS             75
  146        UD     .2

  147        KK  RT-G  ROUTE G1 TO POINT G
  148        RM      1   .096     .4

  149        KK    G2  GALENA CREEK WATERSHED NO. 2
  150        BA    1.3
  151        PH      1    109    .39    .77   1.35   1.76   2.16   3.08    4.1   5.12
  152        LS             75
  153        UD     .2

  154        KK    G3  GALENA CREEK WATERSHED NO. 3
  155        BA   1.15
  156        PH      1    109    .38    .74    1.3   1.69   2.05    2.9   3.95   4.99
  157        LS             69
  158        UD    .36
  159        KK  G123  COMBINE ROUTED G1 WITH G2 AND G3
  160        HC      3

  161        KK  RT-H  ROUTE COMBINED HYDROGRAPH TO POINT H
  162        RM      2   .174     .4

  163        KK    G4  GALENA CREEK WATERSHED NO. 4
  164        BA   1.54
  165        PH      1    109    .38    .75   1.32   1.68   2.02   2.83   3.79   4.74
  166        LS             63
  167        UD    .25

  168        KK    G5  GALENA CREEK WATERSHED NO. 5
  169        BA   1.02
  170        PH      1    109    .38    .75   1.32   1.67   1.99   2.75    3.7   4.64
  171        LS             55
  172        UD    .32

  173        KK   G1-5 COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
  174        HC      3

  175        KK  RT-I  ROUTE COMBINED HYDROGRAPHS TO POINT I
  176        RM      2   .167     .4

  177        KK    G6  GALENA CREEK WATERSHED N0.6
  178        BA   1.37
  179        PH      1    109    .37    .72   1.26   1.57   1.87   2.56   3.33    4.1
  180        LS             59
  181        UD    .56

  182        KK  G6+CH COMBINE G6 WITH COMBINED HYDROGRAPH AT POINT I
  183        HC      2

  184        KK  RT-K  ROUTE COMBINED HYDROGRAPH TO POINT K
  185        RM      1   .066     .4

  186        KK    J1  JONES CREEK WATERSHED NO. 1
  187        BA   1.29
  188        PH      1    109    .39    .76   1.33   1.67      2   2.75   3.69   4.62
  189        LS             63
  190        UD    .23
  191        KK  RT-J  ROUTE JI TO POINT J
  192        RM      2   .195     .4
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1                                      HEC-1 INPUT

      LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

       193          KK    J2  JONES CREEK WATERSHED NO. 2
       194          BA    1.95

       195          PH     1    109    .35     .7   1.22   1.52    1.8   2.45   3.22   3.98
       196          LS          64
       197          UD    .43
       198          KK  J1+J2 COMBINE ROUTED J1 WITH J2 AT POINT J
       199          HC     2

       200          KK  RT-K  ROUTE COMBINED J1 AND J2 TO POINT K
       201          RM     1  .104     .4

       202          KK    G8  GALENA CREEK WATERSHED NO.8
       203          BA    2.19
       204          PH     1    109    .34    .66   1.16    1.4   1.62   2.13   2.77   3.41
       205          LS          69
       206          UD    .35

       207          KK  G+J   COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
       208          HC     3

       209          KK  RT-L  ROUTE COMBINED HYDROGRAPH TO PT L
       210          RM     1  .132     .4

       211          KK    G7  GALENA CREEK WATERSHED NO. 7
       212          BA    1.5
       213          PH     1    109    .35    .69   1.22    1.5   1.77    2.4    3.1    3.8
       214          LS          62
       215          UD    .36

       216          KK  RT-L  ROUTE G7 TO POINT L
       217          RM     1  .129     .4

       218          KK    G9  GALENA CREEK WATERSHED NO. 9
       219          BA    3.07
       220          PH     1    109    .33  . .65   1.14   1.35   1.56   2.04    2.6   3.18
       221          LS          69
       222          UD    1.67

       223          KK  PT-L  COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
       224          HC     3

       225          KK  RT-PV ROUTE COMBINED HYDROGRAPH TO PLEASENT VALLEY
       226          RM     2  .17      .2

       227          KK    B1  BROWNS CREEK WATERSHED NO. 1
       228          BA    2.18
       229          PH     1    109    .38    .74    1.3   1.63   1.95    2.7   3.62   4.53
       230          LS          62
       231          UD    .44

       232          KK  RT-M  ROUTE B1 TO POINT M
       233          RM     2  .167     .4

       234          KK    B2  BROWNS CREEK WATERSHED NO. 2
       235          BA    1.42
       236          PH     1    109    .36    .71   1.25   1.55   1.83   2.49   3.25      4
       237          LS          60
       238          UD    .35
       239          KK  B1+B2 COMBINE ROUTED B1 WITH B2 AT POINT M
       240          HC     2

       241          KK  RT-N  ROUTE COMBINED HYDROGRAPH TO POINT N
       242          RM     1  .104     .4

       243          KK    B3  BROWNS CREEK WATERSHED NO. 3
       244          BA    .53
       245          PH     1    109    .34    .67   1.18   1.43   1.66   2.22   2.82   3.42
       246          LS          67
       247          UD    .36

       248          KK  B123  COMBINE ROUTED B1 AND B2 WITH B3
       249          HC     2

       250          KK  RT-PV ROUTE BROWNS CREEK HYDROGRAPH TO PLEASENT VALLEY
       251          RM     3   .31     .2

       252          KK PLEASV COMBINE GALENA CK AND BROWNS CK AT PLEASENT VALLEY
       253          HC     2

       254          KK  RT-SG ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
       255          RM     3   .21     .2

       256          KK    30  STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
       257          BA    17.6
       258          BF    500    500      1
       259          PH     1    109    .32    .64   1.12   1.28   1.44    1.6   2.34   2.87
       260          LS          77
       261          UD    0.82

       262          KK  STMBT COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
       263          HC     2

       264          KK  RT-341 ROUTE COMBINED HYDROGRAPH TO HWY 341
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1                                   HEC-1 INPUT

         LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          265        RM     2   .413    .2

          266        KK    35  WATERSHED 35 AKA BAILEY CANYON
          267        BA    15.5
          268        BF     0      0      1
          269        PH     1    109    .39    .77   1.34   1.53   1.68   1.98   2.51   3.04
          270        LS           82
          271        UD    .72

          272        KK    40  WATERSHED NO.40
          273        BA    2.63
          274        PH     1    109    .35    .69   1.21   1.38   1.51   1.78   2.29   2.81
          275        LS           77
          276        UD     .49

          277        KK  HY-341  COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
          278        HC     3

          279        KK  RT-HN  ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
          280        RM     5   2.26     .1

          281        KK    60  WATERSHED NO. 60
          282        BA   23.15
          283        PH     1    109    .35    .68   1.19   1.36   1.49   1.77    2.3   2.83
          284        LS           76
          285        UD    3.70

          286        KK   HUFN  COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
          287        HC     4
          288        KO     1      2

          289        KK   MDPLS ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
          290        RS     1   STOR      0
          291        SA    .6    1.9    8.6   18.1     40     80    131    196
          292        SE  4410   4412   4414   4416   4418   4420   4422   4424
          293        SQ   200    480    783.  1411   4191   9772  19163  31000
          294        ZZ
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1
            SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE   (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

 NO.    (.) CONNECTOR      (<---) RETURN OF DIVERTED OR PUMPED FLOW

  18       T1
           V
           V
  23     RT1-B
           .
           .
  25       .     T2
           .     .
           .     .
  30       .     .     T3
           .     .     .
           .     .     .
  35      CP-B.................
           V
           V
  37     RCP-C
           .
           .
  39       .     T4
           .     .
           .     .
  44      CP-C..........
           V
           V
  46     RCP-D
           .
           .
  48       .     T5
           .     .
           .     .
  53      CP-D..........
           V
           V
  56     RCP-E
           .
           .
  58       .     T6
           .     .
           .     .
  63     CP-E ..........
           V
           V
  65     RT-HN
           .
           .
  67       .     W1
           .     .
           .     .
  72       .     .     W2
           .     .     .
           .     .     .
  77       .    W1+W2.........
           .     V
           .     V
  79       .    RT-A
           .     .
           .     .
  81       .     .     W3
           .     .     V
           .     .     V
  86       .     .    RT-A
           .     .     .
           .     .     .
  88       .     .     .     W4
           .     .     .     .
           .     .     .     .
  93       .    W1234.....................
           .     V
           .     V
  95       .    RT-B
           .     .
           .     .
  97       .     .     W5
           .     .     .
           .     .     .
 102       .    W5+CH..........
           .     V
           .     V
 104       .    RT-C
           .     .
           .     .
 106       .     .     W6
           .     .     .
           .     .     .
 111       .    W6+CH..........
           .     V
           .     V
 113       .    RT-D
           .     .
           .     .
```

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1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
LINE        (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

NO.        (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

115           .         .       W7
             .         .         .
             .         .         .
120           .      W7+CH...........
             .         V
             .         V
122           .      RT-E
             .         .
             .         .
124           .         .       W8
             .         .         .
             .         .         .
129           .      W8+CH...........
             .         V
             .         V
131           .      RT-F
             .         .
             .         .
133           .         .        48
             .         .         .
             .         .         .
138           .      48+CH...........
             .         V
             .         V
140           .      RT-HN
             .         .
             .         .
142           .         .       G1
             .         .         V
             .         .         V
147           .         .      RT-G
             .         .         .
             .         .         .
149           .         .          .       G2
             .         .         .         .
             .         .         .         .
154           .         .          .         .       G3
             .         .         .         .         .
             .         .         .         .         .
159           .         .      G123 .....................
             .         .         V
             .         .         V
161           .         .      RT-H
             .         .         .
             .         .         .
163           .         .          .       G4
             .         .         .         .
             .         .         .         .
168           .         .          .         .       G5
             .         .         .         .         .
             .         .         .         .         .
173           .         .       G1-5......................
             .         .         V
             .         .         V
175           .         .      RT-I
             .         .         .
             .         .         .
177           .         .          .       G6
             .         .         .         .
             .         .         .         .
182           .         .      G6+CH..........
             .         .         V
             .         .         V
184           .         .      RT-K
             .         .         .
             .         .         .
186           .         .          .       J1
             .         .         .         V
             .         .         .         V
191           .         .          .     RT-J
             .         .         .         .
             .         .         .         .
193           .         .          .         .       J2
             .         .         .         .         .
             .         .         .         .         .
198           .         .          .     J1+J2..........
             .         .         .         V
             .         .         .         V
200           .         .          .     RT-K
             .         .         .         .
             .         .         .         .
202           .         .          .         .       G8
             .         .         .         .         .
             .         .         .         .         .
207           .         .       G+J .....................
             .         .         V
             .         .         V
209           .         .       RT-L
             .         .         .
             .         .         .
```

```
   1
           SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE    (V) ROUTING        (---->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR      (<----) RETURN OF DIVERTED OR PUMPED FLOW

 211     .      .      .    G7
         .      .      .     V
         .      .      .     V
 216     .      .      .   RT-L
         .      .      .     .
         .      .      .     .
 218     .      .      .     .      G9
         .      .      .     .      .
         .      .      .     .      .
 223     .      .    PT-L ...............
         .      .      V
         .      .      V
 225     .      .    RT-PV
         .      .      .
         .      .      .
 227     .      .      .     B1
         .      .      .     V
         .      .      .     V
 232     .      .      .   RT-M
         .      .      .     .
         .      .      .     .
 234     .      .      .     .      B2
         .      .      .     .      .
         .      .      .     .      .
 239     .      .      .   B1+B2...........
         .      .      .     V
         .      .      .     V
 241     .      .      .   RT-N
         .      .      .     .
         .      .      .     .
 243     .      .      .     .      B3
         .      .      .     .      .
         .      .      .     .      .
 248     .      .      .   B123 ...........
         .      .      .     V
         .      .      .     V
 250     .      .      .   RT-PV
         .      .      .     .
         .      .      .     .
 252     .      .    PLEASV...........
         .      .      V
         .      .      V
 254     .      .     RT-SG
         .      .      .
         .      .      .
 256     .      .      .     30
         .      .      .     .
         .      .      .     .
 262     .      .     STMBT...........
         .      .      V
         .      .      V
 264     .      .    RT-341
         .      .      .
         .      .      .
 266     .      .      .     35
         .      .      .     .
         .      .      .     .

 272     .      .      .     .      40
         .      .      .     .      .
         .      .      .     .      .
 277     .      .    HY-341.......................
         .      .      V
         .      .      V
 279     .      .    RT-HN
         .      .      .
         .      .      .
 281     .      .      .     60
         .      .      .     .
         .      .      .     .
 286   HUFN ...................................
         V
         V
 289   MDPLS
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
***************************************************              ***************************************************
*   FLOOD HYDROGRAPH PACKAGE (HEC-1)   *                         *      U.S. ARMY CORPS OF ENGINEERS       *
*            FEBRUARY 1981             *                         * THE HYDROLOGIC ENGINEERING CENTER       *
*           REVISED 01 JUN 88          *                         *          609 SECOND STREET              *
*                                      *                         *        DAVIS, CALIFORNIA 95616          *
*    RUN DATE 12/07/1989  TIME  16:38:15 *                       *            (916)551-1748                *
***************************************************              ***************************************************



                  *************************************************************
                  PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION
                  FACILITY DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER
                  PURPOSE WITHOUT CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

                  HUFFAKER NARROWS HYDROLOGY MODEL OF EXISTING CONDITION
                  THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURRING SUMMER 1989
                  THE PARAMETERS ARE BASED ON THE 100 YEAR POINT RAINFALL FROM
                  THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
                  NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
                  METHOD AND MANNING EQUATINS ARE USED FOR THE DETERMINATION OF LAG TIME.
                  CURVE NUMBERS WERE ESTIMATED FROM USFS PHOTOGRAPHS AND FIELD INVESTIGATIONS
                  AERIAL REDUCTION FOR 109 SQUARE MILES 15 MINUTE TIME STEP.

                           FILE NAME: HEX15.909

                  *************************************************************

  17 IO       OUTPUT CONTROL VARIABLES
                IPRNT        4  PRINT CONTROL
                IPLOT        1  PLOT CONTROL
                QSCAL        0.  HYDROGRAPH PLOT SCALE

    IT       HYDROGRAPH TIME DATA
                 NMIN       15  MINUTES IN COMPUTATION INTERVAL
                IDATE     1    0  STARTING DATE
                ITIME      0000  STARTING TIME
                  NQ       289  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE      4    0  ENDING DATE
               NDTIME       0000  ENDING TIME
                ICENT       19  CENTURY MARK

              COMPUTATION INTERVAL     .25 HOURS
                 TOTAL TIME BASE   72.00 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


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *           *
  18 KK   *     T1    *     THOMAS CREEK WATERSHED T1
          *           *
          ***************

            SUBBASIN RUNOFF DATA

  19 BA         SUBBASIN CHARACTERISTICS
                  TAREA      2.50  SUBBASIN AREA

              PRECIPITATION DATA

  20 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .42     .83    1.45    1.87    2.26    3.18    4.31    5.44    .00     .00     .00     .00

                                     STORM AREA =  109.00

  21 LS         SCS LOSS RATE
                  STRTL        .90  INITIAL ABSTRACTION
                 CRVNBR      69.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

  22 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .35  LAG

                                      ***

                                         UNIT HYDROGRAPH
                                    9 END-OF-PERIOD ORDINATES
          1333.    2551.    1501.    619.    262.    111.     47.     22.      7.
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 23 KK        *   RT1-B     *      ROUTE T1 TO CONCENTRATION POINT B
              *             *
              ***************

                HYDROGRAPH ROUTING DATA

 24 RM              MUSKINGUM ROUTING
                      NSTPS          1 NUMBER OF SUBREACHES
                      AMSKK        .10 MUSKINGUM K
                          X        .40 MUSKINGUM X

                                            ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 25 KK        *      T2     *      THOMAS CREEK WATERSHED T2
              *             *
              ***************

                SUBBASIN RUNOFF DATA

 26 BA              SUBBASIN CHARACTERISTICS
                      TAREA       1.82  SUBBASIN AREA

                  PRECIPITATION DATA

 27 PH                                DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .40     .79    1.39   1.75    2.10    2.90    3.91    4.92     .00     .00     .00     .00

                                         STORM AREA =  109.00

 28 LS              SCS LOSS RATE
                      STRTL        1.45  INITIAL ABSTRACTION
                     CRVNBR       58.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 29 UD              SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .29  LAG

                                            ***

                                              UNIT HYDROGRAPH
                                          8 END-OF-PERIOD ORDINATES
             1414.     1973.     821.     309.     115.      44.      18.       4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 30 KK        *      T3     *      THOMAS CREEK WATERSHED T3
              *             *
              ***************

                SUBBASIN RUNOFF DATA

 31 BA              SUBBASIN CHARACTERISTICS
                      TAREA        .82  SUBBASIN AREA

                  PRECIPITATION DATA

 32 PH                                DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .41     .80    1.40   1.73    2.04    2.76    3.75    4.73     .00     .00     .00     .00

                                         STORM AREA =  109.00

 33 LS              SCS LOSS RATE
                      STRTL        1.39  INITIAL ABSTRACTION
                     CRVNBR       59.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 34 UD              SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .30  LAG

                                            ***

                                              UNIT HYDROGRAPH
                                          8 END-OF-PERIOD ORDINATES
              598.      886.     389.     151.      58.      22.       9.       3.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 35 KK      *    CP-B     *    COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCCENTRATION PT B
            *             *
            ***************

 36 HC          HYDROGRAPH COMBINATION
                 ICOMP         3  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 37 KK      *    RCP-C    *    ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
            *             *
            ***************

             HYDROGRAPH ROUTING DATA

 38 RM          MUSKINGUM ROUTING
                 NSTPS        2 NUMBER OF SUBREACHES
                 AMSKK      .15 MUSKINGUM K
                    X      .40 MUSKINGUM X

                                         ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 39 KK      *     T4      *    THOMAS CREEK WATERSHED T4
            *             *
            ***************

             SUBBASIN RUNOFF DATA

 40 BA          SUBBASIN CHARACTERISTICS
                 TAREA        2.16  SUBBASIN AREA

              PRECIPITATION DATA

 41 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY  4-DAY   7-DAY  10-DAY
                .39     .77    1.35    1.64    1.91    2.55    3.38    4.20     .00    .00     .00     .00

                                    STORM AREA =   109.00

 42 LS          SCS LOSS RATE
                 STRTL        1.45  INITIAL ABSTRACTION
                 CRVNBR      58.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

 43 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .54  LAG

                                         ***

                                          UNIT HYDROGRAPH
                                      13 END-OF-PERIOD ORDINATES
            441.    1375.    1525.    1059.    536.    298.    160.     85.     47.     25.
             15.       8.       2.




*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
 44 KK      *    CP-C     *    COMBINE ROUTED T1-T3 W/ T4
            *             *
            ***************

 45 HC          HYDROGRAPH COMBINATION
                 ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 46 KK        *   RCP-D     *   ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
              *             *
              ***************

                HYDROGRAPH ROUTING DATA

 47 RM             MUSKINGUM ROUTING
                     NSTPS        2 NUMBER OF SUBREACHES
                     AMSKK      .14 MUSKINGUM K
                        X      .40 MUSKINGUM X

                                              ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 48 KK        *      T5     *   THOMAS CREEK WATERSHED T5
              *             *
              ***************

                SUBBASIN RUNOFF DATA

 49 BA             SUBBASIN CHARACTERISTICS
                     TAREA       1.19  SUBBASIN AREA

                 PRECIPITATION DATA

 50 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ..........
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .35     .68    1.20    1.40    1.59    2.04    2.75    3.40     .00     .00     .00     .00

                                    STORM AREA =  109.00

 51 LS             SCS LOSS RATE
                     STRTL        .82  INITIAL ABSTRACTION
                    CRVNBR      71.00  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

 52 UD             SCS DIMENSIONLESS UNITGRAPH
                      TLAG        .49  LAG

                                              ***

                                        UNIT HYDROGRAPH
                                    12 END-OF-PERIOD ORDINATES
                302.     883.     863.     503.     253.     131.      68.      35.      18.      10.
                  5.       1.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 53 KK        *    CP-D     *   COMBINE ROUTED T1-T4 W/ T5
              *             *
              ***************

 55 KO             OUTPUT CONTROL VARIABLES
                     IPRNT          1  PRINT CONTROL
                     IPLOT          1  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE

 54 HC             HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***
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*****************************************************************************************************************************

                                         HYDROGRAPH AT STATION     CP-D
                                           SUM OF  2 HYDROGRAPHS

*****************************************************************************************************************************
                        *                         *                           *
  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW
                        *                         *                           *
  1   0000    1      0.  *  1   1815  74    412.  *  2   1230 147      0.  *  3   0645 220      0.
  1   0015    2      0.  *  1   1830  75    391.  *  2   1245 148      0.  *  3   0700 221      0.
  1   0030    3      0.  *  1   1845  76    358.  *  2   1300 149      0.  *  3   0715 222      0.
  1   0045    4      0.  *  1   1900  77    320.  *  2   1315 150      0.  *  3   0730 223      0.
  1   0100    5      0.  *  1   1915  78    300.  *  2   1330 151      0.  *  3   0745 224      0.
  1   0115    6      0.  *  1   1930  79    291.  *  2   1345 152      0.  *  3   0800 225      0.
  1   0130    7      0.  *  1   1945  80    283.  *  2   1400 153      0.  *  3   0815 226      0.
  1   0145    8      0.  *  1   2000  81    277.  *  2   1415 154      0.  *  3   0830 227      0.
  1   0200    9      0.  *  1   2015  82    272.  *  2   1430 155      0.  *  3   0845 228      0.
  1   0215   10      0.  *  1   2030  83    267.  *  2   1445 156      0.  *  3   0900 229      0.
  1   0230   11      0.  *  1   2045  84    262.  *  2   1500 157      0.  *  3   0915 230      0.
  1   0245   12      0.  *  1   2100  85    258.  *  2   1515 158      0.  *  3   0930 231      0.
  1   0300   13      0.  *  1   2115  86    254.  *  2   1530 159      0.  *  3   0945 232      0.
  1   0315   14      0.  *  1   2130  87    250.  *  2   1545 160      0.  *  3   1000 233      0.
  1   0330   15      0.  *  1   2145  88    247.  *  2   1600 161      0.  *  3   1015 234      0.
  1   0345   16      0.  *  1   2200  89    243.  *  2   1615 162      0.  *  3   1030 235      0.
  1   0400   17      0.  *  1   2215  90    240.  *  2   1630 163      0.  *  3   1045 236      0.
  1   0415   18      0.  *  1   2230  91    237.  *  2   1645 164      0.  *  3   1100 237      0.
  1   0430   19      0.  *  1   2245  92    234.  *  2   1700 165      0.  *  3   1115 238      0.
  1   0445   20      0.  *  1   2300  93    231.  *  2   1715 166      0.  *  3   1130 239      0.
  1   0500   21      0.  *  1   2315  94    228.  *  2   1730 167      0.  *  3   1145 240      0.
  1   0515   22      0.  *  1   2330  95    225.  *  2   1745 168      0.  *  3   1200 241      0.
  1   0530   23      0.  *  1   2345  96    223.  *  2   1800 169      0.  *  3   1215 242      0.
  1   0545   24      0.  *  2   0000  97    220.  *  2   1815 170      0.  *  3   1230 243      0.
  1   0600   25      0.  *  2   0015  98    212.  *  2   1830 171      0.  *  3   1245 244      0.
  1   0615   26      0.  *  2   0030  99    179.  *  2   1845 172      0.  *  3   1300 245      0.
  1   0630   27      0.  *  2   0045 100    114.  *  2   1900 173      0.  *  3   1315 246      0.
  1   0645   28      0.  *  2   0100 101     48.  *  2   1915 174      0.  *  3   1330 247      0.
  1   0700   29      0.  *  2   0115 102     18.  *  2   1930 175      0.  *  3   1345 248      0.
  1   0715   30      0.  *  2   0130 103     10.  *  2   1945 176      0.  *  3   1400 249      0.
  1   0730   31      0.  *  2   0145 104      4.  *  2   2000 177      0.  *  3   1415 250      0.
  1   0745   32      0.  *  2   0200 105      2.  *  2   2015 178      0.  *  3   1430 251      0.
  1   0800   33      0.  *  2   0215 106      1.  *  2   2030 179      0.  *  3   1445 252      0.
  1   0815   34      0.  *  2   0230 107      0.  *  2   2045 180      0.  *  3   1500 253      0.
  1   0830   35      1.  *  2   0245 108      0.  *  2   2100 181      0.  *  3   1515 254      0.
  1   0845   36      4.  *  2   0300 109      0.  *  2   2115 182      0.  *  3   1530 255      0.
  1   0900   37     10.  *  2   0315 110      0.  *  2   2130 183      0.  *  3   1545 256      0.
  1   0915   38     17.  *  2   0330 111      0.  *  2   2145 184      0.  *  3   1600 257      0.
  1   0930   39     25.  *  2   0345 112      0.  *  2   2200 185      0.  *  3   1615 258      0.
  1   0945   40     35.  *  2   0400 113      0.  *  2   2215 186      0.  *  3   1630 259      0.
  1   1000   41     47.  *  2   0415 114      0.  *  2   2230 187      0.  *  3   1645 260      0.
  1   1015   42     61.  *  2   0430 115      0.  *  2   2245 188      0.  *  3   1700 261      0.
  1   1030   43     75.  *  2   0445 116      0.  *  2   2300 189      0.  *  3   1715 262      0.
  1   1045   44     92.  *  2   0500 117      0.  *  2   2315 190      0.  *  3   1730 263      0.
  1   1100   45    113.  *  2   0515 118      0.  *  2   2330 191      0.  *  3   1745 264      0.
  1   1115   46    140.  *  2   0530 119      0.  *  2   2345 192      0.  *  3   1800 265      0.
  1   1130   47    175.  *  2   0545 120      0.  *  3   0000 193      0.  *  3   1815 266      0.
  1   1145   48    224.  *  2   0600 121      0.  *  3   0015 194      0.  *  3   1830 267      0.
  1   1200   49    310.  *  2   0615 122      0.  *  3   0030 195      0.  *  3   1845 268      0.
  1   1215   50    516.  *  2   0630 123      0.  *  3   0045 196      0.  *  3   1900 269      0.
  1   1230   51    946.  *  2   0645 124      0.  *  3   0100 197      0.  *  3   1915 270      0.
  1   1245   52   1449.  *  2   0700 125      0.  *  3   0115 198      0.  *  3   1930 271      0.
  1   1300   53   1604.  *  2   0715 126      0.  *  3   0130 199      0.  *  3   1945 272      0.
  1   1315   54   1274.  *  2   0730 127      0.  *  3   0145 200      0.  *  3   2000 273      0.
  1   1330   55    935.  *  2   0745 128      0.  *  3   0200 201      0.  *  3   2015 274      0.
  1   1345   56    839.  *  2   0800 129      0.  *  3   0215 202      0.  *  3   2030 275      0.
  1   1400   57    774.  *  2   0815 130      0.  *  3   0230 203      0.  *  3   2045 276      0.
  1   1415   58    707.  *  2   0830 131      0.  *  3   0245 204      0.  *  3   2100 277      0.
  1   1430   59    673.  *  2   0845 132      0.  *  3   0300 205      0.  *  3   2115 278      0.
  1   1445   60    633.  *  2   0900 133      0.  *  3   0315 206      0.  *  3   2130 279      0.
  1   1500   61    608.  *  2   0915 134      0.  *  3   0330 207      0.  *  3   2145 280      0.
  1   1515   62    586.  *  2   0930 135      0.  *  3   0345 208      0.  *  3   2200 281      0.
  1   1530   63    564.  *  2   0945 136      0.  *  3   0400 209      0.  *  3   2215 282      0.
  1   1545   64    540.  *  2   1000 137      0.  *  3   0415 210      0.  *  3   2230 283      0.
  1   1600   65    510.  *  2   1015 138      0.  *  3   0430 211      0.  *  3   2245 284      0.
  1   1615   66    492.  *  2   1030 139      0.  *  3   0445 212      0.  *  3   2300 285      0.
  1   1630   67    477.  *  2   1045 140      0.  *  3   0500 213      0.  *  3   2315 286      0.
  1   1645   68    466.  *  2   1100 141      0.  *  3   0515 214      0.  *  3   2330 287      0.
  1   1700   69    455.  *  2   1115 142      0.  *  3   0530 215      0.  *  3   2345 288      0.
  1   1715   70    446.  *  2   1130 143      0.  *  3   0545 216      0.  *  4   0000 289      0.
  1   1730   71    437.  *  2   1145 144      0.  *  3   0600 217      0.  *
  1   1745   72    429.  *  2   1200 145      0.  *  3   0615 218      0.  *
  1   1800   73    422.  *  2   1215 146      0.  *  3   0630 219      0.  *
                        *                         *                           *
*********************************************************************************************

   PEAK FLOW      TIME                  MAXIMUM AVERAGE FLOW
                               6-HR       24-HR       72-HR    72.00-HR
 +  (CFS)       (HR)
                       (CFS)
 +    1604.     13.00              697.       263.        88.         88.
                      (INCHES)    .763       1.151       1.151       1.151
                       (AC-FT)    346.        521.        521.        521.

                      CUMULATIVE AREA =    8.49 SQ MI
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 56 KK    *   RCP-E     *     ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

 57 RM          MUSKINGUM ROUTING
                  NSTPS        5 NUMBER OF SUBREACHES
                  AMSKK      .84 MUSKINGUM K
                     X       .20 MUSKINGUM X

                                                ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 58 KK    *      T6     *     THOMAS CREEK WATERSHED T6
          *             *
          ***************

             SUBBASIN RUNOFF DATA

 59 BA          SUBBASIN CHARACTERISTICS
                  TAREA       3.15  SUBBASIN AREA

              PRECIPITATION DATA

 60 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .35     .69    1.21    1.34    1.48    1.80    2.30    2.80     .00     .00     .00     .00

                                           STORM AREA =  109.00

 61 LS          SCS LOSS RATE
                  STRTL        .67  INITIAL ABSTRACTION
                 CRVNBR      75.00  CURVE NUMBER
                  RTIMP       5.00  PERCENT IMPERVIOUS AREA

 62 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG        .85  LAG

                                                ***

                                             UNIT HYDROGRAPH
                                          19 END-OF-PERIOD ORDINATES
            236.     773.    1401.    1559.    1364.     991.     615.     408.     273.     178.
            117.      77.      51.      33.      22.      15.      10.       6.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 63 KK    *    CP-E     *     COMBINE ROUTED T1-T5 W/ T6
          *             *
          ***************

 64 HC          HYDROGRAPH COMBINATION
                  ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 65 KK    *    RT-HN    *     ROUTE THOMAS CK WATERSHED TO HUFFAKER NARROWS
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

 66 RM          MUSKINGUM ROUTING
                  NSTPS        5 NUMBER OF SUBREACHES
                  AMSKK     1.49 MUSKINGUM K
                     X       .10 MUSKINGUM X

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

          ***************
          *             *
 67 KK    *      W1     *    WHITES CREEK WATERSHED NO. 1
          *             *
          ***************

             SUBBASIN RUNOFF DATA

 68 BA          SUBBASIN CHARACTERISTICS
                  TAREA        1.36  SUBBASIN AREA

              PRECIPITATION DATA

 69 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ................ TP-40 ................   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .39     .77    1.35    1.83    2.28    3.34    4.43    5.52     .00     .00     .00     .00

                                    STORM AREA =  109.00

 70 LS          SCS LOSS RATE
                  STRTL         .74  INITIAL ABSTRACTION
                 CRVNBR       73.00  CURVE NUMBER
                  RTIMP         .00  PERCENT IMPERVIOUS AREA

 71 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG         .21  LAG

                                              ***

                                       UNIT HYDROGRAPH
                                    6 END-OF-PERIOD ORDINATES
           1668.    1317.     374.     109.      33.      10.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 72 KK    *      W2     *    WHITES CREEK WATERSHED NO. 2
          *             *
          ***************

             SUBBASIN RUNOFF DATA

 73 BA          SUBBASIN CHARACTERISTICS
                  TAREA         .84  SUBBASIN AREA

              PRECIPITATION DATA

 74 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ................ TP-40 ................   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .39     .77    1.35    1.80    2.23    3.22    4.31    5.39     .00     .00     .00     .00

                                    STORM AREA =  109.00

 75 LS          SCS LOSS RATE
                  STRTL         .50  INITIAL ABSTRACTION
                 CRVNBR       80.00  CURVE NUMBER
                  RTIMP         .00  PERCENT IMPERVIOUS AREA

 76 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG         .17  LAG

                                              ***

                                       UNIT HYDROGRAPH
                                    5 END-OF-PERIOD ORDINATES
           1316.     638.     163.      41.      11.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 77 KK    *    W1+W2    *    COMBINE FLOW FROM W1 AND W2
          *             *
          ***************

 78 HC          HYDROGRAPH COMBINATION
                  ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
 79 KK    *    RT-A    *    ROUTE COMBINED W1 AND W2 TO POINT A
          *            *
          **************

             HYDROGRAPH ROUTING DATA

 80 RM          MUSKINGUM ROUTING
                  NSTPS        1 NUMBER OF SUBREACHES
                  AMSKK      .12 MUSKINGUM K
                      X      .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
 81 KK    *     W3     *    WHITES CREEK WATERSHED NO. 3
          *            *
          **************

             SUBBASIN RUNOFF DATA

 82 BA          SUBBASIN CHARACTERISTICS
                  TAREA       1.38  SUBBASIN AREA

               PRECIPITATION DATA

 83 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                 .39     .77    1.36   1.78   2.18   3.12   4.15   5.17    .00    .00    .00    .00

                                       STORM AREA =  109.00

 84 LS          SCS LOSS RATE
                  STRTL        .78  INITIAL ABSTRACTION
                 CRVNBR      72.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

 85 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG        .23  LAG

                                        ***

                                          UNIT HYDROGRAPH
                                       7 END-OF-PERIOD ORDINATES
            1512.    1414.    438.    138.     44.     15.      1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
 86 KK    *    RT-A    *    ROUTE W3 TO POINT A
          *            *
          **************

             HYDROGRAPH ROUTING DATA

 87 RM          MUSKINGUM ROUTING
                  NSTPS        1 NUMBER OF SUBREACHES
                  AMSKK      .09 MUSKINGUM K
                      X      .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
 88 KK    *     W4     *    WHITES CREEK WATERSHED NO. 4
          *            *
          **************

             SUBBASIN RUNOFF DATA

 89 BA          SUBBASIN CHARACTERISTICS
                  TAREA       1.47  SUBBASIN AREA

               PRECIPITATION DATA
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```
90 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
          ..... HYDRO-35 ......  ................ TP-40 ................  ........... TP-49 ...........
          5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
           .38    .75    1.32    1.71   2.08   2.95   3.94   4.94    .00    .00    .00    .00

                                    STORM AREA =  109.00

91 LS         SCS LOSS RATE
               STRTL       1.23  INITIAL ABSTRACTION
              CRVNBR       62.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

92 UD          SCS DIMENSIONLESS UNITGRAPH
                TLAG        .27  LAG

                                           ***

                                      UNIT HYDROGRAPH
                                   7 END-OF-PERIOD ORDINATES
        1281.    1588.    594.    217.     77.     27.     10.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
93 KK     *    W1234    *    COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
          *             *
          ***************

94 HC          HYDROGRAPH COMBINATION
                ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                           ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
95 KK     *    RT-B     *    ROUTE COMBINED HYDROGRAPH TO POINT B
          *             *
          ***************

        HYDROGRAPH ROUTING DATA

96 RM          MUSKINGUM ROUTING
                NSTPS          1 NUMBER OF SUBREACHES
                AMSKK        .08 MUSKINGUM K
                    X      .40 MUSKINGUM X

                                           ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
97 KK     *     W5      *    WHITES CREEK WATERSHED NO. 5
          *             *
          ***************

        SUBBASIN RUNOFF DATA

98 BA          SUBBASIN CHARACTERISTICS
                TAREA       1.27  SUBBASIN AREA

          PRECIPITATION DATA

99 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
          ..... HYDRO-35 ......  ................ TP-40 ................  ........... TP-49 ...........
          5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
           .38    .75    1.31    1.67   2.01   2.80   3.78   4.77    .00    .00    .00    .00

                                    STORM AREA =  109.00

100 LS         SCS LOSS RATE
                STRTL       1.23  INITIAL ABSTRACTION
               CRVNBR       62.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

101 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .28  LAG

                                           ***

                                      UNIT HYDROGRAPH
                                   8 END-OF-PERIOD ORDINATES
        1044.    1375.    545.    202.     74.     27.     11.      1.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 102 KK       *   W5+CH    *   COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
              *            *
              **************

 103 HC         HYDROGRAPH COMBINATION
                 ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 104 KK       *    RT-C    *   ROUTE COMBINED HYDROGRAPH TO POINT C
              *            *
              **************

            HYDROGRAPH ROUTING DATA

 105 RM         MUSKINGUM ROUTING
                 NSTPS         2 NUMBER OF SUBREACHES
                 AMSKK       .19 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 106 KK       *     W6     *   WHITES CREEK WATERSHED NO. 6
              *            *
              **************

            SUBBASIN RUNOFF DATA

 107 BA         SUBBASIN CHARACTERISTICS
                 TAREA       1.43  SUBBASIN AREA

              PRECIPITATION DATA

 108 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   .......... TP-49 ..........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .36     .71    1.24    1.55    1.86    2.56    3.34    4.12     .00     .00     .00     .00

                                        STORM AREA =  109.00

 109 LS         SCS LOSS RATE
                 STRTL        1.28  INITIAL ABSTRACTION
                CRVNBR       61.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

 110 UD         SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .44  LAG

                                         ***

                                            UNIT HYDROGRAPH
                                         11 END-OF-PERIOD ORDINATES
            465.    1207.    1031.     506.     250.     122.      59.      29.      14.       7.
              2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
 111 KK       *   W6+CH    *   COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
              *            *
              **************

 112 HC         HYDROGRAPH COMBINATION
                 ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
113 KK    *    RT-D     *    ROUTE COMBINED HYDROGRAPH TO POINT D
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

114 RM          MUSKINGUM ROUTING
                 NSTPS        3 NUMBER OF SUBREACHES
                 AMSKK      .30 MUSKINGUM K
                    X      .40 MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
115 KK    *     W7      *    WHITES CREEK WATERSHED NO.7
          *             *
          ***************

             SUBBASIN RUNOFF DATA

116 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.30  SUBBASIN AREA

              PRECIPITATION DATA

117 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .33     .64    1.12    1.34    1.55    2.03    2.69    3.36     .00     .00     .00     .00

                                        STORM AREA =  109.00

118 LS          SCS LOSS RATE
                 STRTL         .94  INITIAL ABSTRACTION
                CRVNBR       68.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

119 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .50  LAG

                                         ***

                                              UNIT HYDROGRAPH
                                        12 END-OF-PERIOD ORDINATES
            314.     942.     942.     567.     284.     149.      78.      41.      21.      11.
              6.       2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
120 KK    *   W7+CH     *    COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
          *             *
          ***************

121 HC          HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
122 KK    *    RT-E     *    ROUTE COMBINED HYDROGRAPH TO POINT E
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

123 RM          MUSKINGUM ROUTING
                 NSTPS        2 NUMBER OF SUBREACHES
                 AMSKK      .14 MUSKINGUM K
                    X      .40 MUSKINGUM X

                                         ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
124 KK   *     W8      *     WHITES CREEK WATERSHED NO. 8
         *             *
         ***************

           SUBBASIN RUNOFF DATA

125 BA          SUBBASIN CHARACTERISTICS
                  TAREA       4.37  SUBBASIN AREA

             PRECIPITATION DATA

126 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .32     .64    1.12    1.28    1.43    1.79    2.29    2.79     .00     .00     .00     .00

                                     STORM AREA =  109.00

127 LS          SCS LOSS RATE
                  STRTL         .94  INITIAL ABSTRACTION
                 CRVNBR       68.00  CURVE NUMBER
                  RTIMP         .00  PERCENT IMPERVIOUS AREA

128 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG         .53  LAG

                                             ***

                                         UNIT HYDROGRAPH
                                     13 END-OF-PERIOD ORDINATES
            929.    2870.    3106.    2090.    1051.     581.     310.     164.      89.      47.
             28.      14.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
129 KK   *    W8+CH    *     COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
         *             *
         ***************

130 HC          HYDROGRAPH COMBINATION
                  ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                             ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
131 KK   *    RT-F     *     ROUTE COMBINED HYDROGRAPH TO POINT F
         *             *
         ***************

           HYDROGRAPH ROUTING DATA

132 RM          MUSKINGUM ROUTING
                  NSTPS           1  NUMBER OF SUBREACHES
                  AMSKK         .24  MUSKINGUM K
                      X         .20  MUSKINGUM X

                                             ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
133 KK   *     46      *     WHITES CREEK WATERSHED 46
         *             *
         ***************

           SUBBASIN RUNOFF DATA

134 BA          SUBBASIN CHARACTERISTICS
                  TAREA       2.69  SUBBASIN AREA

             PRECIPITATION DATA

135 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .38     .70    1.23    1.39    1.52    1.78    2.28    2.75     .00     .00     .00     .00

                                     STORM AREA =  109.00
```

```
136 LS          SCS LOSS RATE
                 STRTL       1.03  INITIAL ABSTRACTION
                CRVNBR       66.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

137 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .50  LAG

                                          ***

                                    UNIT HYDROGRAPH
                                 12 END-OF-PERIOD ORDINATES
        649.     1946.     1946.     1173.     587.     306.     161.      84.      44.      23.
         13.        4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


        ***************
        *             *
138 KK  *    46+CH    *    COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
        *             *
        ***************

139 HC          HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


        ***************
        *             *
140 KK  *    RT-HN    *    ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
        *             *
        ***************

            HYDROGRAPH ROUTING DATA

141 RM          MUSKINGUM ROUTING
                 NSTPS          5 NUMBER OF SUBREACHES
                 AMSKK       1.76 MUSKINGUM K
                     X        .10 MUSKINGUM X

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


        ***************
        *             *
142 KK  *      G1     *    GLENA CREEK WATERSHED NO.1
        *             *
        ***************

            SUBBASIN RUNOFF DATA

143 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.63  SUBBASIN AREA

             PRECIPITATION DATA

144 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .40     .79    1.39    1.85    2.29    3.31    4.46    5.60     .00     .00     .00     .00

                                    STORM AREA =  109.00

145 LS          SCS LOSS RATE
                 STRTL        .67  INITIAL ABSTRACTION
                CRVNBR      75.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

146 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .20  LAG

                                          ***

                                    UNIT HYDROGRAPH
                                  6 END-OF-PERIOD ORDINATES
       2126.     1505.     415.     117.      33.       9.
```

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

              ***************
              *             *
147 KK        *    RT-G     *    ROUTE G1 TO POINT G
              *             *
              ***************

         HYDROGRAPH ROUTING DATA

148 RM          MUSKINGUM ROUTING
                 NSTPS        1 NUMBER OF SUBREACHES
                 AMSKK      .10 MUSKINGUM K
                    X       .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
149 KK        *     G2      *    GALENA CREEK WATERSHED NO. 2
              *             *
              ***************

         SUBBASIN RUNOFF DATA

150 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.30  SUBBASIN AREA

          PRECIPITATION DATA

151 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
          ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
          5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
            .39     .77    1.35    1.76    2.16    3.08    4.10    5.12     .00     .00     .00     .00

                                        STORM AREA =  109.00

152 LS          SCS LOSS RATE
                 STRTL        .67  INITIAL ABSTRACTION
                CRVNBR      75.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

153 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .20  LAG

                                        ***

                                             UNIT HYDROGRAPH
                                         6 END-OF-PERIOD ORDINATES
       1697.    1200.     331.      93.      27.       7.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
154 KK        *     G3      *    GALENA CREEK WATERSHED NO. 3
              *             *
              ***************

         SUBBASIN RUNOFF DATA

155 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.15  SUBBASIN AREA

          PRECIPITATION DATA

156 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
          ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
          5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
            .38     .74    1.30    1.69    2.05    2.90    3.95    4.99     .00     .00     .00     .00

                                        STORM AREA =  109.00

157 LS          SCS LOSS RATE
                 STRTL        .90  INITIAL ABSTRACTION
                CRVNBR      69.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

158 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .36  LAG

                                        ***

                                             UNIT HYDROGRAPH
                                         9 END-OF-PERIOD ORDINATES
        576.    1151.     721.     297.     129.      55.      24.      11.       4.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
159 KK    *    G123    *    COMBINE ROUTED G1 WITH G2 AND G3
          *            *
          **************

160 HC          HYDROGRAPH COMBINATION
                 ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
161 KK    *    RT-H    *    ROUTE COMBINED HYDROGRAPH TO POINT H
          *            *
          **************

             HYDROGRAPH ROUTING DATA

162 RM          MUSKINGUM ROUTING
                 NSTPS        2 NUMBER OF SUBREACHES
                 AMSKK      .17 MUSKINGUM K
                    X      .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
163 KK    *     G4     *    GALENA CREEK WATERSHED NO. 4
          *            *
          **************

             SUBBASIN RUNOFF DATA

164 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.54  SUBBASIN AREA

              PRECIPITATION DATA

165 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .38     .75    1.32   1.68    2.02    2.83    3.79    4.74     .00     .00     .00     .00

                                  STORM AREA =  109.00

166 LS          SCS LOSS RATE
                 STRTL        1.17  INITIAL ABSTRACTION
                CRVNBR        63.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

167 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .25  LAG

                                        ***

                                        UNIT HYDROGRAPH
                                     7 END-OF-PERIOD ORDINATES
           1506.    1637.     550.     191.     64.     22.      7.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
168 KK    *     G5     *    GALENA CREEK WATERSHED NO. 5
          *            *
          **************

             SUBBASIN RUNOFF DATA

169 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.02  SUBBASIN AREA

              PRECIPITATION DATA

170 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .38     .75    1.32   1.67    1.99    2.75    3.70    4.64     .00     .00     .00     .00

                                  STORM AREA =  109.00
```

```
171 LS         SCS LOSS RATE
                STRTL       1.64  INITIAL ABSTRACTION
               CRVNBR       55.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

172 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .32  LAG

                                   ***

                                  UNIT HYDROGRAPH
                                8 END-OF-PERIOD ORDINATES
           657.    1091.    531.    216.     85.     34.     14.      6.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

        **************
        *            *
173 KK  *    G1-5    *    COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
        *            *
        **************

174 HC         HYDROGRAPH COMBINATION
                ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                   ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

        **************
        *            *
175 KK  *    RT-I    *    ROUTE COMBINED HYDROGRAPHS TO POINT I
        *            *
        **************

           HYDROGRAPH ROUTING DATA

176 RM         MUSKINGUM ROUTING
                NSTPS          2 NUMBER OF SUBREACHES
                AMSKK        .17 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                   ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

        **************
        *            *
177 KK  *     G6     *    GALENA CREEK WATERSHED NO.6
        *            *
        **************

           SUBBASIN RUNOFF DATA

178 BA         SUBBASIN CHARACTERISTICS
                TAREA       1.37  SUBBASIN AREA

            PRECIPITATION DATA

179 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .37    .72    1.26   1.57   1.87   2.56   3.33   4.10    .00    .00    .00    .00

                                  STORM AREA =  109.00

180 LS         SCS LOSS RATE
                STRTL       1.39  INITIAL ABSTRACTION
               CRVNBR       59.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

181 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .58  LAG

                                   ***

                                  UNIT HYDROGRAPH
                                14 END-OF-PERIOD ORDINATES
           239.     778.     931.     713.     383.     219.     122.      68.      38.      22.
            12.       7.       4.       0.
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
182 KK    *    G8+CH    *     COMBINE G8 WITH COMBINED HYDROGRAPH AT POINT I
          *             *
          ***************

183 HC         HYDROGRAPH COMBINATION
                ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
184 KK    *    RT-K     *     ROUTE COMBINED HYDROGRAPH TO POINT K
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

185 RM         MUSKINGUM ROUTING
                NSTPS         1 NUMBER OF SUBREACHES
                AMSKK       .07 MUSKINGUM K
                   X      .40 MUSKINGUM X

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
186 KK    *     J1      *     JONES CREEK WATERSHED NO. 1
          *             *
          ***************

             SUBBASIN RUNOFF DATA

187 BA         SUBBASIN CHARACTERISTICS
                TAREA        1.29  SUBBASIN AREA

              PRECIPITATION DATA

188 PH                              DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY  4-DAY   7-DAY  10-DAY
                .39     .76    1.33   1.67   2.00   2.75   3.69    4.62     .00    .00     .00     .00

                                         STORM AREA =  109.00

189 LS         SCS LOSS RATE
                STRTL        1.17  INITIAL ABSTRACTION
               CRVNBR       63.00  CURVE NUMBER
                RTIMP         .00  PERCENT IMPERVIOUS AREA

190 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .23  LAG

                                          ***

                                             UNIT HYDROGRAPH
                                         7 END-OF-PERIOD ORDINATES
            1413.    1322.    409.    129.     41.     14.      1.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
191 KK    *    RT-J     *     ROUTE JI TO POINT J
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

192 RM         MUSKINGUM ROUTING
                NSTPS         2 NUMBER OF SUBREACHES
                AMSKK       .19 MUSKINGUM K
                   X      .40 MUSKINGUM X

                                          ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
193 KK        *     J2      *     JONES CREEK WATERSHED NO. 2
              *             *
              ***************

           SUBBASIN RUNOFF DATA

194 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.95  SUBBASIN AREA

             PRECIPITATION DATA

195 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .35     .70    1.22   1.52   1.80   2.45   3.22   3.98    .00    .00    .00    .00

                                   STORM AREA =  109.00

196 LS          SCS LOSS RATE
                 STRTL        1.13  INITIAL ABSTRACTION
                CRVNBR       84.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

197 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .43  LAG

                                               ***

                                         UNIT HYDROGRAPH
                                     11 END-OF-PERIOD ORDINATES
           666.   1688.   1397.    663.    326.    156.     74.     36.     18.      8.
             1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
198 KK        *    J1+J2    *     COMBINE ROUTED J1 WITH J2 AT POINT J
              *             *
              ***************

199 HC          HYDROGRAPH COMBINATION
                 ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                               ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
200 KK        *    RT-K     *     ROUTE COMBINED J1 AND J2 TO POINT K
              *             *
              ***************

           HYDROGRAPH ROUTING DATA

201 RM          MUSKINGUM ROUTING
                 NSTPS           1  NUMBER OF SUBREACHES
                 AMSKK         .10  MUSKINGUM K
                     X         .40  MUSKINGUM X

                                               ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
202 KK        *     G8      *     GALENA CREEK WATERSHED NO.8
              *             *
              ***************

           SUBBASIN RUNOFF DATA

203 BA          SUBBASIN CHARACTERISTICS
                 TAREA        2.19  SUBBASIN AREA

             PRECIPITATION DATA

204 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .34     .66    1.16   1.40   1.62   2.13   2.77   3.41    .00    .00    .00    .00

                                   STORM AREA =  109.00
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```
205 LS         SCS LOSS RATE
                STRTL        .90  INITIAL ABSTRACTION
               CRVNBR       69.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

206 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .35  LAG

                                         ***

                                              UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
          1168.    2235.    1315.    543.    230.     97.     41.     19.      6.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
207 KK    *     G+J     *    COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
          *             *
          ***************

208 HC          HYDROGRAPH COMBINATION
                 ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
209 KK    *    RT-L     *    ROUTE COMBINED HYDROGRAPH TO PT L
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

210 RM          MUSKINGUM ROUTING
                 NSTPS        1  NUMBER OF SUBREACHES
                 AMSKK      .13  MUSKINGUM K
                    X      .40  MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
211 KK    *     G7      *    GALENA CREEK WATERSHED NO. 7
          *             *
          ***************

            SUBBASIN RUNOFF DATA

212 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.50  SUBBASIN AREA

             PRECIPITATION DATA

213 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .35    .69    1.22   1.50   1.77   2.40   3.10   3.80    .00    .00    .00    .00

                                       STORM AREA =  109.00

214 LS          SCS LOSS RATE
                 STRTL       1.23  INITIAL ABSTRACTION
                CRVNBR      62.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

215 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .36  LAG

                                         ***

                                              UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
           752.    1501.    840.    388.    168.     72.     31.     14.      5.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
216 KK       *    RT-L     *    ROUTE G7 TO POINT L
             *             *
             ***************

              HYDROGRAPH ROUTING DATA

217 RM          MUSKINGUM ROUTING
                 NSTPS        1 NUMBER OF SUBREACHES
                 AMSKK      .13 MUSKINGUM K
                    X       .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
218 KK       *     G9      *    GALENA CREEK WATERSHED NO. 9
             *             *
             ***************

              SUBBASIN RUNOFF DATA

219 BA          SUBBASIN CHARACTERISTICS
                 TAREA       3.07  SUBBASIN AREA

               PRECIPITATION DATA

220 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .33     .65    1.14    1.35    1.56    2.04    2.60    3.16     .00     .00     .00     .00

                                           STORM AREA =   109.00

221 LS          SCS LOSS RATE
                 STRTL        .90  INITIAL ABSTRACTION
                CRVNBR      69.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

222 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG       1.67  LAG

                                        ***

                                             UNIT HYDROGRAPH
                                        35 END-OF-PERIOD ORDINATES
              47.      141.      280.      478.      672.      786.      824.      811.      737.      649.
             530.      404.      317.      252.      204.      164.      129.      104.       83.       65.
              52.       41.       33.       27.       21.       17.       13.       11.        9.        7.
               6.        5.        3.        2.        1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
223 KK       *    PT-L     *    COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
             *             *
             ***************

224 HC          HYDROGRAPH COMBINATION
                 ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
225 KK       *    RT-PV    *    ROUTE COMBINED HYDROGRAPH TO PLEASENT VALLEY
             *             *
             ***************

              HYDROGRAPH ROUTING DATA

226 RM          MUSKINGUM ROUTING
                 NSTPS        2 NUMBER OF SUBREACHES
                 AMSKK      .17 MUSKINGUM K
                    X       .20 MUSKINGUM X

                                        ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
227 KK      *     B1     *     BROWNS CREEK WATERSHED NO. 1
            *            *
            **************

             SUBBASIN RUNOFF DATA

228 BA          SUBBASIN CHARACTERISTICS
                 TAREA       2.18  SUBBASIN AREA

              PRECIPITATION DATA

229 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .38     .74    1.30    1.83    1.95    2.70    3.62    4.53     .00     .00     .00     .00

                                   STORM AREA =  109.00

230 LS          SCS LOSS RATE
                 STRTL       1.23  INITIAL ABSTRACTION
                CRVNBR      62.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

231 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .44  LAG

                                          ***

                                      UNIT HYDROGRAPH
                                    11 END-OF-PERIOD ORDINATES
             709.    1840.    1572.    771.    381.    185.     89.     44.     21.     11.
               2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
232 KK      *    RT-M    *     ROUTE B1 TO POINT M
            *            *
            **************

             HYDROGRAPH ROUTING DATA

233 RM          MUSKINGUM ROUTING
                 NSTPS          2  NUMBER OF SUBREACHES
                 AMSKK        .17  MUSKINGUM K
                     X        .40  MUSKINGUM X

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
234 KK      *     B2     *     BROWNS CREEK WATERSHED NO. 2
            *            *
            **************

             SUBBASIN RUNOFF DATA

235 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.42  SUBBASIN AREA

              PRECIPITATION DATA

236 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .38     .71    1.25    1.55    1.83    2.49    3.25    4.00     .00     .00     .00     .00

                                   STORM AREA =  109.00

237 LS          SCS LOSS RATE
                 STRTL       1.33  INITIAL ABSTRACTION
                CRVNBR      60.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

238 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .35  LAG

                                          ***

                                      UNIT HYDROGRAPH
                                    9 END-OF-PERIOD ORDINATES
             757.    1449.     852.    352.    149.     63.     27.     12.      4.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
239 KK    *   B1+B2     *    COMBINE ROUTED B1 WITH B2 AT POINT M
          *             *
          ***************

240 HC       HYDROGRAPH COMBINATION
              ICOMP        2  NUMBER OF HYDROGRAPHS TO COMBINE

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
241 KK    *   RT-N      *    ROUTE COMBINED HYDROGRAPH TO POINT N
          *             *
          ***************

          HYDROGRAPH ROUTING DATA

242 RM       MUSKINGUM ROUTING
              NSTPS        1 NUMBER OF SUBREACHES
              AMSKK      .10 MUSKINGUM K
                 X      .40 MUSKINGUM X

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
243 KK    *     B3      *    BROWNS CREEK WATERSHED NO. 3
          *             *
          ***************

          SUBBASIN RUNOFF DATA

244 BA       SUBBASIN CHARACTERISTICS
              TAREA       .53  SUBBASIN AREA

           PRECIPITATION DATA

245 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
            .34    .67    1.18   1.43   1.66   2.22   2.82   3.42    .00    .00    .00    .00

                                   STORM AREA =  109.00

246 LS       SCS LOSS RATE
              STRTL       .99  INITIAL ABSTRACTION
             CRVNBR      67.00  CURVE NUMBER
              RTIMP       .00  PERCENT IMPERVIOUS AREA

247 UD       SCS DIMENSIONLESS UNITGRAPH
               TLAG       .36  LAG

                                   ***

                                      UNIT HYDROGRAPH
                                   9 END-OF-PERIOD ORDINATES
          266.     530.     332.     137.      59.      26.      11.       5.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
248 KK    *   B123      *    COMBINE ROUTED B1 AND B2 WITH B3
          *             *
          ***************

249 HC       HYDROGRAPH COMBINATION
              ICOMP        2  NUMBER OF HYDROGRAPHS TO COMBINE

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

           ***************
           *             *
250 KK     *   RT-PV     *    ROUTE BROWNS CREEK HYDROGRAPH TO PLEASENT VALLEY
           *             *
           ***************

              HYDROGRAPH ROUTING DATA

251 RM          MUSKINGUM ROUTING
                 NSTPS         3 NUMBER OF SUBREACHES
                 AMSKK       .31 MUSKINGUM K
                    X      .20 MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
252 KK     *   PLEASV    *    COMBINE GALENA CK AND BROWNS CK AT PLEASENT VALLEY
           *             *
           ***************

253 HC          HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
254 KK     *   RT-SG     *    ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
           *             *
           ***************

              HYDROGRAPH ROUTING DATA

255 RM          MUSKINGUM ROUTING
                 NSTPS         3 NUMBER OF SUBREACHES
                 AMSKK       .21 MUSKINGUM K
                    X      .20 MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
256 KK     *     30      *    STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
           *             *
           ***************

              SUBBASIN RUNOFF DATA

257 BA          SUBBASIN CHARACTERISTICS
                 TAREA      17.80  SUBBASIN AREA

258 BF          BASE FLOW CHARACTERISTICS
                 STRTQ     500.00  INITIAL FLOW
                 QRCSN      500.00  BEGIN BASE FLOW RECESSION
                 RTIOR    1.00000  RECESSION CONSTANT

               PRECIPITATION DATA

259 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                 .32    .64    1.12   1.28   1.44   1.80   2.34   2.87    .00    .00    .00    .00

                                    STORM AREA =  109.00

260 LS          SCS LOSS RATE
                 STRTL        .60  INITIAL ABSTRACTION
                CRVNBR       77.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

261 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .82  LAG

                                         ***

                                      UNIT HYDROGRAPH
                                  18 END-OF-PERIOD ORDINATES
          1439.    4783.    8404.    9052.    7665.    5238.    3268.    2163.    1391.     912.
           591.     382.     250.     163.     106.      75.      46.      22.
```

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

          ***************
          *             *
262 KK    *   STMBT     *    COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
          *             *
          ***************

263 HC        HYDROGRAPH COMBINATION
                ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                       ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
264 KK    *   RT-341    *    ROUTE COMBINED HYDROGRAPH TO HWY 341
          *             *
          ***************

           HYDROGRAPH ROUTING DATA

265 RM        MUSKINGUM ROUTING
                NSTPS         2 NUMBER OF SUBREACHES
                AMSKK       .41 MUSKINGUM K
                    X       .20 MUSKINGUM X

                                       ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
266 KK    *     35      *    WATERSHED 35 AKA BAILEY CANYON
          *             *
          ***************

           SUBBASIN RUNOFF DATA

267 BA        SUBBASIN CHARACTERISTICS
                TAREA     15.50  SUBBASIN AREA

268 BF        BASE FLOW CHARACTERISTICS
                STRTQ       .00  INITIAL FLOW
                QRCSN       .00  BEGIN BASE FLOW RECESSION
                RTIOR   1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

269 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .39     .77    1.34   1.53   1.68   1.98   2.51   3.04    .00    .00    .00     .00

                                      STORM AREA =  109.00

270 LS        SCS LOSS RATE
                STRTL       .44  INITIAL ABSTRACTION
               CRVNBR     82.00  CURVE NUMBER
                RTIMP       .00  PERCENT IMPERVIOUS AREA

271 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG       .72  LAG

                                       ***

                                          UNIT HYDROGRAPH
                                     16 END-OF-PERIOD ORDINATES
          1648.    5702.    8695.    8318.    6201.    3605.    2249.    1389.     864.     527.
           327.     203.     125.      82.      51.      24.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
272 KK    *     40      *    WATERSHED NO.40
          *             *
          ***************

           SUBBASIN RUNOFF DATA

273 BA        SUBBASIN CHARACTERISTICS
                TAREA      2.63  SUBBASIN AREA
```

```
268 BF        BASE FLOW CHARACTERISTICS
               STRTQ        .00  INITIAL FLOW
               QRCSN        .00  BEGIN BASE FLOW RECESSION
               RTIOR    1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

274 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .35     .69    1.21    1.38    1.51    1.78    2.29    2.81     .00     .00     .00     .00

                              STORM AREA =  109.00

275 LS        SCS LOSS RATE
               STRTL        .60  INITIAL ABSTRACTION
              CRVNBR      77.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

276 UD        SCS DIMENSIONLESS UNITGRAPH
               TLAG         .49  LAG

                                 ***

                                   UNIT HYDROGRAPH
                                12 END-OF-PERIOD ORDINATES
           667.    1952.    1908.    1112.     558.     290.     150.      77.      40.      21.
            11.       3.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
277 KK   *   HY-341    *   COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
         *             *
         ***************

278 HC        HYDROGRAPH COMBINATION
               ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                 ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
279 KK   *   RT-HN     *   ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
         *             *
         ***************

           HYDROGRAPH ROUTING DATA

280 RM        MUSKINGUM ROUTING
               NSTPS          5  NUMBER OF SUBREACHES
               AMSKK       2.28  MUSKINGUM K
                  X         .10  MUSKINGUM X

                                 ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
281 KK   *     60      *   WATERSHED NO. 60
         *             *
         ***************

           SUBBASIN RUNOFF DATA

282 BA        SUBBASIN CHARACTERISTICS
               TAREA      23.15  SUBBASIN AREA

268 BF        BASE FLOW CHARACTERISTICS
               STRTQ        .00  INITIAL FLOW
               QRCSN        .00  BEGIN BASE FLOW RECESSION
               RTIOR    1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

283 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .35     .68    1.19    1.36    1.49    1.77    2.30    2.83     .00     .00     .00     .00

                              STORM AREA =  109.00
```

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284 LS         SCS LOSS RATE
                 STRTL        .63  INITIAL ABSTRACTION
                CRVNBR      76.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

285 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG       3.70  LAG

                                        ***

                                  UNIT HYDROGRAPH
                              76 END-OF-PERIOD ORDINATES
          57.     151.     284.     454.     650.     879.    1175.    1501.    1864.    2180.
        2459.    2669.    2806.    2899.    2918.    2910.    2875.    2760.    2634.    2498.
        2345.    2170.    1977.    1747.    1538.    1347.    1213.    1088.     973.     876.
         791.     721.     651.     586.     528.     471.     419.     381.     343.     307.
         278.     249.     222.     201.     180.     159.     145.     131.     117.     106.
          96.      85.      77.      70.      62.      56.      50.      45.      41.      37.
          33.      30.      28.      26.      23.      21.      19.      17.      14.      12.
          11.       9.       7.       5.       3.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
286 KK    *    HUFN     *    COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
          *             *
          ***************

288 KO         OUTPUT CONTROL VARIABLES
                 IPRNT          1  PRINT CONTROL
                 IPLOT          2  PLOT CONTROL
                 QSCAL         0.  HYDROGRAPH PLOT SCALE

287 HC          HYDROGRAPH COMBINATION
                 ICOMP          4  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***
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*****************************************************************************************************************************

                                           HYDROGRAPH AT STATION    HUFN
                                             SUM OF  4 HYDROGRAPHS

*****************************************************************************************************************************
                          *                           *                           *
  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW
                          *                           *                           *
   1     0000    1     500.  *   1    1815   74     6412.  *   2    1230  147     506.  *   3    0645  220     500.
   1     0015    2     500.  *   1    1830   75     6137.  *   2    1245  148     505.  *   3    0700  221     500.
   1     0030    3     500.  *   1    1845   76     5898.  *   2    1300  149     504.  *   3    0715  222     500.
   1     0045    4     500.  *   1    1900   77     5689.  *   2    1315  150     504.  *   3    0730  223     500.
   1     0100    5     500.  *   1    1915   78     5501.  *   2    1330  151     504.  *   3    0745  224     500.
   1     0115    6     500.  *   1    1930   79     5331.  *   2    1345  152     503.  *   3    0800  225     500.
   1     0130    7     500.  *   1    1945   80     5171.  *   2    1400  153     503.  *   3    0815  226     500.
   1     0145    8     501.  *   1    2000   81     5015.  *   2    1415  154     502.  *   3    0830  227     500.
   1     0200    9     501.  *   1    2015   82     4855.  *   2    1430  155     502.  *   3    0845  228     500.
   1     0215   10     501.  *   1    2030   83     4690.  *   2    1445  156     502.  *   3    0900  229     500.
   1     0230   11     502.  *   1    2045   84     4520.  *   2    1500  157     502.  *   3    0915  230     500.
   1     0245   12     502.  *   1    2100   85     4350.  *   2    1515  158     501.  *   3    0930  231     500.
   1     0300   13     503.  *   1    2115   86     4185.  *   2    1530  159     501.  *   3    0945  232     500.
   1     0315   14     503.  *   1    2130   87     4029.  *   2    1545  160     501.  *   3    1000  233     500.
   1     0330   15     503.  *   1    2145   88     3885.  *   2    1600  161     501.  *   3    1015  234     500.
   1     0345   16     503.  *   1    2200   89     3754.  *   2    1615  162     501.  *   3    1030  235     500.
   1     0400   17     504.  *   1    2215   90     3636.  *   2    1630  163     501.  *   3    1045  236     500.
   1     0415   18     504.  *   1    2230   91     3531.  *   2    1645  164     500.  *   3    1100  237     500.
   1     0430   19     504.  *   1    2245   92     3437.  *   2    1700  165     500.  *   3    1115  238     500.
   1     0445   20     504.  *   1    2300   93     3353.  *   2    1715  166     500.  *   3    1130  239     500.
   1     0500   21     504.  *   1    2315   94     3277.  *   2    1730  167     500.  *   3    1145  240     500.
   1     0515   22     504.  *   1    2330   95     3208.  *   2    1745  168     500.  *   3    1200  241     500.
   1     0530   23     504.  *   1    2345   96     3146.  *   2    1800  169     500.  *   3    1215  242     500.
   1     0545   24     504.  *   2    0000   97     3090.  *   2    1815  170     500.  *   3    1230  243     500.
   1     0600   25     504.  *   2    0015   98     3037.  *   2    1830  171     500.  *   3    1245  244     500.
   1     0615   26     505.  *   2    0030   99     2988.  *   2    1845  172     500.  *   3    1300  245     500.
   1     0630   27     505.  *   2    0045  100     2941.  *   2    1900  173     500.  *   3    1315  246     500.
   1     0645   28     505.  *   2    0100  101     2894.  *   2    1915  174     500.  *   3    1330  247     500.
   1     0700   29     505.  *   2    0115  102     2844.  *   2    1930  175     500.  *   3    1345  248     500.
   1     0715   30     505.  *   2    0130  103     2786.  *   2    1945  176     500.  *   3    1400  249     500.
   1     0730   31     505.  *   2    0145  104     2711.  *   2    2000  177     500.  *   3    1415  250     500.
   1     0745   32     506.  *   2    0200  105     2611.  *   2    2015  178     500.  *   3    1430  251     500.
   1     0800   33     506.  *   2    0215  106     2479.  *   2    2030  179     500.  *   3    1445  252     500.
   1     0815   34     507.  *   2    0230  107     2315.  *   2    2045  180     500.  *   3    1500  253     500.
   1     0830   35     509.  *   2    0245  108     2126.  *   2    2100  181     500.  *   3    1515  254     500.
   1     0845   36     510.  *   2    0300  109     1923.  *   2    2115  182     500.  *   3    1530  255     500.
   1     0900   37     513.  *   2    0315  110     1721.  *   2    2130  183     500.  *   3    1545  256     500.
   1     0915   38     516.  *   2    0330  111     1530.  *   2    2145  184     500.  *   3    1600  257     500.
   1     0930   39     520.  *   2    0345  112     1358.  *   2    2200  185     500.  *   3    1615  258     500.
   1     0945   40     527.  *   2    0400  113     1207.  *   2    2215  186     500.  *   3    1630  259     500.
   1     1000   41     536.  *   2    0415  114     1079.  *   2    2230  187     500.  *   3    1645  260     500.
   1     1015   42     550.  *   2    0430  115      973.  *   2    2245  188     500.  *   3    1700  261     500.
   1     1030   43     569.  *   2    0445  116      886.  *   2    2300  189     500.  *   3    1715  262     500.
   1     1045   44     594.  *   2    0500  117      816.  *   2    2315  190     500.  *   3    1730  263     500.
   1     1100   45     625.  *   2    0515  118      759.  *   2    2330  191     500.  *   3    1745  264     500.
   1     1115   46     665.  *   2    0530  119      713.  *   2    2345  192     500.  *   3    1800  265     500.
   1     1130   47     715.  *   2    0545  120      677.  *   3    0000  193     500.  *   3    1815  266     500.
   1     1145   48     777.  *   2    0600  121      648.  *   3    0015  194     500.  *   3    1830  267     500.
   1     1200   49     857.  *   2    0615  122      625.  *   3    0030  195     500.  *   3    1845  268     500.
   1     1215   50     964.  *   2    0630  123      607.  *   3    0045  196     500.  *   3    1900  269     500.
   1     1230   51    1109.  *   2    0645  124      592.  *   3    0100  197     500.  *   3    1915  270     500.
   1     1245   52    1309.  *   2    0700  125      579.  *   3    0115  198     500.  *   3    1930  271     500.
   1     1300   53    1603.  *   2    0715  126      569.  *   3    0130  199     500.  *   3    1945  272     500.
   1     1315   54    2048.  *   2    0730  127      561.  *   3    0145  200     500.  *   3    2000  273     500.
   1     1330   55    2715.  *   2    0745  128      553.  *   3    0200  201     500.  *   3    2015  274     500.
   1     1345   56    3654.  *   2    0800  129      547.  *   3    0215  202     500.  *   3    2030  275     500.
   1     1400   57    4855.  *   2    0815  130      542.  *   3    0230  203     500.  *   3    2045  276     500.
   1     1415   58    6229.  *   2    0830  131      537.  *   3    0245  204     500.  *   3    2100  277     500.
   1     1430   59    7614.  *   2    0845  132      533.  *   3    0300  205     500.  *   3    2115  278     500.
   1     1445   60    8833.  *   2    0900  133      529.  *   3    0315  206     500.  *   3    2130  279     500.
   1     1500   61    9745.  *   2    0915  134      526.  *   3    0330  207     500.  *   3    2145  280     500.
   1     1515   62   10290.  *   2    0930  135      523.  *   3    0345  208     500.  *   3    2200  281     500.
   1     1530   63   10492.  *   2    0945  136      521.  *   3    0400  209     500.  *   3    2215  282     500.
   1     1545   64   10413.  *   2    1000  137      518.  *   3    0415  210     500.  *   3    2230  283     500.
   1     1600   65   10134.  *   2    1015  138      516.  *   3    0430  211     500.  *   3    2245  284     500.
   1     1615   66    9732.  *   2    1030  139      515.  *   3    0445  212     500.  *   3    2300  285     500.
   1     1630   67    9263.  *   2    1045  140      513.  *   3    0500  213     500.  *   3    2315  286     500.
   1     1645   68    8776.  *   2    1100  141      512.  *   3    0515  214     500.  *   3    2330  287     500.
   1     1700   69    8304.  *   2    1115  142      510.  *   3    0530  215     500.  *   3    2345  288     500.
   1     1715   70    7859.  *   2    1130  143      509.  *   3    0545  216     500.  *   4    0000  289     500.
   1     1730   71    7447.  *   2    1145  144      508.  *   3    0600  217     500.  *
   1     1745   72    7069.  *   2    1200  145      507.  *   3    0615  218     500.  *
   1     1800   73    6722.  *   2    1215  146      506.  *   3    0630  219     500.  *
                          *                           *                           *
*****************************************************************************************

   PEAK FLOW      TIME                     MAXIMUM AVERAGE FLOW
                               6-HR      24-HR      72-HR    72.00-HR
 +  (CFS)       (HR)
                       (CFS)
 +  10492.      15.50             7666.      3349.      1451.      1451.
                    (INCHES)      .654      1.143      1.486      1.486
                     (AC-FT)     3802.      6643.      8634.      8634.

                     CUMULATIVE AREA =  108.97 SQ MI
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```
1                                   STATION    HUFN

                  (O) OUTFLOW
         0.     1000.     2000.     3000.     4000.     5000.     6000.     7000.     8000.     9000.    10000.    11000.        0.
DAHRMN PER
10000   1.-----O----.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
10015   2.    O     .         .         .         .         .         .         .         .         .         .         .
10030   3.    O     .         .         .         .         .         .         .         .         .         .         .
10045   4.    O     .         .         .         .         .         .         .         .         .         .         .
10100   5.    O     .         .         .         .         .         .         .         .         .         .         .
10115   6.    O     .         .         .         .         .         .         .         .         .         .         .
10130   7.    O     .         .         .         .         .         .         .         .         .         .         .
10145   8.    O     .         .         .         .         .         .         .         .         .         .         .
10200   9.    O     .         .         .         .         .         .         .         .         .         .         .
10215  10.     O    .         .         .         .         .         .         .         .         .         .         .
10230  11......O.............................................................................................................
10245  12.     O    .         .         .         .         .         .         .         .         .         .         .
10300  13.     O    .         .         .         .         .         .         .         .         .         .         .
10315  14.     O    .         .         .         .         .         .         .         .         .         .         .
10330  15.     O    .         .         .         .         .         .         .         .         .         .         .
10345  16.     O    .         .         .         .         .         .         .         .         .         .         .
10400  17.     O    .         .         .         .         .         .         .         .         .         .         .
10415  18.     O    .         .         .         .         .         .         .         .         .         .         .
10430  19.     O    .         .         .         .         .         .         .         .         .         .         .
10445  20.     O    .         .         .         .         .         .         .         .         .         .         .
10500  21......O.............................................................................................................
10515  22.     O    .         .         .         .         .         .         .         .         .         .         .
10530  23.     O    .         .         .         .         .         .         .         .         .         .         .
10545  24.     O    .         .         .         .         .         .         .         .         .         .         .
10600  25.     O    .         .         .         .         .         .         .         .         .         .         .
10615  26.     O    .         .         .         .         .         .         .         .         .         .         .
10630  27.     O    .         .         .         .         .         .         .         .         .         .         .
10645  28.     O    .         .         .         .         .         .         .         .         .         .         .
10700  29.     O    .         .         .         .         .         .         .         .         .         .         .
10715  30.     O    .         .         .         .         .         .         .         .         .         .         .
10730  31......O.............................................................................................................
10745  32.     O    .         .         .         .         .         .         .         .         .         .         .
10800  33.     O    .         .         .         .         .         .         .         .         .         .         .
10815  34.     O    .         .         .         .         .         .         .         .         .         .         .
10830  35.     O    .         .         .         .         .         .         .         .         .         .         .
10845  36.     O    .         .         .         .         .         .         .         .         .         .         .
10900  37.     O    .         .         .         .         .         .         .         .         .         .         .
10915  38.     O    .         .         .         .         .         .         .         .         .         .         .
10930  39.     O    .         .         .         .         .         .         .         .         .         .         .
10945  40.     O    .         .         .         .         .         .         .         .         .         .         .
11000  41......O.............................................................................................................
11015  42.      O   .         .         .         .         .         .         .         .         .         .         .
11030  43.      O   .         .         .         .         .         .         .         .         .         .         .
11045  44.      O   .         .         .         .         .         .         .         .         .         .         .
11100  45.      O   .         .         .         .         .         .         .         .         .         .         .
11115  46.       O  .         .         .         .         .         .         .         .         .         .         .
11130  47.       O  .         .         .         .         .         .         .         .         .         .         .
11145  48.        O .         .         .         .         .         .         .         .         .         .         .
11200  49.         O.         .         .         .         .         .         .         .         .         .         .
11215  50.          O         .         .         .         .         .         .         .         .         .         .
11230  51...........O........................................................................................................
11245  52.          .  O      .         .         .         .         .         .         .         .         .         .
11300  53.          .     O   .         .         .         .         .         .         .         .         .         .
11315  54.          .         O         .         .         .         .         .         .         .         .         .
11330  55.          .         .      O  .         .         .         .         .         .         .         .         .
11345  56.          .         .         .      O  .         .         .         .         .         .         .         .
11400  57.          .         .         .         .        O.         .         .         .         .         .         .
11415  58.          .         .         .         .         .         . O       .         .         .         .         .
11430  59.          .         .         .         .         .         .         .     O   .         .         .         .
11445  60.          .         .         .         .         .         .         .         .        O.         .         .
11500  61............................................................................................O.......................
11515  62.          .         .         .         .         .         .         .         .         .         .  O      .
11530  63.          .         .         .         .         .         .         .         .         .         .    O    .
11545  64.          .         .         .         .         .         .         .         .         .         .   O     .
11600  65.          .         .         .         .         .         .         .         .         .         .O        .
11615  66.          .         .         .         .         .         .         .         .         .      O  .         .
11630  67.          .         .         .         .         .         .         .         .         .  O      .         .
11645  68.          .         .         .         .         .         .         .         .        O.         .         .
11700  69.          .         .         .         .         .         .         .         .   O     .         .         .
11715  70.          .         .         .         .         .         .         .        O.         .         .         .
11730  71.......................................................................O.............................................
11745  72.          .         .         .         .         .         .         .O        .         .         .         .
11800  73.          .         .         .         .         .         .       O .         .         .         .         .
11815  74.          .         .         .         .         .         .    O    .         .         .         .         .
11830  75.          .         .         .         .         .         . O       .         .         .         .         .
11845  76.          .         .         .         .         .        O.         .         .         .         .         .
11900  77.          .         .         .         .         .       O .         .         .         .         .         .
11915  78.          .         .         .         .         .     O   .         .         .         .         .         .
11930  79.          .         .         .         .         .   O     .         .         .         .         .         .
11945  80.          .         .         .         .         .O        .         .         .         .         .         .
12000  81................................................O....................................................................
12015  82.          .         .         .         .        O.         .         .         .         .         .         .
12030  83.          .         .         .         .      O  .         .         .         .         .         .         .
12045  84.          .         .         .         .    O    .         .         .         .         .         .         .
12100  85.          .         .         .         .   O     .         .         .         .         .         .         .
12115  86.          .         .         .         .O        .         .         .         .         .         .         .
12130  87.          .         .         .         O         .         .         .         .         .         .         .
12145  88.          .         .         .        O.         .         .         .         .         .         .         .
12200  89.          .         .         .       O .         .         .         .         .         .         .         .
12215  90.          .         .         .     O   .         .         .         .         .         .         .         .
12230  91...................................O.................................................................................
12245  92.          .         .         .    O    .         .         .         .         .         .         .         .
```

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1                                                      STATION    HUFN

                    (O) OUTFLOW
        0.    1000.     2000.     3000.     4000.     5000.     6000.     7000.     8000.     9000.    10000.    11000.         0.
DAHRMN PER
12300  93.        .         .         .    O    .         .         .         .         .         .         .         .         .
12315  94.        .         .         .   O     .         .         .         .         .         .         .         .         .
12330  95.        .         .         .  O      .         .         .         .         .         .         .         .         .
12345  96.        .         .         .O        .         .         .         .         .         .         .         .         .
20000  97.        .         .         .O        .         .         .         .         .         .         .         .         .
20015  98.        .         .         O         .         .         .         .         .         .         .         .         .
20030  99.        .         .         O         .         .         .         .         .         .         .         .         .
20045 100.        .         .        O.         .         .         .         .         .         .         .         .         .
20100 101...........................O......................................................................................
20115 102.        .         .        O.         .         .         .         .         .         .         .         .         .
20130 103.        .         .       O .         .         .         .         .         .         .         .         .         .
20145 104.        .         .      O  .         .         .         .         .         .         .         .         .         .
20200 105.        .         .     O   .         .         .         .         .         .         .         .         .         .
20215 106.        .         .    O    .         .         .         .         .         .         .         .         .         .
20230 107.        .         .  O      .         .         .         .         .         .         .         .         .         .
20245 108.        .         .O        .         .         .         .         .         .         .         .         .         .
20300 109.        .        O.         .         .         .         .         .         .         .         .         .         .
20315 110.        .      O  .         .         .         .         .         .         .         .         .         .         .
20330 111.............O....................................................................................................
20345 112.        .   O     .         .         .         .         .         .         .         .         .         .         .
20400 113.        . O       .         .         .         .         .         .         .         .         .         .         .
20415 114.        .O        .         .         .         .         .         .         .         .         .         .         .
20430 115.        O         .         .         .         .         .         .         .         .         .         .         .
20445 116.       O.         .         .         .         .         .         .         .         .         .         .         .
20500 117.      O .         .         .         .         .         .         .         .         .         .         .         .
20515 118.      O .         .         .         .         .         .         .         .         .         .         .         .
20530 119.     O  .         .         .         .         .         .         .         .         .         .         .         .
20545 120.     O  .         .         .         .         .         .         .         .         .         .         .         .
20600 121....O.............................................................................................................
20615 122.    O   .         .         .         .         .         .         .         .         .         .         .         .
20630 123.    O   .         .         .         .         .         .         .         .         .         .         .         .
20645 124.    O   .         .         .         .         .         .         .         .         .         .         .         .
20700 125.    O   .         .         .         .         .         .         .         .         .         .         .         .
20715 126.    O   .         .         .         .         .         .         .         .         .         .         .         .
20730 127.    O   .         .         .         .         .         .         .         .         .         .         .         .
20745 128.    O   .         .         .         .         .         .         .         .         .         .         .         .
20800 129.   O    .         .         .         .         .         .         .         .         .         .         .         .
20815 130.   O    .         .         .         .         .         .         .         .         .         .         .         .
20830 131...O..............................................................................................................
20845 132.   O    .         .         .         .         .         .         .         .         .         .         .         .
20900 133.   O    .         .         .         .         .         .         .         .         .         .         .         .
20915 134.   O    .         .         .         .         .         .         .         .         .         .         .         .
20930 135.   O    .         .         .         .         .         .         .         .         .         .         .         .
20945 136.   O    .         .         .         .         .         .         .         .         .         .         .         .
21000 137.   O    .         .         .         .         .         .         .         .         .         .         .         .
21015 138.   O    .         .         .         .         .         .         .         .         .         .         .         .
21030 139.   O    .         .         .         .         .         .         .         .         .         .         .         .
21045 140.   O    .         .         .         .         .         .         .         .         .         .         .         .
21100 141...O..............................................................................................................
21115 142.   O    .         .         .         .         .         .         .         .         .         .         .         .
21130 143.   O    .         .         .         .         .         .         .         .         .         .         .         .
21145 144.   O    .         .         .         .         .         .         .         .         .         .         .         .
21200 145.   O    .         .         .         .         .         .         .         .         .         .         .         .
21215 146.   O    .         .         .         .         .         .         .         .         .         .         .         .
21230 147.   O    .         .         .         .         .         .         .         .         .         .         .         .
21245 148.   O    .         .         .         .         .         .         .         .         .         .         .         .
21300 149.   O    .         .         .         .         .         .         .         .         .         .         .         .
21315 150.   O    .         .         .         .         .         .         .         .         .         .         .         .
21330 151...O..............................................................................................................
21345 152.   O    .         .         .         .         .         .         .         .         .         .         .         .
21400 153.   O    .         .         .         .         .         .         .         .         .         .         .         .
21415 154.   O    .         .         .         .         .         .         .         .         .         .         .         .
21430 155.   O    .         .         .         .         .         .         .         .         .         .         .         .
21445 156.   O    .         .         .         .         .         .         .         .         .         .         .         .
21500 157.   O    .         .         .         .         .         .         .         .         .         .         .         .
21515 158.   O    .         .         .         .         .         .         .         .         .         .         .         .
21530 159.   O    .         .         .         .         .         .         .         .         .         .         .         .
21545 160.   O    .         .         .         .         .         .         .         .         .         .         .         .
21600 161...O..............................................................................................................
21615 162.   O    .         .         .         .         .         .         .         .         .         .         .         .
21630 163.   O    .         .         .         .         .         .         .         .         .         .         .         .
21645 164.   O    .         .         .         .         .         .         .         .         .         .         .         .
21700 165.   O    .         .         .         .         .         .         .         .         .         .         .         .
21715 166.   O    .         .         .         .         .         .         .         .         .         .         .         .
21730 167.   O    .         .         .         .         .         .         .         .         .         .         .         .
21745 168.   O    .         .         .         .         .         .         .         .         .         .         .         .
21800 169.   O    .         .         .         .         .         .         .         .         .         .         .         .
21815 170.   O    .         .         .         .         .         .         .         .         .         .         .         .
21830 171...O..............................................................................................................
21845 172.   O    .         .         .         .         .         .         .         .         .         .         .         .
21900 173.   O    .         .         .         .         .         .         .         .         .         .         .         .
21915 174.   O    .         .         .         .         .         .         .         .         .         .         .         .
21930 175.   O    .         .         .         .         .         .         .         .         .         .         .         .
21945 176.   O    .         .         .         .         .         .         .         .         .         .         .         .
22000 177.   O    .         .         .         .         .         .         .         .         .         .         .         .
22015 178.   O    .         .         .         .         .         .         .         .         .         .         .         .
22030 179.   O    .         .         .         .         .         .         .         .         .         .         .         .
22045 180.   O    .         .         .         .         .         .         .         .         .         .         .         .
22100 181...O..............................................................................................................
22115 182.   O    .         .         .         .         .         .         .         .         .         .         .         .
22130 183.   O    .         .         .         .         .         .         .         .         .         .         .         .
22145 184.   O    .         .         .         .         .         .         .         .         .         .         .         .
```

```
1                                     STATION     HUFN

                    (O) OUTFLOW
         0.    1000.    2000.    3000.    4000.    5000.    6000.    7000.    8000.    9000.   10000.   11000.        0.
DAHRMN PER
22200 185.   O  .       .       .       .       .       .       .       .       .       .       .       .
22215 186.   O  .       .       .       .       .       .       .       .       .       .       .       .
22230 187.   O  .       .       .       .       .       .       .       .       .       .       .       .
22245 188.   O  .       .       .       .       .       .       .       .       .       .       .       .
22300 189.   O  .       .       .       .       .       .       .       .       .       .       .       .
22315 190.   O  .       .       .       .       .       .       .       .       .       .       .       .
22330 191...O......................................................................................
22345 192.   O  .       .       .       .       .       .       .       .       .       .       .       .
30000 193.   O  .       .       .       .       .       .       .       .       .       .       .       .
30015 194.   O  .       .       .       .       .       .       .       .       .       .       .       .
30030 195.   O  .       .       .       .       .       .       .       .       .       .       .       .
30045 196.   O  .       .       .       .       .       .       .       .       .       .       .       .
30100 197.   O  .       .       .       .       .       .       .       .       .       .       .       .
30115 198.   O  .       .       .       .       .       .       .       .       .       .       .       .
30130 199.   O  .       .       .       .       .       .       .       .       .       .       .       .
30145 200.   O  .       .       .       .       .       .       .       .       .       .       .       .
30200 201...O......................................................................................
30215 202.   O  .       .       .       .       .       .       .       .       .       .       .       .
30230 203.   O  .       .       .       .       .       .       .       .       .       .       .       .
30245 204.   O  .       .       .       .       .       .       .       .       .       .       .       .
30300 205.   O  .       .       .       .       .       .       .       .       .       .       .       .
30315 206.   O  .       .       .       .       .       .       .       .       .       .       .       .
30330 207.   O  .       .       .       .       .       .       .       .       .       .       .       .
30345 208.   O  .       .       .       .       .       .       .       .       .       .       .       .
30400 209.   O  .       .       .       .       .       .       .       .       .       .       .       .
30415 210.   O  .       .       .       .       .       .       .       .       .       .       .       .
30430 211...O......................................................................................
30445 212.   O  .       .       .       .       .       .       .       .       .       .       .       .
30500 213.   O  .       .       .       .       .       .       .       .       .       .       .       .
30515 214.   O  .       .       .       .       .       .       .       .       .       .       .       .
30530 215.   O  .       .       .       .       .       .       .       .       .       .       .       .
30545 216.   O  .       .       .       .       .       .       .       .       .       .       .       .
30600 217.   O  .       .       .       .       .       .       .       .       .       .       .       .
30615 218.   O  .       .       .       .       .       .       .       .       .       .       .       .
30630 219.   O  .       .       .       .       .       .       .       .       .       .       .       .
30645 220.   O  .       .       .       .       .       .       .       .       .       .       .       .
30700 221...O......................................................................................
30715 222.   O  .       .       .       .       .       .       .       .       .       .       .       .
30730 223.   O  .       .       .       .       .       .       .       .       .       .       .       .
30745 224.   O  .       .       .       .       .       .       .       .       .       .       .       .
30800 225.   O  .       .       .       .       .       .       .       .       .       .       .       .
30815 226.   O  .       .       .       .       .       .       .       .       .       .       .       .
30830 227.   O  .       .       .       .       .       .       .       .       .       .       .       .
30845 228.   O  .       .       .       .       .       .       .       .       .       .       .       .
30900 229.   O  .       .       .       .       .       .       .       .       .       .       .       .
30915 230.   O  .       .       .       .       .       .       .       .       .       .       .       .
30930 231...O......................................................................................
30945 232.   O  .       .       .       .       .       .       .       .       .       .       .       .
31000 233.   O  .       .       .       .       .       .       .       .       .       .       .       .
31015 234.   O  .       .       .       .       .       .       .       .       .       .       .       .
31030 235.   O  .       .       .       .       .       .       .       .       .       .       .       .
31045 236.   O  .       .       .       .       .       .       .       .       .       .       .       .
31100 237.   O  .       .       .       .       .       .       .       .       .       .       .       .
31115 238.   O  .       .       .       .       .       .       .       .       .       .       .       .
31130 239.   O  .       .       .       .       .       .       .       .       .       .       .       .
31145 240.   O  .       .       .       .       .       .       .       .       .       .       .       .
31200 241...O......................................................................................
31215 242.   O  .       .       .       .       .       .       .       .       .       .       .       .
31230 243.   O  .       .       .       .       .       .       .       .       .       .       .       .
31245 244.   O  .       .       .       .       .       .       .       .       .       .       .       .
31300 245.   O  .       .       .       .       .       .       .       .       .       .       .       .
31315 246.   O  .       .       .       .       .       .       .       .       .       .       .       .
31330 247.   O  .       .       .       .       .       .       .       .       .       .       .       .
31345 248.   O  .       .       .       .       .       .       .       .       .       .       .       .
31400 249.   O  .       .       .       .       .       .       .       .       .       .       .       .
31415 250.   O  .       .       .       .       .       .       .       .       .       .       .       .
31430 251...O......................................................................................
31445 252.   O  .       .       .       .       .       .       .       .       .       .       .       .
31500 253.   O  .       .       .       .       .       .       .       .       .       .       .       .
31515 254.   O  .       .       .       .       .       .       .       .       .       .       .       .
31530 255.   O  .       .       .       .       .       .       .       .       .       .       .       .
31545 256.   O  .       .       .       .       .       .       .       .       .       .       .       .
31600 257.   O  .       .       .       .       .       .       .       .       .       .       .       .
31615 258.   O  .       .       .       .       .       .       .       .       .       .       .       .
31630 259.   O  .       .       .       .       .       .       .       .       .       .       .       .
31645 260.   O  .       .       .       .       .       .       .       .       .       .       .       .
31700 261...O......................................................................................
31715 262.   O  .       .       .       .       .       .       .       .       .       .       .       .
31730 263.   O  .       .       .       .       .       .       .       .       .       .       .       .
31745 264.   O  .       .       .       .       .       .       .       .       .       .       .       .
31800 265.   O  .       .       .       .       .       .       .       .       .       .       .       .
31815 266.   O  .       .       .       .       .       .       .       .       .       .       .       .
31830 267.   O  .       .       .       .       .       .       .       .       .       .       .       .
31845 268.   O  .       .       .       .       .       .       .       .       .       .       .       .
31900 269.   O  .       .       .       .       .       .       .       .       .       .       .       .
31915 270.   O  .       .       .       .       .       .       .       .       .       .       .       .
31930 271...O......................................................................................
31945 272.   O  .       .       .       .       .       .       .       .       .       .       .       .
32000 273.   O  .       .       .       .       .       .       .       .       .       .       .       .
32015 274.   O  .       .       .       .       .       .       .       .       .       .       .       .
32030 275.   O  .       .       .       .       .       .       .       .       .       .       .       .
32045 276.   O  .       .       .       .       .       .       .       .       .       .       .       .
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1                                         STATION    HUFN

                    (O) OUTFLOW
      0.     1000.   2000.    3000.    4000.    5000.    6000.    7000.    8000.    9000.   10000.   11000.        0.
 DAHRMN PER
  32100 277.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32115 278.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32130 279.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32145 280.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32200 281. . .O. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
  32215 282.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32230 283.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32245 284.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32300 285.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32315 286.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32330 287.   O  .       .       .       .       .       .       .       .       .       .       .       .
  32345 288.   O  .       .       .       .       .       .       .       .       .       .       .       .
  40000 289.----O----.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
1


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 289 KK    *   MDPLS     *    ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
           *             *
           ***************

               HYDROGRAPH ROUTING DATA

 290 RS         STORAGE ROUTING
                 NSTPS           1  NUMBER OF SUBREACHES
                  ITYP        STOR  TYPE OF INITIAL CONDITION
                RSVRIC         .00  INITIAL CONDITION
                     X         .00 WORKING R AND D COEFFICIENT

 291 SA            AREA         .6      1.9   ·  8.6      18.1      40.0      80.0     131.0     198.0

 292 SE         ELEVATION    4410.00   4412.00   4414.00   4416.00   4418.00   4420.00   4422.00   4424.00

 293 SQ         DISCHARGE       200.      480.      783.     1411.     4191.     9772.    19163.    31000.

                                          ***

                             COMPUTED STORAGE-ELEVATION DATA

         STORAGE        .00      2.38     12.07     38.19     94.88    212.57    421.49    746.31
       ELEVATION    4410.00   4412.00   4414.00   4416.00   4418.00   4420.00   4422.00   4424.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN      200. TO      480.
           THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
           THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
1
                                         RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                  TIME IN HOURS,  AREA IN SQUARE MILES

                               PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD       BASIN    MAXIMUM    TIME OF
      OPERATION       STATION     FLOW    PEAK                                   AREA     STAGE    MAX STAGE
+                                             6-HOUR    24-HOUR    72-HOUR

      HYDROGRAPH AT
+                         T1      904.   12.50       354.       134.        45.       2.50

      ROUTED TO
+                       RT1-B      871.   12.75       353.       134.        45.       2.50

      HYDROGRAPH AT
+                         T2      290.   12.50       124.        46.        15.       1.82

      HYDROGRAPH AT
+                         T3      131.   12.50        54.        20.         7.        .82


      3 COMBINED AT
+                        CP-B     1237.   12.50       529.       200.        67.       5.14

      ROUTED TO
+                       RCP-C     1282.   12.75       529.       200.        67.       5.14

      HYDROGRAPH AT
+                         T4      169.   12.75        96.        36.        12.       2.16

      2 COMBINED AT
+                        CP-C     1451.   12.75       623.       236.        79.       7.30

      ROUTED TO
+                       RCP-D     1445.   13.00       622.       236.        79.       7.30

      HYDROGRAPH AT
+                         T5      193.   12.75        76.        27.         9.       1.19

      2 COMBINED AT
+                        CP-D     1604.   13.00       697.       263.        88.       8.49
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                         PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD    BASIN    MAXIMUM    TIME OF
   OPERATION          STATION    FLOW    PEAK                               AREA     STAGE     MAX STAGE

     ROUTED TO
+                  RCP-E     1402.   13.75      694.      283.      88.     8.49

     HYDROGRAPH AT
+                     T6    428.   13.00      187.      68.      23.    3.15

     2 COMBINED AT
+                   CP-E     1759.   13.50      875.      330.      110.     11.64

     ROUTED TO
+                  RT-HN     1355.   15.00      853.      330.      110.     11.64

     HYDROGRAPH AT
+                     W1    590.   12.25      231.      87.      29.    1.36

     HYDROGRAPH AT
+                     W2    524.   12.25      170.      65.      22.     .84

     2 COMBINED AT
+                  W1+W2     1114.   12.25      400.      152.      51.     2.20

     ROUTED TO
+                   RT-A     1154.   12.50      400.      152.      51.     2.20

     HYDROGRAPH AT
+                     W3    536.   12.50      203.      78.      25.    1.38

     ROUTED TO
+                   RT-A     574.   12.50      203.      76.      25.     1.38

     HYDROGRAPH AT
+                     W4    311.   12.50      127.      47.      16.    1.47

     3 COMBINED AT
+                  W1234     2039.   12.50      725.      275.      92.     5.05

     ROUTED TO
+                   RT-B     1899.   12.50      725.      275.      92.     5.05

     HYDROGRAPH AT
+                     W5    251.   12.50      101.      37.      12.    1.27

     2 COMBINED AT
+                  W5+CH     2150.   12.50      823.      312.      104.     6.32

     ROUTED TO
+                   RT-C     2126.   12.75      823.      312.      104.     6.32

     HYDROGRAPH AT
+                     W6    153.   12.75      76.      28.      9.    1.43

     2 COMBINED AT
+                  W6+CH     2279.   12.75      897.      340.      113.     7.75

     ROUTED TO
+                   RT-D     2137.   13.25      897.      340.      113.     7.75

     HYDROGRAPH AT
+                     W7    150.   12.75      66.      24.      8.    1.30

     2 COMBINED AT
+                  W7+CH     2241.   13.25      963.      364.      121.     9.05

     ROUTED TO
+                   RT-E     2290.   13.25      962.      364.      121.     9.05

     HYDROGRAPH AT
+                     W8    310.   12.75      139.      50.      17.    4.37

     2 COMBINED AT
+                  W8+CH     2526.   13.25      1100.      414.      138.     13.42

     ROUTED TO
+                   RT-F     2374.   13.50      1098.      414.      138.     13.42

     HYDROGRAPH AT
+                     46    159.   12.75      68.      25.      8.    2.69

     2 COMBINED AT
+                  46+CH     2474.   13.50      1166.      439.      146.     16.11

     ROUTED TO
+                  RT-HN     1720.   15.25      1133.      439.      146.     16.11

     HYDROGRAPH AT
+                     G1    818.   12.25      298.      114.      38.    1.63

     ROUTED TO
+                   RT-G     866.   12.50      298.      114.      38.     1.63

     HYDROGRAPH AT
+                     G2    594.   12.25      209.      79.      26.    1.30

     HYDROGRAPH AT
+                     G3    336.   12.50      138.      52.      17.    1.15
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                     PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD    BASIN   MAXIMUM    TIME OF
   OPERATION      STATION   FLOW     PEAK                               AREA    STAGE   MAX STAGE

    3 COMBINED AT
+              G123    1746.  12.50    642.     245.     82.     4.08

    ROUTED TO
+              RT-H     1698.  12.75    642.     245.     82.     4.08

    HYDROGRAPH AT
+               G4     329.  12.50    129.     47.     16.     1.54

    HYDROGRAPH AT
+               G5      89.  12.50     48.     18.      6.     1.02

    3 COMBINED AT
+              G1-5    2015.  12.75    814.     310.    103.     6.64

    ROUTED TO
+              RT-I    1989.  12.75    813.     310.    103.     6.64

    HYDROGRAPH AT
+               G6     104.  13.00     62.     23.      8.     1.37

    2 COMBINED AT
+              G6+CH    2089.  12.75     873.     333.    111.     8.01

    ROUTED TO
+              RT-K    2101.  13.00    872.     333.    111.     8.01

    HYDROGRAPH AT
+               J1     267.  12.50    102.     37.     12.     1.29

    ROUTED TO
+              RT-J     270.  12.75    102.     37.     12.     1.29

    HYDROGRAPH AT
+               J2     253.  12.75    117.     42.     14.     1.95

    2 COMBINED AT
+              J1+J2    523.  12.75    219.     80.     27.     3.24

    ROUTED TO
+              RT-K     527.  12.75    218.     80.     27.     3.24

    HYDROGRAPH AT
+               G8     337.  12.50    126.     45.     15.     2.19

    3 COMBINED AT
+              G+J     2781.  12.75   1216.     458.    153.    13.44

    ROUTED TO
+              RT-L    2867.  13.00   1215.     458.    153.    13.44

    HYDROGRAPH AT
+               G7     149.  12.50     70.     25.      8.     1.50

    ROUTED TO
+              RT-L     156.  12.75     70.     25.      8.     1.50

    HYDROGRAPH AT
+               G9     189.  14.25    136.     52.     17.     3.07

    3 COMBINED AT
+              PT-L    3084.  13.00   1413.     535.    178.    18.01

    ROUTED TO
+              RT-PV    3001.  13.25    1412.     535.    178.    18.01

    HYDROGRAPH AT
+               B1     325.  12.75    155.     57.     19.     2.18

    ROUTED TO
+              RT-M     321.  12.75    155.     57.     19.     2.18

    HYDROGRAPH AT
+               B2     134.  12.50     65.     24.      8.     1.42

    2 COMBINED AT
+              B1+B2    450.  12.75    220.     81.     27.     3.60


    ROUTED TO
+              RT-N     448.  13.00    220.     81.     27.     3.60

    HYDROGRAPH AT
+               B3      68.  12.50     28.     10.      3.      .53

    2 COMBINED AT
+              B123     496.  13.00    247.     90.     30.     4.13

    ROUTED TO
+              RT-PV    489.  13.25    248.     90.     30.     4.13

    2 COMBINED AT
+              PLEASV    3489.  13.25    1656.     626.    209.    22.14
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                          PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD   BASIN   MAXIMUM    TIME OF
      OPERATION        STATION    FLOW    PEAK                        AREA  STAGE   MAX STAGE

      ROUTED TO
+                RT-SG     3407.  13.50     1655.    628.    209.    22.14

      HYDROGRAPH AT
+                  30    3027.  13.00    1638.    904.    635.    17.80

      2 COMBINED AT
+                STMBT     6122.  13.25     3284.    1529.    843.    39.94

      ROUTED TO
+                RT-341    5847.  13.75     3268.    1529.    843.    39.94

      HYDROGRAPH AT
+                  35    4067.  13.00    1510.    516.    172.    15.50

      HYDROGRAPH AT
+                  40     511.  12.75     165.     57.      19.    2.63

      3 COMBINED AT
+                HY-341    8495.  13.50     4880.    2103.    1034.    58.07

      ROUTED TO
+                RT-HN     8521.  15.75     4859.    2103.    1034.    58.07

      HYDROGRAPH AT
+                  60    1224.  16.75    1049.    479.    160.    23.15

      4 COMBINED AT
+                HUFN     10492.  15.50     7666.    3349.    1451.   108.97

      ROUTED TO
+                MDPLS     10322.  15.75     7638.    3349.    1451.   108.97
+                                                             4420.12     15.75


*** NORMAL END OF HEC-1 ***
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*****************************************                          ****************************************
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)     *                          *      U.S. ARMY CORPS OF ENGINEERS    *
*            FEBRUARY 1981              *                          * THE HYDROLOGIC ENGINEERING CENTER    *
*           REVISED 01 JUN 88           *                          *          609 SECOND STREET           *
*                                       *                          *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE 12/07/1989  TIME  16:38:15  *                          *            (916)551-1748             *
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                    *     *  *          *                           *
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           ******************************************************************
           PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION
           FACILITY DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER
           PURPOSE WITHOUT CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

           HUFFAKER NARROWS HYDROLOGY MODEL
           THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURRING SUMMER 1989
           THE PARAMETERS ARE BASED ON THE 100 YEAR POINT RAINFALL FROM
           THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
           NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
           METHOD AND MANNING EQUATION ARE USED FOR THE DETERMINATION OF LAG TIME.
           CURVE NUMBERS ESTIMATED FROM USFS PHOTOGRAPHS AND FIELD INVESTIGATION
           FUTURE CONDITIONS MODEL: IMPERVIOUS AREAS BASED ON COUNTY MASTER PLANS AND
           THE DAMONTE AND DOUBLE DIAMOND MASTER PLANS
           CHANGED ROUTING PARAMETERS FOR WHITES AND THOMAS FROM
           APEXES TO THE NARROWS
           MODIFIED THE LAG TIMES OF WATERSHEDS 40,60 DUE TO PROPOSED DEVELOPMENT IN THE
           UPPER TRUCKEE MEADOWS.


1                                 HEC-1 INPUT                               PAGE  1

      LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                *DIAGRAM
        1        **  ******************************************************************
        2        ID
        3        ID
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       10        ID
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       13        ID
       14        ID
       15        ID
       16        ID
       17        ID
       18        ID
       19        ID                    FILE NAME: HFUT5.909
       20        ID
       21        ID  ******************************************************************
       22        IT      5                 289
       23        IO      4       1

       24        KK     T1   THOMAS CREEK WATERSHED T1
       25        BA    2.5
       26        PH      1     109     .42     .83    1.45    1.87    2.26    3.18    4.31    5.44
       27        LS             69
       28        UD    .35

       29        KK   RT1-B   ROUTE T1 TO CONCENTRATION POINT B
       30        RM      1  .09568      .4

       31        KK     T2   THOMAS CREEK WATERSHED T2
       32        BA   1.82
       33        PH      1     109      .4     .79    1.39    1.75     2.1     2.9    3.91    4.92
       34        LS             58
       35        UD    .29

       36        KK     T3   THOMAS CREEK WATERSHED T3
       37        BA    .82
       38        PH      1     109     .41      .8     1.4    1.73    2.04    2.76    3.75    4.73
       39        LS             59
       40        UD     .3

       41        KK    CP-B   COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCCENTRATION PT B
       42        HC      3
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LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 43        KK  RCP-C  ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
 44        RM     2 .14576     .4

 45        KK    T4  THOMAS CREEK WATERSHED T4
 46        BA   2.16
 47        PH     1    109    .39    .77   1.35   1.64   1.91   2.55   3.38    4.2
 48        LS           58
 49        UD    .54

 50        KK   CP-C  COMBINE ROUTED T1-T3 W/ T4
 51        HC     2

 52        KK  RCP-D  ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
 53        RM     2  .1408     .4

 54        KK    T5  THOMAS CREEK WATERSHED T5
 55        BA   1.19
 56        PH    1.    109    .35    .68    1.2    1.4   1.59   2.04   2.75    3.4
 57        LS           71     8
 58        UD    .49

 59        KK   CP-D  COMBINE ROUTED T1-T4 W/ T5
 60        HC     2
 61        KO     1

 62        KK  RCP-E  ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
 63        RM     3  .2701     .4

 64        KK    T6  THOMAS CREEK WATERSHED T6
 65        BA   3.15
 66        PH     1    109    .35    .69   1.21   1.34   1.48    1.8    2.3    2.8
 67        LS           75    16
 68        UD    .85

 69        KK  CP-E  COMBINE ROUTED T1-T5 W/ T6
 70        HC     2

 71        KK  RT-HN  ROUTE THOMAS CK WATERSHED TO HUFFAKER NARROWS
 72        RM     2    .35    .4

 73        KK    W1 WHITES CREEK WATERSHED NO. 1
 74        BA   1.36
 75        PH     1    109    .39    .77   1.35   1.83   2.28   3.34   4.43   5.52
 76        LS           73
 77        UD    .21

 78        KK     W2 WHITES CREEK WATERSHED NO. 2
 79        BA    .84
 80        PH     1    109    .39    .77   1.35    1.8   2.23   3.22   4.31   5.39
 81        LS           80
 82        UD    .17
 83        KK  W1+W2 COMBINE FLOW FROM W1 AND W2
 84        HC     2

 85        KK  RT-A  ROUTE COMBINED W1 AND W2 TO POINT A
 86        RM     1   .122    .4

 87        KK    W3  WHITES CREEK WATERSHED NO. 3
 88        BA   1.38
 89        PH     1    109    .39    .77   1.36   1.78   2.18   3.12   4.15   5.17
 90        LS           72
 91        UD    .23

 92        KK   RT-A ROUTE W3 TO POINT A
 93        RM     1  .0950     .4

 94        KK    W4  WHITES CREEK WATERSHED NO. 4
 95        BA   1.47
 96        PH     1    109    .38    .75   1.32   1.71   2.08   2.95   3.94   4.94
 97        LS           62
 98        UD    .27

 99        KK  W1234 COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
100         HC     3

101         KK  RT-B  ROUTE COMBINED HYDROGRAPH TO POINT B
102         RM     1  .0597     .4

103         KK    W5  WHITES CREEK WATERSHED NO. 5
104         BA   1.27
105         PH     1    109    .38    .75   1.31   1.67   2.01    2.8   3.78   4.77
106         LS           62
107         UD    .28

108         KK  W5+CH COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
109         HC     2

110         KK  RT-C  ROUTE COMBINED HYDROGRAPH TO POINT C
111         RM     2   .185     .4

112         KK    W6  WHITES CREEK WATERSHED NO. 6
113         BA   1.43
114         PH     1    109    .36    .71   1.24   1.55   1.86   2.56   3.34   4.12
115         LS           61
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 116         UD    .44
 117         KK  W6+CH COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
 118         HC      2

 119         KK  RT-D  ROUTE COMBINED HYDROGRAPH TO POINT D
 120         RM      3   .296     .4
 121         KK   W7   WHITES CREEK WATERSHED NO.7
 122         BA    1.3
 123         PH      1     109     .33     .64    1.12    1.34    1.55    2.03    2.69    3.36
 124         LS             66       8
 125         UD     .5

 126         KK  W7+CH COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
 127         HC      2

 128         KK  RT-E  ROUTE COMBINED HYDROGRAPH TO POINT E
 129         RM      2   .139     .4

 130         KK   W8   WHITES CREEK WATERSHED NO. 8
 131         BA   4.37
 132         PH      1     109     .32     .64    1.12    1.28    1.43    1.79    2.29    2.79
 133         LS             66      17
 134         UD    .53

 135         KK  W8+CH COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
 136         HC      2

 137         KK  RT-F  ROUTE COMBINED HYDROGRAPH TO POINT F
 138         RM      1    .24     .4

 139         KK    46  WHITES CREEK WATERSHED 46
 140         BA   2.69
 141         PH      1     109     .36      .7    1.23    1.39    1.52    1.76    2.26    2.75
 142         LS             66      25
 143         UD     .5

 144         KK  46+CH COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
 145         HC      2

 146         KK  RT-HN ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
 147         RM      4    .40     .4

 148         KK   G1   GLENA CREEK WATERSHED NO.1
 149         BA   1.63
 150         PH      1     109      .4     .79    1.39    1.85    2.29    3.31    4.46     5.6
 151         LS             75
 152         UD     .2

 153         KK  RT-G  ROUTE G1 TO POINT G
 154         RM      1   .096     .4

 155         KK    G2  GALENA CREEK WATERSHED NO. 2
 156         BA    1.3
 157         PH      1     109     .39     .77    1.35    1.76    2.16    3.06     4.1    5.12
 158         LS             75
 159         UD     .2

 160         KK    G3  GALENA CREEK WATERSHED NO. 3
 161         BA   1.15
 162         PH      1     109     .36     .74     1.3    1.69    2.05     2.9    3.95    4.99
 163         LS             69
 164         UD    .36

 165         KK  G123  COMBINE ROUTED G1 WITH G2 AND G3
 166         HC      3

 167         KK  RT-H  ROUTE COMBINED HYDROGRAPH TO POINT H
 168         RM      2   .174     .4

 169         KK    G4  GALENA CREEK WATERSHED NO. 4
 170         BA   1.54
 171         PH      1     109     .36     .75    1.32    1.66    2.02    2.63    3.79    4.74
 172         LS             63
 173         UD    .25

 174         KK    G5  GALENA CREEK WATERSHED NO. 5
 175         BA   1.02
 176         PH      1     109     .36     .75    1.32    1.67    1.99    2.75     3.7    4.64
 177         LS             55
 178         UD    .32

 179         KK   G1-5 COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
 180         HC      3

 181         KK  RT-I  ROUTE COMBINED HYDROGRAPHS TO POINT I
 182         RM      2   .167     .4

 183         KK    G6  GALENA CREEK WATERSHED N0.6
 184         BA   1.37
 185         PH      1     109     .37     .72    1.26    1.57    1.87    2.56    3.33     4.1
 186         LS             59     2.5
 187         UD    .56
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1                                  HEC-1 INPUT                                    PAGE  3

     LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

      188         KK  G6+CH COMBINE G6 WITH COMBINED HYDROGRAPH AT POINT I
      189         HC      2

      190         KK  RT-K  ROUTE COMBINED HYDROGRAPH TO POINT K
      191         RM      1   .066     .4

      192         KK     J1  JONES CREEK WATERSHED NO. 1
      193         BA   1.29
      194         PH      1    109    .39    .76   1.33   1.67      2   2.75   3.69   4.62
      195         LS             63
      196         UD    .23

      197         KK  RT-J  ROUTE JI TO POINT J
      198         RM      2   .195     .4
      199         KK     J2  JONES CREEK WATERSHED NO. 2
      200         BA   1.95
      201         PH      1    109    .35     .7   1.22   1.52    1.8   2.45   3.22   3.98
      202         LS             64    3.4
      203         UD    .43

      204         KK  J1+J2 COMBINE ROUTED J1 WITH J2 AT POINT J
      205         HC      2

      206         KK  RT-K  ROUTE COMBINED J1 AND J2 TO POINT K
      207         RM      1   .104     .4

      208         KK     G8  GALENA CREEK WATERSHED NO.8
      209         BA   2.19
      210         PH      1    109    .34    .66   1.16    1.4   1.62   2.13   2.77   3.41
      211         LS             69      6
      212         UD    .35

      213         KK  G+J   COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
      214         HC      3

      215         KK  RT-L  ROUTE COMBINED HYDROGRAPH TO PT L
      216         RM      1   .132     .4

      217         KK     G7  GALENA CREEK WATERSHED NO. 7
      218         BA    1.5
      219         PH      1    109    .35    .69   1.22    1.5   1.77    2.4    3.1    3.8
      220         LS             62      5
      221         UD    .36

      222         KK  RT-L  ROUTE G7 TO OINT L
      223         RM      1   .129     .4

      224         KK     G9  GALENA CREEK WATERSHED NO. 9
      225         BA   3.07
      226         PH      1    109    .33    .65   1.14   1.35   1.56   2.04    2.6   3.16
      227         LS             69    3.4
      228         UD   1.67

      229         KK  PT-L  COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
      230         HC      3

      231         KK  RT-PV ROUTE GALENA CK HYDROGRAPH TO PLEASENT VALLEY
      232         RM      2    .17     .4

      233         KK     B1  BROWNS CREEK WATERSHED NO. 1
      234         BA   2.18
      235         PH      1    109    .38    .74    1.3   1.63   1.95    2.7   3.62   4.53
      236         LS             62
      237         UD    .44

      238         KK  RT-M  ROUTE B1 TO POINT M
      239         RM      2   .167     .4

      240         KK     B2  BROWNS CREEK WATERSHED NO. 2
      241         BA   1.42
      242         PH      1    109    .36    .71   1.25   1.55   1.83   2.49   3.25      4
      243         LS             60      0
      244         UD    .35

      245         KK  B1+B2 COMBINE ROUTED B1 WITH B2 AT POINT M
      246         HC      2

      247         KK  RT-N  ROUTE COMBINED HYDROGRAPH TO POINT N
      248         RM      1   .104     .4

      249         KK     B3  BROWNS CREEK WATERSHED NO. 3
      250         BA    .53
      251         PH      1    109    .34    .67   1.18   1.43   1.66   2.22   2.82   3.42
      252         LS             67      0
      253         UD    .36

      254         KK  B123  COMBINE ROUTED B1 AND B2 WITH B3
      255         HC      2

      256         KK  RT-PV ROUTE BROWNS CREEK HYDROGRAPH TO PLEASENT VALLEY
      257         RM      3   .306     .4
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1                            HEC-1 INPUT                             PAGE  3

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 258        KK  PLEASV COMBINE GALENA CK AND BROWNS CK AT PLEASENT VALLEY
 259        HC      2

 260        KK   RT-SG ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
 261        RM      3    .21     .4

 262        KK      30 STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
 263        BA    17.8
 264        BF     500     500      1
 265        PH       1     109    .32    .64    1.12    1.28    1.44     1.8    2.34    2.87
 266        LS              77      3
 267        UD    0.82

 268        KK   STMBT COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
 269        HC      2

 270        KK  RT-341 ROUTE COMBINED HYDROGRAPH TO HWY 341
 271        RM      2   .413   .4

 272        KK     35  WATERSHED 35 AKA BAILEY CANYON
 273        BA    15.5
 274        BF       0       0      1
 275        PH       1     109    .39    .77    1.34    1.53    1.68    1.98    2.51    3.04
 276        LS              82      2
 277        UD     .72

 278        KK     40  WATERSHED NO.40
 279        BA    2.63
 280        PH       1     109    .35    .69    1.21    1.38    1.51    1.78    2.29    2.81
 281        LS              77     15
 282        UD      .3

 283        KK  HY-341  COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
 284        HC      3

 285        KK  RT-HN  ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
 286        RM      5    .44     .4

 287        KK     60  WATERSHED NO. 60
 288        BA   23.15
 289        PH       1     109    .35    .68    1.19    1.36    1.49    1.77     2.3    2.83
 290        LS              76     12
 291        UD     1.0

 292        KK   HUFN  COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
 293        HC      4
 294        KO       1      2                      22

 295        KK   MDPLS ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
 296        RS       1    STOR      0
 297        SA      .6     1.9    8.6    18.1      40      80     131     196
 298        SE    4410    4412   4414    4416    4418    4420    4422    4424
 299        SQ     200     480    783    1411    4191    9772   19163   31000
 300        ZZ
```

```
1
        SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE  (V) ROUTING     (--->) DIVERSION OR PUMP FLOW

 NO.   (.) CONNECTOR   (<---) RETURN OF DIVERTED OR PUMPED FLOW

  24    T1
        V
        V
  29   RT1-B
        .
        .
  31    .     T2
        .     .
        .     .
  36    .     .     T3
        .     .     .
        .     .     .
  41    CP-B...............
        V
        V
  43   RCP-C
        .
        .
  45    .     T4
        .     .
        .     .
  50    CP-C.........
        V
        V
  52   RCP-D
        .
        .
  54    .     T5
        .     .
        .     .
  59    CP-D.........
        V
        V
  62   RCP-E
        .
        .
  64    .     T6
        .     .
        .     .
  69   CP-E .........
        V
        V
  71   RT-HN
        .
        .
  73    .     W1
        .     .
        .     .
  78    .     .     W2
        .     .     .
        .     .     .
  83    .    W1+W2.........
        .     V
        .     V
  85    .    RT-A
        .     .
        .     .
  87    .     .     W3
        .     .     V
        .     .     V
  92    .     .    RT-A
        .     .     .
        .     .     .
  94    .     .     .     W4
        .     .     .     .
        .     .     .     .
  99    .    W1234...................
        .     V
        .     V
 101    .    RT-B
        .     .
        .     .
 103    .     .     W5
        .     .     .
        .     .     .
 108    .    W5+CH.........
        .     V
        .     V
 110    .    RT-C
        .     .
        .     .
 112    .     .     W6
        .     .     .
        .     .     .
 117    .    W6+CH.........
        .     V
        .     V
 119    .    RT-D
        .     .
        .     .
```

```
INPUT
 LINE   (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

 NO.    (.) CONNECTOR      (<---) RETURN OF DIVERTED OR PUMPED FLOW

121      .     .     W7
        .     .      .
        .     .      .
126      .    W7+CH............
        .     V
        .     V
128      .    RT-E
        .     .
        .     .
130      .     .     W8
        .     .      .
        .     .      .
135      .    W8+CH............
        .     V
        .     V
137      .    RT-F
        .     .
        .     .
139      .     .     48
        .     .      .
        .     .      .
144      .    48+CH............
        .     V
        .     V
146      .    RT-HN
        .     .
        .     .
148      .     .     G1
        .     .      V
        .     .      V
153      .     .     RT-G
        .     .      .
        .     .      .
155      .     .      .     G2
        .     .      .      .
        .     .      .      .
160      .     .      .      .     G3
        .     .      .      .      .
        .     .      .      .      .
165      .     .     G123 ........................
        .     .      V
        .     .      V
167      .     .     RT-H
        .     .      .
        .     .      .
169      .     .      .     G4
        .     .      .      .
        .     .      .      .
174      .     .      .      .     G5
        .     .      .      .      .
        .     .      .      .      .
179      .     .     G1-5........................
        .     .      V
        .     .      V
181      .     .     RT-I
        .     .      .
        .     .      .
183      .     .      .     G6
        .     .      .      .
        .     .      .      .
188      .     .     G6+CH............
        .     .      V
        .     .      V
190      .     .     RT-K
        .     .      .
        .     .      .
192      .     .      .     J1
        .     .      .      V
        .     .      .      V
197      .     .      .     RT-J
        .     .      .      .
        .     .      .      .
199      .     .      .      .     J2
        .     .      .      .      .
        .     .      .      .      .
204      .     .      .     J1+J2............
        .     .      .      V
        .     .      .      V
206      .     .      .     RT-K
        .     .      .      .
        .     .      .      .
208      .     .      .      .     G8
        .     .      .      .      .
        .     .      .      .      .
213      .     .     G+J  ........................
        .     .      V
        .     .      V
215      .     .     RT-L
        .     .      .
        .     .      .
217      .     .      .     G7
        .     .      .      V
        .     .      .      V
```

```
INPUT
LINE     (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

NO.      (.) CONNECTOR      (<---) RETURN OF DIVERTED OR PUMPED FLOW

222      .      .      .      RT-L
         .      .      .      .
         .      .      .      .
224      .      .      .      .      G9
         .      .      .      .      .
         .      .      .      .      .
229      .      .      PT-L ..........
         .      .      V
         .      .      V
231      .      .      RT-PV
         .      .      .
         .      .      .
233      .      .      .      B1
         .      .      .      V
         .      .      .      V
238      .      .      .      RT-M
         .      .      .      .
         .      .      .      .
240      .      .      .      .      B2
         .      .      .      .      .
         .      .      .      .      .
245      .      .      .      B1+B2......
         .      .      .      V
         .      .      .      V
247      .      .      .      RT-N
         .      .      .      .
         .      .      .      .
249      .      .      .      .      B3
         .      .      .      .      .
         .      .      .      .      .
254      .      .      .      B123 ......
         .      .      .      V
         .      .      .      V
256      .      .      .      RT-PV
         .      .      .      .
         .      .      .      .
258      .      .      PLEASV.....
         .      .      V
         .      .      V
260      .      .      RT-SG
         .      .      .
         .      .      .
262      .      .      .      30
         .      .      .      .
         .      .      .      .
268      .      .      STMBT......
         .      .      V
         .      .      V
270      .      .      RT-341
         .      .      .
         .      .      .
272      .      .      .      35
         .      .      .      .
         .      .      .      .
278      .      .      .      .      40
         .      .      .      .      .
         .      .      .      .      .
283      .      .      HY-341..........
         .      .      V
         .      .      V
285      .      .      RT-HN
         .      .      .
         .      .      .
287      .      .      .      60
         .      .      .      .
         .      .      .      .
292      HUFN .................
         V
         V
295      MDPLS
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
*****************************************                              *****************************************
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)     *                              *     U.S. ARMY CORPS OF ENGINEERS      *
*            FEBRUARY 1981              *                              * THE HYDROLOGIC ENGINEERING CENTER     *
*          REVISED 01 JUN 88            *                              *          609 SECOND STREET            *
*                                       *                              *       DAVIS, CALIFORNIA 95616         *
*    RUN DATE 12/07/1989  TIME  18:38:15 *                             *            (916)551-1748              *
*****************************************                              *****************************************


                   *************************************************************************
                   PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION
                   FACILITY DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER
                   PURPOSE WITHOUT CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

                   HUFFAKER NARROWS HYDROLOGY MODEL
                   THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURRING SUMMER 1989
                   THE PARAMETERS ARE BASED ON THE 100 YEAR POINT RAINFALL FROM
                   THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
                   NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
                   METHOD AND MANNING EQUATION ARE USED FOR THE DETERMINATION OF LAG TIME.
                   CURVE NUMBERS ESTIMATED FROM USFS PHOTOGRAPHS AND FIELD INVESTIGATION
                   FUTURE CONDITIONS MODEL: IMPERVIOUS AREAS BASED ON COUNTY MASTER PLANS AND
                   THE DAMONTE AND DOUBLE DIAMOND MASTER PLANS
                   CHANGED ROUTING PARAMETERS FOR WHITES AND THOMAS FROM
                   APEXES TO THE NARROWS
                   MODIFIED THE LAG TIMES OF WATERSHEDS 40,60 DUE TO PROPOSED DEVELOPMENT IN THE
                   UPPER TRUCKEE MEADOWS.

                                FILE NAME: HFUT5.909

                   *************************************************************************

  23 IO      OUTPUT CONTROL VARIABLES
                IPRNT         4  PRINT CONTROL
                IPLOT         1  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT      HYDROGRAPH TIME DATA
                NMIN          5  MINUTES IN COMPUTATION INTERVAL
                IDATE     1    0  STARTING DATE
                ITIME      0000  STARTING TIME
                  NQ       289  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE      2    0  ENDING DATE
               NDTIME        0000  ENDING TIME
                ICENT         19  CENTURY MARK

             COMPUTATION INTERVAL     .08 HOURS
                TOTAL TIME BASE    24.00 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

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
  24 KK     *      T1     *        THOMAS CREEK WATERSHED T1
            *             *
            ***************

            SUBBASIN RUNOFF DATA

  25 BA        SUBBASIN CHARACTERISTICS
                 TAREA       2.50  SUBBASIN AREA

             PRECIPITATION DATA

  26 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
               .42     .83    1.45   1.87   2.26   3.18   4.31   5.44    .00    .00    .00    .00

                                       STORM AREA =  109.00

  27 LS        SCS LOSS RATE
                 STRTL        .90  INITIAL ABSTRACTION
                CRVNBR      69.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

  28 UD        SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .35  LAG
                                              ***

                                           UNIT HYDROGRAPH
                                      23 END-OF-PERIOD ORDINATES
           344.    1083.    2226.    2985.    3087.    2705.    2132.    1415.     998.     720.
           509.     359.     253.     177.     125.      89.      63.      44.      32.      24.
            17.      10.       3.
```

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

            ***************
            *             *
29 KK       *   RT1-B     *   ROUTE T1 TO CONCENTRATION POINT B
            *             *
            ***************

             HYDROGRAPH ROUTING DATA

30 RM           MUSKINGUM ROUTING
                  NSTPS        1 NUMBER OF SUBREACHES
                  AMSKK      .10 MUSKINGUM K
                     X       .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
31 KK       *      T2     *   THOMAS CREEK WATERSHED T2
            *             *
            ***************

             SUBBASIN RUNOFF DATA

32 BA           SUBBASIN CHARACTERISTICS
                  TAREA       1.82  SUBBASIN AREA

              PRECIPITATION DATA

33 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .40     .79    1.39   1.75    2.10    2.90    3.91    4.92     .00     .00     .00     .00

                                      STORM AREA =  109.00

34 LS           SCS LOSS RATE
                  STRTL       1.45  INITIAL ABSTRACTION
                 CRVNBR      58.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

35 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG        .29  LAG

                                        ***

                                         UNIT HYDROGRAPH
                                     19 END-OF-PERIOD ORDINATES
            388.    1261.    2334.    2654.    2365.    1782.    1112.     734.     501.     331.
            219.     143.      97.      65.      42.      29.      21.      13.       6.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
36 KK       *      T3     *   THOMAS CREEK WATERSHED T3
            *             *
            ***************

            .SUBBASIN RUNOFF DATA

37 BA           SUBBASIN CHARACTERISTICS
                  TAREA        .82  SUBBASIN AREA

              PRECIPITATION DATA

38 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .41     .80    1.40   1.73    2.04    2.78    3.75    4.73     .00     .00     .00     .00

                                      STORM AREA =  109.00

39 LS           SCS LOSS RATE
                  STRTL       1.39  INITIAL ABSTRACTION
                 CRVNBR      59.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

40 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG        .30  LAG

                                        ***

                                         UNIT HYDROGRAPH
                                     20 END-OF-PERIOD ORDINATES
            162.     524.     994.    1159.    1065.     833.     529.     354.     243.     162.
            110.      73.      49.      33.      22.      15.      11.       7.       4.       1.
```

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

           **************
           *            *
41 KK      *    CP-B    *     COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCCENTRATION PT B
           *            *
           **************

42 HC          HYDROGRAPH COMBINATION
                 ICOMP         3  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
43 KK      *   RCP-C    *     ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
           *            *
           **************

            HYDROGRAPH ROUTING DATA

44 RM          MUSKINGUM ROUTING
                 NSTPS        2 NUMBER OF SUBREACHES
                 AMSKK      .15 MUSKINGUM K
                     X      .40 MUSKINGUM X

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
45 KK      *     T4     *     THOMAS CREEK WATERSHED T4
           *            *
           **************

            SUBBASIN RUNOFF DATA

46 BA          SUBBASIN CHARACTERISTICS
                 TAREA       2.16  SUBBASIN AREA

             PRECIPITATION DATA

47 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  .............. TP-40 ..............  .......... TP-49 ..........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
               .39    .77    1.35   1.64   1.91   2.55   3.38   4.20    .00    .00    .00    .00

                                     STORM AREA =  109.00

48 LS          SCS LOSS RATE
                 STRTL        1.45  INITIAL ABSTRACTION
                CRVNBR       58.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

49 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .54  LAG

                                              ***

                                        UNIT HYDROGRAPH
                                    34 END-OF-PERIOD ORDINATES
             108.    319.    642.   1093.   1504.   1733.   1794.   1727.   1557.   1341.
            1057.    801.    633.    499.    405.    322.    251.    200.    159.    125.
              98.     78.     62.     49.     39.     31.     24.     19.     16.     13.
              10.      7.      5.      2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
50 KK      *    CP-C    *     COMBINE ROUTED T1-T3 W/ T4
           *            *
           **************
```

```
 51 HC        HYDROGRAPH COMBINATION
                ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           **************
           *            *
 52 KK     *   RCP-D    *      ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
           *            *
           **************

            HYDROGRAPH ROUTING DATA

 53 RM        MUSKINGUM ROUTING
                NSTPS         2 NUMBER OF SUBREACHES
                AMSKK       .14 MUSKINGUM K
                   X       .40 MUSKINGUM X

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           **************
           *            *
 54 KK     *      T5    *      THOMAS CREEK WATERSHED T5
           *            *
           **************

            SUBBASIN RUNOFF DATA

 55 BA        SUBBASIN CHARACTERISTICS
                TAREA        1.19  SUBBASIN AREA

             PRECIPITATION DATA

 56 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .35     .68    1.20    1.40    1.59    2.04    2.75    3.40     .00     .00     .00     .00

                                    STORM AREA =  109.00

 57 LS        SCS LOSS RATE
                STRTL         .82  INITIAL ABSTRACTION
               CRVNBR       71.00  CURVE NUMBER
                RTIMP        8.00  PERCENT IMPERVIOUS AREA

 58 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .49  LAG

                                          ***

                                       UNIT HYDROGRAPH
                                   31 END-OF-PERIOD ORDINATES
             75.     223.     457.     760.     986.    1075.    1070.     965.     832.     648.
            479.     369.     288.     226.     175.     136.     105.      81.      62.      49.
             38.      29.      23.      17.      14.      11.       9.       7.       5.       3.
              2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           **************
           *            *
 59 KK     *    CP-D    *      COMBINE ROUTED T1-T4 W/ T5
           *            *
           **************

 61 KO        OUTPUT CONTROL VARIABLES
                IPRNT          1  PRINT CONTROL
                IPLOT          1  PLOT CONTROL
                QSCAL          0.  HYDROGRAPH PLOT SCALE

 60 HC        HYDROGRAPH COMBINATION
                ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***

*****************************************************************************************************************************************

                                                    HYDROGRAPH AT STATION     CP-D
                                                      SUM OF  2 HYDROGRAPHS

*****************************************************************************************************************************************
                    *                        *                        *
  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW
```

```
                            *                             *                            *
  1   0000   1     0.  *  1   0805   74      4.  *  1   1210 147     477.  *  1   1815 220    414.
  1   0005   2     0.  *  1   0810   75      4.  *  1   1215 148     584.  *  1   1820 221    410.
  1   0010   3     0.  *  1   0815   76      4.  *  1   1220 149     733.  *  1   1825 222    403.
  1   0015   4     0.  *  1   0820   77      5.  *  1   1225 150     939.  *  1   1830 223    394.
  1   0020   5     0.  *  1   0825   78      5.  *  1   1230 151    1199.  *  1   1835 224    380.
  1   0025   6     1.  *  1   0830   79      5.  *  1   1235 152    1462.  *  1   1840 225    365.
  1   0030   7     1.  *  1   0835   80      5.  *  1   1240 153    1658.  *  1   1845 226    350.
  1   0035   8     1.  *  1   0840   81      6.  *  1   1245 154    1745.  *  1   1850 227    336.
  1   0040   9     2.  *  1   0845   82      6.  *  1   1250 155    1726.  *  1   1855 228    325.
  1   0045  10     2.  *  1   0850   83      6.  *  1   1255 156    1635.  *  1   1900 229    316.
  1   0050  11     2.  *  1   0855   84      6.  *  1   1300 157    1510.  *  1   1905 230    309.
  1   0055  12     2.  *  1   0700   85      6.  *  1   1305 158    1375.  *  1   1910 231    303.
  1   0100  13     2.  *  1   0705   86      6.  *  1   1310 159    1249.  *  1   1915 232    299.
  1   0105  14     3.  *  1   0710   87      6.  *  1   1315 160    1140.  *  1   1920 233    295.
  1   0110  15     3.  *  1   0715   88      6.  *  1   1320 161    1046.  *  1   1925 234    292.
  1   0115  16     3.  *  1   0720   89      7.  *  1   1325 162     970.  *  1   1930 235    289.
  1   0120  17     3.  *  1   0725   90      7.  *  1   1330 163     910.  *  1   1935 236    286.
  1   0125  18     3.  *  1   0730   91      7.  *  1   1335 164     865.  *  1   1940 237    284.
  1   0130  19     3.  *  1   0735   92      7.  *  1   1340 165     831.  *  1   1945 238    282.
  1   0135  20     3.  *  1   0740   93      7.  *  1   1345 166     805.  *  1   1950 239    280.
  1   0140  21     3.  *  1   0745   94      7.  *  1   1350 167     784.  *  1   1955 240    278.
  1   0145  22     3.  *  1   0750   95      7.  *  1   1355 168     764.  *  1   2000 241    276.
  1   0150  23     3.  *  1   0755   96      7.  *  1   1400 169     747.  *  1   2005 242    275.
  1   0155  24     3.  *  1   0800   97      7.  *  1   1405 170     729.  *  1   2010 243    273.
  1   0200  25     3.  *  1   0805   98      7.  *  1   1410 171     713.  *  1   2015 244    271.
  1   0205  26     3.  *  1   0810   99      7.  *  1   1415 172     698.  *  1   2020 245    270.
  1   0210  27     3.  *  1   0815  100      7.  *  1   1420 173     684.  *  1   2025 246    268.
  1   0215  28     3.  *  1   0820  101      8.  *  1   1425 174     671.  *  1   2030 247    267.
  1   0220  29     3.  *  1   0825  102      8.  *  1   1430 175     659.  *  1   2035 248    265.
  1   0225  30     3.  *  1   0830  103      9.  *  1   1435 176     648.  *  1   2040 249    264.
  1   0230  31     3.  *  1   0835  104      9.  *  1   1440 177     638.  *  1   2045 250    262.
  1   0235  32     3.  *  1   0840  105     11.  *  1   1445 178     629.  *  1   2050 251    261.
  1   0240  33     3.  *  1   0845  106     12.  *  1   1450 179     620.  *  1   2055 252    260.
  1   0245  34     3.  *  1   0850  107     14.  *  1   1455 180     612.  *  1   2100 253    258.
  1   0250  35     3.  *  1   0855  108     16.  *  1   1500 181     604.  *  1   2105 254    257.
  1   0255  36     3.  *  1   0900  109     19.  *  1   1505 182     597.  *  1   2110 255    256.
  1   0300  37     3.  *  1   0905  110     21.  *  1   1510 183     590.  *  1   2115 256    254.
  1   0305  38     3.  *  1   0910  111     23.  *  1   1515 184     583.  *  1   2120 257    253.
  1   0310  39     3.  *  1   0915  112     26.  *  1   1520 185     578.  *  1   2125 258    252.
  1   0315  40     3.  *  1   0920  113     29.  *  1   1525 186     571.  *  1   2130 259    251.
  1   0320  41     3.  *  1   0925  114     31.  *  1   1530 187     564.  *  1   2135 260    249.
  1   0325  42     3.  *  1   0930  115     34.  *  1   1535 188     555.  *  1   2140 261    248.
  1   0330  43     3.  *  1   0935  116     38.  *  1   1540 189     545.  *  1   2145 262    247.
  1   0335  44     3.  *  1   0940  117     41.  *  1   1545 190     535.  *  1   2150 263    246.
  1   0340  45     3.  *  1   0945  118     45.  *  1   1550 191     525.  *  1   2155 264    245.
  1   0345  46     3.  *  1   0950  119     49.  *  1   1555 192     516.  *  1   2200 265    244.
  1   0350  47     3.  *  1   0955  120     54.  *  1   1600 193     509.  *  1   2205 266    243.
  1   0355  48     3.  *  1   1000  121     58.  *  1   1605 194     502.  *  1   2210 267    241.
  1   0400  49     3.  *  1   1005  122     62.  *  1   1610 195     496.  *  1   2215 268    240.
  1   0405  50     4.  *  1   1010  123     67.  *  1   1615 196     491.  *  1   2220 269    239.
  1   0410  51     4.  *  1   1015  124     72.  *  1   1620 197     486.  *  1   2225 270    238.
  1   0415  52     4.  *  1   1020  125     77.  *  1   1625 198     481.  *  1   2230 271    237.
  1   0420  53     4.  *  1   1025  126     82.  *  1   1630 199     477.  *  1   2235 272    236.
  1   0425  54     4.  *  1   1030  127     87.  *  1   1635 200     473.  *  1   2240 273    235.
  1   0430  55     4.  *  1   1035  128     93.  *  1   1640 201     469.  *  1   2245 274    234.
  1   0435  56     4.  *  1   1040  129     99.  *  1   1645 202     466.  *  1   2250 275    233.
  1   0440  57     4.  *  1   1045  130    106.  *  1   1650 203     462.  *  1   2255 276    232.
  1   0445  58     4.  *  1   1050  131    112.  *  1   1655 204     459.  *  1   2300 277    231.
  1   0450  59     4.  *  1   1055  132    120.  *  1   1700 205     455.  *  1   2305 278    230.
  1   0455  60     4.  *  1   1100  133    127.  *  1   1705 206     452.  *  1   2310 279    229.
  1   0500  61     4.  *  1   1105  134    136.  *  1   1710 207     449.  *  1   2315 280    228.
  1   0505  62     4.  *  1   1110  135    145.  *  1   1715 208     446.  *  1   2320 281    227.
  1   0510  63     4.  *  1   1115  136    156.  *  1   1720 209     443.  *  1   2325 282    227.
  1   0515  64     4.  *  1   1120  137    169.  *  1   1725 210     441.  *  1   2330 283    226.
  1   0520  65     4.  *  1   1125  138    182.  *  1   1730 211     438.  *  1   2335 284    225.
  1   0525  66     4.  *  1   1130  139    196.  *  1   1735 212     435.  *  1   2340 285    224.
  1   0530  67     4.  *  1   1135  140    210.  *  1   1740 213     432.  *  1   2345 286    223.
  1   0535  68     4.  *  1   1140  141    226.  *  1   1745 214     430.  *  1   2350 287    222.
  1   0540  69     4.  *  1   1145  142    244.  *  1   1750 215     427.  *  1   2355 288    221.
  1   0545  70     4.  *  1   1150  143    267.  *  1   1755 216     425.  *  2   0000 289    221.
  1   0550  71     4.  *  1   1155  144    298.  *  1   1800 217     423.  *
  1   0555  72     4.  *  1   1200  145    339.  *  1   1805 218     420.  *
  1   0600  73     4.  *  1   1205  146    398.  *  1   1810 219     417.  *
                   *                          *                        *
*****************************************************************************************************

 PEAK FLOW    TIME                     MAXIMUM AVERAGE FLOW
                        6-HR      24-HR      72-HR    24.00-HR
+  (CFS)     (HR)
                 (CFS)
+   1745.    12.75         710.      262.       262.       262.
               (INCHES)    .777      1.146      1.146      1.146
               (AC-FT)     352.       519.       519.       519.

               CUMULATIVE AREA =    8.49 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
 62 KK      *   RCP-E    *     ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
            *            *
            **************
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            HYDROGRAPH ROUTING DATA

 63 RM         MUSKINGUM ROUTING
                 NSTPS        3 NUMBER OF SUBREACHES
                 AMSKK      .27 MUSKINGUM K
                     X      .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 64 KK    *      T6     *    THOMAS CREEK WATERSHED T6
          *             *
          ***************

            SUBBASIN RUNOFF DATA

 65 BA         SUBBASIN CHARACTERISTICS
                 TAREA       3.15  SUBBASIN AREA

              PRECIPITATION DATA

 66 PH                     DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                .35    .69    1.21    1.34   1.48   1.80   2.30   2.80    .00    .00    .00    .00

                                       STORM AREA =  109.00

 67 LS         SCS LOSS RATE
                 STRTL        .67  INITIAL ABSTRACTION
                CRVNBR      75.00  CURVE NUMBER
                 RTIMP      16.00  PERCENT IMPERVIOUS AREA

 68 UD         SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .85  LAG

                                        ***

                                         UNIT HYDROGRAPH
                                     53 END-OF-PERIOD ORDINATES
           48.     155.     294.     476.     713.     999.    1275.    1490.    1630.    1696.
         1703.    1668.    1570.    1457.    1329.    1169.     979.     816.     695.     595.
          510.     443.     385.     331.     284.     241.     209.     178.     154.     131.
          113.      96.      83.      71.      62.      53.      46.      39.      34.      29.
           25.      21.      18.      16.      15.      13.      11.       9.       7.       6.
            4.       2.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 69 KK    *     CP-E    *    COMBINE ROUTED T1-T5 W/ T6
          *             *
          ***************

 70 HC         HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 71 KK    *    RT-HN    *    ROUTE THOMAS CK WATERSHED TO HUFFAKER NARROWS
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

 72 RM         MUSKINGUM ROUTING
                 NSTPS        2 NUMBER OF SUBREACHES
                 AMSKK      .35 MUSKINGUM K
                     X      .40 MUSKINGUM X

                                        ***
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 73 KK    *      W1     *    WHITES CREEK WATERSHED NO. 1
          *             *
          ***************
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                SUBBASIN RUNOFF DATA

 74 BA              SUBBASIN CHARACTERISTICS
                      TAREA       1.38  SUBBASIN AREA

                  PRECIPITATION DATA

 75 PH                              DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .39     .77    1.35    1.83    2.28    3.34    4.43    5.52     .00     .00     .00     .00

                                          STORM AREA =   109.00

 76 LS              SCS LOSS RATE
                      STRTL        .74  INITIAL ABSTRACTION
                     CRVNBR      73.00  CURVE NUMBER
                      RTIMP        .00  PERCENT IMPERVIOUS AREA

 77 UD              SCS DIMENSIONLESS UNITGRAPH
                       TLAG        .21  LAG

                                                ***

                                             UNIT HYDROGRAPH
                                         15 END-OF-PERIOD ORDINATES
                  595.    1989.    2616.    2200.    1321.     750.     449.     281.     150.      89.
                   52.      30.      19.      10.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               **************
               *            *
 78 KK         *     W2     *     WHITES CREEK WATERSHED NO. 2
               *            *
               **************

                SUBBASIN RUNOFF DATA

 79 BA              SUBBASIN CHARACTERISTICS
                      TAREA        .84  SUBBASIN AREA

                  PRECIPITATION DATA

 80 PH                              DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .39     .77    1.35    1.80    2.23    3.22    4.31    5.39     .00     .00     .00     .00

                                          STORM AREA =   109.00

 81 LS              SCS LOSS RATE
                      STRTL        .50  INITIAL ABSTRACTION
                     CRVNBR      80.00  CURVE NUMBER
                      RTIMP        .00  PERCENT IMPERVIOUS AREA

 82 UD              SCS DIMENSIONLESS UNITGRAPH
                       TLAG        .17  LAG

                                                ***

                                             UNIT HYDROGRAPH
                                         12 END-OF-PERIOD ORDINATES
                  583.    1765.    1813.    1137.     570.     305.     161.      84.      45.      24.
                   14.       5.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               **************
               *            *
 83 KK         *   W1+W2    *     COMBINE FLOW FROM W1 AND W2
               *            *
               **************

 84 HC              HYDROGRAPH COMBINATION
                      ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                ***



*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               **************
               *            *
 85 KK         *    RT-A    *     ROUTE COMBINED W1 AND W2 TO POINT A
               *            *
               **************
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          HYDROGRAPH ROUTING DATA

 86 RM        MUSKINGUM ROUTING
                NSTPS        1 NUMBER OF SUBREACHES
                AMSKK      .12 MUSKINGUM K
                   X      .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 87 KK     *     W3      *   WHITES CREEK WATERSHED NO. 3
           *             *
           ***************

          SUBBASIN RUNOFF DATA

 88 BA        SUBBASIN CHARACTERISTICS
                TAREA        1.38  SUBBASIN AREA

           PRECIPITATION DATA

 89 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .39     .77    1.36    1.78    2.18    3.12    4.15    5.17     .00     .00     .00     .00

                                STORM AREA =  109.00

 90 LS        SCS LOSS RATE
                STRTL        .78  INITIAL ABSTRACTION
               CRVNBR      72.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

 91 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .23  LAG

                                        ***

                                   UNIT HYDROGRAPH
                                16 END-OF-PERIOD ORDINATES
        486.    1672.    2434.    2235.    1569.     897.     555.     334.     203.     123.
         75.      46.      28.      18.      10.       2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 92 KK     *    RT-A     *   ROUTE W3 TO POINT A
           *             *
           ***************

          HYDROGRAPH ROUTING DATA

 93 RM        MUSKINGUM ROUTING
                NSTPS        1 NUMBER OF SUBREACHES
                AMSKK      .09 MUSKINGUM K
                   X      .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 94 KK     *     W4      *   WHITES CREEK WATERSHED NO. 4
           *             *
           ***************

          SUBBASIN RUNOFF DATA

 95 BA        SUBBASIN CHARACTERISTICS
                TAREA        1.47  SUBBASIN AREA


           PRECIPITATION DATA

 96 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .38     .75    1.32    1.71    2.08    2.95    3.94    4.94     .00     .00     .00     .00

                                STORM AREA =  109.00
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```
97 LS        SCS LOSS RATE
               STRTL        1.23  INITIAL ABSTRACTION
              CRVNBR        62.00  CURVE NUMBER
               RTIMP         .00  PERCENT IMPERVIOUS AREA

98 UD         SCS DIMENSIONLESS UNITGRAPH
                TLAG         .27  LAG

                                      ***

                                   UNIT HYDROGRAPH
                                18 END-OF-PERIOD ORDINATES
          366.    1222.    2123.    2264.    1893.    1267.     791.     523.     332.     219.
          140.      90.      59.      38.      25.      17.      10.       4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
99 KK     *    W1234    *    COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
          *             *
          ***************

100 HC        HYDROGRAPH COMBINATION
                ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                      ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
101 KK    *    RT-B     *    ROUTE COMBINED HYDROGRAPH TO POINT B
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

102 RM        MUSKINGUM ROUTING
                NSTPS          1 NUMBER OF SUBREACHES
                AMSKK        .08 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                      ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
103 KK    *      W5     *    WHITES CREEK WATERSHED NO. 5
          *             *
          ***************

            SUBBASIN RUNOFF DATA

104 BA        SUBBASIN CHARACTERISTICS
                TAREA       1.27  SUBBASIN AREA

             PRECIPITATION DATA

105 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY  4-DAY  7-DAY  10-DAY
               .38     .75    1.31   1.67    2.01    2.80    3.78    4.77     .00    .00    .00     .00

                                  STORM AREA =  109.00

106 LS        SCS LOSS RATE
                STRTL       1.23  INITIAL ABSTRACTION
               CRVNBR       62.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

107 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG         .28  LAG

                                      ***

                                   UNIT HYDROGRAPH
                                19 END-OF-PERIOD ORDINATES
          292.     963.    1728.    1902.    1648.    1174.     729.     484.     320.     208.
          137.      89.      59.      39.      25.      18.      12.       6.       1.
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
108 KK    *    W5+CH    *    COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
          *             *
          ***************
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```
109 HC        HYDROGRAPH COMBINATION
               ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
110 KK    *    RT-C     *    ROUTE COMBINED HYDROGRAPH TO POINT C
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

111 RM        MUSKINGUM ROUTING
               NSTPS        2 NUMBER OF SUBREACHES
               AMSKK      .19 MUSKINGUM K
                  X      .40 MUSKINGUM X

                                              ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
112 KK    *     W6      *    WHITES CREEK WATERSHED NO. 6
          *             *
          ***************

             SUBBASIN RUNOFF DATA

113 BA        SUBBASIN CHARACTERISTICS
               TAREA       1.43  SUBBASIN AREA

              PRECIPITATION DATA

114 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .36     .71    1.24    1.55   1.86   2.56   3.34   4.12    .00    .00    .00    .00

                                        STORM AREA =  109.00

115 LS        SCS LOSS RATE
               STRTL       1.28  INITIAL ABSTRACTION
              CRVNBR      61.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

116 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .44  LAG

                                              ***

                                          UNIT HYDROGRAPH
                                       28 END-OF-PERIOD ORDINATES
            116.     352.     726.    1158.    1390.    1429.    1323.    1137.     877.     630.
            471.     362.     276.     205.     155.     117.      88.      67.      51.      38.
             29.      21.      16.      13.      10.       7.       5.       2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
117 KK    *    W6+CH    *    COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
          *             *
          ***************

118 HC        HYDROGRAPH COMBINATION
               ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***




*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
119 KK    *    RT-D     *    ROUTE COMBINED HYDROGRAPH TO POINT D
          *             *
          ***************
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            HYDROGRAPH ROUTING DATA

 120 RM          MUSKINGUM ROUTING
                  NSTPS        3 NUMBER OF SUBREACHES
                  AMSKK      .30 MUSKINGUM K
                      X      .40 MUSKINGUM X

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 121 KK    *     W7      *     WHITES CREEK WATERSHED NO.7
           *             *
           ***************

            SUBBASIN RUNOFF DATA

 122 BA          SUBBASIN CHARACTERISTICS
                  TAREA        1.30  SUBBASIN AREA

              PRECIPITATION DATA

 123 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .33     .64    1.12    1.34    1.55    2.03    2.69    3.36     .00     .00     .00     .00

                                      STORM AREA =  109.00

 124 LS          SCS LOSS RATE
                  STRTL         .94  INITIAL ABSTRACTION
                 CRVNBR       68.00  CURVE NUMBER
                  RTIMP        8.00  PERCENT IMPERVIOUS AREA

 125 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG         .50  LAG

                                   ***

                                      UNIT HYDROGRAPH
                                  32 END-OF-PERIOD ORDINATES
             78.     231.     474.     784.    1039.    1151.    1151.    1053.     919.     735.
            542.     420.     325.     260.     203.     156.     121.      95.      74.      57.
             44.      35.      27.      21.      16.      13.      11.       8.       6.       4.
              3.       1.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 126 KK    *   W7+CH     *     COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
           *             *
           ***************

 127 HC          HYDROGRAPH COMBINATION
                  ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                   ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 128 KK    *    RT-E     *     ROUTE COMBINED HYDROGRAPH TO POINT E
           *             *
           ***************

            HYDROGRAPH ROUTING DATA

 129 RM          MUSKINGUM ROUTING
                  NSTPS        2 NUMBER OF SUBREACHES
                  AMSKK      .14 MUSKINGUM K
                      X      .40 MUSKINGUM X

                                   ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 130 KK    *     W8      *     WHITES CREEK WATERSHED NO. 8
           *             *
           ***************
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              SUBBASIN RUNOFF DATA

131 BA          SUBBASIN CHARACTERISTICS
                  TAREA       4.37  SUBBASIN AREA

                PRECIPITATION DATA

132 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .32     .64    1.12    1.28    1.43    1.79    2.29    2.79     .00     .00     .00     .00

                                        STORM AREA =  109.00

133 LS          SCS LOSS RATE
                  STRTL        .94  INITIAL ABSTRACTION
                 CRVNBR      68.00  CURVE NUMBER
                  RTIMP      17.00  PERCENT IMPERVIOUS AREA

134 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .53  LAG

                                             ***

                                              UNIT HYDROGRAPH
                                          34 END-OF-PERIOD ORDINATES
              229.      674.     1366.     2320.     3147.     3602.     3687.     3511.     3142.     2669.
             2056.     1572.     1230.      980.      783.      618.      485.      382.      301.      238.
              186.      146.      117.       93.       73.       57.       45.       37.       31.       24.
               18.       12.        7.        2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
135 KK      *    W8+CH    *    COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
            *             *
            ***************

136 HC          HYDROGRAPH COMBINATION
                  ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                             ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
137 KK      *    RT-F     *    ROUTE COMBINED HYDROGRAPH TO POINT F
            *             *
            ***************

              HYDROGRAPH ROUTING DATA

138 RM          MUSKINGUM ROUTING
                  NSTPS          1  NUMBER OF SUBREACHES
                  AMSKK        .24  MUSKINGUM K
                      X        .40  MUSKINGUM X

                                             ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
139 KK      *      46     *    WHITES CREEK WATERSHED 46
            *             *
            ***************

              SUBBASIN RUNOFF DATA

140 BA          SUBBASIN CHARACTERISTICS
                  TAREA       2.69  SUBBASIN AREA

                PRECIPITATION DATA

141 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .36     .70    1.23    1.39    1.52    1.78    2.26    2.75     .00     .00     .00     .00

                                        STORM AREA =  109.00

142 LS          SCS LOSS RATE
                  STRTL       1.03  INITIAL ABSTRACTION
                 CRVNBR      66.00  CURVE NUMBER
                  RTIMP      25.00  PERCENT IMPERVIOUS AREA

143 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .50  LAG
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                                       ***

                                 UNIT HYDROGRAPH
                               32 END-OF-PERIOD ORDINATES
      162.     478.     980.    1643.    2150.    2381.    2381.    2180.    1901.    1521.
     1122.     869.     672.     537.     419.     323.     251.     198.     152.     118.
       92.      72.      56.      44.      34.      28.      22.      18.      13.       9.
        6.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
144 KK        *   46+CH     *   COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
              *             *
              ***************

145 HC           HYDROGRAPH COMBINATION
                  ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                       ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
146 KK        *   RT-HN     *   ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
              *             *
              ***************

             HYDROGRAPH ROUTING DATA

147 RM           MUSKINGUM ROUTING
                  NSTPS          4  NUMBER OF SUBREACHES
                  AMSKK        .40  MUSKINGUM K
                      X        .40  MUSKINGUM X

                                       ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
148 KK        *     G1      *   GLENA CREEK WATERSHED NO.1
              *             *
              ***************

             SUBBASIN RUNOFF DATA

149 BA           SUBBASIN CHARACTERISTICS
                  TAREA       1.83  SUBBASIN AREA

              PRECIPITATION DATA

150 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ............... . ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                .40     .79    1.39   1.85   2.29   3.31   4.46   5.60    .00    .00    .00    .00

                                   STORM AREA =  109.00

151 LS           SCS LOSS RATE
                  STRTL        .67  INITIAL ABSTRACTION
                 CRVNBR      75.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

152 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG        .20  LAG

                                       ***

                                 UNIT HYDROGRAPH
                               14 END-OF-PERIOD ORDINATES
      795.    2620.    3249.    2597.    1445.     831.     470.     271.     154.      88.
       50.      30.      17.       6.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
153 KK        *   RT-G      *   ROUTE G1 TO POINT G
              *             *
              ***************
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               HYDROGRAPH ROUTING DATA

 154 RM           MUSKINGUM ROUTING
                   NSTPS        1 NUMBER OF SUBREACHES
                   AMSKK      .10 MUSKINGUM K
                      X       .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               **************
               *            *
 155 KK        *     G2     *   GALENA CREEK WATERSHED NO. 2
               *            *
               **************

               SUBBASIN RUNOFF DATA

 156 BA           SUBBASIN CHARACTERISTICS
                   TAREA        1.30  SUBBASIN AREA

                PRECIPITATION DATA

 157 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .39     .77    1.35    1.76    2.16    3.08    4.10    5.12     .00     .00     .00     .00

                                      STORM AREA =  109.00

 158 LS           SCS LOSS RATE
                   STRTL        .67  INITIAL ABSTRACTION
                  CRVNBR      75.00  CURVE NUMBER
                   RTIMP        .00  PERCENT IMPERVIOUS AREA

 159 UD           SCS DIMENSIONLESS UNITGRAPH
                    TLAG        .20  LAG

                                        ***

                                         UNIT HYDROGRAPH
                                    14 END-OF-PERIOD ORDINATES
             634.     2089.     2591.     2071.     1152.      663.      375.      216.      123.       70.
              40.       24.       14.        4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               **************
               *            *
 160 KK        *     G3     *   GALENA CREEK WATERSHED NO. 3
               *            *
               **************

               SUBBASIN RUNOFF DATA

 161 BA           SUBBASIN CHARACTERISTICS
                   TAREA        1.15  SUBBASIN AREA

                PRECIPITATION DATA

 162 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .38     .74    1.30    1.69    2.05    2.90    3.95    4.99     .00     .00     .00     .00

                                      STORM AREA =  109.00

 163 LS           SCS LOSS RATE
                   STRTL        .90  INITIAL ABSTRACTION
                  CRVNBR      69.00  CURVE NUMBER
                   RTIMP        .00  PERCENT IMPERVIOUS AREA

 164 UD           SCS DIMENSIONLESS UNITGRAPH
                    TLAG        .36  LAG

                                        ***

                                         UNIT HYDROGRAPH
                                    24 END-OF-PERIOD ORDINATES
             148.      462.      963.     1312.     1379.     1244.     1007.      692.      484.      350.
             252.      179.      128.       91.       64.       46.       33.       23.       17.       13.
               9.        6.        3.        0.
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               **************
               *            *
 165 KK        *    G123    *   COMBINE ROUTED G1 WITH G2 AND G3
               *            *
               **************
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166 HC        HYDROGRAPH COMBINATION
               ICOMP         3  NUMBER OF HYDROGRAPHS TO COMBINE

                                             ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
167 KK    *    RT-H     *    ROUTE COMBINED HYDROGRAPH TO POINT H
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

168 RM        MUSKINGUM ROUTING
               NSTPS        2 NUMBER OF SUBREACHES
               AMSKK      .17 MUSKINGUM K
                  X       .40 MUSKINGUM X

                                             ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
169 KK    *     G4      *    GALENA CREEK WATERSHED NO. 4
          *             *
          ***************

            SUBBASIN RUNOFF DATA

170 BA        SUBBASIN CHARACTERISTICS
               TAREA        1.54  SUBBASIN AREA

             PRECIPITATION DATA

171 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .38    .75    1.32    1.68    2.02    2.83    3.79    4.74    .00     .00     .00     .00

                                          STORM AREA =  109.00

172 LS        SCS LOSS RATE
               STRTL        1.17  INITIAL ABSTRACTION
              CRVNBR        63.00  CURVE NUMBER
               RTIMP         .00  PERCENT IMPERVIOUS AREA

173 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG         .25  LAG

                                             ***

                                                 UNIT HYDROGRAPH
                                             17 END-OF-PERIOD ORDINATES
           452.     1546.    2462.    2482.    1918.    1149.     715.     483.     288.     181.
           113.       71.      45.      28.      19.      11.       4.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
174 KK    *     G5      *    GALENA CREEK WATERSHED NO. 5
          *             *
          ***************

            SUBBASIN RUNOFF DATA

175 BA        SUBBASIN CHARACTERISTICS
               TAREA        1.02  SUBBASIN AREA

             PRECIPITATION DATA

176 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .38    .75    1.32    1.67    1.99    2.75    3.70    4.64    .00     .00     .00     .00

                                          STORM AREA =  109.00

177 LS        SCS LOSS RATE
               STRTL        1.64  INITIAL ABSTRACTION
              CRVNBR        55.00  CURVE NUMBER
               RTIMP         .00  PERCENT IMPERVIOUS AREA

178 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG         .32  LAG
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                                      ***

                              UNIT HYDROGRAPH
                            21 END-OF-PERIOD ORDINATES
      173.    555.   1097.   1351.   1305.   1081.    745.    496.    345.    239.
      164.    112.     76.     53.     38.     25.     17.     13.      9.      5.
        2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
179 KK     *    G1-5    *   COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
           *            *
           **************

180 HC        HYDROGRAPH COMBINATION
               ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE
                                      ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
181 KK     *    RT-I    *   ROUTE COMBINED HYDROGRAPHS TO POINT I
           *            *
           **************

             HYDROGRAPH ROUTING DATA

182 RM        MUSKINGUM ROUTING
               NSTPS         2 NUMBER OF SUBREACHES
               AMSKK       .17 MUSKINGUM K
                  X        .40 MUSKINGUM X
                                      ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
183 KK     *     G6     *   GALENA CREEK WATERSHED N0.6
           *            *
           **************

             SUBBASIN RUNOFF DATA

184 BA        SUBBASIN CHARACTERISTICS
               TAREA        1.37  SUBBASIN AREA

              PRECIPITATION DATA

185 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
                .37    .72    1.26   1.57   1.87   2.56   3.33   4.10    .00    .00    .00    .00

                                   STORM AREA =  109.00

186 LS        SCS LOSS RATE
               STRTL        1.39  INITIAL ABSTRACTION
              CRVNBR       59.00  CURVE NUMBER
               RTIMP        2.50  PERCENT IMPERVIOUS AREA

187 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG         .58  LAG
                                      ***

                              UNIT HYDROGRAPH
                            37 END-OF-PERIOD ORDINATES
       57.    172.    334.    574.    823.    993.   1059.   1057.    986.    882.
      751.    587.    458.    366.    294.    242.    195.    154.    125.    101.
       80.     65.     52.     42.     34.     27.     22.     17.     14.     11.
       10.      8.      6.      5.      3.      2.      0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
188 KK     *   G6+CH    *   COMBINE G6 WITH COMBINED HYDROGRAPH AT POINT I
           *            *
           **************
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189 HC        HYDROGRAPH COMBINATION
               ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
190 KK   *    RT-K     *    ROUTE COMBINED HYDROGRAPH TO POINT K
         *             *
         ***************

            HYDROGRAPH ROUTING DATA

191 RM        MUSKINGUM ROUTING
               NSTPS         1 NUMBER OF SUBREACHES
               AMSKK       .07 MUSKINGUM K
                 X         .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
192 KK   *     J1      *    JONES CREEK WATERSHED NO. 1
         *             *
         ***************

            SUBBASIN RUNOFF DATA

193 BA        SUBBASIN CHARACTERISTICS
               TAREA        1.29  SUBBASIN AREA

             PRECIPITATION DATA

194 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .39     .76    1.33   1.67   2.00   2.75    3.69    4.62     .00     .00     .00     .00

                                   STORM AREA =  109.00

195 LS        SCS LOSS RATE
               STRTL        1.17  INITIAL ABSTRACTION
              CRVNBR       63.00  CURVE NUMBER
               RTIMP         .00  PERCENT IMPERVIOUS AREA

196 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG         .23  LAG

                                        ***

                                      UNIT HYDROGRAPH
                                  16 END-OF-PERIOD ORDINATES
            454.    1563.   2275.   2089.   1467.    839.    519.    312.    190.    115.
             70.      43.     26.     17.      9.      2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
197 KK   *    RT-J     *    ROUTE JI TO POINT J
         *             *
         ***************

            HYDROGRAPH ROUTING DATA

198 RM        MUSKINGUM ROUTING
               NSTPS         2 NUMBER OF SUBREACHES
               AMSKK       .19 MUSKINGUM K
                 X         .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
199 KK   *     J2      *    JONES CREEK WATERSHED NO. 2
         *             *
         ***************
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          SUBBASIN RUNOFF DATA

 200 BA        SUBBASIN CHARACTERISTICS
                TAREA        1.95  SUBBASIN AREA

           PRECIPITATION DATA

 201 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .35     .70    1.22    1.52    1.80    2.45    3.22    3.98     .00     .00     .00     .00

                                   STORM AREA =  109.00

 202 LS        SCS LOSS RATE
                STRTL        1.13  INITIAL ABSTRACTION
               CRVNBR       64.00  CURVE NUMBER
                RTIMP        3.40  PERCENT IMPERVIOUS AREA

 203 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG          .43  LAG

                                          ***

                                          UNIT HYDROGRAPH
                                     28 END-OF-PERIOD ORDINATES
         167.      507.     1052.     1652.     1957.     1984.     1805.     1530.     1142.      825.
         615.      471.      355.      264.      199.      148.      109.       83.       63.       47.
          35.       26.       20.       16.       12.        8.        5.        1.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 204 KK   *    J1+J2    *    COMBINE ROUTED J1 WITH J2 AT POINT J
          *             *
          ***************

 205 HC        HYDROGRAPH COMBINATION
                ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 206 KK   *    RT-K     *    ROUTE COMBINED J1 AND J2 TO POINT K
          *             *
          ***************

          HYDROGRAPH ROUTING DATA

 207 RM        MUSKINGUM ROUTING
                NSTPS         1 NUMBER OF SUBREACHES
                AMSKK       .10 MUSKINGUM K
                   X        .40 MUSKINGUM X

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
 208 KK   *      G6     *    GALENA CREEK WATERSHED NO.6
          *             *
          ***************

          SUBBASIN RUNOFF DATA

 209 BA        SUBBASIN CHARACTERISTICS
                TAREA        2.19  SUBBASIN AREA

           PRECIPITATION DATA

 210 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .34     .66    1.16    1.40    1.62    2.13    2.77    3.41     .00     .00     .00     .00

                                   STORM AREA =  109.00

 211 LS        SCS LOSS RATE
                STRTL         .90  INITIAL ABSTRACTION
               CRVNBR       69.00  CURVE NUMBER
                RTIMP        6.00  PERCENT IMPERVIOUS AREA

 212 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG          .35  LAG
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                                   ***

                              UNIT HYDROGRAPH
                           23 END-OF-PERIOD ORDINATES
        301.     949.    1950.   2597.   2687.   2370.   1867.   1240.    872.    631.
        446.     315.     222.    155.    110.     78.     55.     39.     28.     21.
         15.       9.       3.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
213 KK    *     G+J     *     COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
          *             *
          ***************

214 HC        HYDROGRAPH COMBINATION
               ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
215 KK    *     RT-L    *     ROUTE COMBINED HYDROGRAPH TO PT L
          *             *
          ***************

           HYDROGRAPH ROUTING DATA

216 RM        MUSKINGUM ROUTING
               NSTPS          1 NUMBER OF SUBREACHES
               AMSKK        .13 MUSKINGUM K
                   X        .40 MUSKINGUM X

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
217 KK    *      G7     *     GALENA CREEK WATERSHED NO. 7
          *             *
          ***************

           SUBBASIN RUNOFF DATA

218 BA        SUBBASIN CHARACTERISTICS
               TAREA       1.50  SUBBASIN AREA

            PRECIPITATION DATA

219 PH                     DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .35     .69    1.22    1.50    1.77    2.40    3.10    3.80     .00     .00     .00     .00

                                 STORM AREA =  109.00

220 LS        SCS LOSS RATE
               STRTL       1.23  INITIAL ABSTRACTION
              CRVNBR      62.00  CURVE NUMBER
               RTIMP       5.00  PERCENT IMPERVIOUS AREA

221 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .36  LAG

                                   ***

                              UNIT HYDROGRAPH
                           24 END-OF-PERIOD ORDINATES
        193.     603.    1258.   1711.   1798.   1622.   1314.    903.    631.    456.
        329.     233.     167.    118.     84.     60.     43.     31.     22.     17.
         12.       8.       4.      0.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
222 KK    *     RT-L    *     ROUTE G7 TO OINT L
          *             *
          ***************
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          HYDROGRAPH ROUTING DATA

223 RM        MUSKINGUM ROUTING
               NSTPS       1 NUMBER OF SUBREACHES
               AMSKK     .13 MUSKINGUM K
                  X      .40 MUSKINGUM X

                                ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
224 KK   *     G9      *     GALENA CREEK WATERSHED NO. 9
         *             *
         ***************

          SUBBASIN RUNOFF DATA

225 BA        SUBBASIN CHARACTERISTICS
               TAREA       3.07  SUBBASIN AREA

           PRECIPITATION DATA

226 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .33    .65    1.14    1.35   1.56   2.04   2.60    3.16     .00     .00     .00     .00

                                        STORM AREA =  109.00

227 LS        SCS LOSS RATE
               STRTL        .90  INITIAL ABSTRACTION
              CRVNBR       69.00  CURVE NUMBER
               RTIMP       3.40  PERCENT IMPERVIOUS AREA

228 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG       1.67  LAG

                                ***

                                         UNIT HYDROGRAPH
                                      102 END-OF-PERIOD ORDINATES
          13.      25.      54.      83.     121.     159.     207.     258.     322.     389.
         466.     546.     618.     685.     740.     788.     820.     848.     860.     864.
         865.     861.     848.     822.     796.     766.     735.     702.     666.     624.
         580.     529.     480.     437.     396.     367.     337.     312.     287.     265.
         244.     229.     213.     198.     182.     169.     156.     144.     131.     121.
         113.     105.      98.      89.      83.      76.      70.      64.      60.      55.
          51.      46.      43.      40.      37.      34.      32.      29.      27.      25.
          23.      21.      20.      18.      17.      16.      14.      13.      12.      11.
          11.      10.       9.       9.       8.       8.       7.       7.       6.       6.
           5.       5.       4.       4.       3.       3.       2.       2.       2.       1.
           1.       0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
229 KK   *    PT-L     *     COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
         *             *
         ***************

230 HC        HYDROGRAPH COMBINATION
               ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
231 KK   *    RT-PV    *     ROUTE GALENA CK HYDROGRAPH TO PLEASENT VALLEY
         *             *
         ***************
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          HYDROGRAPH ROUTING DATA

232 RM         MUSKINGUM ROUTING
                NSTPS       2 NUMBER OF SUBREACHES
                AMSKK     .17 MUSKINGUM K
                   X      .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
233 KK   *     B1      *    BROWNS CREEK WATERSHED NO. 1
         *             *
         ***************

          SUBBASIN RUNOFF DATA

234 BA         SUBBASIN CHARACTERISTICS
                TAREA       2.18  SUBBASIN AREA

           PRECIPITATION DATA

235 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
            .38    .74    1.30    1.63   1.95   2.70   3.62   4.53    .00    .00    .00    .00

                                      STORM AREA =  109.00

236 LS         SCS LOSS RATE
                STRTL       1.23  INITIAL ABSTRACTION
               CRVNBR      62.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

237 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .44  LAG

                                        ***

                                          UNIT HYDROGRAPH
                                       28 END-OF-PERIOD ORDINATES
         177.     536.    1107.    1766.    2120.    2179.    2017.    1734.    1338.     960.
         718.     552.     421.     312.     236.     179.     134.     102.      77.      58.
          44.      33.      25.      20.      16.      11.       7.       3.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
238 KK   *    RT-M     *    ROUTE B1 TO POINT M
         *             *
         ***************

          HYDROGRAPH ROUTING DATA

239 RM         MUSKINGUM ROUTING
                NSTPS       2 NUMBER OF SUBREACHES
                AMSKK     .17 MUSKINGUM K
                   X      .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
240 KK   *     B2      *    BROWNS CREEK WATERSHED NO. 2
         *             *
         ***************

          SUBBASIN RUNOFF DATA

241 BA         SUBBASIN CHARACTERISTICS
                TAREA       1.42  SUBBASIN AREA



           PRECIPITATION DATA

242 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
            .38    .71    1.25    1.55   1.83   2.49   3.25   4.00    .00    .00    .00    .00

                                      STORM AREA =  109.00
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243 LS        SCS LOSS RATE
               STRTL       1.33  INITIAL ABSTRACTION
              CRVNBR       60.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

244 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .35  LAG

                                    ***

                                 UNIT HYDROGRAPH
                               23 END-OF-PERIOD ORDINATES
          195.     615.    1264.    1684.    1742.    1536.    1211.     804.     565.     409.
          289.     204.     144.     101.      71.      51.      36.      25.      18.      14.
            9.       6.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *           *
245 KK    *   B1+B2   *    COMBINE ROUTED B1 WITH B2 AT POINT M
          *           *
          **************

246 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                    ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *           *
247 KK    *   RT-N    *    ROUTE COMBINED HYDROGRAPH TO POINT N
          *           *
          **************

            HYDROGRAPH ROUTING DATA

248 RM        MUSKINGUM ROUTING
               NSTPS          1 NUMBER OF SUBREACHES
               AMSKK        .10 MUSKINGUM K
                  X       .40 MUSKINGUM X

                                    ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *           *
249 KK    *    B3     *    BROWNS CREEK WATERSHED NO. 3
          *           *
          **************

            SUBBASIN RUNOFF DATA

250 BA        SUBBASIN CHARACTERISTICS
               TAREA        .53  SUBBASIN AREA

              PRECIPITATION DATA

251 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY  4-DAY  7-DAY  10-DAY
                .34     .67    1.18    1.43    1.66    2.22    2.82    3.42     .00    .00    .00     .00

                                    STORM AREA =  109.00

252 LS        SCS LOSS RATE
               STRTL        .99  INITIAL ABSTRACTION
              CRVNBR       67.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

253 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .36  LAG

                                    ***

                                 UNIT HYDROGRAPH
                               24 END-OF-PERIOD ORDINATES
           68.     213.     444.     605.     635.     573.     464.     319.     223.     161.
          116.      82.      59.      42.      30.      21.      15.      11.       8.       6.
            4.       3.       1.       0.
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
254 KK     *    B123     *    COMBINE ROUTED B1 AND B2 WITH B3
           *             *
           ***************

255 HC          HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
256 KK     *    RT-PV    *    ROUTE BROWNS CREEK HYDROGRAPH TO PLEASENT VALLEY
           *             *
           ***************

             HYDROGRAPH ROUTING DATA

257 RM          MUSKINGUM ROUTING
                 NSTPS         3 NUMBER OF SUBREACHES
                 AMSKK       .31 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
258 KK     *   PLEASV    *    COMBINE GALENA CK AND BROWNS CK AT PLEASENT VALLEY
           *             *
           ***************

259 HC          HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
260 KK     *    RT-SG    *    ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
           *             *
           ***************

             HYDROGRAPH ROUTING DATA

261 RM          MUSKINGUM ROUTING
                 NSTPS         3 NUMBER OF SUBREACHES
                 AMSKK       .21 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                              ***




*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
262 KK     *     30      *    STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
           *             *
           ***************
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             SUBBASIN RUNOFF DATA

263 BA         SUBBASIN CHARACTERISTICS
                 TAREA      17.80  SUBBASIN AREA

264 BF         BASE FLOW CHARACTERISTICS
                 STRTQ      500.00  INITIAL FLOW
                 QRCSN      500.00  BEGIN BASE FLOW RECESSION
                 RTIOR     1.00000  RECESSION CONSTANT

              PRECIPITATION DATA

265 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .32     .64    1.12    1.28    1.44    1.60    2.34    2.87     .00     .00     .00     .00

                                     STORM AREA =   109.00

266 LS         SCS LOSS RATE
                 STRTL         .60  INITIAL ABSTRACTION
                CRVNBR       77.00  CURVE NUMBER
                 RTIMP        3.00  PERCENT IMPERVIOUS AREA

267 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG          .62  LAG

                                          ***

                                        UNIT HYDROGRAPH
                                   51 END-OF-PERIOD ORDINATES
           290.      953.     1809.     2939.     4432.     6218.     7822.     9000.     9711.     9955.
          9924.     9525.     8889.     8159.     7285.     6224.     5153.     4309.     3670.     3125.
          2684.     2331.     1994.     1705.     1433.     1240.     1052.      907.      764.      658.
           551.      478.      408.      351.      298.      257.      218.      187.      158.      136.
           117.      102.       91.       79.       68.       56.       45.       36.       26.       16.
             7.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
268 KK     *   STMBT     *   COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
           *             *
           ***************

269 HC         HYDROGRAPH COMBINATION
                 ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
270 KK     *   RT-341    *   ROUTE COMBINED HYDROGRAPH TO HWY 341
           *             *
           ***************

             HYDROGRAPH ROUTING DATA

271 RM         MUSKINGUM ROUTING
                 NSTPS           2  NUMBER OF SUBREACHES
                 AMSKK         .41  MUSKINGUM K
                     X         .40  MUSKINGUM X

                                          ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
272 KK     *     35      *   WATERSHED 35 AKA BAILEY CANYON
           *             *
           ***************

             SUBBASIN RUNOFF DATA

273 BA         SUBBASIN CHARACTERISTICS
                 TAREA      15.50  SUBBASIN AREA

274 BF         BASE FLOW CHARACTERISTICS
                 STRTQ         .00  INITIAL FLOW
                 QRCSN         .00  BEGIN BASE FLOW RECESSION
                 RTIOR     1.00000  RECESSION CONSTANT

              PRECIPITATION DATA
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275 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
          ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
          5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
           .39    .77    1.34    1.53   1.68   1.98   2.51   3.04    .00    .00    .00    .00

                                   STORM AREA =  109.00

276 LS        SCS LOSS RATE
               STRTL        .44  INITIAL ABSTRACTION
              CRVNBR       82.00  CURVE NUMBER
               RTIMP       2.00  PERCENT IMPERVIOUS AREA

277 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .72  LAG

                                          ***

                                      UNIT HYDROGRAPH
                                 45 END-OF-PERIOD ORDINATES
         360.    1149.    2201.    3639.    5499.    7376.    8773.    9586.    9815.    9738.
        9118.    8352.    7448.    6310.    5100.    4174.    3480.    2903.    2470.    2077.
        1747.    1431.    1216.    1014.     852.     709.     590.     494.     413.     349.
         290.     245.     203.     171.     142.     120.     102.      90.      77.      64.
          51.      40.      29.      18.       8.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
278 KK   *      40     *   WATERSHED NO.40
         *             *
         ***************

          SUBBASIN RUNOFF DATA

279 BA        SUBBASIN CHARACTERISTICS
               TAREA        2.63  SUBBASIN AREA

274 BF        BASE FLOW CHARACTERISTICS
               STRTQ        .00  INITIAL FLOW
               QRCSN        .00  BEGIN BASE FLOW RECESSION
               RTIOR    1.00000  RECESSION CONSTANT

           PRECIPITATION DATA

280 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
          ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
          5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
           .35    .89    1.21    1.38   1.51   1.78   2.29   2.81    .00    .00    .00    .00

                                   STORM AREA =  109.00

281 LS        SCS LOSS RATE
               STRTL        .60  INITIAL ABSTRACTION
              CRVNBR       77.00  CURVE NUMBER
            -  RTIMP      15.00  PERCENT IMPERVIOUS AREA

282 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .30  LAG

                                          ***

                                      UNIT HYDROGRAPH
                                 20 END-OF-PERIOD ORDINATES
         520.    1679.    3187.    3719.    3416.    2671.    1696.    1135.     778.     519.
         353.     235.     157.     106.      72.      48.      34.      24.      14.       5.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
283 KK   *   HY-341    *   COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
         *             *
         ***************

284 HC        HYDROGRAPH COMBINATION
               ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***



*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
285 KK   *    RT-HN    *   ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
         *             *
         ***************
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          HYDROGRAPH ROUTING DATA

286 RM         MUSKINGUM ROUTING
                NSTPS        5 NUMBER OF SUBREACHES
                AMSKK      .44 MUSKINGUM K
                   X       .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
287 KK    *     60      *   WATERSHED NO. 60
          *             *
          ***************

          SUBBASIN RUNOFF DATA

288 BA         SUBBASIN CHARACTERISTICS
                TAREA       23.15  SUBBASIN AREA

274 BF         BASE FLOW CHARACTERISTICS
                STRTQ        .00  INITIAL FLOW
                QRCSN        .00  BEGIN BASE FLOW RECESSION
                RTIOR    1.00000  RECESSION CONSTANT

           PRECIPITATION DATA

289 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
            .35     .68    1.19    1.36    1.49    1.77    2.30    2.83     .00     .00     .00     .00

                                    STORM AREA =  109.00

290 LS         SCS LOSS RATE
                STRTL        .63  INITIAL ABSTRACTION
               CRVNBR      76.00  CURVE NUMBER
                RTIMP      12.00  PERCENT IMPERVIOUS AREA

291 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG       1.00  LAG

                                        ***

                                      UNIT HYDROGRAPH
                                  62 END-OF-PERIOD ORDINATES
          258.     773.    1460.    2298.    3329.    4704.    6271.    7775.    9042.    9987.
        10502.   10696.   10696.   10502.    9987.    9386.    8720.    7947.    7045.    6014.
         5155.    4489.    3930.    3436.    3007.    2693.    2380.    2094.    1836.    1579.
         1407.    1235.    1085.     956.     827.     732.     638.     558.     494.     430.
          382.     335.     294.     260.     226.     200.     174.     152.     135.     118.
          108.      98.      87.      77.      67.      56.      47.      39.      30.      21.
           13.       4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
292 KK    *    HUFN     *   COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
          *             *
          ***************

294 KO         OUTPUT CONTROL VARIABLES
                IPRNT          1  PRINT CONTROL
                IPLOT          2  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE
                IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                 IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                ISAV2        289  LAST ORDINATE PUNCHED OR SAVED
               TIMINT       .083  TIME INTERVAL IN HOURS

293 HC         HYDROGRAPH COMBINATION
                ICOMP          4  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***

*********************************************************************************************************************************************

                                               HYDROGRAPH AT STATION    HUFN
                                                 SUM OF  4 HYDROGRAPHS

*********************************************************************************************************************************************
                                *                              *                              *
  DA MON HRMN  ORD      FLOW    *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW
```

```
                    *                       *                       *
 1  0000   1    500.  *  1  0605  74    721.  *  1  1210 147   3350.  *  1  1815 220   4986.
 1  0005   2    500.  *  1  0610  75    723.  *  1  1215 148   3784.  *  1  1820 221   4949.
 1  0010   3    500.  *  1  0615  76    725.  *  1  1220 149   4311.  *  1  1825 222   4911.
 1  0015   4    501.  *  1  0620  77    727.  *  1  1225 150   4970.  *  1  1830 223   4872.
 1  0020   5    502.  *  1  0625  78    729.  *  1  1230 151   5818.  *  1  1835 224   4831.
 1  0025   6    503.  *  1  0630  79    732.  *  1  1235 152   6861.  *  1  1840 225   4787.
 1  0030   7    506.  *  1  0635  80    736.  *  1  1240 153   8045.  *  1  1845 226   4739.
 1  0035   8    509.  *  1  0640  81    740.  *  1  1245 154   9297.  *  1  1850 227   4688.
 1  0040   9    515.  *  1  0645  82    745.  *  1  1250 155  10560.  *  1  1855 228   4634.
 1  0045  10    522.  *  1  0650  83    751.  *  1  1255 156  11789.  *  1  1900 229   4575.
 1  0050  11    530.  *  1  0655  84    757.  *  1  1300 157  12946.  *  1  1905 230   4513.
 1  0055  12    540.  *  1  0700  85    763.  *  1  1305 158  13998.  *  1  1910 231   4448.
 1  0100  13    549.  *  1  0705  86    770.  *  1  1310 159  14902.  *  1  1915 232   4379.
 1  0105  14    559.  *  1  0710  87    776.  *  1  1315 160  15658.  *  1  1920 233   4308.
 1  0110  15    569.  *  1  0715  88    783.  *  1  1320 161  16290.  *  1  1925 234   4235.
 1  0115  16    579.  *  1  0720  89    790.  *  1  1325 162  16791.  *  1  1930 235   4158.
 1  0120  17    588.  *  1  0725  90    796.  *  1  1330 163  17114.  *  1  1935 236   4081.
 1  0125  18    596.  *  1  0730  91    803.  *  1  1335 164  17220.  *  1  1940 237   4005.
 1  0130  19    604.  *  1  0735  92    809.  *  1  1340 165  17127.  *  1  1945 238   3929.
 1  0135  20    612.  *  1  0740  93    815.  *  1  1345 166  16896.  *  1  1950 239   3855.
 1  0140  21    619.  *  1  0745  94    822.  *  1  1350 167  16545.  *  1  1955 240   3785.
 1  0145  22    625.  *  1  0750  95    828.  *  1  1355 168  16066.  *  1  2000 241   3719.
 1  0150  23    631.  *  1  0755  96    833.  *  1  1400 169  15460.  *  1  2005 242   3658.
 1  0155  24    636.  *  1  0800  97    839.  *  1  1405 170  14754.  *  1  2010 243   3603.
 1  0200  25    640.  *  1  0805  98    844.  *  1  1410 171  13992.  *  1  2015 244   3554.
 1  0205  26    644.  *  1  0810  99    850.  *  1  1415 172  13212.  *  1  2020 245   3510.
 1  0210  27    648.  *  1  0815 100    855.  *  1  1420 173  12452.  *  1  2025 246   3471.
 1  0215  28    651.  *  1  0820 101    860.  *  1  1425 174  11741.  *  1  2030 247   3437.
 1  0220  29    654.  *  1  0825 102    866.  *  1  1430 175  11093.  *  1  2035 248   3405.
 1  0225  30    657.  *  1  0830 103    872.  *  1  1435 176  10517.  *  1  2040 249   3377.
 1  0230  31    659.  *  1  0835 104    878.  *  1  1440 177  10009.  *  1  2045 250   3350.
 1  0235  32    661.  *  1  0840 105    885.  *  1  1445 178   9564.  *  1  2050 251   3326.
 1  0240  33    663.  *  1  0845 106    893.  *  1  1450 179   9176.  *  1  2055 252   3302.
 1  0245  34    665.  *  1  0850 107    901.  *  1  1455 180   8835.  *  1  2100 253   3280.
 1  0250  35    667.  *  1  0855 108    911.  *  1  1500 181   8535.  *  1  2105 254   3259.
 1  0255  36    669.  *  1  0900 109    922.  *  1  1505 182   8266.  *  1  2110 255   3239.
 1  0300  37    670.  *  1  0905 110    934.  *  1  1510 183   8024.  *  1  2115 256   3220.
 1  0305  38    672.  *  1  0910 111    947.  *  1  1515 184   7804.  *  1  2120 257   3201.
 1  0310  39    673.  *  1  0915 112    962.  *  1  1520 185   7603.  *  1  2125 258   3182.
 1  0315  40    674.  *  1  0920 113    978.  *  1  1525 186   7420.  *  1  2130 259   3165.
 1  0320  41    676.  *  1  0925 114    994.  *  1  1530 187   7255.  *  1  2135 260   3147.
 1  0325  42    677.  *  1  0930 115   1011.  *  1  1535 188   7107.  *  1  2140 261   3130.
 1  0330  43    678.  *  1  0935 116   1028.  *  1  1540 189   6976.  *  1  2145 262   3114.
 1  0335  44    680.  *  1  0940 117   1044.  *  1  1545 190   6862.  *  1  2150 263   3098.
 1  0340  45    681.  *  1  0945 118   1059.  *  1  1550 191   6762.  *  1  2155 264   3082.
 1  0345  46    682.  *  1  0950 119   1074.  *  1  1555 192   6673.  *  1  2200 265   3067.
 1  0350  47    683.  *  1  0955 120   1090.  *  1  1600 193   6594.  *  1  2205 266   3052.
 1  0355  48    685.  *  1  1000 121   1105.  *  1  1605 194   6523.  *  1  2210 267   3037.
 1  0400  49    686.  *  1  1005 122   1122.  *  1  1610 195   6456.  *  1  2215 268   3023.
 1  0405  50    687.  *  1  1010 123   1139.  *  1  1615 196   6393.  *  1  2220 269   3009.
 1  0410  51    688.  *  1  1015 124   1158.  *  1  1620 197   6330.  *  1  2225 270   2995.
 1  0415  52    689.  *  1  1020 125   1179.  *  1  1625 198   6263.  *  1  2230 271   2981.
 1  0420  53    691.  *  1  1025 126   1204.  *  1  1630 199   6192.  *  1  2235 272   2968.
 1  0425  54    692.  *  1  1030 127   1232.  *  1  1635 200   6118.  *  1  2240 273   2954.
 1  0430  55    693.  *  1  1035 128   1264.  *  1  1640 201   6040.  *  1  2245 274   2941.
 1  0435  56    695.  *  1  1040 129   1300.  *  1  1645 202   5960.  *  1  2250 275   2929.
 1  0440  57    696.  *  1  1045 130   1339.  *  1  1650 203   5880.  *  1  2255 276   2916.
 1  0445  58    697.  *  1  1050 131   1382.  *  1  1655 204   5802.  *  1  2300 277   2904.
 1  0450  59    698.  *  1  1055 132   1429.  *  1  1700 205   5726.  *  1  2305 278   2892.
 1  0455  60    700.  *  1  1100 133   1480.  *  1  1705 206   5653.  *  1  2310 279   2880.
 1  0500  61    701.  *  1  1105 134   1535.  *  1  1710 207   5585.  *  1  2315 280   2868.
 1  0505  62    703.  *  1  1110 135   1595.  *  1  1715 208   5522.  *  1  2320 281   2856.
 1  0510  63    704.  *  1  1115 136   1660.  *  1  1720 209   5464.  *  1  2325 282   2845.
 1  0515  64    705.  *  1  1120 137   1731.  *  1  1725 210   5410.  *  1  2330 283   2833.
 1  0520  65    707.  *  1  1125 138   1809.  *  1  1730 211   5359.  *  1  2335 284   2822.
 1  0525  66    708.  *  1  1130 139   1894.  *  1  1735 212   5311.  *  1  2340 285   2811.
 1  0530  67    710.  *  1  1135 140   1989.  *  1  1740 213   5266.  *  1  2345 286   2800.
 1  0535  68    711.  *  1  1140 141   2095.  *  1  1745 214   5222.  *  1  2350 287   2790.
 1  0540  69    713.  *  1  1145 142   2218.  *  1  1750 215   5180.  *  1  2355 288   2779.
 1  0545  70    714.  *  1  1150 143   2358.  *  1  1755 216   5140.  *  2  0000 289   2769.
 1  0550  71    716.  *  1  1155 144   2522.  *  1  1800 217   5100.  *
 1  0555  72    717.  *  1  1200 145   2726.  *  1  1805 218   5062.  *
 1  0600  73    719.  *  1  1205 146   2998.  *  1  1810 219   5024.  *
                    *                       *                       *
*****************************************************************************************************

 PEAK FLOW    TIME                  MAXIMUM AVERAGE FLOW
                         6-HR     24-HR     72-HR    24.00-HR
+  (CFS)     (HR)
                   (CFS)
+   17220.    13.58         8937.     3542.     3542.     3542.
                   (INCHES)   .763     1.209     1.209     1.209
                   (AC-FT)   4432.     7025.     7025.     7025.

                   CUMULATIVE AREA =   108.97 SQ MI


1                                          STATION    HUFN

                    (O) OUTFLOW
     0.    2000.    4000.    6000.    8000.   10000.   12000.   14000.   16000.   18000.       0.       0.       0.
DAHRMN PER
 10000  1.--O-------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10005  2.  O     .        .        .        .        .        .        .        .        .        .        .
 10010  3.  O     .        .        .        .        .        .        .        .        .        .        .
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10015  4. O   .     .     .     .     .     .     .     .     .     .     .     .
10020  5. O   .     .     .     .     .     .     .     .     .     .     .     .
10025  6. O   .     .     .     .     .     .     .     .     .     .     .     .
10030  7. O   .     .     .     .     .     .     .     .     .     .     .     .
10035  8. O   .     .     .     .     .     .     .     .     .     .     .     .
10040  9. O   .     .     .     .     .     .     .     .     .     .     .     .
10045 10. O   .     .     .     .     .     .     .     .     .     .     .     .
10050 11. .O..............................................................
10055 12. O   .     .     .     .     .     .     .     .     .     .     .     .
10100 13. O   .     .     .     .     .     .     .     .     .     .     .     .
10105 14. O   .     .     .     .     .     .     .     .     .     .     .     .
10110 15. O   .     .     .     .     .     .     .     .     .     .     .     .
10115 16. O   .     .     .     .     .     .     .     .     .     .     .     .
10120 17. O   .     .     .     .     .     .     .     .     .     .     .     .
10125 18. O   .     .     .     .     .     .     .     .     .     .     .     .
10130 19. O   .     .     .     .     .     .     .     .     .     .     .     .
10135 20. O   .     .     .     .     .     .     .     .     .     .     .     .
10140 21. .O..............................................................
10145 22. O   .     .     .     .     .     .     .     .     .     .     .     .
10150 23. O   .     .     .     .     .     .     .     .     .     .     .     .
10155 24. O   .     .     .     .     .     .     .     .     .     .     .     .
10200 25. O   .     .     .     .     .     .     .     .     .     .     .     .
10205 26. O   .     .     .     .     .     .     .     .     .     .     .     .
10210 27. O   .     .     .     .     .     .     .     .     .     .     .     .
10215 28. O   .     .     .     .     .     .     .     .     .     .     .     .
10220 29. O   .     .     .     .     .     .     .     .     .     .     .     .
10225 30. O   .     .     .     .     .     .     .     .     .     .     .     .
10230 31. .O..............................................................
10235 32. O   .     .     .     .     .     .     .     .     .     .     .     .
10240 33. O   .     .     .     .     .     .     .     .     .     .     .     .
10245 34. O   .     .     .     .     .     .     .     .     .     .     .     .
10250 35. O   .     .     .     .     .     .     .     .     .     .     .     .
10255 36. O   .     .     .     .     .     .     .     .     .     .     .     .
10300 37. O   .     .     .     .     .     .     .     .     .     .     .     .
10305 38. O   .     .     .     .     .     .     .     .     .     .     .     .
10310 39. O   .     .     .     .     .     .     .     .     .     .     .     .
10315 40. O   .     .     .     .     .     .     .     .     .     .     .     .
10320 41. .O..............................................................
10325 42. O   .     .     .     .     .     .     .     .     .     .     .     .
10330 43. O   .     .     .     .     .     .     .     .     .     .     .     .
10335 44. O   .     .     .     .     .     .     .     .     .     .     .     .
10340 45. O   .     .     .     .     .     .     .     .     .     .     .     .
10345 46. O   .     .     .     .     .     .     .     .     .     .     .     .
10350 47. O   .     .     .     .     .     .     .     .     .     .     .     .
10355 48. O   .     .     .     .     .     .     .     .     .     .     .     .
10400 49. O   .     .     .     .     .     .     .     .     .     .     .     .
10405 50. O   .     .     .     .     .     .     .     .     .     .     .     .
10410 51. .O..............................................................
10415 52. O   .     .     .     .     .     .     .     .     .     .     .     .
10420 53. O   .     .     .     .     .     .     .     .     .     .     .     .
10425 54. O   .     .     .     .     .     .     .     .     .     .     .     .
10430 55. O   .     .     .     .     .     .     .     .     .     .     .     .
10435 56. O   .     .     .     .     .     .     .     .     .     .     .     .
10440 57. O   .     .     .     .     .     .     .     .     .     .     .     .
10445 58. O   .     .     .     .     .     .     .     .     .     .     .     .
10450 59. O   .     .     .     .     .     .     .     .     .     .     .     .
10455 60. O   .     .     .     .     .     .     .     .     .     .     .     .
10500 61. . O.............................................................
10505 62.  O  .     .     .     .     .     .     .     .     .     .     .     .
10510 63.  O  .     .     .     .     .     .     .     .     .     .     .     .
10515 64.  O  .     .     .     .     .     .     .     .     .     .     .     .
10520 65.  O  .     .     .     .     .     .     .     .     .     .     .     .
10525 66.  O  .     .     .     .     .     .     .     .     .     .     .     .
10530 67.  O  .     .     .     .     .     .     .     .     .     .     .     .
10535 68.  O  .     .     .     .     .     .     .     .     .     .     .     .
10540 69.  O  .     .     .     .     .     .     .     .     .     .     .     .
10545 70.  O  .     .     .     .     .     .     .     .     .     .     .     .
10550 71. . O.............................................................
10555 72.  O  .     .     .     .     .     .     .     .     .     .     .     .
10600 73.  O  .     .     .     .     .     .     .     .     .     .     .     .
10605 74.  O  .     .     .     .     .     .     .     .     .     .     .     .
10610 75.  O  .     .     .     .     .     .     .     .     .     .     .     .
10615 76.  O  .     .     .     .     .     .     .     .     .     .     .     .
10620 77.  O  .     .     .     .     .     .     .     .     .     .     .     .
10625 78.  O  .     .     .     .     .     .     .     .     .     .     .     .
10630 79.  O  .     .     .     .     .     .     .     .     .     .     .     .
10635 80.  O  .     .     .     .     .     .     .     .     .     .     .     .
10640 81. . O.............................................................
10645 82.  O  .     .     .     .     .     .     .     .     .     .     .     .
10650 83.  O  .     .     .     .     .     .     .     .     .     .     .     .
10655 84.  O  .     .     .     .     .     .     .     .     .     .     .     .
10700 85.  O  .     .     .     .     .     .     .     .     .     .     .     .
10705 86.  O  .     .     .     .     .     .     .     .     .     .     .     .
10710 87.  O  .     .     .     .     .     .     .     .     .     .     .     .
10715 88.  O  .     .     .     .     .     .     .     .     .     .     .     .
10720 89.  O  .     .     .     .     .     .     .     .     .     .     .     .
10725 90.  O  .     .     .     .     .     .     .     .     .     .     .     .
10730 91. . O.............................................................
10735 92.  O  .     .     .     .     .     .     .     .     .     .     .     .
10740 93.  O  .     .     .     .     .     .     .     .     .     .     .     .
              (O) OUTFLOW
      0.   2000.   4000.   6000.   8000.  10000.  12000.  14000.  16000.  18000.     0.     0.     0.
DAHRMN PER
10745 94.  O  .     .     .     .     .     .     .     .     .     .     .     .
10750 95.  O  .     .     .     .     .     .     .     .     .     .     .     .
10755 96.  O  .     .     .     .     .     .     .     .     .     .     .     .
10800 97.  O  .     .     .     .     .     .     .     .     .     .     .     .
10805 98.  O  .     .     .     .     .     .     .     .     .     .     .     .
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10810  99.   O      .         .         .         .         .         .         .         .         .         .         .         .
10815 100.   O      .         .         .         .         .         .         .         .         .         .         .         .
10820 101....O................................................................................................................
10825 102.    O     .         .         .         .         .         .         .         .         .         .         .         .
10830 103.    O     .         .         .         .         .         .         .         .         .         .         .         .
10835 104.    O     .         .         .         .         .         .         .         .         .         .         .         .
10840 105.    O     .         .         .         .         .         .         .         .         .         .         .         .
10845 106.    O     .         .         .         .         .         .         .         .         .         .         .         .
10850 107.     O    .         .         .         .         .         .         .         .         .         .         .         .
10855 108.     O    .         .         .         .         .         .         .         .         .         .         .         .
10900 109.     O    .         .         .         .         .         .         .         .         .         .         .         .
10905 110.     O    .         .         .         .         .         .         .         .         .         .         .         .
10910 111.....O...............................................................................................................
10915 112.     O    .         .         .         .         .         .         .         .         .         .         .         .
10920 113.     O    .         .         .         .         .         .         .         .         .         .         .         .
10925 114.     O    .         .         .         .         .         .         .         .         .         .         .         .
10930 115.     O    .         .         .         .         .         .         .         .         .         .         .         .
10935 116.     O    .         .         .         .         .         .         .         .         .         .         .         .
10940 117.     O    .         .         .         .         .         .         .         .         .         .         .         .
10945 118.     O    .         .         .         .         .         .         .         .         .         .         .         .
10950 119.     O    .         .         .         .         .         .         .         .         .         .         .         .
10955 120.     O    .         .         .         .         .         .         .         .         .         .         .         .
11000 121......O..............................................................................................................
11005 122.      O   .         .         .         .         .         .         .         .         .         .         .         .
11010 123.      O   .         .         .         .         .         .         .         .         .         .         .         .
11015 124.      O   .         .         .         .         .         .         .         .         .         .         .         .
11020 125.      O   .         .         .         .         .         .         .         .         .         .         .         .
11025 126.      O   .         .         .         .         .         .         .         .         .         .         .         .
11030 127.      O   .         .         .         .         .         .         .         .         .         .         .         .
11035 128.      O   .         .         .         .         .         .         .         .         .         .         .         .
11040 129.      O   .         .         .         .         .         .         .         .         .         .         .         .
11045 130.       O  .         .         .         .         .         .         .         .         .         .         .         .
11050 131.......O.............................................................................................................
11055 132.       O  .         .         .         .         .         .         .         .         .         .         .         .
11100 133.       O  .         .         .         .         .         .         .         .         .         .         .         .
11105 134.        O .         .         .         .         .         .         .         .         .         .         .         .
11110 135.        O .         .         .         .         .         .         .         .         .         .         .         .
11115 136.        O .         .         .         .         .         .         .         .         .         .         .         .
11120 137.         O.         .         .         .         .         .         .         .         .         .         .         .
11125 138.         O.         .         .         .         .         .         .         .         .         .         .         .
11130 139.         O.         .         .         .         .         .         .         .         .         .         .         .
11135 140.          O         .         .         .         .         .         .         .         .         .         .         .
11140 141...........O.........................................................................................................
11145 142.          .O        .         .         .         .         .         .         .         .         .         .         .
11150 143.          . O       .         .         .         .         .         .         .         .         .         .         .
11155 144.          .  O      .         .         .         .         .         .         .         .         .         .         .
11200 145.          .   O     .         .         .         .         .         .         .         .         .         .         .
11205 146.          .    O    .         .         .         .         .         .         .         .         .         .         .
11210 147.          .      O  .         .         .         .         .         .         .         .         .         .         .
11215 148.          .        O.         .         .         .         .         .         .         .         .         .         .
11220 149.          .         . O       .         .         .         .         .         .         .         .         .         .
11225 150.          .         .    O    .         .         .         .         .         .         .         .         .         .
11230 151............................O........................................................................................
11235 152.          .         .         .   O     .         .         .         .         .         .         .         .
11240 153.          .         .         .         O         .         .         .         .         .         .         .
11245 154.          .         .         .         .     O   .         .         .         .         .         .         .
11250 155.          .         .         .         .         .  O      .         .         .         .         .         .
11255 156.          .         .         .         .         .        O.         .         .         .         .         .
11300 157.          .         .         .         .         .         .    O    .         .         .         .         .
11305 158.          .         .         .         .         .         .         O         .         .         .         .
11310 159.          .         .         .         .         .         .         .    O    .         .         .         .
11315 160.          .         .         .         .         .         .         .        O.         .         .         .
11320 161..............................................................................O......................................
11325 162.          .         .         .         .         .         .         .         .   O     .         .         .
11330 163.          .         .         .         .         .         .         .         .     O   .         .         .
11335 164.          .         .         .         .         .         .         .         .     O   .         .         .
11340 165.          .         .         .         .         .         .         .         .     O   .         .         .
11345 166.          .         .         .         .         .         .         .         .   O     .         .         .
11350 167.          .         .         .         .         .         .         .         .  O      .         .         .
11355 168.          .         .         .         .         .         .         .         O         .         .         .
11400 169.          .         .         .         .         .         .         .      O  .         .         .         .
11405 170.          .         .         .         .         .         .         .   O     .         .         .         .
11410 171....................................................................O................................................
11415 172.          .         .         .         .         .         .     O   .         .         .         .         .
11420 173.          .         .         .         .         .         .O        .         .         .         .         .
11425 174.          .         .         .         .         .        O.         .         .         .         .         .
11430 175.          .         .         .         .         .    O    .         .         .         .         .         .
11435 176.          .         .         .         .         .  O      .         .         .         .         .         .
11440 177.          .         .         .         .         O         .         .         .         .         .         .
11445 178.          .         .         .         .        O.         .         .         .         .         .         .
11450 179.          .         .         .         .     O   .         .         .         .         .         .         .
11455 180.          .         .         .         .   O     .         .         .         .         .         .         .
11500 181..........................................O..........................................................................
11505 182.          .         .         .         .O        .         .         .         .         .         .         .
11510 183.          .         .         .         O         .         .         .         .         .         .         .
11515 184.          .         .         .        O.         .         .         .         .         .         .         .
11520 185.          .         .         .       O .         .         .         .         .         .         .         .
11525 186.          .         .         .      O  .         .         .         .         .         .         .         .
11530 187.          .         .         .     O   .         .         .         .         .         .         .         .
11535 188.          .         .         .     O   .         .         .         .         .         .         .         .
                  (O) OUTFLOW
      0.     2000.     4000.     6000.     8000.    10000.    12000.    14000.    16000.    18000.        0.        0.        0.
DAHRMN PER
11540 189.          .         .         .    O    .         .         .         .         .         .         .         .
11545 190.          .         .         .   O     .         .         .         .         .         .         .         .
11550 191..................................O..................................................................................
11555 192.          .         .         .  O      .         .         .         .         .         .         .         .
11600 193.          .         .         .  O      .         .         .         .         .         .         .         .
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11605 194.       .     .      . O    .      .      .     .      .     .      .      .     .
11610 195.       .     .     . O     .      .      .     .      .     .      .      .     .
11615 196.       .     .     . O     .      .      .     .      .     .      .      .     .
11620 197.       .     .     . O     .      .      .     .      .     .      .      .     .
11625 198.       .     .      .O     .      .      .     .      .     .      .      .     .
11630 199.       .     .      .O     .      .      .     .      .     .      .      .     .
11635 200.       .     .      .O     .      .      .     .      .     .      .      .     .
11640 201...................O..........................................................
11645 202.       .     .      O      .      .      .     .      .     .      .      .     .
11650 203.       .     .      O.     .      .      .     .      .     .      .      .     .
11655 204.       .     .      O.     .      .      .     .      .     .      .      .     .
11700 205.       .     .      O.     .      .      .     .      .     .      .      .     .
11705 206.       .     .     O .     .      .      .     .      .     .      .      .     .
11710 207.       .     .     O .     .      .      .     .      .     .      .      .     .
11715 208.       .     .     O .     .      .      .     .      .     .      .      .     .
11720 209.       .     .    O  .     .      .      .     .      .     .      .      .     .
11725 210.       .     .    O  .     .      .      .     .      .     .      .      .     .
11730 211.................O............................................................
11735 212.       .     .    O  .     .      .      .     .      .     .      .      .     .
11740 213.       .     .   O   .     .      .      .     .      .     .      .      .     .
11745 214.       .     .   O   .     .      .      .     .      .     .      .      .     .
11750 215.       .     .   O   .     .      .      .     .      .     .      .      .     .
11755 216.       .     .   O   .     .      .      .     .      .     .      .      .     .
11800 217.       .     .   O   .     .      .      .     .      .     .      .      .     .
11805 218.       .     .   O   .     .      .      .     .      .     .      .      .     .
11810 219.       .     .   O   .     .      .      .     .      .     .      .      .     .
11815 220.       .     .   O   .     .      .      .     .      .     .      .      .     .
11820 221................O.............................................................
11825 222.       .     .   O   .     .      .      .     .      .     .      .      .     .
11830 223.       .     .  O    .     .      .      .     .      .     .      .      .     .
11835 224.       .     .  O    .     .      .      .     .      .     .      .      .     .
11840 225.       .     .  O    .     .      .      .     .      .     .      .      .     .
11845 226.       .     .  O    .     .      .      .     .      .     .      .      .     .
11850 227.       .     . O     .     .      .      .     .      .     .      .      .     .
11855 228.       .     . O     .     .      .      .     .      .     .      .      .     .
11900 229.       .     . O     .     .      .      .     .      .     .      .      .     .
11905 230.       .     . O     .     .      .      .     .      .     .      .      .     .
11910 231..............O...............................................................
11915 232.       .     . O     .     .      .      .     .      .     .      .      .     .
11920 233.       .     . O     .     .      .      .     .      .     .      .      .     .
11925 234.       .     .O      .     .      .      .     .      .     .      .      .     .
11930 235.       .     .O      .     .      .      .     .      .     .      .      .     .
11935 236.       .     O       .     .      .      .     .      .     .      .      .     .
11940 237.       .     O       .     .      .      .     .      .     .      .      .     .
11945 238.       .     O       .     .      .      .     .      .     .      .      .     .
11950 239.       .    O.       .     .      .      .     .      .     .      .      .     .
11955 240.       .    O.       .     .      .      .     .      .     .      .      .     .
12000 241............O.................................................................
12005 242.       .    O.       .     .      .      .     .      .     .      .      .     .
12010 243.       .    O.       .     .      .      .     .      .     .      .      .     .
12015 244.       .    O.       .     .      .      .     .      .     .      .      .     .
12020 245.       .    O.       .     .      .      .     .      .     .      .      .     .
12025 246.       .   O .       .     .      .      .     .      .     .      .      .     .
12030 247.       .   O .       .     .      .      .     .      .     .      .      .     .
12035 248.       .   O .       .     .      .      .     .      .     .      .      .     .
12040 249.       .   O .       .     .      .      .     .      .     .      .      .     .
12045 250.       .   O .       .     .      .      .     .      .     .      .      .     .
12050 251...........O..................................................................
12055 252.       .   O .       .     .      .      .     .      .     .      .      .     .
12100 253.       .   O .       .     .      .      .     .      .     .      .      .     .
12105 254.       .   O .       .     .      .      .     .      .     .      .      .     .
12110 255.       .   O .       .     .      .      .     .      .     .      .      .     .
12115 256.       .   O .       .     .      .      .     .      .     .      .      .     .
12120 257.       .   O .       .     .      .      .     .      .     .      .      .     .
12125 258.       .   O .       .     .      .      .     .      .     .      .      .     .
12130 259.       .   O .       .     .      .      .     .      .     .      .      .     .
12135 260.       .   O .       .     .      .      .     .      .     .      .      .     .
12140 261..........O...................................................................
12145 262.       .   O .       .     .      .      .     .      .     .      .      .     .
12150 263.       .  O  .       .     .      .      .     .      .     .      .      .     .
12155 264.       .  O  .       .     .      .      .     .      .     .      .      .     .
12200 265.       .  O  .       .     .      .      .     .      .     .      .      .     .
12205 266.       .  O  .       .     .      .      .     .      .     .      .      .     .
12210 267.       .  O  .       .     .      .      .     .      .     .      .      .     .
12215 268.       .  O  .       .     .      .      .     .      .     .      .      .     .
12220 269.       .  O  .       .     .      .      .     .      .     .      .      .     .
12225 270.       .  O  .       .     .      .      .     .      .     .      .      .     .
12230 271..........O...................................................................
12235 272.       .  O  .       .     .      .      .     .      .     .      .      .     .
12240 273.       .  O  .       .     .      .      .     .      .     .      .      .     .
12245 274.       .  O  .       .     .      .      .     .      .     .      .      .     .
12250 275.       .  O  .       .     .      .      .     .      .     .      .      .     .
12255 276.       .  O  .       .     .      .      .     .      .     .      .      .     .
12300 277.       .  O  .       .     .      .      .     .      .     .      .      .     .
12305 278.       . O   .       .     .      .      .     .      .     .      .      .     .
12310 279.       . O   .       .     .      .      .     .      .     .      .      .     .
12315 280.       . O   .       .     .      .      .     .      .     .      .      .     .
12320 281.........O....................................................................
12325 282.       . O   .       .     .      .      .     .      .     .      .      .     .
12330 283.       . O   .       .     .      .      .     .      .     .      .      .     .
                (O) OUTFLOW
      0.   2000.   4000.    6000.   8000.   10000.   12000.   14000.   16000.   18000.     0.     0.     0.
DAHRMN PER
12335 284.       . O   .       .     .      .      .     .      .     .      .      .     .
12340 285.       . O   .       .     .      .      .     .      .     .      .      .     .
12345 286.       . O   .       .     .      .      .     .      .     .      .      .     .
12350 287.       . O   .       .     .      .      .     .      .     .      .      .     .
12355 288.       . O   .       .     .      .      .     .      .     .      .      .     .
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 20000 289.---------.---O-----.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
1


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          **************
          *           *
 295 KK   *   MDPLS   *    ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
          *           *
          **************

             HYDROGRAPH ROUTING DATA

 296 RS          STORAGE ROUTING
                   NSTPS          1  NUMBER OF SUBREACHES
                    ITYP       STOR  TYPE OF INITIAL CONDITION
                  RSVRIC        .00  INITIAL CONDITION
                       X        .00  WORKING R AND D COEFFICIENT

 297 SA            AREA        .6       1.9      8.6     18.1     40.0     80.0    131.0    198.0

 298 SE          ELEVATION  4410.00  4412.00  4414.00  4416.00  4418.00  4420.00  4422.00  4424.00

 299 SQ          DISCHARGE     200.     480.     783.    1411.    4191.    9772.   19163.   31000.

                                           ***

                                 COMPUTED STORAGE-ELEVATION DATA

          STORAGE       .00     2.38    12.07    38.19    94.86   212.57   421.49   748.31
        ELEVATION   4410.00  4412.00  4414.00  4416.00  4418.00  4420.00  4422.00  4424.00
1
                                              RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                 PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM     TIME OF
        OPERATION            STATION      FLOW     PEAK                                  AREA     STAGE    MAX STAGE
 +                                                        6-HOUR   24-HOUR   72-HOUR

        HYDROGRAPH AT
 +                     T1     966.  12.42       354.       132.       132.      2.50

        ROUTED TO
 +                  RT1-B      955.  12.50       353.       132.       132.      2.50

        HYDROGRAPH AT
 +                     T2     305.  12.42       124.        45.        45.      1.82

        HYDROGRAPH AT
 +                     T3     138.  12.42        54.        20.        20.       .82

        3 COMBINED AT
 +                   CP-B     1375.  12.50       530.       196.       196.      5.14

        ROUTED TO
 +                  RCP-C     1357.  12.67       530.       195.       195.      5.14

        HYDROGRAPH AT
 +                     T4     180.  12.75        96.        35.        35.      2.16

        2 COMBINED AT
 +                   CP-C     1531.  12.67       624.       230.       230.      7.30

        ROUTED TO
 +                  RCP-D     1513.  12.75       624.       229.       229.      7.30

        HYDROGRAPH AT
 +                     T5     243.  12.58        87.        32.        32.      1.19

        2 COMBINED AT
 +                   CP-D     1745.  12.75       710.       262.       262.      8.49

        ROUTED TO
 +                  RCP-E     1709.  13.08       709.       259.       259.      8.49

        HYDROGRAPH AT
 +                     T6     565.  13.00       224.        83.        83.      3.15

        2 COMBINED AT
 +                   CP-E     2266.  13.08       931.       342.       342.     11.64

        ROUTED TO
 +                  RT-HN     2186.  13.42       930.       338.       338.     11.64

        HYDROGRAPH AT
 +                     W1     728.  12.25       231.        86.        86.      1.36
                                 PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM     TIME OF
        OPERATION            STATION      FLOW     PEAK                                  AREA     STAGE    MAX STAGE
 +                                                        6-HOUR   24-HOUR   72-HOUR


        HYDROGRAPH AT
 +                     W2     598.  12.25       170.        65.        65.       .84
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       2 COMBINED AT
+                W1+W2    1326.  12.25     400.     151.     151.     2.20

       ROUTED TO
+                RT-A    1271.  12.33     400.     151.     151.     2.20

       HYDROGRAPH AT
+                 W3     641.  12.25     203.      75.      75.    1.38

       ROUTED TO
+                RT-A     623.  12.42     203.      75.      75.    1.38

       HYDROGRAPH AT
+                 W4     341.  12.33     127.      46.      46.    1.47

       3 COMBINED AT
+                W1234    2233.  12.33     725.     272.     272.     5.05

       ROUTED TO
+                RT-B    2231.  12.42     725.     272.     272.     5.05

       HYDROGRAPH AT
+                 W5     271.  12.33     101.      37.      37.    1.27

       2 COMBINED AT
+                W5+CH    2496.  12.42     823.     308.     308.     6.32

       ROUTED TO
+                RT-C    2401.  12.58     823.     307.     307.     6.32

       HYDROGRAPH AT
+                 W6     160.  12.58      77.      27.      27.    1.43

       2 COMBINED AT
+                W6+CH    2561.  12.58     898.     334.     334.     7.75

       ROUTED TO
+                RT-D    2448.  12.92     897.     331.     331.     7.75

       HYDROGRAPH AT
+                 W7     201.  12.67      78.      30.      30.    1.30

       2 COMBINED AT
+                W7+CH    2615.  12.92     976.     361.     361.     9.05

       ROUTED TO
+                RT-E    2567.  13.08     976.     360.     360.     9.05

       HYDROGRAPH AT
+                 W8     660.  12.67     228.      92.      92.    4.37

       2 COMBINED AT
+                W8+CH    3072.  13.00    1202.     451.     451.    13.42

       ROUTED TO
+                RT-F    2942.  13.25    1202.     448.     448.    13.42

       HYDROGRAPH AT
+                 46     518.  12.58     156.      64.      64.    2.69

       2 COMBINED AT
+                46+CH    3203.  13.25    1353.     512.     512.    16.11

       ROUTED TO
+                RT-HN    3121.  13.58    1353.     506.     506.    16.11

       HYDROGRAPH AT
+                 G1     994.  12.25     298.     114.     114.    1.63

       ROUTED TO
+                RT-G     968.  12.33     298.     113.     113.    1.63

       HYDROGRAPH AT
+                 G2     724.  12.25     209.      78.      78.    1.30

       HYDROGRAPH AT
+                 G3     359.  12.42     138.      52.      52.    1.15

       3 COMBINED AT
+                G123    1964.  12.33     643.     243.     243.    4.08

       ROUTED TO
+                RT-H    1910.  12.50     643.     242.     242.    4.08

       HYDROGRAPH AT
+                 G4     369.  12.33     129.      47.      47.    1.54

       HYDROGRAPH AT
+                 G5      94.  12.50      48.      18.      18.    1.02

                          PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD     BASIN    MAXIMUM    TIME OF
       OPERATION        STATION   FLOW    PEAK                                AREA     STAGE    MAX STAGE
+                                             6-HOUR   24-HOUR   72-HOUR

       3 COMBINED AT
+                 G1-5    2306.  12.50     813.     306.     306.     6.64

       ROUTED TO
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+                RT-I     2261.  12.67     813.    304.    304.    6.64

      HYDROGRAPH AT
+                 G6       125.  12.83      67.     25.     25.    1.37

      2 COMBINED AT
+                G6+CH    2381.  12.67     879.    330.    330.    8.01

      ROUTED TO
+                RT-K     2360.  12.75     879.    329.    329.    8.01

      HYDROGRAPH AT
+                 J1       305.  12.33     102.     37.     37.    1.29

      ROUTED TO
+                RT-J      297.  12.50     102.     37.     37.    1.29

      HYDROGRAPH AT
+                 J2       302.  12.58     126.     46.     46.    1.95

      2 COMBINED AT
+                J1+J2     596.  12.50     228.     83.     83.    3.24

      ROUTED TO
+                RT-K      583.  12.58     228.     83.     83.    3.24

      HYDROGRAPH AT
+                 G8       423.  12.42     142.     52.     52.    2.19

      3 COMBINED AT
+                G+J      3255.  12.67    1248.    464.    464.   13.44

      ROUTED TO
+                RT-L     3217.  12.83    1248.    462.    462.   13.44

      HYDROGRAPH AT
+                 G7       204.  12.50      81.     31.     31.    1.50

      ROUTED TO
+                RT-L      200.  12.58      81.     31.     31.    1.50

      HYDROGRAPH AT
+                 G9       216.  14.17     150.     55.     55.    3.07

      3 COMBINED AT
+                PT-L     3478.  12.83    1472.    547.    547.   18.01

      ROUTED TO
+                RT-PV    3434.  13.00    1471.    544.    544.   18.01

      HYDROGRAPH AT
+                 B1       347.  12.58     155.     56.     56.    2.18

      ROUTED TO
+                RT-M      344.  12.75     155.     55.     55.    2.18

      HYDROGRAPH AT
+                 B2       145.  12.50      66.     23.     23.    1.42

      2 COMBINED AT
+                B1+B2     470.  12.67     221.     79.     79.    3.60

      ROUTED TO
+                RT-N      468.  12.83     221.     79.     79.    3.60

      HYDROGRAPH AT
+                 B3        73.  12.50      28.      9.      9.     .53

      2 COMBINED AT
+                B123      525.  12.75     248.     88.     88.    4.13

      ROUTED TO
+                RT-PV     518.  13.08     248.     87.     87.    4.13

      2 COMBINED AT
+                PLEASV   3942.  13.00    1717.    631.    631.   22.14

      ROUTED TO
+                RT-SG    3891.  13.25    1717.    627.    627.   22.14

      HYDROGRAPH AT
+                 30      3305.  13.00    1693.    917.    917.   17.80

      2 COMBINED AT
+                STMBT    7035.  13.17    3398.   1544.   1544.   39.94

      ROUTED TO
+                RT-341   6775.  13.58    3394.   1529.   1529.   39.94

      HYDROGRAPH AT
                  PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD    BASIN    MAXIMUM    TIME OF
      OPERATION     STATION   FLOW   PEAK                      AREA     STAGE    MAX STAGE
+                               6-HOUR   24-HOUR   72-HOUR

+                 35      4428.  12.83    1538.    518.    518.   15.50

      HYDROGRAPH AT
+                 40       854.  12.33     204.     75.     75.    2.63
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        3 COMBINED AT
+                 HY-341    9574.  13.50      5061.     2122.     2122.     58.07

        ROUTED TO
+                 RT-HN     9502.  13.92      5058.     2100.     2100.     58.07

        HYDROGRAPH AT
+                    60    3724.  13.17      1624.      597.      597.     23.15

        4 COMBINED AT
+                  HUFN    17220.  13.58      8937.     3542.     3542.    108.97

        ROUTED TO
+                  MDPLS    16405.  13.83      8902.     3508.     3508.    108.97
+                                                                 4421.41       13.83


***   1 ERROR(S) DETECTED BY HEC-1 ***
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*****************************************                  ****************************************
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)     *                  *     U.S. ARMY CORPS OF ENGINEERS     *
*          FEBRUARY 1981                *                  * THE HYDROLOGIC ENGINEERING CENTER    *
*          REVISED 01 JUN 88            *                  *          609 SECOND STREET           *
*                                       *                  *        DAVIS, CALIFORNIA 95616       *
*  RUN DATE 12/07/1989  TIME  16:38:15  *                  *           (916)551-1748              *
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                         *     *  *         *                      *
                         *     *  *         *                      *
                         *******  ****      *        *******       *
                         *     *  *         *                      *
                         *     *  *         *                      *
                         *     *  *******   *******             *******


               ********************************************************
               PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION
               FACILITY DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER
               PURPOSE WITHOUT CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

               HUFFAKER NARROWS HYDROLOGY MODEL FUTURE CONDITIONS
               THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURRING SUMMER 1989
               THE PARAMETERS ARE BASED ON THE 100 POINT RAINFALL FROM
               THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
               NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
               METHOD AND MANNING EQUATIN ARE USED FOR THE DETERMINATION OF LAG TIME.
               CURVE NUMBERS ESTIMATED FROM USFS PHOTOGRAPHS AND FILED INVESTIGATION
               FUTURE CONDITIONS MODEL: IMPERVIOUS AREAS BASED ON COUNTY MASTER PLANS AND
               THE DAMONTE AND DOUBLE DIAMOND MASTER PLANS
               CHANGED ROUTING PARAMETERS FOR STEAMBOAT CREEK, WHITE AND THOMAS FROM THEIR
               APEXES TO THE NARROWS
               MODIFIED THE LAG TIMES OF WATERSHEDS 40,60 DUE TO PROPOSED DEVELOPMENT IN THE
               UPPER TRUCKEE MEADOWS.


1                                HEC-1 INPUT

      LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                *DIAGRAM
         1       ID   ***********************************************************************
         2       ID
         3       ID
         4       ID
         5       ID
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         8       ID
         9       ID
        10       ID
        11       ID
        12       ID
        13       ID
        14       ID
        15       ID
        16       ID
        17       ID
        18       ID
        19       ID                 FILE NAME: HFUT15.909
        20       ID
        21       ID   ***********************************************************************
        22       IT    15                  289
        23       IO     4       1

        24       KK     T1   THOMAS CREEK WATERSHED T1
        25       BA    2.5
        26       PH      1     109     .42     .83    1.45    1.87    2.26    3.18    4.31    5.44
        27       LS             69
        28       UD    .35

        29       KK   RT1-B   ROUTE T1 TO CONCENTRATION POINT B
        30       RM      1  .09568     .4

        31       KK     T2   THOMAS CREEK WATERSHED T2
        32       BA   1.82
        33       PH      1     109      .4     .79    1.39    1.75     2.1     2.9    3.91    4.92
        34       LS             58
        35       UD    .29

        36       KK     T3   THOMAS CREEK WATERSHED T3
        37       BA    .82
        38       PH      1     109     .41      .8     1.4    1.73    2.04    2.78    3.75    4.73
        39       LS             59
        40       UD     .3

        41       KK    CP-B   COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCCENTRATION PT B
        42       HC      3

        43       KK   RCP-C   ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
        44       RM      2  .14578     .4
1                                HEC-1 INPUT
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1                                    HEC-1 INPUT

      LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

       45         KK     T4  THOMAS CREEK WATERSHED T4
       46         BA   2.16
       47         PH      1     109     .39     .77    1.35    1.64    1.91    2.55    3.38     4.2
       48         LS            58
       49         UD     .54

       50         KK    CP-C   COMBINE ROUTED T1-T3 W/ T4
       51         HC      2
       52         KK   RCP-D   ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
       53         RM      2  .1408      .4

       54         KK     T5  THOMAS CREEK WATERSHED T5
       55         BA   1.19
       56         PH     1.     109     .35     .68     1.2     1.4    1.59    2.04    2.75     3.4
       57         LS            71       8
       58         UD     .49

       59         KK    CP-D   COMBINE ROUTED T1-T4 W/ T5
       60         HC      2
       61         KO      1

       62         KK   RCP-E   ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
       63         RM      3  .2701      .4

       64         KK     T6  THOMAS CREEK WATERSHED T6
       65         BA   3.15
       66         PH      1     109     .35     .69    1.21    1.34    1.48     1.8     2.3     2.8
       67         LS            75      16
       68         UD     .85

       69         KK   CP-E   COMBINE ROUTED T1-T5 W/ T6
       70         HC      2

       71         KK   RT-HN  ROUTE THOMAS CK WATERSHED TO HUFFAKER NARROWS
       72         RM      2    .35      .4

       73         KK     W1 WHITES CREEK WATERSHED NO. 1
       74         BA   1.38
       75         PH      1     109     .39     .77    1.35    1.83    2.28    3.34    4.43    5.52
       76         LS            73
       77         UD     .21

       78         KK     W2 WHITES CREEK WATERSHED NO. 2
       79         BA    .84
       80         PH      1     109     .39     .77    1.35     1.8    2.23    3.22    4.31    5.39
       81         LS            80
       82         UD     .17
       83         KK   W1+W2 COMBINE FLOW FROM W1 AND W2
       84         HC      2

       85         KK   RT-A  ROUTE COMBINED W1 AND W2 TO POINT A
       86         RM      1   .122      .4

       87         KK     W3  WHITES CREEK WATERSHED NO. 3
       88         BA   1.38
       89         PH      1     109     .39     .77    1.36    1.78    2.18    3.12    4.15    5.17
       90         LS            72
       91         UD     .23

       92         KK    RT-A ROUTE W3 TO POINT A
       93         RM      1  .0950      .4

       94         KK     W4  WHITES CREEK WATERSHED NO. 4
       95         BA   1.47
       96         PH      1     109     .38     .75    1.32    1.71    2.08    2.95    3.94    4.94
       97         LS            62
       98         UD     .27

       99         KK   W1234 COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
      100          HC      3

      101          KK   RT-B  ROUTE COMBINED HYDROGRAPH TO POINT B
      102          RM      1  .0597      .4

      103          KK     W5  WHITES CREEK WATERSHED NO. 5
      104          BA   1.27
      105          PH      1     109     .38     .75    1.31    1.67    2.01     2.8    3.78    4.77
      106          LS            82
      107          UD     .28

      108          KK   W5+CH COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
      109          HC      2

      110          KK   RT-C  ROUTE COMBINED HYDROGRAPH TO POINT C
      111          RM      2   .185      .4

      112          KK     W6  WHITES CREEK WATERSHED N0. 6
      113          BA   1.43
      114          PH      1     109     .36     .71    1.24    1.55    1.86    2.58    3.34    4.12
      115          LS            81
      116          UD     .44

      117          KK   W6+CH COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
      118          HC      2
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1                                   HEC-1 INPUT

 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  119          KK   RT-D  ROUTE COMBINED HYDROGRAPH TO POINT D
  120          RM      3   .298      .4

  121          KK    W7   WHITES CREEK WATERSHED NO.7
  122          BA    1.3
  123          PH      1     109     .33     .64    1.12    1.34    1.55    2.03    2.69    3.36
  124          LS             68       8
  125          UD     .5

  126          KK   W7+CH COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
  127          HC      2

  128          KK   RT-E  ROUTE COMBINED HYDROGRAPH TO POINT E
  129          RM      2   .139      .4

  130          KK    W8   WHITES CREEK WATERSHED NO. 8
  131          BA   4.37
  132          PH      1     109     .32     .64    1.12    1.28    1.43    1.79    2.29    2.79
  133          LS             68      17
  134          UD    .53

  135          KK   W8+CH COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
  136          HC      2

  137          KK   RT-F  ROUTE COMBINED HYDROGRAPH TO POINT F
  138          RM      1    .24      .4

  139          KK    46  WHITES CREEK WATERSHED 46
  140          BA   2.69
  141          PH      1     109     .36      .7    1.23    1.39    1.52    1.78    2.26    2.75
  142          LS             66      25
  143          UD     .5

  144          KK   46+CH COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
  145          HC      2

  146          KK   RT-HN ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
  147          RM      4    .40      .4

  148          KK    G1   GLENA CREEK WATERSHED NO.1
  149          BA   1.63
  150          PH      1     109      .4     .79    1.39    1.85    2.29    3.31    4.46     5.6
  151          LS             75
  152          UD     .2

  153          KK   RT-G  ROUTE G1 TO POINT G
  154          RM      1   .096      .4

  155          KK    G2  GALENA CREEK WATERSHED NO. 2
  156          BA    1.3
  157          PH      1     109     .39     .77    1.35    1.78    2.18    3.08     4.1    5.12
  158          LS             75
  159          UD     .2
  160          KK    G3  GALENA CREEK WATERSHED NO. 3
  161          BA   1.15
  162          PH      1     109     .38     .74     1.3    1.69    2.05     2.9    3.95    4.99
  163          LS             69
  164          UD    .36

  165          KK   G123  COMBINE ROUTED G1 WITH G2 AND G3
  166          HC      3

  167          KK   RT-H  ROUTE COMBINED HYDROGRAPH TO POINT H
  168          RM      2   .174      .4

  169          KK    G4  GALENA CREEK WATERSHED NO. 4
  170          BA   1.54
  171          PH      1     109     .38     .75    1.32    1.68    2.02    2.83    3.79    4.74
  172          LS             63
  173          UD    .25

  174          KK    G5  GALENA CREEK WATERSHED NO. 5
  175          BA   1.02
  176          PH      1     109     .38     .75    1.32    1.67    1.99    2.75     3.7    4.64
  177          LS             55
  178          UD    .32

  179          KK    G1-5 COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
  180          HC      3

  181          KK   RT-I  ROUTE COMBINED HYDROGRAPHS TO POINT I
  182          RM      2   .167      .4

  183          KK    G6  GALENA CREEK WATERSHED N0.6
  184          BA   1.37
  185          PH      1     109     .37     .72    1.28    1.57    1.87    2.56    3.33     4.1
  186          LS             59     2.5
  187          UD    .58

  188          KK   G6+CH COMBINE G6 WITH COMBINED HYDROGRAPH AT POINT I
  189          HC      2

  190          KK   RT-K  ROUTE COMBINED HYDROGRAPH TO POINT K
  191          RM      1   .066      .4
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1                                 HEC-1 INPUT

         LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          192       KK    J1  JONES CREEK WATERSHED NO. 1
          193       BA  1.29
          194       PH     1     109    .39    .76   1.33   1.67      2   2.75   3.69   4.62
          195       LS            63
          196       UD    .23

          197       KK  RT-J  ROUTE JI TO POINT J
          198       RM     2   .195     .4

          199       KK    J2  JONES CREEK WATERSHED NO. 2
          200       BA  1.95
          201       PH     1     109    .35     .7   1.22   1.52    1.8   2.45   3.22   3.98
          202       LS            64    3.4
          203       UD    .43

          204       KK  J1+J2 COMBINE ROUTED J1 WITH J2 AT POINT J
          205       HC     2

          206       KK  RT-K  ROUTE COMBINED J1 AND J2 TO POINT K
          207       RM     1   .104     .4

          208       KK    G8  GALENA CREEK WATERSHED NO.8
          209       BA  2.19
          210       PH     1     109    .34    .68   1.18    1.4   1.62   2.13   2.77   3.41
          211       LS            69      6
          212       UD    .35

          213       KK  G+J   COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
          214       HC     3

          215       KK  RT-L  ROUTE COMBINED HYDROGRAPH TO PT L
          216       RM     1   .132     .4

          217       KK    G7  GALENA CREEK WATERSHED NO. 7
          218       BA   1.5
          219       PH     1     109    .35    .69   1.22    1.5   1.77    2.4    3.1    3.8
          220       LS            62      5
          221       UD    .38

          222       KK  RT-L  ROUTE G7 TO OINT L
          223       RM     1   .129     .4

          224       KK    G9  GALENA CREEK WATERSHED NO. 9
          225       BA  3.07
          226       PH     1     109    .33    .65   1.14   1.35   1.56   2.04    2.6   3.16
          227       LS            69    3.4
          228       UD  1.67

          229       KK  PT-L  COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
          230       HC     3

          231       KK  RT-PV ROUTE GALENA CK HYDROGRAPH TO PLEASENT VALLEY
          232       RM     2    .17     .4

          233       KK    B1  BROWNS CREEK WATERSHED NO. 1
          234       BA  2.18
          235       PH     1     109    .38    .74    1.3   1.63   1.95    2.7   3.62   4.53
          236       LS            62
          237       UD    .44
          238       KK  RT-M  ROUTE B1 TO POINT M
          239       RM     2   .167     .4

          240       KK    B2  BROWNS CREEK WATERSHED NO. 2
          241       BA  1.42
          242       PH     1     109    .36    .71   1.25   1.55   1.83   2.49   3.25      4
          243       LS            60      0
          244       UD    .35

          245       KK  B1+B2 COMBINE ROUTED B1 WITH B2 AT POINT M
          246       HC     2

          247       KK  RT-N  ROUTE COMBINED HYDROGRAPH TO POINT N
          248       RM     1   .104     .4

          249       KK    B3  BROWNS CREEK WATERSHED NO. 3
          250       BA   .53
          251       PH     1     109    .34    .67   1.18   1.43   1.68   2.22   2.82   3.42
          252       LS            67      0
          253       UD    .38

          254       KK  B123  COMBINE ROUTED B1 AND B2 WITH B3
          255       HC     2

          256       KK  RT-PV ROUTE BROWNS CREEK HYDROGRAPH TO PLEASENT VALLEY
          257       RM     3   .306     .4

          258       KK PLEASV COMBINE GALENA CK AND BROWNS CK AT PLEASENT VALLEY
          259       HC     2

          260       KK  RT-SG ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
          261       RM     3    .21     .4

          262       KK     30 STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
          263       BA  17.8
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1                                 HEC-1 INPUT

      LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


       264      BF    500    500     1
       265      PH      1    109   .32   .64  1.12  1.28  1.44   1.8  2.34  2.87
       266      LS            77     3
       267      UD   0.82

       268      KK  STMBT COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
       269      HC      2

       270      KK RT-341 ROUTE COMBINED HYDROGRAPH TO HWY 341
       271      RM      2   .413  .4

       272      KK    35  WATERSHED 35 AKA BAILEY CANYON
       273      BA   15.5
       274      BF      0      0     1
       275      PH      1    109   .39   .77  1.34  1.53  1.68  1.98  2.51  3.04
       276      LS            82     2
       277      UD    .72
1                                 HEC-1 INPUT

      LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


       278      KK    40  WATERSHED NO.40
       279      BA   2.63
       280      PH      1    109   .35   .69  1.21  1.38  1.51  1.78  2.29  2.81
       281      LS            77    15
       282      UD     .3

       283      KK HY-341  COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
       284      HC      3

       285      KK RT-HN  ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
       286      RM      5   .44    .4

       287      KK    60  WATERSHED NO. 60
       288      BA  23.15
       289      PH      1    109   .35   .68  1.19  1.36  1.49  1.77   2.3  2.83
       290      LS            76    12
       291      UD    1.0

       292      KK  HUFN  COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
       293      HC      4
       294      KO      1      2                    22

       295      KK  MDPLS ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
       296      RS      1   STOR      0
       297      SA     .6    1.9   8.6  18.1    40    80   131   196
       298      SE   4410   4412  4414  4416  4418  4420  4422  4424
       299      SQ    200    480   783  1411  4191  9772 19163 31000
       300      ZZ
1
           SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
 LINE     (V) ROUTING       (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR      (<---) RETURN OF DIVERTED OR PUMPED FLOW

  24        T1
            V
            V
  29      RT1-B
            .
            .
  31        .       T2
            .       .
            .       .
  36        .       .       T3
            .       .       .
            .       .       .
  41       CP-B.....................
            V
            V
  43      RCP-C
            .
            .
  45        .       T4
            .       .
            .       .
  50       CP-C............
            V
            V
  52      RCP-D
            .
            .
  54        .       T5
            .       .
            .       .
  59       CP-D............
            V
            V
  62      RCP-E
            .
            .
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INPUT
LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

 64           .         T6
              .         .
              .         .
 69        CP-E ............
              V
              V
 71        RT-HN
              .
              .
 73           .         W1
              .         .
              .         .
 78           .         .         W2
              .         .         .
              .         .         .
 83           .      W1+W2...........
              .         V
              .         V
 85           .      RT-A
              .         .
              .         .
 87           .         .         W3
              .         .         V
              .         .         V
 92           .         .       RT-A
              .         .         .
              .         .         .
 94           .         .         .         W4
              .         .         .         .
              .         .         .         .
 99           .      W1234.......................
              .         V
              .         V
101           .      RT-B
              .         .
              .         .
103           .         .         W5
              .         .         .
              .         .         .
108           .      W5+CH............
              .         V
              .         V
110           .      RT-C
              .         .
              .         .
112           .         .         W6
              .         .         .
              .         .         .
117           .      W6+CH............
              .         V
              .         V
119           .      RT-D
              .         .
              .         .
121           .         .         W7
              .         .         .
              .         .         .
126           .      W7+CH............
              .         V
              .         V
128           .      RT-E
              .         .
              .         .
130           .         .         W8
              .         .         .
              .         .         .
135           .      W8+CH............
              .         V
              .         V
137           .      RT-F
              .         .
              .         .
139           .         .         46
              .         .         .
              .         .         .
144           .      46+CH............
              .         V
              .         V
146           .      RT-HN
              .         .
              .         .
148           .         .         G1
              .         .         V
              .         .         V
153           .         .       RT-G
              .         .         .
              .         .         .
155           .         .         .         G2
              .         .         .         .
              .         .         .         .
160           .         .         .         .         G3
              .         .         .         .         .
              .         .         .         .         .
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INPUT
LINE     (V) ROUTING       (--->) DIVERSION OR PUMP FLOW

NO.      (.) CONNECTOR      (<---) RETURN OF DIVERTED OR PUMPED FLOW

 165        .       .     G123 .......................
            .       .     V
            .       .     V

 167        .       .     RT-H
            .       .     .
            .       .     .
 169        .       .     .       G4
            .       .     .       .
            .       .     .       .
 174        .       .     .       .       G5
            .       .     .       .       .
            .       .     .       .       .
 179        .       .     G1-5.......................
            .       .     V
            .       .     V
 181        .       .     RT-I
            .       .     .
            .       .     .
 183        .       .     .       G6
            .       .     .       .
            .       .     .       .
 188        .       .     G6+CH............
            .       .     V
            .       .     V
 190        .       .     RT-K
            .       .     .
            .       .     .
 192        .       .     .       J1
            .       .     .       V
            .       .     .       V
 197        .       .     .      RT-J
            .       .     .       .
            .       .     .       .
 199        .       .     .       .       J2
            .       .     .       .       .
            .       .     .       .       .
 204        .       .     .      J1+J2............
            .       .     .       V
            .       .     .       V
 206        .       .     .      RT-K
            .       .     .       .
            .       .     .       .
 208        .       .     .       .       G8
            .       .     .       .       .
            .       .     .       .       .
 213        .       .     G+J  .......................
            .       .     V
            .       .     V
 215        .       .     RT-L
            .       .     .
            .       .     .
 217        .       .     .       G7
            .       .     .       V
            .       .     .       V
 222        .       .     .      RT-L
            .       .     .       .
            .       .     .       .
 224        .       .     .       .       G9
            .       .     .       .       .
            .       .     .       .       .
 229        .       .     PT-L .......................
            .       .     V
            .       .     V
 231        .       .     RT-PV
            .       .     .
            .       .     .
 233        .       .     .       B1
            .       .     .       V
            .       .     .       V
 238        .       .     .      RT-M
            .       .     .       .
            .       .     .       .
 240        .       .     .       .       B2
            .       .     .       .       .
            .       .     .       .       .
 245        .       .     .      B1+B2............
            .       .     .       V
            .       .     .       V
 247        .       .     .      RT-N
            .       .     .       .
            .       .     .       .
 249        .       .     .       .       B3
            .       .     .       .       .
            .       .     .       .       .
 254        .       .     .      B123 ............
            .       .     .       V
            .       .     .       V
 256        .       .     .      RT-PV
            .       .     .       .
            .       .     .       .
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INPUT
 LINE   (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

 NO.   (.) CONNECTOR       (<---) RETURN OF DIVERTED OR PUMPED FLOW

 258        .     .   PLEASV............
           .     .      V
           .     .      V
 260        .     .    RT-SG
           .     .      .
           .     .      .
 262        .     .      .     30
           .     .      .     .
           .     .      .     .
 268        .     .    STMBT............
           .     .      V
           .     .      V
 270        .     .   RT-341
           .     .      .
           .     .      .
 272        .     .      .     35
           .     .      .     .
           .     .      .     .
 278        .     .      .     .     40
           .     .      .     .     .
           .     .      .     .     .
 283        .     .   HY-341........................
           .     .      V
           .     .      V
 285        .     .   RT-HN
           .     .      .
           .     .      .
 287        .     .      .     60
           .     .      .     .
           .     .      .     .
 292      HUFN ....................................
           V
           V
 295      MDPLS
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
*****************************************                          *****************************************
*   FLOOD HYDROGRAPH PACKAGE (HEC-1)    *                          *     U.S. ARMY CORPS OF ENGINEERS      *
*           FEBRUARY 1981               *                          * THE HYDROLOGIC ENGINEERING CENTER     *
*          REVISED 01 JUN 88            *                          *          609 SECOND STREET            *
*                                       *                          *       DAVIS, CALIFORNIA 95816         *
*     RUN DATE 12/07/1989  TIME  16:38:15 *                        *            (916)551-1748              *
*****************************************                          *****************************************



             ****************************************************************************
             PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION
             FACILITY DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER
             PURPOSE WITHOUT CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

             HUFFAKER NARROWS HYDROLOGY MODEL FUTURE CONDITIONS
             THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURRING SUMMER 1989
             THE PARAMETERS ARE BASED ON THE 100 POINT RAINFALL FROM
             THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
             NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
             METHOD AND MANNING EQUATIN ARE USED FOR THE DETERMINATION OF LAG TIME.
             CURVE NUMBERS ESTIMATED FROM USFS PHOTOGRAPHS AND FILED INVESTIGATION
             FUTURE CONDITIONS MODEL: IMPERVIOUS AREAS BASED ON COUNTY MASTER PLANS AND
             THE DAMONTE AND DOUBLE DIAMOND MASTER PLANS
             CHANGED ROUTING PARAMETERS FOR STEAMBOAT CREEK, WHITE AND THOMAS FROM THEIR
             APEXES TO THE NARROWS
             MODIFIED THE LAG TIMES OF WATERSHEDS 40,80 DUE TO PROPOSED DEVELOPMENT IN THE
             UPPER TRUCKEE MEADOWS.

                            FILE NAME: HFUT15.909

             ****************************************************************************

   23 IO        OUTPUT CONTROL VARIABLES
                  IPRNT         4  PRINT CONTROL
                  IPLOT         1  PLOT CONTROL
                  QSCAL        0.  HYDROGRAPH PLOT SCALE

     IT       HYDROGRAPH TIME DATA
                   NMIN          15  MINUTES IN COMPUTATION INTERVAL
                  IDATE      1    0  STARTING DATE
                  ITIME        0000  STARTING TIME
                     NQ         289  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE      4    0  ENDING DATE
                 NDTIME        0000  ENDING TIME
                  ICENT          19  CENTURY MARK

                COMPUTATION INTERVAL     .25 HOURS
                   TOTAL TIME BASE   72.00 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

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
   24 KK    *     T1     *      THOMAS CREEK WATERSHED T1
            *            *
            **************

              SUBBASIN RUNOFF DATA

   25 BA        SUBBASIN CHARACTERISTICS
                  TAREA        2.50  SUBBASIN AREA

               PRECIPITATION DATA

   26 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .42     .83    1.45    1.87    2.26    3.18    4.31    5.44     .00     .00     .00     .00

                                      STORM AREA =  109.00

   27 LS        SCS LOSS RATE
                  STRTL         .90  INITIAL ABSTRACTION
                 CRVNBR       69.00  CURVE NUMBER
                  RTIMP         .00  PERCENT IMPERVIOUS AREA

   28 UD        SCS DIMENSIONLESS UNITGRAPH
                  TLAG          .35  LAG

                                            ***

                                        UNIT HYDROGRAPH
                                    9 END-OF-PERIOD ORDINATES
            1333.    2551.    1501.     619.     282.     111.      47.      22.       7.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
29 KK     *   RT1-B     *      ROUTE T1 TO CONCENTRATION POINT B
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

30 RM            MUSKINGUM ROUTING
                  NSTPS        1 NUMBER OF SUBREACHES
                  AMSKK      .10 MUSKINGUM K
                     X       .40 MUSKINGUM X

                                            ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
31 KK     *      T2     *      THOMAS CREEK WATERSHED T2
          *             *
          ***************

             SUBBASIN RUNOFF DATA

32 BA           SUBBASIN CHARACTERISTICS
                  TAREA        1.82  SUBBASIN AREA

               PRECIPITATION DATA

33 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .40    .79    1.39    1.75    2.10    2.90    3.91    4.92     .00     .00     .00     .00

                                        STORM AREA =  109.00

34 LS           SCS LOSS RATE
                  STRTL        1.45  INITIAL ABSTRACTION
                 CRVNBR       58.00  CURVE NUMBER
                  RTIMP         .00  PERCENT IMPERVIOUS AREA

35 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG         .29  LAG

                                            ***

                                            UNIT HYDROGRAPH
                                       8 END-OF-PERIOD ORDINATES
            1414.    1973.     821.     309.     115.      44.      18.       4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
36 KK     *      T3     *      THOMAS CREEK WATERSHED T3
          *             *
          ***************

             SUBBASIN RUNOFF DATA

37 BA           SUBBASIN CHARACTERISTICS
                  TAREA         .82  SUBBASIN AREA

               PRECIPITATION DATA

38 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .41    .80    1.40    1.73    2.04    2.76    3.75    4.73     .00     .00     .00     .00

                                        STORM AREA =  109.00

39 LS           SCS LOSS RATE
                  STRTL        1.39  INITIAL ABSTRACTION
                 CRVNBR       59.00  CURVE NUMBER
                  RTIMP         .00  PERCENT IMPERVIOUS AREA

40 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG         .30  LAG

                                            ***

                                            UNIT HYDROGRAPH
                                       8 END-OF-PERIOD ORDINATES
             598.     888.     389.     151.      58.      22.       9.       3.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
41 KK     *    CP-B    *      COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCCENTRATION PT B
          *            *
          **************

42 HC           HYDROGRAPH COMBINATION
                  ICOMP        3  NUMBER OF HYDROGRAPHS TO COMBINE

                                             ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
43 KK     *   RCP-C    *      ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
          *            *
          **************

             HYDROGRAPH ROUTING DATA

44 RM           MUSKINGUM ROUTING
                  NSTPS        2 NUMBER OF SUBREACHES
                  AMSKK      .15 MUSKINGUM K
                      X      .40 MUSKINGUM X

                                             ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
45 KK     *     T4     *      THOMAS CREEK WATERSHED T4
          *            *
          **************

             SUBBASIN RUNOFF DATA

46 BA           SUBBASIN CHARACTERISTICS
                  TAREA       2.16  SUBBASIN AREA

              PRECIPITATION DATA

47 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .39     .77    1.35   1.64   1.91   2.55    3.38    4.20     .00     .00     .00     .00

                                      STORM AREA =  109.00

48 LS           SCS LOSS RATE
                  STRTL       1.45  INITIAL ABSTRACTION
                 CRVNBR      58.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

49 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG        .54  LAG

                                             ***

                                          UNIT HYDROGRAPH
                                      13 END-OF-PERIOD ORDINATES
             441.    1375.    1525.    1059.     536.     298.     160.      85.      47.      25.
              15.       8.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
50 KK     *    CP-C    *      COMBINE ROUTED T1-T3 W/ T4
          *            *
          **************

51 HC           HYDROGRAPH COMBINATION
                  ICOMP        2  NUMBER OF HYDROGRAPHS TO COMBINE

                                             ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
52 KK     *   RCP-D    *      ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
          *            *
          **************
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            HYDROGRAPH ROUTING DATA

 53 RM         MUSKINGUM ROUTING
                 NSTPS        2 NUMBER OF SUBREACHES
                 AMSKK      .14 MUSKINGUM K
                   X        .40 MUSKINGUM X

                                    ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
 54 KK    *      T5    *     THOMAS CREEK WATERSHED T5
          *            *
          **************

            SUBBASIN RUNOFF DATA

 55 BA         SUBBASIN CHARACTERISTICS
                 TAREA       1.19  SUBBASIN AREA

              PRECIPITATION DATA

 56 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .35     .68    1.20    1.40    1.59    2.04    2.75    3.40     .00     .00     .00     .00

                                      STORM AREA =   109.00

 57 LS         SCS LOSS RATE
                 STRTL        .82  INITIAL ABSTRACTION
                CRVNBR      71.00  CURVE NUMBER
                 RTIMP       8.00  PERCENT IMPERVIOUS AREA

 58 UD         SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .49  LAG

                                    ***

                                         UNIT HYDROGRAPH
                                     12 END-OF-PERIOD ORDINATES
           302.      883.      863.      503.      253.      131.       68.       35.       18.       10.
             5.        1.




*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          **************
          *            *
 59 KK    *     CP-D   *     COMBINE ROUTED T1-T4 W/ T5
          *            *
          **************

 61 KO         OUTPUT CONTROL VARIABLES
                 IPRNT          1  PRINT CONTROL
                 IPLOT          1  PLOT CONTROL
                 QSCAL         0.  HYDROGRAPH PLOT SCALE

 60 HC         HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                    ***




*********************************************************************************************************************************

                                        HYDROGRAPH AT STATION     CP-D
                                          SUM OF  2 HYDROGRAPHS

*********************************************************************************************************************************
                      *                          *                          *
   DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW
```

```
                      *                       *                        *
 1   0000   1     0.  *  1   1815  74    415.  *  2   1230  147     0.  *  3   0645  220     0.
 1   0015   2     0.  *  1   1830  75    394.  *  2   1245  148     0.  *  3   0700  221     0.
 1   0030   3     1.  *  1   1845  76    358.  *  2   1300  149     0.  *  3   0715  222     0.
 1   0045   4     2.  *  1   1900  77    322.  *  2   1315  150     0.  *  3   0730  223     0.
 1   0100   5     2.  *  1   1915  78    302.  *  2   1330  151     0.  *  3   0745  224     0.
 1   0115   6     3.  *  1   1930  79    293.  *  2   1345  152     0.  *  3   0800  225     0.
 1   0130   7     3.  *  1   1945  80    285.  *  2   1400  153     0.  *  3   0815  226     0.
 1   0145   8     3.  *  1   2000  81    278.  *  2   1415  154     0.  *  3   0830  227     0.
 1   0200   9     3.  *  1   2015  82    273.  *  2   1430  155     0.  *  3   0845  228     0.
 1   0215  10     3.  *  1   2030  83    268.  *  2   1445  156     0.  *  3   0900  229     0.
 1   0230  11     3.  *  1   2045  84    264.  *  2   1500  157     0.  *  3   0915  230     0.
 1   0245  12     3.  *  1   2100  85    260.  *  2   1515  158     0.  *  3   0930  231     0.
 1   0300  13     3.  *  1   2115  86    256.  *  2   1530  159     0.  *  3   0945  232     0.
 1   0315  14     3.  *  1   2130  87    252.  *  2   1545  160     0.  *  3   1000  233     0.
 1   0330  15     3.  *  1   2145  88    248.  *  2   1600  161     0.  *  3   1015  234     0.
 1   0345  16     3.  *  1   2200  89    245.  *  2   1615  162     0.  *  3   1030  235     0.
 1   0400  17     3.  *  1   2215  90    241.  *  2   1630  163     0.  *  3   1045  236     0.
 1   0415  18     4.  *  1   2230  91    238.  *  2   1645  164     0.  *  3   1100  237     0.
 1   0430  19     4.  *  1   2245  92    235.  *  2   1700  165     0.  *  3   1115  238     0.
 1   0445  20     4.  *  1   2300  93    232.  *  2   1715  166     0.  *  3   1130  239     0.
 1   0500  21     4.  *  1   2315  94    229.  *  2   1730  167     0.  *  3   1145  240     0.
 1   0515  22     4.  *  1   2330  95    227.  *  2   1745  168     0.  *  3   1200  241     0.
 1   0530  23     4.  *  1   2345  96    224.  *  2   1800  169     0.  *  3   1215  242     0.
 1   0545  24     4.  *  2   0000  97    221.  *  2   1815  170     0.  *  3   1230  243     0.
 1   0600  25     4.  *  2   0015  98    213.  *  2   1830  171     0.  *  3   1245  244     0.
 1   0615  26     4.  *  2   0030  99    180.  *  2   1845  172     0.  *  3   1300  245     0.
 1   0630  27     5.  *  2   0045 100    115.  *  2   1900  173     0.  *  3   1315  246     0.
 1   0645  28     6.  *  2   0100 101     49.  *  2   1915  174     0.  *  3   1330  247     0.
 1   0700  29     6.  *  2   0115 102     18.  *  2   1930  175     0.  *  3   1345  248     0.
 1   0715  30     6.  *  2   0130 103     10.  *  2   1945  176     0.  *  3   1400  249     0.
 1   0730  31     7.  *  2   0145 104      4.  *  2   2000  177     0.  *  3   1415  250     0.
 1   0745  32     7.  *  2   0200 105      2.  *  2   2015  178     0.  *  3   1430  251     0.
 1   0800  33     7.  *  2   0215 106      1.  *  2   2030  179     0.  *  3   1445  252     0.
 1   0815  34     7.  *  2   0230 107      0.  *  2   2045  180     0.  *  3   1500  253     0.
 1   0830  35     9.  *  2   0245 108      0.  *  2   2100  181     0.  *  3   1515  254     0.
 1   0845  36    12.  *  2   0300 109      0.  *  2   2115  182     0.  *  3   1530  255     0.
 1   0900  37    18.  *  2   0315 110      0.  *  2   2130  183     0.  *  3   1545  256     0.
 1   0915  38    25.  *  2   0330 111      0.  *  2   2145  184     0.  *  3   1600  257     0.
 1   0930  39    33.  *  2   0345 112      0.  *  2   2200  185     0.  *  3   1615  258     0.
 1   0945  40    43.  *  2   0400 113      0.  *  2   2215  186     0.  *  3   1630  259     0.
 1   1000  41    56.  *  2   0415 114      0.  *  2   2230  187     0.  *  3   1645  260     0.
 1   1015  42    69.  *  2   0430 115      0.  *  2   2245  188     0.  *  3   1700  261     0.
 1   1030  43    85.  *  2   0445 116      0.  *  2   2300  189     0.  *  3   1715  262     0.
 1   1045  44   102.  *  2   0500 117      0.  *  2   2315  190     0.  *  3   1730  263     0.
 1   1100  45   124.  *  2   0515 118      0.  *  2   2330  191     0.  *  3   1745  264     0.
 1   1115  46   151.  *  2   0530 119      0.  *  2   2345  192     0.  *  3   1800  265     0.
 1   1130  47   186.  *  2   0545 120      0.  *  3   0000  193     0.  *  3   1815  266     0.
 1   1145  48   238.  *  2   0600 121      0.  *  3   0015  194     0.  *  3   1830  267     0.
 1   1200  49   328.  *  2   0615 122      0.  *  3   0030  195     0.  *  3   1845  268     0.
 1   1215  50   544.  *  2   0630 123      0.  *  3   0045  196     0.  *  3   1900  269     0.
 1   1230  51   984.  *  2   0645 124      0.  *  3   0100  197     0.  *  3   1915  270     0.
 1   1245  52  1485.  *  2   0700 125      0.  *  3   0115  198     0.  *  3   1930  271     0.
 1   1300  53  1630.  *  2   0715 126      0.  *  3   0130  199     0.  *  3   1945  272     0.
 1   1315  54  1292.  *  2   0730 127      0.  *  3   0145  200     0.  *  3   2000  273     0.
 1   1330  55   948.  *  2   0745 128      0.  *  3   0200  201     0.  *  3   2015  274     0.
 1   1345  56   849.  *  2   0800 129      0.  *  3   0215  202     0.  *  3   2030  275     0.
 1   1400  57   783.  *  2   0815 130      0.  *  3   0230  203     0.  *  3   2045  276     0.
 1   1415  58   713.  *  2   0830 131      0.  *  3   0245  204     0.  *  3   2100  277     0.
 1   1430  59   679.  *  2   0845 132      0.  *  3   0300  205     0.  *  3   2115  278     0.
 1   1445  60   638.  *  2   0900 133      0.  *  3   0315  206     0.  *  3   2130  279     0.
 1   1500  61   613.  *  2   0915 134      0.  *  3   0330  207     0.  *  3   2145  280     0.
 1   1515  62   591.  *  2   0930 135      0.  *  3   0345  208     0.  *  3   2200  281     0.
 1   1530  63   568.  *  2   0945 136      0.  *  3   0400  209     0.  *  3   2215  282     0.
 1   1545  64   544.  *  2   1000 137      0.  *  3   0415  210     0.  *  3   2230  283     0.
 1   1600  65   514.  *  2   1015 138      0.  *  3   0430  211     0.  *  3   2245  284     0.
 1   1615  66   496.  *  2   1030 139      0.  *  3   0445  212     0.  *  3   2300  285     0.
 1   1630  67   481.  *  2   1045 140      0.  *  3   0500  213     0.  *  3   2315  286     0.
 1   1645  68   470.  *  2   1100 141      0.  *  3   0515  214     0.  *  3   2330  287     0.
 1   1700  69   459.  *  2   1115 142      0.  *  3   0530  215     0.  *  3   2345  288     0.
 1   1715  70   450.  *  2   1130 143      0.  *  3   0545  216     0.  *  4   0000  289     0.
                      *                       *                        *
DA MON HRMN ORD      FLOW  * DA MON HRMN ORD      FLOW  * DA MON HRMN ORD      FLOW  * DA MON HRMN ORD      FLOW


 1   1730  71   440.  *  2   1145 144      0.  *  3   0600  217     0.  *
 1   1745  72   433.  *  2   1200 145      0.  *  3   0615  218     0.  *
 1   1800  73   425.  *  2   1215 146      0.  *  3   0630  219     0.  *
                      *                       *                        *
*********************************************************************************************************

 PEAK FLOW    TIME                MAXIMUM AVERAGE FLOW
                          6-HR      24-HR      72-HR    72.00-HR
+  (CFS)      (HR)
                    (CFS)
+   1630.    13.00         708.       268.       90.       90.
                   (INCHES)  .775      1.176      1.177      1.177
                   (AC-FT)   351.       532.       533.       533.

                   CUMULATIVE AREA =    8.49 SQ MI
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


               ***************
               *             *
 62 KK         *   RCP-E     *      ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
               *             *
               ***************
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          HYDROGRAPH ROUTING DATA

 63 RM         MUSKINGUM ROUTING
                NSTPS        3 NUMBER OF SUBREACHES
                AMSKK      .27 MUSKINGUM K
                  X      .40 MUSKINGUM X

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 64 KK   *      T6     *     THOMAS CREEK WATERSHED T6
         *             *
         ***************

          SUBBASIN RUNOFF DATA

 65 BA         SUBBASIN CHARACTERISTICS
                TAREA       3.15  SUBBASIN AREA

            PRECIPITATION DATA

 66 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .35     .69    1.21    1.34    1.46    1.80    2.30    2.80     .00     .00     .00     .00

                                    STORM AREA =  109.00

 67 LS         SCS LOSS RATE
                STRTL        .67  INITIAL ABSTRACTION
               CRVNBR      75.00  CURVE NUMBER
                RTIMP      16.00  PERCENT IMPERVIOUS AREA

 68 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .85  LAG

                                   ***

                                       UNIT HYDROGRAPH
                                   19 END-OF-PERIOD ORDINATES
          236.     773.    1401.    1559.    1364.     991.     615.     406.     273.     178.
          117.      77.      51.      33.      22.      15.      10.       6.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 69 KK   *    CP-E     *     COMBINE ROUTED T1-T5 W/ T6
         *             *
         ***************

 70 HC         HYDROGRAPH COMBINATION
                ICOMP        2  NUMBER OF HYDROGRAPHS TO COMBINE

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 71 KK   *    RT-HN    *     ROUTE THOMAS CK WATERSHED TO HUFFAKER NARROWS
         *             *
         ***************

          HYDROGRAPH ROUTING DATA

 72 RM         MUSKINGUM ROUTING
                NSTPS        2 NUMBER OF SUBREACHES
                AMSKK      .35 MUSKINGUM K
                  X      .40 MUSKINGUM X

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 73 KK   *     W1      *     WHITES CREEK WATERSHED NO. 1
         *             *
         ***************
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```
            SUBBASIN RUNOFF DATA

74 BA           SUBBASIN CHARACTERISTICS
                  TAREA       1.36  SUBBASIN AREA

              PRECIPITATION DATA

75 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ................ TP-40 ................   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .39     .77    1.35    1.83    2.28    3.34    4.43    5.52     .00     .00     .00     .00

                                          STORM AREA =  109.00

76 LS           SCS LOSS RATE
                  STRTL       .74  INITIAL ABSTRACTION
                 CRVNBR     73.00  CURVE NUMBER
                  RTIMP       .00  PERCENT IMPERVIOUS AREA

77 UD           SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .21  LAG

                                                ***

                                               UNIT HYDROGRAPH
                                            6 END-OF-PERIOD ORDINATES
           1668.     1317.     374.     109.      33.      10.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
78 KK     *      W2     *     WHITES CREEK WATERSHED NO. 2
          *             *
          ***************

            SUBBASIN RUNOFF DATA

79 BA           SUBBASIN CHARACTERISTICS
                  TAREA        .84  SUBBASIN AREA

              PRECIPITATION DATA

80 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ................ TP-40 ................   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .39     .77    1.35    1.80    2.23    3.22    4.31    5.39     .00     .00     .00     .00

                                          STORM AREA =  109.00

81 LS           SCS LOSS RATE
                  STRTL       .50  INITIAL ABSTRACTION
                 CRVNBR     80.00  CURVE NUMBER
                  RTIMP       .00  PERCENT IMPERVIOUS AREA

82 UD           SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .17  LAG

                                                ***

                                               UNIT HYDROGRAPH
                                            5 END-OF-PERIOD ORDINATES
           1316.      638.     163.      41.      11.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
83 KK     *    W1+W2    *     COMBINE FLOW FROM W1 AND W2
          *             *
          ***************

84 HC           HYDROGRAPH COMBINATION
                  ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
85 KK     *     RT-A    *     ROUTE COMBINED W1 AND W2 TO POINT A
          *             *
          ***************
```

```
           HYDROGRAPH ROUTING DATA

 86 RM         MUSKINGUM ROUTING
                NSTPS        1 NUMBER OF SUBREACHES
                AMSKK      .12 MUSKINGUM K
                  X        .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 87 KK     *     W3      *    WHITES CREEK WATERSHED NO. 3
           *             *
           ***************

           SUBBASIN RUNOFF DATA

 88 BA         SUBBASIN CHARACTERISTICS
                TAREA       1.38  SUBBASIN AREA

            PRECIPITATION DATA

 89 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .39     .77    1.36    1.78    2.18    3.12    4.15    5.17     .00     .00     .00     .00

                                      STORM AREA =  109.00

 90 LS         SCS LOSS RATE
                STRTL        .78  INITIAL ABSTRACTION
               CRVNBR      72.00  CURVE NUMBER
                RTIMP        .00  PERCENT IMPERVIOUS AREA

 91 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .23  LAG

                                        ***

                                          UNIT HYDROGRAPH
                                      7 END-OF-PERIOD ORDINATES
           1512.     1414.     438.     138.      44.      15.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 92 KK     *    RT-A     *    ROUTE W3 TO POINT A
           *             *
           ***************

           HYDROGRAPH ROUTING DATA

 93 RM         MUSKINGUM ROUTING
                NSTPS        1 NUMBER OF SUBREACHES
                AMSKK      .09 MUSKINGUM K
                  X        .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 94 KK     *     W4      *    WHITES CREEK WATERSHED NO. 4
           *             *
           ***************

           SUBBASIN RUNOFF DATA

 95 BA         SUBBASIN CHARACTERISTICS
                TAREA       1.47  SUBBASIN AREA

            PRECIPITATION DATA

 96 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .38     .75    1.32    1.71    2.08    2.95    3.94    4.94     .00     .00     .00     .00

                                      STORM AREA =  109.00
```

```
97 LS         SCS LOSS RATE
                STRTL        1.23  INITIAL ABSTRACTION
               CRVNBR       62.00  CURVE NUMBER
                RTIMP         .00  PERCENT IMPERVIOUS AREA

98 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .27  LAG

                                        ***

                                    UNIT HYDROGRAPH
                                  7 END-OF-PERIOD ORDINATES
        1281.     1588.     594.     217.      77.      27.      10.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
99 KK      *     W1234   *    COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
           *             *
           ***************

100 HC         HYDROGRAPH COMBINATION
                ICOMP           3  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
101 KK     *     RT-B    *    ROUTE COMBINED HYDROGRAPH TO POINT B
           *             *
           ***************

            HYDROGRAPH ROUTING DATA

102 RM         MUSKINGUM ROUTING
                NSTPS          1 NUMBER OF SUBREACHES
                AMSKK        .08 MUSKINGUM K
                    X        .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
103 KK     *      W5     *    WHITES CREEK WATERSHED NO. 5
           *             *
           ***************

            SUBBASIN RUNOFF DATA

104 BA         SUBBASIN CHARACTERISTICS
                TAREA        1.27  SUBBASIN AREA

             PRECIPITATION DATA

105 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .38     .75    1.31    1.67    2.01    2.80    3.78    4.77     .00     .00     .00     .00

                                       STORM AREA =   109.00

106 LS         SCS LOSS RATE
                STRTL        1.23  INITIAL ABSTRACTION
               CRVNBR       62.00  CURVE NUMBER
                RTIMP         .00  PERCENT IMPERVIOUS AREA

107 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .28  LAG

                                        ***

                                    UNIT HYDROGRAPH
                                  8 END-OF-PERIOD ORDINATES
        1044.     1375.     545.     202.      74.      27.      11.       1.
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
108 KK     *     W5+CH   *    COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
           *             *
           ***************
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109 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


             ***************
             *             *
110 KK       *    RT-C     *    ROUTE COMBINED HYDROGRAPH TO POINT C
             *             *
             ***************

             HYDROGRAPH ROUTING DATA

111 RM        MUSKINGUM ROUTING
               NSTPS        2 NUMBER OF SUBREACHES
               AMSKK      .19 MUSKINGUM K
                  X      .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


             ***************
             *             *
112 KK       *     W6      *    WHITES CREEK WATERSHED N0. 6
             *             *
             ***************

             SUBBASIN RUNOFF DATA

113 BA        SUBBASIN CHARACTERISTICS
               TAREA        1.43  SUBBASIN AREA

              PRECIPITATION DATA

114 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .38     .71    1.24    1.55    1.88    2.58    3.34    4.12     .00     .00     .00     .00

                                    STORM AREA =  109.00

115 LS        SCS LOSS RATE
               STRTL        1.28  INITIAL ABSTRACTION
              CRVNBR        61.00  CURVE NUMBER
               RTIMP         .00  PERCENT IMPERVIOUS AREA

116 UD        SCS DIMENSIONLESS UNITGRAPH
               TLAG         .44  LAG

                                        ***

                                      UNIT HYDROGRAPH
                                   11 END-OF-PERIOD ORDINATES
             465.    1207.    1031.     506.     250.     122.      59.      29.      14.       7.
              2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


             ***************
             *             *
117 KK       *    W6+CH    *    COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
             *             *
             ***************

118 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


             ***************
             *             *
119 KK       *    RT-D     *    ROUTE COMBINED HYDROGRAPH TO POINT D
             *             *
             ***************
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```
          HYDROGRAPH ROUTING DATA

120 RM       MUSKINGUM ROUTING
              NSTPS        3 NUMBER OF SUBREACHES
              AMSKK      .30 MUSKINGUM K
                 X      .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
121 KK    *      W7     *    WHITES CREEK WATERSHED NO.7
          *             *
          ***************

          SUBBASIN RUNOFF DATA

122 BA       SUBBASIN CHARACTERISTICS
              TAREA       1.30  SUBBASIN AREA

            PRECIPITATION DATA

123 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .33     .64    1.12    1.34    1.55    2.03    2.69    3.36     .00     .00     .00     .00

                                   STORM AREA =  109.00

124 LS       SCS LOSS RATE
              STRTL        .94  INITIAL ABSTRACTION
             CRVNBR      68.00  CURVE NUMBER
              RTIMP       8.00  PERCENT IMPERVIOUS AREA

125 UD       SCS DIMENSIONLESS UNITGRAPH
               TLAG        .50  LAG

                                        ***

                                    UNIT HYDROGRAPH
                                 12 END-OF-PERIOD ORDINATES
          314.     942.     942.     567.     284.     149.      78.      41.      21.      11.
            6.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
126 KK    *    W7+CH    *    COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
          *             *
          ***************

127 HC       HYDROGRAPH COMBINATION
              ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
128 KK    *     RT-E    *    ROUTE COMBINED HYDROGRAPH TO POINT E
          *             *
          ***************

          HYDROGRAPH ROUTING DATA

129 RM       MUSKINGUM ROUTING
              NSTPS        2 NUMBER OF SUBREACHES
              AMSKK      .14 MUSKINGUM K
                 X      .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
130 KK    *      W8     *    WHITES CREEK WATERSHED NO. 8
          *             *
          ***************
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```
          SUBBASIN RUNOFF DATA

131 BA        SUBBASIN CHARACTERISTICS
                TAREA       4.37  SUBBASIN AREA

           PRECIPITATION DATA

132 PH                    · DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .32     .64    1.12    1.28    1.43    1.79    2.29    2.79     .00     .00     .00     .00

                                   STORM AREA =  109.00

133 LS        SCS LOSS RATE
                STRTL       .94  INITIAL ABSTRACTION
               CRVNBR      68.00  CURVE NUMBER
                RTIMP     17.00  PERCENT IMPERVIOUS AREA

134 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG       .53  LAG

                                         ***

                                      UNIT HYDROGRAPH
                                  13 END-OF-PERIOD ORDINATES
          929.     2870.    3106.    2090.    1051.    581.     310.     164.     89.      47.
           28.       14.       1.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
135 KK    *    W8+CH    *    COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
          *             *
          ***************

136 HC        HYDROGRAPH COMBINATION
                ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
137 KK    *    RT-F     *    ROUTE COMBINED HYDROGRAPH TO POINT F
          *             *
          ***************

          HYDROGRAPH ROUTING DATA

138 RM        MUSKINGUM ROUTING
                NSTPS          1 NUMBER OF SUBREACHES
                AMSKK       .24 MUSKINGUM K
                    X       .40 MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
139 KK    *     48      *    WHITES CREEK WATERSHED 48
          *             *
          ***************

          SUBBASIN RUNOFF DATA

140 BA        SUBBASIN CHARACTERISTICS
                TAREA       2.69  SUBBASIN AREA

           PRECIPITATION DATA

141 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .38     .70    1.23    1.39    1.52    1.78    2.28    2.75     .00     .00     .00     .00

                                   STORM AREA =  109.00

142 LS        SCS LOSS RATE
                STRTL      1.03  INITIAL ABSTRACTION
               CRVNBR      66.00  CURVE NUMBER
                RTIMP     25.00  PERCENT IMPERVIOUS AREA

143 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG       .50  LAG
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                                   ***

                                UNIT HYDROGRAPH
                             12 END-OF-PERIOD ORDINATES
        649.     1948.     1948.    1173.     587.     308.     161.     84.      44.      23.
         13.        4.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
144 KK   *    46+CH    *   COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
         *             *
         ***************

145 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                   ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
146 KK   *    RT-HN    *   ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
         *             *
         ***************

           HYDROGRAPH ROUTING DATA

147 RM        MUSKINGUM ROUTING
               NSTPS         4  NUMBER OF SUBREACHES
               AMSKK       .40  MUSKINGUM K
                  X        .40  MUSKINGUM X

                                   ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
148 KK   *     G1      *   GLENA CREEK WATERSHED NO.1
         *             *
         ***************

           SUBBASIN RUNOFF DATA

149 BA        SUBBASIN CHARACTERISTICS
               TAREA       1.63  SUBBASIN AREA

            PRECIPITATION DATA

150 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .40    .79    1.39   1.85   2.29   3.31   4.46   5.60    .00    .00    .00    .00

                                   STORM AREA =   109.00

151 LS        SCS LOSS RATE
               STRTL        .67  INITIAL ABSTRACTION
              CRVNBR       75.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

152 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .20  LAG

                                   ***

                                UNIT HYDROGRAPH
                              6 END-OF-PERIOD ORDINATES
        2128.     1505.     415.     117.      33.       9.



*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
153 KK   *    RT-G     *   ROUTE G1 TO POINT G
         *             *
         ***************
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           HYDROGRAPH ROUTING DATA

154 RM        MUSKINGUM ROUTING
               NSTPS        1 NUMBER OF SUBREACHES
               AMSKK       .10 MUSKINGUM K
                  X       .40 MUSKINGUM X

                                   ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
155 KK    *     G2      *    GALENA CREEK WATERSHED NO. 2
          *             *
          ***************

           SUBBASIN RUNOFF DATA

156 BA        SUBBASIN CHARACTERISTICS
               TAREA       1.30  SUBBASIN AREA

            PRECIPITATION DATA

157 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .39     .77    1.35    1.76    2.18    3.08    4.10    5.12     .00     .00     .00     .00

                                    STORM AREA =  109.00

158 LS        SCS LOSS RATE
               STRTL        .67  INITIAL ABSTRACTION
              CRVNBR      75.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

159 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .20  LAG

                                   ***

                                         UNIT HYDROGRAPH
                                      6 END-OF-PERIOD ORDINATES
          1697.     1200.      331.       93.       27.        7.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
160 KK    *     G3      *    GALENA CREEK WATERSHED NO. 3
          *             *
          ***************

           SUBBASIN RUNOFF DATA

161 BA        SUBBASIN CHARACTERISTICS
               TAREA       1.15  SUBBASIN AREA

            PRECIPITATION DATA

162 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .38     .74    1.30    1.69    2.05    2.90    3.95    4.99     .00     .00     .00     .00

                                    STORM AREA =  109.00

163 LS        SCS LOSS RATE
               STRTL        .90  INITIAL ABSTRACTION
              CRVNBR      69.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

164 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .36  LAG

                                   ***

                                         UNIT HYDROGRAPH
                                      9 END-OF-PERIOD ORDINATES
           576.     1151.      721.      297.      129.       55.       24.       11.        4.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
165 KK    *    G123     *    COMBINE ROUTED G1 WITH G2 AND G3
          *             *
          ***************
```

```
166 HC        HYDROGRAPH COMBINATION
               ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                    ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
167 KK    *    RT-H    *    ROUTE COMBINED HYDROGRAPH TO POINT H
          *            *
          **************

          HYDROGRAPH ROUTING DATA

168 RM        MUSKINGUM ROUTING
               NSTPS        2 NUMBER OF SUBREACHES
               AMSKK      .17 MUSKINGUM K
                  X       .40 MUSKINGUM X

                                                    ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
169 KK    *     G4     *    GALENA CREEK WATERSHED NO. 4
          *            *
          **************

          SUBBASIN RUNOFF DATA

170 BA        SUBBASIN CHARACTERISTICS
               TAREA        1.54  SUBBASIN AREA

           PRECIPITATION DATA

171 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
            .38     .75    1.32   1.68   2.02   2.83   3.79   4.74    .00    .00    .00    .00

                                  STORM AREA =  109.00

172 LS        SCS LOSS RATE
               STRTL        1.17  INITIAL ABSTRACTION
              CRVNBR        63.00  CURVE NUMBER
               RTIMP         .00  PERCENT IMPERVIOUS AREA

173 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG         .25  LAG

                                                    ***

                                       UNIT HYDROGRAPH
                                    7 END-OF-PERIOD ORDINATES
          1506.    1637.    550.    191.     64.     22.      7.




*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
174 KK    *     G5     *    GALENA CREEK WATERSHED NO. 5
          *            *
          **************

          SUBBASIN RUNOFF DATA

175 BA        SUBBASIN CHARACTERISTICS
               TAREA        1.02  SUBBASIN AREA


           PRECIPITATION DATA

176 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
            .38     .75    1.32   1.67   1.99   2.75   3.70   4.64    .00    .00    .00    .00

                                  STORM AREA =  109.00
```

```
177 LS          SCS LOSS RATE
                 STRTL       1.64  INITIAL ABSTRACTION
                CRVNBR       55.00  CURVE NUMBER
                 RTIMP       .00  PERCENT IMPERVIOUS AREA

178 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .32  LAG

                                   ***

                              UNIT HYDROGRAPH
                           8 END-OF-PERIOD ORDINATES
       657.    1091.    531.    216.     85.     34. ,   14.      6.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


        **************
        *            *
179 KK  *    G1-5    *    COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
        *            *
        **************

180 HC          HYDROGRAPH COMBINATION
                 ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                   ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


        **************
        *            *
181 KK  *    RT-I    *    ROUTE COMBINED HYDROGRAPHS TO POINT I
        *            *
        **************

           HYDROGRAPH ROUTING DATA

182 RM          MUSKINGUM ROUTING
                 NSTPS          2 NUMBER OF SUBREACHES
                 AMSKK        .17 MUSKINGUM K
                    X       .40 MUSKINGUM X

                                   ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


        **************
        *            *
183 KK  *     G6     *    GALENA CREEK WATERSHED NO.6
        *            *
        **************

           SUBBASIN RUNOFF DATA

184 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.37  SUBBASIN AREA

            PRECIPITATION DATA

185 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
             .37    .72    1.26   1.57   1.87   2.56   3.33   4.10    .00    .00    .00    .00

                                 STORM AREA =  109.00

186 LS          SCS LOSS RATE
                 STRTL       1.39  INITIAL ABSTRACTION
                CRVNBR       59.00  CURVE NUMBER
                 RTIMP       2.50  PERCENT IMPERVIOUS AREA

187 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .58  LAG

                                   ***

                              UNIT HYDROGRAPH
                           14 END-OF-PERIOD ORDINATES
         239.    778.    931.    713.    383.    219.    122.     68.     38.     22.
          12.      7.      4.      0.
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


        **************
        *            *
188 KK  *   G6+CH    *    COMBINE G6 WITH COMBINED HYDROGRAPH AT POINT I
        *            *
        **************
```

```
189 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                               ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
190 KK    *    RT-K     *    ROUTE COMBINED HYDROGRAPH TO POINT K
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

191 RM        MUSKINGUM ROUTING
               NSTPS         1 NUMBER OF SUBREACHES
               AMSKK       .07 MUSKINGUM K
                  X        .40 MUSKINGUM X

                                               ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
192 KK    *     J1      *    JONES CREEK WATERSHED NO. 1
          *             *
          ***************

            SUBBASIN RUNOFF DATA

193 BA        SUBBASIN CHARACTERISTICS
               TAREA      1.29  SUBBASIN AREA

              PRECIPITATION DATA

194 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .39     .76    1.33   1.67   2.00   2.75    3.69    4.62     .00     .00     .00     .00

                                       STORM AREA =  109.00

195 LS        SCS LOSS RATE
               STRTL        1.17  INITIAL ABSTRACTION
              CRVNBR       63.00  CURVE NUMBER
               RTIMP         .00  PERCENT IMPERVIOUS AREA

196 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG         .23  LAG

                                               ***

                                           UNIT HYDROGRAPH
                                         7 END-OF-PERIOD ORDINATES
           1413.     1322.     409.     129.      41.      14.       1.



*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
197 KK    *    RT-J     *    ROUTE JI TO POINT J
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

198 RM        MUSKINGUM ROUTING
               NSTPS         2 NUMBER OF SUBREACHES
               AMSKK       .19 MUSKINGUM K
                  X        .40 MUSKINGUM X
                                               ***
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
199 KK    *     J2      *    JONES CREEK WATERSHED NO. 2
          *             *
          ***************
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```
            SUBBASIN RUNOFF DATA

 200 BA          SUBBASIN CHARACTERISTICS
                  TAREA       1.95  SUBBASIN AREA

             PRECIPITATION DATA

 201 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .35     .70    1.22    1.52    1.80    2.45    3.22    3.98     .00     .00     .00     .00

                                    STORM AREA =  109.00

 202 LS          SCS LOSS RATE
                  STRTL       1.13  INITIAL ABSTRACTION
                 CRVNBR       64.00  CURVE NUMBER
                  RTIMP       3.40  PERCENT IMPERVIOUS AREA

 203 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .43  LAG

                                            ***

                                         UNIT HYDROGRAPH
                                    11 END-OF-PERIOD ORDINATES
            666.     1688.     1397.     683.     326.     156.      74.      36.      18.       8.
              1.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 204 KK    *    J1+J2    *   COMBINE ROUTED J1 WITH J2 AT POINT J
           *             *
           ***************

 205 HC          HYDROGRAPH COMBINATION
                  ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                            ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 206 KK    *     RT-K    *   ROUTE COMBINED J1 AND J2 TO POINT K
           *             *
           ***************

             HYDROGRAPH ROUTING DATA

 207 RM          MUSKINGUM ROUTING
                  NSTPS          1  NUMBER OF SUBREACHES
                  AMSKK        .10  MUSKINGUM K
                      X        .40  MUSKINGUM X

                                            ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
 208 KK    *      G8     *   GALENA CREEK WATERSHED NO.8
           *             *
           ***************

             SUBBASIN RUNOFF DATA

 209 BA          SUBBASIN CHARACTERISTICS
                  TAREA       2.19  SUBBASIN AREA

             PRECIPITATION DATA

 210 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .34     .66    1.16    1.40    1.62    2.13    2.77    3.41     .00     .00     .00     .00

                                    STORM AREA =  109.00

 211 LS          SCS LOSS RATE
                  STRTL        .90  INITIAL ABSTRACTION
                 CRVNBR       69.00  CURVE NUMBER
                  RTIMP       6.00  PERCENT IMPERVIOUS AREA

 212 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .35  LAG
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                                   ***

                              UNIT HYDROGRAPH
                           9 END-OF-PERIOD ORDINATES
        1168.    2235.    1315.    543.    230.     97.     41.     19.      6.


 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 213 KK   *     G+J     *   COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
          *             *
          ***************

 214 HC        HYDROGRAPH COMBINATION
                ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE
                                   ***


 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 215 KK   *    RT-L     *   ROUTE COMBINED HYDROGRAPH TO PT L
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

 216 RM        MUSKINGUM ROUTING
                NSTPS          1 NUMBER OF SUBREACHES
                AMSKK        .13 MUSKINGUM K
                   X         .40 MUSKINGUM X
                                   ***


 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 217 KK   *     G7      *   GALENA CREEK WATERSHED NO. 7
          *             *
          ***************

            SUBBASIN RUNOFF DATA

 218 BA        SUBBASIN CHARACTERISTICS
                TAREA       1.50  SUBBASIN AREA

             PRECIPITATION DATA

 219 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .35    .69    1.22   1.50   1.77   2.40   3.10   3.80    .00    .00    .00    .00

                                  STORM AREA =  109.00

 220 LS        SCS LOSS RATE
                STRTL       1.23  INITIAL ABSTRACTION
               CRVNBR      62.00  CURVE NUMBER
                RTIMP       5.00  PERCENT IMPERVIOUS AREA

 221 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .36  LAG
                                   ***

                              UNIT HYDROGRAPH
                           9 END-OF-PERIOD ORDINATES
          752.    1501.     940.    388.    168.     72.     31.     14.      5.



 *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 222 KK   *    RT-L     *   ROUTE G7 TO OINT L
          *             *
          ***************
```

```
            HYDROGRAPH ROUTING DATA

 223 RM       MUSKINGUM ROUTING
               NSTPS       1 NUMBER OF SUBREACHES
               AMSKK     .13 MUSKINGUM K
                  X      .40 MUSKINGUM X

                                 ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 224 KK    *     G9      *    GALENA CREEK WATERSHED NO. 9
           *             *
           ***************

            SUBBASIN RUNOFF DATA

 225 BA       SUBBASIN CHARACTERISTICS
               TAREA       3.07  SUBBASIN AREA

             PRECIPITATION DATA

 226 PH                     DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY 10-DAY
               .33    .65    1.14   1.35   1.56   2.04   2.60   3.16    .00    .00    .00    .00

                                  STORM AREA =  109.00

 227 LS       SCS LOSS RATE
               STRTL        .90  INITIAL ABSTRACTION
              CRVNBR      69.00  CURVE NUMBER
               RTIMP       3.40  PERCENT IMPERVIOUS AREA

 228 UD       SCS DIMENSIONLESS UNITGRAPH
                TLAG       1.67  LAG

                                 ***

                                        UNIT HYDROGRAPH
                                     35 END-OF-PERIOD ORDINATES
            47.     141.     280.     478.     672.     786.     824.     811.     737.     649.
           530.     404.     317.     252.     204.     164.     129.     104.      83.      65.
            52.      41.      33.      27.      21.      17.      13.      11.       9.       7.
             6.       5.       3.       2.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 229 KK    *    PT-L     *    COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
           *             *
           ***************

 230 HC       HYDROGRAPH COMBINATION
               ICOMP         3  NUMBER OF HYDROGRAPHS TO COMBINE

                                 ***



*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 231 KK    *    RT-PV    *    ROUTE GALENA CK HYDROGRAPH TO PLEASENT VALLEY
           *             *
           ***************

            HYDROGRAPH ROUTING DATA

 232 RM       MUSKINGUM ROUTING
               NSTPS       2 NUMBER OF SUBREACHES
               AMSKK     .17 MUSKINGUM K
                  X      .40 MUSKINGUM X

                                 ***
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           ***************
           *             *
 233 KK    *     B1      *    BROWNS CREEK WATERSHED NO. 1
           *             *
           ***************
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                SUBBASIN RUNOFF DATA

 234 BA             SUBBASIN CHARACTERISTICS
                     TAREA       2.18  SUBBASIN AREA

                  PRECIPITATION DATA

 235 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .38     .74    1.30    1.63    1.95    2.70    3.62    4.53     .00     .00     .00     .00

                                       STORM AREA =  109.00

 236 LS             SCS LOSS RATE
                     STRTL       1.23  INITIAL ABSTRACTION
                    CRVNBR      62.00  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

 237 UD             SCS DIMENSIONLESS UNITGRAPH
                      TLAG        .44  LAG

                                            ***

                                             UNIT HYDROGRAPH
                                        11 END-OF-PERIOD ORDINATES
                709.     1840.     1572.     771.     381.     185.      89.      44.      21.      11.
                  2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               ***************
               *             *
 238 KK        *     RT-M    *     ROUTE B1 TO POINT M
               *             *
               ***************

                HYDROGRAPH ROUTING DATA

 239 RM             MUSKINGUM ROUTING
                     NSTPS         2  NUMBER OF SUBREACHES
                     AMSKK       .17  MUSKINGUM K
                         X       .40  MUSKINGUM X

                                            ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

               ***************
               *             *
 240 KK        *      B2     *     BROWNS CREEK WATERSHED NO. 2
               *             *
               ***************

                SUBBASIN RUNOFF DATA

 241 BA             SUBBASIN CHARACTERISTICS
                     TAREA       1.42  SUBBASIN AREA

                  PRECIPITATION DATA


 242 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .36     .71    1.25    1.55    1.83    2.49    3.25    4.00     .00     .00     .00     .00

                                       STORM AREA =  109.00

 243 LS             SCS LOSS RATE
                     STRTL       1.33  INITIAL ABSTRACTION
                    CRVNBR      60.00  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

 244 UD             SCS DIMENSIONLESS UNITGRAPH
                      TLAG        .35  LAG

                                            ***

                                             UNIT HYDROGRAPH


                                         9 END-OF-PERIOD ORDINATES
                757.     1449.      852.     352.     149.      63.      27.      12.       4.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              ***************
              *             *
245 KK        *   B1+B2     *   COMBINE ROUTED B1 WITH B2 AT POINT M
              *             *
              ***************

246 HC        HYDROGRAPH COMBINATION
               ICOMP          2 NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
247 KK        *    RT-N     *   ROUTE COMBINED HYDROGRAPH TO POINT N
              *             *
              ***************

          HYDROGRAPH ROUTING DATA

248 RM        MUSKINGUM ROUTING
               NSTPS         1 NUMBER OF SUBREACHES
               AMSKK       .10 MUSKINGUM K
                  X        .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
249 KK        *     B3      *   BROWNS CREEK WATERSHED NO. 3
              *             *
              ***************

          SUBBASIN RUNOFF DATA

250 BA        SUBBASIN CHARACTERISTICS
               TAREA         .53  SUBBASIN AREA

           PRECIPITATION DATA

251 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .34     .67    1.18   1.43   1.66   2.22   2.82   3.42    .00    .00    .00    .00

                                  STORM AREA =  109.00

252 LS        SCS LOSS RATE
               STRTL         .99  INITIAL ABSTRACTION
              CRVNBR       67.00  CURVE NUMBER
               RTIMP         .00  PERCENT IMPERVIOUS AREA

253 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG         .36  LAG



                                        ***

                                   UNIT HYDROGRAPH
                                 9 END-OF-PERIOD ORDINATES
          266.     530.     332.     137.      59.      26.      11.       5.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
254 KK        *    B123     *   COMBINE ROUTED B1 AND B2 WITH B3
              *             *
              ***************

255 HC        HYDROGRAPH COMBINATION
               ICOMP          2 NUMBER OF HYDROGRAPHS TO COMBINE
                                        ***
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
256 KK        *    RT-PV    *   ROUTE BROWNS CREEK HYDROGRAPH TO PLEASENT VALLEY
              *             *
              ***************
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          HYDROGRAPH ROUTING DATA

 257 RM        MUSKINGUM ROUTING
                NSTPS       3 NUMBER OF SUBREACHES
                AMSKK     .31 MUSKINGUM K
                   X     .40 MUSKINGUM X

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 258 KK  *   PLEASV    *   COMBINE GALENA CK AND BROWNS CK AT PLEASENT VALLEY
         *             *
         ***************

 259 HC        HYDROGRAPH COMBINATION
                ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 260 KK  *    RT-SG    *   ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
         *             *
         ***************

          HYDROGRAPH ROUTING DATA

 261 RM        MUSKINGUM ROUTING
                NSTPS       3 NUMBER OF SUBREACHES
                AMSKK     .21 MUSKINGUM K
                   X     .40 MUSKINGUM X

                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 262 KK  *      30     *   STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
         *             *
         ***************

          SUBBASIN RUNOFF DATA

 263 BA        SUBBASIN CHARACTERISTICS
                TAREA       17.80  SUBBASIN AREA

 264 BF        BASE FLOW CHARACTERISTICS
                STRTQ     500.00  INITIAL FLOW
                QRCSN      500.00  BEGIN BASE FLOW RECESSION
                RTIOR     1.00000  RECESSION CONSTANT

           PRECIPITATION DATA

 265 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .32    .64   1.12   1.28   1.44   1.80   2.34   2.87    .00    .00    .00    .00

                                   STORM AREA =  109.00

 266 LS        SCS LOSS RATE
                STRTL         .60  INITIAL ABSTRACTION
               CRVNBR       77.00  CURVE NUMBER
                RTIMP        3.00  PERCENT IMPERVIOUS AREA

 267 UD        SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .82  LAG

                                   ***

                                     UNIT HYDROGRAPH
                                  18 END-OF-PERIOD ORDINATES
        1439.    4783.    8404.    9052.    7665.    5238.    3268.    2163.    1391.     912.
         591.     382.     250.     163.     106.      75.      46.      22.
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 268 KK  *    STMBT    *   COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
         *             *
         ***************
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269 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                             ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
270 KK     *   RT-341    *     ROUTE COMBINED HYDROGRAPH TO HWY 341
           *             *
           ***************

           HYDROGRAPH ROUTING DATA

271 RM        MUSKINGUM ROUTING
               NSTPS        2 NUMBER OF SUBREACHES
               AMSKK      .41 MUSKINGUM K
                  X      .40 MUSKINGUM X

                                             ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
272 KK     *     35      *     WATERSHED 35 AKA BAILEY CANYON
           *             *
           ***************

           SUBBASIN RUNOFF DATA

273 BA        SUBBASIN CHARACTERISTICS
               TAREA       15.50  SUBBASIN AREA

274 BF        BASE FLOW CHARACTERISTICS
               STRTQ         .00  INITIAL FLOW
               QRCSN         .00  BEGIN BASE FLOW RECESSION
               RTIOR     1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

275 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .39    .77    1.34   1.53   1.68   1.98   2.51   3.04    .00    .00    .00    .00

                                    STORM AREA =  109.00

276 LS        SCS LOSS RATE
               STRTL         .44  INITIAL ABSTRACTION
              CRVNBR       82.00  CURVE NUMBER
               RTIMP        2.00  PERCENT IMPERVIOUS AREA

277 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG         .72  LAG

                                             ***

                                       UNIT HYDROGRAPH
                                  16 END-OF-PERIOD ORDINATES
          1648.    5702.    8695.    8318.    6201.    3605.    2249.    1389.    864.    527.
           327.     203.     125.      82.      51.      24.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


           ***************
           *             *
278 KK     *     40      *     WATERSHED NO.40
           *             *
           ***************

           SUBBASIN RUNOFF DATA

279 BA        SUBBASIN CHARACTERISTICS
               TAREA        2.63  SUBBASIN AREA

274 BF        BASE FLOW CHARACTERISTICS
               STRTQ         .00  INITIAL FLOW
               QRCSN         .00  BEGIN BASE FLOW RECESSION
               RTIOR     1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

280 PH                      DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .35    .69    1.21   1.38   1.51   1.78   2.29   2.81    .00    .00    .00    .00
```

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                              STORM AREA =  109.00

281 LS         SCS LOSS RATE
                STRTL        .60  INITIAL ABSTRACTION
               CRVNBR       77.00  CURVE NUMBER
                RTIMP       15.00  PERCENT IMPERVIOUS AREA

282 UD         SCS DIMENSIONLESS UNITGRAPH
                TLAG         .30  LAG

                                        ***

                                    UNIT HYDROGRAPH
                                  8 END-OF-PERIOD ORDINATES
         1919.     2842.     1248.     485.     185.      72.      29.       9.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

      ***************
      *             *
283 KK  *   HY-341   *    COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
      *             *
      ***************

284 HC         HYDROGRAPH COMBINATION
                ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

      ***************
      *             *
285 KK  *   RT-HN    *    ROUTE COMBINED HYDROGRAPH TO HUFFAKER NARROWS
      *             *
      ***************

           HYDROGRAPH ROUTING DATA

286 RM         MUSKINGUM ROUTING
                NSTPS          5  NUMBER OF SUBREACHES
                AMSKK        .44  MUSKINGUM K
                   X         .40  MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

      ***************
      *             *
287 KK  *     60     *    WATERSHED NO. 60
      *             *
      ***************

           SUBBASIN RUNOFF DATA

288 BA         SUBBASIN CHARACTERISTICS
                TAREA      23.15  SUBBASIN AREA

274 BF         BASE FLOW CHARACTERISTICS
                STRTQ        .00  INITIAL FLOW
                QRCSN        .00  BEGIN BASE FLOW RECESSION
                RTIOR    1.00000  RECESSION CONSTANT

            PRECIPITATION DATA

289 PH                    DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .35     .68    1.19   1.36   1.49   1.77   2.30    2.83     .00     .00     .00     .00
                              STORM AREA =  109.00

290 LS         SCS LOSS RATE
                STRTL        .63  INITIAL ABSTRACTION
               CRVNBR       76.00  CURVE NUMBER
                RTIMP       12.00  PERCENT IMPERVIOUS AREA

291 UD         SCS DIMENSIONLESS UNITGRAPH
                TLAG        1.00  LAG
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                                          ***

                                   UNIT HYDROGRAPH
                                22 END-OF-PERIOD ORDINATES
      1192.    3785.    7615.    9767.    9767.    8277.    6092.    4028.    2781.    1990.
      1372.     963.     666.     464.     324.     226.     156.     109.      83.      56.
        33.      11.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
292 KK    *    HUFN     *     COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
          *             *
          ***************

294 KO          OUTPUT CONTROL VARIABLES
                 IPRNT          1  PRINT CONTROL
                 IPLOT          2  PLOT CONTROL
                 QSCAL          0.  HYDROGRAPH PLOT SCALE
                 IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                  IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                 ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                 ISAV2        289  LAST ORDINATE PUNCHED OR SAVED
                TIMINT       .250  TIME INTERVAL IN HOURS

293 HC          HYDROGRAPH COMBINATION
                 ICOMP          4  NUMBER OF HYDROGRAPHS TO COMBINE
                                          ***


****************************************************************************************************************************

                                       HYDROGRAPH AT STATION    HUFN
                                          SUM OF  4 HYDROGRAPHS

****************************************************************************************************************************
                             *                           *                           *
  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW
```

```
                       *                                *                              *
  1   0000   1    500.  *  1   1815  74   5017.  *  2   1230  147    500.  *  3   0645  220    500.
  1   0015   2    502.  *  1   1830  75   4902.  *  2   1245  148    500.  *  3   0700  221    500.
  1   0030   3    508.  *  1   1845  76   4781.  *  2   1300  149    500.  *  3   0715  222    500.
  1   0045   4    523.  *  1   1900  77   4596.  *  2   1315  150    500.  *  3   0730  223    500.
  1   0100   5    548.  *  1   1915  78   4406.  *  2   1330  151    500.  *  3   0745  224    500.
  1   0115   6    577.  *  1   1930  79   4193.  *  2   1345  152    500.  *  3   0800  225    500.
  1   0130   7    602.  *  1   1945  80   3976.  *  2   1400  153    500.  *  3   0815  226    500.
  1   0145   8    621.  *  1   2000  81   3771.  *  2   1415  154    500.  *  3   0830  227    500.
  1   0200   9    637.  *  1   2015  82   3596.  *  2   1430  155    500.  *  3   0845  228    500.
  1   0215  10    649.  *  1   2030  83   3462.  *  2   1445  156    500.  *  3   0900  229    500.
  1   0230  11    657.  *  1   2045  84   3370.  *  2   1500  157    500.  *  3   0915  230    500.
  1   0245  12    663.  *  1   2100  85   3300.  *  2   1515  158    500.  *  3   0930  231    500.
  1   0300  13    668.  *  1   2115  86   3240.  *  2   1530  159    500.  *  3   0945  232    500.
  1   0315  14    673.  *  1   2130  87   3183.  *  2   1545  160    500.  *  3   1000  233    500.
  1   0330  15    677.  *  1   2145  88   3130.  *  2   1600  161    500.  *  3   1015  234    500.
  1   0345  16    681.  *  1   2200  89   3082.  *  2   1615  162    500.  *  3   1030  235    500.
  1   0400  17    685.  *  1   2215  90   3037.  *  2   1630  163    500.  *  3   1045  236    500.
  1   0415  18    688.  *  1   2230  91   2994.  *  2   1645  164    500.  *  3   1100  237    500.
DA MON HRMN  ORD     FLOW  *  DA MON HRMN  ORD     FLOW  *  DA MON HRMN  ORD     FLOW  *  DA MON HRMN  ORD     FLOW

  1   0430  19    692.  *  1   2245  92   2954.  *  2   1700  165    500.  *  3   1115  238    500.
  1   0445  20    696.  *  1   2300  93   2916.  *  2   1715  166    500.  *  3   1130  239    500.
  1   0500  21    700.  *  1   2315  94   2879.  *  2   1730  167    500.  *  3   1145  240    500.
  1   0515  22    704.  *  1   2330  95   2844.  *  2   1745  168    500.  *  3   1200  241    500.
  1   0530  23    709.  *  1   2345  96   2811.  *  2   1800  169    500.  *  3   1215  242    500.
  1   0545  24    713.  *  2   0000  97   2778.  *  2   1815  170    500.  *  3   1230  243    500.
  1   0600  25    718.  *  2   0015  98   2739.  *  2   1830  171    500.  *  3   1245  244    500.
  1   0615  26    724.  *  2   0030  99   2675.  *  2   1845  172    500.  *  3   1300  245    500.
  1   0630  27    732.  *  2   0045 100   2553.  *  2   1900  173    500.  *  3   1315  246    500.
  1   0645  28    744.  *  2   0100 101   2352.  *  2   1915  174    500.  *  3   1330  247    500.
  1   0700  29    761.  *  2   0115 102   2077.  *  2   1930  175    500.  *  3   1345  248    500.
  1   0715  30    781.  *  2   0130 103   1755.  *  2   1945  176    500.  *  3   1400  249    500.
  1   0730  31    800.  *  2   0145 104   1414.  *  2   2000  177    500.  *  3   1415  250    500.
  1   0745  32    818.  *  2   0200 105   1097.  *  2   2015  178    500.  *  3   1430  251    500.
  1   0800  33    835.  *  2   0215 106    845.  *  2   2030  179    500.  *  3   1445  252    500.
  1   0815  34    852.  *  2   0230 107    683.  *  2   2045  180    500.  *  3   1500  253    500.
  1   0830  35    869.  *  2   0245 108    606.  *  2   2100  181    500.  *  3   1515  254    500.
  1   0845  36    890.  *  2   0300 109    574.  *  2   2115  182    500.  *  3   1530  255    500.
  1   0900  37    918.  *  2   0315 110    554.  *  2   2130  183    500.  *  3   1545  256    500.
  1   0915  38    955.  *  2   0330 111    538.  *  2   2145  184    500.  *  3   1600  257    500.
  1   0930  39   1001.  *  2   0345 112    525.  *  2   2200  185    500.  *  3   1615  258    500.
  1   0945  40   1048.  *  2   0400 113    518.  *  2   2215  186    500.  *  3   1630  259    500.
  1   1000  41   1095.  *  2   0415 114    514.  *  2   2230  187    500.  *  3   1645  260    500.
  1   1015  42   1148.  *  2   0430 115    509.  *  2   2245  188    500.  *  3   1700  261    500.
  1   1030  43   1221.  *  2   0445 116    507.  *  2   2300  189    500.  *  3   1715  262    500.
  1   1045  44   1321.  *  2   0500 117    506.  *  2   2315  190    500.  *  3   1730  263    500.
  1   1100  45   1457.  *  2   0515 118    503.  *  2   2330  191    500.  *  3   1745  264    500.
  1   1115  46   1635.  *  2   0530 119    503.  *  2   2345  192    500.  *  3   1800  265    500.
  1   1130  47   1883.  *  2   0545 120    502.  *  3   0000  193    500.  *  3   1815  266    500.
  1   1145  48   2186.  *  2   0600 121    502.  *  3   0015  194    500.  *  3   1830  267    500.
  1   1200  49   2698.  *  2   0615 122    502.  *  3   0030  195    500.  *  3   1845  268    500.
  1   1215  50   3720.  *  2   0630 123    501.  *  3   0045  196    500.  *  3   1900  269    500.
  1   1230  51   5565.  *  2   0645 124    501.  *  3   0100  197    500.  *  3   1915  270    500.
  1   1245  52   8472.  *  2   0700 125    501.  *  3   0115  198    500.  *  3   1930  271    500.
  1   1300  53  11875.  *  2   0715 126    501.  *  3   0130  199    500.  *  3   1945  272    500.
  1   1315  54  14690.  *  2   0730 127    500.  *  3   0145  200    500.  *  3   2000  273    500.
  1   1330  55  16160.  *  2   0745 128    500.  *  3   0200  201    500.  *  3   2015  274    500.
  1   1345  56  16402.  *  2   0800 129    500.  *  3   0215  202    500.  *  3   2030  275    500.
  1   1400  57  15628.  *  2   0815 130    500.  *  3   0230  203    500.  *  3   2045  276    500.
  1   1415  58  14030.  *  2   0830 131    500.  *  3   0245  204    500.  *  3   2100  277    500.
  1   1430  59  12048.  *  2   0845 132    500.  *  3   0300  205    500.  *  3   2115  278    500.
  1   1445  60  10148.  *  2   0900 133    500.  *  3   0315  206    500.  *  3   2130  279    500.
  1   1500  61   8790.  *  2   0915 134    500.  *  3   0330  207    500.  *  3   2145  280    500.
  1   1515  62   8005.  *  2   0930 135    500.  *  3   0345  208    500.  *  3   2200  281    500.
  1   1530  63   7473.  *  2   0945 136    500.  *  3   0400  209    500.  *  3   2215  282    500.
  1   1545  64   7070.  *  2   1000 137    500.  *  3   0415  210    500.  *  3   2230  283    500.
  1   1600  65   6735.  *  2   1015 138    500.  *  3   0430  211    500.  *  3   2245  284    500.
  1   1615  66   6474.  *  2   1030 139    500.  *  3   0445  212    500.  *  3   2300  285    500.
  1   1630  67   6293.  *  2   1045 140    500.  *  3   0500  213    500.  *  3   2315  286    500.
  1   1645  68   6053.  *  2   1100 141    500.  *  3   0515  214    500.  *  3   2330  287    500.
  1   1700  69   5804.  *  2   1115 142    500.  *  3   0530  215    500.  *  3   2345  288    500.
  1   1715  70   5600.  *  2   1130 143    500.  *  3   0545  216    500.  *  4   0000  289    500.
  1   1730  71   5405.  *  2   1145 144    500.  *  3   0600  217    500.  *
  1   1745  72   5258.  *  2   1200 145    500.  *  3   0615  218    500.  *
  1   1800  73   5140.  *  2   1215 146    500.  *  3   0630  219    500.  *
                       *                                *                              *
**************************************************************************************************

  PEAK FLOW     TIME                       MAXIMUM AVERAGE FLOW
                              6-HR       24-HR       72-HR    72.00-HR
+  (CFS)       (HR)
                        (CFS)
+  16402.     13.75              8909.      3680.      1564.      1564.
                     (INCHES)    .760       1.256      1.601      1.601
                      (AC-FT)   4417.       7298.      9307.      9307.

                     CUMULATIVE AREA =  108.97 SQ MI


1                                            STATION    HUFN

                     (O) OUTFLOW
       0.     2000.    4000.     6000.     8000.     10000.    12000.    14000.    16000.    18000.      0.       0.       0.
DAHRMN PER
 10000   1.--O------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
 10015   2.  O     .         .         .         .         .         .         .         .         .         .         .
 10030   3.  O     .         .         .         .         .         .         .         .         .         .         .
```

```
10045  4.   O       .         .         .         .         .         .         .         .         .         .         .         .
10100  5.   O       .         .         .         .         .         .         .         .         .         .         .         .
10115  6.   O       .         .         .         .         .         .         .         .         .         .         .         .
10130  7.   O       .         .         .         .         .         .         .         .         .         .         .         .
10145  8.   O       .         .         .         .         .         .         .         .         .         .         .         .
10200  9.   O       .         .         .         .         .         .         .         .         .         .         .         .
10215 10.    O      .         .         .         .         .         .         .         .         .         .         .         .
10230 11. ...O.................................................................................................................
10245 12.    O      .         .         .         .         .         .         .         .         .         .         .         .
10300 13.    O      .         .         .         .         .         .         .         .         .         .         .         .
10315 14.    O      .         .         .         .         .         .         .         .         .         .         .         .
10330 15.    O      .         .         .         .         .         .         .         .         .         .         .         .
10345 16.    O      .         .         .         .         .         .         .         .         .         .         .         .
10400 17.    O      .         .         .         .         .         .         .         .         .         .         .         .
10415 18.    O      .         .         .         .         .         .         .         .         .         .         .         .
10430 19.    O      .         .         .         .         .         .         .         .         .         .         .         .
10445 20.    O      .         .         .         .         .         .         .         .         .         .         .         .
10500 21. ....O................................................................................................................
10515 22.     O     .         .         .         .         .         .         .         .         .         .         .         .
10530 23.     O     .         .         .         .         .         .         .         .         .         .         .         .
10545 24.     O     .         .         .         .         .         .         .         .         .         .         .         .
10600 25.     O     .         .         .         .         .         .         .         .         .         .         .         .
10615 26.     O     .         .         .         .         .         .         .         .         .         .         .         .
10630 27.     O     .         .         .         .         .         .         .         .         .         .         .         .
10645 28.     O     .         .         .         .         .         .         .         .         .         .         .         .
10700 29.     O     .         .         .         .         .         .         .         .         .         .         .         .
10715 30.     O     .         .         .         .         .         .         .         .         .         .         .         .
10730 31. ....O................................................................................................................
10745 32.     O     .         .         .         .         .         .         .         .         .         .         .         .
10800 33.     O     .         .         .         .         .         .         .         .         .         .         .         .
10815 34.     O     .         .         .         .         .         .         .         .         .         .         .         .
10830 35.     O     .         .         .         .         .         .         .         .         .         .         .         .
10845 36.     O     .         .         .         .         .         .         .         .         .         .         .         .
10900 37.      O    .         .         .         .         .         .         .         .         .         .         .         .
10915 38.      O    .         .         .         .         .         .         .         .         .         .         .         .
10930 39.      O    .         .         .         .         .         .         .         .         .         .         .         .
10945 40.      O    .         .         .         .         .         .         .         .         .         .         .         .
11000 41. .....O...............................................................................................................
11015 42.       O   .         .         .         .         .         .         .         .         .         .         .         .
11030 43.       O   .         .         .         .         .         .         .         .         .         .         .         .
11045 44.        O  .         .         .         .         .         .         .         .         .         .         .         .
11100 45.        O  .         .         .         .         .         .         .         .         .         .         .         .
11115 46.         O .         .         .         .         .         .         .         .         .         .         .         .
11130 47.          O.         .         .         .         .         .         .         .         .         .         .         .
11145 48.           .O        .         .         .         .         .         .         .         .         .         .         .
11200 49.           .  O      .         .         .         .         .         .         .         .         .         .         .
11215 50.           .        O.         .         .         .         .         .         .         .         .         .         .
11230 51. ...........................O.........................................................................................
11245 52.           .         .         .         . O       .         .         .         .         .         .         .         .
11300 53.           .         .         .         .         .        O.         .         .         .         .         .         .
11315 54.           .         .         .         .         .         .         .   O     .         .         .         .         .
11330 55.           .         .         .         .         .         .         .         .O        .         .         .         .
11345 56.           .         .         .         .         .         .         .         .  O      .         .         .         .
11400 57.           .         .         .         .         .         .         .       O .         .         .         .         .
11415 58.           .         .         .         .         .         .         .O        .         .         .         .         .
11430 59.           .         .         .         .         .         .O        .         .         .         .         .         .
11445 60.           .         .         .         .         .O        .         .         .         .         .         .         .
11500 61. ...........................................O.........................................................................
11515 62.           .         .         .         .O        .         .         .         .         .         .         .         .
11530 63.           .         .         .       O .         .         .         .         .         .         .         .         .
11545 64.           .         .         .     O   .         .         .         .         .         .         .         .         .
11600 65.           .         .         .    O    .         .         .         .         .         .         .         .         .
11615 66.           .         .         .  O      .         .         .         .         .         .         .         .         .
11630 67.           .         .         . O       .         .         .         .         .         .         .         .         .
11645 68.           .         .         .O        .         .         .         .         .         .         .         .         .
11700 69.           .         .        O.         .         .         .         .         .         .         .         .         .
11715 70.           .         .       O .         .         .         .         .         .         .         .         .         .
11730 71. ...........................O.........................................................................................
11745 72.           .         .      O  .         .         .         .         .         .         .         .         .         .
11800 73.           .         .      O  .         .         .         .         .         .         .         .         .         .
11815 74.           .         .     O   .         .         .         .         .         .         .         .         .         .
11830 75.           .         .     O   .         .         .         .         .         .         .         .         .         .
11845 76.           .         .    O    .         .         .         .         .         .         .         .         .         .
11900 77.           .         .   O     .         .         .         .         .         .         .         .         .         .
11915 78.           .         . O       .         .         .         .         .         .         .         .         .         .
11930 79.           .         .O        .         .         .         .         .         .         .         .         .         .
11945 80.           .         .O        .         .         .         .         .         .         .         .         .         .
12000 81. ...................O.................................................................................................
12015 82.           .        O.         .         .         .         .         .         .         .         .         .         .
12030 83.           .       O .         .         .         .         .         .         .         .         .         .         .
12045 84.           .       O .         .         .         .         .         .         .         .         .         .         .
12100 85.           .       O .         .         .         .         .         .         .         .         .         .         .
12115 86.           .      O  .         .         .         .         .         .         .         .         .         .         .
12130 87.           .      O  .         .         .         .         .         .         .         .         .         .         .
12145 88.           .      O  .         .         .         .         .         .         .         .         .         .         .
12200 89.           .     O   .         .         .         .         .         .         .         .         .         .         .
12215 90.           .     O   .         .         .         .         .         .         .         .         .         .         .
12230 91. ...............O.....................................................................................................
12245 92.           .     O   .         .         .         .         .         .         .         .         .         .         .
12300 93.           .     O   .         .         .         .         .         .         .         .         .         .         .
                    (O) OUTFLOW
        0.     2000.     4000.     6000.     8000.    10000.    12000.    14000.    16000.    18000.        0.        0.        0.
DAHRMN PER
12315 94.           .    O    .         .         .         .         .         .         .         .         .         .         .
12330 95.           .    O    .         .         .         .         .         .         .         .         .         .         .
12345 96.           .    O    .         .         .         .         .         .         .         .         .         .         .
20000 97.           .    O    .         .         .         .         .         .         .         .         .         .         .
20015 98.           .    O    .         .         .         .         .         .         .         .         .         .         .
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20030  99.     . O    .     .     .     .     .     .     .     .     .     .
20045 100.     . O    .     .     .     .     .     .     .     .     .     .
20100 101......O...................................................................
20115 102.     O      .     .     .     .     .     .     .     .     .     .     .
20130 103.     O.     .     .     .     .     .     .     .     .     .     .     .
20145 104.    O .     .     .     .     .     .     .     .     .     .     .     .
20200 105.   O  .     .     .     .     .     .     .     .     .     .     .     .
20215 106.  O   .     .     .     .     .     .     .     .     .     .     .     .
20230 107. O    .     .     .     .     .     .     .     .     .     .     .     .
20245 108. O    .     .     .     .     .     .     .     .     .     .     .     .
20300 109. O    .     .     .     .     .     .     .     .     .     .     .     .
20315 110. O    .     .     .     .     .     .     .     .     .     .     .     .
20330 111..O....................................................................
20345 112. O    .     .     .     .     .     .     .     .     .     .     .     .
20400 113. O    .     .     .     .     .     .     .     .     .     .     .     .
20415 114. O    .     .     .     .     .     .     .     .     .     .     .     .
20430 115. O    .     .     .     .     .     .     .     .     .     .     .     .
20445 116. O    .     .     .     .     .     .     .     .     .     .     .     .
20500 117. O    .     .     .     .     .     .     .     .     .     .     .     .
20515 118. O    .     .     .     .     .     .     .     .     .     .     .     .
20530 119. O    .     .     .     .     .     .     .     .     .     .     .     .
20545 120. O    .     .     .     .     .     .     .     .     .     .     .     .
20600 121..O....................................................................
20615 122. O    .     .     .     .     .     .     .     .     .     .     .     .
20630 123. O    .     .     .     .     .     .     .     .     .     .     .     .
20645 124. O    .     .     .     .     .     .     .     .     .     .     .     .
20700 125. O    .     .     .     .     .     .     .     .     .     .     .     .
20715 126. O    .     .     .     .     .     .     .     .     .     .     .     .
20730 127. O    .     .     .     .     .     .     .     .     .     .     .     .
20745 128. O    .     .     .     .     .     .     .     .     .     .     .     .
20800 129. O    .     .     .     .     .     .     .     .     .     .     .     .
20815 130. O    .     .     .     .     .     .     .     .     .     .     .     .
20830 131..O....................................................................
20845 132. O    .     .     .     .     .     .     .     .     .     .     .     .
20900 133. O    .     .     .     .     .     .     .     .     .     .     .     .
20915 134. O    .     .     .     .     .     .     .     .     .     .     .     .
20930 135. O    .     .     .     .     .     .     .     .     .     .     .     .
20945 136. O    .     .     .     .     .     .     .     .     .     .     .     .
21000 137. O    .     .     .     .     .     .     .     .     .     .     .     .
21015 138.O     .     .     .     .     .     .     .     .     .     .     .     .
21030 139. O    .     .     .     .     .     .     .     .     .     .     .     .
21045 140.O     .     .     .     .     .     .     .     .     .     .     .     .
21100 141.O.....................................................................
21115 142. O    .     .     .     .     .     .     .     .     .     .     .     .
21130 143.O     .     .     .     .     .     .     .     .     .     .     .     .
21145 144. O    .     .     .     .     .     .     .     .     .     .     .     .
21200 145.O     .     .     .     .     .     .     .     .     .     .     .     .
21215 146. O    .     .     .     .     .     .     .     .     .     .     .     .
21230 147.O     .     .     .     .     .     .     .     .     .     .     .     .
21245 148. O    .     .     .     .     .     .     .     .     .     .     .     .
21300 149.O     .     .     .     .     .     .     .     .     .     .     .     .
21315 150. O    .     .     .     .     .     .     .     .     .     .     .     .
21330 151.O.....................................................................
21345 152. O    .     .     .     .     .     .     .     .     .     .     .     .
21400 153.O     .     .     .     .     .     .     .     .     .     .     .     .
21415 154. O    .     .     .     .     .     .     .     .     .     .     .     .
21430 155.O     .     .     .     .     .     .     .     .     .     .     .     .
21445 156. O    .     .     .     .     .     .     .     .     .     .     .     .
21500 157. O    .     .     .     .     .     .     .     .     .     .     .     .
21515 158. O    .     .     .     .     .     .     .     .     .     .     .     .
21530 159. O    .     .     .     .     .     .     .     .     .     .     .     .
21545 160. O    .     .     .     .     .     .     .     .     .     .     .     .
21600 161..O....................................................................
21615 162. O    .     .     .     .     .     .     .     .     .     .     .     .
21630 163. O    .     .     .     .     .     .     .     .     .     .     .     .
21645 164. O    .     .     .     .     .     .     .     .     .     .     .     .
21700 165. O    .     .     .     .     .     .     .     .     .     .     .     .
21715 166. O    .     .     .     .     .     .     .     .     .     .     .     .
21730 167. O    .     .     .     .     .     .     .     .     .     .     .     .
21745 168. O    .     .     .     .     .     .     .     .     .     .     .     .
21800 169. O    .     .     .     .     .     .     .     .     .     .     .     .
21815 170. O    .     .     .     .     .     .     .     .     .     .     .     .
21830 171..O....................................................................
21845 172. O    .     .     .     .     .     .     .     .     .     .     .     .
21900 173. O    .     .     .     .     .     .     .     .     .     .     .     .
21915 174. O    .     .     .     .     .     .     .     .     .     .     .     .
21930 175. O    .     .     .     .     .     .     .     .     .     .     .     .
21945 176. O    .     .     .     .     .     .     .     .     .     .     .     .
22000 177. O    .     .     .     .     .     .     .     .     .     .     .     .
22015 178. O    .     .     .     .     .     .     .     .     .     .     .     .
22030 179. O    .     .     .     .     .     .     .     .     .     .     .     .
22045 180. O    .     .     .     .     .     .     .     .     .     .     .     .
22100 181..O....................................................................
22115 182. O    .     .     .     .     .     .     .     .     .     .     .     .
22130 183. O    .     .     .     .     .     .     .     .     .     .     .     .
22145 184. O    .     .     .     .     .     .     .     .     .     .     .     .
22200 185. O    .     .     .     .     .     .     .     .     .     .     .     .
22215 186. O    .     .     .     .     .     .     .     .     .     .     .     .
22230 187. O    .     .     .     .     .     .     .     .     .     .     .     .
22245 188. O    .     .     .     .     .     .     .     .     .     .     .     .
               (O) OUTFLOW
      0.    2000.   4000.   6000.   8000.  10000.  12000.  14000.  16000.  18000.     0.      0.      0.
DAHRMN PER
22300 189. O    .     .     .     .     .     .     .     .     .     .     .     .
22315 190. O    .     .     .     .     .     .     .     .     .     .     .     .
22330 191..O....................................................................
22345 192. O    .     .     .     .     .     .     .     .     .     .     .     .
30000 193. O    .     .     .     .     .     .     .     .     .     .     .     .
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30015 194. O    .     .     .     .     .     .     .     .     .     .     .     .
30030 195. O    .     .     .     .     .     .     .     .     .     .     .     .
30045 196. O    .     .     .     .     .     .     .     .     .     .     .     .
30100 197. O    .     .     .     .     .     .     .     .     .     .     .     .
30115 198. O    .     .     .     .     .     .     .     .     .     .     .     .
30130 199. O    .     .     .     .     .     .     .     .     .     .     .     .
30145 200. O    .     .     .     .     .     .     .     .     .     .     .     .
30200 201. .O...................................................................
30215 202. O    .     .     .     .     .     .     .     .     .     .     .     .
30230 203. O    .     .     .     .     .     .     .     .     .     .     .     .
30245 204. O    .     .     .     .     .     .     .     .     .     .     .     .
30300 205. O    .     .     .     .     .     .     .     .     .     .     .     .
30315 206. O    .     .     .     .     .     .     .     .     .     .     .     .
30330 207. O    .     .     .     .     .     .     .     .     .     .     .     .
30345 208. O    .     .     .     .     .     .     .     .     .     .     .     .
30400 209. O    .     .     .     .     .     .     .     .     .     .     .     .
30415 210. O    .     .     .     .     .     .     .     .     .     .     .     .
30430 211. .O...................................................................
30445 212. O    .     .     .     .     .     .     .     .     .     .     .     .
30500 213. O    .     .     .     .     .     .     .     .     .     .     .     .
30515 214. O    .     .     .     .     .     .     .     .     .     .     .     .
30530 215. O    .     .     .     .     .     .     .     .     .     .     .     .
30545 216. O    .     .     .     .     .     .     .     .     .     .     .     .
30600 217. O    .     .     .     .     .     .     .     .     .     .     .     .
30615 218. O    .     .     .     .     .     .     .     .     .     .     .     .
30630 219. O    .     .     .     .     .     .     .     .     .     .     .     .
30645 220. O    .     .     .     .     .     .     .     .     .     .     .     .
30700 221. .O...................................................................
30715 222. O    .     .     .     .     .     .     .     .     .     .     .     .
30730 223. O    .     .     .     .     .     .     .     .     .     .     .     .
30745 224. O    .     .     .     .     .     .     .     .     .     .     .     .
30800 225. O    .     .     .     .     .     .     .     .     .     .     .     .
30815 226. O    .     .     .     .     .     .     .     .     .     .     .     .
30830 227. O    .     .     .     .     .     .     .     .     .     .     .     .
30845 228. O    .     .     .     .     .     .     .     .     .     .     .     .
30900 229. O    .     .     .     .     .     .     .     .     .     .     .     .
30915 230. O    .     .     .     .     .     .     .     .     .     .     .     .
30930 231. .O...................................................................
30945 232. O    .     .     .     .     .     .     .     .     .     .     .     .
31000 233. O    .     .     .     .     .     .     .     .     .     .     .     .
31015 234. O    .     .     .     .     .     .     .     .     .     .     .     .
31030 235. O    .     .     .     .     .     .     .     .     .     .     .     .
31045 236. O    .     .     .     .     .     .     .     .     .     .     .     .
31100 237. O    .     .     .     .     .     .     .     .     .     .     .     .
31115 238. O    .     .     .     .     .     .     .     .     .     .     .     .
31130 239. O    .     .     .     .     .     .     .     .     .     .     .     .
31145 240. O    .     .     .     .     .     .     .     .     .     .     .     .
31200 241. .O...................................................................
31215 242. O    .     .     .     .     .     .     .     .     .     .     .     .
31230 243. O    .     .     .     .     .     .     .     .     .     .     .     .
31245 244. O    .     .     .     .     .     .     .     .     .     .     .     .
31300 245. O    .     .     .     .     .     .     .     .     .     .     .     .
31315 246. O    .     .     .     .     .     .     .     .     .     .     .     .
31330 247. O    .     .     .     .     .     .     .     .     .     .     .     .
31345 248. O    .     .     .     .     .     .     .     .     .     .     .     .
31400 249. O    .     .     .     .     .     .     .     .     .     .     .     .
31415 250. O    .     .     .     .     .     .     .     .     .     .     .     .
31430 251. .O...................................................................
31445 252. O    .     .     .     .     .     .     .     .     .     .     .     .
31500 253. O    .     .     .     .     .     .     .     .     .     .     .     .
31515 254. O    .     .     .     .     .     .     .     .     .     .     .     .
31530 255. O    .     .     .     .     .     .     .     .     .     .     .     .
31545 256. O    .     .     .     .     .     .     .     .     .     .     .     .
31600 257. O    .     .     .     .     .     .     .     .     .     .     .     .
31615 258. O    .     .     .     .     .     .     .     .     .     .     .     .
31630 259. O    .     .     .     .     .     .     .     .     .     .     .     .
31645 260. O    .     .     .     .     .     .     .     .     .     .     .     .
31700 261. .O...................................................................
31715 262. O    .     .     .     .     .     .     .     .     .     .     .     .
31730 263. O    .     .     .     .     .     .     .     .     .     .     .     .
31745 264. O    .     .     .     .     .     .     .     .     .     .     .     .
31800 265. O    .     .     .     .     .     .     .     .     .     .     .     .
31815 266. O    .     .     .     .     .     .     .     .     .     .     .     .
31830 267. O    .     .     .     .     .     .     .     .     .     .     .     .
31845 268. O    .     .     .     .     .     .     .     .     .     .     .     .
31900 269. O    .     .     .     .     .     .     .     .     .     .     .     .
31915 270. O    .     .     .     .     .     .     .     .     .     .     .     .
31930 271. .O...................................................................
31945 272. O    .     .     .     .     .     .     .     .     .     .     .     .
32000 273. O    .     .     .     .     .     .     .     .     .     .     .     .
32015 274. O    .     .     .     .     .     .     .     .     .     .     .     .
32030 275. O    .     .     .     .     .     .     .     .     .     .     .     .
32045 276. O    .     .     .     .     .     .     .     .     .     .     .     .
32100 277. O    .     .     .     .     .     .     .     .     .     .     .     .
32115 278. O    .     .     .     .     .     .     .     .     .     .     .     .
32130 279. O    .     .     .     .     .     .     .     .     .     .     .     .
32145 280. O    .     .     .     .     .     .     .     .     .     .     .     .
32200 281. .O...................................................................
32215 282. O    .     .     .     .     .     .     .     .     .     .     .     .
32230 283. O    .     .     .     .     .     .     .     .     .     .     .     .
               (O) OUTFLOW
     0.    2000.   4000.   6000.   8000.  10000.  12000.  14000.  16000.  18000.      0.      0.      0.
DAHRMN PER
32245 284. O    .     .     .     .     .     .     .     .     .     .     .     .
32300 285. O    .     .     .     .     .     .     .     .     .     .     .     .
32315 286. O    .     .     .     .     .     .     .     .     .     .     .     .
32330 287. O    .     .     .     .     .     .     .     .     .     .     .     .
32345 288. O    .     .     .     .     .     .     .     .     .     .     .     .
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 40000 289.--O------.----------.---------.---------.---------.---------.----------.---------.---------.---------.---------.---------.
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         *            *
 295 KK  *   MDPLS    *   ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
         *            *
         **************

           HYDROGRAPH ROUTING DATA

 296 RS       STORAGE ROUTING
               NSTPS          1  NUMBER OF SUBREACHES
                ITYP       STOR  TYPE OF INITIAL CONDITION
              RSVRIC        .00  INITIAL CONDITION
                   X        .00 WORKING R AND D COEFFICIENT

 297 SA          AREA        .6      1.9      8.6     18.1     40.0     80.0    131.0    196.0

 298 SE       ELEVATION   4410.00  4412.00  4414.00  4416.00  4418.00  4420.00  4422.00  4424.00

 299 SQ       DISCHARGE      200.     480.     783.    1411.    4191.    9772.   19163.   31000.

                                              ***

                                  COMPUTED STORAGE-ELEVATION DATA

          STORAGE      .00     2.38    12.07    38.19    94.86   212.57   421.49   746.31
         ELEVATION  4410.00  4412.00  4414.00  4416.00  4418.00  4420.00  4422.00  4424.00

 *** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN      200. TO      480.
            THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
            THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
1
                                              RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                     TIME IN HOURS,  AREA IN SQUARE MILES

                               PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD        BASIN     MAXIMUM      TIME OF
        OPERATION         STATION     FLOW       PEAK                                   AREA      STAGE     MAX STAGE
+                                                 6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          T1       804.   12.50      354.       134.        45.        2.50

        ROUTED TO
+                       RT1-B        871.   12.75      353.       134.        45.        2.50

        HYDROGRAPH AT
+                          T2       290.   12.50      124.        46.        15.        1.82

        HYDROGRAPH AT
+                          T3       131.   12.50       54.        20.         7.         .82

        3 COMBINED AT
+                        CP-B      1237.   12.50      529.       200.        67.        5.14

        ROUTED TO
+                       RCP-C      1282.   12.75      529.       200.        67.        5.14

        HYDROGRAPH AT
+                          T4       169.   12.75       98.        36.        12.        2.16

        2 COMBINED AT
+                        CP-C      1451.   12.75      623.       236.        79.        7.30

        ROUTED TO
+                       RCP-D      1445.   13.00      622.       236.        79.        7.30

        HYDROGRAPH AT
+                          T5       229.   12.75       87.        33.        11.        1.19

        2 COMBINED AT
+                        CP-D      1630.   13.00      708.       268.        90.        8.49

        ROUTED TO
+                       RCP-E      1619.   13.25      707.       268.        90.        8.49

        HYDROGRAPH AT
+                          T6       535.   13.00      223.        85.        29.        3.15

        2 COMBINED AT
+                        CP-E      2130.   13.25      928.       353.       118.       11.64


                               PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD        BASIN     MAXIMUM      TIME OF
        OPERATION         STATION     FLOW       PEAK                                   AREA      STAGE     MAX STAGE

        ROUTED TO
+                       RT-HN      2053.   13.50      926.       353.       118.       11.64

        HYDROGRAPH AT
+                          W1       590.   12.25      231.        87.        29.        1.36
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       HYDROGRAPH AT
+                 W2      524.   12.25       170.      65.       22.      .84

       2 COMBINED AT
+                W1+W2     1114.   12.25       400.      152.      51.      2.20

       ROUTED TO
+                RT-A     1154.   12.50       400.      152.      51.      2.20

       HYDROGRAPH AT
+                 W3      536.   12.50       203.      78.       25.      1.38

       ROUTED TO
+                 RT-A     574.   12.50       203.      78.       25.      1.38

       HYDROGRAPH AT
+                 W4      311.   12.50       127.      47.       16.      1.47

       3 COMBINED AT
+                W1234     2039.   12.50       725.      275.      92.      5.05

       ROUTED TO
+                RT-B     1889.   12.50       725.      275.      92.      5.05

       HYDROGRAPH AT
+                 W5      251.   12.50       101.      37.       12.      1.27

       2 COMBINED AT
+                W5+CH     2150.   12.50       823.      312.      104.     6.32

       ROUTED TO
+                RT-C     2126.   12.75       823.      312.      104.     6.32

       HYDROGRAPH AT
+                 W6      153.   12.75       76.       28.       9.      1.43

       2 COMBINED AT
+                W6+CH     2279.   12.75       897.      340.      113.     7.75

       ROUTED TO
+                RT-D     2137.   13.25       897.      340.      113.     7.75

       HYDROGRAPH AT
+                 W7      191.   12.75       78.       31.       10.      1.30

       2 COMBINED AT
+                W7+CH     2262.   13.25       975.      371.      124.     9.05

       ROUTED TO
+                RT-E     2316.   13.25       975.      371.      124.     9.05

       HYDROGRAPH AT
+                 W8      627.   12.75       227.      93.       31.      4.37

       2 COMBINED AT
+                W8+CH     2720.   13.25       1202.     463.      155.     13.42

       ROUTED TO
+                RT-F     2683.   13.50       1201.     463.      155.     13.42

       HYDROGRAPH AT
+                 46      490.   12.75       156.      65.       22.      2.69

       2 COMBINED AT
+                46+CH     2874.   13.50       1352.     528.      176.     16.11

       ROUTED TO
+                RT-HN     2777.   13.75       1351.     528.      176.     16.11

       HYDROGRAPH AT
+                 G1      818.   12.25       298.      114.      38.      1.63

       ROUTED TO
+                RT-G      866.   12.50       298.      114.      38.      1.63

       HYDROGRAPH AT
+                 G2      594.   12.25       209.      79.       26.      1.30

       HYDROGRAPH AT
+                 G3      336.   12.50       138.      52.       17.      1.15

       3 COMBINED AT
+                G123      1746.   12.50       642.      245.      82.      4.08

       ROUTED TO
+                RT-H      1696.   12.75       642.      245.      82.      4.08

       HYDROGRAPH AT
+                 G4      329.   12.50       129.      47.       16.      1.54
                      PEAK  TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD     BASIN    MAXIMUM    TIME OF
       OPERATION     STATION   FLOW    PEAK                           AREA     STAGE    MAX STAGE

       HYDROGRAPH AT
+                 G5      89.   12.50       46.       18.       6.      1.02

       3 COMBINED AT
+                G1-5      2015.   12.75       814.      310.      103.     6.64
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         ROUTED TO
+                  RT-I      1989.   12.75      813.      310.      103.     6.84

         HYDROGRAPH AT
+                   G6        118.   13.00       67.       26.        9.     1.37

         2 COMBINED AT
+                  G6+CH     2106.   12.75      879.      336.      112.     8.01

         ROUTED TO
+                  RT-K      2116.   13.00      878.      336.      112.     8.01

         HYDROGRAPH AT
+                   J1        267.   12.50      102.       37.       12.     1.29

         ROUTED TO
+                  RT-J       270.   12.75      102.       37.       12.     1.29

         HYDROGRAPH AT
+                   J2        282.   12.75      126.       47.       16.     1.95

         2 COMBINED AT
+                  J1+J2      552.   12.75      228.       85.       28.     3.24

         ROUTED TO
+                  RT-K       559.   12.75      228.       85.       28.     3.24

         HYDROGRAPH AT
+                   G8        399.   12.50      142.       53.       18.     2.19

         3 COMBINED AT
+                  G+J       2876.   12.75     1246.      474.      158.    13.44


         ROUTED TO
+                  RT-L      2951.   13.00     1247.      474.      158.    13.44

         HYDROGRAPH AT
+                   G7        191.   12.50       81.       31.       10.     1.50

         ROUTED TO
+                  RT-L       195.   12.75       81.       31.       10.     1.50

         HYDROGRAPH AT
+                   G9        212.   14.25      149.       58.       20.     3.07

         3 COMBINED AT
+                  PT-L      3216.   13.00     1469.      562.      188.    18.01

         ROUTED TO

+                  RT-PV     3170.   13.25     1469.      562.      188.    18.01

         HYDROGRAPH AT
+                   B1        325.   12.75      155.       57.       19.     2.18

         ROUTED TO
+                  RT-M       321.   12.75      155.       57.       19.     2.18

         HYDROGRAPH AT
+                   B2        134.   12.50       65.       24.        8.     1.42

         2 COMBINED AT
+                  B1+B2      450.   12.75      220.       81.       27.     3.60

         ROUTED TO
+                  RT-N       448.   13.00      220.       81.       27.     3.60

         HYDROGRAPH AT
+                   B3         88.   12.50       28.       10.        3.      .53

         2 COMBINED AT
+                  B123       496.   13.00      247.       90.       30.     4.13

         ROUTED TO
+                  RT-PV      504.   13.25      247.       90.       30.     4.13

         2 COMBINED AT
+                 PLEASV     3874.   13.25     1713.      653.      218.    22.14

         ROUTED TO
+                  RT-SG     3636.   13.50     1712.      653.      218.    22.14

         HYDROGRAPH AT
+                    30      3170.   13.00     1689.      929.      643.    17.80

         2 COMBINED AT
+                  STMBT     6470.   13.25     3390.     1582.      861.    39.94
                          PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
         OPERATION     STATION     FLOW     PEAK                                  AREA      STAGE     MAX STAGE

         ROUTED TO
+                 RT-341     6395.   13.75     3382.     1582.      861.    39.94

         HYDROGRAPH AT
+                   35       4143.   13.00     1535.      529.      176.    15.50
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         HYDROGRAPH AT
+                    40      804.   12.50       204.       76.        25.      2.63

         3 COMBINED AT
+                HY-341     8939.   13.50      5043.      2186.      1063.     58.07

         ROUTED TO
+                RT-HN      8914.   14.00      5041.      2186.      1063.     58.07

         HYDROGRAPH AT
+                    60     3568.   13.25      1617.       615.       206.     23.15

         4 COMBINED AT
+                  HUFN    16402.   13.75      8909.      3680.      1564.    108.97

         ROUTED TO
+                 MDPLS    15814.   14.00      8868.      3677.      1564.    108.97
+                                                               4421.29      14.00

*** NORMAL END OF HEC-1 ***
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*********************************************          *********************************************
*  FLOOD HYDROGRAPH PACKAGE (HEC-1)         *          *     U.S. ARMY CORPS OF ENGINEERS          *
*           FEBRUARY 1981                   *          * THE HYDROLOGIC ENGINEERING CENTER         *
*           REVISED 01 JUN 88               *          *         609 SECOND STREET                 *
*                                           *          *      DAVIS, CALIFORNIA 95616              *
*   RUN DATE 12/27/1989  TIME  14:56:36     *          *          (916)551-1748                    *
*********************************************          *********************************************


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                     *     *  *          *                           *
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                     *     *  *          *                           *
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                     *     *  *          *                           *
                     *     *  *          *                           *
                     *     *  *********  *********              ***********


              ***************************************************************************
              PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION
              FACILITY DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER
              PURPOSE WITHOUT CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

              HUFFAKER NARROWS DETENTION FACILITY HYDROLOGY MODEL
              THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURING SUMMER 1989
              THE PARAMETERS FOR THIS MODEL ARE BASED ON THE 100 YEAR RAIN FALL FROM
              THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
              NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
              METHOD AND MANNING EQUATION ARE USED FOR THE DETERMINATION OF LAG TIME.
              -CURVE NUMBERS ESTIMATED FROM USFS PHOTOGRAPHS AND FIELD INVESTIGATION
              FUTURE CONDITIONS MODEL: IMPERVIOUS AREAS BASED ON COUNTY MASTER PLANS AND
              THE DALMONTE AND DOUBLE DIAMOND MASTER PLANS
              CHANGED ROUTING PARAMETERS FOR STEAMBOAT CREEK, WHITE AND THOMAS FROM
              APEXES TO THE NARROWS
              MODIFIED THE LAG TIMES OF WATERSHEDS 40,60 DUE TO PROPOSED DEVELOPMENT IN THE
              UPPER TRUCKEE MEADOWS.
              Originally used 10 ft/sec for velocities in channels, but modified velocities
              for Steamboat, Thomas and White Creeks to 6ft/sec.


1                             HEC-1 INPUT

      LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

                *DIAGRAM
        1       ID  ************************************************************************
        2       ID
        3       ID
        4       ID
        5       ID
        6       ID
        7       ID
        8       ID
        9       ID
       10       ID
       11       ID
       12       ID
       13       ID
       14       ID
       15       ID
       16       ID
       17       ID
       18       ID
       19       ID
       20       ID                FILE NAME: HFUT6.909
       21       ID
       22       ID  ************************************************************************
       23       IT    15                 289
       24       IO     4     1

       25       KK    T1  THOMAS CREEK WATERSHED T1
       26       BA   2.5
       27       PH     1   109   .42   .83  1.45  1.87  2.26  3.18  4.31  5.44
       28       LS         69
       29       UD   .35

       30       KK  RT1-B  ROUTE T1 TO CONCENTRATION POINT B
       31       RM     1 .09568    .4

       32       KK    T2  THOMAS CREEK WATERSHED T2
       33       BA  1.82
       34       PH     1   109    .4   .79  1.39  1.75   2.1   2.9  3.91  4.92
       35       LS         58
       36       UD   .29

       37       KK    T3  THOMAS CREEK WATERSHED T3
       38       BA   .82
       39       PH     1   109   .41    .8   1.4  1.73  2.04  2.76  3.75  4.73
       40       LS         59
       41       UD    .3
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1                                   HEC-1 INPUT

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 42             KK   CP-B   COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCENTRATION PT B
 43             HC      3

 44             KK   RCP-C   ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
 45             RM      2 .14576     .4

 46             KK      T4   THOMAS CREEK WATERSHED T4
 47             BA    2.16
 48             PH      1     109    .39    .77    1.35    1.64    1.91    2.55    3.38    4.2
 49             LS            58
 50             UD     .54

 51             KK   CP-C   COMBINE ROUTED T1-T3 W/ T4
 52             HC      2

 53             KK   RCP-D   ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
 54             RM      2  .1408     .4

 55             KK      T5   THOMAS CREEK WATERSHED T5
 56             BA    1.19
 57             PH      1.    109    .35    .68    1.2     1.4     1.59    2.04    2.75    3.4
 58             LS            71      8
 59             UD     .49

 60             KK   CP-D   COMBINE ROUTED T1-T4 W/ T5
 61             HC      2
 62             KO      1

 63             KK   RCP-E   ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
 64             RM      3  .2701     .4

 65             KK      T6   THOMAS CREEK WATERSHED T6
 66             BA    3.15
 67             PH      1     109    .35    .69    1.21    1.34    1.48    1.8     2.3     2.8
 68             LS            75     16
 69             UD     .85

 70             KK   CP-E   COMBINE ROUTED T1-T5 W/ T6
 71             HC      2

 72             KK   RT-DD  ROUTE THOMAS CK WATERSHED TO END OF DOUBLE DIAMOND
 73             RM      2    .43     .4

 74             KK   RT-HN ROUTE THOMAS CREEK TO NARROWS
 75             RM      1    .38     .1

 76             KK     W1 WHITES CREEK WATERSHED NO. 1
 77             BA    1.36
 78             PH      1     109    .39    .77    1.35    1.83    2.28    3.34    4.43    5.52
 79             LS            73
 80             UD     .21
 81             KK     W2 WHITES CREEK WATERSHED NO. 2
 82             BA     .84
 83             PH      1     109    .39    .77    1.35     1.8    2.23    3.22    4.31    5.39
 84             LS            80
 85             UD     .17

 86             KK   W1+W2 COMBINE FLOW FROM W1 AND W2
 87             HC      2

 88             KK   RT-A  ROUTE COMBINED W1 AND W2 TO POINT A
 89             RM      1   .122     .4

 90             KK     W3  WHITES CREEK WATERSHED NO. 3
 91             BA    1.38
 92             PH      1     109    .39    .77    1.36    1.78    2.18    3.12    4.15    5.17
 93             LS            72
 94             UD     .23

 95             KK    RT-A ROUTE W3 TO POINT A
 96             RM      1  .0950     .4

 97             KK     W4  WHITES CREEK WATERSHED NO. 4
 98             BA    1.47
 99             PH      1     109    .38    .75    1.32    1.71    2.08    2.95    3.94    4.94
100              LS           62
101              UD    .27

102              KK  W1234 COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
103              HC     3

104              KK  RT-B  ROUTE COMBINED HYDROGRAPH TO POINT B
105              RM     1  .0597     .4

106              KK     W5  WHITES CREEK WATERSHED NO. 5
107              BA   1.27
108              PH     1     109    .38    .75    1.31    1.67    2.01     2.8    3.78    4.77
109              LS           62
110              UD    .28

111              KK  W5+CH COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
112              HC     2
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1                                   HEC-1 INPUT

          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

           113          KK   RT-C  ROUTE COMBINED HYDROGRAPH TO POINT C
           114          RM      2   .185     .4

           115          KK    W6  WHITES CREEK WATERSHED NO. 6
           116          BA    1.43
           117          PH      1    109    .36    .71    1.24    1.55    1.86    2.56    3.34    4.12
           118          LS            61
           119          UD     .44

           120          KK   W6+CH COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
           121          HC      2

           122          KK   RT-D  ROUTE COMBINED HYDROGRAPH TO POINT D
           123          RM      3   .298     .4

           124          KK    W7   WHITES CREEK WATERSHED NO.7
           125          BA     1.3
           126          PH      1    109    .33    .64    1.12    1.34    1.55    2.03    2.69    3.36
           127          LS            68      8
           128          UD      .5

           129          KK   W7+CH COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
           130          HC      2

           131          KK   RT-E  ROUTE COMBINED HYDROGRAPH TO POINT E
           132          RM      2   .139     .4

           133          KK    W8   WHITES CREEK WATERSHED NO. 8
           134          BA    4.37
           135          PH      1    109    .32    .64    1.12    1.28    1.43    1.79    2.29    2.79
           136          LS            68     17
           137          UD     .53

           138          KK   W8+CH COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
           139          HC      2

           140          KK   RT-F  ROUTE COMBINED HYDROGRAPH TO POINT F
           141          RM      1    .24     .4

           142          KK     46  WHITES CREEK WATERSHED 46
           143          BA    2.69
           144          PH      1    109    .36     .7    1.23    1.39    1.52    1.78    2.26    2.75
           145          LS            66     25
           146          UD      .5

           147          KK   46+CH COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
           148          HC      2

           149          KK   RT-DD ROUTE COMBINED HYDROGRAPH TO END OF DOUBLE DIAMOND
           150          RM      2    .53     .4

           151          KK   RT-HN ROUTE FLOWS TO NARROWS
           152          RM      1    .38     .1

           153          KK    G1   GLENA CREEK WATERSHED NO.1
           154          BA    1.63
           155          PH      1    109     .4    .79    1.39    1.85    2.29    3.31    4.46     5.6
           156          LS            75
           157          UD      .2

           158          KK   RT-G  ROUTE G1 TO POINT G
           159          RM      1   .096     .4

           160          KK     G2  GALENA CREEK WATERSHED NO. 2
           161          BA     1.3
           162          PH      1    109    .39    .77    1.35    1.76    2.16    3.08     4.1    5.12
           163          LS            75
           164          UD      .2

           165          KK     G3  GALENA CREEK WATERSHED NO. 3
           166          BA    1.15
           167          PH      1    109    .38    .74     1.3    1.69    2.05     2.9    3.95    4.99
           168          LS            69
           169          UD     .36

           170          KK   G123  COMBINE ROUTED G1 WITH G2 AND G3
           171          HC      3

           172          KK   RT-H  ROUTE COMBINED HYDROGRAPH TO POINT H
           173          RM      2   .174     .4

           174          KK     G4  GALENA CREEK WATERSHED NO. 4
           175          BA    1.54
           176          PH      1    109    .38    .75    1.32    1.68    2.02    2.83    3.79    4.74
           177          LS            63
           178          UD     .25

           179          KK     G5  GALENA CREEK WATERSHED NO. 5
           180          BA    1.02
           181          PH      1    109    .38    .75    1.32    1.67    1.99    2.75     3.7    4.64
           182          LS            55
           183          UD     .32

           184          KK    G1-5 COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
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1                            HEC-1 INPUT

      LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

       185       HC     3

       186       KK   RT-I  ROUTE COMBINED HYDROGRAPHS TO POINT I
       187       RM     2   .167     .4

       188       KK    G6  GALENA CREEK WATERSHED N0.6
       189       BA    1.37
       190       PH     1     109     .37     .72    1.26    1.57    1.87    2.56    3.33     4.1
       191       LS             59     2.5
       192       UD     .56

       193       KK   G6+CH COMBINE G6 WITH COMBINED HYDROGRAPH AT POINT I
       194       HC     2

       195       KK   RT-K  ROUTE COMBINED HYDROGRAPH TO POINT K
       196       RM     1   .066     .4

       197       KK    J1  JONES CREEK WATERSHED NO. 1
       198       BA    1.29
       199       PH     1     109     .39     .76    1.33    1.67       2    2.75    3.69    4.62
       200       LS             63
       201       UD     .23

       202       KK   RT-J  ROUTE JI TO POINT J
       203       RM     2   .195     .4

       204       KK    J2  JONES CREEK WATERSHED NO. 2
       205       BA    1.95
       206       PH     1     109     .35      .7    1.22    1.52     1.8    2.45    3.22    3.98
       207       LS             64     3.4
       208       UD     .43

       209       KK   J1+J2 COMBINE ROUTED J1 WITH J2 AT POINT J
       210       HC     2

       211       KK   RT-K  ROUTE COMBINED J1 AND J2 TO POINT K
       212       RM     1   .104     .4

       213       KK    G8  GALENA CREEK WATERSHED NO.8
       214       BA    2.19
       215       PH     1     109     .34     .66    1.16     1.4    1.62    2.13    2.77    3.41
       216       LS             69       6
       217       UD     .35

       218       KK   G+J   COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
       219       HC     3

       220       KK   RT-L  ROUTE COMBINED HYDROGRAPH TO PT L
       221       RM     1   .132     .4

       222       KK    G7  GALENA CREEK WATERSHED NO. 7
       223       BA    1.5
       224       PH     1     109     .35     .69    1.22     1.5    1.77     2.4     3.1     3.8
       225       LS             62       5
       226       UD     .36

       227       KK   RT-L  ROUTE G7 TO OINT L
       228       RM     1   .129     .4

       229       KK    G9  GALENA CREEK WATERSHED NO. 9
       230       BA    3.07
       231       PH     1     109     .33     .65    1.14    1.35    1.56    2.04     2.6    3.16
       232       LS             69     3.4
       233       UD    1.67

       234       KK   PT-L  COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
       235       HC     3
       236       KK   RT-PV ROUTE GALENA CK HYDROGRAPH TO PLEASANT VALLEY
       237       RM     2    .17     .4

       238       KK    B1  BROWNS CREEK WATERSHED NO. 1
       239       BA    2.18
       240       PH     1     109     .38     .74     1.3    1.63    1.95     2.7    3.62    4.53
       241       LS             62
       242       UD     .44

       243       KK   RT-M  ROUTE B1 TO POINT M
       244       RM     2   .167     .4

       245       KK    B2  BROWNS CREEK WATERSHED NO. 2
       246       BA    1.42
       247       PH     1     109     .36     .71    1.25    1.55    1.83    2.49    3.25       4
       248       LS             60       0
       249       UD     .35

       250       KK   B1+B2 COMBINE ROUTED B1 WITH B2 AT POINT M
       251       HC     2

       252       KK   RT-N  ROUTE COMBINED HYDROGRAPH TO POINT N
       253       RM     1   .104     .4

       254       KK    B3  BROWNS CREEK WATERSHED NO. 3
       255       BA     .53
       256       PH     1     109     .34     .67    1.18    1.43    1.66    2.22    2.82    3.42
```

```
LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

257         LS         67      0
258         UD   .36

259         KK  B123  COMBINE ROUTED B1 AND B2 WITH B3
260         HC     2

261         KK  RT-PV ROUTE BROWNS CREEK HYDROGRAPH TO PLEASANT VALLEY
262         RM     3   .306     .4

263         KK  PLEASV COMBINE GALENA CK AND BROWNS CK AT PLEASANT VALLEY
264         HC     2

265         KK  RT-SG ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
266         RM     3    .21     .4

267         KK     30 STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
268         BA   17.8
269         BF    500    500      1
270         PH      1    109    .32    .84   1.12   1.28   1.44    1.8   2.34   2.87
271         LS           77      3
272         UD   0.82

273         KK  STMBT COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
274         HC     2

275         KK  RT-341 ROUTE COMBINED HYDROGRAPH TO HWY 341
276         RM     2   .413   .4

277         KK    35  WATERSHED 35 AKA BAILEY CANYON
278         BA   15.5
279         BF      0      0      1
280         PH      1    109    .39    .77   1.34   1.53   1.68   1.98   2.51   3.04
281         LS           82      2
282         UD    .72

283         KK    40  WATERSHED NO.40
284         BA   2.63
285         PH      1    109    .35    .69   1.21   1.38   1.51   1.78   2.29   2.81
286         LS           77     15
287         UD     .3

288         KK  HY-341  COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
289         HC     3

290         KK  RT-DD  ROUTE COMBINED HYDROGRAPH TO END OF PROPOSED DEVELOPMENT
291         RM     2    .55     .4

292         KK  RT-HN  ROUTE FLOWS TO NARROWS
293         RM     1     .8     .1

294         KK    60  WATERSHED NO. 60
295         BA  23.15
296         PH      1    109    .35    .68   1.19   1.38   1.49   1.77    2.3   2.83
297         LS           76     12
298         UD   1.25

299         KK  HUFN  COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
300         HC     4
301         KO      1      2                    22

302         KK  MDPLS ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
303         RS      1   STOR      0
304         SA     .6    1.9    8.6   18.1     40     80    131    196
305         SE   4410   4412   4414   4416   4418   4420   4422   4424
306         SQ    200    480    783   1411   4191   9772  19163  31000
307         KO                                  32
308         ZZ
```

```
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE       (V) ROUTING      (---->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR      (<----) RETURN OF DIVERTED OR PUMPED FLOW

  25         T1
             V
             V
  30       RT1-B
             .
             .
  32         .     T2
             .     .
             .     .
  37         .     .     T3
             .     .     .
             .     .     .
  42        CP-B.......................
             V
             V
  44       RCP-C
             .
             .
  46         .     T4
             .     .
             .     .
  51        CP-C............
             V
             V
  53       RCP-D
             .
             .
  55         .     T5
             .     .
             .     .
  60        CP-D............
             V
             V
  63       RCP-E
             .
             .
  65         .     T6
             .     .
             .     .
  70       CP-E ............
             V
             V
  72       RT-DD
             V
             V
  74       RT-HN
             .
             .
  76         .     W1
             .     .
             .     .
  81         .     .     W2
             .     .     .
             .     .     .
  86         .    W1+W2............
             .     V
             .     V
  88         .    RT-A
             .     .
             .     .
  90         .     .     W3
             .     .     V
             .     .     V
  95         .     .    RT-A
             .     .     .
             .     .     .
  97         .     .     .     W4
             .     .     .     .
             .     .     .     .
 102         .    W1234.......................
             .     V
             .     V
 104         .    RT-B
             .     .
             .     .
 108         .     .     W5
             .     .     .
             .     .     .
 111         .    W5+CH............
             .     V
             .     V
 113         .    RT-C
             .     .
             .     .
 115         .     .     W6
             .     .     .
             .     .     .
 120         .    W6+CH............
             .     V
             .     V
```

```
1
         SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE   (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

 NO.    (.) CONNECTOR       (<---) RETURN OF DIVERTED OR PUMPED FLOW

122    .     RT-D
       .      .
       .      .
124    .      .     W7
       .      .      .
       .      .      .
129    .     W7+CH............
       .      V
       .      V
131    .     RT-E
       .      .
       .      .
133    .      .     W8
       .      .      .
       .      .      .
138    .     W8+CH............
       .      V
       .      V
140    .     RT-F
       .      .
       .      .
142    .      .     46
       .      .      .
       .      .      .
147    .     46+CH............
       .      V
       .      V
149    .     RT-DD
       .      V
       .      V
151    .     RT-HN
       .      .
       .      .
153    .      .     G1
       .      .      V
       .      .      V
158    .      .     RT-G
       .      .      .
       .      .      .
160    .      .      .     G2
       .      .      .      .
       .      .      .      .
165    .      .      .      .     G3
       .      .      .      .      .
       .      .      .      .      .
170    .      .     G123 ........................
       .      .      V
       .      .      V
172    .      .     RT-H
       .      .      .
       .      .      .
174    .      .      .     G4
       .      .      .      .
       .      .      .      .
179    .      .      .      .     G5
       .      .      .      .      .
       .      .      .      .      .
184    .      .     G1-5........................
       .      .      V
       .      .      V
186    .      .     RT-I
       .      .      .
       .      .      .
188    .      .      .     G6
       .      .      .      .
       .      .      .      .
193    .      .     G6+CH............
       .      .      V
       .      .      V
195    .      .     RT-K
       .      .      .
       .      .      .
197    .      .      .     J1
       .      .      .      V
       .      .      .      V
202    .      .      .     RT-J
       .      .      .      .
       .      .      .      .
204    .      .      .      .     J2
       .      .      .      .      .
       .      .      .      .      .
209    .      .      .     J1+J2............
       .      .      .      V
       .      .      .      V
211    .      .      .     RT-K
       .      .      .      .
       .      .      .      .
213    .      .      .      .     G8
       .      .      .      .      .
       .      .      .      .      .
```

```
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
LINE     (V) ROUTING         (--->) DIVERSION OR PUMP FLOW

NO.      (.) CONNECTOR       (<---) RETURN OF DIVERTED OR PUMPED FLOW

 218         .     .     G+J ......................
             .     .      V
             .     .      V
 220         .     .     RT-L
             .     .      .
             .     .      .
 222         .     .      .     G7
             .     .      .     V
             .     .      .     V
 227         .     .      .    RT-L
             .     .      .     .
             .     .      .     .
 229         .     .      .     .     G9
             .     .      .     .     .
             .     .      .     .     .
 234         .     .     PT-L ......................
             .     .      V
             .     .      V
 236         .     .     RT-PV
             .     .      .
             .     .      .
 238         .     .      .     B1
             .     .      .     V
             .     .      .     V
 243         .     .      .    RT-M
             .     .      .     .
             .     .      .     .
 245         .     .      .     .     B2
             .     .      .     .     .
             .     .      .     .     .
 250         .     .      .    B1+B2...........
             .     .      .     V
             .     .      .     V
 252         .     .      .    RT-N
             .     .      .     .
             .     .      .     .
 254         .     .      .     .     B3
             .     .      .     .     .
             .     .      .     .     .
 259         .     .      .    B123 ...........
             .     .      .     V
             .     .      .     V
 261         .     .      .    RT-PV
             .     .      .     .
             .     .      .     .
 263         .     .     PLEASV...........
             .     .      V
             .     .      V
 265         .     .     RT-SG
             .     .      .
             .     .      .
 267         .     .      .     30
             .     .      .     .
             .     .      .     .
 273         .     .     STMBT...........
             .     .      V
             .     .      V
 275         .     .     RT-341
             .     .      .
             .     .      .
 277         .     .      .     35
             .     .      .     .
             .     .      .     .
 283         .     .      .     .     40
             .     .      .     .     .
             .     .      .     .     .
 288         .     .     HY-341......................
             .     .      V
             .     .      V
 290         .     .     RT-DD
             .     .      V
             .     .      V
 292         .     .     RT-HN
             .     .      .
             .     .      .
 294         .     .      .     60
             .     .      .     .
             .     .      .     .
 299        HUFN ..................................
             V
             V
 302        MDPLS
```

```
(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
***********************************************                    *******************************************
*   FLOOD HYDROGRAPH PACKAGE (HEC-1)   *                    *     U.S. ARMY CORPS OF ENGINEERS       *
*            FEBRUARY 1981              *                    * THE HYDROLOGIC ENGINEERING CENTER      *
*          REVISED 01 JUN 88            *                    *          609 SECOND STREET             *
*                                       *                    *        DAVIS, CALIFORNIA 95616         *
*   RUN DATE 12/27/1989  TIME  14:56:36 *                    *            (916)551-1748               *
***********************************************                    *******************************************



              **********************************************************************
                 PEAK DISCHARGES GENERATED IN THIS MODEL ARE SPECIFICALLY FOR A DETENTION FACILITY
                 DESIGN AT HUFFAKER NARROWS AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE WITHOUT
                 CONSULTING NIMBUS ENGINEERS AND WASHOE COUNTY.

                 HUFFAKER NARROWS DETENTION FACILITY HYDROLOGY MODEL
                 THIS MODEL IS BASED ON DATA GENERATED BY NIMBUS ENGINEERS DURING SUMMER 1989
                 THE PARAMETERS FOR THIS MODEL ARE BASED ON THE 100 YEAR RAIN FALL FROM
                 THE NOAA 2 ATLAS. LOSSES ARE BASED ON THE SCS CURVE NUMBER METHOD OUTLINED IN
                 NEH-4 AND TR-55. THE MUSKINGHUM METHOD IS USED FOR ROUTING. THE UPLAND
                 METHOD AND MANNING EQUATION ARE USED FOR THE DETERMINATION OF LAG TIME.
                 -CURVE NUMBERS ESTIMATED FROM USFS PHOTOGRAPHS AND FIELD INVESTIGATION
                 FUTURE CONDITIONS MODEL: IMPERVIOUS AREAS BASED ON COUNTY MASTER PLANS AND
                 THE DALMONTE AND DOUBLE DIAMOND MASTER PLANS
                 CHANGED ROUTING PARAMETERS FOR STEAMBOAT CREEK, WHITE AND THOMAS FROM
                 APEXES TO THE NARROWS
                 MODIFIED THE LAG TIMES OF WATERSHEDS 40,60 DUE TO PROPOSED DEVELOPMENT IN THE
                 UPPER TRUCKEE MEADOWS.
                 Originally used 10 ft/sec for velocities in channels, but modified velocities
                 for Steamboat, Thomas and White Creeks to 6ft/sec.

                             FILE NAME: HFUT6.909

               **********************************************************************


 24 IO        OUTPUT CONTROL VARIABLES
                 IPRNT         4  PRINT CONTROL
                 IPLOT         1  PLOT CONTROL
                 QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT        HYDROGRAPH TIME DATA
                 NMIN         15  MINUTES IN COMPUTATION INTERVAL
                 IDATE     1    0  STARTING DATE
                 ITIME      0000  STARTING TIME
                    NQ       289  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE     4    0  ENDING DATE
                NDTIME      0000  ENDING TIME
                ICENT        19  CENTURY MARK

              COMPUTATION INTERVAL     .25 HOURS
                 TOTAL TIME BASE   72.00 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


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


          ***************
          *             *
 25 KK    *      T1     *    THOMAS CREEK WATERSHED T1
          *             *
          ***************

            SUBBASIN RUNOFF DATA

 26 BA         SUBBASIN CHARACTERISTICS
                 TAREA        2.50  SUBBASIN AREA

             PRECIPITATION DATA

 27 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
               .42    .83    1.45   1.87   2.26   3.18   4.31   5.44    .00    .00    .00    .00

                                   STORM AREA =  109.00

 28 LS         SCS LOSS RATE
                 STRTL        .90  INITIAL ABSTRACTION
                CRVNBR      69.00  CURVE NUMBER
                 RTIMP        .00  PERCENT IMPERVIOUS AREA

 29 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .35  LAG
```

```
                                                  ***

                                           UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
        1333.     2551.     1501.     619.     262.     111.     47.     22.     7.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
 30 KK       *   RT1-B     *     ROUTE T1 TO CONCENTRATION POINT B
             *             *
             ***************

              HYDROGRAPH ROUTING DATA

 31 RM          MUSKINGUM ROUTING
                  NSTPS         1 NUMBER OF SUBREACHES
                  AMSKK       .10 MUSKINGUM K
                      X       .40 MUSKINGUM X

                                                  ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
 32 KK       *      T2     *     THOMAS CREEK WATERSHED T2
             *             *
             ***************

              SUBBASIN RUNOFF DATA

 33 BA          SUBBASIN CHARACTERISTICS
                  TAREA      1.82  SUBBASIN AREA

               PRECIPITATION DATA

 34 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                 .40     .79    1.39   1.75   2.10   2.90   3.91   4.92    .00    .00    .00    .00

                                       STORM AREA =  109.00

 35 LS          SCS LOSS RATE
                  STRTL      1.45  INITIAL ABSTRACTION
                 CRVNBR      58.00  CURVE NUMBER
                  RTIMP       .00  PERCENT IMPERVIOUS AREA

 36 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG       .29  LAG

                                                  ***

                                           UNIT HYDROGRAPH
                                          8 END-OF-PERIOD ORDINATES
        1414.     1973.     821.     309.     115.     44.     18.     4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
 37 KK       *      T3     *     THOMAS CREEK WATERSHED T3
             *             *
             ***************

              SUBBASIN RUNOFF DATA

 38 BA          SUBBASIN CHARACTERISTICS
                  TAREA       .82  SUBBASIN AREA

               PRECIPITATION DATA

 39 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                 .41     .80    1.40   1.73   2.04   2.78   3.75   4.73    .00    .00    .00    .00

                                       STORM AREA =  109.00

 40 LS          SCS LOSS RATE
                  STRTL      1.39  INITIAL ABSTRACTION
                 CRVNBR      59.00  CURVE NUMBER
                  RTIMP       .00  PERCENT IMPERVIOUS AREA

 41 UD          SCS DIMENSIONLESS UNITGRAPH
                   TLAG       .30  LAG
```

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                                       ***

                                         UNIT HYDROGRAPH
                                      8 END-OF-PERIOD ORDINATES
          598.     886.     389.     151.      58.      22.       9.       3.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              ***************
              *             *
   42 KK      *    CP-B     *     COMBINE ROUTED WATERSHED T1 W/ T2 AND T3 AT CONCENTRATION PT B
              *             *
              ***************

   43 HC          HYDROGRAPH COMBINATION
                    ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                       ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              ***************
              *             *
   44 KK      *   RCP-C     *     ROUTE COMBINED T1-T3 TO CONCENTRATION PT C
              *             *
              ***************

               HYDROGRAPH ROUTING DATA

   45 RM          MUSKINGUM ROUTING
                    NSTPS        2  NUMBER OF SUBREACHES
                    AMSKK      .15  MUSKINGUM K
                       X       .40  MUSKINGUM X

                                       ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              ***************
              *             *
   46 KK      *      T4     *     THOMAS CREEK WATERSHED T4
              *             *
              ***************

               SUBBASIN RUNOFF DATA

   47 BA          SUBBASIN CHARACTERISTICS
                    TAREA        2.16  SUBBASIN AREA

                 PRECIPITATION DATA

   48 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .39     .77    1.35   1.64    1.91    2.55    3.38    4.20     .00     .00     .00     .00

                                          STORM AREA =  109.00

   49 LS          SCS LOSS RATE
                    STRTL        1.45  INITIAL ABSTRACTION
                   CRVNBR       58.00  CURVE NUMBER
                    RTIMP         .00  PERCENT IMPERVIOUS AREA

   50 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG          .54  LAG

                                       ***

                                         UNIT HYDROGRAPH
                                     13 END-OF-PERIOD ORDINATES
          441.    1375.    1525.    1059.     536.     298.     160.      85.      47.      25.
           15.       8.       2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              ***************
              *             *
   51 KK      *    CP-C     *     COMBINE ROUTED T1-T3 W/ T4
              *             *
              ***************

   52 HC          HYDROGRAPH COMBINATION
                    ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                       ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
  53 KK      *    RCP-D    *      ROUTE COMBINED T1-T4 TO CONCENTRATION PT D
             *             *
             ***************

          HYDROGRAPH ROUTING DATA

  54 RM          MUSKINGUM ROUTING
                   NSTPS        2 NUMBER OF SUBREACHES
                   AMSKK      .14 MUSKINGUM K
                       X      .40 MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
  55 KK      *      T5     *      THOMAS CREEK WATERSHED T5
             *             *
             ***************

          SUBBASIN RUNOFF DATA

  56 BA          SUBBASIN CHARACTERISTICS
                   TAREA       1.19  SUBBASIN AREA

           PRECIPITATION DATA

  57 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .35     .68    1.20    1.40    1.59    2.04    2.75    3.40     .00     .00     .00     .00

                                   STORM AREA =  109.00

  58 LS          SCS LOSS RATE
                   STRTL        .82  INITIAL ABSTRACTION
                  CRVNBR      71.00  CURVE NUMBER
                   RTIMP       8.00  PERCENT IMPERVIOUS AREA

  59 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG        .49  LAG

                                        ***

                                     UNIT HYDROGRAPH
                                 12 END-OF-PERIOD ORDINATES
        302.      883.      863.      503.      253.      131.       68.       35.       18.       10.
          5.        1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

             ***************
             *             *
  60 KK      *     CP-D    *      COMBINE ROUTED T1-T4 W/ T5
             *             *
             ***************

  62 KO          OUTPUT CONTROL VARIABLES
                   IPRNT          1  PRINT CONTROL
                   IPLOT          1  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE

  61 HC          HYDROGRAPH COMBINATION
                   ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

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*******************************************************************************************************************************

                                                      HYDROGRAPH AT STATION     CP-D
                                                       SUM OF  2 HYDROGRAPHS

*******************************************************************************************************************************
                     *                              *                              *
 DA MON HRMN  ORD       FLOW  *  DA MON HRMN  ORD       FLOW  *  DA MON HRMN  ORD       FLOW  *  DA MON HRMN  ORD       FLOW
                     *                              *                              *
  1    0000   1      0.  *  1    1815  74    415.  *  2    1230  147     0.  *  3    0645  220    0.
  1    0015   2      0.  *  1    1830  75    394.  *  2    1245  148     0.  *  3    0700  221    0.
  1    0030   3      1.  *  1    1845  76    358.  *  2    1300  149     0.  *  3    0715  222    0.
  1    0045   4      2.  *  1    1900  77    322.  *  2    1315  150     0.  *  3    0730  223    0.
  1    0100   5      2.  *  1    1915  78    302.  *  2    1330  151     0.  *  3    0745  224    0.
  1    0115   6      3.  *  1    1930  79    293.  *  2    1345  152     0.  *  3    0800  225    0.
  1    0130   7      3.  *  1    1945  80    285.  *  2    1400  153     0.  *  3    0815  226    0.
  1    0145   8      3.  *  1    2000  81    278.  *  2    1415  154     0.  *  3    0830  227    0.
  1    0200   9      3.  *  1    2015  82    273.  *  2    1430  155     0.  *  3    0845  228    0.
  1    0215  10      3.  *  1    2030  83    268.  *  2    1445  156     0.  *  3    0900  229    0.
  1    0230  11      3.  *  1    2045  84    264.  *  2    1500  157     0.  *  3    0915  230    0.
  1    0245  12      3.  *  1    2100  85    260.  *  2    1515  158     0.  *  3    0930  231    0.
  1    0300  13      3.  *  1    2115  86    256.  *  2    1530  159     0.  *  3    0945  232    0.
  1    0315  14      3.  *  1    2130  87    252.  *  2    1545  160     0.  *  3    1000  233    0.
  1    0330  15      3.  *  1    2145  88    248.  *  2    1600  161     0.  *  3    1015  234    0.
  1    0345  16      3.  *  1    2200  89    245.  *  2    1615  162     0.  *  3    1030  235    0.
  1    0400  17      3.  *  1    2215  90    241.  *  2    1630  163     0.  *  3    1045  236    0.
  1    0415  18      4.  *  1    2230  91    238.  *  2    1645  164     0.  *  3    1100  237    0.
  1    0430  19      4.  *  1    2245  92    235.  *  2    1700  165     0.  *  3    1115  238    0.
  1    0445  20      4.  *  1    2300  93    232.  *  2    1715  166     0.  *  3    1130  239    0.
  1    0500  21      4.  *  1    2315  94    229.  *  2    1730  167     0.  *  3    1145  240    0.
  1    0515  22      4.  *  1    2330  95    227.  *  2    1745  168     0.  *  3    1200  241    0.
  1    0530  23      4.  *  1    2345  96    224.  *  2    1800  169     0.  *  3    1215  242    0.
  1    0545  24      4.  *  2    0000  97    221.  *  2    1815  170     0.  *  3    1230  243    0.
  1    0600  25      4.  *  2    0015  98    213.  *  2    1830  171     0.  *  3    1245  244    0.
  1    0615  26      4.  *  2    0030  99    180.  *  2    1845  172     0.  *  3    1300  245    0.
  1    0630  27      5.  *  2    0045 100    115.  *  2    1900  173     0.  *  3    1315  246    0.
  1    0645  28      6.  *  2    0100 101     49.  *  2    1915  174     0.  *  3    1330  247    0.
  1    0700  29      6.  *  2    0115 102     18.  *  2    1930  175     0.  *  3    1345  248    0.
  1    0715  30      6.  *  2    0130 103     10.  *  2    1945  176     0.  *  3    1400  249    0.
  1    0730  31      7.  *  2    0145 104      4.  *  2    2000  177     0.  *  3    1415  250    0.
  1    0745  32      7.  *  2    0200 105      2.  *  2    2015  178     0.  *  3    1430  251    0.
  1    0800  33      7.  *  2    0215 106      1.  *  2    2030  179     0.  *  3    1445  252    0.
  1    0815  34      7.  *  2    0230 107      0.  *  2    2045  180     0.  *  3    1500  253    0.
  1    0830  35      9.  *  2    0245 108      0.  *  2    2100  181     0.  *  3    1515  254    0.
  1    0845  36     12.  *  2    0300 109      0.  *  2    2115  182     0.  *  3    1530  255    0.
  1    0900  37     18.  *  2    0315 110      0.  *  2    2130  183     0.  *  3    1545  256    0.
  1    0915  38     25.  *  2    0330 111      0.  *  2    2145  184     0.  *  3    1600  257    0.
  1    0930  39     33.  *  2    0345 112      0.  *  2    2200  185     0.  *  3    1615  258    0.
  1    0945  40     43.  *  2    0400 113      0.  *  2    2215  186     0.  *  3    1630  259    0.
  1    1000  41     56.  *  2    0415 114      0.  *  2    2230  187     0.  *  3    1645  260    0.
  1    1015  42     69.  *  2    0430 115      0.  *  2    2245  188     0.  *  3    1700  261    0.
  1    1030  43     85.  *  2    0445 116      0.  *  2    2300  189     0.  *  3    1715  262    0.
  1    1045  44    102.  *  2    0500 117      0.  *  2    2315  190     0.  *  3    1730  263    0.
  1    1100  45    124.  *  2    0515 118      0.  *  2    2330  191     0.  *  3    1745  264    0.
  1    1115  46    151.  *  2    0530 119      0.  *  2    2345  192     0.  *  3    1800  265    0.
  1    1130  47    186.  *  2    0545 120      0.  *  3    0000  193     0.  *  3    1815  266    0.
  1    1145  48    238.  *  2    0600 121      0.  *  3    0015  194     0.  *  3    1830  267    0.
  1    1200  49    328.  *  2    0615 122      0.  *  3    0030  195     0.  *  3    1845  268    0.
  1    1215  50    544.  *  2    0630 123      0.  *  3    0045  196     0.  *  3    1900  269    0.
  1    1230  51    984.  *  2    0645 124      0.  *  3    0100  197     0.  *  3    1915  270    0.
  1    1245  52   1485.  *  2    0700 125      0.  *  3    0115  198     0.  *  3    1930  271    0.
  1    1300  53   1630.  *  2    0715 126      0.  *  3    0130  199     0.  *  3    1945  272    0.
  1    1315  54   1292.  *  2    0730 127      0.  *  3    0145  200     0.  *  3    2000  273    0.
  1    1330  55    948.  *  2    0745 128      0.  *  3    0200  201     0.  *  3    2015  274    0.
  1    1345  56    849.  *  2    0800 129      0.  *  3    0215  202     0.  *  3    2030  275    0.
  1    1400  57    783.  *  2    0815 130      0.  *  3    0230  203     0.  *  3    2045  276    0.
  1    1415  58    713.  *  2    0830 131      0.  *  3    0245  204     0.  *  3    2100  277    0.
  1    1430  59    679.  *  2    0845 132      0.  *  3    0300  205     0.  *  3    2115  278    0.
  1    1445  60    638.  *  2    0900 133      0.  *  3    0315  206     0.  *  3    2130  279    0.
  1    1500  61    613.  *  2    0915 134      0.  *  3    0330  207     0.  *  3    2145  280    0.
  1    1515  62    591.  *  2    0930 135      0.  *  3    0345  208     0.  *  3    2200  281    0.
  1    1530  63    568.  *  2    0945 136      0.  *  3    0400  209     0.  *  3    2215  282    0.
  1    1545  64    544.  *  2    1000 137      0.  *  3    0415  210     0.  *  3    2230  283    0.
  1    1600  65    514.  *  2    1015 138      0.  *  3    0430  211     0.  *  3    2245  284    0.
  1    1615  66    496.  *  2    1030 139      0.  *  3    0445  212     0.  *  3    2300  285    0.
  1    1630  67    481.  *  2    1045 140      0.  *  3    0500  213     0.  *  3    2315  286    0.
  1    1645  68    470.  *  2    1100 141      0.  *  3    0515  214     0.  *  3    2330  287    0.
  1    1700  69    459.  *  2    1115 142      0.  *  3    0530  215     0.  *  3    2345  288    0.
  1    1715  70    450.  *  2    1130 143      0.  *  3    0545  216     0.  *  4    0000  289    0.
  1    1730  71    440.  *  2    1145 144      0.  *  3    0600  217     0.  *
  1    1745  72    433.  *  2    1200 145      0.  *  3    0615  218     0.  *
  1    1800  73    425.  *  2    1215 146      0.  *  3    0630  219     0.  *
                     *                              *                              *
*****************************************************************************************

   PEAK FLOW      TIME                       MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR     72.00-HR
 +   (CFS)        (HR)
                            (CFS)
 +    1630.       13.00                708.        268.         90.         90.
                          (INCHES)     .775       1.176       1.177       1.177
                          (AC-FT)      351.        532.        533.        533.

                  CUMULATIVE AREA =    8.49 SQ MI
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
63 KK         *   RCP-E    *      ROUTE COMBINED T1-T5 TO CONCENTRATION PT E
              *            *
              **************

                HYDROGRAPH ROUTING DATA

64 RM              MUSKINGUM ROUTING
                    NSTPS         3 NUMBER OF SUBREACHES
                    AMSKK       .27 MUSKINGUM K
                       X        .40 MUSKINGUM X

                                                  ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
65 KK         *      T6    *      THOMAS CREEK WATERSHED T6
              *            *
              **************

                SUBBASIN RUNOFF DATA

66 BA              SUBBASIN CHARACTERISTICS
                    TAREA        3.15  SUBBASIN AREA

                 PRECIPITATION DATA

67 PH                              DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .35     .69    1.21    1.34    1.48    1.80    2.30    2.80     .00     .00     .00     .00

                                             STORM AREA =  109.00

68 LS              SCS LOSS RATE
                    STRTL          .67  INITIAL ABSTRACTION
                   CRVNBR        75.00  CURVE NUMBER
                    RTIMP        16.00  PERCENT IMPERVIOUS AREA

69 UD              SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .85  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                             19 END-OF-PERIOD ORDINATES
                236.     773.    1401.    1559.    1364.     991.     615.     408.     273.     178.
                117.      77.      51.      33.      22.      15.      10.       6.       2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
70 KK         *    CP-E    *      COMBINE ROUTED T1-T5 W/ T6
              *            *
              **************

71 HC              HYDROGRAPH COMBINATION
                    ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                  ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
72 KK         *    RT-DD   *      ROUTE THOMAS CK WATERSHED TO END OF DOUBLE DIAMOND
              *            *
              **************

                HYDROGRAPH ROUTING DATA

73 RM              MUSKINGUM ROUTING
                    NSTPS         2 NUMBER OF SUBREACHES
                    AMSKK       .43 MUSKINGUM K
                       X        .40 MUSKINGUM X

                                                  ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 74 KK        *    RT-HN    *   ROUTE THOMAS CREEK TO NARROWS
              *             *
              ***************

                HYDROGRAPH ROUTING DATA

 75 RM              MUSKINGUM ROUTING
                      NSTPS         1  NUMBER OF SUBREACHES
                      AMSKK       .38  MUSKINGUM K
                          X       .10  MUSKINGUM X

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 76 KK        *      W1     *   WHITES CREEK WATERSHED NO. 1
              *             *
              ***************

                SUBBASIN RUNOFF DATA

 77 BA              SUBBASIN CHARACTERISTICS
                      TAREA        1.36  SUBBASIN AREA

                  PRECIPITATION DATA

 78 PH                              DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                    .39    .77   1.35   1.83   2.28   3.34   4.43   5.52    .00    .00    .00    .00

                                          STORM AREA =  109.00

 79 LS              SCS LOSS RATE
                      STRTL         .74  INITIAL ABSTRACTION
                     CRVNBR       73.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 80 UD              SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .21  LAG

                                              ***

                                              UNIT HYDROGRAPH
                                            6 END-OF-PERIOD ORDINATES
               1668.     1317.     374.     109.      33.      10.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
 81 KK        *      W2     *   WHITES CREEK WATERSHED NO. 2
              *             *
              ***************

                SUBBASIN RUNOFF DATA

 82 BA              SUBBASIN CHARACTERISTICS
                      TAREA         .84  SUBBASIN AREA

                  PRECIPITATION DATA

 83 PH                              DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                    .39    .77   1.35   1.80   2.23   3.22   4.31   5.39    .00    .00    .00    .00

                                          STORM AREA =  109.00

 84 LS              SCS LOSS RATE
                      STRTL         .50  INITIAL ABSTRACTION
                     CRVNBR       80.00  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

 85 UD              SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .17  LAG

                                              ***

                                              UNIT HYDROGRAPH
                                            5 END-OF-PERIOD ORDINATES
               1316.      638.     163.      41.      11.
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 86 KK   *   W1+W2     *    COMBINE FLOW FROM W1 AND W2
         *             *
         ***************

 87 HC            HYDROGRAPH COMBINATION
                   ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 88 KK   *    RT-A     *    ROUTE COMBINED W1 AND W2 TO POINT A
         *             *
         ***************

              HYDROGRAPH ROUTING DATA

 89 RM            MUSKINGUM ROUTING
                   NSTPS         1 NUMBER OF SUBREACHES
                   AMSKK       .12 MUSKINGUM K
                      X        .40 MUSKINGUM X

                                              ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 90 KK   *     W3      *    WHITES CREEK WATERSHED NO. 3
         *             *
         ***************

              SUBBASIN RUNOFF DATA

 91 BA            SUBBASIN CHARACTERISTICS
                   TAREA        1.38  SUBBASIN AREA

               PRECIPITATION DATA

 92 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .39     .77    1.36    1.78    2.18    3.12    4.15    5.17     .00     .00     .00     .00

                                    STORM AREA =  109.00

 93 LS            SCS LOSS RATE
                   STRTL         .78  INITIAL ABSTRACTION
                  CRVNBR       72.00  CURVE NUMBER
                   RTIMP         .00  PERCENT IMPERVIOUS AREA

 94 UD            SCS DIMENSIONLESS UNITGRAPH
                    TLAG         .23  LAG

                                              ***

                                           UNIT HYDROGRAPH
                                         7 END-OF-PERIOD ORDINATES
          1512.    1414.     438.     138.      44.      15.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
 95 KK   *    RT-A     *    ROUTE W3 TO POINT A
         *             *
         ***************

              HYDROGRAPH ROUTING DATA

 96 RM            MUSKINGUM ROUTING
                   NSTPS         1 NUMBER OF SUBREACHES
                   AMSKK       .09 MUSKINGUM K
                      X        .40 MUSKINGUM X

                                              ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
97 KK     *     W4     *     WHITES CREEK WATERSHED NO. 4
          *            *
          **************

            SUBBASIN RUNOFF DATA

98 BA            SUBBASIN CHARACTERISTICS
                   TAREA         1.47  SUBBASIN AREA

             PRECIPITATION DATA

99 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY  4-DAY  7-DAY  10-DAY
               .38     .75    1.32    1.71   2.08   2.95   3.94    4.94     .00    .00    .00     .00

                                 STORM AREA =  109.00

100 LS           SCS LOSS RATE
                   STRTL        1.23  INITIAL ABSTRACTION
                  CRVNBR       62.00  CURVE NUMBER
                   RTIMP         .00  PERCENT IMPERVIOUS AREA

101 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG          .27  LAG

                                         ***

                                      UNIT HYDROGRAPH
                                  7 END-OF-PERIOD ORDINATES
         1281.     1588.     594.     217.      77.      27.      10.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
102 KK    *   W1234    *     COMBINE ROUTED W1&W2 WITH ROUTED W3 AND W4 AT POINT A
          *            *
          **************

103 HC           HYDROGRAPH COMBINATION
                   ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
104 KK    *    RT-B    *     ROUTE COMBINED HYDROGRAPH TO POINT B
          *            *
          **************

            HYDROGRAPH ROUTING DATA

105 RM           MUSKINGUM ROUTING
                   NSTPS        1 NUMBER OF SUBREACHES
                   AMSKK      .08 MUSKINGUM K
                     X      .40 MUSKINGUM X

                                         ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
106 KK        *     W5     *    WHITES CREEK WATERSHED NO. 5
              *            *
              **************

               SUBBASIN RUNOFF DATA

107 BA            SUBBASIN CHARACTERISTICS
                   TAREA        1.27  SUBBASIN AREA

                PRECIPITATION DATA

108 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                  .38    .75   1.31   1.67   2.01   2.80   3.78   4.77    .00    .00    .00    .00

                                        STORM AREA =  109.00

109 LS            SCS LOSS RATE
                   STRTL        1.23  INITIAL ABSTRACTION
                  CRVNBR       62.00  CURVE NUMBER
                   RTIMP         .00  PERCENT IMPERVIOUS AREA

110 UD            SCS DIMENSIONLESS UNITGRAPH
                   TLAG          .28  LAG

                                                ***

                                             UNIT HYDROGRAPH
                                         8 END-OF-PERIOD ORDINATES
            1044.    1375.     545.     202.      74.      27.      11.       1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
111 KK        *   W5+CH    *    COMBINE W5 WITH ROUTED HYDROGRAPH AT POINT B
              *            *
              **************

112 HC            HYDROGRAPH COMBINATION
                   ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
113 KK        *    RT-C    *    ROUTE COMBINED HYDROGRAPH TO POINT C
              *            *
              **************

               HYDROGRAPH ROUTING DATA

114 RM            MUSKINGUM ROUTING
                   NSTPS           2  NUMBER OF SUBREACHES
                   AMSKK         .19  MUSKINGUM K
                       X         .40  MUSKINGUM X

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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         *            *
115 KK   *     W6     *   WHITES CREEK WATERSHED NO. 6
         *            *
         **************

           SUBBASIN RUNOFF DATA

116 BA        SUBBASIN CHARACTERISTICS
               TAREA       1.43  SUBBASIN AREA

            PRECIPITATION DATA

117 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .36    .71    1.24   1.55   1.86   2.56   3.34   4.12    .00    .00    .00    .00

                                STORM AREA =  109.00

118 LS        SCS LOSS RATE
               STRTL       1.28  INITIAL ABSTRACTION
              CRVNBR      61.00  CURVE NUMBER
               RTIMP        .00  PERCENT IMPERVIOUS AREA

119 UD        SCS DIMENSIONLESS UNITGRAPH
               TLAG         .44  LAG

                                         ***

                                   UNIT HYDROGRAPH
                                 11 END-OF-PERIOD ORDINATES
           465.    1207.    1031.    506.    250.    122.     59.     29.     14.      7.
             2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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         *            *
120 KK   *   W6+CH    *   COMBINE W6 WITH ROUTED HYDROGRAPH AT POINT C. (WALLER'S CP 42)
         *            *
         **************

121 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

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         *            *
122 KK   *   RT-D     *   ROUTE COMBINED HYDROGRAPH TO POINT D
         *            *
         **************

           HYDROGRAPH ROUTING DATA

123 RM        MUSKINGUM ROUTING
               NSTPS          3  NUMBER OF SUBREACHES
               AMSKK        .30  MUSKINGUM K
                  X         .40  MUSKINGUM X

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         *            *
124 KK   *     W7     *   WHITES CREEK WATERSHED NO.7
         *            *
         **************

           SUBBASIN RUNOFF DATA

125 BA        SUBBASIN CHARACTERISTICS
               TAREA       1.30  SUBBASIN AREA

            PRECIPITATION DATA

126 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
             .33    .64    1.12   1.34   1.55   2.03   2.69   3.36    .00    .00    .00    .00

                                STORM AREA =  109.00
```

```
127 LS        SCS LOSS RATE
               STRTL        .94  INITIAL ABSTRACTION
              CRVNBR       68.00  CURVE NUMBER
               RTIMP        8.00  PERCENT IMPERVIOUS AREA

128 UD         SCS DIMENSIONLESS UNITGRAPH
                TLAG         .50  LAG

                                          ***

                                     UNIT HYDROGRAPH
                                  12 END-OF-PERIOD ORDINATES
          314.     942.     942.     567.     284.     149.      78.      41.      21.      11.
            6.       2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


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         *             *
129 KK   *    W7+CH    *   COMBINE W7 WITH ROUTED HYDROGRAPH AT POINT D
         *             *
         ***************

130 HC         HYDROGRAPH COMBINATION
                ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
131 KK   *    RT-E     *   ROUTE COMBINED HYDROGRAPH TO POINT E
         *             *
         ***************

            HYDROGRAPH ROUTING DATA

132 RM         MUSKINGUM ROUTING
                NSTPS         2 NUMBER OF SUBREACHES
                AMSKK       .14 MUSKINGUM K
                    X       .40 MUSKINGUM X

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
133 KK   *     W8      *   WHITES CREEK WATERSHED NO. 8
         *             *
         ***************

            SUBBASIN RUNOFF DATA

134 BA         SUBBASIN CHARACTERISTICS
                TAREA       4.37  SUBBASIN AREA

             PRECIPITATION DATA

135 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .32     .64    1.12    1.28    1.43    1.79    2.29    2.79     .00     .00     .00     .00

                                      STORM AREA =  109.00

136 LS         SCS LOSS RATE
                STRTL        .94  INITIAL ABSTRACTION
               CRVNBR      68.00  CURVE NUMBER
                RTIMP      17.00  PERCENT IMPERVIOUS AREA

137 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .53  LAG

                                          ***

                                     UNIT HYDROGRAPH
                                  13 END-OF-PERIOD ORDINATES
          929.    2870.    3106.    2090.    1051.     581.     310.     164.      89.      47.
           28.      14.       1.
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
138 KK    *    W8+CH    *    COMBINE W8 WITH ROUTED HYDROGRAPH AT POINT E
          *             *
          ***************

139 HC         HYDROGRAPH COMBINATION
                ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                       ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
140 KK    *    RT-F     *    ROUTE COMBINED HYDROGRAPH TO POINT F
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

141 RM         MUSKINGUM ROUTING
                NSTPS         1 NUMBER OF SUBREACHES
                AMSKK       .24 MUSKINGUM K
                    X       .40 MUSKINGUM X

                                       ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
142 KK    *     46      *    WHITES CREEK WATERSHED 46
          *             *
          ***************

            SUBBASIN RUNOFF DATA

143 BA         SUBBASIN CHARACTERISTICS
                TAREA        2.69  SUBBASIN AREA

             PRECIPITATION DATA

144 PH                             DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
               .36    .70    1.23   1.39   1.52   1.78   2.26   2.75    .00    .00    .00    .00

                                     STORM AREA =  109.00

145 LS         SCS LOSS RATE
                STRTL        1.03  INITIAL ABSTRACTION
               CRVNBR       66.00  CURVE NUMBER
                RTIMP       25.00  PERCENT IMPERVIOUS AREA

146 UD         SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .50  LAG

                                       ***

                                        UNIT HYDROGRAPH
                                    12 END-OF-PERIOD ORDINATES
          649.    1948.    1948.    1173.     587.     308.     161.      84.      44.      23.
           13.       4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
147 KK    *    46+CH    *    COMBINE 46 WITH ROUTED HYDROGRAPH AT POINT F
          *             *
          ***************

148 HC         HYDROGRAPH COMBINATION
                ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                       ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
149 KK    *   RT-DD    *   ROUTE COMBINED HYDROGRAPH TO END OF DOUBLE DIAMOND
          *            *
          **************

             HYDROGRAPH ROUTING DATA

150 RM           MUSKINGUM ROUTING
                  NSTPS         2 NUMBER OF SUBREACHES
                  AMSKK       .53 MUSKINGUM K
                     X      .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
151 KK    *   RT-HN    *   ROUTE FLOWS TO NARROWS
          *            *
          **************

             HYDROGRAPH ROUTING DATA

152 RM           MUSKINGUM ROUTING
                  NSTPS         1 NUMBER OF SUBREACHES
                  AMSKK       .30 MUSKINGUM K
                     X 800000.10 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
153 KK    *     G1     *   GLENA CREEK WATERSHED NO.1
          *            *
          **************

             SUBBASIN RUNOFF DATA

154 BA           SUBBASIN CHARACTERISTICS
                  TAREA        1.63  SUBBASIN AREA

               PRECIPITATION DATA

155 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR  12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                 .40     .79    1.39   1.85   2.29   3.31   4.46   5.60    .00    .00    .00    .00

                                        STORM AREA =  109.00

156 LS           SCS LOSS RATE
                  STRTL        .67  INITIAL ABSTRACTION
                 CRVNBR      75.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

157 UD           SCS DIMENSIONLESS UNITGRAPH  --
                   TLAG        .20  LAG

                                        ***

                                           UNIT HYDROGRAPH
                                        6 END-OF-PERIOD ORDINATES
            2128.    1505.    415.    117.     33.      9.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
158 KK    *    RT-G    *   ROUTE G1 TO POINT G
          *            *
          **************

             HYDROGRAPH ROUTING DATA

159 RM           MUSKINGUM ROUTING
                  NSTPS         1 NUMBER OF SUBREACHES
                  AMSKK       .10 MUSKINGUM K
                     X      .40 MUSKINGUM X

                                        ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
160 KK      *     G2     *    GALENA CREEK WATERSHED NO. 2
            *            *
            **************

             SUBBASIN RUNOFF DATA

161 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.30  SUBBASIN AREA

              PRECIPITATION DATA

162 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .39     .77    1.35    1.76    2.16    3.08    4.10    5.12     .00     .00     .00     .00

                                    STORM AREA =  109.00

163 LS          SCS LOSS RATE
                 STRTL         .67  INITIAL ABSTRACTION
                CRVNBR       75.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

164 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG          .20  LAG

                                           ***

                                             UNIT HYDROGRAPH
                                         6 END-OF-PERIOD ORDINATES
         1697.     1200.     331.      93.      27.       7.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
165 KK      *     G3     *    GALENA CREEK WATERSHED NO. 3
            *            *
            **************

             SUBBASIN RUNOFF DATA

166 BA          SUBBASIN CHARACTERISTICS
                 TAREA        1.15  SUBBASIN AREA

              PRECIPITATION DATA

167 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
               .38     .74    1.30    1.69    2.05    2.90    3.95    4.99     .00     .00     .00     .00

                                    STORM AREA =  109.00

168 LS          SCS LOSS RATE
                 STRTL         .90  INITIAL ABSTRACTION
                CRVNBR       69.00  CURVE NUMBER
                 RTIMP         .00  PERCENT IMPERVIOUS AREA

169 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG          .36  LAG

                                           ***

                                             UNIT HYDROGRAPH
                                         9 END-OF-PERIOD ORDINATES
          576.     1151.      721.     297.     129.      55.      24.      11.       4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            **************
            *            *
170 KK      *    G123    *    COMBINE ROUTED G1 WITH G2 AND G3
            *            *
            **************

171 HC          HYDROGRAPH COMBINATION
                 ICOMP           3  NUMBER OF HYDROGRAPHS TO COMBINE

                                           ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
172 KK    *    RT-H     *    ROUTE COMBINED HYDROGRAPH TO POINT H
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

173 RM           MUSKINGUM ROUTING
                  NSTPS        2 NUMBER OF SUBREACHES
                  AMSKK      .17 MUSKINGUM K
                     X      .40 MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
174 KK    *     G4      *    GALENA CREEK WATERSHED NO. 4
          *             *
          ***************

             SUBBASIN RUNOFF DATA

175 BA           SUBBASIN CHARACTERISTICS
                  TAREA        1.54  SUBBASIN AREA

              PRECIPITATION DATA

176 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY  4-DAY   7-DAY  10-DAY
                .38     .75    1.32    1.68    2.02    2.83    3.79    4.74     .00    .00     .00     .00

                                       STORM AREA =  109.00

177 LS           SCS LOSS RATE
                  STRTL        1.17  INITIAL ABSTRACTION
                 CRVNBR       63.00  CURVE NUMBER
                  RTIMP         .00  PERCENT IMPERVIOUS AREA

178 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG         .25  LAG

                                         ***

                                           UNIT HYDROGRAPH
                                        7 END-OF-PERIOD ORDINATES
           1506.     1637.     550.     191.      64.      22.       7.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
179 KK    *     G5      *    GALENA CREEK WATERSHED NO. 5
          *             *
          ***************

             SUBBASIN RUNOFF DATA

180 BA           SUBBASIN CHARACTERISTICS
                  TAREA        1.02  SUBBASIN AREA

              PRECIPITATION DATA

181 PH                            DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY  4-DAY   7-DAY  10-DAY
                .38     .75    1.32    1.67    1.99    2.75    3.70    4.64     .00    .00     .00     .00

                                       STORM AREA =  109.00

182 LS           SCS LOSS RATE
                  STRTL        1.64  INITIAL ABSTRACTION
                 CRVNBR       55.00  CURVE NUMBER
                  RTIMP         .00  PERCENT IMPERVIOUS AREA

183 UD           SCS DIMENSIONLESS UNITGRAPH
                   TLAG         .32  LAG

                                         ***

                                           UNIT HYDROGRAPH
                                        8 END-OF-PERIOD ORDINATES
            657.     1091.     531.     216.      85.      34.      14.       6.
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
184 KK    *    G1-5     *   COMBINE ROUTED HYDS FOR G1-G3 WITH HYDS FOR G4 AND G5 AT POINT H
          *             *
          ***************

185 HC         HYDROGRAPH COMBINATION
                ICOMP         3  NUMBER OF HYDROGRAPHS TO COMBINE

                                           ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
186 KK    *    RT-I     *   ROUTE COMBINED HYDROGRAPHS TO POINT I
          *             *
          ***************

             HYDROGRAPH ROUTING DATA

187 RM         MUSKINGUM ROUTING                  \
                NSTPS         2 NUMBER OF SUBREACHES
                AMSKK       .17 MUSKINGUM K
                   X        .40 MUSKINGUM X

                                           ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
188 KK    *     G6      *   GALENA CREEK WATERSHED N0.6
          *             *
          ***************

             SUBBASIN RUNOFF DATA

189 BA         SUBBASIN CHARACTERISTICS
                TAREA        1.37  SUBBASIN AREA

              PRECIPITATION DATA

190 PH                       DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
               .37    .72    1.26    1.57   1.87   2.56   3.33   4.10    .00    .00    .00    .00

                                        STORM AREA =  109.00

191 LS         SCS LOSS RATE
                STRTL        1.39  INITIAL ABSTRACTION
                CRVNBR      59.00  CURVE NUMBER
                RTIMP        2.50  PERCENT IMPERVIOUS AREA

192 UD         SCS DIMENSIONLESS UNITGRAPH
                TLAG          .58  LAG

                                           ***

                                     UNIT HYDROGRAPH
                                  14 END-OF-PERIOD ORDINATES
             239.     778.     931.     713.     383.     219.     122.      68.      38.      22.
              12.       7.       4.       0.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
193 KK    *    G6+CH    *   COMBINE G6 WITH COMBINED HYDROGRAPH AT POINT I
          *             *
          ***************

194 HC         HYDROGRAPH COMBINATION
                ICOMP         2  NUMBER OF HYDROGRAPHS TO COMBINE

                                           ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
195 KK     *    RT-K    *    ROUTE COMBINED HYDROGRAPH TO POINT K
           *            *
           **************

              HYDROGRAPH ROUTING DATA

196 RM           MUSKINGUM ROUTING
                  NSTPS         1 NUMBER OF SUBREACHES
                  AMSKK       .07 MUSKINGUM K
                     X      .40 MUSKINGUM X

                                           ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
197 KK     *     J1     *    JONES CREEK WATERSHED NO. 1
           *            *
           **************

              SUBBASIN RUNOFF DATA

198 BA           SUBBASIN CHARACTERISTICS
                  TAREA       1.29  SUBBASIN AREA

               PRECIPITATION DATA

199 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                 .39     .76    1.33   1.67   2.00   2.75   3.69   4.62    .00    .00    .00    .00

                                        STORM AREA =  109.00

200 LS           SCS LOSS RATE
                  STRTL       1.17  INITIAL ABSTRACTION
                  CRVNBR     63.00  CURVE NUMBER
                  RTIMP        .00  PERCENT IMPERVIOUS AREA

201 UD           SCS DIMENSIONLESS UNITGRAPH
                  TLAG         .23  LAG

                                           ***

                                              UNIT HYDROGRAPH
                                          7 END-OF-PERIOD ORDINATES
           1413.    1322.    409.    129.     41.     14.      1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
202 KK     *    RT-J    *    ROUTE JI TO POINT J
           *            *
           **************

              HYDROGRAPH ROUTING DATA

203 RM           MUSKINGUM ROUTING
                  NSTPS         2 NUMBER OF SUBREACHES
                  AMSKK       .19 MUSKINGUM K
                     X      .40 MUSKINGUM X

                                           ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

           **************
           *            *
204 KK     *     J2     *    JONES CREEK WATERSHED NO. 2
           *            *
           **************

              SUBBASIN RUNOFF DATA

205 BA           SUBBASIN CHARACTERISTICS
                  TAREA       1.95  SUBBASIN AREA

               PRECIPITATION DATA

206 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR  24-HR  2-DAY  4-DAY  7-DAY  10-DAY
                 .35     .70    1.22   1.52   1.80   2.45   3.22   3.98    .00    .00    .00    .00

                                        STORM AREA =  109.00
```

```
207 LS         SCS LOSS RATE
                 STRTL       1.13  INITIAL ABSTRACTION
                CRVNBR       64.00  CURVE NUMBER
                 RTIMP       3.40  PERCENT IMPERVIOUS AREA

208 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .43  LAG

                                         ***

                                      UNIT HYDROGRAPH
                                  11 END-OF-PERIOD ORDINATES
          666.   1688.    1397.    663.    326.    156.    74.     36.      18.      8.
            1.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


       **************
       *            *
209 KK  *   J1+J2   *     COMBINE ROUTED J1 WITH J2 AT POINT J
       *            *
       **************

210 HC          HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


       **************
       *            *
211 KK  *    RT-K   *     ROUTE COMBINED J1 AND J2 TO POINT K
       *            *
       **************

           HYDROGRAPH ROUTING DATA

212 RM          MUSKINGUM ROUTING
                 NSTPS        1 NUMBER OF SUBREACHES
                 AMSKK      .10 MUSKINGUM K
                    X      .40 MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


       **************
       *            *
213 KK  *     G8    *     GALENA CREEK WATERSHED NO.8
       *            *
       **************

           SUBBASIN RUNOFF DATA

214 BA          SUBBASIN CHARACTERISTICS
                 TAREA        2.19  SUBBASIN AREA

             PRECIPITATION DATA

215 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR  2-DAY  4-DAY  7-DAY  10-DAY
              .34     .66    1.16    1.40    1.62    2.13    2.77    3.41    .00    .00    .00    .00

                                STORM AREA =  109.00

216 LS          SCS LOSS RATE
                 STRTL        .90  INITIAL ABSTRACTION
                CRVNBR       69.00  CURVE NUMBER
                 RTIMP       6.00  PERCENT IMPERVIOUS AREA

217 UD           SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .35  LAG

                                         ***

                                      UNIT HYDROGRAPH
                                   9 END-OF-PERIOD ORDINATES
          1168.    2235.    1315.    543.    230.     97.     41.     19.      6.
```

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
218 KK    *     G+J     *    COMBINE ROUTED GALENA CK WITH G8 AND ROUTED JONES CK AT POINT K
          *             *
          ***************

219 HC          HYDROGRAPH COMBINATION
                 ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
220 KK    *    RT-L     *    ROUTE COMBINED HYDROGRAPH TO PT L
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

221 RM          MUSKINGUM ROUTING
                 NSTPS          1 NUMBER OF SUBREACHES
                 AMSKK        .13 MUSKINGUM K
                     X        .40 MUSKINGUM X

                                                   ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
222 KK    *     G7      *    GALENA CREEK WATERSHED NO. 7
          *             *
          ***************

            SUBBASIN RUNOFF DATA

223 BA          SUBBASIN CHARACTERISTICS
                 TAREA       1.50  SUBBASIN AREA

             PRECIPITATION DATA

224 PH                         DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
             ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
             5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .35     .69    1.22    1.50   1.77   2.40   3.10    3.60     .00     .00     .00     .00

                                        STORM AREA =  109.00

225 LS          SCS LOSS RATE
                 STRTL       1.23  INITIAL ABSTRACTION
                CRVNBR      62.00  CURVE NUMBER
                 RTIMP       5.00  PERCENT IMPERVIOUS AREA

226 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG         .36  LAG

                                                   ***

                                              UNIT HYDROGRAPH
                                           9 END-OF-PERIOD ORDINATES
            752.    1501.     940.     386.     166.      72.      31.      14.       5.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
227 KK    *    RT-L     *    ROUTE G7 TO OINT L
          *             *
          ***************

            HYDROGRAPH ROUTING DATA

228 RM          MUSKINGUM ROUTING
                 NSTPS          1 NUMBER OF SUBREACHES
                 AMSKK        .13 MUSKINGUM K
                     X        .40 MUSKINGUM X

                                                   ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              ***************
              *             *
229 KK        *     G9      *     GALENA CREEK WATERSHED NO. 9
              *             *
              ***************

               SUBBASIN RUNOFF DATA

230 BA              SUBBASIN CHARACTERISTICS
                      TAREA        3.07  SUBBASIN AREA

                 PRECIPITATION DATA

231 PH                               DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 ......   ................ TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .33     .65    1.14    1.35    1.56    2.04    2.60    3.16     .00     .00     .00     .00

                                          STORM AREA =  109.00

232 LS              SCS LOSS RATE
                      STRTL        .90  INITIAL ABSTRACTION
                     CRVNBR      69.00  CURVE NUMBER
                      RTIMP       3.40  PERCENT IMPERVIOUS AREA

233 UD              SCS DIMENSIONLESS UNITGRAPH
                       TLAG       1.67  LAG

                                                    ***


                                              UNIT HYDROGRAPH
                                         35 END-OF-PERIOD ORDINATES
                47.      141.      280.      478.      672.      786.      824.      811.      737.      649.
               530.      404.      317.      252.      204.      164.      129.      104.       83.       65.
                52.       41.       33.       27.       21.       17.       13.       11.     . 9.        7.
                 6.        5.        3.        2.        1.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              ***************
              *             *
234 KK        *    PT-L     *     COMBINE ROUTED JONES CK WITH ROUTED GALENA CK AND G9 AT POINT L  AKA 25
              *             *
              ***************

235 HC              HYDROGRAPH COMBINATION
                      ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                    ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              ***************
              *             *
236 KK        *    RT-PV    *     ROUTE GALENA CK HYDROGRAPH TO PLEASANT VALLEY
              *             *
              ***************

               HYDROGRAPH ROUTING DATA

237 RM              MUSKINGUM ROUTING
                      NSTPS          2  NUMBER OF SUBREACHES
                      AMSKK        .17  MUSKINGUM K
                          X        .40  MUSKINGUM X

                                                    ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


              ***************
              *             *
238 KK        *     B1      *     BROWNS CREEK WATERSHED NO. 1
              *             *
              ***************

               SUBBASIN RUNOFF DATA

239 BA              SUBBASIN CHARACTERISTICS
                      TAREA        2.16  SUBBASIN AREA

                 PRECIPITATION DATA

240 PH                               DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 ......   ................ TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .38     .74    1.30    1.63    1.95    2.70    3.62    4.53     .00     .00     .00     .00

                                          STORM AREA =  109.00
```

```
241 LS        SCS LOSS RATE
               STRTL      1.23  INITIAL ABSTRACTION
              CRVNBR     62.00  CURVE NUMBER
               RTIMP       .00  PERCENT IMPERVIOUS AREA

242 UD         SCS DIMENSIONLESS UNITGRAPH
                TLAG        .44  LAG

                                        ***

                                   UNIT HYDROGRAPH
                                 11 END-OF-PERIOD ORDINATES
          709.    1840.    1572.    771.     381.     185.     89.      44.      21.      11.
            2.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
243 KK      *    RT-M     *    ROUTE B1 TO POINT M
            *             *
            ***************

          HYDROGRAPH ROUTING DATA

244 RM         MUSKINGUM ROUTING
                NSTPS        2 NUMBER OF SUBREACHES
                AMSKK      .17 MUSKINGUM K
                   X      .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
245 KK      *     B2      *    BROWNS CREEK WATERSHED NO. 2
            *             *
            ***************

          SUBBASIN RUNOFF DATA

246 BA         SUBBASIN CHARACTERISTICS
                TAREA       1.42  SUBBASIN AREA

           PRECIPITATION DATA

247 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......  ............... TP-40 ...............  ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .38     .71    1.25    1.55    1.83    2.49    3.25    4.00     .00     .00     .00     .00

                                     STORM AREA =  109.00

248 LS         SCS LOSS RATE
                STRTL      1.33  INITIAL ABSTRACTION
               CRVNBR     60.00  CURVE NUMBER
                RTIMP       .00  PERCENT IMPERVIOUS AREA

249 UD          SCS DIMENSIONLESS UNITGRAPH
                 TLAG        .35  LAG

                                        ***

                                     UNIT HYDROGRAPH
                                  9 END-OF-PERIOD ORDINATES
          757.    1449.    852.     352.     149.     63.      27.      12.       4.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

            ***************
            *             *
250 KK      *    B1+B2    *    COMBINE ROUTED B1 WITH B2 AT POINT M
            *             *
            ***************

251 HC          HYDROGRAPH COMBINATION
                 ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***
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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
252 KK        *    RT-N     *     ROUTE COMBINED HYDROGRAPH TO POINT N
              *             *
              ***************

                 HYDROGRAPH ROUTING DATA

253 RM              MUSKINGUM ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                     AMSKK        .10  MUSKINGUM K
                       X          .40  MUSKINGUM X

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
254 KK        *     B3      *     BROWNS CREEK WATERSHED NO. 3
              *             *
              ***************

                 SUBBASIN RUNOFF DATA

255 BA              SUBBASIN CHARACTERISTICS
                     TAREA        .53  SUBBASIN AREA

                  PRECIPITATION DATA

256 PH                           DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .34     .67    1.18    1.43    1.66    2.22    2.82    3.42     .00     .00     .00     .00

                                          STORM AREA =  109.00

257 LS              SCS LOSS RATE
                     STRTL        .99  INITIAL ABSTRACTION
                    CRVNBR      67.00  CURVE NUMBER
                     RTIMP        .00  PERCENT IMPERVIOUS AREA

258 UD              SCS DIMENSIONLESS UNITGRAPH
                      TLAG        .36  LAG

                                          ***

                                             UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
                 266.     530.     332.     137.      59.      26.      11.       5.       2.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
259 KK        *    B123     *     COMBINE ROUTED B1 AND B2 WITH B3
              *             *
              ***************

260 HC              HYDROGRAPH COMBINATION
                     ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                          ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              ***************
              *             *
261 KK        *    RT-PV    *     ROUTE BROWNS CREEK HYDROGRAPH TO PLEASANT VALLEY
              *             *
              ***************

                 HYDROGRAPH ROUTING DATA

262 RM              MUSKINGUM ROUTING
                     NSTPS          3  NUMBER OF SUBREACHES
                     AMSKK        .31  MUSKINGUM K
                       X          .40  MUSKINGUM X

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
263 KK   *   PLEASV    *    COMBINE GALENA CK AND BROWNS CK AT PLEASANT VALLEY
         *             *
         ***************

264 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
265 KK   *    RT-SG    *    ROUTE STEAMBOAT CK TO STEAMBOAT GAGE
         *             *
         ***************

            HYDROGRAPH ROUTING DATA

266 RM        MUSKINGUM ROUTING
               NSTPS          3  NUMBER OF SUBREACHES
               AMSKK        .21  MUSKINGUM K
                  X         .40  MUSKINGUM X

                                         ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
267 KK   *      30     *    STEAMBOAT WATERSHED NO. 30 WITH WASHOE LK INCLUDED AS 500 CFS BASE FLOW
         *             *
         ***************

            SUBBASIN RUNOFF DATA

268 BA        SUBBASIN CHARACTERISTICS
               TAREA      17.80  SUBBASIN AREA

269 BF        BASE FLOW CHARACTERISTICS
               STRTQ     500.00  INITIAL FLOW
               QRCSN     500.00  BEGIN BASE FLOW RECESSION
               RTIOR    1.00000  RECESSION CONSTANT

             PRECIPITATION DATA

270 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
            ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
            5-MIN  15-MIN  60-MIN   2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
              .32     .64    1.12   1.28    1.44    1.80    2.34    2.87     .00     .00     .00     .00

                                    STORM AREA =  109.00

271 LS        SCS LOSS RATE
               STRTL        .60  INITIAL ABSTRACTION
              CRVNBR      77.00  CURVE NUMBER
               RTIMP       3.00  PERCENT IMPERVIOUS AREA

272 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG        .82  LAG

                                         ***

                                    UNIT HYDROGRAPH
                                  18 END-OF-PERIOD ORDINATES
          1439.    4783.    8404.    9052.    7665.    5238.    3268.    2163.    1391.     912.
           591.     382.     250.     163.     106.      75.      46.      22.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

         ***************
         *             *
273 KK   *    STMBT    *    COMBINE ROUTED GALENA, JONES, BROWNS, WASHOE LK, AREA 30 AT STEAMBOAT
         *             *
         ***************

274 HC        HYDROGRAPH COMBINATION
               ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

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*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
275 KK    *   RT-341   *    ROUTE COMBINED HYDROGRAPH TO HWY 341
          *            *
          **************

             HYDROGRAPH ROUTING DATA

276 RM          MUSKINGUM ROUTING
                 NSTPS       2 NUMBER OF SUBREACHES
                 AMSKK     .41 MUSKINGUM K
                   X     .40 MUSKINGUM X

                                        ***

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
277 KK    *     35     *    WATERSHED 35 AKA BAILEY CANYON
          *            *
          **************

             SUBBASIN RUNOFF DATA

278 BA          SUBBASIN CHARACTERISTICS
                 TAREA      15.50  SUBBASIN AREA

279 BF          BASE FLOW CHARACTERISTICS
                 STRTQ        .00  INITIAL FLOW
                 QRCSN         .00  BEGIN BASE FLOW RECESSION
                 RTIOR    1.00000  RECESSION CONSTANT

              PRECIPITATION DATA

280 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .39     .77    1.34    1.53    1.68    1.98    2.51    3.04     .00     .00     .00     .00

                                     STORM AREA =  109.00

281 LS          SCS LOSS RATE
                 STRTL        .44  INITIAL ABSTRACTION
                CRVNBR       82.00  CURVE NUMBER
                 RTIMP       2.00  PERCENT IMPERVIOUS AREA

282 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .72  LAG

                                        ***

                                          UNIT HYDROGRAPH
                                      16 END-OF-PERIOD ORDINATES
            1648.    5702.    8695.    8318.    8201.    3605.    2249.    1389.     864.     527.
             327.     203.     125.      82.      51.      24.

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
283 KK    *     40     *    WATERSHED NO.40
          *            *
          **************

             SUBBASIN RUNOFF DATA

284 BA          SUBBASIN CHARACTERISTICS
                 TAREA       2.63  SUBBASIN AREA

279 BF          BASE FLOW CHARACTERISTICS
                 STRTQ        .00  INITIAL FLOW
                 QRCSN         .00  BEGIN BASE FLOW RECESSION
                 RTIOR    1.00000  RECESSION CONSTANT

              PRECIPITATION DATA

285 PH                          DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .35     .69    1.21    1.38    1.51    1.78    2.29    2.81     .00     .00     .00     .00

                                     STORM AREA =  109.00

286 LS          SCS LOSS RATE
                 STRTL        .60  INITIAL ABSTRACTION
                CRVNBR       77.00  CURVE NUMBER
                 RTIMP      15.00  PERCENT IMPERVIOUS AREA

287 UD          SCS DIMENSIONLESS UNITGRAPH
                  TLAG        .30  LAG
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                                        ***

                                 UNIT HYDROGRAPH
                               8 END-OF-PERIOD ORDINATES
        1919.    2842.    1248.    485.    185.    72.    29.     9.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

        ***************
        *             *
288 KK  *   HY-341    *    COMBINE STEAMBOAT CR WITH AREAS 35 AND 40 AT HWY 341
        *             *
        ***************

289 HC        HYDROGRAPH COMBINATION
               ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

        ***************
        *             *
290 KK  *    RT-DD    *    ROUTE COMBINED HYDROGRAPH TO END OF PROPOSED DEVELOPMENT
        *             *
        ***************

          HYDROGRAPH ROUTING DATA

291 RM        MUSKINGUM ROUTING
               NSTPS          2  NUMBER OF SUBREACHES
               AMSKK        .55  MUSKINGUM K
                 X          .40  MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

        ***************
        *             *
292 KK  *    RT-HN    *    ROUTE FLOWS TO NARROWS
        *             *
        ***************

          HYDROGRAPH ROUTING DATA

293 RM        MUSKINGUM ROUTING
               NSTPS         10  NUMBER OF SUBREACHES
               AMSKK        .80  MUSKINGUM K
                 X          .10  MUSKINGUM X

                                        ***


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

        ***************
        *             *
294 KK  *     60      *    WATERSHED NO. 60
        *             *
        ***************

          SUBBASIN RUNOFF DATA

295 BA        SUBBASIN CHARACTERISTICS
               TAREA      23.15  SUBBASIN AREA

279 BF        BASE FLOW CHARACTERISTICS
               STRTQ        .00  INITIAL FLOW
               QRCSN        .00  BEGIN BASE FLOW RECESSION
               RTIOR    1.00000  RECESSION CONSTANT

           PRECIPITATION DATA

296 PH                        DEPTHS FOR   1-PERCENT HYPOTHETICAL STORM
           ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
           5-MIN  15-MIN  60-MIN   2-HR   3-HR   6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
             .35     .88    1.19   1.36   1.49   1.77    2.30    2.83     .00     .00     .00     .00

                                    STORM AREA =  109.00

297 LS        SCS LOSS RATE
               STRTL        .63  INITIAL ABSTRACTION
              CRVNBR      76.00  CURVE NUMBER
               RTIMP      12.00  PERCENT IMPERVIOUS AREA

298 UD        SCS DIMENSIONLESS UNITGRAPH
               TLAG        1.25  LAG
```

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                                        ***

                             UNIT HYDROGRAPH
                         27 END-OF-PERIOD ORDINATES
       709.   2165.   4522.   6909.   8055.   8055.   7146.   5897.   4256.   3081.
      2276.   1737.   1284.    958.    715.    528.    392.    293.    218.    162.
       119.     89.     72.     54.     37.     22.      7.


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          ***************
          *             *
299 KK    *    HUFN     *    COMBINE ALL HYDROGRAPHS AT HUFFAKER NARROWS
          *             *
          ***************

301 KO         OUTPUT CONTROL VARIABLES
                 IPRNT          1  PRINT CONTROL
                 IPLOT          2  PLOT CONTROL
                 QSCAL          0.  HYDROGRAPH PLOT SCALE
                 IPNCH          0  PUNCH COMPUTED HYDROGRAPH
                  IOUT         22  SAVE HYDROGRAPH ON THIS UNIT
                 ISAV1          1  FIRST ORDINATE PUNCHED OR SAVED
                 ISAV2        289  LAST ORDINATE PUNCHED OR SAVED
                TIMINT       .250  TIME INTERVAL IN HOURS

300 HC          HYDROGRAPH COMBINATION
                 ICOMP          4  NUMBER OF HYDROGRAPHS TO COMBINE
                                        ***
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*****************************************************************************************************************************

                                          HYDROGRAPH AT STATION    HUFN
                                           SUM OF  4 HYDROGRAPHS

*****************************************************************************************************************************
                       *                          *                          *
 DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW  *  DA MON HRMN  ORD      FLOW
                       *                          *                          *
  1   0000   1     500.  *  1   1815  74    5407.  *  2   1230 147    500.  *  3   0645 220    500.
  1   0015   2     501.  *  1   1830  75    5241.  *  2   1245 148    500.  *  3   0700 221    500.
  1   0030   3     503.  *  1   1845  76    5090.  *  2   1300 149    500.  *  3   0715 222    500.
  1   0045   4     511.  *  1   1900  77    4944.  *  2   1315 150    500.  *  3   0730 223    500.
  1   0100   5     525.  *  1   1915  78    4795.  *  2   1330 151    500.  *  3   0745 224    500.
  1   0115   6     544.  *  1   1930  79    4629.  *  2   1345 152    500.  *  3   0800 225    500.
  1   0130   7     566.  *  1   1945  80    4446.  *  2   1400 153    500.  *  3   0815 226    500.
  1   0145   8     586.  *  1   2000  81    4253.  *  2   1415 154    500.  *  3   0830 227    500.
  1   0200   9     604.  *  1   2015  82    4074.  *  2   1430 155    500.  *  3   0845 228    500.
  1   0215  10     618.  *  1   2030  83    3916.  *  2   1445 156    500.  *  3   0900 229    500.
  1   0230  11     631.  *  1   2045  84    3767.  *  2   1500 157    500.  *  3   0915 230    500.
  1   0245  12     642.  *  1   2100  85    3621.  *  2   1515 158    500.  *  3   0930 231    500.
  1   0300  13     652.  *  1   2115  86    3488.  *  2   1530 159    500.  *  3   0945 232    500.
  1   0315  14     660.  *  1   2130  87    3379.  *  2   1545 160    500.  *  3   1000 233    500.
  1   0330  15     668.  *  1   2145  88    3293.  *  2   1600 161    500.  *  3   1015 234    500.
  1   0345  16     672.  *  1   2200  89    3227.  *  2   1615 162    500.  *  3   1030 235    500.
  1   0400  17     676.  *  1   2215  90    3170.  *  2   1630 163    500.  *  3   1045 236    500.
  1   0415  18     681.  *  1   2230  91    3117.  *  2   1645 164    500.  *  3   1100 237    500.
  1   0430  19     685.  *  1   2245  92    3068.  *  2   1700 165    500.  *  3   1115 238    500.
  1   0445  20     689.  *  1   2300  93    3023.  *  2   1715 166    500.  *  3   1130 239    500.
  1   0500  21     693.  *  1   2315  94    2980.  *  2   1730 167    500.  *  3   1145 240    500.
  1   0515  22     697.  *  1   2330  95    2940.  *  2   1745 168    500.  *  3   1200 241    500.
  1   0530  23     701.  *  1   2345  96    2902.  *  2   1800 169    500.  *  3   1215 242    500.
  1   0545  24     705.  *  2   0000  97    2866.  *  2   1815 170    500.  *  3   1230 243    500.
  1   0600  25     710.  *  2   0015  98    2826.  *  2   1830 171    500.  *  3   1245 244    500.
  1   0615  26     715.  *  2   0030  99    2779.  *  2   1845 172    500.  *  3   1300 245    500.
  1   0630  27     721.  *  2   0045 100    2713.  *  2   1900 173    500.  *  3   1315 246    500.
  1   0645  28     729.  *  2   0100 101    2617.  *  2   1915 174    500.  *  3   1330 247    500.
  1   0700  29     741.  *  2   0115 102    2483.  *  2   1930 175    500.  *  3   1345 248    500.
  1   0715  30     756.  *  2   0130 103    2299.  *  2   1945 176    500.  *  3   1400 249    500.
  1   0730  31     772.  *  2   0145 104    2061.  *  2   2000 177    500.  *  3   1415 250    500.
  1   0745  32     789.  *  2   0200 105    1793.  *  2   2015 178    500.  *  3   1430 251    500.
  1   0800  33     806.  *  2   0215 106    1546.  *  2   2030 179    500.  *  3   1445 252    500.
  1   0815  34     823.  *  2   0230 107    1339.  *  2   2045 180    500.  *  3   1500 253    500.
  1   0830  35     839.  *  2   0245 108    1147.  *  2   2100 181    500.  *  3   1515 254    500.
  1   0845  36     857.  *  2   0300 109     955.  *  2   2115 182    500.  *  3   1530 255    500.
  1   0900  37     876.  *  2   0315 110     789.  *  2   2130 183    500.  *  3   1545 256    500.
  1   0915  38     897.  *  2   0330 111     671.  *  2   2145 184    500.  *  3   1600 257    500.
  1   0930  39     922.  *  2   0345 112     601.  *  2   2200 185    500.  *  3   1615 258    500.
  1   0945  40     951.  *  2   0400 113     567.  *  2   2215 186    500.  *  3   1630 259    500.
  1   1000  41     984.  *  2   0415 114     548.  *  2   2230 187    500.  *  3   1645 260    500.
  1   1015  42    1026.  *  2   0430 115     534.  *  2   2245 188    500.  *  3   1700 261    500.
  1   1030  43    1080.  *  2   0445 116     524.  *  2   2300 189    500.  *  3   1715 262    500.
  1   1045  44    1149.  *  2   0500 117     517.  *  2   2315 190    500.  *  3   1730 263    500.
  1   1100  45    1237.  *  2   0515 118     512.  *  2   2330 191    500.  *  3   1745 264    500.
  1   1115  46    1346.  *  2   0530 119     509.  *  2   2345 192    500.  *  3   1800 265    500.
  1   1130  47    1480.  *  2   0545 120     507.  *  3   0000 193    500.  *  3   1815 266    500.
  1   1145  48    1669.  *  2   0600 121     505.  *  3   0015 194    500.  *  3   1830 267    500.
  1   1200  49    1951.  *  2   0615 122     504.  *  3   0030 195    500.  *  3   1845 268    500.
  1   1215  50    2467.  *  2   0630 123     503.  *  3   0045 196    500.  *  3   1900 269    500.
  1   1230  51    3297.  *  2   0645 124     502.  *  3   0100 197    500.  *  3   1915 270    500.
  1   1245  52    4535.  *  2   0700 125     502.  *  3   0115 198    500.  *  3   1930 271    500.
  1   1300  53    6181.  *  2   0715 126     501.  *  3   0130 199    500.  *  3   1945 272    500.
  1   1315  54    8050.  *  2   0730 127     501.  *  3   0145 200    500.  *  3   2000 273    500.
  1   1330  55   10059.  *  2   0745 128     501.  *  3   0200 201    500.  *  3   2015 274    500.
  1   1345  56   12030.  *  2   0800 129     501.  *  3   0215 202    500.  *  3   2030 275    500.
  1   1400  57   13488.  *  2   0815 130     501.  *  3   0230 203    500.  *  3   2045 276    500.
  1   1415  58   13909.  *  2   0830 131     500.  *  3   0245 204    500.  *  3   2100 277    500.
  1   1430  59   13563.  *  2   0845 132     500.  *  3   0300 205    500.  *  3   2115 278    500.
  1   1445  60   13106.  *  2   0900 133     500.  *  3   0315 206    500.  *  3   2130 279    500.
  1   1500  61   12607.  *  2   0915 134     500.  *  3   0330 207    500.  *  3   2145 280    500.
  1   1515  62   11697.  *  2   0930 135     500.  *  3   0345 208    500.  *  3   2200 281    500.
  1   1530  63   10455.  *  2   0945 136     500.  *  3   0400 209    500.  *  3   2215 282    500.
  1   1545  64    9225.  *  2   1000 137     500.  *  3   0415 210    500.  *  3   2230 283    500.
  1   1600  65    8220.  *  2   1015 138     500.  *  3   0430 211    500.  *  3   2245 284    500.
  1   1615  66    7556.  *  2   1030 139     500.  *  3   0445 212    500.  *  3   2300 285    500.
  1   1630  67    7122.  *  2   1045 140     500.  *  3   0500 213    500.  *  3   2315 286    500.
  1   1645  68    6750.  *  2   1100 141     500.  *  3   0515 214    500.  *  3   2330 287    500.
  1   1700  69    6427.  *  2   1115 142     500.  *  3   0530 215    500.  *  3   2345 288    500.
  1   1715  70    6160.  *  2   1130 143     500.  *  3   0545 216    500.  *  4   0000 289    500.
  1   1730  71    5953.  *  2   1145 144     500.  *  3   0600 217    500.  *
  1   1745  72    5769.  *  2   1200 145     500.  *  3   0615 218    500.  *
  1   1800  73    5583.  *  2   1215 146     500.  *  3   0630 219    500.  *
                       *                          *                          *
*****************************************************************************************

  PEAK FLOW      TIME                     MAXIMUM AVERAGE FLOW
                                6-HR        24-HR       72-HR     72.00-HR
+  (CFS)        (HR)
                         (CFS)
+   13909.     14.25              8724.       3676.       1564.       1564.
                      (INCHES)    .744        1.255       1.601       1.601
                       (AC-FT)   4326.        7291.       9307.       9307.

                   CUMULATIVE AREA =   108.97 SQ MI
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1                                    STATION    HUFN

                        (O) OUTFLOW
     0.     2000.     4000.     6000.     8000.    10000.    12000.    14000.        0.        0.        0.        0.        0.
DAHRMN PER
10000   1.--O-------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
10015   2.  O       .         .         .         .         .         .         .         .         .         .         .         .
10030   3.  O       .         .         .         .         .         .         .         .         .         .         .         .
10045   4.  O       .         .         .         .         .         .         .         .         .         .         .         .
10100   5.  O       .         .         .         .         .         .         .         .         .         .         .         .
10115   6.  O       .         .         .         .         .         .         .         .         .         .         .         .
10130   7.  O       .         .         .         .         .         .         .         .         .         .         .         .
10145   8.  O       .         .         .         .         .         .         .         .         .         .         .         .
10200   9.  O       .         .         .         .         .         .         .         .         .         .         .         .
10215  10.  O       .         .         .         .         .         .         .         .         .         .         .         .
10230  11. .O.................................................................................................................
10245  12.  O       .         .         .         .         .         .         .         .         .         .         .         .
10300  13.  O       .         .         .         .         .         .         .         .         .         .         .         .
10315  14.  O       .         .         .         .         .         .         .         .         .         .         .         .
10330  15.  O       .         .         .         .         .         .         .         .         .         .         .         .
10345  16.  O       .         .         .         .         .         .         .         .         .         .         .         .
10400  17.  O       .         .         .         .         .         .         .         .         .         .         .         .
10415  18.  O       .         .         .         .         .         .         .         .         .         .         .         .
10430  19.  O       .         .         .         .         .         .         .         .         .         .         .         .
10445  20.  O       .         .         .         .         .         .         .         .         .         .         .         .
10500  21. .O.................................................................................................................
10515  22.  O       .         .         .         .         .         .         .         .         .         .         .         .
10530  23.   O      .         .         .         .         .         .         .         .         .         .         .         .
10545  24.   O      .         .         .         .         .         .         .         .         .         .         .         .
10600  25.   O      .         .         .         .         .         .         .         .         .         .         .         .
10615  26.   O      .         .         .         .         .         .         .         .         .         .         .         .
10630  27.   O      .         .         .         .         .         .         .         .         .         .         .         .
10645  28.   O      .         .         .         .         .         .         .         .         .         .         .         .
10700  29.   O      .         .         .         .         .         .         .         .         .         .         .         .
10715  30.   O      .         .         .         .         .         .         .         .         .         .         .         .
10730  31. ..O................................................................................................................
10745  32.   O      .         .         .         .         .         .         .         .         .         .         .         .
10800  33.   O      .         .         .         .         .         .         .         .         .         .         .         .
10815  34.   O      .         .         .         .         .         .         .         .         .         .         .         .
10830  35.   O      .         .         .         .         .         .         .         .         .         .         .         .
10845  36.   O      .         .         .         .         .         .         .         .         .         .         .         .
10900  37.   O      .         .         .         .         .         .         .         .         .         .         .         .
10915  38.   O      .         .         .         .         .         .         .         .         .         .         .         .
10930  39.     O    .         .         .         .         .         .         .         .         .         .         .         .
10945  40.     O    .         .         .         .         .         .         .         .         .         .         .         .
11000  41. ....O..............................................................................................................
11015  42.     O    .         .         .         .         .         .         .         .         .         .         .         .
11030  43.     O    .         .         .         .         .         .         .         .         .         .         .         .
11045  44.      O   .         .         .         .         .         .         .         .         .         .         .         .
11100  45.      O   .         .         .         .         .         .         .         .         .         .         .         .
11115  46.       O  .         .         .         .         .         .         .         .         .         .         .         .
11130  47.       O  .         .         .         .         .         .         .         .         .         .         .         .
11145  48.        O .         .         .         .         .         .         .         .         .         .         .         .
11200  49.          O         .         .         .         .         .         .         .         .         .         .         .
11215  50.          . O       .         .         .         .         .         .         .         .         .         .         .
11230  51. ..............O....................................................................................................
11245  52.          .         .  O      .         .         .         .         .         .         .         .         .         .
11300  53.          .         .         .O        .         .         .         .         .         .         .         .         .
11315  54.          .         .         .         O         .         .         .         .         .         .         .         .
11330  55.          .         .         .         .         O         .         .         .         .         .         .         .
11345  56.          .         .         .         .         .         O         .         .         .         .         .         .
11400  57.          .         .         .         .         .         .      O  .         .         .         .         .         .
11415  58.          .         .         .         .         .         .         O         .         .         .         .         .
11430  59.          .         .         .         .         .         .        O.         .         .         .         .         .
11445  60.          .         .         .         .         .         .     O   .         .         .         .         .         .
11500  61. ............................................................O......................................................
11515  62.          .         .         .         .         .       O .         .         .         .         .         .         .
11530  63.          .         .         .         .         . O       .         .         .         .         .         .         .
11545  64.          .         .         .         .     O   .         .         .         .         .         .         .         .
11600  65.          .         .         .         .O        .         .         .         .         .         .         .         .
11615  66.          .         .         .       O .         .         .         .         .         .         .         .         .
11630  67.          .         .         .     O   .         .         .         .         .         .         .         .         .
11645  68.          .         .         .   O     .         .         .         .         .         .         .         .         .
11700  69.          .         .         . O       .         .         .         .         .         .         .         .         .
11715  70.          .         .         .O        .         .         .         .         .         .         .         .         .
11730  71. ............................O......................................................................................
11745  72.          .         .        O.         .         .         .         .         .         .         .         .         .
11800  73.          .         .       O .         .         .         .         .         .         .         .         .         .
11815  74.          .         .      O  .         .         .         .         .         .         .         .         .         .
11830  75.          .         .     O   .         .         .         .         .         .         .         .         .         .
11845  76.          .         .    O    .         .         .         .         .         .         .         .         .         .
11900  77.          .         .    O    .         .         .         .         .         .         .         .         .         .
11915  78.          .         .   O     .         .         .         .         .         .         .         .         .         .
11930  79.          .         .  O      .         .         .         .         .         .         .         .         .         .
11945  80.          .         . O       .         .         .         .         .         .         .         .         .         .
12000  81. ...................O...............................................................................................
12015  82.          .         O         .         .         .         .         .         .         .         .         .         .
12030  83.          .         O         .         .         .         .         .         .         .         .         .         .
12045  84.          .        O.         .         .         .         .         .         .         .         .         .         .
12100  85.          .       O .         .         .         .         .         .         .         .         .         .         .
12115  86.          .      O  .         .         .         .         .         .         .         .         .         .         .
12130  87.          .      O  .         .         .         .         .         .         .         .         .         .         .
12145  88.          .     O   .         .         .         .         .         .         .         .         .         .         .
12200  89.          .     O   .         .         .         .         .         .         .         .         .         .         .
12215  90.          .     O   .         .         .         .         .         .         .         .         .         .         .
12230  91. ..............O....................................................................................................
12245  92.          .    O    .         .         .         .         .         .         .         .         .         .         .
12300  93.          .    O    .         .         .         .         .         .         .         .         .         .         .
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1                                    STATION    HUFN

                (O) OUTFLOW
      0.   2000.   4000.   6000.  8000.  10000.  12000.  14000.    0.     0.     0.     0.     0.
 DAHRMN PER
 12315  94.     .   O .     .     .     .     .     .     .     .     .     .     .
 12330  95.     .   O .     .     .     .     .     .     .     .     .     .     .
 12345  96.     .   O .     .     .     .     .     .     .     .     .     .     .
 20000  97.     .  O  .     .     .     .     .     .     .     .     .     .     .
 20015  98.     .  O  .     .     .     .     .     .     .     .     .     .     .
 20030  99.     .  O  .     .     .     .     .     .     .     .     .     .     .
 20045 100.     .  O  .     .     .     .     .     .     .     .     .     .     .
 20100 101........O..............................................................
 20115 102.     . O   .     .     .     .     .     .     .     .     .     .     .
 20130 103.     .O    .     .     .     .     .     .     .     .     .     .     .
 20145 104.     O     .     .     .     .     .     .     .     .     .     .     .
 20200 105.    O.     .     .     .     .     .     .     .     .     .     .     .
 20215 106.   O .     .     .     .     .     .     .     .     .     .     .     .
 20230 107.   O .     .     .     .     .     .     .     .     .     .     .     .
 20245 108.  O  .     .     .     .     .     .     .     .     .     .     .     .
 20300 109.  O  .     .     .     .     .     .     .     .     .     .     .     .
 20315 110. O   .     .     .     .     .     .     .     .     .     .     .     .
 20330 111..O....................................................................
 20345 112. O   .     .     .     .     .     .     .     .     .     .     .     .
 20400 113. O   .     .     .     .     .     .     .     .     .     .     .     .
 20415 114. O   .     .     .     .     .     .     .     .     .     .     .     .
 20430 115. O   .     .     .     .     .     .     .     .     .     .     .     .
 20445 116. O   .     .     .     .     .     .     .     .     .     .     .     .
 20500 117. O   .     .     .     .     .     .     .     .     .     .     .     .
 20515 118. O   .     .     .     .     .     .     .     .     .     .     .     .
 20530 119. O   .     .     .     .     .     .     .     .     .     .     .     .
 20545 120. O   .     .     .     .     .     .     .     .     .     .     .     .
 20600 121..O....................................................................
 20615 122. O   .     .     .     .     .     .     .     .     .     .     .     .
 20630 123. O   .     .     .     .     .     .     .     .     .     .     .     .
 20645 124. O   .     .     .     .     .     .     .     .     .     .     .     .
 20700 125. O   .     .     .     .     .     .     .     .     .     .     .     .
 20715 126. O   .     .     .     .     .     .     .     .     .     .     .     .
 20730 127. O   .     .     .     .     .     .     .     .     .     .     .     .
 20745 128. O   .     .     .     .     .     .     .     .     .     .     .     .
 20800 129. O   .     .     .     .     .     .     .     .     .     .     .     .
 20815 130. O   .     .     .     .     .     .     .     .     .     .     .     .
 20830 131..O....................................................................
 20845 132. O   .     .     .     .     .     .     .     .     .     .     .     .
 20900 133. O   .     .     .     .     .     .     .     .     .     .     .     .
 20915 134. O   .     .     .     .     .     .     .     .     .     .     .     .
 20930 135. O   .     .     .     .     .     .     .     .     .     .     .     .
 20945 136. O   .     .     .     .     .     .     .     .     .     .     .     .
 21000 137. O   .     .     .     .     .     .     .     .     .     .     .     .
 21015 138. O   .     .     .     .     .     .     .     .     .     .     .     .
 21030 139. O   .     .     .     .     .     .     .     .     .     .     .     .
 21045 140. O   .     .     .     .     .     .     .     .     .     .     .     .
 21100 141..O....................................................................
 21115 142. O   .     .     .     .     .     .     .     .     .     .     .     .
 21130 143. O   .     .     .     .     .     .     .     .     .     .     .     .
 21145 144. O   .     .     .     .     .     .     .     .     .     .     .     .
 21200 145. O   .     .     .     .     .     .     .     .     .     .     .     .
 21215 146. O   .     .     .     .     .     .     .     .     .     .     .     .
 21230 147. O   .     .     .     .     .     .     .     .     .     .     .     .
 21245 148. O   .     .     .     .     .     .     .     .     .     .     .     .
 21300 149. O   .     .     .     .     .     .     .     .     .     .     .     .
 21315 150. O   .     .     .     .     .     .     .     .     .     .     .     .
 21330 151..O....................................................................
 21345 152. O   .     .     .     .     .     .     .     .     .     .     .     .
 21400 153. O   .     .     .     .     .     .     .     .     .     .     .     .
 21415 154. O   .     .     .     .     .     .     .     .     .     .     .     .
 21430 155. O   .     .     .     .     .     .     .     .     .     .     .     .
 21445 156. O   .     .     .     .     .     .     .     .     .     .     .     .
 21500 157. O   .     .     .     .     .     .     .     .     .     .     .     .
 21515 158. O   .     .     .     .     .     .     .     .     .     .     .     .
 21530 159. O   .     .     .     .     .     .     .     .     .     .     .     .
 21545 160. O   .     .     .     .     .     .     .     .     .     .     .     .
 21600 161..O....................................................................
 21615 162. O   .     .     .     .     .     .     .     .     .     .     .     .
 21630 163. O   .     .     .     .     .     .     .     .     .     .     .     .
 21645 164. O   .     .     .     .     .     .     .     .     .     .     .     .
 21700 165. O   .     .     .     .     .     .     .     .     .     .     .     .
 21715 166. O   .     .     .     .     .     .     .     .     .     .     .     .
 21730 167. O   .     .     .     .     .     .     .     .     .     .     .     .
 21745 168. O   .     .     .     .     .     .     .     .     .     .     .     .
 21800 169. O   .     .     .     .     .     .     .     .     .     .     .     .
 21815 170. O   .     .     .     .     .     .     .     .     .     .     .     .
 21830 171..O....................................................................
 21845 172. O   .     .     .     .     .     .     .     .     .     .     .     .
 21900 173. O   .     .     .     .     .     .     .     .     .     .     .     .
 21915 174. O   .     .     .     .     .     .     .     .     .     .     .     .
 21930 175. O   .     .     .     .     .     .     .     .     .     .     .     .
 21945 176. O   .     .     .     .     .     .     .     .     .     .     .     .
 22000 177. O   .     .     .     .     .     .     .     .     .     .     .     .
 22015 178. O   .     .     .     .     .     .     .     .     .     .     .     .
 22030 179. O   .     .     .     .     .     .     .     .     .     .     .     .
 22045 180. O   .     .     .     .     .     .     .     .     .     .     .     .
 22100 181..O....................................................................
 22115 182. O   .     .     .     .     .     .     .     .     .     .     .     .
 22130 183. O   .     .     .     .     .     .     .     .     .     .     .     .
 22145 184. O   .     .     .     .     .     .     .     .     .     .     .     .
 22200 185. O   .     .     .     .     .     .     .     .     .     .     .     .
 22215 186. O   .     .     .     .     .     .     .     .     .     .     .     .
```

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1                                   STATION    HUFN

                    (O) OUTFLOW
      0.    2000.    4000.    6000.    8000.   10000.   12000.   14000.      0.      0.      0.      0.      0.
 DAHRMN PER
 22230 187. O    .       .       .       .       .       .       .       .       .       .       .       .
 22245 188. O    .       .       .       .       .       .       .       .       .       .       .       .
 22300 189. O    .       .       .       .       .       .       .       .       .       .       .       .
 22315 190. O    .       .       .       .       .       .       .       .       .       .       .       .
 22330 191. .O.........................................................................................
 22345 192. O    .       .       .       .       .       .       .       .       .       .       .       .
 30000 193. O    .       .       .       .       .       .       .       .       .       .       .       .
 30015 194. O    .       .       .       .       .       .       .       .       .       .       .       .
 30030 195. O    .       .       .       .       .       .       .       .       .       .       .       .
 30045 196. O    .       .       .       .       .       .       .       .       .       .       .       .
 30100 197. O    .       .       .       .       .       .       .       .       .       .       .       .
 30115 198. O    .       .       .       .       .       .       .       .       .       .       .       .
 30130 199. O    .       .       .       .       .       .       .       .       .       .       .       .
 30145 200. O    .       .       .       .       .       .       .       .       .       .       .       .
 30200 201. .O.........................................................................................
 30215 202. O    .       .       .       .       .       .       .       .       .       .       .       .
 30230 203. O    .       .       .       .       .       .       .       .       .       .       .       .
 30245 204. O    .       .       .       .       .       .       .       .       .       .       .       .
 30300 205. O    .       .       .       .       .       .       .       .       .       .       .       .
 30315 206. O    .       .       .       .       .       .       .       .       .       .       .       .
 30330 207. O    .       .       .       .       .       .       .       .       .       .       .       .
 30345 208. O    .       .       .       .       .       .       .       .       .       .       .       .
 30400 209. O    .       .       .       .       .       .       .       .       .       .       .       .
 30415 210. O    .       .       .       .       .       .       .       .       .       .       .       .
 30430 211. .O.........................................................................................
 30445 212. O    .       .       .       .       .       .       .       .       .       .       .       .
 30500 213. O    .       .       .       .       .       .       .       .       .       .       .       .
 30515 214. O    .       .       .       .       .       .       .       .       .       .       .       .
 30530 215. O    .       .       .       .       .       .       .       .       .       .       .       .
 30545 216. O    .       .       .       .       .       .       .       .       .       .       .       .
 30600 217. O    .       .       .       .       .       .       .       .       .       .       .       .
 30615 218. O    .       .       .       .       .       .       .       .       .       .       .       .
 30630 219. O    .       .       .       .       .       .       .       .       .       .       .       .
 30645 220. O    .       .       .       .       .       .       .       .       .       .       .       .
 30700 221. .O.........................................................................................
 30715 222. O    .       .       .       .       .       .       .       .       .       .       .       .
 30730 223. O    .       .       .       .       .       .       .       .       .       .       .       .
 30745 224. O    .       .       .       .       .       .       .       .       .       .       .       .
 30800 225. O    .       .       .       .       .       .       .       .       .       .       .       .
 30815 226. O    .       .       .       .       .       .       .       .       .       .       .       .
 30830 227. O    .       .       .       .       .       .       .       .       .       .       .       .
 30845 228. O    .       .       .       .       .       .       .       .       .       .       .       .
 30900 229. O    .       .       .       .       .       .       .       .       .       .       .       .
 30915 230. O    .       .       .       .       .       .       .       .       .       .       .       .
 30930 231. .O.........................................................................................
 30945 232. O    .       .       .       .       .       .       .       .       .       .       .       .
 31000 233. O    .       .       .       .       .       .       .       .       .       .       .       .
 31015 234. O    .       .       .       .       .       .       .       .       .       .       .       .
 31030 235. O    .       .       .       .       .       .       .       .       .       .       .       .
 31045 236. O    .       .       .       .       .       .       .       .       .       .       .       .
 31100 237. O    .       .       .       .       .       .       .       .       .       .       .       .
 31115 238. O    .       .       .       .       .       .       .       .       .       .       .       .
 31130 239. O    .       .       .       .       .       .       .       .       .       .       .       .
 31145 240. O    .       .       .       .       .       .       .       .       .       .       .       .
 31200 241. .O.........................................................................................
 31215 242. O    .       .       .       .       .       .       .       .       .       .       .       .
 31230 243. O    .       .       .       .       .       .       .       .       .       .       .       .
 31245 244. O    .       .       .       .       .       .       .       .       .       .       .       .
 31300 245. O    .       .       .       .       .       .       .       .       .       .       .       .
 31315 246. O    .       .       .       .       .       .       .       .       .       .       .       .
 31330 247. O    .       .       .       .       .       .       .       .       .       .       .       .
 31345 248. O    .       .       .       .       .       .       .       .       .       .       .       .
 31400 249. O    .       .       .       .       .       .       .       .       .       .       .       .
 31415 250. O    .       .       .       .       .       .       .       .       .       .       .       .
 31430 251. .O.........................................................................................
 31445 252. O    .       .       .       .       .       .       .       .       .       .       .       .
 31500 253. O    .       .       .       .       .       .       .       .       .       .       .       .
 31515 254. O    .       .       .       .       .       .       .       .       .       .       .       .
 31530 255. O    .       .       .       .       .       .       .       .       .       .       .       .
 31545 256. O    .       .       .       .       .       .       .       .       .       .       .       .
 31600 257. O    .       .       .       .       .       .       .       .       .       .       .       .
 31615 258. O    .       .       .       .       .       .       .       .       .       .       .       .
 31630 259. O    .       .       .       .       .       .       .       .       .       .       .       .
 31645 260. O    .       .       .       .       .       .       .       .       .       .       .       .
 31700 261. .O.........................................................................................
 31715 262. O    .       .       .       .       .       .       .       .       .       .       .       .
 31730 263. O    .       .       .       .       .       .       .       .       .       .       .       .
 31745 264. O    .       .       .       .       .       .       .       .       .       .       .       .
 31800 265. O    .       .       .       .       .       .       .       .       .       .       .       .
 31815 266. O    .       .       .       .       .       .       .       .       .       .       .       .
 31830 267. O    .       .       .       .       .       .       .       .       .       .       .       .
 31845 268. O    .       .       .       .       .       .       .       .       .       .       .       .
 31900 269. O    .       .       .       .       .       .       .       .       .       .       .       .
 31915 270. O    .       .       .       .       .       .       .       .       .       .       .       .
 31930 271. .O.........................................................................................
 31945 272. O    .       .       .       .       .       .       .       .       .       .       .       .
 32000 273. O    .       .       .       .       .       .       .       .       .       .       .       .
 32015 274. O    .       .       .       .       .       .       .       .       .       .       .       .
 32030 275. O    .       .       .       .       .       .       .       .       .       .       .       .
 32045 276. O    .       .       .       .       .       .       .       .       .       .       .       .
 32100 277. O    .       .       .       .       .       .       .       .       .       .       .       .
 32115 278. O    .       .       .       .       .       .       .       .       .       .       .       .
 32130 279. O    .       .       .       .       .       .       .       .       .       .       .       .
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1                                           STATION    HUFN

                      (O) OUTFLOW
      0.    2000.    4000.    6000.    8000.   10000.   12000.   14000.      0.       0.       0.       0.       0.
DAHRMN PER
 32145 280.  O     .        .        .        .        .        .        .        .        .        .        .
 32200 281. .O.........................................................................
 32215 282.  O     .        .        .        .        .        .        .        .        .        .        .
 32230 283.  O     .        .        .        .        .        .        .        .        .        .        .
 32245 284.  O     .        .        .        .        .        .        .        .        .        .        .
 32300 285.  O     .        .        .        .        .        .        .        .        .        .        .
 32315 286.  O     .        .        .        .        .        .        .        .        .        .        .
 32330 287.  O     .        .        .        .        .        .        .        .        .        .        .
 32345 288.  O     .        .        .        .        .        .        .        .        .        .        .
 40000 289.--O------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
1


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         ***************
         *             *
302 KK   *    MDPLS    *    ROUTE PK THROUGH HUFFAKER NARROWS WITH MODIFIED PULS
         *             *
         ***************

307 KO        OUTPUT CONTROL VARIABLES
               IPRNT        4  PRINT CONTROL
               IPLOT        1  PLOT CONTROL
               QSCAL        0.  HYDROGRAPH PLOT SCALE
               IPNCH        0  PUNCH COMPUTED HYDROGRAPH
               IOUT        32  SAVE HYDROGRAPH ON THIS UNIT
               ISAV1        1  FIRST ORDINATE PUNCHED OR SAVED
               ISAV2      289  LAST ORDINATE PUNCHED OR SAVED
              TIMINT     .250  TIME INTERVAL IN HOURS


          HYDROGRAPH ROUTING DATA

303 RS        STORAGE ROUTING
               NSTPS        1  NUMBER OF SUBREACHES
                ITYP     STOR  TYPE OF INITIAL CONDITION
              RSVRIC      .00  INITIAL CONDITION
                 X        .00  WORKING R AND D COEFFICIENT

304 SA           AREA        .6       1.9      8.6      18.1      40.0      80.0     131.0     198.0

305 SE        ELEVATION   4410.00  4412.00  4414.00  4416.00  4418.00  4420.00  4422.00  4424.00

306 SQ        DISCHARGE      200.     480.     783.    1411.    4191.    9772.   19163.   31000.

                                              ***

                                 COMPUTED STORAGE-ELEVATION DATA

        STORAGE      .00     2.38    12.07    38.19    94.86   212.57   421.49   746.31
      ELEVATION  4410.00  4412.00  4414.00  4416.00  4418.00  4420.00  4422.00  4424.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN      200. TO      480.
         THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
         THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
1
                                           RUNOFF SUMMARY
                                      FLOW IN CUBIC FEET PER SECOND
                                   TIME IN HOURS,  AREA IN SQUARE MILES

                           PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD       BASIN    MAXIMUM    TIME OF
      OPERATION          STATION    FLOW      PEAK                                  AREA     STAGE    MAX STAGE
+                                          6-HOUR     24-HOUR     72-HOUR

      HYDROGRAPH AT
+                     T1     904.   12.50       354.      134.       45.      2.50

      ROUTED TO
+                  RT1-B      871.   12.75        353.      134.       45.      2.50

      HYDROGRAPH AT
+                     T2     290.   12.50       124.       46.       15.      1.82

      HYDROGRAPH AT
+                     T3     131.   12.50        54.       20.        7.       .82

      3 COMBINED AT
+                   CP-B     1237.   12.50        529.      200.       67.      5.14

      ROUTED TO
+                  RCP-C     1282.   12.75        529.      200.       67.      5.14

      HYDROGRAPH AT
+                     T4     169.   12.75        98.       36.       12.      2.16

      2 COMBINED AT
+                   CP-C     1451.   12.75        623.      236.       79.      7.30

      ROUTED TO
+                  RCP-D     1445.   13.00        622.      236.       79.      7.30
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                        PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD    BASIN    MAXIMUM    TIME OF
      OPERATION      STATION    FLOW    PEAK                        AREA .  STAGE    MAX STAGE

      HYDROGRAPH AT
+                T5     229.  12.75      87.      33.      11.     1.19

      2 COMBINED AT
+               CP-D     1630.  13.00     708.     268.      90.     8.49

      ROUTED TO
+              RCP-E     1619.  13.25     707.     268.      90.     8.49

      HYDROGRAPH AT
+                T6     535.  13.00     223.      85.      29.     3.15

      2 COMBINED AT
+              CP-E     2130.  13.25     928.     353.     118.    11.64

      ROUTED TO
+              RT-DD     2027.  13.75     926.     353.     118.    11.64

      ROUTED TO
+              RT-HN     1802.  14.00     919.     353.     118.    11.64

      HYDROGRAPH AT
+                W1     590.  12.25     231.      87.      29.     1.36

      HYDROGRAPH AT
+                W2     524.  12.25     170.      65.      22.      .84

      2 COMBINED AT
+              W1+W2     1114.  12.25     400.     152.      51.     2.20

      ROUTED TO
+              RT-A     1154.  12.50     400.     152.      51.     2.20

      HYDROGRAPH AT
+                W3     536.  12.50     203.      76.      25.     1.38

      ROUTED TO
+               RT-A     574.  12.50     203.      76.      25.     1.38

      HYDROGRAPH AT
+                W4     311.  12.50     127.      47.      16.     1.47

      3 COMBINED AT
+              W1234     2039.  12.50     725.     275.      92.     5.05

      ROUTED TO
+              RT-B     1899.  12.50     725.     275.      92.     5.05

      HYDROGRAPH AT
+                W5     251.  12.50     101.      37.      12.     1.27

      2 COMBINED AT
+              W5+CH     2150.  12.50     823.     312.     104.     6.32

      ROUTED TO
+              RT-C     2126.  12.75     823.     312.     104.     6.32

      HYDROGRAPH AT
+                W6     153.  12.75      76.      28.       9.     1.43

      2 COMBINED AT
+              W6+CH     2279.  12.75     897.     340.     113.     7.75

      ROUTED TO
+              RT-D     2137.  13.25     897.     340.     113.     7.75

      HYDROGRAPH AT
+                W7     191.  12.75      78.      31.      10.     1.30

      2 COMBINED AT
+              W7+CH     2262.  13.25     975.     371.     124.     9.05

      ROUTED TO
+              RT-E     2316.  13.25     975.     371.     124.     9.05

      HYDROGRAPH AT
+                W8     627.  12.75     227.      93.      31.     4.37

      2 COMBINED AT
+              W8+CH     2720.  13.25    1202.     463.     155.    13.42

      ROUTED TO
+              RT-F     2683.  13.50    1201.     463.     155.    13.42

      HYDROGRAPH AT
+                46     490.  12.75     156.      65.      22.     2.69

      2 COMBINED AT
+              46+CH     2874.  13.50    1352.     528.     176.    16.11

      ROUTED TO
+              RT-DD     2782.  14.00    1350.     528.     176.    16.11
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                     PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD   BASIN    MAXIMUM    TIME OF
  OPERATION       STATION    FLOW    PEAK                       AREA   STAGE    MAX STAGE

  ROUTED TO
+              RT-HN    2782.  14.00     1350.     528.     176.    16.11

  HYDROGRAPH AT
+                G1      818.  12.25      298.     114.      38.     1.83

  ROUTED TO
+              RT-G      868.  12.50      298.     114.      38.     1.83

  HYDROGRAPH AT
+                G2      594.  12.25      209.      79.      26.     1.30

  HYDROGRAPH AT
+                G3      336.  12.50      138.      52.      17.     1.15

  3 COMBINED AT
+              G123     1746.  12.50      642.     245.      82.     4.08

  ROUTED TO
+              RT-H     1696.  12.75      642.     245.      82.     4.08

  HYDROGRAPH AT
+                G4      329.  12.50      129.      47.      16.     1.54

  HYDROGRAPH AT
+                G5       89.  12.50       48.      18.       6.     1.02

  3 COMBINED AT
+              G1-5     2015.  12.75      814.     310.     103.     6.64

  ROUTED TO
+              RT-I     1989.  12.75      813.     310.     103.     6.64

  HYDROGRAPH AT
+                G6      116.  13.00       67.      26.       9.     1.37

  2 COMBINED AT
+             G6+CH     2106.  12.75      879.     336.     112.     8.01

  ROUTED TO
+              RT-K     2116.  13.00      878.     336.     112.     8.01

  HYDROGRAPH AT
+                J1      267.  12.50      102.      37.      12.     1.29

  ROUTED TO
+              RT-J      270.  12.75      102.      37.      12.     1.29

  HYDROGRAPH AT
+                J2      282.  12.75      126.      47.      16.     1.95

  2 COMBINED AT
+             J1+J2      552.  12.75      228.      85.      28.     3.24

  ROUTED TO
+              RT-K      559.  12.75      228.      85.      28.     3.24

  HYDROGRAPH AT
+                G8      399.  12.50      142.      53.      18.     2.19

  3 COMBINED AT
+               G+J     2876.  12.75     1246.     474.     158.    13.44

  ROUTED TO
+              RT-L     2951.  13.00     1247.     474.     158.    13.44

  HYDROGRAPH AT
+                G7      191.  12.50       81.      31.      10.     1.50

  ROUTED TO
+              RT-L      195.  12.75       81.      31.      10.     1.50

  HYDROGRAPH AT
+                G9      212.  14.25      149.      58.      20.     3.07

  3 COMBINED AT
+              PT-L     3216.  13.00     1469.     562.     188.    18.01

  ROUTED TO
+             RT-PV     3170.  13.25     1469.     562.     188.    18.01

  HYDROGRAPH AT
+                B1      325.  12.75      155.      57.      19.     2.18

  ROUTED TO
+              RT-M      321.  12.75      155.      57.      19.     2.18

  HYDROGRAPH AT
+                B2      134.  12.50       65.      24.       8.     1.42

  2 COMBINED AT
+             B1+B2      450.  12.75      220.      81.      27.     3.60

  ROUTED TO
+              RT-N      448.  13.00      220.      81.      27.     3.60
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                        PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD   BASIN    MAXIMUM    TIME OF
   OPERATION         STATION    FLOW    PEAK                               AREA    STAGE    MAX STAGE

   HYDROGRAPH AT
+                 B3       68.  12.50      28.      10.      3.     .53

   2 COMBINED AT
+               B123      496.  13.00     247.      90.     30.    4.13

   ROUTED TO
+              RT-PV      504.  13.25     247.      90.     30.    4.13

   2 COMBINED AT
+             PLEASV     3874.  13.25    1713.     653.    218.   22.14

   ROUTED TO
+              RT-SG     3636.  13.50    1712.     653.    218.   22.14

   HYDROGRAPH AT
+                 30     3170.  13.00    1689.     929.    643.   17.80

   2 COMBINED AT
+              STMBT     6470.  13.25    3390.    1582.    861.   39.94

   ROUTED TO
+             RT-341     6395.  13.75    3382.    1582.    861.   39.94

   HYDROGRAPH AT
+                 35     4143.  13.00    1535.     529.    176.   15.50

   HYDROGRAPH AT
+                 40      804.  12.50     204.      76.     25.    2.63

   3 COMBINED AT
+             HY-341     8939.  13.50    5043.    2186.   1063.   58.07

   ROUTED TO
+              RT-DD     8824.  14.00    5033.    2186.   1063.   58.07

   ROUTED TO
+              RT-HN     8805.  14.75    5009.    2186.   1063.   58.07

   HYDROGRAPH AT
+                 60     3125.  13.50    1599.     614.    208.   23.15

   4 COMBINED AT
+               HUFN    13909.  14.25    8724.    3876.   1584.  108.97

   ROUTED TO
+              MDPLS    13483.  14.50    8694.    3874.   1584.  108.97
+                                                             4420.79     14.50


*** NORMAL END OF HEC-1 ***
```

OPTION 1

```
1                                        HEC-1 INPUT                                              PAGE  1

         LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

           1        ID      HUFFAKER NARROWS WITH BI CARD    *** existing flow ***
           2        ID      2 4 X 10' RCB's AT OUTLET      over double diamond and bella vista
           3        ID      NO EXCAVATION - EXISTING GROUND
           4        ID   ***********************************************************************
           5        IT     15                     289
           6        BI   HUFN       22

           7        KK      MOD PULS THROUGH NARROWS
           8        RS       1     STOR       0
           9        SV      .1      2.4      12      37      91     201     394     694    1114    1683
          10        SV    2513     3649    5054
          11        SE    4410     4412    4414    4416    4418    4420    4422    4424    4426    4428
          12        SE    4430     4432    4434
          13        SQ       1      160     500     800    1050    1350    1480    1660    1760    1950
          14        SQ    2040     2100    2200
          15        ZZ

  PEAK FLOW     TIME                      MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR       72-HR     72.00-HR

+   (CFS)       (HR)
                         (CFS)
+    2111.     26.75               2106.       2072.       1449.       1449.
                       (INCHES)     .180        .707       1.484       1.484
                        (AC-FT)    1044.       4109.       8622.       8622.

 PEAK STORAGE   TIME                     MAXIMUM AVERAGE STORAGE
                                   6-HR        24-HR       72-HR     72.00-HR

+  (AC-FT)      (HR)
     3808.     26.75               3736.       3140.       1394.       1394.

  PEAK STAGE    TIME                      MAXIMUM AVERAGE STAGE
                                   6-HR        24-HR       72-HR     72.00-HR

+   (FEET)      (HR)
   4432.23     26.75             4432.12     4431.07     4423.49     4423.49

                        CUMULATIVE AREA =   108.97 SQ MI

1
                                                RUNOFF SUMMARY
                                           FLOW IN CUBIC FEET PER SECOND
                                         TIME IN HOURS,  AREA IN SQUARE MILES

                                          PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD     BASIN    MAXIMUM     TIME OF
             OPERATION       STATION      FLOW     PEAK                                          AREA     STAGE     MAX STAGE
+                                                             6-HOUR     24-HOUR     72-HOUR

             HYDROGRAPH AT
+                               M       10492.    15.50        7666.       3349.       1451.     108.97

             ROUTED TO
+                               M        2111.    26.75        2106.       2072.       1449.     108.97
+                                                                                                         4432.23       26.75


 *** NORMAL END OF HEC-1 ***
```

OPTION 1

```
1                                          HEC-1 INPUT                                          PAGE  1

       LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

         1         ID      HUFFAKER NARROWS WITH BI CARD    *** FUTURE CONDITIONS ***
         2         ID      2 4 X 10' RCB's AT OUTLET     over double diamond and bella vista
         3         ID      NO EXCAVATION - EXISTING GROUND
         4         ID   ************************************************************************
         5         IT     15                    289
         6         BI   HUFN      22

         7         KK      MOD PULS THROUGH NARROWS
         8         RS       1    STOR       0
         9         SV      .1     2.4      12      37      91     201     394     694    1114    1683
        10         SV    2513    3649    5054
        11         SE    4410    4412    4414    4416    4418    4420    4422    4424    4426    4428
        12         SE    4430    4432    4434
        13         SQ       1     160     500     800    1050    1350    1480    1660    1760    1950
        14         SQ    2040    2100    2200
        15         ZZ
1*****************************************                                ***************************************

  PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
                                  6-HR        24-HR       72-HR     72.00-HR
+   (CFS)       (HR)
                        (CFS)
+    2150.     25.25               2144.       2104.       1562.        1562.
                      (INCHES)      .183        .718       1.599        1.599
                       (AC-FT)     1063.       4173.       9295.        9295.

 PEAK STORAGE   TIME                       MAXIMUM AVERAGE STORAGE
                                  6-HR        24-HR       72-HR     72.00-HR
+  (AC-FT)      (HR)
     4353.     25.25               4269.       3646.       1692.        1692.

  PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                  6-HR        24-HR       72-HR     72.00-HR
+   (FEET)      (HR)
   4433.00     25.25             4432.88     4431.92     4424.75      4424.75

                       CUMULATIVE AREA =   108.97 SQ MI

1
                                               RUNOFF SUMMARY
                                         FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                      PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD       BASIN    MAXIMUM     TIME OF
           OPERATION        STATION    FLOW     PEAK                                             AREA     STAGE     MAX STAGE
+                                                         6-HOUR      24-HOUR     72-HOUR

           HYDROGRAPH AT
+                              M     16402.    13.75       8909.       3680.       1564.     108.97

           ROUTED TO
+                              M      2150.    25.25       2144.       2104.       1562.     108.97
+                                                                                                     4433.00       25.25


 *** NORMAL END OF HEC-1 ***
```

OPTION 1

```
1                                        HEC-1 INPUT                                          PAGE  1

         LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

           1         ID      HUFFAKER NARROWS WITH BI CARD
           2         ID      2 4 X 10' RCB's AT OUTLET      over double diamond and bella vista
           3         ID      NO EXCAVATION - EXISTING GROUND
           4         ID      ++++++++  MODIFIED FUTURE FLOW  ++++++++
           5         ID  ###########################################################################
           6         IT     15                    289
           7         BI  HUFN       22

           8         KK      MOD PULS THROUGH NARROWS
           9         RS       1    STOR       0
          10         SV      .1     2.4      12      37      91     201     394     694    1114    1683
          11         SV    2513    3649    5054
          12         SE    4410    4412    4414    4416    4418    4420    4422    4424    4426    4428
          13         SE    4430    4432    4434
          14         SQ       1     160     500     800    1050    1350    1480    1660    1760    1950
          15         SQ    2040    2100    2200
          16         ZZ
######################################################################################################

 PEAK FLOW     TIME                         MAXIMUM AVERAGE FLOW
                                   6-HR        24-HR        72-HR      72.00-HR
+  (CFS)       (HR)
                          (CFS)
+    2148.     25.75               2143.        2103.        1562.        1562.
                        (INCHES)    .183         .718        1.599        1.599
                         (AC-FT)   1062.        4171.        9294.        9294.

PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                   6-HR        24-HR        72-HR      72.00-HR
+  (AC-FT)     (HR)
     4325.     25.75               4247.        3626.        1682.        1682.

 PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
                                   6-HR        24-HR        72-HR      72.00-HR
+  (FEET)      (HR)
   4432.96     25.75             4432.85      4431.88      4424.73      4424.73

                         CUMULATIVE AREA =  108.97 SQ MI

1
                                                   RUNOFF SUMMARY
                                             FLOW IN CUBIC FEET PER SECOND
                                           TIME IN HOURS,  AREA IN SQUARE MILES

                                         PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD    BASIN   MAXIMUM    TIME OF
           OPERATION       STATION       FLOW     PEAK                                        AREA     STAGE   MAX STAGE
+                                                          6-HOUR      24-HOUR     72-HOUR

           HYDROGRAPH AT
+                              M       13909.    14.25      8724.        3676.       1564.    108.97

           ROUTED TO
+                              M        2148.    25.75      2143.        2103.       1562.    108.97
+                                                                                                     4432.96      25.75
```

OPTION 2

```
1                                              HEC-1 INPUT                                                  PAGE  1

            LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

              1          ID       HUFFAKER NARROWS WITH BI CARD   *** existing flow ***
              2          ID       2 4 x 10' reinforced concrete boxes at outlet
              3          ID       NO EXCAVATION - EXISTING GROUND on BELLA VISTA ONLY
              4          ID    ***********************************************************************
              5          IT      15                     289
              6          BI    HUFN       22

              7          KK       MOD PULS THROUGH NARROWS
              8          RS       1     STOR       0
              9          SV      .1      2.4      12      37      91     201     389     670    1060    1565
             10          SV    2170     2872    3690    4638    5723    6945
             11          SE    4410     4412    4414    4416    4418    4420    4422    4424    4426    4428
             12          SE    4430     4432    4434    4436    4438    4440
             13          SQ       1      160     500     800    1050    1350    1480    1660    1760    1950
             14          SQ    2040     2100    2200    2300    2400    2500
             15          ZZ
1****************************************                                                *************************************

   PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                         6-HR        24-HR        72-HR     72.00-HR
+   (CFS)         (HR)
                             (CFS)
+    2206.       26.75                  2198.        2129.        1449.        1449.
                          (INCHES)       .188         .727        1.484        1.484
                           (AC-FT)      1090.        4224.        8622.        8622.

  PEAK STORAGE    TIME                         MAXIMUM AVERAGE STORAGE
                                         6-HR        24-HR        72-HR     72.00-HR
+  (AC-FT)        (HR)
      3748.      26.75                  3679.        3071.        1339.        1339.

   PEAK STAGE     TIME                          MAXIMUM AVERAGE STAGE
                                         6-HR        24-HR        72-HR     72.00-HR
+   (FEET)        (HR)
    4434.12      26.75                4433.97      4432.42      4423.78      4423.78

                         CUMULATIVE AREA =   108.97 SQ MI

1
                                                   RUNOFF SUMMARY
                                              FLOW IN CUBIC FEET PER SECOND
                                            TIME IN HOURS,  AREA IN SQUARE MILES

                                          PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM     TIME OF
            OPERATION        STATION      FLOW    PEAK                                             AREA     STAGE     MAX STAGE
+                                                            6-HOUR      24-HOUR      72-HOUR

            HYDROGRAPH AT
+                               M       10492.   15.50       7666.        3349.        1451.     108.97

            ROUTED TO
+                               M        2206.   26.75       2198.        2129.        1449.     108.97
+                                                                                                        4434.12       26.75


 *** NORMAL END OF HEC-1 ***
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OPTION 2

```
1                                         HEC-1 INPUT                                                    PAGE  1

           LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

             1         ID      HUFFAKER NARROWS WITH BI CARD   *** FUTURE CONDITIONS ***
             2         ID      2 4 x 10' reinforced concrete boxes at outlet
             3         ID      NO EXCAVATION - EXISTING GROUND on BELLA VISTA ONLY
             4         ID   ************************************************************************
             5         IT     15                     289
             6         BI   HUFN       22

             7         KK      MOD PULS THROUGH NARROWS
             8         RS       1    STOR       0
             9         SV      .1     2.4      12      37      91     201     389     670    1060    1565
            10         SV    2170    2872    3690    4638    5723    6945
            11         SE    4410    4412    4414    4416    4418    4420    4422    4424    4426    4428
            12         SE    4430    4432    4434    4436    4438    4440
            13         SQ       1     160     500     800    1050    1350    1480    1660    1760    1950
            14         SQ    2040    2100    2200    2300    2400    2500
            15         ZZ
1*****************************************                                     ***************************************

  PEAK FLOW     TIME                     MAXIMUM AVERAGE FLOW
                                   6-HR       24-HR       72-HR      72.00-HR
+   (CFS)       (HR)
                           (CFS)
+    2261.     25.00               2253.       2182.       1562.       1562.
                         (INCHES)   .192        .745       1.599       1.599
                          (AC-FT)  1117.       4328.       9295.       9295.

 PEAK STORAGE   TIME                    MAXIMUM AVERAGE STORAGE
                                   6-HR       24-HR       72-HR      72.00-HR
+  (AC-FT)      (HR)
    4272.      25.00               4195.       3555.       1612.       1612.

  PEAK STAGE    TIME                     MAXIMUM AVERAGE STAGE
                                   6-HR       24-HR       72-HR      72.00-HR
+   (FEET)      (HR)
   4435.23     25.00             4435.06     4433.60     4425.09     4425.09

                          CUMULATIVE AREA =   108.97 SQ MI

1
                                                 RUNOFF SUMMARY
                                           FLOW IN CUBIC FEET PER SECOND
                                         TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD     BASIN   MAXIMUM    TIME OF
             OPERATION     STATION   FLOW     PEAK                                           AREA     STAGE   MAX STAGE
+                                                       6-HOUR     24-HOUR     72-HOUR

             HYDROGRAPH AT
+                             M     16402.   13.75      8909.       3680.       1564.     108.97

             ROUTED TO
+                             M      2261.   25.00      2253.       2182.       1562.     108.97
+                                                                                                 4435.23      25.00


 *** NORMAL END OF HEC-1 ***
```

OPTION 2

```
1                                            HEC-1 INPUT                                          PAGE  1

          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

            1           ID      HUFFAKER NARROWS WITH BI CARD
            2           ID      2 4 x 10' reinforced concrete boxes at outlet
            3           ID      NO EXCAVATION - EXISTING GROUND on BELLA VISTA ONLY
            4           ID      +++++++++  MODIFIED FUTURE FLOW  ++++++++
            5           ID   ************************************************************************
            6           IT      15                    289
            7           BI   HUFN       22

            8           KK      MOD PULS THROUGH NARROWS
            9           RS       1    STOR       0
           10           SV      .1     2.4      12      37      91     201     389     670    1060    1565
           11           SV    2170    2872    3690    4638    5723    6945
           12           SE    4410    4412    4414    4416    4418    4420    4422    4424    4426    4428
           13           SE    4430    4432    4434    4436    4438    4440
           14           SQ       1     160     500     800    1050    1350    1480    1660    1760    1950
           15           SQ    2040    2100    2200    2300    2400    2500
           16           ZZ
1*****************************************                                                   ***************************************

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR        24-HR       72-HR     72.00-HR
+   (CFS)        (HR)
                            (CFS)
+    2259.      25.50                  2251.       2180.       1562.        1562.
                          (INCHES)      .192        .744       1.599        1.599
                           (AC-FT)     1116.       4323.       9295.        9295.

  PEAK STORAGE   TIME                         MAXIMUM AVERAGE STORAGE
                                       6-HR        24-HR       72-HR     72.00-HR
+  (AC-FT)       (HR)
     4246.      25.50                  4174.       3535.       1602.        1602.

   PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                       6-HR        24-HR       72-HR     72.00-HR
+   (FEET)       (HR)
   4435.17      25.50               4435.02     4433.55     4425.08      4425.08

                            CUMULATIVE AREA =   108.97 SQ MI

1
                                                            RUNOFF SUMMARY
                                                      FLOW IN CUBIC FEET PER SECOND
                                                   TIME IN HOURS,  AREA IN SQUARE MILES

                                     PEAK     TIME OF      AVERAGE FLOW FOR MAXIMUM PERIOD       BASIN     MAXIMUM     TIME OF
          OPERATION      STATION     FLOW      PEAK                                               AREA      STAGE     MAX STAGE
+                                                         6-HOUR      24-HOUR      72-HOUR

          HYDROGRAPH AT
+                           M       13909.    14.25        8724.       3676.        1564.       108.97

          ROUTED TO
+                           M        2259.    25.50        2251.       2180.        1562.       108.97
+                                                                                                         4435.17       25.50
```

OPTION 3

```
1                                             HEC-1 INPUT                                              PAGE  1

         LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

           1         ID      HUFFAKER NARROWS WITH BI CARD  -  existing flow
           2         ID      2 4' X 10' REINFORCED CONCRETE BOX    no excavation
           3         ID      preliminary basin design  -  LEVEE PROTECTING DOUBLE DIAMOND
           4         ID      Northern corner Double Diamond available for inundation
           5         ID   ***********************************************************************
           6         IT     15                     289
           7         BI   HUFN       22

           8         KK      MOD PULS THROUGH NARROWS
           9         RS       1    STOR       0
          10         SV      .1     2.3      12      37      90     200     394     694    1114    1666
          11         SV    2390    3339    4476
          12         SE    4410    4412    4414    4416    4418    4420    4422    4424    4426    4428
          13         SE    4430    4432    4434
          14         SQ       1     160     500     800    1050    1350    1480    1660    1760    1950
          15         SQ    2040    2100    2200
          16         ZZ
1****************************************                                    *************************************

   PEAK FLOW      TIME                           MAXIMUM AVERAGE FLOW
                                           6-HR        24-HR        72-HR      72.00-HR
 +   (CFS)        (HR)
                                  (CFS)
 +    2140.       26.75                    2134.        2088.        1449.        1449.
                                (INCHES)    .182         .713        1.484        1.484
                                 (AC-FT)   1058.        4142.        8622.        8622.

  PEAK STORAGE    TIME                          MAXIMUM AVERAGE STORAGE
                                           6-HR        24-HR        72-HR      72.00-HR
 +  (AC-FT)       (HR)
      3792.       26.75                    3720.        3121.        1379.        1379.

   PEAK STAGE     TIME                           MAXIMUM AVERAGE STAGE
                                           6-HR        24-HR        72-HR      72.00-HR
 +   (FEET)       (HR)
    4432.80       26.75                  4432.67      4431.49      4423.58      4423.58

                                 CUMULATIVE AREA =   108.97 SQ MI

1
                                                    RUNOFF SUMMARY
                                              FLOW IN CUBIC FEET PER SECOND
                                            TIME IN HOURS,  AREA IN SQUARE MILES

                                         PEAK    TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM      TIME OF
            OPERATION        STATION     FLOW     PEAK                                           AREA      STAGE      MAX STAGE
 +                                                          6-HOUR      24-HOUR      72-HOUR

            HYDROGRAPH AT
 +                                 M     10492.   15.50       7666.       3349.        1451.     108.97

            ROUTED TO
 +                                 M      2140.   26.75       2134.       2088.        1449.     108.97
 +                                                                                                        4432.80       26.75


 *** NORMAL END OF HEC-1 ***
```

OPTION 3

```
1                                        HEC-1 INPUT                                         PAGE  1

          LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

            1         ID        HUFFAKER NARROWS WITH BI CARD  -  future FLOW
            2         ID        2 4' X 10' REINFORCED CONCRETE BOX    no excavation
            3         ID        preliminary basin design  -  LEVEE PROTECTING DOUBLE DIAMOND
            4         ID        Northern corner Double Diamond available for inundation
            5         ID    ******************************************************************************
            6         IT       15                       289
            7         BI    HUFN        22

            8         KK        MOD PULS THROUGH NARROWS
            9         RS         1     STOR       0
           10         SV        .1      2.3      12      37      90     200     394     694    1114    1666
           11         SV      2390     3339    4476
           12         SE      4410     4412    4414    4416    4418    4420    4422    4424    4426    4428
           13         SE      4430     4432    4434
           14         SQ         1      160     500     800    1050    1350    1480    1660    1760    1950
           15         SQ      2040     2100    2200
           16         ZZ
1*****************************************                                       *****************************************

  PEAK FLOW     TIME                         MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR       72-HR      72.00-HR

+   (CFS)       (HR)
                           (CFS)
+    2187.      25.25                 2180.       2128.       1562.        1562.
                        (INCHES)       .186        .726       1.599        1.599
                         (AC-FT)      1081.       4220.       9295.        9295.

 PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                      6-HR        24-HR       72-HR      72.00-HR

+  (AC-FT)      (HR)
    4328.       25.25                 4246.       3618.       1668.        1668.

  PEAK STAGE    TIME                         MAXIMUM AVERAGE STAGE
                                      6-HR        24-HR       72-HR      72.00-HR

+   (FEET)      (HR)
   4433.74      25.25               4433.59     4432.45     4424.86      4424.86

                         CUMULATIVE AREA =   108.97 SQ MI

1
                                                     RUNOFF SUMMARY
                                              FLOW IN CUBIC FEET PER SECOND
                                            TIME IN HOURS,  AREA IN SQUARE MILES

                                            PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
            OPERATION          STATION      FLOW     PEAK                                             AREA      STAGE     MAX STAGE
+                                                               6-HOUR      24-HOUR      72-HOUR

            HYDROGRAPH AT
+                                 M       16402.    13.75        8909.        3680.        1564.      108.97

            ROUTED TO
+                                 M        2187.    25.25        2180.        2128.        1562.      108.97
+                                                                                                               4433.74       25.25


 *** NORMAL END OF HEC-1 ***
```

OPTION 3

```
1                                          HEC-1 INPUT                                        PAGE  1

        LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          1         ID      HUFFAKER NARROWS WITH BI CARD
          2         ID      2 4' X 10' REINFORCED CONCRETE BOX    no excavation
          3         ID      preliminary basin design  -  LEVEE PROTECTING DOUBLE DIAMOND
          4         ID      Northern corner Double Diamond available for inundation
          5         ID      ++++++++  MODIFIED FUTURE FLOW  ++++++++
          6         ID   ########################################################################
          7         IT     15                    289
          8         BI   HUFN       22

          9         KK      MOD PULS THROUGH NARROWS
         10         RS      1    STOR       0
         11         SV     .1     2.3      12      37      90     200     394     694    1114    1666
         12         SV   2390    3339    4476
         13         SE   4410    4412    4414    4416    4418    4420    4422    4424    4426    4428
         14         SE   4430    4432    4434
         15         SQ      1     160     500     800    1050    1350    1480    1660    1760    1950
         16         SQ   2040    2100    2200
         17         ZZ
 ####################################################################################################################################

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                       6-HR        24-HR        72-HR      72.00-HR
 +   (CFS)       (HR)
                             (CFS)
 +    2185.     25.50                 2178.        2126.        1562.        1562.
                          (INCHES)     .186         .726        1.599        1.599
                           (AC-FT)    1080.        4217.        9295.        9295.

  PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                       6-HR        24-HR        72-HR      72.00-HR
 +  (AC-FT)      (HR)
      4301.     25.50                 4225.        3599.        1658.        1658.

   PEAK STAGE    TIME                         MAXIMUM AVERAGE STAGE
                                       6-HR        24-HR        72-HR      72.00-HR
 +   (FEET)      (HR)
    4433.69     25.50               4433.56      4432.41      4424.84      4424.84

                           CUMULATIVE AREA =   108.97 SQ MI

 1
                                                       RUNOFF SUMMARY
                                                FLOW IN CUBIC FEET PER SECOND
                                              TIME IN HOURS,  AREA IN SQUARE MILES

                                             PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD       BASIN    MAXIMUM     TIME OF
                OPERATION         STATION     FLOW     PEAK                                          AREA      STAGE    MAX STAGE
 +                                                              6-HOUR       24-HOUR      72-HOUR

                HYDROGRAPH AT
 +                                   M      13909.   14.25        8724.        3676.        1564.     108.97

                ROUTED TO
 +                                   M       2185.   25.50        2178.        2126.        1562.     108.97
 +                                                                                                              4433.69        25.50
```