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FLOODPLAIN DELINEATION
FOR
WASH B

November 8, 2000

Coe & Van Loo Consultants, Inc.
4550 North 12th Street
Phoenix, Arizona 85014

CVL Project No. 9700201

FLOODPLAIN DELINEATION

FOR

WASH B

November 8, 2000

Prepared for:

Maricopa County Flood Control District

2801 West Durango Street

Phoenix, Arizona 85009-6399

Prepared by:

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Wash B Flood Plain Delineation

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WASH B FLOODPLAIN DELINEATION

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1.0 INTRODUCTION

1.1 Scope of Study

Coe & Van Loo Consultants, Inc., (CVL) has contracted with the Flood Control District Maricopa County (FCDMC) to perform a Floodplain Delineation for a portion of Wash B located in Maricopa County, Arizona.

The project consists of topographic mapping and floodway delineation of approximately 3.9 river miles of Wash B south of the Cactus Road alignment and north of Doubletree Ranch Road in the City of Scottsdale. The reaches under study consist of the main stem and one tributary, broken down into three segments (1a, 1b, and 2). Segments 1a and 1b are the main stem, with 1a (2.1 miles) being the reach south of Shea Boulevard. Segment 1b in the main stem of Wash B is north of Shea Boulevard, comprising approximately 1.5 miles to Cactus Road. Segment 2 is the tributary to the main stem and is roughly 0.3 miles terminating at Via Linda Road. In addition, the study includes topographic mapping and the establishment of ponding limits on the upstream side of the Central Arizona Project (CAP) Canal. The limits of the contributory watershed are from Section 13 of Township 3N Range 5E (on the north) to Section 25 of Township 3N Range 5E (on the south). CVL developed hydrology for the 2.5 square mile watershed using the US Army Corps of Engineer's HEC-1 computer model. Backwater analysis will be conducted using the HEC-RAS computer model to determine floodplain and floodway delineation for the 100-year peak flood.

The specific scope of this report is to analyze and document the hydrology of Wash B. The hydrologic computations documented in this report are in accordance with the methodology documented in the FCDMC's *Hydrologic Design Model* (Ref. 1).

1.2 Description of Watershed

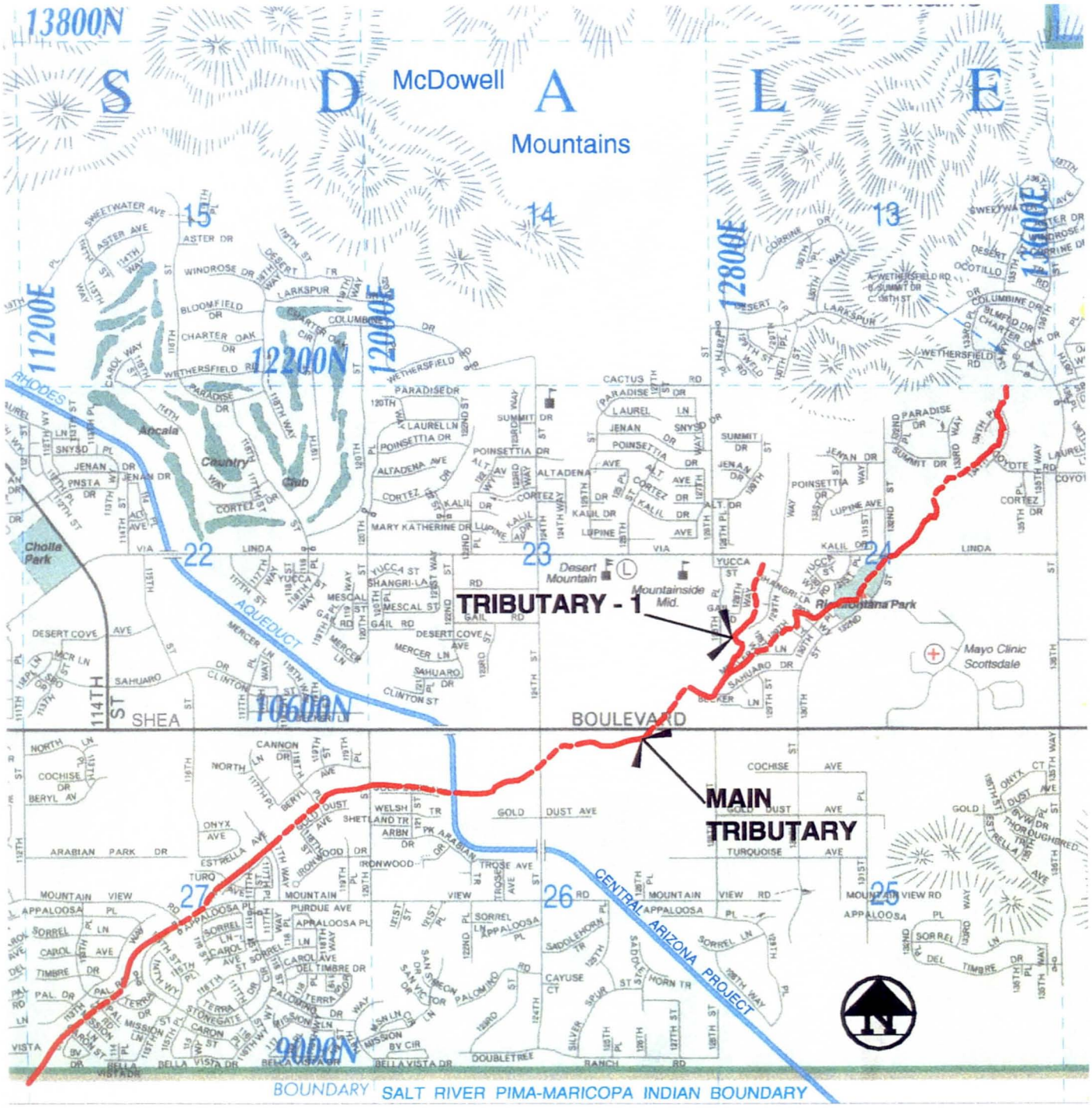
Hydrology is being analyzed for approximately 2.5 square miles of watershed that contributes stormwater runoff to Wash B. Wash B watershed extends approximately 2 miles north of the CAP Canal and Shea Boulevard crossing with the upper limit located within the McDowell Mountains. Numerous roads cross the watershed, including Cactus Road, Via Linda Road and Shea Boulevard with the southern boundary of the watershed being at the CAP Canal just south of Shea Boulevard. Refer to the vicinity map (page 4) for the location of the Wash B Watershed Study Area.

The terrain within the watershed differs greatly with the mountains to the north having slopes ranging from 25 to 65 percent (%) and the rest of the watershed generally sloping to the southwest ranging from about 10% down to 2.5%. A large portion of the watershed is in a medium density residential condition with several roads, subdivisions and the CAP Canal. The soils within the watershed range from highly permeable sandy loam to less permeable clays and rock outcroppings.

1.3 Previous Studies and Reports

Wash B has not previously been analyzed for Floodplain Delineation. Hydrology is not available for the entire Wash B watershed. Information on the CAP overchute south of Shea Boulevard was gathered from the United States Bureau of Reclamation (USBR). The overchute structure, three, 72-inch-diameter pipes, is at CAP station 234+10. The Granite Reef Aqueduct (CAP Canal) Location Map (Reach 12) shows that the peak inflow is 1130 cfs, the storage capacity is 42 acre-feet and the peak outflow is 834 cfs for a 100-year 6-hour storm at this location. The input data for the overchute at station 234+10 (Hayden-Rhodes Data, Appendix VII) shows that the pipes were designed with the Soil Conservation Service (SCS) method to accommodate a drainage area of 2.42 square miles, a channel length of 2.50 miles with a centroid of 1.60 miles, a curve number of 80 and a slope of 480 feet/mile. The overchute was originally designed at an invert elevation of 1507.14 feet and a previous crest elevation of 1518.00 feet. See Appendix Section VII for details. No storage capacity data is available for the overchute.

A FEMA search was conducted to obtain any available historical data relating to the hydrologics and hydraulics in the area. The only information available for the entire Wash B area was a HEC-2 analysis, Glen Washburn FPMS, April 1976. A copy of this HEC-2 is included in the Appendix, Section VII. The HEC-2 appears to have been done prior to the construction of the CAP and does not provide any significant information.



WASH–B FLOODPLAIN DELINATION STUDY	STUDY AREA LOCATION MAP	JOB NO. 997002–01
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2.0 METHOD DESCRIPTION

2.1 Hydrologic Model

A computerized rainfall/runoff model was developed for the Wash B watershed using the U.S. Army Corps of Engineers (CORPS) Flood Hydrograph Package, HEC-1 (Ref. 3). HEC-1 uses numerical parameters to describe the amount of temporal distribution of rainfall, the runoff characteristics of the watershed, and the hydraulic properties of channels and washes that collect and convey the direct runoff to concentration points. The computer output provides runoff hydrographs at user selected locations. A network of sub-basins and connecting channels was configured that simulates the natural drainage patterns of the watershed. See the Sub-Basin and Soils Delineation Map (Plate 1).

The September 1990 HEC-1 computer program was used to model the Wash B watershed. The HEC-1 version 4.0, as implemented by Dodson and Associates, Inc. in their April 1991 version of ProHEC-1 was used for this study.

2.2 Study Criteria

The criteria and guidelines to be used in this study were set forth by FCDMC prior to the commencement of work. The CORPS HEC-1 computer program was used to model the Wash B watershed, for the 100-year storm. Storm durations of 6 and 24 hours were evaluated to determine which duration storm results in the higher magnitude peak discharge.

The Phoenix Mountain S-Graph, the Phoenix Valley S-Graph, the Green-Ampt Loss Rate and the Normal Depth/Modified Puls Channel Routing options were used in the HEC-1 model for the Wash B watershed. The Maricopa County Unit Hydrograph Procedure 2 (MCUHP2) computer program within the new Drainage Design Management System (DDMSW), as provided by the FCDMC was used to generate the basic HEC-1 input file. The assumptions, procedures and methodologies used to develop the remainder of the HEC-1 data input sets are discussed in the following sections.

3.0 PARAMETER ESTIMATION

3.1 Drainage Area Boundaries

The study watershed encompasses approximately 2.5 square miles, extending from the McDowell Mountains to the CAP Canal. The sub-basins were delineated using detailed topographic mapping provided by the City of Scottsdale. The topographic mapping is at a 2-foot contour scale and is dated 1993.

The sub-basins were delineated such that concentration points were provided at meaningful locations, (confluences, roads, etc.). The sub-basin areas were all under 0.5 square miles. Refer to the Routing Reach with Concentration Points Map (Figure 2).

3.2 Physical Parameters

3.2.1 Unit Hydrograph Procedures

A large portion of the watershed was medium density residential with slopes ranging between 2.5% and 10%. The watershed was modeled with both the Phoenix Mountain S-Graph for the mountainous sub-basins and the Phoenix Valley S-Graph for the remainder, as implemented by the MCUHP2 computer program supplied by the FCDMC.

3.2.2 Loss Rate Estimation

Precipitation loss rates have been computed using the Green-Ampt Infiltration Equation option in HEC-1. The Green-Ampt Parameters XKSAT (hydraulic conductivity at natural saturation), PSIF (wetting front capillary suction), and DTHETA (volumetric soil moisture deficit at the start of rainfall) have been determined for each sub-basin. The area of each soil unit within each sub-basin was computed using maps from the Soil Conservation Service's Soil Survey of Aguila-Carefree Area, Parts of Maricopa and Pinal Counties, Arizona, then a log area-weighted set of Green-Ampt parameters for each sub-basin was calculated.

Given the Green-Ampt parameters based strictly on soil characteristics, the XKSAT and DTHETA parameters were then adjusted to account for vegetative cover and/or land use. To account for the impact of vegetative cover, the XKSAT parameters for each sub-basin were adjusted based on guidelines given in the FCDMC's *Hydrologic Design Manual*, aerial photographs and field observations. The DTHETA parameter is influenced by land use.

DTHETA (dry) was used in natural desert areas, due to the arid nature of the land. DTHETA (normal) was used for the medium density residential areas, since there is intermittent moisture due to watering landscaping. The DTHETA parameter was calculated as an area-weighted average based on the land use.

The percent vegetative cover within a sub-basin was based on guidelines from the City of Scottsdale (COS). The percent vegetative cover for natural mountain ranges, desert areas and medium density residential areas was restricted to 15%. The residential areas were further sub-divided into actual "developed" portions and "natural area" portions. These "natural areas" ranged from 25 to 35% of the total developed area in most of the sub-basins and are based on strict guidelines provided by the COS.

The COS has only minimal on-site storage (retention basins). The only on-site retention found in the entire Wash B drainage area was located at Anazi Elementary, Desert Mountain, and Mountain Middle Schools at 124th Street and Via Linda. Also, some parking lot retention is provided for a church located just south of Desert Mountain Middle School at 124th Street and Gail Street. Each facility has enough on-site storage to accommodate their own drainage areas. However, no off-site flows are retained. When the total on-site retention for these areas was accounted for in the HEC-1, it did not result in any significant impact to the original HEC-1 model. For this reason, no on-site retention of any kind has been included within the final HEC-1 model.

The "percent impervious" parameter (RTIMP) specifies the percentage of a sub-basin that is impervious. The "percent impervious" was computed for each sub-basin, as a function of natural rock features and land use. The percentage of impervious rock outcrops within each sub-basin was estimated from data provided in the SCS Soil Survey for each soil unit and was calculated within the MCHUP2 program.

The surface retention loss parameter (IA) is a function of land use and/or surface vegetative cover. IA values for each sub-basin have been calculated using guidelines given in the FCDMC's *Hydrologic Design Manual*. The IA values for natural desert areas have been weighted to reflect flat slopes, hill slopes or mountain slopes. Then the IA value has been area weighted to reflect the land use in the sub-basin.

The loss rate estimation parameters have been calculated using a computer spreadsheet program, Drainage Design Management System for Windows (DDMSW), provided by the FCDMC. The program uses the soil types, land use, vegetative cover and percent impervious to weight Green-Ampt parameters. The MCFCD provided semi-rectified aerial photographs dated 1999, which were used to determine land use parameters and vegetative cover percentages. See Section I in the appendix for loss rate parameters.

3.2.3 Lag Time

Lag time flow routes have been determined using detailed topographic maps. Lag times were calculated for each sub-basin using the following empirical equation per FCDMC guidelines.

$$\text{Lag} = C \frac{(L\ Lca)^m}{S^p}$$

where Lag = sub-basin lag time in hours

L = length of longest watercourse in miles

Lca= length along watercourse to a point opposite the centroid in miles

S = watercourse slope in feet

C = 24 Kn

Kn = estimated mean Manning's "n" for all channels in sub-basin

m = 0.38

p = 0.5

L, Lca and S were determined for each sub-basin based on topographic maps (see the Routing Reach Map, Figure 2). The Kn values range from 0.035 to 0.09 and were based on aerial photography and field reconnaissance. The actual lag time calculation was done within DDMSW provided by the MCFCD. Refer to the appendix Section I for lag time calculation data.

3.2.4 Channel Routing

In this study, the Normal Depth Channel/Modified Puls method was used for all flow routings. Channel geometries, slopes and Manning's roughness coefficients were estimated from topographic maps, aerial photography and observations made during field

reconnaissance. The routing reach length and average slope were based on topographic mapping. The remaining channel parameters were estimated to represent an average cross-section for the reach.

The number of steps to be used in the channel routing (NSTPS) HEC-1 calculations was determined based on the guidelines given in the HEC-1 manual. The equation determining the NSTPS is as follows:

$$\text{NSTPS} = \frac{\text{Reach Length (ft)/Average Velocity (fps)}}{\text{Computational Time Interval (min) x 60 (sec/min)}}$$

The average velocity was initially estimated using Manning's Equation. After the initial HEC-1 runs, the reach length was divided by the difference in time to peak (due to the channel route) to better estimate the average velocity. After a few iterations, the results converged on a reasonable average velocity.

Transmission losses have not been applied to the channel routes.

3.2.5 Reservoir Routing

Reservoir routing was modeled in two locations in the ponding area behind the CAP Canal. The ponding and reservoir routing behind the CAP Canal was evaluated for the watershed based on topographic mapping. The outflow rating curves were based on inlet control using the HDS-5 culvert capacity charts (Ref. 10) for the 3, 72-inch-diameter culvert overchute and the 36-inch-diameter underchute and on weir flow over the canal. The CAP Canal bank was used as input into the HEC-1 model for weir flow calculations and the ponding limits were delineated based on 2-foot contour topographic mapping. Refer to the appendix Section IV for sample calculations of the ponding situation described in this section.

3.3 Statistical Parameters

The statistical parameters used in this analysis were obtained from the FCDMC's *Hydrologic Design Manual*. Extensive research and analysis went into the production of that manual. Refer to the Manual for the background of the statistical parameters.

3.3.1 Gage Data

There are no gage stations within this watershed. Therefore, a gage station analysis was not performed.

3.3.2 Calibration

Due to the lack of gage station data, calibration of the HEC-1 model was made using general statistical data. The FCDMC's Flood Frequency Analysis of U.S. Geological Survey (USGS) Gage Data Collected in Maricopa County was utilized for reasonableness of the HEC-1 model. Representative 100-year discharges for Wash B, as calculated in the HEC-1 model, were plotted on Peak Discharges versus Drainage Area Curves for the Maricopa County Area. The storm duration (6-hour or 24-hour) that produced the higher peak flow, at each selected location, was plotted on the curve. These plots indicated that the Hec-1 results appear to be of a reasonable magnitude. Refer to Appendix Section VIII for these curves and USGS's *Methods for Estimating Magnitude for Frequency of Floods in the Southwestern United States* (Reference 11) for the original empirical data.

3.4 Precipitation Parameters

3.4.1 Rainfall Distributions

The rainfall distributions used for the 6-hour storms are based on distributions documented in the FCDMC's *Hydrologic Design Manual* as implemented by the Maricopa County Unit Hydrograph Procedure 2 (MCUHP2) within DDMSW. The SCS Type II distribution was used for the 24-hour storm (see appendix Section V, Tables 7 & 8).

3.4.2 Precipitation Data

The point precipitation values used in this study were obtained from isopluvial maps for Maricopa County published in the FCDMC's *Hydrologic Design Manual.* The Wash B watershed was drawn on each isopluvial map and the precipitation was approximated at the centroid of the watershed. The point precipitation values are given in Table 11 and copies of isopluvial maps are included in appendix Section VI.

3.4.3 Aerial Reduction Factors

The point precipitation values used in this study were adjusted with aerial reduction factors to account for the natural spatial variability of rainfall. Reduction factors for the 6-hour duration storms were obtained from curves documented in the FCDMC's *Hydrologic Design Manual.* This data was based on depth-area reduction curves developed by the CORPS, for the historic storm of 1954 over the Queen Creek area. The 24-hour storm reduction factors were obtained from the *NOAA Technical Memorandum NWS HYDRO-40* (Ref. 4). These factors are given in the appendix Section VII, Table 10.

3.4.4 Computational Time Step Interval

The computational time step interval was chosen to be long enough such that the total storm would be covered by the 300 time increments, and short enough that it was no longer than the shortest lag time. A time step of 2 minutes was chosen for the 6-hour storm and a time step of 5 minutes was chosen for the 24-hour storm. With 300 time increments, the computations would cover 10 hours for the 6 hour storm and 25 hours for the 24 hour storm, which is sufficient for both.

4.0 PROBLEMS/DISCUSSIONS

The original model for the Wash B drainage area as found in the FEMA Flood Insurance Study (FIS) for Maricopa County, September 30, 1995, shows the peak 100 year discharge for Wash B to be approximately 1380 cfs at a point 4500 feet downstream of 124th Street, just south of the CAP Canal. The current HEC-1 model for Wash B developed in this study indicates a peak 100 year, 6 hour flow of 3115 cfs at the CAP Canal. This 3115 cfs flow results in overtopping of the CAP Canal at the 3, 72-inch-diameter culvert overchute, and overtopping of the berm south of the CAP Canal overchute. As a test, the model was adjusted by varying land-use types and changing all developed areas into their pre-developed natural conditions and still resulted in a large overtopping flow.

Due to the unavailability of any previous Wash B studies or any verification of the original FEMA FIS discharges, the model was set up to demonstrate that of the 3115 cfs that reaches the CAP Canal overchute, 1192 cfs is routed through the overchute, 1128 cfs is stored in the ponding area behind the CAP canal and the remaining 795 cfs overtops the CAP Canal and the berm south of the CAP Canal, 397 cfs and 397 cfs respectively. The flows routed through the overchute have been verified using the HY8 program. The floodplain delineation southwest of the CAP will use the 1192 cfs that is routed through the overchute. Of the 795 cfs that overtops the CAP and the berm south of the CAP, 397 will enter the CAP and 397 will contribute to the small drainage area south of the berm. The CAP at this location has been designed to be able to withstand an additional 600-cfs of flow without overtopping its banks and the HEC-1 models shows that the CAP south of the berm at the 36-inch-diameter underchute overtops approximately 0.15 feet from the additional 397 cfs. After many discussions with the FCDMC and the City of Scottsdale, it was decided that these overtopping flows accurately depict the flood scenario at the CAP Canal.

5.0 FINAL RESULTS

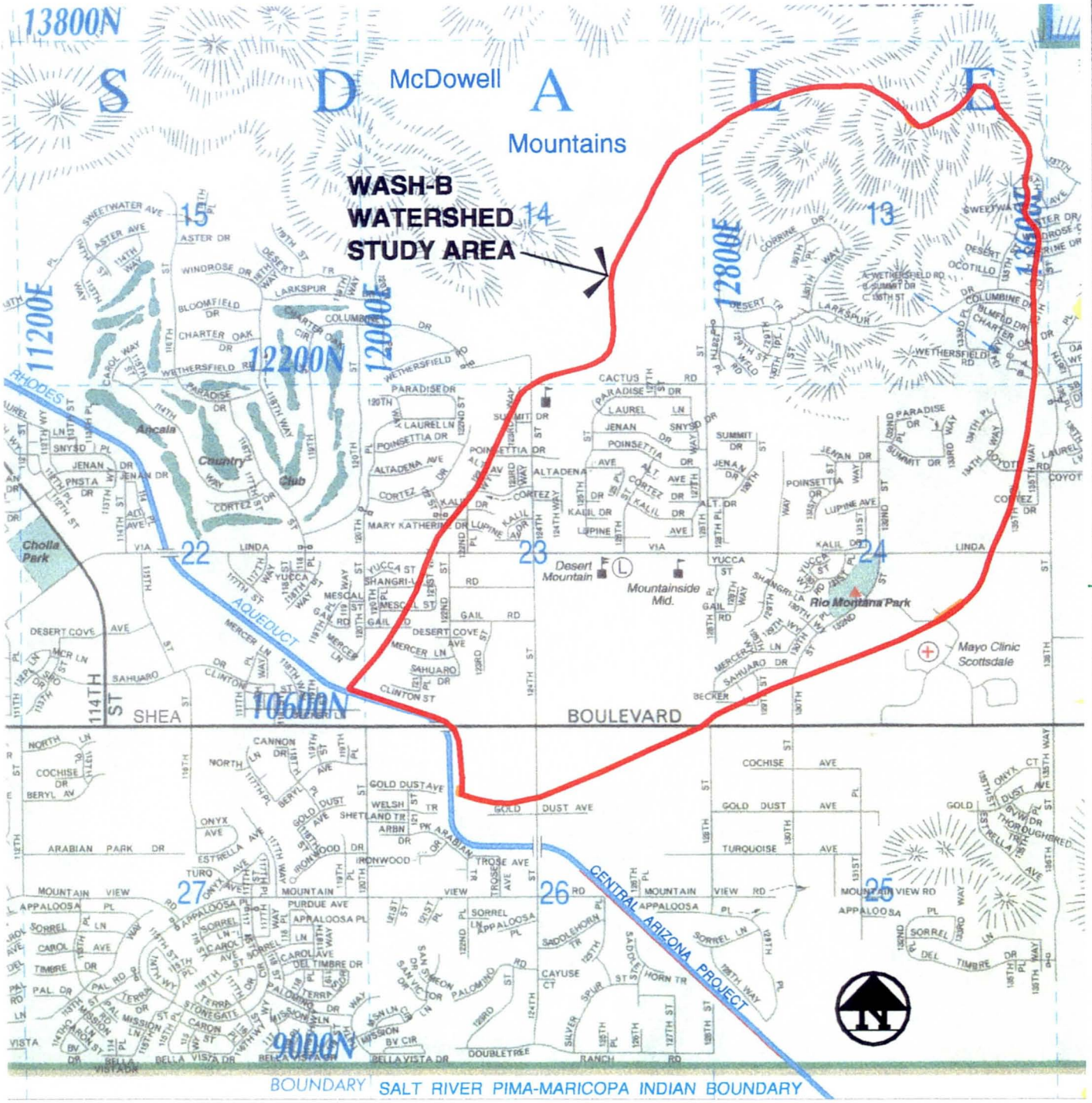
The HEC-1 hydrologic simulation model was used to compute 100-year discharges for Wash B. The 100-year discharges corresponding to both the 6-hour and 24-hour events were evaluated in the study. The results of the study are summarized in Table 9.

Wash B has a small watershed and small sub-basins, which resulted in a higher peak discharge for the 6-hour event as compared to the 24-hour event. It is recommended that the peak discharge for the 6-hour event be used in the floodplain delineation analysis.

The 6-hour peak flow is 3115 cfs. The routed flow of 1192 cfs will be used in the HEC-RAS model south of the CAP Canal for the Wash B Floodplain Delineation. South of the CAP, the downstream watershed conditions consist of moderately dense housing developments (subdivisions). Due to the topography and/or revised developments no additional contributions of flow occur south of the CAP Canal. The CAP Canal retains the entire runoff from the Wash B drainage area in the ponding areas that build up behind the Canal.

6.0 FINAL MODELING RESULTS

The enclosed disks contain the 100-year/6-hour and 100-year/24-hour HEC-1 input and output files.



WASH-B FLOODPLAIN DELINATION STUDY	COMMUNITY MAP	JOB NO. 997002-01
4550 NORTH 12TH STREET PHOENIX, ARIZONA 85014 TELEPHONE (602) 264-6831	COE & VAN LOO PLANNING • ENGINEERING • LANDSCAPE ARCHITECTURE	FIGURE-4

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Table 9

100-Year Peak Discharges on Wash B		6Hour			24Hour		
Location	**HEC-1 ID**	**Discharge (cfs)**	**Time to Peak (hrs)**	**Q/A (cfs/sm)**	**Discharge (cfs)**	**Time to Peak (hrs)**	**Q/A (cfs/sm)**
Concentration Point*	CP1	771	4.07	1606	794	12.00	1654
	CP2	1047	4.10	1517	1066	12.08	1545
	CP3	321	4.27	1459	306	12.17	1391
	CP4	326	4.13	1254	333	12.08	1281
	CP5	740	4.30	1088	739	12.25	1087
	CP3	2024	4.30	1242	2018	12.25	1238
	CP6	2565	4.33	1283	2509	12.25	1248
	CP7	3115	4.47	1261	3011	12.42	1214
CAP Canal	Route	2758	4.67	1117	2509	12.58	1012
Overchute	CP8	354	4.67	143.3	322	12.58	129.8
	CP9	498	4.67	186.5	467	12.58	174.3
CAP Canal	Route	296	4.97	110.9	227	13.00	84.7
Underchute							

* See Routing Map in appendix Section VIII for location of Concentration Points

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Section I: LOSS RATE PARAMETERS ESTIMATION

TABLE 1 SUB-BASIN DATA

TABLE 2 SOIL DATA

TABLE 3 LAND USE DATA

Flood Control District of Maricopa County
99700201 - Wash B

Sub Basin Data

5/15/00

Basin: 01 Storms: Single Duration: 6 Hour Loss Method: Green-Ampt Unit Hydrograph: S-Graph

	Sub Basin Parameters							Rainfall Losses				
Area ID	Area (sq mi)	Length (mi)	Slope (ft/mi)	S-Graph	Lca (mi)	Lag (min)	Kn	I (in)	DTHETA	PSIF (in)	XKSAT (in/hr)	RTIMP (%)
A	0.31	0.80	175.0	Mountain	0.40	11	0.047	0.24	0.34	4.80	0.27	48
B	0.17	1.10	872.7	Valley	0.55	13	0.041	0.24	0.34	4.50	0.33	31
C	0.19	1.10	540.9	Valley	0.55	25	0.069	0.24	0.21	10.10	0.03	5
D	0.02	0.22	363.6	Valley	0.11	5	0.061	0.25	0.35	3.74	0.51	31
E	0.20	0.90	188.9	Valley	0.45	26	0.070	0.18	0.18	8.80	0.06	22
M	0.02	0.18	166.7	Valley	0.09	8	0.070	0.16	0.28	3.29	0.69	28
I	0.19	1.10	890.9	Mountain	0.55	18	0.054	0.25	0.35	3.95	0.44	53
J	0.07	0.95	505.3	Valley	0.48	23	0.070	0.19	0.31	2.89	0.92	17
K	0.18	1.10	163.6	Valley	0.55	32	0.070	0.23	0.33	3.50	0.59	6
L	0.23	1.10	400.0	Valley	0.55	25	0.066	0.20	0.31	3.71	0.52	27
N	0.04	0.60	100.0	Valley	0.30	22	0.070	0.21	0.32	3.29	0.69	12
F	0.16	1.11	252.3	Valley	0.56	29	0.070	0.19	0.17	10.10	0.03	18
O	0.03	0.18	166.7	Valley	0.09	8	0.070	0.18	0.29	3.29	0.69	22
H	0.41	1.11	180.2	Valley	0.56	31	0.070	0.21	0.18	10.10	0.03	13
P	0.06	0.75	53.3	Valley	0.35	28	0.070	0.23	0.33	4.00	0.43	5
G	0.20	1.10	200.0	Valley	0.55	30	0.070	0.19	0.17	10.10	0.03	18
R	0.20	1.30	107.7	Valley	0.65	39	0.070	0.21	0.31	3.71	0.52	12

* Non default value

Soil Data

Area Id	Soil Survey	Map Unit	Area	Area Pct (%)	XKSAT	Rock Outcrop (%)	Effective (%)
A	Aguila/Carefree	31	0.218	70.1	0.33	35.0	100
	Aguila/Carefree	44	0.047	15.1	0.03		
	Aguila/Carefree	68	0.046	14.8	0.63		
B	Aguila/Carefree	31	0.078	45.1	0.33	35.0	100
	Aguila/Carefree	68	0.069	39.9	0.63		
	Aguila/Carefree	44	0.026	15.0	0.03		
C	Aguila/Carefree	31	0.009	4.9	0.33	35.0	100
	Aguila/Carefree	44	0.176	95.1	0.03		
D	Aguila/Carefree	31	0.009	47.4	0.33	35.0	100
	Aguila/Carefree	68	0.010	52.6	0.63		
E	Aguila/Carefree	44	0.169	84.9	0.03		
	Aguila/Carefree	68	0.030	15.1	0.63		
M	Aguila/Carefree	68	0.015	100.0	0.63		
I	Aguila/Carefree	31	0.154	80.2	0.33	35.0	100
	Aguila/Carefree	91	0.029	15.1	0.93		
	Aguila/Carefree	68	0.009	4.7	0.63		
J	Aguila/Carefree	91	0.054	75.0	0.93		
	Aguila/Carefree	68	0.018	25.0	0.63		
K	Aguila/Carefree	68	0.175	95.1	0.63		
	Aguila/Carefree	44	0.009	4.9	0.03		
L	Aguila/Carefree	68	0.173	74.9	0.63		
	Aguila/Carefree	31	0.046	19.9	0.33	35.0	100
	Aguila/Carefree	44	0.012	5.2	0.03		
N	Aguila/Carefree	68	0.044	100.0	0.63		
F	Aguila/Carefree	44	0.160	100.0	0.03		
O	Aguila/Carefree	68	0.027	100.0	0.63		
H	Aguila/Carefree	44	0.408	100.0	0.03		
P	Aguila/Carefree	98	0.053	89.8	0.37		
	Aguila/Carefree	68	0.006	10.2	0.63		
G	Aguila/Carefree	44	0.196	100.0	0.03		
R	Aguila/Carefree	98	0.109	55.1	0.37		
	Aguila/Carefree	68	0.089	44.9	0.63		

* Custom Value (not default value)

Flood Control District of Maricopa County
99700201 - Wash B

Land Use Data

5/15/00

Area Id	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
A	MOUNTAIN	0.220	70.7	Dry	15.0	30	0.25	0.050
	DESERT	0.071	22.8	Dry	15.0 *		0.25 *	0.030
	M.D.R.	0.020	6.4	Normal	15.0 *	30	0.15 *	0.070 *
B	MOUNTAIN	0.078	45.1	Dry	15.0	30	0.25	0.050
	DESERT	0.085	49.1	Dry	15.0 *		0.25 *	0.030
	M.D.R.	0.010	5.8	Normal	15.0 *	30	0.15 *	0.070 *
C	MOUNTAIN	0.009	4.9	Dry	15.0	30	0.25	0.050
	DESERT	0.165	89.2	Dry	15.0 *		0.25 *	0.070 *
	M.D.R.	0.011	5.9	Normal	15.0 *	30	0.15 *	0.070 *
D	MOUNTAIN	0.009	47.4	Dry	15.0	30	0.25	0.050
	DESERT	0.010	52.6	Dry	15.0 *		0.25 *	0.070 *
E	M.D.R.	0.149	74.9	Normal	15.0 *	30	0.15 *	0.070 *
	DESERT	0.050	25.1	Dry	15.0 *		0.25 *	0.070 *
M	M.D.R.	0.011	91.7	Normal	15.0 *	30	0.15 *	0.070 *
	DESERT	0.001	8.3	Dry	15.0 *		0.25 *	0.070 *
I	MOUNTAIN	0.154	80.2	Dry	15.0	30	0.25	0.050
	M.D.R.	0.004	2.1	Normal	15.0 *	30	0.15 *	0.070 *
	DESERT	0.034	17.7	Dry	15.0 *		0.25 *	0.070 *
J	M.D.R.	0.042	58.3	Normal	15.0 *	30	0.15 *	0.070 *
	DESERT	0.030	41.7	Dry	15.0 *		0.25 *	0.070 *
K	M.D.R.	0.035	19.0	Normal	15.0 *	30	0.15 *	0.070 *
	DESERT	0.149	81.0	Dry	15.0 *		0.25 *	0.070 *
L	MOUNTAIN	0.046	19.9	Dry	15.0	30	0.25	0.050
	M.D.R.	0.108	46.8	Normal	15.0 *	30	0.15 *	0.070 *
	DESERT	0.077	33.3	Dry	15.0 *		0.25 *	0.070 *
N	M.D.R.	0.018	40.9	Normal	15.0 *	30	0.15 *	0.070 *
	DESERT	0.026	59.1	Dry	15.0 *		0.25 *	0.070 *
F	M.D.R.	0.096	60.0	Normal	15.0 *	30	0.15 *	0.070 *
	DESERT	0.064	40.0	Dry	15.0 *		0.25 *	0.070 *
O	M.D.R.	0.020	74.1	Normal	15.0 *	30	0.15 *	0.070 *

* Custom Value (not default value)

Land Use Data

Area Id	Land Use Code	Area	Area Pct (%)	DTHETA Condition	Vegetation Cover (%)	RTIMP (%)	IA (in)	Kn
O	DESERT	0.007	25.9	Dry	15.0 *		0.25*	0.070 *
H	M.D.R.	0.179	43.9	Normal	15.0 *	30	0.15*	0.070 *
	DESERT	0.229	56.1	Dry	15.0 *		0.25*	0.070 *
P	M.D.R.	0.009	15.3	Normal	15.0 *	30	0.15*	0.070 *
	DESERT	0.050	84.7	Dry	15.0 *		0.25*	0.070 *
G	M.D.R.	0.119	60.7	Normal	15.0 *	30	0.15*	0.070 *
	DESERT	0.077	39.3	Dry	15.0 *		0.25*	0.070 *
R	M.D.R.	0.082	41.4	Normal	15.0 *	30	0.15*	0.070 *
	DESERT	0.116	58.6	Dry	15.0 *		0.25*	0.070 *

* Custom Value (not default value)

SECTION II: CHANNEL ROUTING PARAMETERS

CHANNEL ROUTING COMPUTATION SHEETS

TABLE 4 CHANNEL ROUTING / NSTPS CALCULATIONS

CVL

TABLE 4

WASH B

CHANNEL ROUTING NSTPS CALCULATIONS

NSTPS = Number of steps to be used in the storage routing (reach length/average velocity)/(time interval, NMIN x 60)

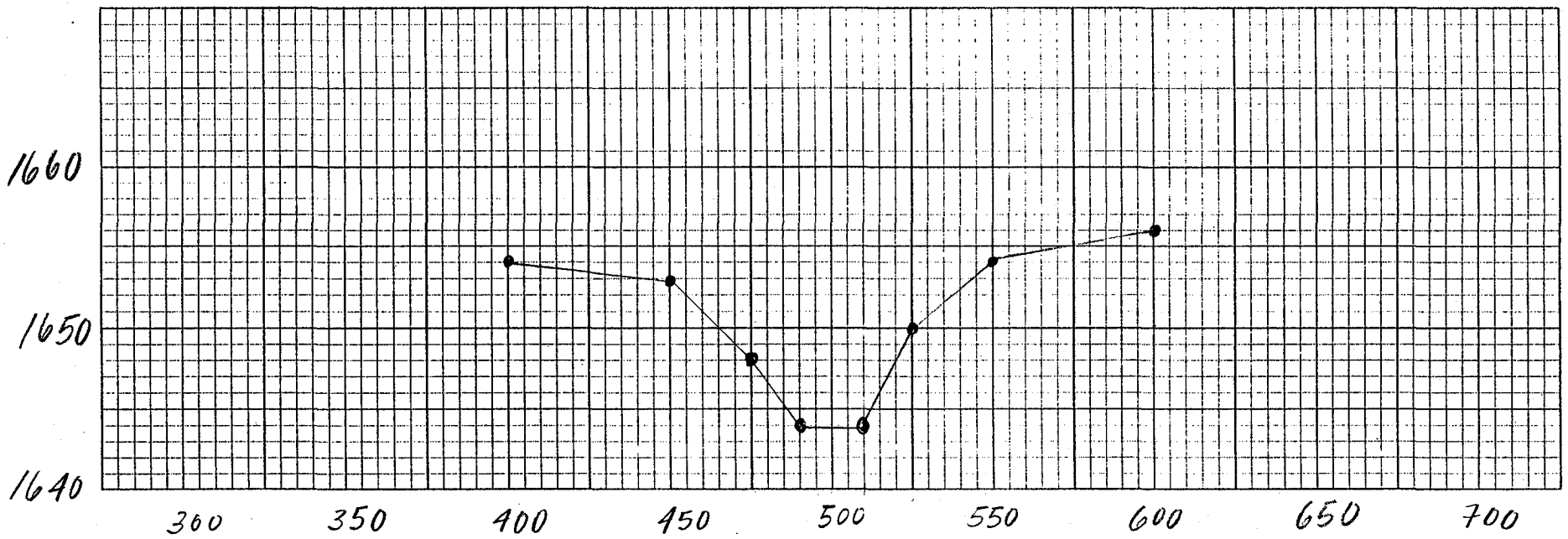
ROUTE ID NUMBER	REACH LENGTH (ft)	APPROXIMATED VELOCITY (fps)	NMIN (min)	NSTPS (calc)	NSTPS (integer)
1-2	1100.0	2.83	5	1.297	1
2-3	4000.0	3.08	5	4.323	4
4-5	4000.0	2.03	5	6.582	7
3-6	2000.0	3.67	5	1.817	2
5-3	2000.0	2.04	5	3.277	3
6-7	3000.0	1.62	5	6.178	6

SECTION IV: RESERVOIR ROUTING PARAMETERS

CAP CANAL ROUTING SAMPLE CALCULATIONS

NORMAL DEPTH CHANNEL ROUTE COMPUTATION SHEET

ROUTE IDENTIFICATION NUMBER 1-2

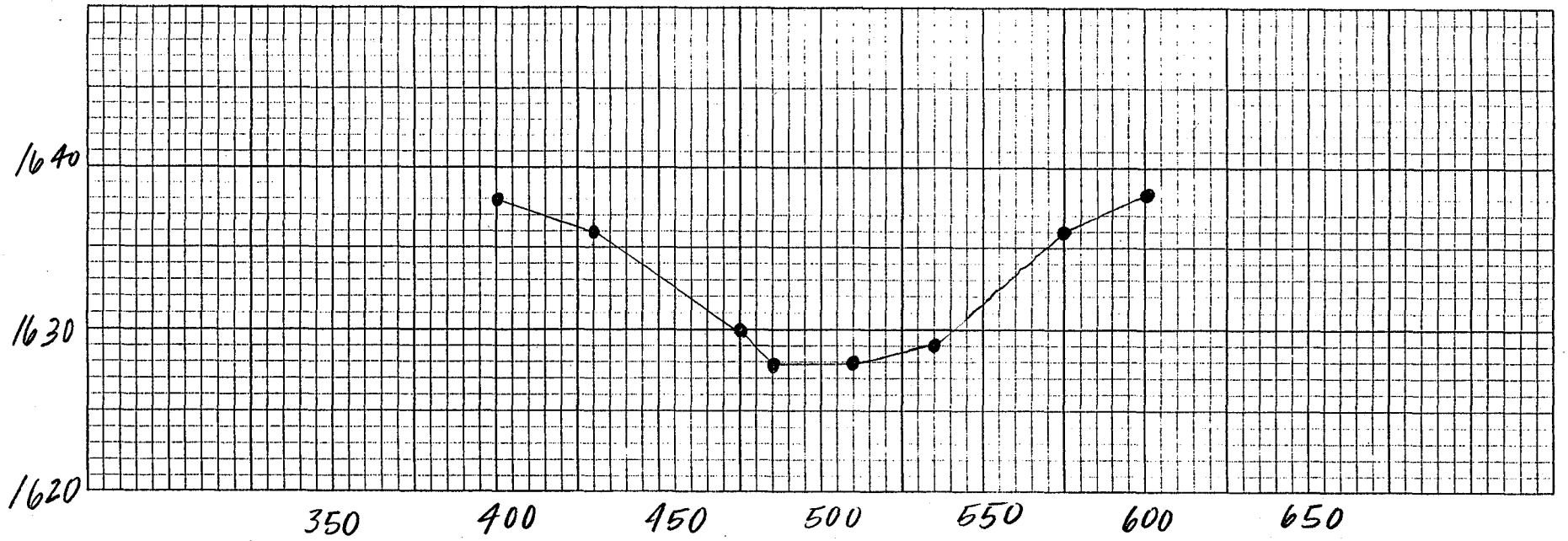


RS	1	FLOW	-1					
RC	0.08	0.06	0.08	1100	0.0218			
RX	400	450	475	490	510	525	550	600
RY	1654	1653	1648	1644	1644	1650	1654	1656

CALCULATED BY: EK

NORMAL DEPTH CHANNEL ROUTE COMPUTATION SHEET

ROUTE IDENTIFICATION NUMBER 2-3

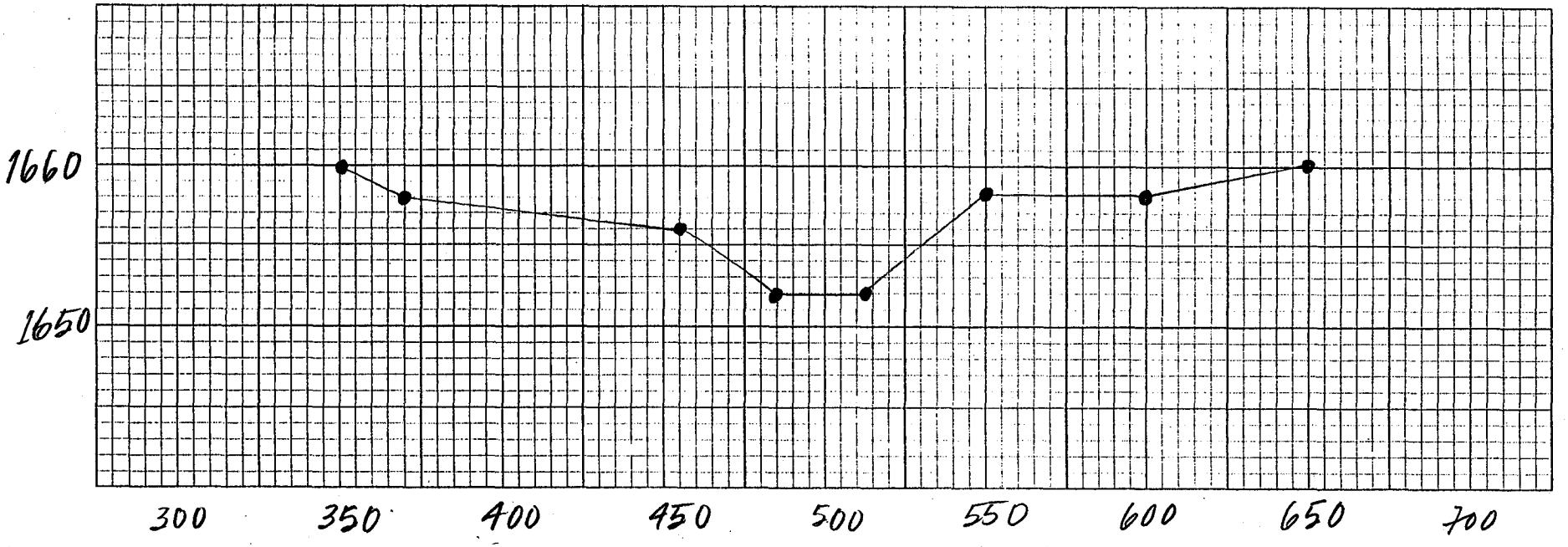


RS	(4)2	FLOW	-1					
RC	0.070	0.045	0.070	4000	0.0175			
RX	400	430	475	480	510	535	575	600
RY	1638	1636	1630	1628	1628	1634	1636	1638

CALCULATED BY: EK

NORMAL DEPTH CHANNEL ROUTE COMPUTATION SHEET

ROUTE IDENTIFICATION NUMBER 4-5

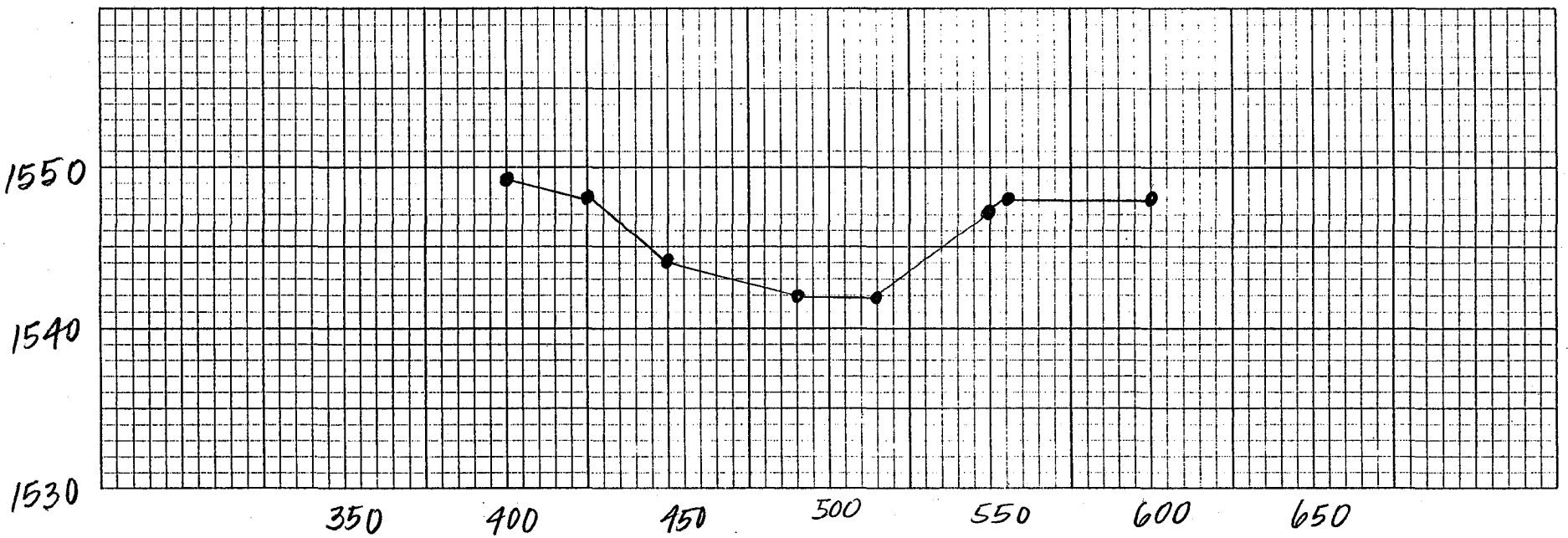


RS	2	FLOW	-1					
RC	0.08	0.06	0.08	4000	0.032			
RX	350	370	460	485	512	550	600	650
RY	1660	1658	1656	1652	1652	1658	1658	1660

CALCULATED BY: EK

NORMAL DEPTH CHANNEL ROUTE COMPUTATION SHEET

ROUTE IDENTIFICATION NUMBER 3-6

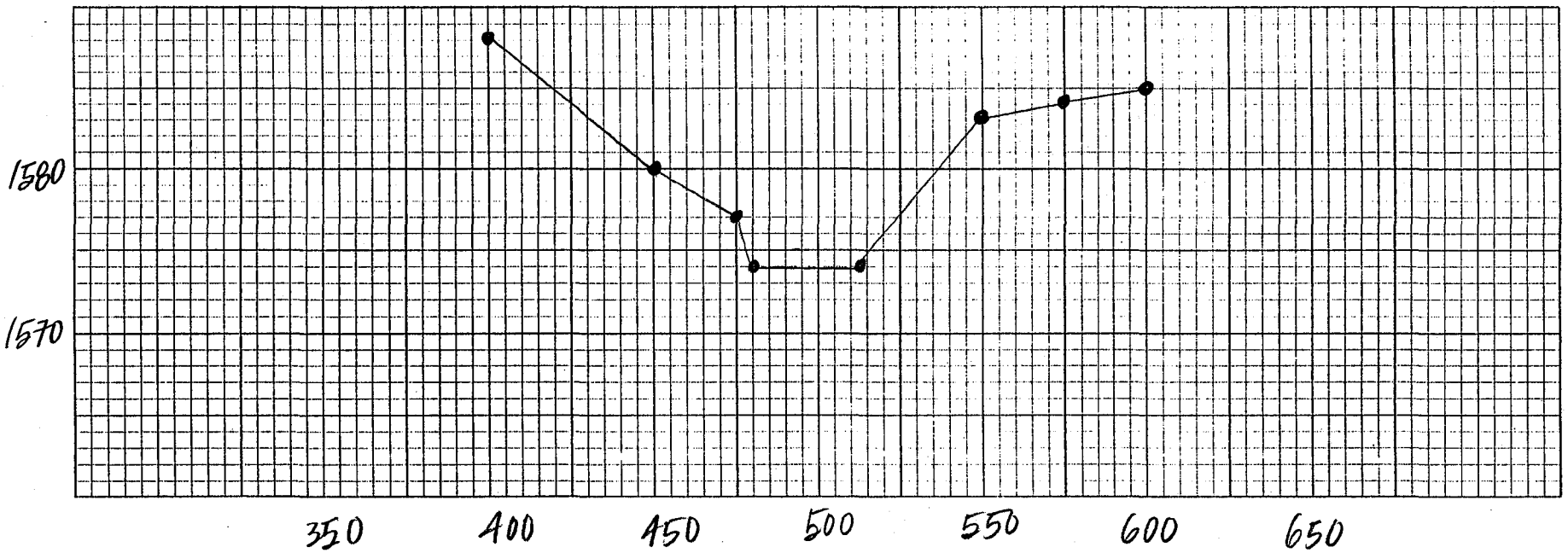


RS	1	FLOW	-1					
RC	0.060	0.040	0.060	2000	0.017			
RX	400	425	450	490	515	550	560	600
RY	1549	1548	1544	1542	1542	1547	1548	1548

CALCULATED BY: EK

NORMAL DEPTH CHANNEL ROUTE COMPUTATION SHEET

ROUTE IDENTIFICATION NUMBER 5-3

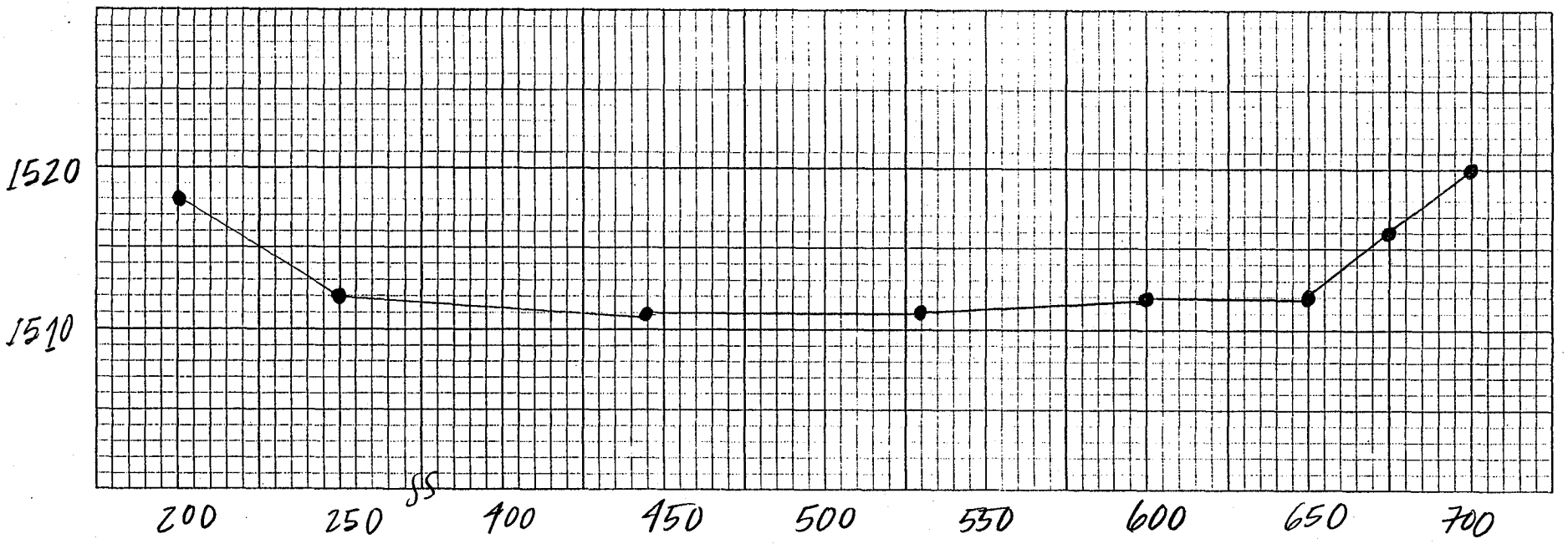


RS	(3) 2	FLOW	-1					
RC	0.70	0.45	0.70	2000	0.007			
RX	400	450	475	480	512	550	575	600
RY	1588	1580	1577	1574	1574	1583	1584	1585

CALCULATED BY: EK

NORMAL DEPTH CHANNEL ROUTE
COMPUTATION SHEET

ROUTE IDENTIFICATION NUMBER 6-7



RS	(6) 4	FLOW	-1					
RC	0.060	0.040	0.060	3000	0.0067			
RX	200	250	440	530	600	650	675	700
RY	1518	1512	1511	1511	1512	1512	1516	1520

CALCULATED BY: EK

CAP CANAL ROUTING CALCULATION

The 3, 72-inch-diameter culvert overchute and the 36-inch-diameter culvert underchute at the CAP Canal were modeled based on inlet control on the culverts using the HDS-5 culvert capacity charts (Ref. 9) and verified using the HY8 program. The culvert data was obtained from a field investigation. The capacity of each culvert was calculated separately and the results were combined to approximate the outflow rating curve for the overchute and underchute, respectively. The overchute was designed by the U.S Bureau of Reclamation (USBR). The 3, 72-inch-diameter pipes have a concrete outlet structure and exit into a wide trapezoidal channel downstream of the CAP. No tailwater condition exists. Therefore, no outlet condition analysis was performed.

Ponding areas were approximated based on topographic mapping and areas and volumes were calculated at various depths of ponding. This data, along with the outflow rating curve, top of bank elevation and length of weir were used as input for the HEC-1 model to determine the total discharge/storage capacity of the CAP Canal at these two locations.

RESERVOIR ROUTING

WASH B

CAP CANAL OVERCHUTE

DEPTH	1-72"	2-72"	3-72"	Q TOTAL (cfs)
0	0	0	0	0
1	14	14	14	42
2	31	31	31	93
3	65	65	65	195
4	110	110	110	330
5	155	155	155	465
6	210	210	210	630
7	250	250	250	750
8	295	295	295	885
9	320	320	320	960
10	365	365	365	1095
11	385	385	385	1155
12	410	410	410	1230
13	445	445	445	1335

HEC-1 INPUT TABLE:

RS	1	ELEV		1508						
SV*	0	1.5	8.0	20.0	35.0	53.0	63.0	72.0		
SE	1507	1510	1512	1514	1516	1518	1519	1520		
SQ	0	42	93	195	330	465	630	750	890	960
SQ	1095	1155	1230							
SE	1509	1510	1511	1512	1513	1514	1515	1516	1517	1518
SE	1519	1520	1521							
SS**	1509									
ST***	1519.5	500.0	3.0	1.5						

* Volumes calculated from ponding areas on topographic mapping

**Starting water elevation card, invert of culverts

***Top of bank elevation, length of weir, weir coefficients for weir flow. (HEC-1 automatically calculates and adds to rating table)

CURRENT DATE: 09-18-2000 FILE DATE: 09-18-2000
CURRENT TIME: 19:58:09 FILE NAME: WASHB

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULVERT NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS / SHAPE / MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1507.14	1505.00	170.01	3 CSP	6.00	6.00	.024	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: WASHB DATE: 09-18-2000

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1507.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1510.13	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1511.65	400.0	400.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1513.49	600.0	600.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1514.78	800.0	800.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1516.64	1000.0	1000.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1518.62	1100.0	1100.0	0.0	0.0	0.0	0.0	0.0	0.00	1
1519.80	1400.0	1166.8	0.0	0.0	0.0	0.0	0.0	219.76	5
1519.96	1600.0	1176.8	0.0	0.0	0.0	0.0	0.0	415.45	4
1520.09	1800.0	1184.7	0.0	0.0	0.0	0.0	0.0	610.57	4
1520.19	2000.0	1191.3	0.0	0.0	0.0	0.0	0.0	795.21	3
1519.50	1148.3	1148.3	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: WASHB DATE: 09-18-2000

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1507.14	0.000	0.00	0.00	0.00
1510.13	0.000	200.00	0.00	0.00
1511.65	0.000	400.00	0.00	0.00
1513.49	0.000	600.00	0.00	0.00
1514.78	0.000	800.00	0.00	0.00
1516.64	0.000	1000.00	0.00	0.00
1518.62	0.000	1100.00	0.00	0.00
1519.80	-0.007	1400.00	13.41	0.96
1519.96	-0.004	1600.00	7.80	0.49
1520.09	-0.008	1800.00	4.77	0.26
1520.19	-0.005	2000.00	13.51	0.68

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 09-18-2000 FILE DATE: 09-18-2000
CURRENT TIME: 19:58:09 FILE NAME: WASHB

PERFORMANCE CURVE FOR CULVERT 1 - 3(6.00 (ft) BY 6.00 (ft)) CSP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1507.14	0.00	-2.14	0-NF	0.00	0.00	0.00	0.00	0.00	0.00
200.00	1510.13	2.99	2.21	1-S2n	2.07	2.16	1.96	0.00	8.28	0.00
400.00	1511.65	4.51	3.51	1-S2n	3.06	3.12	2.92	0.00	9.76	0.00
600.00	1513.49	5.92	6.35	2-M2c	3.97	3.85	3.85	0.00	10.44	0.00
800.00	1514.78	7.49	7.64	2-M2c	5.18	4.45	4.45	0.00	11.87	0.00
1000.00	1516.64	9.39	9.50	2-M2c	6.00	4.94	4.94	0.00	13.42	0.00
1100.00	1518.62	10.49	11.48	2-M2c	6.00	5.13	5.13	0.00	14.30	0.00
1166.83	1519.80	11.29	12.66	2-M2c	6.00	5.25	5.25	0.00	14.86	0.00
1176.76	1519.96	11.42	12.82	2-M2c	6.00	5.27	5.27	0.00	14.94	0.00
1184.66	1520.08	11.51	12.94	2-M2c	6.00	5.29	5.29	0.00	15.00	0.00
1191.27	1520.19	11.60	13.05	2-M2c	6.00	5.30	5.30	0.00	15.06	0.00

El. inlet face invert 1507.14 ft El. outlet invert 1505.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1507.14 ft
OUTLET STATION	170.00 ft
OUTLET ELEVATION	1505.00 ft
NUMBER OF BARRELS	3
SLOPE (V/H)	0.0126
CULVERT LENGTH ALONG SLOPE	170.01 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	6.00 ft
BARREL MATERIAL	CORRUGATED STEEL
BARREL MANNING'S n	0.024
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	SQUARE EDGE WITH HEADWALL
INLET DEPRESSION	NONE

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CURRENT DATE: 09-18-2000                                  FILE DATE: 09-18-2000
CURRENT TIME: 19:58:09                                    FILE NAME: WASHB

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           CONSTANT WATER SURFACE ELEVATION
                    1505.00

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ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ROADWAY OVERTOPPING DATA  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
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      ROADWAY SURFACE                         GRAVEL
      EMBANKMENT TOP WIDTH                     50.00 ft
      CREST LENGTH                            500.00 ft
      OVERTOPPING CREST ELEVATION            1519.50 ft

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CURRENT DATE: 09-25-2000
CURRENT TIME: 09:43:11

FILE DATE: 09-25-2000
FILE NAME: ZA

FHWA CULVERT ANALYSIS
HY-8, VERSION 6.0

CULV NO.	SITE DATA: INLET ELEV. (ft)	OUTLET ELEV. (ft)	CULVERT LENGTH (ft)	CULVERT SHAPE, MATERIAL, INLET: BARRELS SHAPE MATERIAL	SPAN (ft)	RISE (ft)	MANNING n	INLET TYPE
1	1503.00	1501.00	150.01	1 CSP	3.00	3.00	.024	CONVENTIONAL
2								
3								
4								
5								
6								

SUMMARY OF CULVERT FLOWS (cfs) FILE: ZA DATE: 09-25-2000

ELEV (ft)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1503.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1504.25	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1505.10	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1505.60	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1506.10	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1506.38	37.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1507.15	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1508.70	56.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1510.57	64.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1512.49	72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
1514.66	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0
0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	OVERTOPPING	

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: ZA DATE: 09-25-2000

HEAD ELEV (ft)	HEAD ERROR (ft)	TOTAL FLOW (cfs)	FLOW ERROR (cfs)	% FLOW ERROR
1503.00	0.000	0.00	0.00	0.00
1504.25	0.000	8.00	0.00	0.00
1505.10	0.000	16.00	0.00	0.00
1505.60	0.000	24.00	0.00	0.00
1506.10	0.000	32.00	0.00	0.00
1506.38	0.000	37.00	0.00	0.00
1507.15	0.000	48.00	0.00	0.00
1508.70	0.000	56.00	0.00	0.00
1510.57	0.000	64.00	0.00	0.00
1512.49	0.000	72.00	0.00	0.00
1514.66	0.000	80.00	0.00	0.00

<1> TOLERANCE (ft) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 09-25-2000 FILE DATE: 09-25-2000
CURRENT TIME: 09:43:11 FILE NAME: ZA

PERFORMANCE CURVE FOR CULVERT 1 - 1(3.00 (ft) BY 3.00 (ft)) CSP

DIS-CHARGE FLOW (cfs)	HEAD-WATER ELEV. (ft)	INLET CONTROL DEPTH (ft)	OUTLET CONTROL DEPTH (ft)	FLOW TYPE <F4>	NORMAL DEPTH (ft)	CRIT. DEPTH (ft)	OUTLET DEPTH (ft)	TW DEPTH (ft)	OUTLET VEL. (fps)	TW VEL. (fps)
0.00	1503.00	0.00	-2.00	0-NF	0.00	0.00	0.00	-1.00	0.00	0.00
8.00	1504.25	1.25	0.05	1-S2n	0.89	0.89	0.79	-0.70	5.34	4.78
16.00	1505.10	1.86	2.10	2-M2c	1.29	1.27	1.27	-0.55	5.61	6.06
24.00	1505.60	2.35	2.60	2-M2c	1.63	1.57	1.57	-0.44	6.39	6.92
32.00	1506.10	2.85	3.10	2-M2c	1.97	1.83	1.83	-0.33	7.07	7.59
37.00	1506.38	3.20	3.38	2-M2c	2.20	1.97	1.97	-0.28	7.52	7.95
48.00	1507.15	4.15	3.00	2-M2c	3.00	2.25	2.25	-0.16	8.47	8.61
56.00	1508.70	5.01	5.70	2-M2c	3.00	2.42	2.42	-0.09	9.15	9.02
64.00	1510.57	5.99	7.57	2-M2c	3.00	2.55	2.55	-0.02	10.03	9.39
72.00	1512.49	7.07	9.49	2-M2c	3.00	2.68	2.68	0.05	10.82	9.72
80.00	1514.66	8.23	11.66	2-M2c	3.00	2.81	2.81	0.11	11.71	10.03

El. inlet face invert 1503.00 ft El. outlet invert 1501.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT **********

INLET STATION	0.00 ft
INLET ELEVATION	1503.00 ft
OUTLET STATION	150.00 ft
OUTLET ELEVATION	1501.00 ft
NUMBER OF BARRELS	1
SLOPE (V/H)	0.0133
CULVERT LENGTH ALONG SLOPE	150.01 ft

***** CULVERT DATA SUMMARY **********

BARREL SHAPE	CIRCULAR
BARREL DIAMETER	3.00 ft
BARREL MATERIAL	CORRUGATED STEEL
BARREL MANNING'S n	0.024
INLET TYPE	CONVENTIONAL
INLET EDGE AND WALL	MITERED TO CONFORM TO SLOPE
INLET DEPRESSION	NONE

CURRENT DATE: 09-25-2000 FILE DATE: 09-25-2000
CURRENT TIME: 09:43:11 FILE NAME: ZA

TAILWATER

******* REGULAR CHANNEL CROSS SECTION **********

BOTTOM WIDTH	5.00 ft
SIDE SLOPE H/V (X:1)	2.0
CHANNEL SLOPE V/H (ft/ft)	0.055
MANNING'S n (.01-0.1)	0.030
CHANNEL INVERT ELEVATION	1500.00 ft
CULVERT NO.1 OUTLET INVERT ELEVATION	1501.00 ft

******* UNIFORM FLOW RATING CURVE FOR DOWNSTREAM CHANNEL

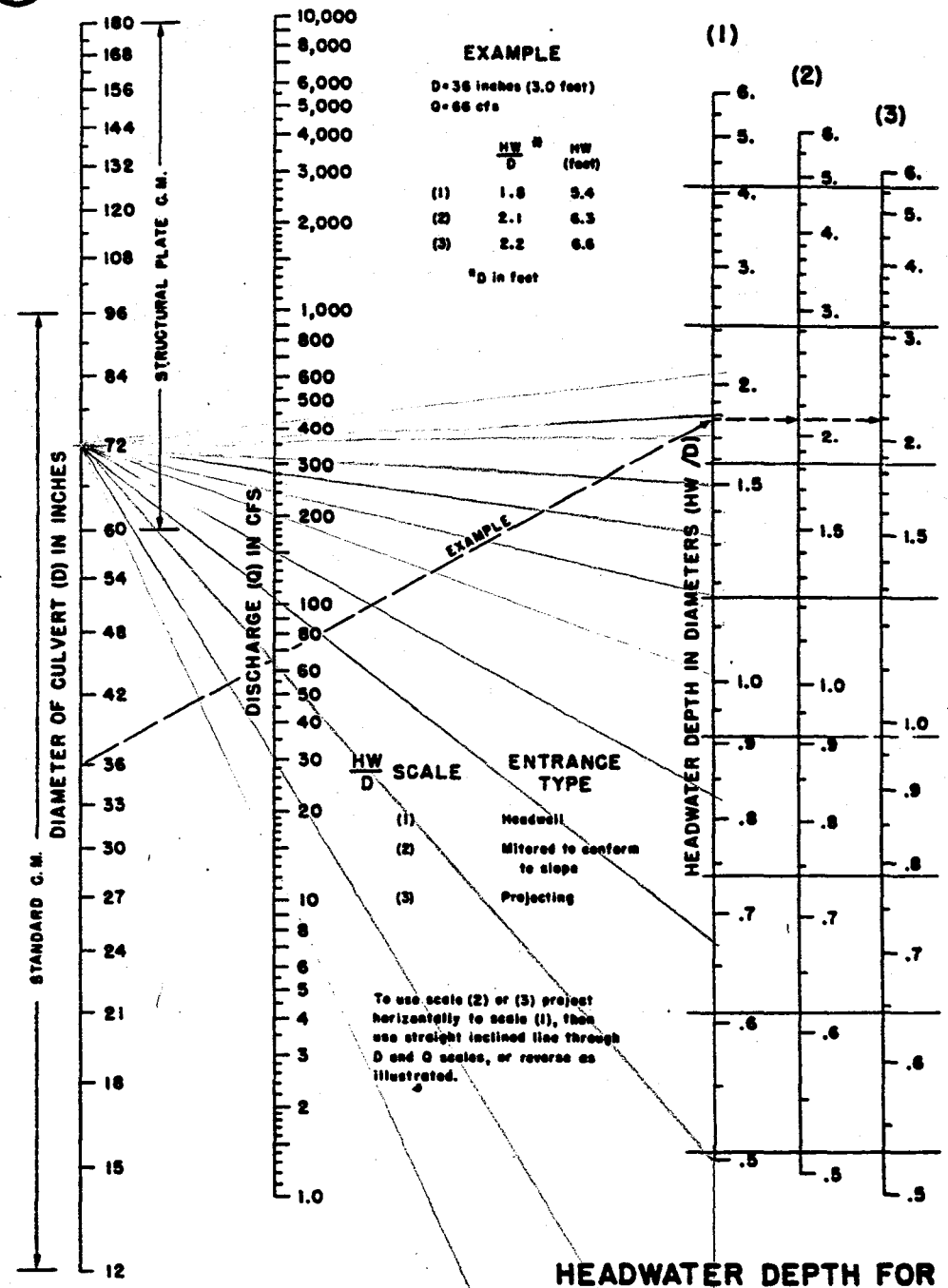
FLOW (cfs)	W.S.E. (ft)	FROUDE NUMBER	DEPTH (ft)	VEL. (f/s)	SHEAR (psf)
0.00	1500.00	0.000	0.00	0.00	0.00
8.00	1500.30	1.540	0.30	4.78	1.03
16.00	1500.45	1.595	0.45	6.06	1.54
24.00	1500.56	1.623	0.56	6.92	1.94
32.00	1500.67	1.639	0.67	7.59	2.29
37.00	1500.72	1.647	0.72	7.95	2.48
48.00	1500.84	1.660	0.84	8.61	2.87
56.00	1500.91	1.666	0.91	9.02	3.12
64.00	1500.98	1.672	0.98	9.39	3.36
72.00	1501.05	1.676	1.05	9.72	3.59
80.00	1501.11	1.680	1.11	10.03	3.80

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	GRAVEL
EMBANKMENT TOP WIDTH	50.00 ft
CREST LENGTH	500.00 ft
OVERTOPPING CREST ELEVATION	1510.00 ft

72-IN-DIA OVERCHUTE CULVERTS @ CAP

CHART 2



HEADWATER DEPTH FOR C. M. PIPE CULVERTS WITH INLET CONTROL

BUREAU OF PUBLIC ROADS JAN. 1963

SECTION IV: RAINFALL DISTRIBUTION

TABLE 5 6 HOUR DISTRIBUTION

TABLE 6 24 HOUR DISTRIBUTION

TABLE 5

6 HOUR STORM RAINFALL DISTRIBUTIONS

(Furnished by FCDMC's Maricopa County Unit Hydrograph Procedure 2)

Cumulative Rainfall Table

STORM TIME (hrs)	WATERSHED AREA (sm) ≤ 0.5	2.8
0.00	0.000	0.000
0.25	0.008	0.009
0.50	0.016	0.016
0.75	0.025	0.025
1.00	0.033	0.034
1.25	0.041	0.042
1.50	0.050	0.051
1.75	0.058	0.059
2.00	0.066	0.067
2.25	0.074	0.076
2.50	0.087	0.087
2.75	0.099	0.100
3.00	0.118	0.120
3.25	0.138	0.163
3.50	0.216	0.252
3.75	0.377	0.451
4.00	0.834	0.694
4.25	0.911	0.837
4.50	0.931	0.900
4.75	0.950	0.938
5.00	0.962	0.950
5.25	0.972	0.963
5.50	0.983	0.975
5.75	0.991	0.988
6.00	1.000	1.000

TABLE 6

24 HOUR RAINFALL DISTRIBUTION

Standard SCS 24-Hour, Type II Distribution

Cumulative Rainfall Table

STORM TIME (hrs)	PRECIPITATION RATIO	STORM TIME (hrs)	PRECIPITATION RATIO
0.0	0.000	12.5	0.735
0.5	0.005	13.0	0.772
1.0	0.011	13.5	0.799
1.5	0.016	14.0	0.820
2.0	0.022	14.5	0.838
2.5	0.028	15.0	0.854
3.0	0.035	15.5	0.868
3.5	0.041	16.0	0.880
4.0	0.048	16.5	0.891
4.5	0.056	17.0	0.902
5.0	0.063	17.5	0.912
5.5	0.071	18.0	0.921
6.0	0.080	18.5	0.929
6.5	0.089	19.0	0.937
7.0	0.098	19.5	0.945
7.5	0.109	20.0	0.952
8.0	0.120	20.5	0.959
8.5	0.133	21.0	0.965
9.0	0.147	21.5	0.972
9.5	0.163	22.0	0.978
10.0	0.181	22.5	0.984
10.5	0.204	23.0	0.989
11.0	0.235	23.5	0.995
11.5	0.283	24.0	1.000
12.0	0.663		

SECTION V: PRECIPITATION DATA

TABLE 7 POINT PRECIPITATION VALUES

ISOPLUVIAL MAPS

CVL

TABLE 7

POINT PRECIPITATION VALUES FOR WASH B

(inches)

RETURN PERIOD (years)	PRECIPITATION VALUES (inches) 6=Hour Duration Map	6=Hour Duration Adjusted	24-Hour Duration Map	24-Hour Duration Adjusted
2	1.20	1.2	1.42	1.4
5	1.70	1.7	2.07	2.1
10	2.06	2.1	2.50	2.5
25	2.56	2.5	3.20	3.2
50	2.90	2.9	3.60	3.6
100	3.30	3.3	4.10	4.1

Source: ***Hydrologic Design Manual for Maricopa County***, (Ref. 1)

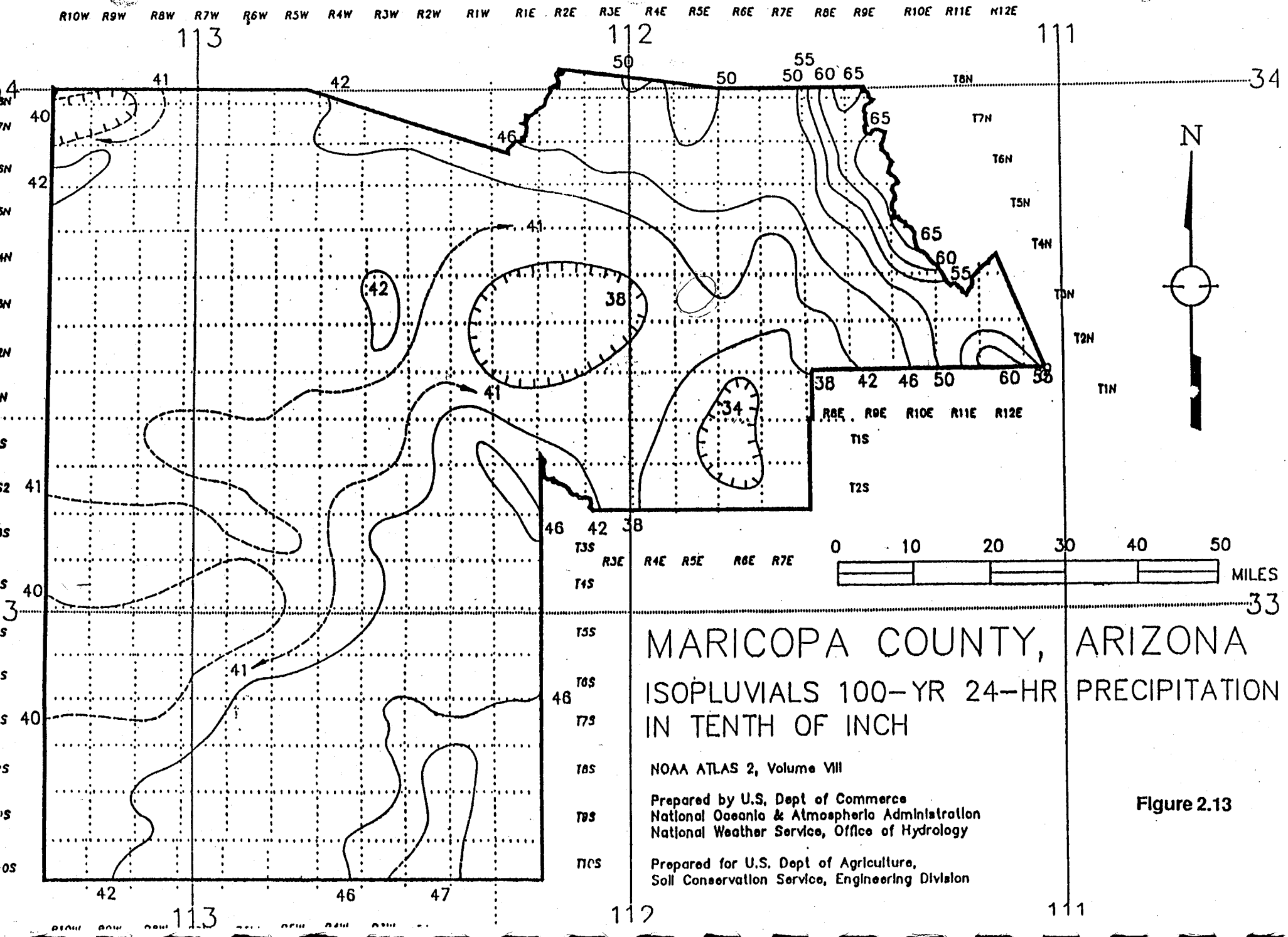
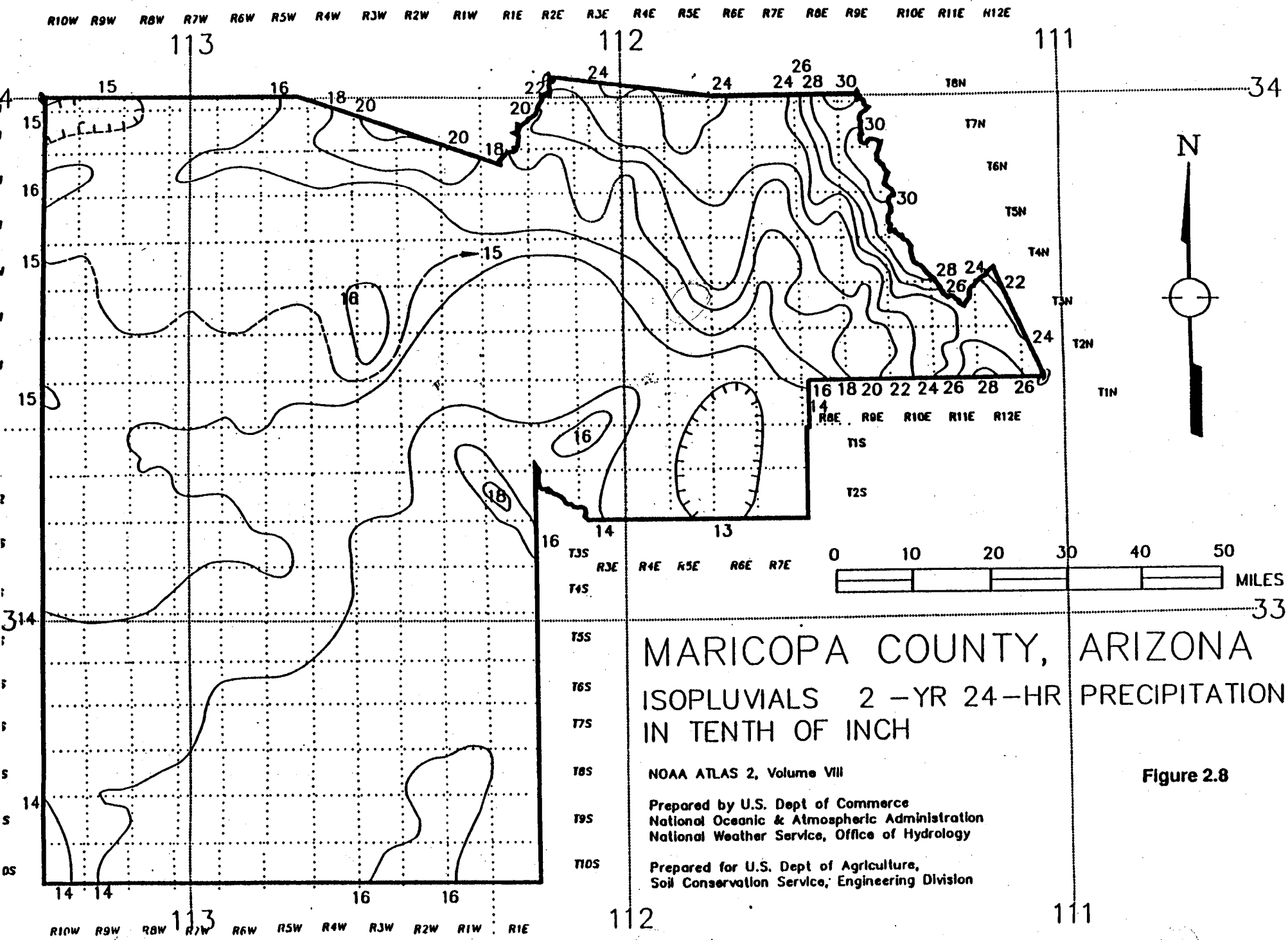

MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 100-YR 24-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
N
MILES
0 10 20 30 40 50
R10W R9W R8W R7W R6W R5W R4W R3W R2W R1W R1E R2E R3E R4E R5E R6E R7E R8E R9E R10E R11E R12E
T8N T7N T6N T5N T4N T3N T2N T1N T1S T2S T3S T4S T5S T6S T7S T8S T9S T10S
113 112 111
34 33

Figure 2.13



MARICOPA COUNTY, ARIZONA

ISOPLUVIALS 2 –YR 24–HR PRECIPITATION IN TENTH OF INCH

NOAA ATLAS 2, Volume VIII

Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology

Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division

Figure 2.8

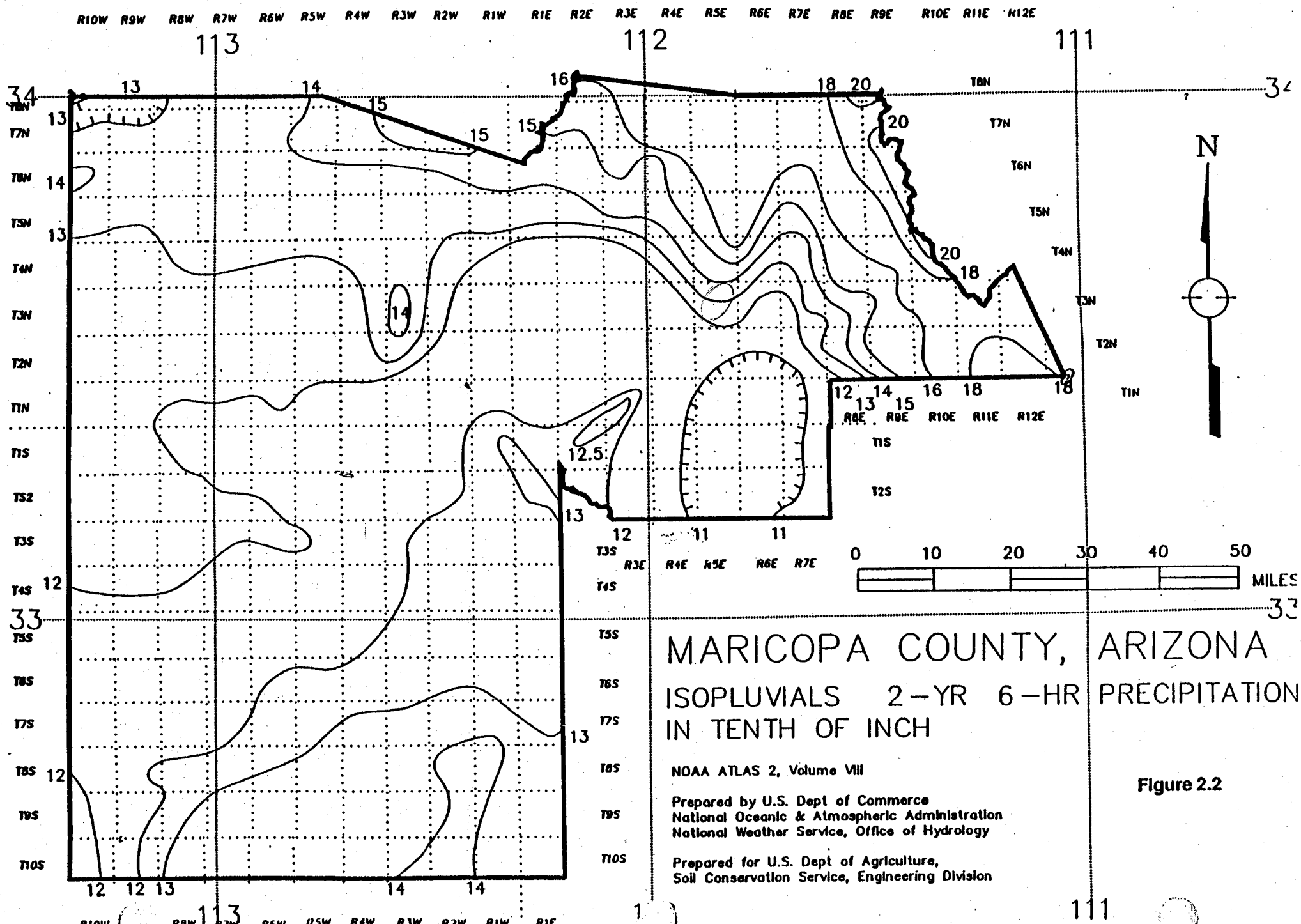

MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 2-YR 6-HR PRECIPITATION
IN TENTH OF INCH
NOAA ATLAS 2, Volume VIII
Prepared by U.S. Dept of Commerce
National Oceanic & Atmospheric Administration
National Weather Service, Office of Hydrology
Prepared for U.S. Dept of Agriculture,
Soil Conservation Service, Engineering Division
N
0 10 20 30 40 50
MILES
113
112
111
34
33
R10W R9W R8W R7W R6W R5W R4W R3W R2W R1W R1E R2E R3E R4E R5E R6E R7E R8E R9E R10E R11E R12E
T8N T7N T6N T5N T4N T3N T2N T1N T1S T2S T3S T4S T5S T6S T7S T8S T9S T10S

Figure 2.2

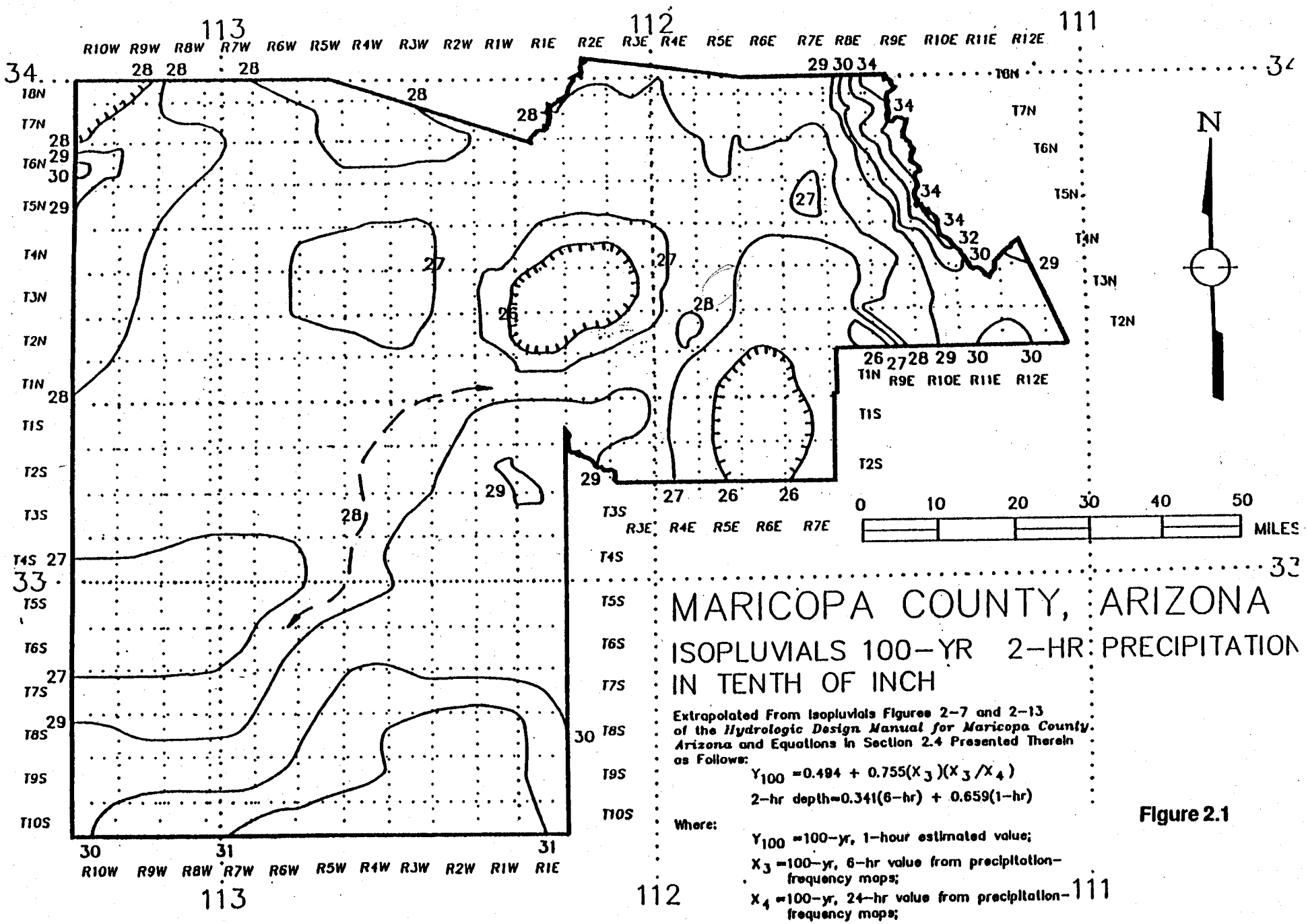

113
112
111
R10W R9W R8W R7W R6W R5W R4W R3W R2W R1W R1E R2E R3E R4E R5E R6E R7E R8E R9E R10E R11E R12E
T8N
T7N
T6N
T5N
T4N
T3N
T2N
T1N
T1S
T2S
T3S
T4S
T5S
T6S
T7S
T8S
T9S
T10S
34
33
32
N
0 10 20 30 40 50
MILES
MARICOPA COUNTY, ARIZONA
ISOPLUVIALS 100-YR 2-HR PRECIPITATION
IN TENTH OF INCH
Extrapolated From Isopluvials Figures 2-7 and 2-13 of the Hydrologic Design Manual for Maricopa County, Arizona and Equations in Section 2.4 Presented Therein as Follows:
$Y_{100} = 0.494 + 0.755(X_3)(X_3/X_4)$
2-hr depth=0.341(6-hr) + 0.659(1-hr)
Where:
Y_{100} =100-yr, 1-hour estimated value;
X_3 =100-yr, 6-hr value from precipitation-frequency maps;
X_4 =100-yr, 24-hr value from precipitation-frequency maps;
6-hr=isopluvial values from figure 2.7;

Figure 2.1

SECTION VI: AERIAL REDUCTION FACTORS

TABLE 8 AERIAL REDUCTION FACTORS

TABLE 8

AERIAL PRECIPITATION REDUCTION DATA

WATERSHED AREA (sq. mi.)	STORM DURATION (hours) 6*	24**
0	1.00	1.00
1	0.99	~
3	~	0.98
5	0.96	0.98
10	0.94	~
20	0.91	0.92
30	0.89	0.90
40	0.87	0.89
50	0.86	0.88
100	0.80	0.85

* This data is based on depth-area reduction curves developed by the US Army Corps of Engineers in 1974 for the historic storm of 1954 over the Queen Creek area. The information was compiled from the *Hydrologic Design Manual for Maricopa County* (Ref. 1).

** This data is based on *NOAA Technical Memorandum NWS HYDRO-40, (Ref. 4), Depth-Area Ratio in the Semi-Arid Southwest United States*, August 1984.

SECTION VII: PREVIOUS STUDIES AND REPORTS

USBR DATA FOR CAP OVERCHUTE

FEMA STUDY- HEC-2 MODEL FOR WASH B

INPUT DATA FOR UNIT HYGROGRAPHS
HYDEN-RHODES AQUEDUCT - REACH 12

STATION	AREA Sq.Mi.	GRAPH SCS/PV	CHANNEL Miles	CENTROID Miles	SLOPE ft/mi.	CURVE No.	PRECIPITATION 100-yr	50-yr	3-hr
135+00	4.84	SCS	5.40	3.30	426	80	3.30	2.93	2.95
234+10	2.42	SCS	2.50	1.60	480	80	3.30	2.93	2.95
243+00	0.11	SCS	0.70	0.30	86	65	3.30	2.93	2.95
332+75	2.64	SCS	3.80	1.90	200	80	3.30	2.93	2.95
364+00	2.75	SCS	4.20	2.00	348	80	3.30	2.93	2.95
420+35	1.70	SCS	2.90	1.20	234	80	3.30	2.93	2.95
429+70	0.07	SCS	0.49	0.20	184	80	3.30	2.93	2.95
457+25	1.39	SCS	2.60	1.50	177	80	3.30	2.93	2.95
465+95	0.27	SCS	1.10	0.60	127	80	3.30	2.93	2.95
476+20	0.04	SCS	0.50	0.20	160	85	3.30	2.93	2.95
491+50	0.54	SCS	1.90	1.00	221	80	3.30	2.93	2.95
501+80	0.50	SCS	1.55	0.72	232	85	3.30	2.93	2.95
525+85									
541+80	0.43	SCS	1.10	0.50	218	85	3.30	2.93	2.95
558+60	0.24	SCS	0.90	0.50	267	85	3.30	2.93	2.95
573+50	0.26	SCS	1.40	1.10	250	80	3.30	2.93	2.95
586+40	1.70	SCS	2.50	0.80	192	80	3.30	2.93	2.95
618+90	0.06	SCS	0.25	0.11	700	85	3.30	2.93	2.95
626+40	0.60	SCS	1.38	0.66	290	83	3.30	2.93	2.95
650+40	0.21	SCS	1.10	0.70	1200	85	3.30	2.93	2.95

INPUT DATA FOR FLOOD ROUTING
HAYDEN-RHODES AQUEDUCT REACH 12

STATION	STRUCT. TYPE	SIZE	INVERT ELEV.	CREST ELEV.	STORAGE CAPACITY DATA ELEV.	AC.FT	ELEV.	AC.FT.
135+00	Culvert	48"	1470.0	1493.0	1470	0	1474	19
					1478	39	1482	71
					1486	117	1490	244
					1492	330		
234+10	Pipe OC	3-72"	1507.14	1518.0				
243+00	Culvert	36"	1495.10	1205.8	1500	0	1502	0.34
					1504	1.79	1506	6.16
					1508	15.32		
332+75	Pipe OC	2-66"	1506.71	1516.0	1507	0	1508	6
					1510	32	1512	75
					1514	133	1516	217
364+00	Pipe OC	3-72"	1506.91	1519.0				
420+35	Culvert	3-60"	1481.72	1504.0	1490	0	1492	1
					1494	4	1496	9.3
					1498	17.3	1500	28.1
					1502	42.9	1504	63.0
429+70	Culvert	42"	1477.86	1503.9				
457+25	Culvert	4-48"	1485.36	1503.7	1490	0	1492	1.0
					1494	4.0	1496	9.7
					1498	18.7	1500	31.0
					1502	47.3	1504	68.2
465+95	Culvert	48"	1488.97	1503.6	1490	0	1492	0.2
					1494	1.0	1496	2.9
					1498	6.7	1500	13.0
					1502	22.6	1504	36.2
476+20	Pipe OC	36"	1504.67	1511.0				
491+50	Box Cul	4'x4'	1479.39	1503.4	1480	0	1482	1.0
					1484	4.0	1486	9.5
					1488	17.8	1490	28.8
					1492	42.9	1494	60.5
					1496	81.7	1498	106.6
501+80	Box Cul	4'x4'	1473.44	1503.4	1474	0	1476	1.0
					1478	4.0	1480	9.0
					1482	16.7	1484	27.3
525+85	Culvert	36"	1475.70	1503.2				

INPUT DATA FOR FLOOD ROUTING
HAYDEN-RHODES AQUEDUCT REACH 12

STATION	STRUCT. TYPE	SIZE	INVERT ELEV.	CREST ELEV.	STORAGE CAPACITY DATA ELEV.	AC.FT	ELEV.	AC.FT.
541+80	Box Cul	4'x4'	1475.49	1503.1	1476	0	1478	1.0
					1480	4.0	1482	10.0
					1484	21.2	1486	34.7
558+60	Culvert	48"	1485.23	1502.9	1492	0	1494	0.2
					1496	1.3	1498	5.5
					1500	12	1502	22.0
573+50	Culvert	48"	1487.34	1502.8	1493	0	1494	0.1
					1496	0.4	1498	0.9
					1500	1.7	1502	3.0
					1504	5.0	1506	7.9
586+40	Pipe OC	4-54"	1483.34	1502.7	1486	0	1488	2.0
					1490	8.5	1492	19.7
					1494	35.4	1496	56.1
618+90	Culvert	36"	1485.28	1502.4				
626+40	Culvert	4-42"	1488.97	1502.4	1491	0	1492	0.1
					1494	0.5	1496	1.5
					1498	2.9	1500	4.7
650+40	Culvert	42"	1481.65	1502.2	1496	0	1498	0.1
					1500	0.4	1502	1.0

CROSS DRAINAGE STRUCTURES

STATION	SIZE	PEAK Qin (cfs)	STORAGE CAPACITY (ac.ft)	PEAK Qout (cfs)	DESIGN STORM
135+00	48" DIA. CMP LINED CULVERT	1860	279	200	100yr, 6hr GENERAL STORM
234+10	72" DIA. 38BL PIPE OVERCHUTE	1130	42	834	100yr, 6hr GENERAL STORM
243+00	36" DIA. PIPE CULVERT	37	0	37	100yr, 3hr THUNDERSTORM
332+75	86" DIA. 28BL PIPE OVERCHUTE	1107	131	430	100yr, 6hr GENERAL STORM
364+00	72" DIA. 38BL PIPE OVERCHUTE	1155	194	843	"
420+35	60" DIA. 38BL PIPE CULVERT	740	35	546	"
429+70	42" DIA. PIPE CULVERT	94	0	94	100yr, 3hr THUNDERSTORM
457+25	48" DIA. 48BL PIPE CULVERT	630	42	500	100yr, 6hr GENERAL STORM
465+95	48" DIA. PIPE CULVERT	148	11	125	"
476+20	36" DIA. PIPE OVERCHUTE	65	0	65	100yr, 3hr THUNDERSTORM
491+50	4' x 4' BOX CULVERT	269	39	165	100yr, 6hr GENERAL STORM
501+80	4'x4' BOX CULVERT	333	51	165	"
525+85	36" DIA. PIPE CULVERT	64	0	64	"
541+80	4'x4' BOX CULVERT	285	34	165	"
558+60	48" DIA. PIPE CULVERT	160	14	125	"
	48" DIA. PIPE CULVERT	134	3	125	"
	54" DIA. 48BL PIPE CULVERT	827	27	604	"
+93	36" DIA. PIPE CULVERT	110	40	64	100yr, 3hr THUNDERSTORM
626+40	42" DIA. 48BL PIPE CULVERT	380	57	83	100yr, 6hr GENERAL STORM
650+40	42" DIA. PIPE CULVERT	154	23	83	"

EXPLANATION

- AQUEDUCT
- DIKE
- DRAINAGE DITCH
- SIPHON AND CHECK
- ABUTMENTS FOR FUTURE BRIDGE
- EQUESTRIAN CROSSING
- DRAINAGE INLET
- BRIDGE
- CULVERT
- OVERCHUTE
- CHECK STRUCTURE
- FLOAT WELL

NOTE

Arizona State plane coordinate system, central zone.

2000 0 2000 4000 6000
SCALE OF FEET

6-20-90 330-	ADDED OVERCHUTE AND CULVERT TEXT
7-26-82 D-6 L F	AS BUILT BY 330-28.6-6.26
5-15-80 D-0.2 M.	REVISED STATIONS AT EXISTING SIPHON TO SUIT "AS BUILT" CONDITIONS CORRECTED STATION AT EQUATION

ALWAYS THINK SAFETY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
CENTRAL ARIZONA PROJECT
GRANITE REEF DIVISION-ARIZONA

GRANITE REEF AQUEDUCT
REACH 12
LOCATION MAP

PHOENIX, ARIZONA MARCH 8, 1978 344-330-803

PRECIPITATION FREQUENCY VALUES FOR GRANITE REEF AQUEDUCT REACH 12
ZONE NUMBER= 7

RETURN PERIOD DURATION	2-YR	5-YR	10-YR	25-YR	50-YR	100-YR	500-YR
5-MIN	.24	.37	.45	.56	.64	.72	.92
10-MIN	.38	.57	.69	.86	.99	1.12	1.43
15-MIN	.48	.72	.88	1.09	1.26	1.42	1.81
30-MIN	.66	1.00	1.22	1.51	1.75	1.97	2.50
1-HR	.84	1.26	1.54	1.92	2.21	2.50	3.17
2-HR	.96	1.42	1.72	2.14	2.46	2.77	3.50
3-HR	1.04	1.53	1.85	2.28	2.62	2.95	3.73
6-HR	1.20	1.73	2.08	2.56	2.93	3.30	4.15
12-HR	1.40	1.97	2.36	2.89	3.29	3.70	4.64
24-HR	1.60	2.22	2.64	3.21	3.66	4.10	5.12

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HEC VERS UPD JA 76
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
VERIFICATIONS 52,53,54,55,56,57,58
*****************************************

T1        SCOTTSDALE AZ, FLOOD INSURANCE STUDY TYPE 19
T2        GLEN MASHBURN FPMS        APRIL 76    X-SEC LOOKING DOWNSTREAM
T3        UNNAMED WASH XBX  Q=10 YR = 190 CFS

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ
       -0       2.       -0       -0       -0       -0       -0       -0  1444.000      -0

J2  NPROF   JPLOT    PRFVS    XSECV    XSECH       FN    ALLDC     IBW    CHNIM   ITRACE
    1.000       -0       -0       -0       -0       -0   -1.000       -0       -0   15.000

NC    .050     .050     .035     .100     .300       -0       -0       -0       -0       -0
QT   4.000  190.000  820.000 1300.000 3200.000       -0       -0       -0       -0       -0

X1 3100.000   23.000  570.000  630.000        0        0        0       -0       -0       -0
X3      -0       -0       -0  310.000       -0       -0       -0       -0       -0       -0
GR 1449.300        0 1446.500  130.000 1446.000  170.000 1445.000  200.000 1445.000  250.000
GR 1447.500  310.000 1445.000  400.000 1444.500  450.000 1445.000  510.000 1445.500  540.000
GR 1445.000  570.000 1442.000  590.000 1445.000  630.000 1445.500  665.000 1445.000  725.000
GR 1445.500  765.000 1445.000  795.000 1445.000  900.000 1446.000  980.000 1445.000 1055.000
GR 1444.800 1095.000 1445.000 1135.000 1446.500 1400.000       -0       -0       -0       -0

X1 3700.000   16.000 1030.000 1070.000  500.000  550.000  600.000       -0       -0       -0
X3      -0       -0       -0  910.000       -0       -0       -0       -0       -0       -0
GR 1457.500        0 1456.500  500.000 1455.000  570.000 1454.000  610.000 1455.000  680.000
GR 1450.500  750.000 1455.000  850.000 1456.000  910.000 1455.000  970.000 1453.000 1030.000
GR 1451.700 1070.000 1453.000 1135.000 1452.500 1325.000 1455.000 1400.000 1455.000 1465.000
GR 1456.000 1540.000       -0       -0       -0       -0       -0       -0       -0       -0

X1 4170.000   20.000 1140.000 1175.000  385.000  475.000  485.000       -0       -0       -0
X3      -0       -0       -0  890.000       -0       -0       -0       -0       -0       -0
GR 1464.500        0 1461.500  550.000 1460.000  615.000 1458.000  715.000 1461.000  750.000
GR 1460.000  800.000 1460.000  850.000 1461.000  890.000 1460.000  935.000 1457.000  960.000
GR 1460.000  995.000 1461.000 1025.000 1460.000 1050.000 1458.000 1090.000 1460.000 1140.000
GR 1457.000 1175.000 1460.000 1280.000 1457.000 1365.000 1460.000 1440.000 1461.000 1490.000
QT   4.000  340.000 1390.000 2300.000 5500.000       -0       -0       -0       -0       -0

X1 4700.000   28.000 1000.000 1045.000  530.000  485.000  540.000       -0       -0       -0
X3      -0       -0       -0  835.000       -0 1420.000       -0       -0       -0       -0
GR 1470.500        0 1471.000  580.000 1470.000  640.000 1465.000  680.000 1464.000  700.000
GR 1465.000  710.000 1470.000  755.000 1474.000  835.000 1465.000  900.000 1464.000  925.000
GR 1465.000  945.000 1466.000  980.000 1465.000 1000.000 1462.500 1030.000 1465.000 1045.000
GR 1466.000 1080.000 1465.000 1115.000 1465.000 1140.000 1466.000 1215.000 1465.000 1270.000
GR 1465.000 1325.000 1467.000 1420.000 1465.000 1530.000 1465.000 1570.000 1465.000 1600.000
GR 1465.000 1645.000 1465.000 1705.000 1466.000 1770.000       -0       -0       -0       -0

X1 5200.000   24.000  795.000  860.000  485.000  500.000  500.000       -0       -0       -0
X3      -0       -0       -0  610.000       -0 1075.000       -0       -0       -0       -0
GR 1477.500        0 1476.000  155.000 1475.000  225.000 1474.000  255.000 1475.000  300.000
GR 1475.500  335.000 1475.000  360.000 1473.000  410.000 1475.000  470.000 1472.000  515.000
GR 1475.000  555.000 1476.000  610.000 1475.000  675.000 1470.000  705.000 1470.000  795.000
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GR	1470,800	860,000	[illegible]	910,[illegible]	[illegible]	950[illegible]	[illegible]	[illegible]	315[illegible]	10[illegible]
GR	1472,500	1205,000	1470,600	1280,000	1473,000	1425,000	1475,000	1740,000	-0	-0
	5700,000	21,000	935,000	980,000	480,000	500,000	500,000	-0	-0	-0
	-0	-0	-0	730,000	-0	1235,000	-0	-0	-0	-0
GR	1485,000	0	1482,000	475,000	1480,000	530,000	1479,000	570,000	1480,000	610,000
GR	1480,000	660,000	1482,500	730,000	1480,000	815,000	1477,000	850,000	1477,000	895,000
GR	1475,000	935,000	1480,000	965,000	1475,000	980,000	1475,000	1005,000	1480,000	1050,000
GR	1475,000	1100,000	1475,000	1115,000	1480,000	1205,000	1481,000	1235,000	1480,000	1290,000
GR	1482,000	1365,000	-0	-0	-0	-0	-0	-0	-0	-0
X1	6200,000	18,000	840,000	920,000	450,000	535,000	500,000	-0	-0	-0
X3	-0	-0	-0	700,000	-0	-0	-0	-0	-0	-0
GR	1492,000	0	1491,000	250,000	1490,000	315,000	1489,000	370,000	1490,000	425,000
GR	1486,500	505,000	1490,000	630,000	1491,000	700,000	1490,000	755,000	1487,000	795,000
GR	1485,000	840,000	1480,000	885,000	1485,000	920,000	1485,000	1050,000	1481,700	1100,000
GR	1485,000	1135,000	1490,000	1160,000	1492,000	1180,000	-0	-0	-0	-0
X1	6700,000	16,000	1015,000	1040,000	450,000	550,000	490,000	-0	-0	-0
X3	-0	-0	-0	700,000	-0	-0	-0	-0	-0	-0
GR	1496,500	0	1496,500	430,000	1495,000	505,000	1495,000	605,000	1495,500	700,000
GR	1496,000	755,000	1495,000	800,000	1490,000	820,000	1491,000	925,000	1490,000	960,000
GR	1488,000	1015,000	1490,000	1040,000	1491,000	1095,000	1490,000	1130,000	1490,000	1155,000
GR	1500,000	1180,000	-0	-0	-0	-0	-0	-0	-0	-0
X1	7200,000	13,000	710,000	740,000	400,000	515,000	500,000	-0	-0	-0
X3	-0	-0	-0	430,000	-0	-0	-0	-0	-0	-0
GR	1502,000	0	1501,300	430,000	1500,000	580,000	1495,000	[illegible]	1497,000	670,000
GR	1495,000	710,000	1492,500	730,000	1495,000	740,000	1497,000	825,000	1495,000	865,000
GR	1495,000	900,000	1500,000	915,000	1510,000	990,000	-0	-0	-0	-0
X1	7800,000	23,000	890,000	915,000	635,000	560,000	600,000	-0	-0	-0
X3	-0	-0	-0	390,000	-0	-0	-0	-0	-0	-0
GR	1511,000	0	1511,000	390,000	1510,000	430,000	1509,000	485,000	1510,000	505,000
GR	1520,000	620,000	1510,500	650,000	1510,000	675,000	1506,000	735,000	1510,000	820,000
GR	1511,000	850,000	1510,000	865,000	1505,000	870,000	1500,000	890,000	1499,800	910,000
GR	1500,000	915,000	1502,000	1000,000	1500,000	1100,000	1500,000	1125,000	1502,000	1200,000
GR	1505,000	1300,000	1510,000	1305,000	1515,000	1410,000	-0	-0	-0	-0
CT	4,000	290,000	1160,000	1925,000	4550,000	-0	-0	-0	-0	-0
X1	8300,000	22,000	850,000	915,000	445,000	400,000	500,000	-0	-0	-0
X3	-0	-0	-0	530,000	-0	-0	-0	-0	-0	-0
GR	1517,000	0	1515,000	350,000	1514,000	390,000	1515,000	420,000	1517,000	530,000
GR	1515,000	605,000	1510,000	625,000	1512,000	650,000	1510,000	670,000	1510,000	800,000
GR	1506,500	850,000	1510,000	915,000	1507,000	965,000	1510,000	1030,000	1510,000	1085,000
GR	1505,000	1125,000	1505,000	1140,000	1510,000	1180,000	1510,500	1195,000	1510,000	1200,000
GR	1510,000	1250,000	1520,000	1280,000	-0	-0	-0	-0	-0	-0
X1	8800,000	20,000	660,000	690,000	460,000	525,000	500,000	-0	-0	-0
X3	-0	-0	-0	305,000	-0	-0	-0	-0	-0	-0
GR	1523,000	0	1520,000	215,000	1519,600	250,000	1520,000	275,000	1521,000	305,000
GR	1520,000	410,000	1520,000	470,000	1515,000	500,000	1514,700	535,000	1515,000	560,000
GR	1516,000	615,000	1515,000	650,000	1511,500	660,000	1515,000	690,000	1516,000	715,000
GR	1515,000	735,000	1515,000	775,000	1516,000	800,000	1515,000	825,000	1520,000	855,000
X1	9300,000	10,000	470,000	540,000	500,000	485,000	500,000	-0	-0	-0
X3	-0	-0	-0	305,000	-0	-0	-0	-0	-0	-0
GR	1531,000	0	1530,000	35,000	1525,000	170,000	1527,000	305,000	1525,000	405,000
GR	1520,000	470,000	1520,000	540,000	1525,000	590,000	1530,000	615,000	1535,000	665,000
X1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0	[illegible]	-0
X3	-0	-0	-0	170,000	-0	-0	-0	-0	-0	-0
GR	1536,500	0	1535,500	170,000	1535,000	240,000	1530,000	320,000	1530,000	345,000
GR	1531,000	370,000	1530,000	390,000	1525,000	450,000	1527,000	500,000	1530,000	545,000
GR	1546,000	570,000	-0	-0	-0	-0	-0	-0	-0	-0

X1	10300,000	11,000	610,000	655,000	350,000	380,000	400,000	-0	-0	-0
X3	-0	-0	-0	475,000	-0	-0	-0	-0	-0	-0
GR	1543,000	0	1540,000	190,000	1540,000	235,000	1541,000	475,000	1540,000	585,000
GR	1535,000	610,000	1530,700	655,000	1535,000	730,000	1536,000	755,000	1535,000	785,000
GR	1541,000	840,000	-0	-0	-0	-0	-0	-0	-0	-0
EN	-0	-0	-0	-0	-0	-0	-0	-0	-0	-0

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*****************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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T1      SCOTTSDALE AZ, FLOOD INSURANCE STUDY TYPE 19
T2      GLEN MASHBURN FPMS        APRIL 76    X-SEC LOOKING DOWNSTREAM
T3      UNNAMED WASH,SBX  Q-50 YR = 820 CFS

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ
      -0       3.       -0       -0       -0       -0       -0       -0    1445.480     -0

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH     FN     ALLDC     IBW     CHNIM    ITRACE
    2.000      -0       -0       -0       -0       -0    -1.000     -0       -0     15.000
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*********************************************
HECR VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
*********************************************

T1      SCOTTSDALE AZ, FLOOD INSURANCE STUDY TYPE 19
T2      GLEN MABWBURN FPMS      APRIL 76    X-SEC LOOKING DOWNSTREAM
T3      UNNAMED WASH XBX  Q-100 YR = 1300 CFS

J1  JCHECK    IND     NINV    IDIR    STRT    METRIC   HVINS     Q      WSEL     FQ
      -0       4.      -0      -0      -0      -0       -0       -0   1445.670    -0

J2  NPROF    IPLOT   PRFVS   XSECH   XSECH    FN     ALLDC    IBW    CHNIM   ITRACE
    3.000     -0      -0      -0      -0      -0     -1.000    -0      -0     15.000
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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
**********************************************

T1      SCOTTSDALE,AZ, FLOOD INSURANCE STUDY TYPE 19
T2      GLEN MASHBURN FPMS      APRIL 76   X-SEC LOOKING DOWNSTREAM
T3      UNNAMED WASH 38% 0-100 YR @ 3200 CFS

J1   ICHECK    INQ    NINV    IDIR    STRT    METRIC    HVINS      Q      WSEL      FQ
        -0      0      -0      -0      -0      -0        -0      -0   1445.500      0.

J2   NPROF    IPLOT   PRTPL   XSECN   XSECH     XN     ALLOC     IBW    CHNIM    ITRACE
     15.000     -0      -0      -0      -0      -0    -1.000     -0      -0     15.000
```

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

UNNAMED RADH 88% 0-500

SECTION NUMBER	CHANNEL LENGTH	MIN EL TOP ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	V
3100.00		0	0	0	1442.00	190.00	1444.06	1443.85	1444.37	41.20	107.71	0	0
3100.00		0	0	0	1442.00	820.00	1445.48	1445.41	1445.66	787.[illegible]	40.[illegible]	0	[illegible]
3100.00		0	0	0	1442.00	1300.00	1445.67	1445.61	1445.90	828.54	52.32	0	0
3100.00		0	0	0	1442.00	3200.00	1446.04	1446.04	1446.49	956.74	101.32	0	[illegible]
3700.00	600.00	0	0	0	1451.70	190.00	1452.80	1452.75	1452.96	214.34	210.48	.05	1.73
3700.00	600.00	0	0	0	1451.70	820.00	1453.29	1453.29	1453.58	327.68	221.06	.04	3.84
3700.00	600.00	0	0	0	1451.70	1300.00	1453.49	1453.49	1453.90	339.38	248.62	.03	5.19
3700.00	600.00	0	0	0	1451.70	3200.00	1454.16	1454.16	1454.85	379.54	226.87	.02	8.79
4170.00	485.00	0	0	0	1457.00	190.00	1458.27	1457.91	1458.33	165.36	71.49	.12	1.63
4170.00	485.00	0	0	0	1457.00	820.00	1459.13	1458.63	1459.25	306.88	76.20	.09	4.58
4170.00	485.00	0	0	0	1457.00	1300.00	1459.53	1458.94	1459.66	372.23	73.37	.07	6.97
4170.00	485.00	0	0	0	1457.00	3200.00	1460.38	1459.73	1460.64	505.81	77.77	.06	15.77
4700.00	540.00	0	0	0	1462.50	340.00	1464.86	1464.86	1465.38	81.30	164.14	.15	2.61
4700.00	540.00	0	0	0	1462.50	1390.00	1465.97	1465.97	1466.38	469.32	90.50	.12	10.59
4700.00	540.00	0	0	0	1462.50	2300.00	1466.26	1466.26	1466.81	493.61	113.51	.10	14.58
4700.00	540.00	0	0	0	1462.50	5500.00	1467.08	1467.08	1467.86	534.10	127.72	.08	25.95
5200.00	500.00	0	0	0	1470.00	340.00	1470.95	1470.67	1471.04	209.73	82.86	.20	3.79
5200.00	500.00	0	0	0	1470.00	1390.00	1471.62	1471.41	1471.98	278.84	144.92	.14	10.53
5200.00	500.00	0	0	0	1470.00	2300.00	1472.15	1471.85	1472.59	323.71	119.46	.13	20.27
5200.00	500.00	0	0	0	1470.00	5500.00	1473.24	1472.[illegible]	1474.02	368.28	120.65	.10	36.19
5700.00	500.00	0	0	0	1475.00	340.00	1476.23	1476.00	1476.42	121.30	147.08	.24	5.15
5700.00	500.00	0	0	0	1475.00	1390.00	1477.54	1477.11	1477.82	247.85	97.70	.18	18.17
5700.00	500.00	0	0	0	1475.00	2300.00	1478.01	1477.59	1478.41	274.92	115.56	.15	25.52
5700.00	500.00	0	0	0	1475.00	5500.00	1479.26	1478.71	1479.92	348.56	117.63	.12	45.81
6200.00	500.00	0	0	0	1480.00	340.00	1482.68	1482.57	1483.12	68.14	114.39	.27	6.15
6200.00	500.00	0	0	0	1480.00	1390.00	1484.12	1484.12	1484.96	128.13	138.79	.20	21.38
6200.00	500.00	0	0	0	1480.00	2300.00	1484.95	1484.95	1485.87	162.80	123.55	.17	30.15
6200.00	500.00	0	0	0	1480.00	5500.00	1486.31	1486.[illegible]	1487.51	330.91	106.71	.14	59.29
6700.00	490.00	0	0	0	1488.00	340.00	1490.14	1490.14	1490.53	121.67	162.91	.30	6.95
6700.00	490.00	0	0	0	1488.00	1390.00	1491.15	1491.13	1491.60	342.49	129.67	.22	24.42
6700.00	490.00	0	0	0	1488.00	2300.00	1491.57	1491.54	1492.10	365.27	126.65	.20	38.74
6700.00	490.00	0	0	0	1488.00	5500.00	1492.60	1492.49	1493.40	351.96	131.20	.16	64.37
7200.00	500.00	0	0	0	1492.50	340.00	1495.53	1495.50	1495.96	110.68	84.62	.32	7.79
7200.00	500.00	0	0	0	1492.50	1390.00	1496.76	1496.76	1497.38	282.26	88.35	.25	27.89
7200.00	500.00	0	0	0	1492.50	2300.00	1497.26	1497.26	1497.97	315.81	94.76	.22	39.78
7200.00	500.00	0	0	0	1492.50	5500.00	1498.27	1498.27	1499.39	322.90	120.78	.17	72.94
7800.00	600.00	0	0	0	1499.80	340.00	1501.05	1500.85	1501.21	189.05	92.79	.38	9.13
7800.00	600.00	0	0	0	1499.80	1390.00	1502.07	1501.73	1502.34	321.00	80.86	.29	32.69
7800.00	600.00	0	0	0	1499.80	2300.00	1502.59	1502.20	1502.92	339.99	75.87	.26	46.70
7800.00	600.00	0	0	0	1499.80	5500.00	1503.96	1503.13	1504.45	390.92	64.40	.20	85.35

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CHWS	EG	TOPWID	10K*S	TIME	VOL
8300.00	500.00	0	0	1505.00	290.00	1506.73	1506.70	1507.25	50.32	269.83	.40	10.03
8300.00	500.00	0	0	1505.00	1160.00	1508.11	1508.11	1508.71	161.87	217.73	.31	35.48
8300.00	500.00	0	0	1505.00	1925.00	1508.63	1508.63	1509.35	208.61	228.11	.27	50.76
8300.00	500.00	0	0	1505.00	4580.00	1509.80	1509.80	1510.75	312.46	218.98	.22	93.24
8800.00	500.00	0	0	1511.50	290.00	1514.03	1514.29	1515.08	35.68	99.25	.82	10.65
8800.00	500.00	0	0	1511.50	1160.00	1515.92	1515.92	1516.44	321.97	85.51	.34	38.25
8800.00	500.00	0	0	1511.50	1925.00	1516.30	1516.35	1516.92	341.61	85.20	.31	54.49
8800.00	500.00	0	0	1511.50	4580.00	1517.31	1517.18	1518.14	352.70	105.42	.24	101.05
9300.00	500.00	0	0	1520.00	290.00	1520.84	1520.79	1521.16	89.30	151.74	.45	11.39
9300.00	500.00	0	0	1520.00	1160.00	1521.90	1521.90	1522.32	113.90	137.53	.35	40.82
9300.00	500.00	0	0	1520.00	1925.00	1522.60	1522.60	1523.67	129.71	123.67	.32	59.01
9300.00	500.00	0	0	1520.00	4580.00	1524.34	1524.34	1525.99	169.76	103.44	.25	110.38
9900.00	620.00	0	0	1525.00	290.00	1527.12	1526.74	1527.32	77.22	73.17	.56	12.33
9900.00	620.00	0	0	1525.00	1160.00	1528.44	1528.06	1529.05	112.92	82.27	.38	43.53
9900.00	620.00	0	0	1525.00	1925.00	1529.13	1528.85	1530.04	131.51	90.96	.34	66.79
9900.00	620.00	0	0	1525.00	4580.00	1530.86	1530.86	1532.21	234.71	85.28	.27	115.85
10300.00	400.00	0	0	1530.70	290.00	1532.66	1532.66	1533.16	54.80	251.04	.52	12.[illegible]
10300.00	400.00	0	0	1530.70	1160.00	1534.12	1534.12	1534.98	95.32	209.80	.40	45.17
10300.00	400.00	0	0	1530.70	1925.00	1534.87	1534.87	1535.94	116.34	199.62	.35	65.11
10300.00	400.00	0	0	1530.70	4580.00	1536.58	1536.58	1538.00	197.37	135.50	.24	120.78

SECTION NUMBER	SUBCHANNEL CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	L.S. DIFF	LENGTH
3100.000	190.000	1440.060	0	0	0	41.200	0	0
3100.000	820.000	1445.480	1.420	0	0	747.480	-706.280	0
3100.000	1300.000	1445.670	.190	0	0	826.336	-785.136	0
3100.000	3200.000	1446.003	.373	0	0	956.791	-915.591	0
3700.000	190.000	1452.800	0	8.740	0	214.335	0	600.000
3700.000	820.000	1453.295	.405	7.815	0	327.681	-113.346	600.000
3700.000	1300.000	1453.490	.195	7.820	0	339.384	-125.049	600.000
3700.000	3200.000	1454.159	.669	8.116	0	379.538	-165.203	600.000
4170.000	190.000	1458.278	0	5.474	0	185.363	0	485.000
4170.000	820.000	1459.132	.858	5.837	0	326.876	-141.514	485.000
4170.000	1300.000	1459.528	.396	6.038	0	372.232	-206.869	485.000
4170.000	3200.000	1460.379	.851	6.220	0	505.612	-340.449	485.000
4700.000	390.000	1464.862	0	6.588	0	81.297	0	540.000
4700.000	1390.000	1465.968	1.106	6.836	0	469.321	-388.023	540.000
4700.000	2300.000	1466.264	.296	6.736	0	493.612	-412.315	540.000
4700.000	5500.000	1467.083	.818	6.704	0	534.100	-452.803	540.000
5200.000	390.000	1470.948	0	6.087	0	209.735	0	500.000
5200.000	1390.000	1471.625	.676	5.657	0	278.835	-69.103	500.000
5200.000	2300.000	1472.153	.528	5.889	0	323.713	-113.980	500.000
5200.000	5500.000	1473.237	1.084	6.155	0	368.278	-158.545	500.000
5700.000	390.000	1476.233	0	5.285	0	121.103	0	500.000
5700.000	1390.000	1477.544	1.311	5.919	0	247.853	-126.749	500.000
5700.000	2300.000	1478.006	.462	5.853	0	274.923	-153.820	500.000
5700.000	5500.000	1479.274	1.272	6.040	0	348.559	-227.456	500.000
6200.000	390.000	1482.680	0	6.447	0	48.137	0	500.000
6200.000	1390.000	1484.117	1.437	6.573	0	128.125	-59.988	500.000

6200,000	2300,000	1484,947	,830	6,941	0	162,805	-94,[illegible]	500,000
6200,000	3500,000	1486,306	1,358	7,028	0	335,908	-262,771	500,000
6700,000	340,000	1490,143	0	7,863	0	121,670	0	490,000
6700,000	1390,000	1491,147	1,004	7,030	0	342,492	-220,822	490,000
6700,000	2300,000	1491,574	,427	6,626	0	345,274	-223,604	490,000
6700,000	3500,000	1492,601	1,027	6,295	0	351,957	-230,287	490,000
7200,000	340,000	1495,528	0	5,385	0	114,[illegible]	0	500,000
7200,000	1390,000	1496,764	1,236	5,617	0	282,262	-165,582	500,000
7200,000	2300,000	1497,259	,495	5,685	0	315,811	-199,132	500,000
7200,000	3500,000	1498,272	1,013	5,670	0	322,901	-206,221	500,000
7800,000	340,000	1501,046	0	5,517	0	189,845	0	600,000
7800,000	1390,000	1502,072	1,026	5,309	0	321,001	-131,155	600,000
7800,000	2300,000	1502,590	,516	5,331	0	339,993	-150,148	600,000
7800,000	3500,000	1503,958	1,368	5,687	0	390,910	-201,072	600,000
8300,000	290,000	1506,732	0	5,686	0	50,322	0	500,000
8300,000	1160,000	1508,108	1,376	6,034	0	161,868	-111,546	500,000
8300,000	1925,000	1508,634	,526	6,040	0	208,607	-158,285	500,000
8300,000	4580,000	1509,803	1,169	5,845	0	312,455	-262,133	500,000
8800,000	290,000	1514,632	0	7,900	0	35,676	0	500,000
8800,000	1160,000	1515,920	1,282	7,816	0	321,971	-286,295	500,000
8800,000	1925,000	1516,384	,460	7,750	0	341,610	-305,933	500,000
8800,000	4580,000	1517,310	,926	7,507	0	352,697	-317,021	500,000
9300,000	290,000	1520,838	0	6,206	0	89,305	0	500,000
9300,000	1160,000	1521,904	1,067	5,981	0	113,798	-24,494	500,000
9300,000	1925,000	1522,596	,692	6,212	0	129,713	-40,409	500,000
9300,000	4580,000	1524,337	1,741	7,028	0	169,761	-80,456	500,000
9900,000	290,000	1527,119	0	6,261	0	77,215	0	620,000
9900,000	1160,000	1528,441	1,322	6,537	0	112,917	-35,701	620,000
9900,000	1925,000	1529,130	,689	6,534	0	131,506	-54,293	620,000
9900,000	4580,000	1530,862	1,731	6,524	0	234,711	-157,496	620,000
10300,000	290,000	1532,664	0	5,545	0	54,805	0	400,000
10300,000	1160,000	1534,116	1,452	5,675	0	95,324	-40,519	400,000
10300,000	1925,000	1534,869	,753	5,739	0	116,343	-61,538	400,000
10300,000	4580,000	1536,579	1,710	5,717	0	197,368	-142,563	400,000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WID AREA-DIFF
1	0	-475,000	16,259	0
2	0	-475,000	63,942	25,682
3	0	-475,000	46,655	30,396
4	0	-475,000	59,045	40,785

SECTION VIII: CALIBRATION

PEAK DISCHARGES VERSUS DRAINAGE AREA CURVE

TABLE 10: REPRESENTATIVE DISCHARGES FOR HEC-1 CALIBRATION

PEAK DISCHARGES VERSUS DRAINAGE AREA CURVE

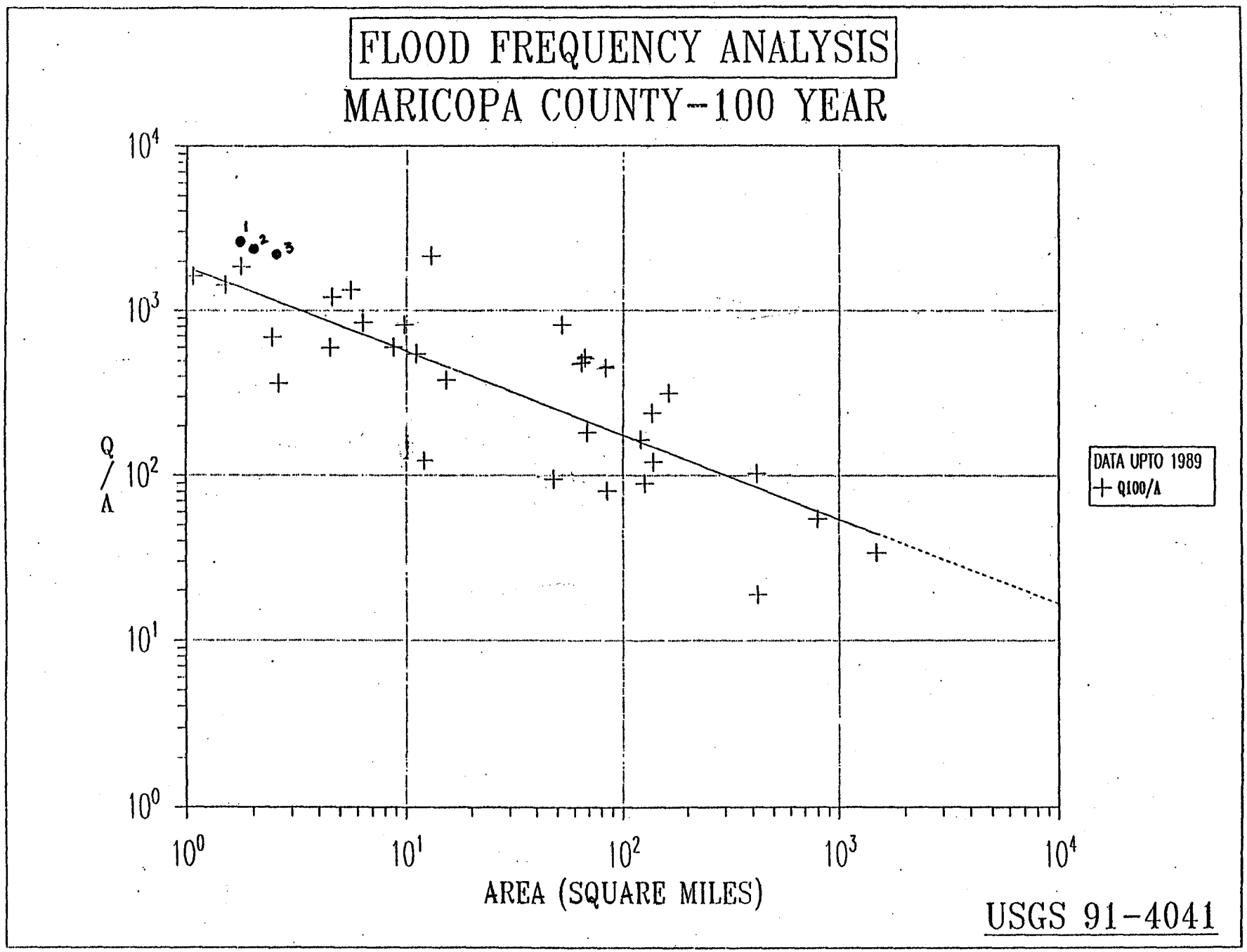

TABLE 10

REPRESENTATIVE DISCHARGES FOR HEC-1 CALIBRATION

Item Number	Location	Contributing Area (sm)	100-Year Discharge 6-hr (cfs)	Q/A (cfs/sm)	24-hr (cfs)	Q/A (cfs/sm)
1	CP3	1.63	2024	1242	2018	1238
2	CP6	1.81	2565	1283	2509	1248
3	CP7	2.48	3115	1261	3011	1214

SECTION VIV: FINAL RESULTS

100-YEAR, 6-HOUR HEC-1 MODEL

100-YEAR, 24-HOUR HEC-1 MODEL

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*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             MAY   1991                *
*          VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
* RUN DATE  10/31/00  TIME  11:04:21    *
*****************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 551-1748              *
*                                       *
*****************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX          XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

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

  1           ID   DDM MCUHP2 Wash B
  2           ID   FILE N:\LLC\997002\nwbnd24.dat
  3           ID   100 YEAR 24 HOUR STORM
              *DIAGRAM
  4           IT       5                    300
  5           IO       3
  6           IN      15
  7           JD    4.10    0.01
  8           PC    .000    .002    .005    .008    .011    .014    .017    .020    .023    .026
  9           PC    .029    .032    .035    .038    .041    .044    .048    .052    .056    .060
 10           PC    .064    .068    .072    .076    .080    .085    .090    .095    .100    .105
 11           PC    .110    .115    .120    .126    .135    .142    .150    .158    .166    .175
 12           PC    .184    .195    .208    .224    .243    .266    .318    .479    .678    .716
 13           PC    .743    .764    .781    .795    .808    .818    .828    .837    .844    .851
 14           PC    .858    .865    .871    .877    .883    .889    .895    .900    .905    .910
 15           PC    .915    .919    .923    .927    .931    .935    .939    .943    .947    .951
 16           PC    .954    .957    .960    .963    .966    .969    .972    .975    .978    .981
 17           PC    .984    .987    .990    .993    .996    .999   1.000
 18           JD    4.02    3.00
 19           JD    3.94   10.00

 20           KK       A
 21           KM   BASIN A
 22           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 23           KM    L=        .8  Lca=        .4   S= 1175.0  Kn= .048  LAG=  11.7
 24           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 25           BA     .31
 26           LG    0.24    0.34    4.80    0.27      48
 27           UI     234     826     573     342     197     104      59      34      18      18
 28           UI       0       0       0       0       0       0       0       0       0       0
 29           UI       0       0       0       0       0       0       0       0       0       0
 30           UI       0       0       0       0       0       0       0       0       0       0

 31           KK       B
 32           KM   BASIN B
 33           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 34           KM    L=       1.1  Lca=        .6   S=  872.7  Kn= .041  LAG=  13.5
 35           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 36           BA   0.173
 37           LG    0.24    0.34    4.50    0.33      31
 38           UI      92     279     477     299     123      46      13       0       0       0
 39           UI       0       0       0       0       0       0       0       0       0       0
 40           UI       0       0       0       0       0       0       0       0       0       0
 41           UI       0       0       0       0       0       0       0       0       0       0

 42           KK     CP1
 43           KM   COMBINE 2 HYDROGRAPHS AT 1
 44           HC       2

 45           KK     CH1
 46           KM   ROUTE FLOW FROM 1 TO 2
 47           RS       1    FLOW      -1
 48           RC    0.08    0.06    0.08    1100  0.0218
 49           RX     400     450     475     490     510     525     550     600
 50           RY    1654    1653    1648    1644    1644    1650    1654    1656
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  51          KK       C
  52          KM    BASIN C
  53          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  54          KM     L=       1.1  Lca=       .6   S=  540.9  Kn= .069  LAG=  24.8
  55          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  56          BA    0.185
  57          LG     0.24     0.21    10.10     0.03       5
  58          UI       25       84      135      183      289      242      175      130       69       42
  59          UI       25       11        8        8        0        0        0        0        0        0
  60          UI        0        0        0        0        0        0        0        0        0        0
  61          UI        0        0        0        0        0        0        0        0        0        0
  62          UI        0        0        0        0        0        0        0        0        0        0

  63          KK       D
  64          KM    BASIN D
  65          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  66          KM     L=        .2  Lca=       .1   S= 1363.6  Kn= .061  LAG=   5.4
  67          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  68          BA    0.019
  69          LG     0.25     0.35     3.74     0.51      31
  70          UI       74       67        0        0        0        0        0        0        0        0
  71          UI        0        0        0        0        0        0        0        0        0        0

  72          KK      CP2
  73          KM    COMBINE 3 HYDROGRAPHS AT 2
  74          HC        3

  75          KK      CH2
  76          KM    ROUTE FLOW FROM 2 TO 3
  77          RS        5     FLOW       -1
  78          RC     0.07     0.06     0.07     4000   0.0175
  79          RX      400      430      475      480      510      535      575      600
  80          RY     1638     1636     1630     1628     1628     1634     1636     1638

  81          KK       E
  82          KM    BASIN E
  83          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  84          KM     L=        .9  Lca=       .4   S=  183.3  Kn= .070  LAG=  26.6
  85          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  86          BA    0.200
  87          LG     0.18     0.18     8.80     0.06      22
  88          UI       26       83      137      181      285      271      198      146       96       45
  89          UI       34       19        8        8        8        0        0        0        0        0
  90          UI        0        0        0        0        0        0        0        0        0        0
  91          UI        0        0        0        0        0        0        0        0        0        0
  92          UI        0        0        0        0        0        0        0        0        0        0

  93          KK       M
  94          KM    BASIN M
  95          KM     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  96          KM     L=        .2  Lca=       .1   S=  166.7  Kn= .070  LAG=   8.0
  97          KM     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  98          BA    0.015
  99          LG     0.16     0.28     3.29     0.69      28
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 100          UI      21      61      27       6       0       0       0       0       0       0
 101          UI       0       0       0       0       0       0       0       0       0       0
 102          UI       0       0       0       0       0       0       0       0       0       0

 103          KK     CP3
 104          KM   COMBINE 2 HYDROGRAPHS AT 3
 105          HC       2

 106          KK       I
 107          KM   BASIN I
 108          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 109          KM    L=      1.1  Lca=       .6   S=  890.9  Kn= .054  LAG=  17.7
 110          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 111          BA   0.192
 112          LG    0.25    0.35    3.95    0.44      53
 113          UI      47     182     306     300     190     139      95      71      47      33
 114          UI      24      17      11       7       7       7       0       0       0       0
 115          UI       0       0       0       0       0       0       0       0       0       0
 116          UI       0       0       0       0       0       0       0       0       0       0
 117          UI       0       0       0       0       0       0       0       0       0       0
 118          UI       0       0       0       0       0       0       0       0       0       0

 119          KK       J
 120          KM   BASIN J
 121          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 122          KM    L=       .9  Lca=       .5   S=  926.3  Kn= .070  LAG=  20.1
 123          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 124          BA   0.072
 125          LG    0.19    0.31    2.89    0.92      17
 126          UI      10      41      61      88     124      88      61      40      18      12
 127          UI       6       3       3       0       0       0       0       0       0       0
 128          UI       0       0       0       0       0       0       0       0       0       0
 129          UI       0       0       0       0       0       0       0       0       0       0
 130          UI       0       0       0       0       0       0       0       0       0       0

 131          KK     CP4
 132          KM   COMBINE 2 HYDROGRAPHS AT 4
 133          HC       2

 134          KK     CH4
 135          KM   ROUTE FLOW FROM 4 TO 5
 136          RS       6    FLOW      -1
 137          RC    0.08    0.06    0.08    4000   0.032
 138          RX     350     370     460     485     512     550     600     650
 139          RY    1660    1658    1656    1652    1652    1658    1658    1660

 140          KK       K
 141          KM   BASIN K
 142          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 143          KM    L=      1.1  Lca=       .6   S=  163.6  Kn= .070  LAG=  31.6
 144          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 145          BA   0.184
 146          LG    0.23    0.33    3.50    0.59       6
 147          UI      19      44      87     112     144     207     222     167     131     101
 148          UI      71      36      30      19      10       6       6       6       6       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 149          UI       0       0       0       0       0       0       0       0       0       0
 150          UI       0       0       0       0       0       0       0       0       0       0
 151          UI       0       0       0       0       0       0       0       0       0       0
 152          UI       0       0       0       0       0       0       0       0       0       0

 153          KK       L
 154          KM   BASIN L
 155          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 156          KM    L=       1.1  Lca=       .6   S=  396.4  Kn= .066  LAG=  25.5
 157          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 158          BA   0.231
 159          LG    0.20    0.31    3.71    0.52      27
 160          UI      31     105     169     229     360     302     219     162      87      51
 161          UI      32      14       9      10       0       0       0       0       0       0
 162          UI       0       0       0       0       0       0       0       0       0       0
 163          UI       0       0       0       0       0       0       0       0       0       0
 164          UI       0       0       0       0       0       0       0       0       0       0

 165          KK     CP5
 166          KM   COMBINE 3 HYDROGRAPHS AT 5
 167          HC       3

 168          KK     CH5
 169          KM   ROUTE FLOW FROM 5 TO 3
 170          RS       4    FLOW      -1
 171          RC    0.08    0.06    0.08    2000   0.007
 172          RX     400     450     475     480     512     550     575     600
 173          RY    1588    1580    1577    1574    1574    1583    1584    1585

 174          KK       N
 175          KM   BASIN N
 176          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 177          KM    L=        .6  Lca=       .3   S=  100.0  Kn= .070  LAG=  21.9
 178          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 179          BA   0.044
 180          LG    0.21    0.32    3.29    0.69      12
 181          UI       7      27      40      61      77      51      36      18      11       6
 182          UI       2       3       2       0       0       0       0       0       0       0
 183          UI       0       0       0       0       0       0       0       0       0       0
 184          UI       0       0       0       0       0       0       0       0       0       0
 185          UI       0       0       0       0       0       0       0       0       0       0

 186          KK     CP3
 187          KM   COMBINE 4 HYDROGRAPHS AT 3
 188          HC       4

 189          KK     CH6
 190          KM   ROUTE FLOW FROM 3 TO 6
 191          RS       2    FLOW      -1
 192          RC   0.065   0.046   0.065    2000   0.017
 193          RX     400     425     450     490     515     550     560     600
 194          RY    1549    1548    1544    1542    1542    1547    1548    1548
```

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

 195          KK       F
 196          KM   BASIN F
 197          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 198          KM    L=       1.1  Lca=       .6   S=  252.3  Kn= .070  LAG=  29.4
 199          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 200          BA   0.160
 201          LG    0.19    0.17   10.10    0.03      18
 202          UI      19      49      91     117     160     226     172     133     102      67
 203          UI      34      26      18       6       6       5       6       0       0       0
 204          UI       0       0       0       0       0       0       0       0       0       0
 205          UI       0       0       0       0       0       0       0       0       0       0
 206          UI       0       0       0       0       0       0       0       0       0       0
 207          UI       0       0       0       0       0       0       0       0       0       0

 208          KK       O
 209          KM   BASIN 0
 210          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 211          KM    L=        .2  Lca=       .1   S=  166.7  Kn= .070  LAG=   8.0
 212          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 213          BA   0.027
 214          LG    0.18    0.29    3.29    0.69      22
 215          UI      39     108      50       9       0       0       0       0       0       0
 216          UI       0       0       0       0       0       0       0       0       0       0
 217          UI       0       0       0       0       0       0       0       0       0       0

 218          KK       G
 219          KM   BASIN G
 220          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 221          KM    L=       1.1  Lca=       .6   S=  200.0  Kn= .070  LAG=  30.4
 222          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 223          BA   0.200
 224          LG    0.19    0.17   10.10    0.03      18
 225          UI      22      58     106     137     181     270     222     174     131      97
 226          UI      50      38      23      13       7       7       7       0       0       0
 227          UI       0       0       0       0       0       0       0       0       0       0
 228          UI       0       0       0       0       0       0       0       0       0       0
 229          UI       0       0       0       0       0       0       0       0       0       0
 230          UI       0       0       0       0       0       0       0       0       0       0

 231          KK     CP6
 232          KM   COMBINE 4 HYDROGRAPHS AT 6
 233          HC       4

 234          KK     CH7
 235          KM   ROUTE FLOW FROM 6 TO 7
 236          RS       7    FLOW      -1
 237          RC    0.07    0.05    0.07    3000  0.0067
 238          RX     200     250     440     530     600     650     675     700
 239          RY    1518    1512    1511    1511    1512    1512    1516    1520
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 240          KK       H
 241          KM   BASIN H
 242          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 243          KM    L=       1.1  Lca=       .6   S=  180.2  Kn= .070  LAG=  32.2
 244          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 245          BA   0.408
 246          LG    0.21    0.18   10.10    0.03      13
 247          UI      44     107     205     262     345     504     476     364     278     212
 248          UI     129      76      56      40      14      13      14      14       0       0
 249          UI       0       0       0       0       0       0       0       0       0       0
 250          UI       0       0       0       0       0       0       0       0       0       0
 251          UI       0       0       0       0       0       0       0       0       0       0
 252          UI       0       0       0       0       0       0       0       0       0       0

 253          KK       P
 254          KM   BASIN P
 255          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 256          KM    L=        .8  Lca=       .3   S=   73.3  Kn= .070  LAG=  26.8
 257          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 258          BA   0.059
 259          LG    0.23    0.33    4.00    0.43       5
 260          UI       7      20      36      46      67      83      62      48      35      19
 261          UI      13       8       5       2       2       2       0       0       0       0
 262          UI       0       0       0       0       0       0       0       0       0       0
 263          UI       0       0       0       0       0       0       0       0       0       0
 264          UI       0       0       0       0       0       0       0       0       0       0
 265          UI       0       0       0       0       0       0       0       0       0       0

 266          KK     CP7
 267          KM   COMBINE 3 HYDROGRAPHS AT 7
 268          HC       3

 269          KK   ROUTE THROUGH CAP (3, 72-INCH-DIAMETER CULVERTS)
 270          RS       1    ELEV 1507.14
 271          SV     0.0     1.5     8.0    20.0    35.0    53.0    63.0    72.0
 272          SE  1507.0  1510.0  1512.0  1514.0  1516.0  1518.0  1519.0  1520.0
 273          SQ      0.     42.     93.    195.    330.    465.    630.    750.    890.    960.
 274          SQ   1095.   1155.   1230.
 275          SE    1507    1510    1511    1512    1513    1514    1515    1516    1517    1518
 276          SE    1519    1520    1521
 277          SS  1507.2
 278          ST  1519.5   500.0     3.0     1.5

 279          KK     CP8
 280          KM    1192 CFS ROUTES THROUGH CAP, 1109 IS STORED,
 281          KM    397.6 CFS OVERTOPS CAP, 397.6 CFS OVERTOPS BERM AT THIS POINT, (87.2% IS DIV
 282          DT     DI1
 283          DI       0    1548    3096
 284          DQ       0  1349.9  2698.4
```

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

 285          KK       R
 286          KM   BASIN R
 287          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 288          KM    L=       1.3  Lca=       .6   S=  146.2  Kn= .070  LAG=  36.7
 289          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 290          BA   0.198
 291          LG    0.21    0.31    3.71    0.52      12
 292          UI      17      25      65      86     105     125     169     214     166     138
 293          UI     113      91      70      41      29      24      18      10       5       5
 294          UI       5       5       6       0       0       0       0       0       0       0
 295          UI       0       0       0       0       0       0       0       0       0       0
 296          UI       0       0       0       0       0       0       0       0       0       0
 297          UI       0       0       0       0       0       0       0       0       0       0
 298          UI       0       0       0       0       0       0       0       0       0       0

 299          KK     CP9
 300          KM   COMBINE 2 HYDROGRAPHS AT CP9
 301          HC       2

 302          KK    ROUTE THROUGH CAP (1, 36-INCH-DIAMETER CULVERT)
 303          RS       1    ELEV    1503
 304          SV     0.0     1.0    21.1
 305          SE    1502    1506    1510
 306          SQ       0       4      13      24      32      38      43      48      52      57
 307          SE    1503    1504    1505    1506    1507    1508    1509    1510    1511    1512
 308          SS    1503
 309          ST  1510.0  1400.0     3.0     1.5
 310          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

  20          A
              .
              .
  31          .           B
              .           .
              .           .
  42        CP1............
              V
              V
  45        CH1
              .
              .
  51          .           C
              .           .
              .           .
  63          .           .           D
              .           .           .
              .           .           .
  72        CP2........................
              V
              V
  75        CH2
              .
              .
  81          .           E
              .           .
              .           .
  93          .           .           M
              .           .           .
              .           .           .
 103          .         CP3............
              .           .
              .           .
 106          .           .           I
              .           .           .
              .           .           .
 119          .           .           .           J
              .           .           .           .
              .           .           .           .
 131          .           .         CP4............
              .           .           V
              .           .           V
 134          .           .         CH4
              .           .           .
              .           .           .
 140          .           .           .           K
              .           .           .           .
              .           .           .           .
 153          .           .           .           .           L
              .           .           .           .           .
              .           .           .           .           .
 165          .           .         CP5........................
              .           .           V
              .           .           V
 168          .           .         CH5
              .           .           .
              .           .           .
 174          .           .           .           N
              .           .           .           .
              .           .           .           .
 186        CP3......................................
              V
              V
 189        CH6
              .
              .
 195          .           F
              .           .
              .           .
 208          .           .           O
```

```
                .           .           .
                .           .           .
218             .           .           .           G
                .           .           .           .
                .           .           .           .
231           CP6.................................
                V
                V
234           CH7
                .
                .
240             .           H
                .           .
                .           .
253             .           .           P
                .           .           .
                .           .           .
266           CP7......................
                V
                V
269         ROUTE
                .
                .
282             .------->     DI1
279           CP8
                .
                .
285             .           R
                .           .
                .           .
299           CP9............
                V
                V
302          ROUT
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            MAY   1991                *
*          VERSION 4.0.1E              *
*    Lahey F77L-EM/32 version 5.01     *
*      Dodson & Associates, Inc.       *
* RUN DATE  10/31/00  TIME  11:04:21   *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
****************************************
```

```
                    DDM MCUHP2 Wash B
                    FILE N:\LLC\997002\nwbnd24.dat
                    100 YEAR 24 HOUR STORM

5 IO        OUTPUT CONTROL VARIABLES
                 IPRNT          3  PRINT CONTROL
                 IPLOT          0  PLOT CONTROL
                 QSCAL         0.  HYDROGRAPH PLOT SCALE

6 IN        TIME DATA FOR INPUT TIME SERIES
                 JXMIN         15  TIME INTERVAL IN MINUTES
                JXDATE      1    0  STARTING DATE
                JXTIME           0  STARTING TIME

  IT        HYDROGRAPH TIME DATA
                  NMIN           5  MINUTES IN COMPUTATION INTERVAL
                 IDATE      1    0  STARTING DATE
                 ITIME       0000  STARTING TIME
                    NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE      2    0  ENDING DATE
                NDTIME       0055  ENDING TIME
                 ICENT          19  CENTURY MARK

            COMPUTATION INTERVAL    0.08 HOURS
                 TOTAL TIME BASE   24.92 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

7 JD        INDEX STORM NO. 1
                 STRM        4.10  PRECIPITATION DEPTH
                 TRDA        0.01  TRANSPOSITION DRAINAGE AREA

8 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.02      0.05      0.05
                0.05      0.07      0.07      0.07      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
```

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

18 JD INDEX STORM NO. 2

STRM 4.02 PRECIPITATION DEPTH

TRDA 3.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.05	0.05
0.05	0.07	0.07	0.07	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

19 JD INDEX STORM NO. 3

STRM 3.94 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.05	0.05
0.05	0.07	0.07	0.07	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

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

          **************
          *            *
 20 KK    *          A *
          *            *
          **************
                         BASIN A
                          THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                          L=        .8  Lca=        .4   S= 1175.0  Kn= .048  LAG=  11.7
                          PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN

             SUBBASIN RUNOFF DATA

 25 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.31  SUBBASIN AREA

 26 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.24  STARTING LOSS
                        DTH        0.34  MOISTURE DEFICIT
                       PSIF        4.80  WETTING FRONT SUCTION
                      XKSAT        0.27  HYDRAULIC CONDUCTIVITY
                      RTIMP       48.00  PERCENT IMPERVIOUS AREA

 21 UI          INPUT UNITGRAPH,  10 ORDINATES,  VOLUME = 1.00
                    234.0     826.0     573.0     342.0     197.0     104.0      59.0      34.0      18.0      18.0

                                                                  ***

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

                       HYDROGRAPH AT STATION        A
                      TRANSPOSITION AREA      0.0 SQ MI

   TOTAL RAINFALL =    4.10, TOTAL LOSS =    1.51, TOTAL EXCESS =    2.59

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
    528.     12.00        (CFS)        67.         22.         21.         21.
                         (INCHES)     2.023       2.593       2.595       2.595
                         (AC-FT)       33.         43.         43.         43.

                        CUMULATIVE AREA =    0.31 SQ MI


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

                       HYDROGRAPH AT STATION        A
                      TRANSPOSITION AREA      3.0 SQ MI

   TOTAL RAINFALL =    4.02, TOTAL LOSS =    1.49, TOTAL EXCESS =    2.53

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
    516.     12.00        (CFS)        66.         21.         20.         20.
                         (INCHES)     1.973       2.533       2.534       2.534
                         (AC-FT)       33.         42.         42.         42.

                        CUMULATIVE AREA =    0.31 SQ MI


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

                       HYDROGRAPH AT STATION        A
                      TRANSPOSITION AREA     10.0 SQ MI

   TOTAL RAINFALL =    3.94, TOTAL LOSS =    1.47, TOTAL EXCESS =    2.47

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
    504.     12.00        (CFS)        64.         21.         20.         20.
                         (INCHES)     1.924       2.472       2.474       2.474
                         (AC-FT)       32.         41.         41.         41.
```

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                    CUMULATIVE AREA =    0.31 SQ MI

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


                    INTERPOLATED HYDROGRAPH AT        A

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   521.     12.00        (CFS)       66.         21.         21.          21.
                       (INCHES)     1.993       2.557       2.558        2.558
                        (AC-FT)      33.         42.         42.          42.

                    CUMULATIVE AREA =    0.31 SQ MI


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


          **************
          *            *
 31 KK    *         B  *
          *            *
          **************
                        BASIN B
                         THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                         L=      1.1  Lca=       .6   S=  872.7  Kn= .041  LAG=  13.5
                         PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

 36 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.17  SUBBASIN AREA

 37 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.24  STARTING LOSS
                        DTH        0.34  MOISTURE DEFICIT
                       PSIF        4.50  WETTING FRONT SUCTION
                      XKSAT        0.33  HYDRAULIC CONDUCTIVITY
                      RTIMP       31.00  PERCENT IMPERVIOUS AREA

 32 UI          INPUT UNITGRAPH,   7 ORDINATES,  VOLUME = 0.99
                     92.0     279.0     477.0     299.0     123.0      46.0      13.0

                                                                  ***

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

                      HYDROGRAPH AT STATION        B
                     TRANSPOSITION AREA      0.0 SQ MI

  TOTAL RAINFALL =    4.10, TOTAL LOSS =    2.06, TOTAL EXCESS =    2.04

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   279.     12.00        (CFS)       31.          9.          9.           9.
                       (INCHES)     1.655       2.020       2.021        2.021
                        (AC-FT)      15.         19.         19.          19.

                    CUMULATIVE AREA =    0.17 SQ MI

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

                      HYDROGRAPH AT STATION        B
                     TRANSPOSITION AREA      3.0 SQ MI

  TOTAL RAINFALL =    4.02, TOTAL LOSS =    2.03, TOTAL EXCESS =    1.99

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   272.     12.00        (CFS)       30.          9.          9.           9.
                       (INCHES)     1.614       1.972       1.973        1.973
                        (AC-FT)      15.         18.         18.          18.
```

CUMULATIVE AREA = 0.17 SQ MI

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

HYDROGRAPH AT STATION B
TRANSPOSITION AREA 10.0 SQ MI

TOTAL RAINFALL = 3.94, TOTAL LOSS = 2.00, TOTAL EXCESS = 1.94

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
265.	12.00	(CFS)	29.	9.	9.	9.
		(INCHES)	1.574	1.925	1.925	1.925
		(AC-FT)	15.	18.	18.	18.

CUMULATIVE AREA = 0.17 SQ MI

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

INTERPOLATED HYDROGRAPH AT B

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
275.	12.00	(CFS)	30.	9.	9.	9.
		(INCHES)	1.635	1.996	1.997	1.997
		(AC-FT)	15.	18.	18.	18.

CUMULATIVE AREA = 0.17 SQ MI

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          **************
          *            *
42 KK     *       CP1  *
          *            *
          **************
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COMBINE 2 HYDROGRAPHS AT 1

44 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

***

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

HYDROGRAPH AT STATION CP1
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
807.	12.00	(CFS)	98.	31.	30.	30.
		(INCHES)	1.891	2.388	2.389	2.389
		(AC-FT)	49.	62.	62.	62.

CUMULATIVE AREA = 0.48 SQ MI

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

HYDROGRAPH AT STATION CP1
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
788.	12.00	(CFS)	96.	30.	29.	29.
		(INCHES)	1.845	2.332	2.333	2.333
		(AC-FT)	48.	60.	60.	60.

CUMULATIVE AREA = 0.48 SQ MI

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

                    HYDROGRAPH AT STATION      CP1
                  TRANSPOSITION AREA     10.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   769.     12.00        (CFS)       93.         30.         28.         28.
                       (INCHES)     1.799       2.276       2.277       2.277
                        (AC-FT)      46.         59.         59.         59.

                    CUMULATIVE AREA =    0.48 SQ MI

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


                    INTERPOLATED HYDROGRAPH AT      CP1

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   794.     12.00        (CFS)       97.         31.         29.         29.
                       (INCHES)     1.860       2.350       2.351       2.351
                        (AC-FT)      48.         61.         61.         61.

                    CUMULATIVE AREA =    0.48 SQ MI


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


          **************
          *            *
 45 KK    *       CH1  *
          *            *
          **************
                    ROUTE FLOW FROM 1 TO 2

            HYDROGRAPH ROUTING DATA

 47 RS          STORAGE ROUTING
                     NSTPS           1  NUMBER OF SUBREACHES
                      ITYP        FLOW  TYPE OF INITIAL CONDITION
                    RSVRIC       -1.00  INITIAL CONDITION
                         X        0.00 WORKING R AND D COEFFICIENT

 48 RC          NORMAL DEPTH CHANNEL
                       ANL       0.080  LEFT OVERBANK N-VALUE
                      ANCH       0.060  MAIN CHANNEL N-VALUE
                       ANR       0.080  RIGHT OVERBANK N-VALUE
                     RLNTH       1100.  REACH LENGTH
                       SEL      0.0218  ENERGY SLOPE
                     ELMAX         0.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                        --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
 50 RY       ELEVATION   1654.00   1653.00   1648.00   1644.00   1644.00   1650.00   1654.00   1656.00
 49 RX       DISTANCE     400.00    450.00    475.00    490.00    510.00    525.00    550.00    600.00

                                                  ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00      0.35      0.76      1.24      1.78      2.38      3.05      3.78      4.58      5.47
          OUTFLOW       0.00     35.17    115.94    237.37    399.87    605.08    855.10   1174.57   1555.44   1989.33
        ELEVATION    1644.00   1644.63   1645.26   1645.89   1646.53   1647.16   1647.79   1648.42   1649.05   1649.68

          STORAGE       6.43      7.50      8.68      9.98     11.39     13.04     15.24     17.80     20.61     23.68
          OUTFLOW    2503.39   3105.56   3777.61   4523.81   5348.05   6160.12   7154.39   8375.20   9770.87  11339.20
        ELEVATION    1650.32   1650.95   1651.58   1652.21   1652.84   1653.47   1654.11   1654.74   1655.37   1656.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN      237. TO    11339.
```

WASH B 100YR-24HR

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.)

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

HYDROGRAPH AT STATION CH1
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
797.	12.08	(CFS)	98.	31.	30.	30.
		(INCHES)	1.890	2.388	2.389	2.389
		(AC-FT)	49.	62.	62.	62.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
3.	12.08	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1647.64	12.08	1644.83	1644.32	1644.31	1644.31

CUMULATIVE AREA = 0.48 SQ MI

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

HYDROGRAPH AT STATION CH1
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
778.	12.08	(CFS)	96.	30.	29.	29.
		(INCHES)	1.844	2.331	2.333	2.333
		(AC-FT)	48.	60.	60.	60.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
3.	12.08	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1647.60	12.08	1644.82	1644.32	1644.31	1644.31

CUMULATIVE AREA = 0.48 SQ MI

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

HYDROGRAPH AT STATION CH1
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
760.	12.08	(CFS)	93.	30.	28.	28.
		(INCHES)	1.798	2.276	2.277	2.277
		(AC-FT)	46.	59.	59.	59.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
3.	12.08	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1647.55	12.08	1644.80	1644.31	1644.30	1644.30

CUMULATIVE AREA = 0.48 SQ MI

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

INTERPOLATED HYDROGRAPH AT CH1

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
784.	12.08	(CFS)	97.	31.	29.	29.

```
                    (INCHES)     1.859       2.349       2.351       2.351
                     (AC-FT)      48.         61.         61.         61.

                    CUMULATIVE AREA =    0.48 SQ MI


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


          **************
          *            *
 51 KK    *         C  *
          *            *
          **************
                         BASIN C
                          THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                          L=      1.1  Lca=       .6   S=  540.9  Kn= .069  LAG=  24.8
                          PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

             SUBBASIN RUNOFF DATA

 56 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.19  SUBBASIN AREA

 57 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.24  STARTING LOSS
                        DTH        0.21  MOISTURE DEFICIT
                       PSIF       10.10  WETTING FRONT SUCTION
                      XKSAT        0.03  HYDRAULIC CONDUCTIVITY
                      RTIMP        5.00  PERCENT IMPERVIOUS AREA

 52 UI          INPUT UNITGRAPH,  14 ORDINATES,  VOLUME = 1.00
                     25.0      84.0     135.0     183.0     289.0     242.0     175.0     130.0      69.0      42.0
                     25.0      11.0       8.0       8.0

                                                                  ***

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

                       HYDROGRAPH AT STATION        C
                      TRANSPOSITION AREA      0.0 SQ MI

  TOTAL RAINFALL =    4.10, TOTAL LOSS =    1.78, TOTAL EXCESS =    2.32

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   289.     12.17        (CFS)        45.         12.         11.         11.
                      (INCHES)     2.242       2.313       2.313       2.313
                       (AC-FT)      22.         23.         23.         23.

                      CUMULATIVE AREA =    0.19 SQ MI


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

                       HYDROGRAPH AT STATION        C
                      TRANSPOSITION AREA      3.0 SQ MI

  TOTAL RAINFALL =    4.02, TOTAL LOSS =    1.76, TOTAL EXCESS =    2.26

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   283.     12.17        (CFS)        43.         11.         11.         11.
                      (INCHES)     2.181       2.248       2.248       2.248
                       (AC-FT)      22.         22.         22.         22.

                      CUMULATIVE AREA =    0.19 SQ MI


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

                       HYDROGRAPH AT STATION        C
                      TRANSPOSITION AREA     10.0 SQ MI

  TOTAL RAINFALL =    3.94, TOTAL LOSS =    1.75, TOTAL EXCESS =    2.19
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PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   276.     12.17        (CFS)       42.         11.         10.          10.
                       (INCHES)     2.119       2.184       2.184        2.184
                        (AC-FT)      21.         22.         22.          22.

                       CUMULATIVE AREA =    0.19 SQ MI

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


                       INTERPOLATED HYDROGRAPH AT        C

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   285.     12.17        (CFS)       44.         11.         11.          11.
                       (INCHES)     2.211       2.280       2.280        2.280
                        (AC-FT)      22.         22.         22.          22.

                       CUMULATIVE AREA =    0.19 SQ MI
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          **************
          *            *
 63 KK    *         D  *
          *            *
          **************
                         BASIN D
                          THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                          L=        .2  Lca=        .1   S= 1363.6  Kn= .061  LAG=   5.4
                          PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

 68 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.02  SUBBASIN AREA

 69 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.25  STARTING LOSS
                        DTH        0.35  MOISTURE DEFICIT
                       PSIF        3.74  WETTING FRONT SUCTION
                      XKSAT        0.51  HYDRAULIC CONDUCTIVITY
                      RTIMP       31.00  PERCENT IMPERVIOUS AREA

 64 UI          INPUT UNITGRAPH,   2 ORDINATES,  VOLUME = 0.96
                     74.0      67.0

                                                          ***

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

                        HYDROGRAPH AT STATION        D
                      TRANSPOSITION AREA      0.0 SQ MI

  TOTAL RAINFALL =    4.10, TOTAL LOSS =    2.16, TOTAL EXCESS =    1.94

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
    31.     12.00        (CFS)        3.          1.          1.           1.
                       (INCHES)     1.503       1.855       1.856        1.856
                        (AC-FT)       2.          2.          2.           2.

                       CUMULATIVE AREA =    0.02 SQ MI

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

                        HYDROGRAPH AT STATION        D
                      TRANSPOSITION AREA      3.0 SQ MI
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```
  TOTAL RAINFALL =    4.02, TOTAL LOSS =    2.13, TOTAL EXCESS =    1.89

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   30.      12.00        (CFS)       3.          1.          1.          1.
                       (INCHES)    1.464       1.810       1.810       1.810
                        (AC-FT)      1.          2.          2.          2.

                       CUMULATIVE AREA =    0.02 SQ MI


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

                       HYDROGRAPH AT STATION        D
                      TRANSPOSITION AREA     10.0 SQ MI

  TOTAL RAINFALL =    3.94, TOTAL LOSS =    2.10, TOTAL EXCESS =    1.84

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   29.      12.00        (CFS)       3.          1.          1.          1.
                       (INCHES)    1.425       1.764       1.764       1.764
                        (AC-FT)      1.          2.          2.          2.

                       CUMULATIVE AREA =    0.02 SQ MI

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


                       INTERPOLATED HYDROGRAPH AT        D

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   30.      12.00        (CFS)       3.          1.          1.          1.
                       (INCHES)    1.499       1.850       1.851       1.851
                        (AC-FT)      2.          2.          2.          2.

                       CUMULATIVE AREA =    0.02 SQ MI


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


          **************
          *            *
 72 KK    *       CP2  *
          *            *
          **************
                       COMBINE 3 HYDROGRAPHS AT 2

 74 HC          HYDROGRAPH COMBINATION
                      ICOMP           3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                ***

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

                       HYDROGRAPH AT STATION      CP2
                      TRANSPOSITION AREA      0.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
 1085.      12.08        (CFS)     145.         43.         42.         42.
                       (INCHES)    1.969       2.353       2.354       2.354
                        (AC-FT)     72.         86.         86.         86.

                       CUMULATIVE AREA =    0.69 SQ MI


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

                       HYDROGRAPH AT STATION      CP2
                      TRANSPOSITION AREA      3.0 SQ MI
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WASH B 100YR-24HR

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
1060.	12.08	(CFS)	142.	42.	41.	41.
		(INCHES)	1.919	2.295	2.296	2.296
		(AC-FT)	70.	84.	84.	84.

CUMULATIVE AREA = 0.69 SQ MI

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

HYDROGRAPH AT STATION CP2
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
1035.	12.08	(CFS)	138.	41.	40.	40.
		(INCHES)	1.870	2.237	2.238	2.238
		(AC-FT)	69.	82.	82.	82.

CUMULATIVE AREA = 0.69 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP2

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
1066.	12.08	(CFS)	143.	43.	41.	41.
		(INCHES)	1.932	2.310	2.311	2.311
		(AC-FT)	71.	85.	85.	85.

CUMULATIVE AREA = 0.69 SQ MI

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          *            *
 75 KK    *       CH2  *
          *            *
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ROUTE FLOW FROM 2 TO 3

HYDROGRAPH ROUTING DATA

```
77 RS        STORAGE ROUTING
                 NSTPS          5  NUMBER OF SUBREACHES
                 ITYP        FLOW  TYPE OF INITIAL CONDITION
                RSVRIC       -1.00  INITIAL CONDITION
                     X        0.00 WORKING R AND D COEFFICIENT

78 RC        NORMAL DEPTH CHANNEL
                   ANL       0.070  LEFT OVERBANK N-VALUE
                  ANCH       0.060  MAIN CHANNEL N-VALUE
                   ANR       0.070  RIGHT OVERBANK N-VALUE
                 RLNTH       4000.  REACH LENGTH
                   SEL      0.0175  ENERGY SLOPE
                 ELMAX         0.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION
```

CROSS-SECTION DATA

		--- LEFT OVERBANK ---			+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---	
80 RY	ELEVATION	1638.00	1636.00	1630.00	1628.00	1628.00	1634.00	1636.00	1638.00
79 RX	DISTANCE	400.00	430.00	475.00	480.00	510.00	535.00	575.00	600.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	1.53	3.24	5.11	7.16	9.46	12.06	14.96	18.15	21.64
OUTFLOW	0.00	34.42	111.57	224.28	372.46	562.14	790.83	1061.13	1375.45	1736.18
ELEVATION	1628.00	1628.53	1629.05	1629.58	1630.11	1630.63	1631.16	1631.68	1632.21	1632.74

STORAGE	25.43	29.51	33.96	39.08	44.90	51.42	58.64	66.56	75.18	84.50
OUTFLOW	2145.64	2606.13	3158.61	3802.10	4522.18	5326.99	6196.55	7164.94	8243.48	9436.88
ELEVATION	1633.26	1633.79	1634.32	1634.84	1635.37	1635.90	1636.42	1636.95	1637.47	1638.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 112. TO 9437.
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.)

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

HYDROGRAPH AT STATION CH2
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
1043.	12.17	(CFS)	145.	43.	42.	42.
		(INCHES)	1.969	2.352	2.353	2.353
		(AC-FT)	72.	86.	86.	86.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
3.	12.17	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1631.65	12.17	1628.92	1628.34	1628.32	1628.32

CUMULATIVE AREA = 0.69 SQ MI

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

HYDROGRAPH AT STATION CH2
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
1018.	12.17	(CFS)	142.	42.	41.	41.
		(INCHES)	1.919	2.293	2.295	2.295
		(AC-FT)	70.	84.	84.	84.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
3.	12.17	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1631.60	12.17	1628.90	1628.33	1628.32	1628.32

CUMULATIVE AREA = 0.69 SQ MI

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

HYDROGRAPH AT STATION CH2
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
994.	12.17	(CFS)	138.	41.	40.	40.
		(INCHES)	1.870	2.236	2.237	2.237
		(AC-FT)	69.	82.	82.	82.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
3.	12.17	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1631.55	12.17	1628.89	1628.32	1628.31	1628.31

CUMULATIVE AREA = 0.69 SQ MI

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

INTERPOLATED HYDROGRAPH AT CH2

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
1025.	12.17	(CFS)	143.	43.	41.	41.
		(INCHES)	1.932	2.308	2.310	2.310
		(AC-FT)	71.	85.	85.	85.

CUMULATIVE AREA = 0.69 SQ MI

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              *            *
81 KK         *         E  *
              *            *
              **************
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BASIN E
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= .9 Lca= .4 S= 183.3 Kn= .070 LAG= 26.6
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

86 BA SUBBASIN CHARACTERISTICS

TAREA	0.20	SUBBASIN AREA

87 LG GREEN AND AMPT LOSS RATE

STRTL	0.18	STARTING LOSS
DTH	0.18	MOISTURE DEFICIT
PSIF	8.80	WETTING FRONT SUCTION
XKSAT	0.06	HYDRAULIC CONDUCTIVITY
RTIMP	22.00	PERCENT IMPERVIOUS AREA

82 UI INPUT UNITGRAPH, 15 ORDINATES, VOLUME = 1.00

26.0	83.0	137.0	181.0	285.0	271.0	198.0	146.0	96.0	45.0
34.0	19.0	8.0	8.0	8.0					

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

HYDROGRAPH AT STATION E
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 4.10, TOTAL LOSS = 1.65, TOTAL EXCESS = 2.45

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
302.	12.17	(CFS)	47.	13.	13.	13.
		(INCHES)	2.181	2.442	2.443	2.443
		(AC-FT)	23.	26.	26.	26.

CUMULATIVE AREA = 0.20 SQ MI

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

HYDROGRAPH AT STATION E
TRANSPOSITION AREA 3.0 SQ MI

TOTAL RAINFALL = 4.02, TOTAL LOSS = 1.63, TOTAL EXCESS = 2.39

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
296.	12.17	(CFS)	46.	13.	12.	12.
		(INCHES)	2.125	2.380	2.381	2.381
		(AC-FT)	23.	25.	25.	25.

CUMULATIVE AREA = 0.20 SQ MI

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

                    HYDROGRAPH AT STATION        E
                  TRANSPOSITION AREA      10.0 SQ MI

  TOTAL RAINFALL =    3.94, TOTAL LOSS =    1.61, TOTAL EXCESS =    2.33

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   289.      12.17        (CFS)      44.         12.         12.         12.
                        (INCHES)   2.069       2.319       2.320       2.320
                         (AC-FT)     22.         25.         25.         25.

                     CUMULATIVE AREA =    0.20 SQ MI

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


                     INTERPOLATED HYDROGRAPH AT        E

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   299.      12.17        (CFS)      46.         13.         12.         12.
                        (INCHES)   2.152       2.410       2.411       2.411
                         (AC-FT)     23.         26.         26.         26.

                     CUMULATIVE AREA =    0.20 SQ MI


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          *            *
 93 KK    *         M  *
          *            *
          **************
                        BASIN M
                         THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                         L=       .2  Lca=       .1   S=  166.7  Kn= .070  LAG=   8.0
                         PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

 98 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.01  SUBBASIN AREA

 99 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.16  STARTING LOSS
                        DTH        0.28  MOISTURE DEFICIT
                       PSIF        3.29  WETTING FRONT SUCTION
                      XKSAT        0.69  HYDRAULIC CONDUCTIVITY
                      RTIMP       28.00  PERCENT IMPERVIOUS AREA

 94 UI          INPUT UNITGRAPH,   4 ORDINATES,  VOLUME = 0.99
                     21.0      61.0      27.0       6.0

                                                          ***

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

                    HYDROGRAPH AT STATION        M
                  TRANSPOSITION AREA       0.0 SQ MI

  TOTAL RAINFALL =    4.10, TOTAL LOSS =    2.30, TOTAL EXCESS =    1.80

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
    23.      12.00        (CFS)       2.          1.          1.          1.
                        (INCHES)   1.454       1.783       1.783       1.783
                         (AC-FT)      1.          1.          1.          1.

                     CUMULATIVE AREA =    0.01 SQ MI
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***             ***             ***             ***             ***

                  HYDROGRAPH AT STATION        M
                TRANSPOSITION AREA      3.0 SQ MI

  TOTAL RAINFALL =    4.02, TOTAL LOSS =    2.27, TOTAL EXCESS =    1.75

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   23.      12.00        (CFS)        2.          1.          1.          1.
                       (INCHES)    1.415       1.737       1.737       1.737
                        (AC-FT)        1.          1.          1.          1.

                      CUMULATIVE AREA =    0.01 SQ MI

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

                  HYDROGRAPH AT STATION        M
                TRANSPOSITION AREA     10.0 SQ MI

  TOTAL RAINFALL =    3.94, TOTAL LOSS =    2.23, TOTAL EXCESS =    1.71

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   22.      12.00        (CFS)        2.          1.          1.          1.
                       (INCHES)    1.376       1.692       1.692       1.692
                        (AC-FT)        1.          1.          1.          1.

                      CUMULATIVE AREA =    0.01 SQ MI

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


                      INTERPOLATED HYDROGRAPH AT        M

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   23.      12.00        (CFS)        2.          1.          1.          1.
                       (INCHES)    1.451       1.779       1.780       1.780
                        (AC-FT)        1.          1.          1.          1.

                      CUMULATIVE AREA =    0.01 SQ MI


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          *            *
103 KK    *       CP3  *
          *            *
          **************
                  COMBINE 2 HYDROGRAPHS AT 3

105 HC          HYDROGRAPH COMBINATION
                     ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                          ***

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

                  HYDROGRAPH AT STATION      CP3
                TRANSPOSITION AREA      0.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
  310.      12.17        (CFS)       49.         14.         13.         13.
                       (INCHES)    2.130       2.396       2.397       2.397
                        (AC-FT)       24.         27.         27.         27.

                      CUMULATIVE AREA =    0.22 SQ MI
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***            ***            ***            ***            ***

                HYDROGRAPH AT STATION      CP3
               TRANSPOSITION AREA      3.0 SQ MI

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
   303.      12.17       (CFS)       48.         14.         13.         13.
                       (INCHES)    2.075       2.335       2.336       2.336
                        (AC-FT)       24.         27.         27.         27.

                      CUMULATIVE AREA =    0.22 SQ MI


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

                HYDROGRAPH AT STATION      CP3
               TRANSPOSITION AREA     10.0 SQ MI

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
   297.      12.17       (CFS)       47.         13.         13.         13.
                       (INCHES)    2.020       2.275       2.276       2.276
                        (AC-FT)       23.         26.         26.         26.

                      CUMULATIVE AREA =    0.22 SQ MI

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


                      INTERPOLATED HYDROGRAPH AT      CP3

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
   306.      12.17       (CFS)       49.         14.         13.         13.
                       (INCHES)    2.101       2.363       2.364       2.364
                        (AC-FT)       24.         27.         27.         27.

                      CUMULATIVE AREA =    0.22 SQ MI


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


          **************
          *            *
106 KK    *         I  *
          *            *
          **************
                    BASIN I
                     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                     L=      1.1  Lca=       .6   S=  890.9  Kn= .054  LAG=  17.7
                     PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN

             SUBBASIN RUNOFF DATA

111 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.19  SUBBASIN AREA

112 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.25  STARTING LOSS
                        DTH        0.35  MOISTURE DEFICIT
                       PSIF        3.95  WETTING FRONT SUCTION
                      XKSAT        0.44  HYDRAULIC CONDUCTIVITY
                      RTIMP       53.00  PERCENT IMPERVIOUS AREA

107 UI          INPUT UNITGRAPH,  16 ORDINATES,  VOLUME = 1.00
                     47.0     182.0     306.0     300.0     190.0     139.0      95.0      71.0      47.0      33.0
                     24.0      17.0      11.0       7.0       7.0       7.0

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HYDROGRAPH AT STATION I
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 4.10, TOTAL LOSS = 1.45, TOTAL EXCESS = 2.65

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
273.	12.08	(CFS)	42.	14.	13.	13.
		(INCHES)	2.014	2.642	2.644	2.644
		(AC-FT)	21.	27.	27.	27.

CUMULATIVE AREA = 0.19 SQ MI

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

HYDROGRAPH AT STATION I
TRANSPOSITION AREA 3.0 SQ MI

TOTAL RAINFALL = 4.02, TOTAL LOSS = 1.43, TOTAL EXCESS = 2.59

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
266.	12.08	(CFS)	41.	13.	13.	13.
		(INCHES)	1.968	2.584	2.587	2.587
		(AC-FT)	20.	26.	26.	26.

CUMULATIVE AREA = 0.19 SQ MI

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

HYDROGRAPH AT STATION I
TRANSPOSITION AREA 10.0 SQ MI

TOTAL RAINFALL = 3.94, TOTAL LOSS = 1.40, TOTAL EXCESS = 2.54

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
260.	12.08	(CFS)	40.	13.	13.	13.
		(INCHES)	1.923	2.526	2.529	2.529
		(AC-FT)	20.	26.	26.	26.

CUMULATIVE AREA = 0.19 SQ MI

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

INTERPOLATED HYDROGRAPH AT I

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
269.	12.08	(CFS)	41.	13.	13.	13.
		(INCHES)	1.990	2.612	2.614	2.614
		(AC-FT)	20.	27.	27.	27.

CUMULATIVE AREA = 0.19 SQ MI

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              **************
              *            *
119 KK        *         J  *
              *            *
              **************
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BASIN J
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= .9 Lca= .5 S= 926.3 Kn= .070 LAG= 20.1
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

124 BA SUBBASIN CHARACTERISTICS

TAREA	0.07	SUBBASIN AREA

125 LG GREEN AND AMPT LOSS RATE

STRTL	0.19	STARTING LOSS
DTH	0.31	MOISTURE DEFICIT
PSIF	2.89	WETTING FRONT SUCTION
XKSAT	0.92	HYDRAULIC CONDUCTIVITY
RTIMP	17.00	PERCENT IMPERVIOUS AREA

120 UI INPUT UNITGRAPH, 13 ORDINATES, VOLUME = 1.00

10.0	41.0	61.0	88.0	124.0	88.0	61.0	40.0	18.0	12.0
6.0	3.0	3.0							

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

HYDROGRAPH AT STATION J
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 4.10, TOTAL LOSS = 2.79, TOTAL EXCESS = 1.31

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
70.	12.17	(CFS)	9.	3.	2.	2.
		(INCHES)	1.099	1.300	1.301	1.301
		(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = 0.07 SQ MI

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

HYDROGRAPH AT STATION J
TRANSPOSITION AREA 3.0 SQ MI

TOTAL RAINFALL = 4.02, TOTAL LOSS = 2.75, TOTAL EXCESS = 1.27

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
67.	12.17	(CFS)	8.	2.	2.	2.
		(INCHES)	1.062	1.259	1.260	1.260
		(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = 0.07 SQ MI

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

HYDROGRAPH AT STATION J
TRANSPOSITION AREA 10.0 SQ MI

TOTAL RAINFALL = 3.94, TOTAL LOSS = 2.72, TOTAL EXCESS = 1.22

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
65.	12.17	(CFS)	8.	2.	2.	2.
		(INCHES)	1.025	1.218	1.218	1.218
		(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = 0.07 SQ MI

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

INTERPOLATED HYDROGRAPH AT J

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
69.	12.17	(CFS)	8.	2.	2.	2.
		(INCHES)	1.086	1.286	1.287	1.287
		(AC-FT)	4.	5.	5.	5.

CUMULATIVE AREA = 0.07 SQ MI

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              *            *
131 KK        *      CP4   *
              *            *
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COMBINE 2 HYDROGRAPHS AT 4

133 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION CP4
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
338.	12.08	(CFS)	50.	16.	16.	16.
		(INCHES)	1.765	2.276	2.278	2.278
		(AC-FT)	25.	32.	32.	32.

CUMULATIVE AREA = 0.26 SQ MI

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

HYDROGRAPH AT STATION CP4
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
329.	12.08	(CFS)	49.	16.	15.	15.
		(INCHES)	1.721	2.223	2.225	2.225
		(AC-FT)	24.	31.	31.	31.

CUMULATIVE AREA = 0.26 SQ MI

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

HYDROGRAPH AT STATION CP4
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
320.	12.08	(CFS)	48.	15.	15.	15.
		(INCHES)	1.678	2.169	2.171	2.171
		(AC-FT)	24.	31.	31.	31.

CUMULATIVE AREA = 0.26 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP4

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
333.	12.08	(CFS)	49.	16.	15.	15.
		(INCHES)	1.740	2.245	2.247	2.247
		(AC-FT)	24.	32.	32.	32.

CUMULATIVE AREA = 0.26 SQ MI

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

            **************
            *            *
 134 KK     *       CH4  *
            *            *
            **************
                          ROUTE FLOW FROM 4 TO 5

               HYDROGRAPH ROUTING DATA

 136 RS          STORAGE ROUTING
                      NSTPS           6  NUMBER OF SUBREACHES
                       ITYP        FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC       -1.00  INITIAL CONDITION
                          X        0.00 WORKING R AND D COEFFICIENT

 137 RC          NORMAL DEPTH CHANNEL
                        ANL       0.080  LEFT OVERBANK N-VALUE
                       ANCH       0.060  MAIN CHANNEL N-VALUE
                        ANR       0.080  RIGHT OVERBANK N-VALUE
                      RLNTH       4000.  REACH LENGTH
                        SEL      0.0320  ENERGY SLOPE
                      ELMAX         0.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                         CROSS-SECTION DATA
                          --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
 139 RY        ELEVATION   1660.00   1658.00   1656.00   1652.00   1652.00   1658.00   1658.00   1660.00
 138 RX        DISTANCE     350.00    370.00    460.00    485.00    512.00    550.00    600.00    650.00

                                                          ***

                                         COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00      1.15      2.50      4.05      5.81      7.78      9.95     12.33     14.91     17.69
          OUTFLOW       0.00     29.38     97.13    199.25    336.15    509.26    720.35    971.34   1264.26   1601.09
        ELEVATION    1652.00   1652.42   1652.84   1653.26   1653.68   1654.11   1654.53   1654.95   1655.37   1655.79

          STORAGE      20.76     24.58     29.24     34.74     41.07     49.61     59.21     69.39     80.13     91.44
          OUTFLOW    2004.68   2486.36   3040.21   3677.53   4408.20   5353.85   6487.63   7768.05   9192.88  10762.48
        ELEVATION    1656.21   1656.63   1657.05   1657.47   1657.89   1658.32   1658.74   1659.16   1659.58   1660.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN       29. TO    10762.
                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.)

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

                       HYDROGRAPH AT STATION      CH4
                     TRANSPOSITION AREA      0.0 SQ MI

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
    325.     12.25        (CFS)       50.         16.         16.         16.
                        (INCHES)    1.764      2.275       2.277       2.277
                         (AC-FT)       25.         32.         32.         32.

PEAK STORAGE   TIME                         MAXIMUM AVERAGE STORAGE
  (AC-FT)      (HR)                  6-HR       24-HR       72-HR     24.92-HR
      1.     12.25                     0.          0.          0.          0.

 PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
   (FEET)      (HR)                  6-HR       24-HR       72-HR     24.92-HR
  1653.65     12.25               1652.42     1652.16     1652.15     1652.15

                      CUMULATIVE AREA =    0.26 SQ MI

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

                       HYDROGRAPH AT STATION      CH4
                     TRANSPOSITION AREA      3.0 SQ MI

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
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```
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   316.     12.25        (CFS)       49.         16.         15.         15.
                       (INCHES)    1.721       2.222       2.224       2.224
                        (AC-FT)       24.         31.         31.         31.

PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
  (AC-FT)      (HR)                  6-HR       24-HR       72-HR     24.92-HR
      1.     12.25                     0.          0.          0.          0.

 PEAK STAGE    TIME                           MAXIMUM AVERAGE STAGE
  (FEET)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
 1653.62     12.25               1652.41     1652.15     1652.15     1652.15

                       CUMULATIVE AREA =    0.26 SQ MI


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

                        HYDROGRAPH AT STATION      CH4
                      TRANSPOSITION AREA     10.0 SQ MI

 PEAK FLOW     TIME                           MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                  6-HR       24-HR       72-HR     24.92-HR
   307.     12.25        (CFS)       48.         15.         15.         15.
                       (INCHES)    1.677       2.168       2.170       2.170
                        (AC-FT)       24.         31.         31.         31.

PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
  (AC-FT)      (HR)                  6-HR       24-HR       72-HR     24.92-HR
      1.     12.25                     0.          0.          0.          0.

 PEAK STAGE    TIME                           MAXIMUM AVERAGE STAGE
  (FEET)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
 1653.60     12.25               1652.40     1652.15     1652.15     1652.15

                       CUMULATIVE AREA =    0.26 SQ MI

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


                       INTERPOLATED HYDROGRAPH AT      CH4

 PEAK FLOW     TIME                           MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                  6-HR       24-HR       72-HR     24.92-HR
   320.     12.25        (CFS)       49.         16.         15.         15.
                       (INCHES)    1.739       2.244       2.246       2.246
                        (AC-FT)       24.         32.         32.         32.

                       CUMULATIVE AREA =    0.26 SQ MI


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


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            *            *
140 KK      *          K *
            *            *
            **************
                      BASIN K
                       THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                       L=      1.1  Lca=       .6   S=  163.6  Kn= .070  LAG=  31.6
                       PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

              SUBBASIN RUNOFF DATA

145 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.18  SUBBASIN AREA

146 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.23  STARTING LOSS
                        DTH        0.33  MOISTURE DEFICIT
                       PSIF        3.50  WETTING FRONT SUCTION
                      XKSAT        0.59  HYDRAULIC CONDUCTIVITY
```

WASH B 100YR-24HR

RTIMP 6.00 PERCENT IMPERVIOUS AREA

141 UI INPUT UNITGRAPH, 19 ORDINATES, VOLUME = 1.00

19.0	44.0	87.0	112.0	144.0	207.0	222.0	167.0	131.0	101.0
71.0	36.0	30.0	19.0	10.0	6.0	6.0	6.0	6.0	

***

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

HYDROGRAPH AT STATION K
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 4.10, TOTAL LOSS = 2.98, TOTAL EXCESS = 1.12

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
162.	12.33	(CFS)	21.	6.	5.	5.
		(INCHES)	1.045	1.116	1.116	1.116
		(AC-FT)	10.	11.	11.	11.

CUMULATIVE AREA = 0.18 SQ MI

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

HYDROGRAPH AT STATION K
TRANSPOSITION AREA 3.0 SQ MI

TOTAL RAINFALL = 4.02, TOTAL LOSS = 2.94, TOTAL EXCESS = 1.08

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
157.	12.33	(CFS)	20.	5.	5.	5.
		(INCHES)	1.010	1.080	1.080	1.080
		(AC-FT)	10.	11.	11.	11.

CUMULATIVE AREA = 0.18 SQ MI

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

HYDROGRAPH AT STATION K
TRANSPOSITION AREA 10.0 SQ MI

TOTAL RAINFALL = 3.94, TOTAL LOSS = 2.90, TOTAL EXCESS = 1.04

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
151.	12.33	(CFS)	19.	5.	5.	5.
		(INCHES)	0.975	1.043	1.044	1.044
		(AC-FT)	10.	10.	10.	10.

CUMULATIVE AREA = 0.18 SQ MI

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

INTERPOLATED HYDROGRAPH AT K

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
159.	12.33	(CFS)	20.	5.	5.	5.
		(INCHES)	1.027	1.097	1.098	1.098
		(AC-FT)	10.	11.	11.	11.

CUMULATIVE AREA = 0.18 SQ MI

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153 KK      *          L  *
            *             *
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                          BASIN L
                           THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                           L=       1.1  Lca=        .6   S=  396.4  Kn= .066  LAG=  25.5
                           PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

              SUBBASIN RUNOFF DATA

158 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.23  SUBBASIN AREA

159 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.20  STARTING LOSS
                        DTH        0.31  MOISTURE DEFICIT
                       PSIF        3.71  WETTING FRONT SUCTION
                      XKSAT        0.52  HYDRAULIC CONDUCTIVITY
                      RTIMP       27.00  PERCENT IMPERVIOUS AREA

154 UI          INPUT UNITGRAPH,  14 ORDINATES,  VOLUME = 1.00
                     31.0     105.0     169.0     229.0     360.0     302.0     219.0     162.0      87.0      51.0
                     32.0      14.0       9.0      10.0

                                                                  ***

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

                        HYDROGRAPH AT STATION        L
                      TRANSPOSITION AREA      0.0 SQ MI

   TOTAL RAINFALL =    4.10, TOTAL LOSS =    2.27, TOTAL EXCESS =    1.83

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   277.     12.17        (CFS)        37.         11.         11.         11.
                       (INCHES)     1.502       1.821       1.822       1.822
                        (AC-FT)        19.         22.         22.         22.

                       CUMULATIVE AREA =    0.23 SQ MI


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

                        HYDROGRAPH AT STATION        L
                      TRANSPOSITION AREA      3.0 SQ MI

   TOTAL RAINFALL =    4.02, TOTAL LOSS =    2.23, TOTAL EXCESS =    1.79

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   270.     12.17        (CFS)        36.         11.         11.         11.
                       (INCHES)     1.463       1.776       1.777       1.777
                        (AC-FT)        18.         22.         22.         22.

                       CUMULATIVE AREA =    0.23 SQ MI


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

                        HYDROGRAPH AT STATION        L
                      TRANSPOSITION AREA     10.0 SQ MI

   TOTAL RAINFALL =    3.94, TOTAL LOSS =    2.20, TOTAL EXCESS =    1.74

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   262.     12.17        (CFS)        35.         11.         10.         10.
                       (INCHES)     1.424       1.731       1.732       1.732
                        (AC-FT)        18.         21.         21.         21.

                       CUMULATIVE AREA =    0.23 SQ MI

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INTERPOLATED HYDROGRAPH AT L

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
273.	12.17	(CFS)	37.	11.	11.	11.
		(INCHES)	1.481	1.796	1.797	1.797
		(AC-FT)	18.	22.	22.	22.

CUMULATIVE AREA = 0.23 SQ MI

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              *            *
165 KK        *       CP5  *
              *            *
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COMBINE 3 HYDROGRAPHS AT 5

167 HC HYDROGRAPH COMBINATION
ICOMP 3 NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION CP5
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
755.	12.25	(CFS)	108.	33.	32.	32.
		(INCHES)	1.480	1.806	1.808	1.808
		(AC-FT)	54.	65.	65.	65.

CUMULATIVE AREA = 0.68 SQ MI

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

HYDROGRAPH AT STATION CP5
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
733.	12.25	(CFS)	105.	32.	31.	31.
		(INCHES)	1.440	1.760	1.762	1.762
		(AC-FT)	52.	64.	64.	64.

CUMULATIVE AREA = 0.68 SQ MI

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

HYDROGRAPH AT STATION CP5
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
712.	12.25	(CFS)	102.	31.	30.	30.
		(INCHES)	1.401	1.714	1.716	1.716
		(AC-FT)	51.	62.	62.	62.

CUMULATIVE AREA = 0.68 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP5

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR

739.	12.25	(CFS)	106.	32.	31.	31.
		(INCHES)	1.451	1.772	1.774	1.774
		(AC-FT)	53.	64.	64.	64.

CUMULATIVE AREA = 0.68 SQ MI

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          *            *
168 KK    *       CH5  *
          *            *
          **************
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ROUTE FLOW FROM 5 TO 3

HYDROGRAPH ROUTING DATA

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170 RS        STORAGE ROUTING
                   NSTPS          4  NUMBER OF SUBREACHES
                    ITYP       FLOW  TYPE OF INITIAL CONDITION
                  RSVRIC      -1.00  INITIAL CONDITION
                       X       0.00 WORKING R AND D COEFFICIENT

171 RC        NORMAL DEPTH CHANNEL
                     ANL      0.080  LEFT OVERBANK N-VALUE
                    ANCH      0.060  MAIN CHANNEL N-VALUE
                     ANR      0.080  RIGHT OVERBANK N-VALUE
                   RLNTH      2000.  REACH LENGTH
                     SEL     0.0070  ENERGY SLOPE
                   ELMAX        0.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION
```

CROSS-SECTION DATA

		--- LEFT OVERBANK ---	+ ------ MAIN CHANNEL	------- + --- RIGHT OVERBANK ---					
173 RY	ELEVATION	1588.00	1580.00	1577.00	1574.00	1574.00	1583.00	1584.00	1585.00
172 RX	DISTANCE	400.00	450.00	475.00	480.00	512.00	550.00	575.00	600.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	1.16	2.46	3.91	5.50	7.32	9.45	11.89	14.64	17.69
OUTFLOW	0.00	40.74	132.39	267.00	443.19	670.76	948.53	1280.84	1672.12	2128.62
ELEVATION	1574.00	1574.74	1575.47	1576.21	1576.95	1577.68	1578.42	1579.16	1579.89	1580.63
STORAGE	21.00	24.57	28.40	32.65	37.67	43.46	49.68	56.06	62.59	69.28
OUTFLOW	2650.54	3240.20	3900.41	4715.24	5647.53	6693.18	7877.14	9177.59	10590.75	12114.38
ELEVATION	1581.37	1582.10	1582.84	1583.58	1584.32	1585.05	1585.79	1586.53	1587.26	1588.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 132. TO 12114.
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.)

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

HYDROGRAPH AT STATION CH5
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
745.	12.33	(CFS)	108.	33.	32.	32.
		(INCHES)	1.480	1.805	1.806	1.806
		(AC-FT)	54.	65.	65.	65.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
2.	12.33	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1577.88	12.33	1574.94	1574.34	1574.33	1574.33

CUMULATIVE AREA = 0.68 SQ MI

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

HYDROGRAPH AT STATION CH5
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
724.	12.33	(CFS)	105.	32.	31.	31.
		(INCHES)	1.440	1.760	1.760	1.760
		(AC-FT)	52.	64.	64.	64.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
2.	12.33	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1577.82	12.33	1574.93	1574.34	1574.32	1574.32

CUMULATIVE AREA = 0.68 SQ MI

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

HYDROGRAPH AT STATION CH5
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
702.	12.33	(CFS)	102.	31.	30.	30.
		(INCHES)	1.400	1.714	1.714	1.714
		(AC-FT)	51.	62.	62.	62.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
2.	12.33	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1577.77	12.33	1574.91	1574.33	1574.32	1574.32

CUMULATIVE AREA = 0.68 SQ MI

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

INTERPOLATED HYDROGRAPH AT CH5

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
729.	12.33	(CFS)	106.	32.	31.	31.
		(INCHES)	1.450	1.772	1.772	1.772
		(AC-FT)	53.	64.	64.	64.

CUMULATIVE AREA = 0.68 SQ MI

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              **************
              *            *
 174 KK       *         N  *
              *            *
              **************
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BASIN N
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= .6 Lca= .3 S= 100.0 Kn= .070 LAG= 21.9
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

```
179 BA          SUBBASIN CHARACTERISTICS
                     TAREA        0.04  SUBBASIN AREA

180 LG          GREEN AND AMPT LOSS RATE
                     STRTL        0.21  STARTING LOSS
                       DTH        0.32  MOISTURE DEFICIT
                      PSIF        3.29  WETTING FRONT SUCTION
                     XKSAT        0.69  HYDRAULIC CONDUCTIVITY
                     RTIMP       12.00  PERCENT IMPERVIOUS AREA

175 UI          INPUT UNITGRAPH,  13 ORDINATES,  VOLUME = 1.00
                     7.0      27.0      40.0      61.0      77.0      51.0      36.0      18.0      11.0       6.0
                     2.0       3.0       2.0

                                                                  ***

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

                       HYDROGRAPH AT STATION        N
                     TRANSPOSITION AREA      0.0 SQ MI

   TOTAL RAINFALL =    4.10, TOTAL LOSS =    2.84, TOTAL EXCESS =    1.26

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   47.      12.17        (CFS)        5.          1.          1.          1.
                       (INCHES)     1.114       1.257       1.257       1.257
                       (AC-FT)        3.          3.          3.          3.

                       CUMULATIVE AREA =    0.04 SQ MI

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

                       HYDROGRAPH AT STATION        N
                     TRANSPOSITION AREA      3.0 SQ MI

   TOTAL RAINFALL =    4.02, TOTAL LOSS =    2.80, TOTAL EXCESS =    1.22

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   45.      12.17        (CFS)        5.          1.          1.          1.
                       (INCHES)     1.078       1.218       1.219       1.219
                       (AC-FT)        3.          3.          3.          3.

                       CUMULATIVE AREA =    0.04 SQ MI

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

                       HYDROGRAPH AT STATION        N
                     TRANSPOSITION AREA     10.0 SQ MI

   TOTAL RAINFALL =    3.94, TOTAL LOSS =    2.76, TOTAL EXCESS =    1.18

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   44.      12.17        (CFS)        5.          1.          1.          1.
                       (INCHES)     1.042       1.179       1.179       1.179
                       (AC-FT)        2.          3.          3.          3.

                       CUMULATIVE AREA =    0.04 SQ MI

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

                       INTERPOLATED HYDROGRAPH AT        N

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   47.      12.17        (CFS)        5.          1.          1.          1.
                       (INCHES)     1.105       1.247       1.247       1.247
                       (AC-FT)        3.          3.          3.          3.

                       CUMULATIVE AREA =    0.04 SQ MI
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          **************
          *            *
186 KK    *       CP3  *
          *            *
          **************
                         COMBINE 4 HYDROGRAPHS AT 3

188 HC          HYDROGRAPH COMBINATION
                      ICOMP           4  NUMBER OF HYDROGRAPHS TO COMBINE

                                                          ***

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

                        HYDROGRAPH AT STATION      CP3
                      TRANSPOSITION AREA      0.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
  2064.     12.25        (CFS)      308.         92.         88.         88.
                       (INCHES)    1.762       2.099       2.101       2.101
                        (AC-FT)    153.        182.        182.        182.

                       CUMULATIVE AREA =    1.63 SQ MI

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

                        HYDROGRAPH AT STATION      CP3
                      TRANSPOSITION AREA      3.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
  2012.     12.25        (CFS)      300.         89.         86.         86.
                       (INCHES)    1.716       2.046       2.048       2.048
                        (AC-FT)    149.        177.        177.        177.

                       CUMULATIVE AREA =    1.63 SQ MI

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

                        HYDROGRAPH AT STATION      CP3
                      TRANSPOSITION AREA     10.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
  1959.     12.25        (CFS)      292.         87.         84.         84.
                       (INCHES)    1.671       1.994       1.995       1.995
                        (AC-FT)    145.        173.        173.        173.

                       CUMULATIVE AREA =    1.63 SQ MI

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


                       INTERPOLATED HYDROGRAPH AT      CP3

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
  2018.     12.25        (CFS)      301.         90.         86.         86.
                       (INCHES)    1.721       2.052       2.054       2.054
                        (AC-FT)    149.        178.        178.        178.

                       CUMULATIVE AREA =    1.63 SQ MI
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189 KK        *     CH6    *
              *            *
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                        ROUTE FLOW FROM 3 TO 6

          HYDROGRAPH ROUTING DATA

191 RS          STORAGE ROUTING
                     NSTPS          2  NUMBER OF SUBREACHES
                      ITYP       FLOW  TYPE OF INITIAL CONDITION
                    RSVRIC      -1.00  INITIAL CONDITION
                         X       0.00 WORKING R AND D COEFFICIENT

192 RC          NORMAL DEPTH CHANNEL
                       ANL      0.065  LEFT OVERBANK N-VALUE
                      ANCH      0.046  MAIN CHANNEL N-VALUE
                       ANR      0.065  RIGHT OVERBANK N-VALUE
                     RLNTH      2000.  REACH LENGTH
                       SEL     0.0170  ENERGY SLOPE
                     ELMAX        0.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                        --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
194 RY       ELEVATION   1549.00   1548.00   1544.00   1542.00   1542.00   1547.00   1548.00   1548.00
193 RX       DISTANCE     400.00    425.00    450.00    490.00    515.00    550.00    560.00    600.00

                                                  ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00      0.51      1.18      2.03      3.04      4.22      5.55      6.98      8.48     10.07
          OUTFLOW       0.00     21.62     74.99    160.98    282.91    444.44    667.62    948.54   1272.82   1640.36
        ELEVATION    1542.00   1542.37   1542.74   1543.11   1543.47   1543.84   1544.21   1544.58   1544.95   1545.32

          STORAGE      11.75     13.50     15.34     17.26     19.26     21.37     23.57     26.37     29.52     32.83
          OUTFLOW    2051.31   2505.96   3004.77   3548.25   4165.22   4868.56   5622.93   6414.83   7299.01   8269.32
        ELEVATION    1545.68   1546.05   1546.42   1546.79   1547.16   1547.53   1547.89   1548.26   1548.63   1549.00


*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN      444. TO      8269.
                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.)

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

                      HYDROGRAPH AT STATION      CH6
                    TRANSPOSITION AREA      0.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
  2038.     12.25        (CFS)      308.         92.         88.          88.
                       (INCHES)    1.762      2.098       2.099        2.099
                        (AC-FT)      153.       182.        182.         182.

PEAK STORAGE  TIME                         MAXIMUM AVERAGE STORAGE
  (AC-FT)     (HR)                  6-HR       24-HR       72-HR     24.92-HR
      6.    12.25                     1.         0.          0.           0.

PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
  (FEET)      (HR)                  6-HR       24-HR       72-HR     24.92-HR
 1545.67    12.25               1543.15    1542.52     1542.50      1542.50

                     CUMULATIVE AREA =    1.63 SQ MI

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

                      HYDROGRAPH AT STATION      CH6
                    TRANSPOSITION AREA      3.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
  1985.     12.25        (CFS)      300.         89.         86.          86.
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                    (INCHES)     1.716       2.045       2.046       2.046
                     (AC-FT)      149.        177.        177.        177.

PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
  (AC-FT)      (HR)                 6-HR       24-HR       72-HR     24.92-HR
     6.      12.25                   1.          0.          0.          0.

PEAK STAGE     TIME                        MAXIMUM AVERAGE STAGE
  (FEET)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
 1545.62     12.25              1543.13     1542.51     1542.50     1542.50

                    CUMULATIVE AREA =    1.63 SQ MI


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

                     HYDROGRAPH AT STATION      CH6
                   TRANSPOSITION AREA     10.0 SQ MI

PEAK FLOW      TIME                        MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                 6-HR       24-HR       72-HR     24.92-HR
  1932.      12.25       (CFS)      292.         87.         84.         84.
                    (INCHES)     1.671       1.993       1.993       1.993
                     (AC-FT)      145.        173.        173.        173.

PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
  (AC-FT)      (HR)                 6-HR       24-HR       72-HR     24.92-HR
     6.      12.25                   1.          0.          0.          0.

PEAK STAGE     TIME                        MAXIMUM AVERAGE STAGE
  (FEET)       (HR)                 6-HR       24-HR       72-HR     24.92-HR
 1545.58     12.25              1543.12     1542.51     1542.49     1542.49

                    CUMULATIVE AREA =    1.63 SQ MI

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


                    INTERPOLATED HYDROGRAPH AT      CH6

PEAK FLOW      TIME                        MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                 6-HR       24-HR       72-HR     24.92-HR
  1990.      12.25       (CFS)      301.         90.         86.         86.
                    (INCHES)     1.721       2.051       2.052       2.052
                     (AC-FT)      149.        178.        178.        178.

                    CUMULATIVE AREA =    1.63 SQ MI


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


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          *            *
195 KK    *         F  *
          *            *
          **************
                     BASIN F
                      THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                      L=      1.1  Lca=       .6   S=  252.3  Kn= .070  LAG=  29.4
                      PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

200 BA          SUBBASIN CHARACTERISTICS
                     TAREA        0.16  SUBBASIN AREA

201 LG          GREEN AND AMPT LOSS RATE
                     STRTL        0.19  STARTING LOSS
                       DTH        0.17  MOISTURE DEFICIT
                      PSIF       10.10  WETTING FRONT SUCTION
                     XKSAT        0.03  HYDRAULIC CONDUCTIVITY
                     RTIMP       18.00  PERCENT IMPERVIOUS AREA
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WASH B 100YR-24HR

196 UI INPUT UNITGRAPH, 17 ORDINATES, VOLUME = 1.00

19.0	49.0	91.0	117.0	160.0	226.0	172.0	133.0	102.0	67.0
34.0	26.0	18.0	6.0	6.0	5.0	6.0			

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

HYDROGRAPH AT STATION F
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 4.10, TOTAL LOSS = 1.44, TOTAL EXCESS = 2.66

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
236.	12.25	(CFS)	41.	11.	11.	11.
		(INCHES)	2.408	2.651	2.652	2.652
		(AC-FT)	21.	23.	23.	23.

CUMULATIVE AREA = 0.16 SQ MI

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

HYDROGRAPH AT STATION F
TRANSPOSITION AREA 3.0 SQ MI

TOTAL RAINFALL = 4.02, TOTAL LOSS = 1.43, TOTAL EXCESS = 2.59

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
232.	12.25	(CFS)	40.	11.	11.	11.
		(INCHES)	2.348	2.583	2.584	2.584
		(AC-FT)	20.	22.	22.	22.

CUMULATIVE AREA = 0.16 SQ MI

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

HYDROGRAPH AT STATION F
TRANSPOSITION AREA 10.0 SQ MI

TOTAL RAINFALL = 3.94, TOTAL LOSS = 1.42, TOTAL EXCESS = 2.52

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
227.	12.25	(CFS)	39.	11.	10.	10.
		(INCHES)	2.287	2.514	2.515	2.515
		(AC-FT)	20.	21.	21.	21.

CUMULATIVE AREA = 0.16 SQ MI

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

INTERPOLATED HYDROGRAPH AT F

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
234.	12.25	(CFS)	41.	11.	11.	11.
		(INCHES)	2.379	2.618	2.619	2.619
		(AC-FT)	20.	22.	22.	22.

CUMULATIVE AREA = 0.16 SQ MI

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208 KK    *          O *
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                BASIN 0
                 THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                 L=       .2  Lca=       .1   S=  166.7  Kn= .070  LAG=   8.0
                 PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

          SUBBASIN RUNOFF DATA

213 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.03  SUBBASIN AREA

214 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.18  STARTING LOSS
                        DTH        0.29  MOISTURE DEFICIT
                       PSIF        3.29  WETTING FRONT SUCTION
                      XKSAT        0.69  HYDRAULIC CONDUCTIVITY
                      RTIMP       22.00  PERCENT IMPERVIOUS AREA

209 UI          INPUT UNITGRAPH,   4 ORDINATES,  VOLUME = 0.99
                     39.0     108.0      50.0       9.0

                                                          ***

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

                    HYDROGRAPH AT STATION        O
                  TRANSPOSITION AREA      0.0 SQ MI

  TOTAL RAINFALL =    4.10, TOTAL LOSS =    2.50, TOTAL EXCESS =    1.60

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   41.      12.00        (CFS)        4.          1.          1.          1.
                       (INCHES)    1.320       1.577       1.577       1.577
                        (AC-FT)        2.          2.          2.          2.

                     CUMULATIVE AREA =    0.03 SQ MI


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

                    HYDROGRAPH AT STATION        O
                  TRANSPOSITION AREA      3.0 SQ MI

  TOTAL RAINFALL =    4.02, TOTAL LOSS =    2.46, TOTAL EXCESS =    1.56

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   39.      12.00        (CFS)        4.          1.          1.          1.
                       (INCHES)    1.283       1.535       1.535       1.535
                        (AC-FT)        2.          2.          2.          2.

                     CUMULATIVE AREA =    0.03 SQ MI


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

                    HYDROGRAPH AT STATION        O
                  TRANSPOSITION AREA     10.0 SQ MI

  TOTAL RAINFALL =    3.94, TOTAL LOSS =    2.43, TOTAL EXCESS =    1.51

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
   38.      12.00        (CFS)        4.          1.          1.          1.
                       (INCHES)    1.245       1.492       1.492       1.492
                        (AC-FT)        2.          2.          2.          2.

                     CUMULATIVE AREA =    0.03 SQ MI

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


                     INTERPOLATED HYDROGRAPH AT        O

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
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(CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
40.	12.00	(CFS)	4.	1.	1.	1.
		(INCHES)	1.314	1.570	1.570	1.570
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = 0.03 SQ MI

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              **************
              *            *
218 KK        *         G  *
              *            *
              **************
                             BASIN G
                              THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                              L=      1.1  Lca=       .6   S=  200.0  Kn= .070  LAG=  30.4
                              PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

                SUBBASIN RUNOFF DATA

223 BA            SUBBASIN CHARACTERISTICS
                        TAREA        0.20  SUBBASIN AREA

224 LG            GREEN AND AMPT LOSS RATE
                        STRTL        0.19  STARTING LOSS
                          DTH        0.17  MOISTURE DEFICIT
                         PSIF       10.10  WETTING FRONT SUCTION
                        XKSAT        0.03  HYDRAULIC CONDUCTIVITY
                        RTIMP       18.00  PERCENT IMPERVIOUS AREA

219 UI            INPUT UNITGRAPH,  17 ORDINATES,  VOLUME = 1.00
                      22.0      58.0     106.0     137.0     181.0     270.0     222.0     174.0     131.0      97.0
                      50.0      38.0      23.0      13.0       7.0       7.0       7.0
                                                                  ***

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

                        HYDROGRAPH AT STATION        G
                      TRANSPOSITION AREA      0.0 SQ MI

   TOTAL RAINFALL =    4.10, TOTAL LOSS =    1.44, TOTAL EXCESS =    2.66

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                    6-HR       24-HR       72-HR     24.92-HR
    290.      12.25        (CFS)       52.         14.         14.         14.
                         (INCHES)    2.403       2.646       2.647       2.647
                          (AC-FT)     26.         28.         28.         28.

                        CUMULATIVE AREA =    0.20 SQ MI

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

                        HYDROGRAPH AT STATION        G
                      TRANSPOSITION AREA      3.0 SQ MI

   TOTAL RAINFALL =    4.02, TOTAL LOSS =    1.43, TOTAL EXCESS =    2.59

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                    6-HR       24-HR       72-HR     24.92-HR
    284.      12.25        (CFS)       50.         14.         13.         13.
                         (INCHES)    2.343       2.577       2.578       2.578
                          (AC-FT)     25.         27.         27.         27.

                        CUMULATIVE AREA =    0.20 SQ MI

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

                        HYDROGRAPH AT STATION        G
                      TRANSPOSITION AREA     10.0 SQ MI
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TOTAL RAINFALL = 3.94, TOTAL LOSS = 1.42, TOTAL EXCESS = 2.52

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
278.	12.25	(CFS)	49.	13.	13.	13.
		(INCHES)	2.282	2.509	2.510	2.510
		(AC-FT)	24.	27.	27.	27.

CUMULATIVE AREA = 0.20 SQ MI

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

INTERPOLATED HYDROGRAPH AT G

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
287.	12.25	(CFS)	51.	14.	14.	14.
		(INCHES)	2.371	2.610	2.611	2.611
		(AC-FT)	25.	28.	28.	28.

CUMULATIVE AREA = 0.20 SQ MI

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              *            *
231 KK        *       CP6  *
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COMBINE 4 HYDROGRAPHS AT 6

233 HC HYDROGRAPH COMBINATION
ICOMP 4 NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION CP6
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2568.	12.25	(CFS)	405.	118.	114.	114.
		(INCHES)	1.871	2.189	2.190	2.190
		(AC-FT)	201.	235.	235.	235.

CUMULATIVE AREA = 2.01 SQ MI

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

HYDROGRAPH AT STATION CP6
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2504.	12.25	(CFS)	394.	115.	111.	111.
		(INCHES)	1.823	2.134	2.135	2.135
		(AC-FT)	196.	229.	229.	229.

CUMULATIVE AREA = 2.01 SQ MI

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

HYDROGRAPH AT STATION CP6
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW TIME MAXIMUM AVERAGE FLOW

WASH B 100YR-24HR

(CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
2441.	12.25	(CFS)	384.	112.	108.	108.
		(INCHES)	1.774	2.078	2.079	2.079
		(AC-FT)	190.	223.	223.	223.

CUMULATIVE AREA = 2.01 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP6

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
(CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
2509.	12.25	(CFS)	395.	116.	111.	111.
		(INCHES)	1.826	2.138	2.139	2.139
		(AC-FT)	196.	229.	229.	229.

CUMULATIVE AREA = 2.01 SQ MI

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              *            *
234 KK        *      CH7   *
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ROUTE FLOW FROM 6 TO 7

HYDROGRAPH ROUTING DATA

236 RS STORAGE ROUTING

NSTPS	7	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	-1.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

237 RC NORMAL DEPTH CHANNEL

ANL	0.070	LEFT OVERBANK N-VALUE
ANCH	0.050	MAIN CHANNEL N-VALUE
ANR	0.070	RIGHT OVERBANK N-VALUE
RLNTH	3000.	REACH LENGTH
SEL	0.0067	ENERGY SLOPE
ELMAX	0.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL -------		+ --- RIGHT OVERBANK ---			
239 RY	ELEVATION	1518.00	1512.00	1511.00	1511.00	1512.00	1512.00	1516.00	1520.00
238 RX	DISTANCE	200.00	250.00	440.00	530.00	600.00	650.00	675.00	700.00

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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	4.94	13.91	26.84	40.20	53.78	67.59	81.63	95.89	110.38
OUTFLOW	0.00	82.15	324.37	813.46	1571.27	2520.13	3645.02	4935.67	6384.54	7985.88
ELEVATION	1511.00	1511.47	1511.95	1512.42	1512.89	1513.37	1513.84	1514.32	1514.79	1515.26
STORAGE	125.09	140.03	155.19	170.58	186.19	202.03	218.00	234.07	250.23	266.50
OUTFLOW	9735.12	11628.61	13663.32	15836.79	18146.93	20610.94	23277.19	26077.80	29010.60	32073.64
ELEVATION	1515.74	1516.21	1516.68	1517.16	1517.63	1518.10	1518.58	1519.05	1519.53	1520.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 813. TO 32074.
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.)

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HYDROGRAPH AT STATION CH7
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2493.	12.42	(CFS)	405.	118.	114.	114.
		(INCHES)	1.870	2.183	2.183	2.183
		(AC-FT)	201.	234.	234.	234.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
8.	12.42	2.	1.	1.	1.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1513.35	12.42	1511.78	1511.29	1511.28	1511.28

CUMULATIVE AREA = 2.01 SQ MI

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HYDROGRAPH AT STATION CH7
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2431.	12.42	(CFS)	394.	115.	111.	111.
		(INCHES)	1.822	2.128	2.128	2.128
		(AC-FT)	196.	228.	228.	228.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
8.	12.42	2.	1.	1.	1.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1513.32	12.42	1511.77	1511.29	1511.28	1511.28

CUMULATIVE AREA = 2.01 SQ MI

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

HYDROGRAPH AT STATION CH7
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2370.	12.42	(CFS)	384.	112.	108.	108.
		(INCHES)	1.774	2.073	2.073	2.073
		(AC-FT)	190.	222.	222.	222.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
7.	12.42	2.	1.	1.	1.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1513.29	12.42	1511.75	1511.28	1511.27	1511.27

CUMULATIVE AREA = 2.01 SQ MI

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INTERPOLATED HYDROGRAPH AT CH7

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2435.	12.42	(CFS)	395.	115.	111.	111.
		(INCHES)	1.825	2.132	2.132	2.132
		(AC-FT)	196.	229.	229.	229.

CUMULATIVE AREA = 2.01 SQ MI

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                **************
                *            *
240 KK          *         H  *
                *            *
                **************
                              BASIN H
                               THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                               L=      1.1  Lca=       .6   S=  180.2  Kn= .070  LAG=  32.2
                               PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

245 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.41  SUBBASIN AREA

246 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.21  STARTING LOSS
                        DTH        0.18  MOISTURE DEFICIT
                       PSIF       10.10  WETTING FRONT SUCTION
                      XKSAT        0.03  HYDRAULIC CONDUCTIVITY
                      RTIMP       13.00  PERCENT IMPERVIOUS AREA

241 UI          INPUT UNITGRAPH,  18 ORDINATES,  VOLUME = 1.00
                     44.0     107.0     205.0     262.0     345.0     504.0     476.0     364.0     278.0     212.0
                    129.0      76.0      56.0      40.0      14.0      13.0      14.0      14.0
                                                                   ***

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

                      HYDROGRAPH AT STATION        H
                     TRANSPOSITION AREA      0.0 SQ MI

   TOTAL RAINFALL =    4.10, TOTAL LOSS =    1.56, TOTAL EXCESS =    2.54

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   577.     12.33        (CFS)       103.         28.         27.          27.
                       (INCHES)     2.356       2.535       2.535        2.535
                       (AC-FT)       51.         55.         55.          55.

                      CUMULATIVE AREA =    0.41 SQ MI


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

                      HYDROGRAPH AT STATION        H
                     TRANSPOSITION AREA      3.0 SQ MI

   TOTAL RAINFALL =    4.02, TOTAL LOSS =    1.55, TOTAL EXCESS =    2.47

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   566.     12.33        (CFS)       101.         27.         26.          26.
                       (INCHES)     2.295       2.467       2.467        2.467
                       (AC-FT)       50.         54.         54.          54.

                      CUMULATIVE AREA =    0.41 SQ MI


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

                      HYDROGRAPH AT STATION        H
                     TRANSPOSITION AREA     10.0 SQ MI

   TOTAL RAINFALL =    3.94, TOTAL LOSS =    1.54, TOTAL EXCESS =    2.40

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   554.     12.33        (CFS)        98.         26.         25.          25.
                       (INCHES)     2.234       2.399       2.400        2.400
                       (AC-FT)       49.         52.         52.          52.

                      CUMULATIVE AREA =    0.41 SQ MI
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***             ***             ***             ***             ***


                    INTERPOLATED HYDROGRAPH AT        H

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   570.      12.33        (CFS)      102.         27.         26.          26.
                        (INCHES)    2.316       2.490       2.491        2.491
                         (AC-FT)     50.         54.         54.          54.

                    CUMULATIVE AREA =    0.41 SQ MI


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          *            *
253 KK    *         P  *
          *            *
          **************
                      BASIN P
                       THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                       L=        .8  Lca=        .3   S=   73.3  Kn= .070  LAG=  26.8
                       PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

258 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.06  SUBBASIN AREA

259 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.23  STARTING LOSS
                        DTH        0.33  MOISTURE DEFICIT
                       PSIF        4.00  WETTING FRONT SUCTION
                      XKSAT        0.43  HYDRAULIC CONDUCTIVITY
                      RTIMP        5.00  PERCENT IMPERVIOUS AREA

254 UI          INPUT UNITGRAPH,  16 ORDINATES,  VOLUME = 1.00
                      7.0      20.0      36.0      46.0      67.0      83.0      62.0      48.0      35.0      19.0
                     13.0       8.0       5.0       2.0       2.0       2.0

                                                                  ***

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

                      HYDROGRAPH AT STATION        P
                     TRANSPOSITION AREA      0.0 SQ MI

  TOTAL RAINFALL =    4.10, TOTAL LOSS =    2.91, TOTAL EXCESS =    1.19

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
    62.      12.25        (CFS)        7.          2.          2.           2.
                        (INCHES)    1.129       1.188       1.188        1.188
                         (AC-FT)      4.          4.          4.           4.

                    CUMULATIVE AREA =    0.06 SQ MI


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

                      HYDROGRAPH AT STATION        P
                     TRANSPOSITION AREA      3.0 SQ MI

  TOTAL RAINFALL =    4.02, TOTAL LOSS =    2.86, TOTAL EXCESS =    1.16

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
    60.      12.25        (CFS)        7.          2.          2.           2.
                        (INCHES)    1.095       1.153       1.153        1.153
                         (AC-FT)      3.          4.          4.           4.
```

CUMULATIVE AREA = 0.06 SQ MI

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

HYDROGRAPH AT STATION P
TRANSPOSITION AREA 10.0 SQ MI

TOTAL RAINFALL = 3.94, TOTAL LOSS = 2.82, TOTAL EXCESS = 1.12

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
58.	12.25	(CFS)	7.	2.	2.	2.
		(INCHES)	1.061	1.118	1.118	1.118
		(AC-FT)	3.	4.	4.	4.

CUMULATIVE AREA = 0.06 SQ MI

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

INTERPOLATED HYDROGRAPH AT P

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
62.	12.25	(CFS)	7.	2.	2.	2.
		(INCHES)	1.118	1.177	1.177	1.177
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = 0.06 SQ MI

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266 KK      **************
            *            *
            *       CP7  *
            *            *
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COMBINE 3 HYDROGRAPHS AT 7

268 HC HYDROGRAPH COMBINATION
ICOMP 3 NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION CP7
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
3083.	12.42	(CFS)	515.	148.	142.	142.
		(INCHES)	1.932	2.217	2.217	2.217
		(AC-FT)	255.	293.	293.	293.

CUMULATIVE AREA = 2.48 SQ MI

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

HYDROGRAPH AT STATION CP7
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
3008.	12.42	(CFS)	502.	144.	139.	139.
		(INCHES)	1.882	2.160	2.161	2.161
		(AC-FT)	249.	286.	286.	286.

CUMULATIVE AREA = 2.48 SQ MI

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

                    HYDROGRAPH AT STATION      CP7
                  TRANSPOSITION AREA     10.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
  2934.      12.42        (CFS)     488.        140.        135.        135.
                        (INCHES)   1.832       2.103       2.104       2.104
                         (AC-FT)    242.        278.        278.        278.

                     CUMULATIVE AREA =    2.48 SQ MI

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


                     INTERPOLATED HYDROGRAPH AT      CP7

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.92-HR
  3011.      12.42        (CFS)     502.        144.        139.        139.
                        (INCHES)   1.884       2.162       2.162       2.162
                         (AC-FT)    249.        286.        286.        286.

                     CUMULATIVE AREA =    2.48 SQ MI


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


            **************
            *            *
269 KK      *     ROUTE  *      THROUGH CAP (3, 72-INCH-DIAMETER CULVERTS)
            *            *
            **************

               HYDROGRAPH ROUTING DATA

270 RS           STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC     1507.14  INITIAL CONDITION
                          X        0.00 WORKING R AND D COEFFICIENT

271 SV             STORAGE         0.0       1.5       8.0      20.0      35.0      53.0      63.0      72.0

272 SE           ELEVATION     1507.00   1510.00   1512.00   1514.00   1516.00   1518.00   1519.00   1520.00

273 SQ           DISCHARGE          0.       42.       93.      195.      330.      465.      630.      750.      890.      960.
                                 1095.     1155.     1230.

275 SE           ELEVATION     1507.00   1510.00   1511.00   1512.00   1513.00   1514.00   1515.00   1516.00   1517.00   1518.00
                               1519.00   1520.00   1521.00

277 SS           SPILLWAY
                       CREL     1507.20  SPILLWAY CREST ELEVATION
                      SPWID        0.00  SPILLWAY WIDTH
                       COQW        0.00  WEIR COEFFICIENT
                       EXPW        1.50  EXPONENT OF HEAD

278 ST           TOP OF DAM
                      TOPEL     1519.50  ELEVATION AT TOP OF DAM
                     DAMWID      500.00  DAM WIDTH
                       COQD        3.00  WEIR COEFFICIENT
                       EXPD        1.50  EXPONENT OF HEAD

                                                   ***

                                  COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

                                       (INCLUDING FLOW OVER DAM)
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STORAGE	0.00	1.50	4.75	8.00	14.00	20.00	27.50	35.00	44.00	53.00
OUTFLOW	0.00	42.00	93.00	195.00	330.00	465.00	630.00	750.00	890.00	960.00
ELEVATION	1507.00	1510.00	1511.00	1512.00	1513.00	1514.00	1515.00	1516.00	1517.00	1518.00

STORAGE	63.00	72.00	81.00
OUTFLOW	1095.00	1685.33	3985.68
ELEVATION	1519.00	1520.00	1521.00

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

HYDROGRAPH AT STATION ROUTE
TRANSPOSITION AREA 0.0 SQ MI

PEAK OUTFLOW IS 2659. AT TIME 12.58 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2659.	12.58	(CFS)	513.	147.	142.	142.
		(INCHES)	1.923	2.213	2.213	2.213
		(AC-FT)	254.	293.	293.	293.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
76.	12.58	23.	7.	6.	6.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1520.49	12.58	1513.78	1510.03	1509.92	1509.92

CUMULATIVE AREA = 2.48 SQ MI

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

HYDROGRAPH AT STATION ROUTE
TRANSPOSITION AREA 3.0 SQ MI

EAK OUTFLOW IS 2504. AT TIME 12.58 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2504.	12.58	(CFS)	500.	144.	138.	138.
		(INCHES)	1.874	2.156	2.157	2.157
		(AC-FT)	248.	285.	285.	285.

EAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
76.	12.58	23.	6.	6.	6.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1520.42	12.58	1513.73	1509.99	1509.88	1509.88

CUMULATIVE AREA = 2.48 SQ MI

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

HYDROGRAPH AT STATION ROUTE
TRANSPOSITION AREA 10.0 SQ MI

PEAK OUTFLOW IS 2334. AT TIME 12.67 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2334.	12.67	(CFS)	486.	140.	135.	135.
		(INCHES)	1.823	2.098	2.099	2.099
		(AC-FT)	241.	277.	277.	277.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
75.	12.67	23.	6.	6.	6.

PEAK STAGE TIME MAXIMUM AVERAGE STAGE

(FEET)	(HR)	6-HR	24-HR	72-HR	24.92-HR
1520.34	12.67	1513.67	1509.95	1509.84	1509.84

CUMULATIVE AREA = 2.48 SQ MI

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

INTERPOLATED HYDROGRAPH AT ROUTE

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2509.	12.58	(CFS)	500.	144.	139.	139.
		(INCHES)	1.875	2.158	2.159	2.159
		(AC-FT)	248.	285.	285.	285.

CUMULATIVE AREA = 2.48 SQ MI

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              *            *
279 KK        *       CP8  *
              *            *
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1192 CFS ROUTES THROUGH CAP, 1109 IS STORED,
397.6 CFS OVERTOPS CAP, 397.6 CFS OVERTOPS BERM AT THIS POINT, (87.2% IS DIV

DT	DIVERSION ISTAD	DI1	DIVERSION HYDROGRAPH IDENTIFICATION	
DI	INFLOW	0.00	1548.00	3096.00
DQ	DIVERTED FLOW	0.00	1349.90	2698.40

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DIVERSION HYDROGRAPH DI1
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2318.	12.58	(CFS)	447.	129.	124.	124.
		(INCHES)	1.677	1.929	1.930	1.930
		(AC-FT)	222.	255.	255.	255.

CUMULATIVE AREA = 2.48 SQ MI

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

HYDROGRAPH AT STATION CP8
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
341.	12.58	(CFS)	66.	19.	18.	18.
		(INCHES)	0.246	0.283	0.283	0.283
		(AC-FT)	33.	37.	37.	37.

CUMULATIVE AREA = 2.48 SQ MI

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

DIVERSION HYDROGRAPH DI1
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR

2183.	12.58	(CFS)	436.	125.	121.	121.
		(INCHES)	1.634	1.880	1.881	1.881
		(AC-FT)	216.	249.	249.	249.

CUMULATIVE AREA = 2.48 SQ MI

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

HYDROGRAPH AT STATION CP8
TRANSPOSITION AREA 3.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
321.	12.58	(CFS)	64.	18.	18.	18.
		(INCHES)	0.240	0.276	0.276	0.276
		(AC-FT)	32.	36.	37.	37.

CUMULATIVE AREA = 2.48 SQ MI

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

DIVERSION HYDROGRAPH DI1
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2035.	12.67	(CFS)	424.	122.	117.	117.
		(INCHES)	1.589	1.829	1.830	1.830
		(AC-FT)	210.	242.	242.	242.

CUMULATIVE AREA = 2.48 SQ MI

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

HYDROGRAPH AT STATION CP8
TRANSPOSITION AREA 10.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
299.	12.67	(CFS)	62.	18.	17.	17.
		(INCHES)	0.233	0.269	0.269	0.269
		(AC-FT)	31.	36.	36.	36.

CUMULATIVE AREA = 2.48 SQ MI

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INTERPOLATED DIVERSION HYDROGRAPH AT DI1

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
2187.	12.58	(CFS)	436.	125.	121.	121.
		(INCHES)	1.635	1.882	1.882	1.882
		(AC-FT)	216.	249.	249.	249.

CUMULATIVE AREA = 2.48 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP8

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
322.	12.58	(CFS)	64.	18.	18.	18.
		(INCHES)	0.240	0.276	0.276	0.276
		(AC-FT)	32.	37.	37.	37.

CUMULATIVE AREA = 2.48 SQ MI

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

          **************
          *            *
285 KK    *         R  *
          *            *
          **************
                         BASIN R
                          THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                          L=      1.3  Lca=       .6   S=  146.2  Kn= .070  LAG=  36.7
                          PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

             SUBBASIN RUNOFF DATA

290 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.20  SUBBASIN AREA

291 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.21  STARTING LOSS
                        DTH        0.31  MOISTURE DEFICIT
                       PSIF        3.71  WETTING FRONT SUCTION
                      XKSAT        0.52  HYDRAULIC CONDUCTIVITY
                      RTIMP       12.00  PERCENT IMPERVIOUS AREA

286 UI          INPUT UNITGRAPH,  23 ORDINATES,  VOLUME = 1.00
                     17.0      25.0      65.0      86.0     105.0     125.0     169.0     214.0     166.0     138.0
                    113.0      91.0      70.0      41.0      29.0      24.0      18.0      10.0       5.0       5.0
                      5.0       5.0       6.0

                                                                  ***

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

                       HYDROGRAPH AT STATION        R
                     TRANSPOSITION AREA      0.0 SQ MI

   TOTAL RAINFALL =    4.10, TOTAL LOSS =    2.74, TOTAL EXCESS =    1.36

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
    168.     12.42        (CFS)        26.          7.          7.          7.
                        (INCHES)     1.220       1.362       1.363       1.363
                         (AC-FT)        13.         14.         14.         14.

                       CUMULATIVE AREA =    0.20 SQ MI

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

                       HYDROGRAPH AT STATION        R
                     TRANSPOSITION AREA      3.0 SQ MI

   TOTAL RAINFALL =    4.02, TOTAL LOSS =    2.69, TOTAL EXCESS =    1.33

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
    163.     12.42        (CFS)        25.          7.          7.          7.
                        (INCHES)     1.184       1.323       1.324       1.324
                         (AC-FT)        13.         14.         14.         14.

                       CUMULATIVE AREA =    0.20 SQ MI

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

                       HYDROGRAPH AT STATION        R
                     TRANSPOSITION AREA     10.0 SQ MI

   TOTAL RAINFALL =    3.94, TOTAL LOSS =    2.65, TOTAL EXCESS =    1.29

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
    158.     12.42        (CFS)        24.          7.          7.          7.
                        (INCHES)     1.148       1.285       1.286       1.286
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                    (AC-FT)        12.         14.         14.          14.

                    CUMULATIVE AREA =    0.20 SQ MI

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


                    INTERPOLATED HYDROGRAPH AT        R

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   166.     12.42        (CFS)        26.         7.          7.          7.
                       (INCHES)     1.201       1.342       1.343       1.343
                        (AC-FT)        13.         14.         14.         14.

                    CUMULATIVE AREA =    0.20 SQ MI


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          *            *
299 KK    *       CP9  *
          *            *
          **************
                      COMBINE 2 HYDROGRAPHS AT CP9

301 HC          HYDROGRAPH COMBINATION
                     ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                          ***

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

                      HYDROGRAPH AT STATION      CP9
                    TRANSPOSITION AREA      0.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   491.     12.58        (CFS)        91.         26.         25.         25.
                       (INCHES)     0.318       0.363       0.363       0.363
                        (AC-FT)        45.         52.         52.         52.

                    CUMULATIVE AREA =    2.68 SQ MI

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

                      HYDROGRAPH AT STATION      CP9
                    TRANSPOSITION AREA      3.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   467.     12.58        (CFS)        89.         25.         25.         25.
                       (INCHES)     0.309       0.353       0.354       0.354
                        (AC-FT)        44.         50.         50.         50.

                    CUMULATIVE AREA =    2.68 SQ MI

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

                      HYDROGRAPH AT STATION      CP9
                    TRANSPOSITION AREA     10.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                   6-HR       24-HR       72-HR     24.92-HR
   436.     12.58        (CFS)        86.         25.         24.         24.
                       (INCHES)     0.300       0.344       0.344       0.344
                        (AC-FT)        43.         49.         49.         49.

                    CUMULATIVE AREA =    2.68 SQ MI
```

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

INTERPOLATED HYDROGRAPH AT CP9

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
467.	12.58	(CFS)	89.	25.	25.	25.
		(INCHES)	0.309	0.354	0.354	0.354
		(AC-FT)	44.	50.	51.	51.

CUMULATIVE AREA = 2.68 SQ MI

*** ***

```
            **************
            *            *
302 KK      *      ROUT  *     E THROUGH CAP (1, 36-INCH-DIAMETER CULVERT)
            *            *
            **************

               HYDROGRAPH ROUTING DATA

303 RS           STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        ELEV  TYPE OF INITIAL CONDITION
                      RSVRIC     1503.00  INITIAL CONDITION
                           X        0.00 WORKING R AND D COEFFICIENT

304 SV             STORAGE         0.0       1.0      21.1

305 SE           ELEVATION     1502.00   1506.00   1510.00

306 SQ           DISCHARGE          0.        4.       13.       24.       32.       38.       43.       48.       52.       57.

307 SE           ELEVATION     1503.00   1504.00   1505.00   1506.00   1507.00   1508.00   1509.00   1510.00   1511.00   1512.00

308 SS           SPILLWAY
                       CREL     1503.00  SPILLWAY CREST ELEVATION
                      SPWID        0.00  SPILLWAY WIDTH
                       COQW        0.00  WEIR COEFFICIENT
                       EXPW        1.50  EXPONENT OF HEAD

309 ST           TOP OF DAM
                      TOPEL     1510.00  ELEVATION AT TOP OF DAM
                     DAMWID     1400.00  DAM WIDTH
                       COQD        3.00  WEIR COEFFICIENT
                       EXPD        1.50  EXPONENT OF HEAD
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***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

(INCLUDING FLOW OVER DAM)

STORAGE	0.00	0.25	0.50	0.75	1.00	6.03	11.05	16.08	21.10	26.13
OUTFLOW	0.00	0.00	4.00	13.00	24.00	32.00	38.00	43.00	48.00	4252.00
ELEVATION	1502.00	1503.00	1504.00	1505.00	1506.00	1507.00	1508.00	1509.00	1510.00	1511.00

STORAGE	31.15
OUTFLOW	11936.39
ELEVATION	1512.00

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

HYDROGRAPH AT STATION ROUT
TRANSPOSITION AREA 0.0 SQ MI

PEAK OUTFLOW IS 230. AT TIME 13.00 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
230.	13.00	(CFS)	66.	26.	25.	25.
		(INCHES)	0.229	0.362	0.362	0.362
		(AC-FT)	33.	52.	52.	52.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
22.	13.00	18.	6.	6.	6.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1510.12	13.00	1509.42	1506.01	1505.90	1505.90

CUMULATIVE AREA = 2.68 SQ MI

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

HYDROGRAPH AT STATION ROUT
TRANSPOSITION AREA 3.0 SQ MI

PEAK OUTFLOW IS 227. AT TIME 13.00 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
227.	13.00	(CFS)	64.	25.	24.	24.
		(INCHES)	0.221	0.352	0.352	0.352
		(AC-FT)	32.	50.	50.	50.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
22.	13.00	18.	6.	6.	6.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1510.12	13.00	1509.40	1505.99	1505.88	1505.88

CUMULATIVE AREA = 2.68 SQ MI

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

HYDROGRAPH AT STATION ROUT
TRANSPOSITION AREA 10.0 SQ MI

PEAK OUTFLOW IS 191. AT TIME 13.08 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
191.	13.08	(CFS)	61.	25.	24.	24.
		(INCHES)	0.213	0.342	0.343	0.343
		(AC-FT)	30.	49.	49.	49.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
22.	13.08	18.	6.	6.	6.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
1510.10	13.08	1509.38	1505.97	1505.86	1505.86

CUMULATIVE AREA = 2.68 SQ MI

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

INTERPOLATED HYDROGRAPH AT ROUT

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
227.	13.00	(CFS)	64.	25.	24.	24.
		(INCHES)	0.221	0.352	0.352	0.352

WASH B 100YR-24HR

(AC-FT)	32.	50.	50.	50.

CUMULATIVE AREA = 2.68 SQ MI

WASH B 100YR-24HR

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	A	521.	12.00	66.	21.	21.	0.31		
HYDROGRAPH AT	B	275.	12.00	30.	9.	9.	0.17		
2 COMBINED AT	CP1	794.	12.00	97.	31.	29.	0.48		
ROUTED TO	CH1	784.	12.08	97.	31.	29.	0.48		
HYDROGRAPH AT	C	285.	12.17	44.	11.	11.	0.19		
HYDROGRAPH AT	D	30.	12.00	3.	1.	1.	0.02		
3 COMBINED AT	CP2	1066.	12.08	143.	43.	41.	0.69		
ROUTED TO	CH2	1025.	12.17	143.	43.	41.	0.69		
HYDROGRAPH AT	E	299.	12.17	46.	13.	12.	0.20		
HYDROGRAPH AT	M	23.	12.00	2.	1.	1.	0.01		
2 COMBINED AT	CP3	306.	12.17	49.	14.	13.	0.22		
HYDROGRAPH AT	I	269.	12.08	41.	13.	13.	0.19		
HYDROGRAPH AT	J	69.	12.17	8.	2.	2.	0.07		
2 COMBINED AT	CP4	333.	12.08	49.	16.	15.	0.26		
ROUTED TO	CH4	320.	12.25	49.	16.	15.	0.26		
HYDROGRAPH AT	K	159.	12.33	20.	5.	5.	0.18		
HYDROGRAPH AT	L	273.	12.17	37.	11.	11.	0.23		
3 COMBINED AT	CP5	739.	12.25	106.	32.	31.	0.68		
ROUTED TO	CH5	729.	12.33	106.	32.	31.	0.68		
HYDROGRAPH AT	N	47.	12.17	5.	1.	1.	0.04		
4 COMBINED AT	CP3	2018.	12.25	301.	90.	86.	1.63		
ROUTED TO	CH6	1990.	12.25	301.	90.	86.	1.63		
HYDROGRAPH AT	F	234.	12.25	41.	11.	11.	0.16		
HYDROGRAPH AT	O	40.	12.00	4.	1.	1.	0.03		
HYDROGRAPH AT	G	287.	12.25	51.	14.	14.	0.20		
4 COMBINED AT	CP6	2509.	12.25	395.	116.	111.	2.01		
ROUTED TO	CH7	2435.	12.42	395.	115.	111.	2.01		
HYDROGRAPH AT	H	570.	12.33	102.	27.	26.	0.41		
HYDROGRAPH AT	P	62.	12.25	7.	2.	2.	0.06		
3 COMBINED AT	CP7	3011.	12.42	502.	144.	139.	2.48		
ROUTED TO	ROUTE	2509.	12.58	500.	144.	139.	2.48		
DIVERSION TO	DI1	2187.	12.58	436.	125.	121.	2.48		
HYDROGRAPH AT	CP8	322.	12.58	64.	18.	18.	2.48		
HYDROGRAPH AT	R	166.	12.42	26.	7.	7.	0.20		
2 COMBINED AT	CP9	467.	12.58	89.	25.	25.	2.68		

WASH B 100YR-24HR

ROUTED TO	ROUT	227.	13.00	64.	25.	24.	2.68

WASH B 100YR-24HR

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION ROUTE
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1507.14	1507.20	1519.50
STORAGE	0.	0.	68.
OUTFLOW	2.	3.	1125.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1520.49	0.99	76.	2659.	0.58	12.58	0.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1507.14	1507.20	1519.50
STORAGE	0.	0.	68.
OUTFLOW	2.	3.	1125.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1520.42	0.92	76.	2504.	0.58	12.58	0.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1507.14	1507.20	1519.50
STORAGE	0.	0.	68.
OUTFLOW	2.	3.	1125.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1520.34	0.84	75.	2334.	0.58	12.67	0.00

WASH B 100YR-24HR

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION ROUT
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1503.00	1503.00	1510.00
STORAGE	0.	0.	21.
OUTFLOW	0.	0.	48.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1510.12	0.12	22.	230.	1.83	13.00	0.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1503.00	1503.00	1510.00
STORAGE	0.	0.	21.
OUTFLOW	0.	0.	48.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1510.12	0.12	22.	227.	1.83	13.00	0.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1503.00	1503.00	1510.00
STORAGE	0.	0.	21.
OUTFLOW	0.	0.	48.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1510.10	0.10	22.	191.	1.67	13.08	0.00

*** NORMAL END OF HEC-1 ***

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*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             MAY   1991                *
*          VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01      *
*      Dodson & Associates, Inc.        *
*  RUN DATE  10/31/00  TIME  11:05:51   *
*****************************************
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 551-1748              *
*                                       *
*****************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX          XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

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

  1           ID   DDM MCUHP2 Wash B
  2           ID   FILE N:\LLC\997002\FCD
  3           ID   100 YEAR 6 HOUR STORM
  4           ID   NWBNDZA.DAT
              *DIAGRAM
  5           IT       2                    300
  6           IO       3
  7           IN      15
  8           JD    3.30    0.01
  9           PC    .000    .009    .016    .025    .035    .043    .052    .060    .069    .078
 10           PC    .089    .102    .122    .165    .254    .452    .693    .835    .899    .937
 11           PC    .950    .963    .975    .988   1.000
 12           JD    3.28    0.50
 13           JD    3.23    2.80

 14           KK       A
 15           KM   BASIN A
 16           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 17           KM    L=        .8  Lca=        .4   S= 1175.0  Kn= .048  LAG=  11.7
 18           KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 19           BA     .31
 20           LG     .24     .34    4.80     .27   48.00
 21           UI     95.    253.    535.    725.   1036.    673.    535.    446.    364.    277.
 22           UI    226.    186.    137.    112.     91.     73.     53.     47.     41.     18.
 23           UI     18.     18.     18.     18.     18.      0.      0.      0.      0.      0.
 24           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 25           KK       B
 26           KM   BASIN B
 27           KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 28           KM    L=       1.1  Lca=        .6   S=  872.7  Kn= .041  LAG=  13.5
 29           KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 30           BA     .17
 31           LG     .24     .34    4.50     .33   31.00
 32           UI     45.     98.    199.    258.    325.    460.    531.    395.    314.    244.
 33           UI    175.     93.     74.     46.     30.     14.     14.     14.     14.      0.
 34           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 35           UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 36           KK     CP1
 37           KM   COMBINE 2 HYDROGRAPHS AT 1
 38           HC       2

 39           KK     CH1
 40           KM   ROUTE FLOW FROM 1 TO 2
 41           RS       1    FLOW      -1
 42           RC    0.08    0.06    0.08    1100  0.0218
 43           RX     400     450     475     490     510     525     550     600
 44           RY    1654    1653    1648    1644    1644    1650    1654    1656
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  45          KK       C
  46          KM   BASIN C
  47          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  48          KM    L=       1.1  Lca=        .6   S=  540.9  Kn= .069  LAG=  24.8
  49          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  50          BA     .19
  51          LG     .24      .21   10.10      .03    5.00
  52          UI     25.      25.     32.      85.    105.    124.    140.    155.    177.    200.
  53          UI    252.     314.    296.     247.    217.    195.    170.    150.    130.    116.
  54          UI     88.      63.     44.      42.     41.     26.     25.     24.      8.      8.
  55          UI      8.       8.      8.       8.      8.      8.      8.      0.      0.      0.
  56          UI      0.       0.      0.       0.      0.      0.      0.      0.      0.      0.

  57          KK       D
  58          KM   BASIN D
  59          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  60          KM    L=        .2  Lca=        .1   S= 1363.6  Kn= .061  LAG=   5.4
  61          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  62          BA     .02
  63          LG     .25      .35    3.74      .51   31.00
  64          UI     28.      82.    136.      78.     29.      9.      4.      0.      0.      0.
  65          UI      0.       0.      0.       0.      0.      0.      0.      0.      0.      0.

  66          KK     CP2
  67          KM   COMBINE 3 HYDROGRAPHS AT 2
  68          HC       3

  69          KK     CH2
  70          KM   ROUTE FLOW FROM 2 TO 3
  71          RS       5    FLOW      -1
  72          RC    0.07     0.06    0.07     4000  0.0175
  73          RX     400      430     475      480     510     535     575     600
  74          RY    1638     1636    1630     1628    1628    1634    1636    1638

  75          KK       E
  76          KM   BASIN E
  77          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  78          KM    L=        .9  Lca=        .4   S=  183.3  Kn= .070  LAG=  26.6
  79          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  80          BA     .20
  81          LG     .18      .18    8.80      .06   22.00
  82          UI     26.      26.     26.      86.    105.    124.    141.    156.    176.    198.
  83          UI    234.     296.    334.     278.    240.    215.    193.    168.    150.    130.
  84          UI    114.      87.     62.      46.     43.     42.     27.     26.     26.      9.
  85          UI      8.       8.      8.       8.      8.      8.      8.      8.      0.      0.
  86          UI      0.       0.      0.       0.      0.      0.      0.      0.      0.      0.

  87          KK       M
  88          KM   BASIN M
  89          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  90          KM    L=        .2  Lca=        .1   S=  166.7  Kn= .070  LAG=   8.0
  91          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
  92          BA     .01
  93          LG     .16      .28    3.29      .69   28.00
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  94          UI      7.     27.     41.     69.     59.     40.     24.     11.      6.      2.
  95          UI      2.      0.      0.      0.      0.      0.      0.      0.      0.      0.
  96          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

  97          KK     CP3
  98          KM   COMBINE 2 HYDROGRAPHS AT 3
  99          HC       2

 100          KK       I
 101          KM   BASIN I
 102          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 103          KM    L=       1.1  Lca=       .6   S=  890.9  Kn= .054  LAG=  17.7
 104          KM    PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN
 105          BA     .19
 106          LG     .25     .35    3.95     .44   53.00
 107          UI     36.     36.    106.    165.    225.    265.    314.    417.    294.    229.
 108          UI    205.    183.    164.    145.    126.    104.     90.     84.     76.     60.
 109          UI     50.     46.     39.     38.     28.     28.     23.     18.     18.     18.
 110          UI     15.      7.      7.      7.      7.      7.      7.      7.      7.      7.
 111          UI      7.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 112          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 113          KK       J
 114          KM   BASIN J
 115          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 116          KM    L=        .9  Lca=       .5   S=  926.3  Kn= .070  LAG=  20.1
 117          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 118          BA     .07
 119          LG     .19     .31    2.89     .92   17.00
 120          UI     11.     11.     19.     38.     48.     56.     63.     72.     82.    101.
 121          UI    132.    125.    103.     90.     80.     69.     60.     52.     43.     30.
 122          UI     19.     18.     17.     11.     11.      8.      3.      3.      3.      3.
 123          UI      3.      3.      3.      3.      0.      0.      0.      0.      0.      0.
 124          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 125          KK     CP4
 126          KM   COMBINE 2 HYDROGRAPHS AT 4
 127          HC       2

 128          KK     CH4
 129          KM   ROUTE FLOW FROM 4 TO 5
 130          RS       6    FLOW      -1
 131          RC    0.08    0.06    0.08    4000   0.032
 132          RX     350     370     460     485     512     550     600     650
 133          RY    1660    1658    1656    1652    1652    1658    1658    1660

 134          KK       K
 135          KM   BASIN K
 136          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 137          KM    L=       1.1  Lca=       .6   S=  163.6  Kn= .070  LAG=  31.6
 138          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 139          BA     .18
 140          LG     .23     .33    3.50     .59    6.00
 141          UI     19.     19.     19.     34.     66.     78.     92.    101.    111.    119.
 142          UI    132.    147.    163.    196.    237.    249.    212.    187.    170.    156.
```

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

 143          UI    142.    127.    115.    104.     93.     82.     65.     51.     34.     34.
 144          UI     32.     32.     21.     19.     19.     16.      6.      6.      6.      6.
 145          UI      6.      6.      6.      6.      6.      6.      6.      0.      0.      0.
 146          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 147          KK       L
 148          KM   BASIN L
 149          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 150          KM    L=       1.1  Lca=       .6   S=  396.4  Kn= .066  LAG=  25.5
 151          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 152          BA     .23
 153          LG     .20     .31    3.71     .52   27.00
 154          UI     31.     31.     40.    106.    131.    155.    175.    194.    221.    250.
 155          UI    315.    392.    369.    308.    271.    244.    212.    188.    163.    145.
 156          UI    110.     79.     55.     52.     51.     33.     31.     30.     10.     10.
 157          UI     10.     10.     10.     10.     10.     10.     10.      0.      0.      0.
 158          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 159          KK     CP5
 160          KM   COMBINE 3 HYDROGRAPHS AT 5
 161          HC       3

 162          KK     CH5
 163          KM   ROUTE FLOW FROM 5 TO 3
 164          RS       4    FLOW      -1
 165          RC    0.08    0.06    0.08    2000   0.007
 166          RX     400     450     475     480     512     550     575     600
 167          RY    1588    1580    1577    1574    1574    1583    1584    1585

 168          KK       N
 169          KM   BASIN N
 170          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 171          KM    L=        .6  Lca=       .3   S=  100.0  Kn= .070  LAG=  21.9
 172          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 173          BA     .04
 174          LG     .21     .32    3.29     .69   12.00
 175          UI      7.      7.     14.     25.     32.     37.     42.     48.     56.     73.
 176          UI     87.     72.     61.     54.     46.     40.     34.     29.     21.     13.
 177          UI     12.     11.      7.      7.      5.      2.      2.      2.      2.      2.
 178          UI      2.      2.      0.      0.      0.      0.      0.      0.      0.      0.
 179          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 180          KK     CP3
 181          KM   COMBINE 4 HYDROGRAPHS AT 3
 182          HC       4

 183          KK     CH6
 184          KM   ROUTE FLOW FROM 3 TO 6
 185          RS       2    FLOW      -1
 186          RC   0.065   0.046   0.065    2000   0.017
 187          RX     400     425     450     490     515     550     560     600
 188          RY    1549    1548    1544    1542    1542    1547    1548    1548
```

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

 189          KK       F
 190          KM   BASIN F
 191          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 192          KM    L=       1.1  Lca=        .6   S=  252.3  Kn= .070  LAG=  29.4
 193          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 194          BA     .16
 195          LG     .19      .17   10.10      .03   18.00
 196          UI     19.      19.     19.      47.     68.     83.     94.    104.    113.    127.
 197          UI    142.     160.    204.     237.    220.    188.    167.    152.    138.    122.
 198          UI    110.      96.     88.      73.     54.     36.     33.     31.     31.     20.
 199          UI     19.      19.     11.       6.      6.      6.      6.      6.      6.      6.
 200          UI      6.       6.      6.       0.      0.      0.      0.      0.      0.      0.
 201          UI      0.       0.      0.       0.      0.      0.      0.      0.      0.      0.

 202          KK       O
 203          KM   BASIN O
 204          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 205          KM    L=        .2  Lca=        .1   S=  166.7  Kn= .070  LAG=   8.0
 206          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 207          BA     .03
 208          LG     .18      .29    3.29      .69   22.00
 209          UI     13.      49.     75.     124.    106.     72.     43.     19.     11.      3.
 210          UI      3.       0.      0.       0.      0.      0.      0.      0.      0.      0.
 211          UI      0.       0.      0.       0.      0.      0.      0.      0.      0.      0.

 212          KK       G
 213          KM   BASIN G
 214          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 215          KM    L=       1.1  Lca=        .6   S=  200.0  Kn= .070  LAG=  30.4
 216          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 217          BA     .20
 218          LG     .19      .17   10.10      .03   18.00
 219          UI     22.      22.     22.      50.     78.     94.    108.    121.    131.    144.
 220          UI    162.     178.    215.     265.    284.    240.    211.    189.    174.    156.
 221          UI    139.     126.    111.     101.     81.     63.     40.     39.     36.     36.
 222          UI     23.      22.     22.      15.      7.      7.      7.      7.      7.      7.
 223          UI      7.       7.      7.       7.      0.      0.      0.      0.      0.      0.
 224          UI      0.       0.      0.       0.      0.      0.      0.      0.      0.      0.

 225          KK     CP6
 226          KM   COMBINE 4 HYDROGRAPHS AT 6
 227          HC       4

 228          KK     CH7
 229          KM   ROUTE FLOW FROM 6 TO 7
 230          RS       7    FLOW      -1
 231          RC    0.07     0.05    0.07     3000  0.0067
 232          RX     200      250     440      530     600     650     675     700
 233          RY    1518     1512    1511     1511    1512    1512    1516    1520
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 234          KK       H
 235          KM   BASIN H
 236          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 237          KM    L=       1.1  Lca=       .6   S=  180.2  Kn= .070  LAG=  32.2
 238          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 239          BA     .41
 240          LG     .21     .18   10.10     .03   13.00
 241          UI     44.     44.     44.     88.    154.    184.    212.    238.    257.    282.
 242          UI    315.    344.    401.    493.    574.    525.    453.    405.    368.    338.
 243          UI    301.    272.    244.    220.    195.    156.    123.     78.     78.     73.
 244          UI     73.     47.     44.     44.     34.     14.     14.     14.     14.     14.
 245          UI     14.     14.     14.     14.     14.     14.      0.      0.      0.      0.
 246          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 247          KK       P
 248          KM   BASIN P
 249          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 250          KM    L=        .8  Lca=       .3   S=   73.3  Kn= .070  LAG=  26.8
 251          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 252          BA     .06
 253          LG     .23     .33    4.00     .43    5.00
 254          UI      7.      7.      7.     20.     26.     33.     37.     41.     45.     50.
 255          UI     56.     67.     83.     92.     77.     67.     60.     55.     48.     43.
 256          UI     38.     34.     29.     22.     15.     13.     12.     12.      7.      7.
 257          UI      7.      4.      2.      2.      2.      2.      2.      2.      2.      2.
 258          UI      2.      0.      0.      0.      0.      0.      0.      0.      0.      0.
 259          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 260          KK     CP7
 261          KM   COMBINE 3 HYDROGRAPHS AT 7
 262          HC       3

 263          KK   ROUTE THROUGH CAP (3, 72-INCH-DIAMETER CULVERTS)
 264          RS       1    ELEV 1507.14
 265          SV     0.0     1.5     8.0    20.0    35.0    53.0    63.0    72.0
 266          SE  1507.0  1510.0  1512.0  1514.0  1516.0  1518.0  1519.0  1520.0
 267          SQ      0.    200.    400.    500.    600.    700.    800.   1000.   1050.   1100.
 268          SQ   1150.   1177.   1191.    2000
 269          SE    1507    1510    1511    1512    1513    1514    1515    1516    1517    1518
 270          SE    1519    1520 1520.19    1521
 271          SS  1507.2
 272          ST  1519.5   500.0     3.0     1.5

 273          KK     CP8
 274          KM    1192 CFS ROUTES THROUGH CAP, 1109 IS STORED,
 275          KM    397.6 CFS OVERTOPS CAP, 397.6 CFS OVERTOPS BERM AT THIS POINT, (87.2% IS DIV
 276          DT     DI1
 277          DI       0    1548    3096
 278          DQ       0  1349.9  2698.4
```

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

 279          KK       R
 280          KM   BASIN R
 281          KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 282          KM    L=      1.3  Lca=       .6   S=  146.2  Kn= .070  LAG=  36.7
 283          KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 284          BA     .20
 285          LG     .21     .31    3.71     .52   12.00
 286          UI     17.     17.     17.     17.     37.     58.     66.     78.     84.     93.
 287          UI     98.    105.    114.    124.    133.    149.    173.    205.    227.    202.
 288          UI    179.    163.    150.    140.    131.    119.    109.    101.     93.     85.
 289          UI     79.     67.     54.     46.     30.     30.     29.     28.     28.     18.
 290          UI     17.     17.     17.     12.      5.      5.      5.      5.      5.      5.
 291          UI      5.      5.      5.      5.      5.      5.      5.      5.      0.      0.
 292          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.

 293          KK     CP9
 294          KM   COMBINE 2 HYDROGRAPHS AT CP9
 295          HC       2

 296          KK    ROUTE THROUGH CAP (1, 36-INCH-DIAMETER CULVERT)
 297          RS       1    ELEV    1503
 298          SV     0.0     1.0    21.1
 299          SE    1502    1506    1510
 300          SQ       0       8      16      32      48      57      60      64      67      72
 301          SE    1503    1504    1505    1506    1507    1508    1509    1510    1511    1512
 302          SS    1503
 303          ST  1510.0  1400.0     3.0     1.5
 304          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

 14          A
             .
             .
 25          .           B
             .           .
             .           .
 36        CP1............
             V
             V
 39        CH1
             .
             .
 45          .           C
             .           .
             .           .
 57          .           .           D
             .           .           .
             .           .           .
 66        CP2........................
             V
             V
 69        CH2
             .
             .
 75          .           E
             .           .
             .           .
 87          .           .           M
             .           .           .
             .           .           .
 97          .         CP3............
             .           .
             .           .
100          .           .           I
             .           .           .
             .           .           .
113          .           .           .           J
             .           .           .           .
             .           .           .           .
125          .           .         CP4............
             .           .           V
             .           .           V
128          .           .         CH4
             .           .           .
             .           .           .
134          .           .           .           K
             .           .           .           .
             .           .           .           .
147          .           .           .           .           L
             .           .           .           .           .
             .           .           .           .           .
159          .           .         CP5........................
             .           .           V
             .           .           V
162          .           .         CH5
             .           .           .
             .           .           .
168          .           .           .           N
             .           .           .           .
             .           .           .           .
180        CP3....................................
             V
             V
183        CH6
             .
             .
189          .           F
             .           .
             .           .
202          .           .           O
```

```
                .           .           .
                .           .           .
212             .           .           .           G
                .           .           .           .
                .           .           .           .
225           CP6.....................................
                V
                V
228           CH7
                .
                .
234             .           H
                .           .
                .           .
247             .           .           P
                .           .           .
                .           .           .
260           CP7........................
                V
                V
263         ROUTE
                .
                .
276             .------->     DI1
273           CP8
                .
                .
279             .           R
                .           .
                .           .
293           CP9............
                V
                V
296          ROUT
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
****************************************
*                                      *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            MAY   1991                *
*         VERSION 4.0.1E               *
*    Lahey F77L-EM/32 version 5.01     *
*      Dodson & Associates, Inc.       *
* RUN DATE  10/31/00  TIME  11:05:51   *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 551-1748             *
*                                      *
****************************************
```

```
                    DDM MCUHP2 Wash B
                    FILE N:\LLC\997002\FCD
                    100 YEAR 6 HOUR STORM
                    NWBNDZA.DAT

6 IO        OUTPUT CONTROL VARIABLES
                 IPRNT          3  PRINT CONTROL
                 IPLOT          0  PLOT CONTROL
                 QSCAL         0.  HYDROGRAPH PLOT SCALE

7 IN        TIME DATA FOR INPUT TIME SERIES
                 JXMIN         15  TIME INTERVAL IN MINUTES
                JXDATE      1    0  STARTING DATE
                JXTIME           0  STARTING TIME

  IT        HYDROGRAPH TIME DATA
                  NMIN           2  MINUTES IN COMPUTATION INTERVAL
                 IDATE      1    0  STARTING DATE
                 ITIME        0000  STARTING TIME
                    NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE      1    0  ENDING DATE
                NDTIME        0958  ENDING TIME
                 ICENT          19  CENTURY MARK

            COMPUTATION INTERVAL    0.03 HOURS
                 TOTAL TIME BASE    9.97 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

8 JD        INDEX STORM NO. 1
                 STRM        3.30  PRECIPITATION DEPTH
                 TRDA        0.01  TRANSPOSITION DRAINAGE AREA

9 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.03      0.03      0.03      0.03      0.03
                0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03
                0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

12 JD       INDEX STORM NO. 2
                 STRM        3.28  PRECIPITATION DEPTH
                 TRDA        0.50  TRANSPOSITION DRAINAGE AREA
```

```
 0 PI            PRECIPITATION PATTERN
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.03      0.03      0.03      0.03      0.03
                   0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03
                   0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

13 JD          INDEX STORM NO. 3
                     STRM        3.23  PRECIPITATION DEPTH
                     TRDA        2.80  TRANSPOSITION DRAINAGE AREA

 0 PI            PRECIPITATION PATTERN
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.03      0.03      0.03      0.03      0.03
                   0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03      0.03
                   0.02      0.02      0.02      0.02      0.02      0.02      0.02      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00

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

            **************
            *            *
14 KK       *         A  *
            *            *
            **************
                          BASIN A
                           THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                           L=        .8  Lca=        .4   S= 1175.0  Kn= .048  LAG=  11.7
                           PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN

               SUBBASIN RUNOFF DATA

19 BA          SUBBASIN CHARACTERISTICS
                     TAREA        0.31  SUBBASIN AREA

20 LG          GREEN AND AMPT LOSS RATE
                    STRTL        0.24  STARTING LOSS
                      DTH        0.34  MOISTURE DEFICIT
                     PSIF        4.80  WETTING FRONT SUCTION
                    XKSAT        0.27  HYDRAULIC CONDUCTIVITY
                    RTIMP       48.00  PERCENT IMPERVIOUS AREA

15 UI          INPUT UNITGRAPH,  25 ORDINATES,  VOLUME = 1.00
                  95.0     253.0     535.0     725.0    1036.0     673.0     535.0     446.0     364.0     277.0
                 226.0     186.0     137.0     112.0      91.0      73.0      53.0      47.0      41.0      18.0
                  18.0      18.0      18.0      18.0      18.0
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WASH B 100YR-6HR

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

HYDROGRAPH AT STATION A
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 0.99, TOTAL EXCESS = 2.31

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
509.	4.03	(CFS)	77.	46.	46.	46.
		(INCHES)	2.309	2.316	2.316	2.316
		(AC-FT)	38.	38.	38.	38.

CUMULATIVE AREA = 0.31 SQ MI

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

HYDROGRAPH AT STATION A
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 0.99, TOTAL EXCESS = 2.29

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
506.	4.03	(CFS)	76.	46.	46.	46.
		(INCHES)	2.291	2.298	2.298	2.298
		(AC-FT)	38.	38.	38.	38.

CUMULATIVE AREA = 0.31 SQ MI

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

HYDROGRAPH AT STATION A
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 0.98, TOTAL EXCESS = 2.25

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
496.	4.03	(CFS)	75.	45.	45.	45.
		(INCHES)	2.246	2.253	2.253	2.253
		(AC-FT)	37.	37.	37.	37.

CUMULATIVE AREA = 0.31 SQ MI

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

INTERPOLATED HYDROGRAPH AT A

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
506.	4.03	(CFS)	76.	46.	46.	46.
		(INCHES)	2.293	2.300	2.300	2.300
		(AC-FT)	38.	38.	38.	38.

CUMULATIVE AREA = 0.31 SQ MI

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          **************
          *            *
25 KK     *          B *
          *            *
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BASIN B
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.1 Lca= .6 S= 872.7 Kn= .041 LAG= 13.5

WASH B 100YR-6HR

PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

30 BA SUBBASIN CHARACTERISTICS

TAREA	0.17	SUBBASIN AREA

31 LG GREEN AND AMPT LOSS RATE

STRTL	0.24	STARTING LOSS
DTH	0.34	MOISTURE DEFICIT
PSIF	4.50	WETTING FRONT SUCTION
XKSAT	0.33	HYDRAULIC CONDUCTIVITY
RTIMP	31.00	PERCENT IMPERVIOUS AREA

26 UI INPUT UNITGRAPH, 19 ORDINATES, VOLUME = 1.02

45.0	98.0	199.0	258.0	325.0	460.0	531.0	395.0	314.0	244.0
175.0	93.0	74.0	46.0	30.0	14.0	14.0	14.0	14.0	

***

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

HYDROGRAPH AT STATION B
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 1.39, TOTAL EXCESS = 1.91

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
268.	4.07	(CFS)	35.	21.	21.	21.
		(INCHES)	1.940	1.944	1.944	1.944
		(AC-FT)	18.	18.	18.	18.

CUMULATIVE AREA = 0.17 SQ MI

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

HYDROGRAPH AT STATION B
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 1.38, TOTAL EXCESS = 1.90

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
266.	4.07	(CFS)	35.	21.	21.	21.
		(INCHES)	1.923	1.927	1.927	1.927
		(AC-FT)	17.	17.	17.	17.

CUMULATIVE AREA = 0.17 SQ MI

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

HYDROGRAPH AT STATION B
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 1.37, TOTAL EXCESS = 1.86

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
260.	4.07	(CFS)	34.	21.	21.	21.
		(INCHES)	1.881	1.885	1.885	1.885
		(AC-FT)	17.	17.	17.	17.

CUMULATIVE AREA = 0.17 SQ MI

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

INTERPOLATED HYDROGRAPH AT B

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
267.	4.07	(CFS)	35.	21.	21.	21.
		(INCHES)	1.928	1.931	1.931	1.931

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                    (AC-FT)        17.         18.         18.         18.

                    CUMULATIVE AREA =    0.17 SQ MI


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          *            *
 36 KK    *       CP1  *
          *            *
          **************
                    COMBINE 2 HYDROGRAPHS AT 1

 38 HC          HYDROGRAPH COMBINATION
                     ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                          ***

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

                      HYDROGRAPH AT STATION      CP1
                     TRANSPOSITION AREA      0.0 SQ MI

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
    777.       4.07        (CFS)     112.         68.         68.         68.
                          (INCHES)  2.178       2.184       2.184       2.184
                          (AC-FT)    56.         56.         56.         56.

                      CUMULATIVE AREA =    0.48 SQ MI

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

                      HYDROGRAPH AT STATION      CP1
                     TRANSPOSITION AREA      0.5 SQ MI

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
    771.       4.07        (CFS)     112.         67.         67.         67.
                          (INCHES)  2.161       2.166       2.166       2.166
                          (AC-FT)    55.         55.         55.         55.

                      CUMULATIVE AREA =    0.48 SQ MI

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

                      HYDROGRAPH AT STATION      CP1
                     TRANSPOSITION AREA      2.8 SQ MI

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
    756.       4.07        (CFS)     109.         66.         66.         66.
                          (INCHES)  2.117       2.123       2.123       2.123
                          (AC-FT)    54.         54.         54.         54.

                      CUMULATIVE AREA =    0.48 SQ MI

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


                      INTERPOLATED HYDROGRAPH AT      CP1

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
    771.       4.07        (CFS)     112.         67.         67.         67.
                          (INCHES)  2.161       2.167       2.167       2.167
                          (AC-FT)    55.         55.         55.         55.

                      CUMULATIVE AREA =    0.48 SQ MI
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          *            *
39 KK     *      CH1   *
          *            *
          **************
                    ROUTE FLOW FROM 1 TO 2

             HYDROGRAPH ROUTING DATA

41 RS          STORAGE ROUTING
                    NSTPS          1  NUMBER OF SUBREACHES
                     ITYP       FLOW  TYPE OF INITIAL CONDITION
                   RSVRIC      -1.00  INITIAL CONDITION
                        X       0.00 WORKING R AND D COEFFICIENT

42 RC          NORMAL DEPTH CHANNEL
                      ANL      0.080  LEFT OVERBANK N-VALUE
                     ANCH      0.060  MAIN CHANNEL N-VALUE
                      ANR      0.080  RIGHT OVERBANK N-VALUE
                    RLNTH      1100.  REACH LENGTH
                      SEL     0.0218  ENERGY SLOPE
                    ELMAX        0.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                   CROSS-SECTION DATA
                        --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
44 RY        ELEVATION  1654.00   1653.00   1648.00   1644.00   1644.00   1650.00   1654.00   1656.00
43 RX        DISTANCE    400.00    450.00    475.00    490.00    510.00    525.00    550.00    600.00

                                                  ***

                                   COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00      0.35      0.76      1.24      1.78      2.38      3.05      3.78      4.58      5.47
          OUTFLOW       0.00     35.17    115.94    237.37    399.87    605.08    855.10   1174.57   1555.44   1989.33
        ELEVATION    1644.00   1644.63   1645.26   1645.89   1646.53   1647.16   1647.79   1648.42   1649.05   1649.68

          STORAGE       6.43      7.50      8.68      9.98     11.39     13.04     15.24     17.80     20.61     23.68
          OUTFLOW    2503.39   3105.56   3777.61   4523.81   5348.05   6160.12   7154.39   8375.20   9770.87  11339.20
        ELEVATION    1650.32   1650.95   1651.58   1652.21   1652.84   1653.47   1654.11   1654.74   1655.37   1656.00

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

                    HYDROGRAPH AT STATION      CH1
                  TRANSPOSITION AREA      0.0 SQ MI

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR      9.97-HR
   769.       4.07        (CFS)    112.        68.         68.         68.
                        (INCHES)   2.176      2.184       2.184       2.184
                         (AC-FT)    56.        56.         56.         56.

PEAK STORAGE  TIME                        MAXIMUM AVERAGE STORAGE
  (AC-FT)     (HR)                 6-HR       24-HR       72-HR      9.97-HR
     3.       4.07                  1.         0.          0.          0.

PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
  (FEET)      (HR)                 6-HR       24-HR       72-HR      9.97-HR
 1647.57      4.07              1644.86    1644.52     1644.52     1644.52

                   CUMULATIVE AREA =    0.48 SQ MI

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

                    HYDROGRAPH AT STATION      CH1
                  TRANSPOSITION AREA      0.5 SQ MI

PEAK FLOW     TIME                        MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR      9.97-HR
   763.       4.07        (CFS)    111.        67.         67.         67.
```

	(INCHES)	2.158	2.166	2.166	2.166
	(AC-FT)	55.	55.	55.	55.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
3.	4.07	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1647.56	4.07	1644.85	1644.52	1644.52	1644.52

CUMULATIVE AREA = 0.48 SQ MI

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

HYDROGRAPH AT STATION CH1
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
748.	4.07	(CFS)	109.	66.	66.	66.
		(INCHES)	2.115	2.123	2.123	2.123
		(AC-FT)	54.	54.	54.	54.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
3.	4.07	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1647.52	4.07	1644.84	1644.51	1644.51	1644.51

CUMULATIVE AREA = 0.48 SQ MI

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

INTERPOLATED HYDROGRAPH AT CH1

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
763.	4.07	(CFS)	111.	67.	67.	67.
		(INCHES)	2.158	2.167	2.167	2.167
		(AC-FT)	55.	55.	55.	55.

CUMULATIVE AREA = 0.48 SQ MI

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          **************
          *            *
 45 KK    *         C  *
          *            *
          **************
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BASIN C
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.1 Lca= .6 S= 540.9 Kn= .069 LAG= 24.8
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

50 BA SUBBASIN CHARACTERISTICS

TAREA	0.19	SUBBASIN AREA

51 LG GREEN AND AMPT LOSS RATE

STRTL	0.24	STARTING LOSS
DTH	0.21	MOISTURE DEFICIT
PSIF	10.10	WETTING FRONT SUCTION
XKSAT	0.03	HYDRAULIC CONDUCTIVITY
RTIMP	5.00	PERCENT IMPERVIOUS AREA

```
46 UI          INPUT UNITGRAPH,  37 ORDINATES,  VOLUME = 0.97
                 25.0      25.0      32.0      85.0     105.0     124.0     140.0     155.0     177.0     200.0
                252.0     314.0     296.0     247.0     217.0     195.0     170.0     150.0     130.0     116.0
                 88.0      63.0      44.0      42.0      41.0      26.0      25.0      24.0       8.0       8.0
                  8.0       8.0       8.0       8.0       8.0       8.0       8.0

                                                          ***

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

                    HYDROGRAPH AT STATION        C
                  TRANSPOSITION AREA      0.0 SQ MI

  TOTAL RAINFALL =    3.30, TOTAL LOSS =    0.90, TOTAL EXCESS =    2.40

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   294.       4.23       (CFS)       48.         29.         29.         29.
                       (INCHES)     2.337       2.339       2.339       2.339
                        (AC-FT)      24.         24.         24.         24.

                     CUMULATIVE AREA =    0.19 SQ MI

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

                    HYDROGRAPH AT STATION        C
                  TRANSPOSITION AREA      0.5 SQ MI

  TOTAL RAINFALL =    3.28, TOTAL LOSS =    0.90, TOTAL EXCESS =    2.38

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   292.       4.23       (CFS)       47.         29.         29.         29.
                       (INCHES)     2.319       2.321       2.321       2.321
                        (AC-FT)      23.         24.         24.         24.

                     CUMULATIVE AREA =    0.19 SQ MI

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

                    HYDROGRAPH AT STATION        C
                  TRANSPOSITION AREA      2.8 SQ MI

  TOTAL RAINFALL =    3.23, TOTAL LOSS =    0.89, TOTAL EXCESS =    2.34

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   287.       4.23       (CFS)       46.         28.         28.         28.
                       (INCHES)     2.272       2.274       2.274       2.274
                        (AC-FT)      23.         23.         23.         23.

                     CUMULATIVE AREA =    0.19 SQ MI

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


                     INTERPOLATED HYDROGRAPH AT        C

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   293.       4.23       (CFS)       47.         29.         29.         29.
                       (INCHES)     2.323       2.325       2.325       2.325
                        (AC-FT)      24.         24.         24.         24.

                     CUMULATIVE AREA =    0.19 SQ MI

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57 KK      *          D  *
           *             *
           **************
                          BASIN D
                           THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                           L=        .2  Lca=        .1   S= 1363.6  Kn= .061  LAG=   5.4
                           PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

62 BA          SUBBASIN CHARACTERISTICS
                     TAREA        0.02  SUBBASIN AREA

63 LG          GREEN AND AMPT LOSS RATE
                     STRTL        0.25  STARTING LOSS
                       DTH        0.35  MOISTURE DEFICIT
                      PSIF        3.74  WETTING FRONT SUCTION
                     XKSAT        0.51  HYDRAULIC CONDUCTIVITY
                     RTIMP       31.00  PERCENT IMPERVIOUS AREA

58 UI          INPUT UNITGRAPH,   7 ORDINATES,  VOLUME = 0.95
                    28.0      82.0     136.0      78.0      29.0       9.0       4.0

                                                                  ***

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

                       HYDROGRAPH AT STATION        D
                     TRANSPOSITION AREA      0.0 SQ MI

  TOTAL RAINFALL =    3.30, TOTAL LOSS =    1.56, TOTAL EXCESS =    1.74

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   30.        4.00        (CFS)       4.          2.          2.          2.
                        (INCHES)    1.639       1.641       1.641       1.641
                         (AC-FT)      2.          2.          2.          2.

                       CUMULATIVE AREA =    0.02 SQ MI

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

                       HYDROGRAPH AT STATION        D
                     TRANSPOSITION AREA      0.5 SQ MI

  TOTAL RAINFALL =    3.28, TOTAL LOSS =    1.56, TOTAL EXCESS =    1.72

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   29.        4.00        (CFS)       3.          2.          2.          2.
                        (INCHES)    1.624       1.626       1.626       1.626
                         (AC-FT)      2.          2.          2.          2.

                       CUMULATIVE AREA =    0.02 SQ MI

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

                       HYDROGRAPH AT STATION        D
                     TRANSPOSITION AREA      2.8 SQ MI

  TOTAL RAINFALL =    3.23, TOTAL LOSS =    1.55, TOTAL EXCESS =    1.68

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   29.        4.00        (CFS)       3.          2.          2.          2.
                        (INCHES)    1.587       1.589       1.589       1.589
                         (AC-FT)      2.          2.          2.          2.

                       CUMULATIVE AREA =    0.02 SQ MI

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

                       INTERPOLATED HYDROGRAPH AT        D
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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
29.	4.00	(CFS)	4.	2.	2.	2.
		(INCHES)	1.637	1.638	1.638	1.638
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = 0.02 SQ MI

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          *            *
 66 KK    *      CP2   *
          *            *
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COMBINE 3 HYDROGRAPHS AT 2

68 HC HYDROGRAPH COMBINATION
ICOMP 3 NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION CP2
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
1059.	4.10	(CFS)	164.	99.	99.	99.
		(INCHES)	2.204	2.211	2.211	2.211
		(AC-FT)	81.	81.	81.	81.

CUMULATIVE AREA = 0.69 SQ MI

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

HYDROGRAPH AT STATION CP2
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
1051.	4.10	(CFS)	162.	98.	98.	98.
		(INCHES)	2.186	2.193	2.193	2.193
		(AC-FT)	80.	81.	81.	81.

CUMULATIVE AREA = 0.69 SQ MI

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

HYDROGRAPH AT STATION CP2
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
1031.	4.10	(CFS)	159.	96.	96.	96.
		(INCHES)	2.142	2.149	2.149	2.149
		(AC-FT)	79.	79.	79.	79.

CUMULATIVE AREA = 0.69 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP2

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
1047.	4.10	(CFS)	162.	98.	98.	98.

(INCHES)	2.178	2.185	2.185	2.185
(AC-FT)	80.	80.	80.	80.

CUMULATIVE AREA = 0.69 SQ MI

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              *            *
69 KK         *     CH2    *
              *            *
              **************
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ROUTE FLOW FROM 2 TO 3

HYDROGRAPH ROUTING DATA

71 RS STORAGE ROUTING

NSTPS	5	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	-1.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

72 RC NORMAL DEPTH CHANNEL

ANL	0.070	LEFT OVERBANK N-VALUE
ANCH	0.060	MAIN CHANNEL N-VALUE
ANR	0.070	RIGHT OVERBANK N-VALUE
RLNTH	4000.	REACH LENGTH
SEL	0.0175	ENERGY SLOPE
ELMAX	0.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---		
74 RY	ELEVATION	1638.00	1636.00	1630.00	1628.00	1628.00	1634.00	1636.00	1638.00
73 RX	DISTANCE	400.00	430.00	475.00	480.00	510.00	535.00	575.00	600.00

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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	1.53	3.24	5.11	7.16	9.46	12.06	14.96	18.15	21.64
OUTFLOW	0.00	34.42	111.57	224.28	372.46	562.14	790.83	1061.13	1375.45	1736.18
ELEVATION	1628.00	1628.53	1629.05	1629.58	1630.11	1630.63	1631.16	1631.68	1632.21	1632.74
STORAGE	25.43	29.51	33.96	39.08	44.90	51.42	58.64	66.56	75.18	84.50
OUTFLOW	2145.64	2606.13	3158.61	3802.10	4522.18	5326.99	6196.55	7164.94	8243.48	9436.88
ELEVATION	1633.26	1633.79	1634.32	1634.84	1635.37	1635.90	1636.42	1636.95	1637.47	1638.00

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HYDROGRAPH AT STATION CH2
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
1035.	4.23	(CFS)	163.	99.	99.	99.
		(INCHES)	2.199	2.211	2.211	2.211
		(AC-FT)	81.	81.	81.	81.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
3.	4.23	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1631.63	4.23	1628.92	1628.56	1628.56	1628.56

CUMULATIVE AREA = 0.69 SQ MI

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HYDROGRAPH AT STATION CH2

TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
1027.	4.23	(CFS)	162.	98.	98.	98.
		(INCHES)	2.182	2.193	2.193	2.193
		(AC-FT)	80.	81.	81.	81.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
3.	4.23	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1631.62	4.23	1628.91	1628.56	1628.56	1628.56

CUMULATIVE AREA = 0.69 SQ MI

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HYDROGRAPH AT STATION CH2
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
1008.	4.23	(CFS)	159.	96.	96.	96.
		(INCHES)	2.138	2.149	2.149	2.149
		(AC-FT)	79.	79.	79.	79.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
3.	4.23	1.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1631.58	4.23	1628.90	1628.55	1628.55	1628.55

CUMULATIVE AREA = 0.69 SQ MI

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

INTERPOLATED HYDROGRAPH AT CH2

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
1023.	4.23	(CFS)	161.	98.	98.	98.
		(INCHES)	2.173	2.185	2.185	2.185
		(AC-FT)	80.	80.	80.	80.

CUMULATIVE AREA = 0.69 SQ MI

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          *            *
 75 KK    *         E  *
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BASIN E
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= .9 Lca= .4 S= 183.3 Kn= .070 LAG= 26.6
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

80 BA SUBBASIN CHARACTERISTICS
TAREA 0.20 SUBBASIN AREA

81 LG GREEN AND AMPT LOSS RATE
STRTL 0.18 STARTING LOSS

DTH	0.18	MOISTURE DEFICIT
PSIF	8.80	WETTING FRONT SUCTION
XKSAT	0.06	HYDRAULIC CONDUCTIVITY
RTIMP	22.00	PERCENT IMPERVIOUS AREA

76 UI INPUT UNITGRAPH, 38 ORDINATES, VOLUME = 0.99

26.0	26.0	26.0	86.0	105.0	124.0	141.0	156.0	176.0	198.0
234.0	296.0	334.0	278.0	240.0	215.0	193.0	168.0	150.0	130.0
114.0	87.0	62.0	46.0	43.0	42.0	27.0	26.0	26.0	9.0
8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		

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HYDROGRAPH AT STATION E
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 0.85, TOTAL EXCESS = 2.45

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
312.	4.27	(CFS)	52.	32.	32.	32.
		(INCHES)	2.434	2.438	2.438	2.438
		(AC-FT)	26.	26.	26.	26.

CUMULATIVE AREA = 0.20 SQ MI

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HYDROGRAPH AT STATION E
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 0.84, TOTAL EXCESS = 2.44

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
310.	4.27	(CFS)	52.	31.	31.	31.
		(INCHES)	2.415	2.420	2.420	2.420
		(AC-FT)	26.	26.	26.	26.

CUMULATIVE AREA = 0.20 SQ MI

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HYDROGRAPH AT STATION E
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 0.84, TOTAL EXCESS = 2.39

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
305.	4.27	(CFS)	51.	31.	31.	31.
		(INCHES)	2.370	2.375	2.375	2.375
		(AC-FT)	25.	25.	25.	25.

CUMULATIVE AREA = 0.20 SQ MI

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

INTERPOLATED HYDROGRAPH AT E

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
311.	4.27	(CFS)	52.	31.	31.	31.
		(INCHES)	2.420	2.425	2.425	2.425
		(AC-FT)	26.	26.	26.	26.

CUMULATIVE AREA = 0.20 SQ MI

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

                INTERPOLATED HYDROGRAPH AT        M

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                 6-HR      24-HR      72-HR     9.97-HR
   22.       4.00       (CFS)      3.         2.         2.         2.
                      (INCHES)   2.409      2.411      2.411      2.411
                       (AC-FT)     1.         1.         1.         1.

                CUMULATIVE AREA =    0.01 SQ MI

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          *            *
97 KK     *      CP3   *
          *            *
          **************
                COMBINE 2 HYDROGRAPHS AT 3

99 HC          HYDROGRAPH COMBINATION
                    ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                          ***

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                HYDROGRAPH AT STATION      CP3
               TRANSPOSITION AREA      0.0 SQ MI

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                 6-HR      24-HR      72-HR     9.97-HR
  323.       4.27       (CFS)     55.        33.        33.        33.
                      (INCHES)   2.432      2.437      2.437      2.437
                       (AC-FT)    27.        27.        27.        27.

                CUMULATIVE AREA =    0.21 SQ MI

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

                HYDROGRAPH AT STATION      CP3
               TRANSPOSITION AREA      0.5 SQ MI

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                 6-HR      24-HR      72-HR     9.97-HR
  321.       4.27       (CFS)     55.        33.        33.        33.
                      (INCHES)   2.413      2.419      2.419      2.419
                       (AC-FT)    27.        27.        27.        27.

                CUMULATIVE AREA =    0.21 SQ MI

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

                HYDROGRAPH AT STATION      CP3
               TRANSPOSITION AREA      2.8 SQ MI

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                 6-HR      24-HR      72-HR     9.97-HR
  315.       4.27       (CFS)     53.        32.        32.        32.
                      (INCHES)   2.368      2.373      2.373      2.373
                       (AC-FT)    27.        27.        27.        27.

                CUMULATIVE AREA =    0.21 SQ MI

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          *            *
87 KK     *          M *
          *            *
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                         BASIN M
                          THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                          L=        .2  Lca=        .1   S=  166.7  Kn= .070  LAG=   8.0
                          PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

             SUBBASIN RUNOFF DATA

92 BA          SUBBASIN CHARACTERISTICS
                     TAREA        0.01  SUBBASIN AREA

93 LG          GREEN AND AMPT LOSS RATE
                     STRTL        0.16  STARTING LOSS
                       DTH        0.28  MOISTURE DEFICIT
                      PSIF        3.29  WETTING FRONT SUCTION
                     XKSAT        0.69  HYDRAULIC CONDUCTIVITY
                     RTIMP       28.00  PERCENT IMPERVIOUS AREA

88 UI          INPUT UNITGRAPH,  11 ORDINATES,  VOLUME = 1.49
                     7.0      27.0      41.0      69.0      59.0      40.0      24.0      11.0       6.0       2.0
                     2.0

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

                       HYDROGRAPH AT STATION        M
                     TRANSPOSITION AREA      0.0 SQ MI

  TOTAL RAINFALL =    3.30, TOTAL LOSS =    1.68, TOTAL EXCESS =    1.62

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
    22.       4.00       (CFS)        3.          2.          2.          2.
                       (INCHES)    2.409       2.411       2.411       2.411
                       (AC-FT)        1.          1.          1.          1.

                       CUMULATIVE AREA =    0.01 SQ MI


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

                       HYDROGRAPH AT STATION        M
                     TRANSPOSITION AREA      0.5 SQ MI

  TOTAL RAINFALL =    3.28, TOTAL LOSS =    1.67, TOTAL EXCESS =    1.61

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
    22.       4.00       (CFS)        3.          2.          2.          2.
                       (INCHES)    2.386       2.389       2.389       2.389
                       (AC-FT)        1.          1.          1.          1.

                       CUMULATIVE AREA =    0.01 SQ MI


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

                       HYDROGRAPH AT STATION        M
                     TRANSPOSITION AREA      2.8 SQ MI

  TOTAL RAINFALL =    3.23, TOTAL LOSS =    1.66, TOTAL EXCESS =    1.57

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
    21.       4.00       (CFS)        3.          2.          2.          2.
                       (INCHES)    2.329       2.332       2.332       2.332
                       (AC-FT)        1.          1.          1.          1.

                       CUMULATIVE AREA =    0.01 SQ MI
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INTERPOLATED HYDROGRAPH AT CP3

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
321.	4.27	(CFS)	55.	33.	33.	33.
		(INCHES)	2.418	2.423	2.423	2.423
		(AC-FT)	27.	27.	27.	27.

CUMULATIVE AREA = 0.21 SQ MI

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              *            *
100 KK        *         I  *
              *            *
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BASIN I
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.1 Lca= .6 S= 890.9 Kn= .054 LAG= 17.7
PHOENIX MOUNTAIN S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

105 BA SUBBASIN CHARACTERISTICS

TAREA	0.19	SUBBASIN AREA

106 LG GREEN AND AMPT LOSS RATE

STRTL	0.25	STARTING LOSS
DTH	0.35	MOISTURE DEFICIT
PSIF	3.95	WETTING FRONT SUCTION
XKSAT	0.44	HYDRAULIC CONDUCTIVITY
RTIMP	53.00	PERCENT IMPERVIOUS AREA

101 UI INPUT UNITGRAPH, 41 ORDINATES, VOLUME = 1.01

36.0	36.0	106.0	165.0	225.0	265.0	314.0	417.0	294.0	229.0
205.0	183.0	164.0	145.0	126.0	104.0	90.0	84.0	76.0	60.0
50.0	46.0	39.0	38.0	28.0	28.0	23.0	18.0	18.0	18.0
15.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
7.0									

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

HYDROGRAPH AT STATION I
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 1.03, TOTAL EXCESS = 2.27

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
267.	4.13	(CFS)	47.	28.	28.	28.
		(INCHES)	2.283	2.296	2.296	2.296
		(AC-FT)	23.	23.	23.	23.

CUMULATIVE AREA = 0.19 SQ MI

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HYDROGRAPH AT STATION I
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 1.02, TOTAL EXCESS = 2.26

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
265.	4.13	(CFS)	46.	28.	28.	28.
		(INCHES)	2.266	2.279	2.279	2.279
		(AC-FT)	23.	23.	23.	23.

CUMULATIVE AREA = 0.19 SQ MI

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

HYDROGRAPH AT STATION I
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 1.02, TOTAL EXCESS = 2.21

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
260.	4.13	(CFS)	45.	27.	27.	27.
		(INCHES)	2.222	2.235	2.235	2.235
		(AC-FT)	23.	23.	23.	23.

CUMULATIVE AREA = 0.19 SQ MI

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

INTERPOLATED HYDROGRAPH AT I

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
266.	4.13	(CFS)	46.	28.	28.	28.
		(INCHES)	2.270	2.283	2.283	2.283
		(AC-FT)	23.	23.	23.	23.

CUMULATIVE AREA = 0.19 SQ MI

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              *            *
113 KK        *         J  *
              *            *
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BASIN J
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= .9 Lca= .5 S= 926.3 Kn= .070 LAG= 20.1
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

118 BA SUBBASIN CHARACTERISTICS
TAREA 0.07 SUBBASIN AREA

119 LG GREEN AND AMPT LOSS RATE

STRTL	0.19	STARTING LOSS
DTH	0.31	MOISTURE DEFICIT
PSIF	2.89	WETTING FRONT SUCTION
XKSAT	0.92	HYDRAULIC CONDUCTIVITY
RTIMP	17.00	PERCENT IMPERVIOUS AREA

114 UI INPUT UNITGRAPH, 34 ORDINATES, VOLUME = 1.03

11.0	11.0	19.0	38.0	48.0	56.0	63.0	72.0	82.0	101.0
132.0	125.0	103.0	90.0	80.0	69.0	60.0	52.0	43.0	30.0
19.0	18.0	17.0	11.0	11.0	8.0	3.0	3.0	3.0	3.0
3.0	3.0	3.0	3.0						

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HYDROGRAPH AT STATION J
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 2.16, TOTAL EXCESS = 1.14

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR

65.	4.23	(CFS)	9.	5.	5.	5.
		(INCHES)	1.171	1.175	1.175	1.175
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = 0.07 SQ MI

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HYDROGRAPH AT STATION J
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 2.15, TOTAL EXCESS = 1.13

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
65.	4.23	(CFS)	9.	5.	5.	5.
		(INCHES)	1.157	1.160	1.160	1.160
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = 0.07 SQ MI

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HYDROGRAPH AT STATION J
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 2.14, TOTAL EXCESS = 1.09

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
62.	4.23	(CFS)	8.	5.	5.	5.
		(INCHES)	1.119	1.123	1.123	1.123
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = 0.07 SQ MI

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

INTERPOLATED HYDROGRAPH AT J

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
65.	4.23	(CFS)	9.	5.	5.	5.
		(INCHES)	1.164	1.168	1.168	1.168
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = 0.07 SQ MI

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          *            *
125 KK    *       CP4  *
          *            *
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COMBINE 2 HYDROGRAPHS AT 4

127 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

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HYDROGRAPH AT STATION CP4
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR

329.	4.13	(CFS)	55.	34.	34.	34.
		(INCHES)	1.984	1.994	1.994	1.994
		(AC-FT)	28.	28.	28.	28.

CUMULATIVE AREA = 0.26 SQ MI

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

HYDROGRAPH AT STATION CP4
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
326.	4.13	(CFS)	55.	33.	33.	33.
		(INCHES)	1.967	1.978	1.978	1.978
		(AC-FT)	27.	27.	27.	27.

CUMULATIVE AREA = 0.26 SQ MI

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

HYDROGRAPH AT STATION CP4
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
319.	4.13	(CFS)	54.	33.	33.	33.
		(INCHES)	1.925	1.936	1.936	1.936
		(AC-FT)	27.	27.	27.	27.

CUMULATIVE AREA = 0.26 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP4

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
326.	4.13	(CFS)	55.	33.	33.	33.
		(INCHES)	1.970	1.980	1.980	1.980
		(AC-FT)	27.	27.	27.	27.

CUMULATIVE AREA = 0.26 SQ MI

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              *            *
128 KK        *     CH4    *
              *            *
              **************
                  ROUTE FLOW FROM 4 TO 5

          HYDROGRAPH ROUTING DATA

130 RS        STORAGE ROUTING
                  NSTPS        6  NUMBER OF SUBREACHES
                   ITYP     FLOW  TYPE OF INITIAL CONDITION
                 RSVRIC    -1.00  INITIAL CONDITION
                      X     0.00 WORKING R AND D COEFFICIENT

131 RC        NORMAL DEPTH CHANNEL
                    ANL    0.080  LEFT OVERBANK N-VALUE
                   ANCH    0.060  MAIN CHANNEL N-VALUE
                    ANR    0.080  RIGHT OVERBANK N-VALUE
                  RLNTH    4000.  REACH LENGTH
                    SEL   0.0320  ENERGY SLOPE
                  ELMAX      0.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION
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WASH B 100YR-6HR

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL		------- +	--- RIGHT OVERBANK ---		
133 RY	ELEVATION	1660.00	1658.00	1656.00	1652.00	1652.00	1658.00	1658.00	1660.00
132 RX	DISTANCE	350.00	370.00	460.00	485.00	512.00	550.00	600.00	650.00

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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	1.15	2.50	4.05	5.81	7.78	9.95	12.33	14.91	17.69
OUTFLOW	0.00	29.38	97.13	199.25	336.15	509.26	720.35	971.34	1264.26	1601.09
ELEVATION	1652.00	1652.42	1652.84	1653.26	1653.68	1654.11	1654.53	1654.95	1655.37	1655.79
STORAGE	20.76	24.58	29.24	34.74	41.07	49.61	59.21	69.39	80.13	91.44
OUTFLOW	2004.68	2486.36	3040.21	3677.53	4408.20	5353.85	6487.63	7768.05	9192.88	10762.48
ELEVATION	1656.21	1656.63	1657.05	1657.47	1657.89	1658.32	1658.74	1659.16	1659.58	1660.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 1601. TO 10762.
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.)

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HYDROGRAPH AT STATION CH4
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
322.	4.30	(CFS)	55.	34.	34.	34.
		(INCHES)	1.980	1.994	1.994	1.994
		(AC-FT)	27.	28.	28.	28.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
1.	4.30	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1653.64	4.30	1652.43	1652.26	1652.26	1652.26

CUMULATIVE AREA = 0.26 SQ MI

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HYDROGRAPH AT STATION CH4
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
319.	4.30	(CFS)	55.	33.	33.	33.
		(INCHES)	1.964	1.978	1.978	1.978
		(AC-FT)	27.	27.	27.	27.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
1.	4.30	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1653.63	4.30	1652.42	1652.26	1652.26	1652.26

CUMULATIVE AREA = 0.26 SQ MI

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

HYDROGRAPH AT STATION CH4
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
312.	4.30	(CFS)	54.	33.	33.	33.
		(INCHES)	1.922	1.936	1.936	1.936
		(AC-FT)	27.	27.	27.	27.

WASH B 100YR-6HR

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
1.	4.30	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1653.61	4.30	1652.42	1652.25	1652.25	1652.25

CUMULATIVE AREA = 0.26 SQ MI

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INTERPOLATED HYDROGRAPH AT CH4

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
319.	4.30	(CFS)	55.	33.	33.	33.
		(INCHES)	1.966	1.980	1.980	1.980
		(AC-FT)	27.	27.	27.	27.

CUMULATIVE AREA = 0.26 SQ MI

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*          K *
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134 KK

BASIN K
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.1 Lca= .6 S= 163.6 Kn= .070 LAG= 31.6
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

139 BA

SUBBASIN CHARACTERISTICS

TAREA	0.18	SUBBASIN AREA

140 LG

GREEN AND AMPT LOSS RATE

STRTL	0.23	STARTING LOSS
DTH	0.33	MOISTURE DEFICIT
PSIF	3.50	WETTING FRONT SUCTION
XKSAT	0.59	HYDRAULIC CONDUCTIVITY
RTIMP	6.00	PERCENT IMPERVIOUS AREA

135 UI

INPUT UNITGRAPH, 47 ORDINATES, VOLUME = 1.02

19.0	19.0	19.0	34.0	66.0	78.0	92.0	101.0	111.0	119.0
132.0	147.0	163.0	196.0	237.0	249.0	212.0	187.0	170.0	156.0
142.0	127.0	115.0	104.0	93.0	82.0	65.0	51.0	34.0	34.0
32.0	32.0	21.0	19.0	19.0	16.0	6.0	6.0	6.0	6.0
6.0	6.0	6.0	6.0	6.0	6.0	6.0			

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

HYDROGRAPH AT STATION K
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 2.18, TOTAL EXCESS = 1.12

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
160.	4.37	(CFS)	22.	13.	13.	13.
		(INCHES)	1.142	1.144	1.144	1.144
		(AC-FT)	11.	11.	11.	11.

CUMULATIVE AREA = 0.18 SQ MI

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

                HYDROGRAPH AT STATION        K
               TRANSPOSITION AREA      0.5 SQ MI

TOTAL RAINFALL =    3.28, TOTAL LOSS =    2.17, TOTAL EXCESS =    1.11

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   158.       4.37        (CFS)      22.         13.         13.         13.
                         (INCHES)   1.128       1.130       1.130       1.130
                          (AC-FT)    11.         11.         11.         11.

                CUMULATIVE AREA =    0.18 SQ MI

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

                HYDROGRAPH AT STATION        K
               TRANSPOSITION AREA      2.8 SQ MI

TOTAL RAINFALL =    3.23, TOTAL LOSS =    2.16, TOTAL EXCESS =    1.07

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   154.       4.37        (CFS)      21.         13.         13.         13.
                         (INCHES)   1.092       1.094       1.094       1.094
                          (AC-FT)    10.         10.         10.         10.

                CUMULATIVE AREA =    0.18 SQ MI

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


                INTERPOLATED HYDROGRAPH AT        K

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   159.       4.37        (CFS)      22.         13.         13.         13.
                         (INCHES)   1.132       1.133       1.133       1.133
                          (AC-FT)    11.         11.         11.         11.

                CUMULATIVE AREA =    0.18 SQ MI


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          *            *
147 KK    *         L  *
          *            *
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                   BASIN L
                    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                    L=      1.1  Lca=       .6   S=  396.4  Kn= .066  LAG=  25.5
                    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

152 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.23  SUBBASIN AREA

153 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.20  STARTING LOSS
                        DTH        0.31  MOISTURE DEFICIT
                       PSIF        3.71  WETTING FRONT SUCTION
                      XKSAT        0.52  HYDRAULIC CONDUCTIVITY
                      RTIMP       27.00  PERCENT IMPERVIOUS AREA

148 UI          INPUT UNITGRAPH,  37 ORDINATES,  VOLUME = 1.00
                     31.0      31.0      40.0     106.0     131.0     155.0     175.0     194.0     221.0     250.0
                    315.0     392.0     369.0     308.0     271.0     244.0     212.0     188.0     163.0     145.0
                    110.0      79.0      55.0      52.0      51.0      33.0      31.0      30.0      10.0      10.0
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10.0 10.0 10.0 10.0 10.0 10.0 10.0

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HYDROGRAPH AT STATION L
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 1.61, TOTAL EXCESS = 1.69

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
277.	4.27	(CFS)	42.	25.	25.	25.
		(INCHES)	1.687	1.693	1.693	1.693
		(AC-FT)	21.	21.	21.	21.

CUMULATIVE AREA = 0.23 SQ MI

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

HYDROGRAPH AT STATION L
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 1.61, TOTAL EXCESS = 1.67

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
274.	4.27	(CFS)	41.	25.	25.	25.
		(INCHES)	1.672	1.678	1.678	1.678
		(AC-FT)	21.	21.	21.	21.

CUMULATIVE AREA = 0.23 SQ MI

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

HYDROGRAPH AT STATION L
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 1.60, TOTAL EXCESS = 1.63

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
268.	4.27	(CFS)	40.	24.	24.	24.
		(INCHES)	1.633	1.639	1.639	1.639
		(AC-FT)	20.	20.	20.	20.

CUMULATIVE AREA = 0.23 SQ MI

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

INTERPOLATED HYDROGRAPH AT L

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
274.	4.27	(CFS)	41.	25.	25.	25.
		(INCHES)	1.675	1.681	1.681	1.681
		(AC-FT)	21.	21.	21.	21.

CUMULATIVE AREA = 0.23 SQ MI

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159 KK        *       CP5  *
              *            *
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COMBINE 3 HYDROGRAPHS AT 5

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161 HC          HYDROGRAPH COMBINATION
                     ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                 ***

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                     HYDROGRAPH AT STATION      CP5
                   TRANSPOSITION AREA      0.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   750.       4.30        (CFS)     119.         72.         72.         72.
                        (INCHES)   1.653       1.662       1.662       1.662
                         (AC-FT)    59.         59.         59.         59.

                      CUMULATIVE AREA =    0.67 SQ MI

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

                     HYDROGRAPH AT STATION      CP5
                   TRANSPOSITION AREA      0.5 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   743.       4.30        (CFS)     118.         71.         71.         71.
                        (INCHES)   1.637       1.647       1.647       1.647
                         (AC-FT)    58.         59.         59.         59.

                      CUMULATIVE AREA =    0.67 SQ MI

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

                     HYDROGRAPH AT STATION      CP5
                   TRANSPOSITION AREA      2.8 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   725.       4.30        (CFS)     115.         70.         70.         70.
                        (INCHES)   1.598       1.608       1.608       1.608
                         (AC-FT)    57.         57.         57.         57.

                      CUMULATIVE AREA =    0.67 SQ MI

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


                      INTERPOLATED HYDROGRAPH AT      CP5

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   740.       4.30        (CFS)     117.         71.         71.         71.
                        (INCHES)   1.630       1.640       1.640       1.640
                         (AC-FT)    58.         59.         59.         59.

                      CUMULATIVE AREA =    0.67 SQ MI


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162 KK      *      CH5   *
            *            *
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                      ROUTE FLOW FROM 5 TO 3

               HYDROGRAPH ROUTING DATA

164 RS          STORAGE ROUTING
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WASH B 100YR-6HR

NSTPS	4	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	-1.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

165 RC NORMAL DEPTH CHANNEL

ANL	0.080	LEFT OVERBANK N-VALUE
ANCH	0.060	MAIN CHANNEL N-VALUE
ANR	0.080	RIGHT OVERBANK N-VALUE
RLNTH	2000.	REACH LENGTH
SEL	0.0070	ENERGY SLOPE
ELMAX	0.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL -------			+ --- RIGHT OVERBANK ---		
167 RY	ELEVATION	1588.00	1580.00	1577.00	1574.00	1574.00	1583.00	1584.00	1585.00
166 RX	DISTANCE	400.00	450.00	475.00	480.00	512.00	550.00	575.00	600.00

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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	1.16	2.46	3.91	5.50	7.32	9.45	11.89	14.64	17.69
OUTFLOW	0.00	40.74	132.39	267.00	443.19	670.76	948.53	1280.84	1672.12	2128.62
ELEVATION	1574.00	1574.74	1575.47	1576.21	1576.95	1577.68	1578.42	1579.16	1579.89	1580.63
STORAGE	21.00	24.57	28.40	32.65	37.67	43.46	49.68	56.06	62.59	69.28
OUTFLOW	2650.54	3240.20	3900.41	4715.24	5647.53	6693.18	7877.14	9177.59	10590.75	12114.38
ELEVATION	1581.37	1582.10	1582.84	1583.58	1584.32	1585.05	1585.79	1586.53	1587.26	1588.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 3900. TO 12114.
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.)

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HYDROGRAPH AT STATION CH5
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
743.	4.40	(CFS)	119.	72.	72.	72.
		(INCHES)	1.651	1.662	1.662	1.662
		(AC-FT)	59.	59.	59.	59.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
2.	4.40	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1577.87	4.40	1574.96	1574.59	1574.59	1574.59

CUMULATIVE AREA = 0.67 SQ MI

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HYDROGRAPH AT STATION CH5
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
735.	4.40	(CFS)	118.	71.	71.	71.
		(INCHES)	1.636	1.647	1.647	1.647
		(AC-FT)	58.	59.	59.	59.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
2.	4.40	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1577.86	4.40	1574.96	1574.58	1574.58	1574.58

CUMULATIVE AREA = 0.67 SQ MI

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

                HYDROGRAPH AT STATION      CH5
               TRANSPOSITION AREA      2.8 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR      9.97-HR
   717.       4.40       (CFS)     115.         70.         70.         70.
                        (INCHES)  1.597       1.608       1.608       1.608
                         (AC-FT)   57.         57.         57.         57.

PEAK STORAGE  TIME                          MAXIMUM AVERAGE STORAGE
  (AC-FT)     (HR)                 6-HR       24-HR       72-HR      9.97-HR
     2.       4.40                  0.          0.          0.          0.

PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
  (FEET)      (HR)                 6-HR       24-HR       72-HR      9.97-HR
 1577.81      4.40              1574.94     1574.58     1574.58     1574.58

                CUMULATIVE AREA =    0.67 SQ MI

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


                INTERPOLATED HYDROGRAPH AT      CH5

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR      9.97-HR
   732.       4.40       (CFS)     117.         71.         71.         71.
                        (INCHES)  1.629       1.640       1.640       1.640
                         (AC-FT)   58.         59.         59.         59.

                CUMULATIVE AREA =    0.67 SQ MI


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          **************
          *            *
168 KK    *         N  *
          *            *
          **************
                 BASIN N
                  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                  L=        .6  Lca=       .3   S=  100.0  Kn= .070  LAG=  21.9
                  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

173 BA        SUBBASIN CHARACTERISTICS
                 TAREA        0.04  SUBBASIN AREA

174 LG        GREEN AND AMPT LOSS RATE
                 STRTL        0.21  STARTING LOSS
                   DTH        0.32  MOISTURE DEFICIT
                  PSIF        3.29  WETTING FRONT SUCTION
                 XKSAT        0.69  HYDRAULIC CONDUCTIVITY
                 RTIMP       12.00  PERCENT IMPERVIOUS AREA

169 UI        INPUT UNITGRAPH,  32 ORDINATES,  VOLUME = 1.10
                 7.0       7.0      14.0      25.0      32.0      37.0      42.0      48.0      56.0      73.0
                87.0      72.0      61.0      54.0      46.0      40.0      34.0      29.0      21.0      13.0
                12.0      11.0       7.0       7.0       5.0       2.0       2.0       2.0       2.0       2.0
                 2.0       2.0

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

                HYDROGRAPH AT STATION        N
               TRANSPOSITION AREA      0.0 SQ MI
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TOTAL RAINFALL = 3.30, TOTAL LOSS = 2.11, TOTAL EXCESS = 1.19

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
45.	4.23	(CFS)	6.	3.	3.	3.
		(INCHES)	1.306	1.308	1.308	1.308
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = 0.04 SQ MI

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

HYDROGRAPH AT STATION N
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 2.11, TOTAL EXCESS = 1.17

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
44.	4.23	(CFS)	6.	3.	3.	3.
		(INCHES)	1.290	1.292	1.292	1.292
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = 0.04 SQ MI

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

HYDROGRAPH AT STATION N
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 2.09, TOTAL EXCESS = 1.14

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
43.	4.23	(CFS)	5.	3.	3.	3.
		(INCHES)	1.250	1.252	1.252	1.252
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = 0.04 SQ MI

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

INTERPOLATED HYDROGRAPH AT N

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
44.	4.23	(CFS)	6.	3.	3.	3.
		(INCHES)	1.300	1.302	1.302	1.302
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = 0.04 SQ MI

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              *            *
180 KK        *       CP3  *
              *            *
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COMBINE 4 HYDROGRAPHS AT 3

182 HC HYDROGRAPH COMBINATION
ICOMP 4 NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION CP3
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2071.	4.30	(CFS)	342.	207.	207.	207.
		(INCHES)	1.978	1.990	1.990	1.990
		(AC-FT)	170.	171.	171.	171.

CUMULATIVE AREA = 1.61 SQ MI

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

HYDROGRAPH AT STATION CP3
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2054.	4.30	(CFS)	340.	206.	206.	206.
		(INCHES)	1.961	1.973	1.973	1.973
		(AC-FT)	168.	169.	169.	169.

CUMULATIVE AREA = 1.61 SQ MI

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HYDROGRAPH AT STATION CP3
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2010.	4.30	(CFS)	332.	201.	201.	201.
		(INCHES)	1.919	1.931	1.931	1.931
		(AC-FT)	165.	166.	166.	166.

CUMULATIVE AREA = 1.61 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP3

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2024.	4.30	(CFS)	335.	203.	203.	203.
		(INCHES)	1.932	1.944	1.944	1.944
		(AC-FT)	166.	167.	167.	167.

CUMULATIVE AREA = 1.61 SQ MI

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              *            *
183 KK        *       CH6  *
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ROUTE FLOW FROM 3 TO 6

HYDROGRAPH ROUTING DATA

185 RS STORAGE ROUTING

NSTPS	2	NUMBER OF SUBREACHES
ITYP	FLOW	TYPE OF INITIAL CONDITION
RSVRIC	-1.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

186 RC NORMAL DEPTH CHANNEL

ANL	0.065	LEFT OVERBANK N-VALUE
ANCH	0.046	MAIN CHANNEL N-VALUE

WASH B 100YR-6HR

ANR	0.065	RIGHT OVERBANK N-VALUE
RLNTH	2000.	REACH LENGTH
SEL	0.0170	ENERGY SLOPE
ELMAX	0.0	MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

CROSS-SECTION DATA

		--- LEFT OVERBANK ---		+ ------ MAIN CHANNEL		------- +	--- RIGHT OVERBANK ---		
188 RY	ELEVATION	1549.00	1548.00	1544.00	1542.00	1542.00	1547.00	1548.00	1548.00
187 RX	DISTANCE	400.00	425.00	450.00	490.00	515.00	550.00	560.00	600.00

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.51	1.18	2.03	3.04	4.22	5.55	6.98	8.48	10.07
OUTFLOW	0.00	21.62	74.99	160.98	282.91	444.44	667.62	948.54	1272.82	1640.36
ELEVATION	1542.00	1542.37	1542.74	1543.11	1543.47	1543.84	1544.21	1544.58	1544.95	1545.32
STORAGE	11.75	13.50	15.34	17.26	19.26	21.37	23.57	26.37	29.52	32.83
OUTFLOW	2051.31	2505.96	3004.77	3548.25	4165.22	4868.56	5622.93	6414.83	7299.01	8269.32
ELEVATION	1545.68	1546.05	1546.42	1546.79	1547.16	1547.53	1547.89	1548.26	1548.63	1549.00

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HYDROGRAPH AT STATION CH6
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2062.	4.33	(CFS)	342.	207.	207.	207.
		(INCHES)	1.977	1.990	1.990	1.990
		(AC-FT)	170.	171.	171.	171.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
6.	4.33	1.	1.	1.	1.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1545.69	4.33	1543.15	1542.71	1542.71	1542.71

CUMULATIVE AREA = 1.61 SQ MI

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HYDROGRAPH AT STATION CH6
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2044.	4.33	(CFS)	339.	206.	206.	206.
		(INCHES)	1.960	1.973	1.973	1.973
		(AC-FT)	168.	169.	169.	169.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
6.	4.33	1.	1.	1.	1.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1545.68	4.33	1543.14	1542.71	1542.71	1542.71

CUMULATIVE AREA = 1.61 SQ MI

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HYDROGRAPH AT STATION CH6
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2001.	4.33	(CFS)	332.	201.	201.	201.
		(INCHES)	1.918	1.931	1.931	1.931
		(AC-FT)	165.	166.	166.	166.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
6.	4.33	1.	1.	1.	1.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1545.64	4.33	1543.13	1542.70	1542.70	1542.70

CUMULATIVE AREA = 1.61 SQ MI

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INTERPOLATED HYDROGRAPH AT CH6

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2015.	4.33	(CFS)	334.	203.	203.	203.
		(INCHES)	1.931	1.944	1.944	1.944
		(AC-FT)	166.	167.	167.	167.

CUMULATIVE AREA = 1.61 SQ MI

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*          F *
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189 KK

BASIN F
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.1 Lca= .6 S= 252.3 Kn= .070 LAG= 29.4
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

194 BA SUBBASIN CHARACTERISTICS

TAREA	0.16	SUBBASIN AREA

195 LG GREEN AND AMPT LOSS RATE

STRTL	0.19	STARTING LOSS
DTH	0.17	MOISTURE DEFICIT
PSIF	10.10	WETTING FRONT SUCTION
XKSAT	0.03	HYDRAULIC CONDUCTIVITY
RTIMP	18.00	PERCENT IMPERVIOUS AREA

190 UI INPUT UNITGRAPH, 43 ORDINATES, VOLUME = 1.00

19.0	19.0	19.0	47.0	68.0	83.0	94.0	104.0	113.0	127.0
142.0	160.0	204.0	237.0	220.0	188.0	167.0	152.0	138.0	122.0
110.0	96.0	88.0	73.0	54.0	36.0	33.0	31.0	31.0	20.0
19.0	19.0	11.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
6.0	6.0	6.0							

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

HYDROGRAPH AT STATION F
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 0.70, TOTAL EXCESS = 2.60

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
250.	4.30	(CFS)	45.	27.	27.	27.
		(INCHES)	2.600	2.606	2.606	2.606
		(AC-FT)	22.	22.	22.	22.

CUMULATIVE AREA = 0.16 SQ MI

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

                HYDROGRAPH AT STATION        F
              TRANSPOSITION AREA      0.5 SQ MI

TOTAL RAINFALL =    3.28, TOTAL LOSS =    0.70, TOTAL EXCESS =    2.58

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   248.       4.30       (CFS)       44.         27.         27.         27.
                       (INCHES)     2.581       2.587       2.587       2.587
                       (AC-FT)       22.         22.         22.         22.

                CUMULATIVE AREA =    0.16 SQ MI


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

                HYDROGRAPH AT STATION        F
              TRANSPOSITION AREA      2.8 SQ MI

TOTAL RAINFALL =    3.23, TOTAL LOSS =    0.70, TOTAL EXCESS =    2.53

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   244.       4.30       (CFS)       44.         26.         26.         26.
                       (INCHES)     2.533       2.539       2.539       2.539
                       (AC-FT)       22.         22.         22.         22.

                CUMULATIVE AREA =    0.16 SQ MI

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


                INTERPOLATED HYDROGRAPH AT        F

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   249.       4.30       (CFS)       45.         27.         27.         27.
                       (INCHES)     2.586       2.593       2.593       2.593
                       (AC-FT)       22.         22.         22.         22.

                CUMULATIVE AREA =    0.16 SQ MI


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          *            *
202 KK    *         O  *
          *            *
          **************
                   BASIN O
                    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                    L=        .2  Lca=        .1   S=  166.7  Kn= .070  LAG=   8.0
                    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

             SUBBASIN RUNOFF DATA

207 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.03  SUBBASIN AREA

208 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.18  STARTING LOSS
                        DTH        0.29  MOISTURE DEFICIT
                       PSIF        3.29  WETTING FRONT SUCTION
                      XKSAT        0.69  HYDRAULIC CONDUCTIVITY
                      RTIMP       22.00  PERCENT IMPERVIOUS AREA

203 UI          INPUT UNITGRAPH,  11 ORDINATES,  VOLUME = 0.89
                     13.0      49.0      75.0     124.0     106.0      72.0      43.0      19.0      11.0       3.0
                      3.0
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HYDROGRAPH AT STATION O
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 1.83, TOTAL EXCESS = 1.47

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
38.	4.00	(CFS)	4.	3.	3.	3.
		(INCHES)	1.306	1.307	1.307	1.307
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = 0.03 SQ MI

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

HYDROGRAPH AT STATION O
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 1.83, TOTAL EXCESS = 1.45

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
37.	4.00	(CFS)	4.	3.	3.	3.
		(INCHES)	1.292	1.294	1.294	1.294
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = 0.03 SQ MI

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

HYDROGRAPH AT STATION O
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 1.82, TOTAL EXCESS = 1.41

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
36.	4.00	(CFS)	4.	2.	2.	2.
		(INCHES)	1.259	1.260	1.260	1.260
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = 0.03 SQ MI

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

INTERPOLATED HYDROGRAPH AT O

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
37.	4.00	(CFS)	4.	3.	3.	3.
		(INCHES)	1.302	1.303	1.303	1.303
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = 0.03 SQ MI

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212 KK        *          G *
              *            *
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BASIN G
THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN

WASH B 100YR-6HR

L= 1.1 Lca= .6 S= 200.0 Kn= .070 LAG= 30.4
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

217 BA SUBBASIN CHARACTERISTICS
TAREA 0.20 SUBBASIN AREA

218 LG GREEN AND AMPT LOSS RATE
STRTL 0.19 STARTING LOSS
DTH 0.17 MOISTURE DEFICIT
PSIF 10.10 WETTING FRONT SUCTION
XKSAT 0.03 HYDRAULIC CONDUCTIVITY
RTIMP 13.00 PERCENT IMPERVIOUS AREA

213 UI INPUT UNITGRAPH, 44 ORDINATES, VOLUME = 0.98

22.0	22.0	22.0	50.0	78.0	94.0	108.0	121.0	131.0	144.0
162.0	178.0	215.0	265.0	284.0	240.0	211.0	189.0	174.0	156.0
139.0	126.0	111.0	101.0	81.0	63.0	40.0	39.0	36.0	36.0
23.0	22.0	22.0	15.0	7.0	7.0	7.0	7.0	7.0	7.0
7.0	7.0	7.0	7.0						

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HYDROGRAPH AT STATION G
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 0.70, TOTAL EXCESS = 2.60

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
303.	4.33	(CFS)	55.	33.	33.	33.
		(INCHES)	2.539	2.546	2.546	2.546
		(AC-FT)	27.	27.	27.	27.

CUMULATIVE AREA = 0.20 SQ MI

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HYDROGRAPH AT STATION G
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 0.70, TOTAL EXCESS = 2.58

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
301.	4.33	(CFS)	54.	33.	33.	33.
		(INCHES)	2.521	2.527	2.527	2.527
		(AC-FT)	27.	27.	27.	27.

CUMULATIVE AREA = 0.20 SQ MI

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

HYDROGRAPH AT STATION G
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 0.70, TOTAL EXCESS = 2.53

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
296.	4.33	(CFS)	53.	32.	32.	32.
		(INCHES)	2.474	2.480	2.480	2.480
		(AC-FT)	26.	26.	26.	26.

CUMULATIVE AREA = 0.20 SQ MI

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

INTERPOLATED HYDROGRAPH AT G

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
301.	4.33	(CFS)	54.	33.	33.	33.
		(INCHES)	2.525	2.532	2.532	2.532
		(AC-FT)	27.	27.	27.	27.

CUMULATIVE AREA = 0.20 SQ MI

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              *            *
225 KK        *       CP6  *
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COMBINE 4 HYDROGRAPHS AT 6

227 HC HYDROGRAPH COMBINATION
ICOMP 4 NUMBER OF HYDROGRAPHS TO COMBINE

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HYDROGRAPH AT STATION CP6
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2630.	4.33	(CFS)	446.	270.	270.	270.
		(INCHES)	2.071	2.085	2.085	2.085
		(AC-FT)	221.	222.	222.	222.

CUMULATIVE AREA = 2.00 SQ MI

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HYDROGRAPH AT STATION CP6
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2608.	4.33	(CFS)	442.	268.	268.	268.
		(INCHES)	2.054	2.067	2.067	2.067
		(AC-FT)	219.	221.	221.	221.

CUMULATIVE AREA = 2.00 SQ MI

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HYDROGRAPH AT STATION CP6
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2554.	4.33	(CFS)	433.	262.	262.	262.
		(INCHES)	2.011	2.024	2.024	2.024
		(AC-FT)	215.	216.	216.	216.

CUMULATIVE AREA = 2.00 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP6

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2565.	4.33	(CFS)	434.	263.	263.	263.
		(INCHES)	2.020	2.033	2.033	2.033

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                    (AC-FT)      215.        217.        217.        217.

                    CUMULATIVE AREA =    2.00 SQ MI


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          *            *
228 KK    *       CH7  *
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          **************
                         ROUTE FLOW FROM 6 TO 7

             HYDROGRAPH ROUTING DATA

230 RS          STORAGE ROUTING
                      NSTPS           7  NUMBER OF SUBREACHES
                       ITYP        FLOW  TYPE OF INITIAL CONDITION
                     RSVRIC       -1.00  INITIAL CONDITION
                          X        0.00 WORKING R AND D COEFFICIENT

231 RC          NORMAL DEPTH CHANNEL
                        ANL       0.070  LEFT OVERBANK N-VALUE
                       ANCH       0.050  MAIN CHANNEL N-VALUE
                        ANR       0.070  RIGHT OVERBANK N-VALUE
                      RLNTH       3000.  REACH LENGTH
                        SEL      0.0067  ENERGY SLOPE
                      ELMAX         0.0  MAX. ELEV. FOR STORAGE/OUTFLOW CALCULATION

                                      CROSS-SECTION DATA
                          --- LEFT OVERBANK --- + ------ MAIN CHANNEL ------- + --- RIGHT OVERBANK ---
233 RY        ELEVATION   1518.00   1512.00   1511.00   1511.00   1512.00   1512.00   1516.00   1520.00
232 RX        DISTANCE     200.00    250.00    440.00    530.00    600.00    650.00    675.00    700.00

                                                   ***

                                      COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE       0.00      4.94     13.91     26.84     40.20     53.78     67.59     81.63     95.89    110.38
          OUTFLOW       0.00     82.15    324.37    813.46   1571.27   2520.13   3645.02   4935.67   6384.54   7985.88
        ELEVATION    1511.00   1511.47   1511.95   1512.42   1512.89   1513.37   1513.84   1514.32   1514.79   1515.26

          STORAGE     125.09    140.03    155.19    170.58    186.19    202.03    218.00    234.07    250.23    266.50
          OUTFLOW    9735.12  11628.61  13663.32  15836.79  18146.93  20610.94  23277.19  26077.80  29010.60  32073.64
        ELEVATION    1515.74   1516.21   1516.68   1517.16   1517.63   1518.10   1518.58   1519.05   1519.53   1520.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN     6385. TO     32074.
                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.)

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                      HYDROGRAPH AT STATION      CH7
                    TRANSPOSITION AREA      0.0 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
  2587.       4.50        (CFS)     445.        270.        270.        270.
                        (INCHES)   2.069       2.085       2.085       2.085
                         (AC-FT)    221.        222.        222.        222.

PEAK STORAGE  TIME                         MAXIMUM AVERAGE STORAGE
  (AC-FT)     (HR)                  6-HR       24-HR       72-HR      9.97-HR
     8.       4.50                    2.          1.          1.          1.

PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
  (FEET)      (HR)                  6-HR       24-HR       72-HR      9.97-HR
 1513.40      4.50               1511.74     1511.46     1511.46     1511.46

                    CUMULATIVE AREA =    2.00 SQ MI
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                    HYDROGRAPH AT STATION      CH7
                  TRANSPOSITION AREA      0.5 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR      9.97-HR
  2565.       4.50       (CFS)     441.        268.        268.        268.
                       (INCHES)   2.052       2.067       2.067       2.067
                        (AC-FT)   219.        221.        221.        221.

PEAK STORAGE  TIME                         MAXIMUM AVERAGE STORAGE
  (AC-FT)     (HR)                 6-HR       24-HR       72-HR      9.97-HR
     8.       4.50                  2.          1.          1.          1.

PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
  (FEET)      (HR)                 6-HR       24-HR       72-HR      9.97-HR
 1513.39      4.50              1511.74     1511.46     1511.46     1511.46

                   CUMULATIVE AREA =    2.00 SQ MI

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

                    HYDROGRAPH AT STATION      CH7
                  TRANSPOSITION AREA      2.8 SQ MI

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR      9.97-HR
  2507.       4.50       (CFS)     432.        262.        262.        262.
                       (INCHES)   2.009       2.024       2.024       2.024
                        (AC-FT)   214.        216.        216.        216.

PEAK STORAGE  TIME                         MAXIMUM AVERAGE STORAGE
  (AC-FT)     (HR)                 6-HR       24-HR       72-HR      9.97-HR
     8.       4.50                  2.          1.          1.          1.

PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
  (FEET)      (HR)                 6-HR       24-HR       72-HR      9.97-HR
 1513.36      4.50              1511.73     1511.45     1511.45     1511.45

                   CUMULATIVE AREA =    2.00 SQ MI

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


                   INTERPOLATED HYDROGRAPH AT      CH7

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR      9.97-HR
  2518.       4.50       (CFS)     434.        263.        263.        263.
                       (INCHES)   2.017       2.033       2.033       2.033
                        (AC-FT)   215.        217.        217.        217.

                   CUMULATIVE AREA =    2.00 SQ MI


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


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          *            *
234 KK    *         H  *
          *            *
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                    BASIN H
                     THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                     L=      1.1  Lca=       .6   S=  180.2  Kn= .070  LAG=  32.2
                     PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

            SUBBASIN RUNOFF DATA

239 BA        SUBBASIN CHARACTERISTICS
                 TAREA        0.41  SUBBASIN AREA
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240 LG          GREEN AND AMPT LOSS RATE
                     STRTL        0.21  STARTING LOSS
                       DTH        0.18  MOISTURE DEFICIT
                      PSIF       10.10  WETTING FRONT SUCTION
                     XKSAT        0.03  HYDRAULIC CONDUCTIVITY
                     RTIMP       13.00  PERCENT IMPERVIOUS AREA

235 UI          INPUT UNITGRAPH,  46 ORDINATES,  VOLUME = 1.00
                    44.0      44.0      44.0      88.0     154.0     184.0     212.0     238.0     257.0     282.0
                   315.0     344.0     401.0     493.0     574.0     525.0     453.0     405.0     368.0     338.0
                   301.0     272.0     244.0     220.0     195.0     156.0     123.0      78.0      78.0      73.0
                    73.0      47.0      44.0      44.0      34.0      14.0      14.0      14.0      14.0      14.0
                    14.0      14.0      14.0      14.0      14.0      14.0
                                                                   ***

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

                      HYDROGRAPH AT STATION        H
                     TRANSPOSITION AREA      0.0 SQ MI

   TOTAL RAINFALL =    3.30, TOTAL LOSS =    0.77, TOTAL EXCESS =    2.53

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   618.       4.37        (CFS)     111.         67.         67.         67.
                         (INCHES)  2.517       2.522       2.522       2.522
                         (AC-FT)    55.         55.         55.         55.

                       CUMULATIVE AREA =    0.41 SQ MI

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

                      HYDROGRAPH AT STATION        H
                     TRANSPOSITION AREA      0.5 SQ MI

   TOTAL RAINFALL =    3.28, TOTAL LOSS =    0.76, TOTAL EXCESS =    2.52

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   614.       4.37        (CFS)     110.         66.         66.         66.
                         (INCHES)  2.498       2.503       2.503       2.503
                         (AC-FT)    55.         55.         55.         55.

                       CUMULATIVE AREA =    0.41 SQ MI

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

                      HYDROGRAPH AT STATION        H
                     TRANSPOSITION AREA      2.8 SQ MI

   TOTAL RAINFALL =    3.23, TOTAL LOSS =    0.76, TOTAL EXCESS =    2.47

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   604.       4.37        (CFS)     108.         65.         65.         65.
                         (INCHES)  2.450       2.455       2.455       2.455
                         (AC-FT)    54.         54.         54.         54.

                       CUMULATIVE AREA =    0.41 SQ MI

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


                       INTERPOLATED HYDROGRAPH AT        H

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR      9.97-HR
   615.       4.37        (CFS)     110.         66.         66.         66.
                         (INCHES)  2.499       2.504       2.504       2.504
                         (AC-FT)    55.         55.         55.         55.

                       CUMULATIVE AREA =    0.41 SQ MI
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          *            *
247 KK    *          P *
          *            *
          **************
                         BASIN P
                          THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                          L=        .8  Lca=        .3   S=   73.3  Kn= .070  LAG=  26.8
                          PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

             SUBBASIN RUNOFF DATA

252 BA          SUBBASIN CHARACTERISTICS
                      TAREA        0.06  SUBBASIN AREA

253 LG          GREEN AND AMPT LOSS RATE
                      STRTL        0.23  STARTING LOSS
                        DTH        0.33  MOISTURE DEFICIT
                       PSIF        4.00  WETTING FRONT SUCTION
                      XKSAT        0.43  HYDRAULIC CONDUCTIVITY
                      RTIMP        5.00  PERCENT IMPERVIOUS AREA

248 UI          INPUT UNITGRAPH,  41 ORDINATES,  VOLUME = 0.98
                      7.0       7.0       7.0      20.0      26.0      33.0      37.0      41.0      45.0      50.0
                     56.0      67.0      83.0      92.0      77.0      67.0      60.0      55.0      48.0      43.0
                     38.0      34.0      29.0      22.0      15.0      13.0      12.0      12.0       7.0       7.0
                      7.0       4.0       2.0       2.0       2.0       2.0       2.0       2.0       2.0       2.0
                      2.0

                                                                  ***

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

                       HYDROGRAPH AT STATION        P
                      TRANSPOSITION AREA      0.0 SQ MI

   TOTAL RAINFALL =    3.30, TOTAL LOSS =    2.03, TOTAL EXCESS =    1.27

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                   6-HR       24-HR       72-HR      9.97-HR
    62.        4.33        (CFS)       8.          5.          5.          5.
                          (INCHES)    1.243       1.245       1.245       1.245
                           (AC-FT)      4.          4.          4.          4.

                        CUMULATIVE AREA =    0.06 SQ MI


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

                       HYDROGRAPH AT STATION        P
                      TRANSPOSITION AREA      0.5 SQ MI

   TOTAL RAINFALL =    3.28, TOTAL LOSS =    2.03, TOTAL EXCESS =    1.25

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                   6-HR       24-HR       72-HR      9.97-HR
    61.        4.33        (CFS)       8.          5.          5.          5.
                          (INCHES)    1.228       1.230       1.230       1.230
                           (AC-FT)      4.          4.          4.          4.

                        CUMULATIVE AREA =    0.06 SQ MI


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

                       HYDROGRAPH AT STATION        P
                      TRANSPOSITION AREA      2.8 SQ MI

   TOTAL RAINFALL =    3.23, TOTAL LOSS =    2.01, TOTAL EXCESS =    1.22
```

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
59.	4.33	(CFS)	8.	5.	5.	5.
		(INCHES)	1.191	1.193	1.193	1.193
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = 0.06 SQ MI

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INTERPOLATED HYDROGRAPH AT P

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
61.	4.33	(CFS)	8.	5.	5.	5.
		(INCHES)	1.237	1.238	1.238	1.238
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = 0.06 SQ MI

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              *            *
260 KK        *       CP7  *
              *            *
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COMBINE 3 HYDROGRAPHS AT 7

262 HC HYDROGRAPH COMBINATION
ICOMP 3 NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION CP7
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
3216.	4.47	(CFS)	563.	342.	342.	342.
		(INCHES)	2.121	2.137	2.137	2.137
		(AC-FT)	279.	281.	281.	281.

CUMULATIVE AREA = 2.47 SQ MI

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HYDROGRAPH AT STATION CP7
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
3186.	4.47	(CFS)	559.	339.	339.	339.
		(INCHES)	2.103	2.119	2.119	2.119
		(AC-FT)	277.	279.	279.	279.

CUMULATIVE AREA = 2.47 SQ MI

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HYDROGRAPH AT STATION CP7
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
3110.	4.47	(CFS)	547.	332.	332.	332.
		(INCHES)	2.060	2.076	2.076	2.076

(AC-FT)	271.	273.	273.	273.

CUMULATIVE AREA = 2.47 SQ MI

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INTERPOLATED HYDROGRAPH AT CP7

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
3115.	4.47	(CFS)	548.	332.	332.	332.
		(INCHES)	2.063	2.079	2.079	2.079
		(AC-FT)	272.	274.	274.	274.

CUMULATIVE AREA = 2.47 SQ MI

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              *            *
263 KK        *     ROUTE  *      THROUGH CAP (3, 72-INCH-DIAMETER CULVERTS)
              *            *
              **************
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HYDROGRAPH ROUTING DATA

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264 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       ELEV  TYPE OF INITIAL CONDITION
                    RSVRIC    1507.14  INITIAL CONDITION
                         X       0.00 WORKING R AND D COEFFICIENT

265 SV            STORAGE        0.0      1.5      8.0     20.0     35.0     53.0     63.0     72.0

266 SE          ELEVATION    1507.00  1510.00  1512.00  1514.00  1516.00  1518.00  1519.00  1520.00

267 SQ          DISCHARGE         0.      200.     400.     500.     600.     700.     800.    1000.    1050.    1100.
                               1150.     1177.    1191.    2000.

269 SE          ELEVATION    1507.00  1510.00  1511.00  1512.00  1513.00  1514.00  1515.00  1516.00  1517.00  1518.00
                             1519.00  1520.00  1520.19  1521.00

271 SS          SPILLWAY
                      CREL    1507.20  SPILLWAY CREST ELEVATION
                     SPWID       0.00  SPILLWAY WIDTH
                      COQW       0.00  WEIR COEFFICIENT
                      EXPW       1.50  EXPONENT OF HEAD

272 ST          TOP OF DAM
                     TOPEL    1519.50  ELEVATION AT TOP OF DAM
                    DAMWID     500.00  DAM WIDTH
                      COQD       3.00  WEIR COEFFICIENT
                      EXPD       1.50  EXPONENT OF HEAD
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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

(INCLUDING FLOW OVER DAM)

STORAGE	0.00	1.50	4.75	8.00	14.00	20.00	27.50	35.00	44.00	53.00
OUTFLOW	0.00	200.00	400.00	500.00	600.00	700.00	800.00	1000.00	1050.00	1100.00
ELEVATION	1507.00	1510.00	1511.00	1512.00	1513.00	1514.00	1515.00	1516.00	1517.00	1518.00

STORAGE	63.00	72.00	73.71	81.00
OUTFLOW	1150.00	1707.33	2050.63	4755.68
ELEVATION	1519.00	1520.00	1520.19	1521.00

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HYDROGRAPH AT STATION ROUTE

TRANSPOSITION AREA 0.0 SQ MI

PEAK OUTFLOW IS 2875. AT TIME 4.63 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2875.	4.63	(CFS)	564.	342.	342.	342.
		(INCHES)	2.121	2.138	2.138	2.138
		(AC-FT)	279.	282.	282.	282.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
76.	4.63	20.	12.	12.	12.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1520.46	4.63	1511.96	1510.03	1510.03	1510.03

CUMULATIVE AREA = 2.47 SQ MI

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HYDROGRAPH AT STATION ROUTE
TRANSPOSITION AREA 0.5 SQ MI

PEAK OUTFLOW IS 2841. AT TIME 4.67 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2841.	4.67	(CFS)	559.	339.	339.	339.
		(INCHES)	2.104	2.121	2.121	2.121
		(AC-FT)	277.	279.	279.	279.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
76.	4.67	20.	12.	12.	12.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1520.45	4.67	1511.94	1510.02	1510.02	1510.02

CUMULATIVE AREA = 2.47 SQ MI

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HYDROGRAPH AT STATION ROUTE
TRANSPOSITION AREA 2.8 SQ MI

PEAK OUTFLOW IS 2752. AT TIME 4.67 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2752.	4.67	(CFS)	547.	332.	332.	332.
		(INCHES)	2.060	2.077	2.077	2.077
		(AC-FT)	271.	274.	274.	274.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
76.	4.67	20.	12.	12.	12.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1520.42	4.67	1511.90	1509.99	1509.99	1509.99

CUMULATIVE AREA = 2.47 SQ MI

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INTERPOLATED HYDROGRAPH AT ROUTE

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2758.	4.67	(CFS)	548.	333.	333.	333.
		(INCHES)	2.063	2.080	2.080	2.080
		(AC-FT)	272.	274.	274.	274.

CUMULATIVE AREA = 2.47 SQ MI

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          *            *
273 KK    *      CP8   *
          *            *
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1192 CFS ROUTES THROUGH CAP, 1109 IS STORED,
397.6 CFS OVERTOPS CAP, 397.6 CFS OVERTOPS BERM AT THIS POINT, (87.2% IS DIV

DT	DIVERSION ISTAD	DI1	DIVERSION HYDROGRAPH IDENTIFICATION	
DI	INFLOW	0.00	1548.00	3096.00
DQ	DIVERTED FLOW	0.00	1349.90	2698.40

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DIVERSION HYDROGRAPH DI1
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2506.	4.63	(CFS)	491.	298.	298.	298.
		(INCHES)	1.850	1.864	1.864	1.864
		(AC-FT)	244.	246.	246.	246.

CUMULATIVE AREA = 2.47 SQ MI

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HYDROGRAPH AT STATION CP8
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
369.	4.63	(CFS)	72.	44.	44.	44.
		(INCHES)	0.272	0.274	0.274	0.274
		(AC-FT)	36.	36.	36.	36.

CUMULATIVE AREA = 2.47 SQ MI

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DIVERSION HYDROGRAPH DI1
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2476.	4.67	(CFS)	487.	296.	296.	296.
		(INCHES)	1.834	1.849	1.849	1.849
		(AC-FT)	242.	244.	244.	244.

CUMULATIVE AREA = 2.47 SQ MI

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HYDROGRAPH AT STATION CP8
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
365.	4.67	(CFS)	72.	43.	43.	43.
		(INCHES)	0.269	0.272	0.272	0.272
		(AC-FT)	35.	36.	36.	36.

CUMULATIVE AREA = 2.47 SQ MI

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DIVERSION HYDROGRAPH DI1
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2399.	4.67	(CFS)	477.	290.	290.	290.
		(INCHES)	1.796	1.811	1.811	1.811
		(AC-FT)	237.	239.	239.	239.

CUMULATIVE AREA = 2.47 SQ MI

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

HYDROGRAPH AT STATION CP8
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
353.	4.67	(CFS)	70.	43.	43.	43.
		(INCHES)	0.264	0.266	0.266	0.266
		(AC-FT)	35.	35.	35.	35.

CUMULATIVE AREA = 2.47 SQ MI

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

INTERPOLATED DIVERSION HYDROGRAPH AT DI1

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
2404.	4.67	(CFS)	478.	290.	290.	290.
		(INCHES)	1.799	1.814	1.814	1.814
		(AC-FT)	237.	239.	239.	239.

CUMULATIVE AREA = 2.47 SQ MI

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INTERPOLATED HYDROGRAPH AT CP8

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
354.	4.67	(CFS)	70.	43.	43.	43.
		(INCHES)	0.264	0.266	0.266	0.266
		(AC-FT)	35.	35.	35.	35.

CUMULATIVE AREA = 2.47 SQ MI

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              *            *
279 KK        *         R  *
              *            *
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BASIN R

WASH B 100YR-6HR

THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
L= 1.3 Lca= .6 S= 146.2 Kn= .070 LAG= 36.7
PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN

SUBBASIN RUNOFF DATA

284 BA SUBBASIN CHARACTERISTICS

TAREA	0.20	SUBBASIN AREA

285 LG GREEN AND AMPT LOSS RATE

STRTL	0.21	STARTING LOSS
DTH	0.31	MOISTURE DEFICIT
PSIF	3.71	WETTING FRONT SUCTION
XKSAT	0.52	HYDRAULIC CONDUCTIVITY
RTIMP	12.00	PERCENT IMPERVIOUS AREA

280 UI INPUT UNITGRAPH, 58 ORDINATES, VOLUME = 0.99

17.0	17.0	17.0	17.0	37.0	58.0	66.0	78.0	84.0	93.0
98.0	105.0	114.0	124.0	133.0	149.0	173.0	205.0	227.0	202.0
179.0	163.0	150.0	140.0	131.0	119.0	109.0	101.0	93.0	85.0
79.0	67.0	54.0	46.0	30.0	30.0	29.0	28.0	28.0	18.0
17.0	17.0	17.0	12.0	5.0	5.0	5.0	5.0	5.0	5.0
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		

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

HYDROGRAPH AT STATION R
TRANSPOSITION AREA 0.0 SQ MI

TOTAL RAINFALL = 3.30, TOTAL LOSS = 1.95, TOTAL EXCESS = 1.35

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
175.	4.50	(CFS)	29.	17.	17.	17.
		(INCHES)	1.331	1.335	1.335	1.335
		(AC-FT)	14.	14.	14.	14.

CUMULATIVE AREA = 0.20 SQ MI

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

HYDROGRAPH AT STATION R
TRANSPOSITION AREA 0.5 SQ MI

TOTAL RAINFALL = 3.28, TOTAL LOSS = 1.94, TOTAL EXCESS = 1.34

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
173.	4.50	(CFS)	28.	17.	17.	17.
		(INCHES)	1.317	1.321	1.321	1.321
		(AC-FT)	14.	14.	14.	14.

CUMULATIVE AREA = 0.20 SQ MI

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

HYDROGRAPH AT STATION R
TRANSPOSITION AREA 2.8 SQ MI

TOTAL RAINFALL = 3.23, TOTAL LOSS = 1.93, TOTAL EXCESS = 1.30

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
168.	4.50	(CFS)	28.	17.	17.	17.
		(INCHES)	1.281	1.285	1.285	1.285
		(AC-FT)	14.	14.	14.	14.

CUMULATIVE AREA = 0.20 SQ MI

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

INTERPOLATED HYDROGRAPH AT R

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
173.	4.50	(CFS)	28.	17.	17.	17.
		(INCHES)	1.320	1.324	1.324	1.324
		(AC-FT)	14.	14.	14.	14.

CUMULATIVE AREA = 0.20 SQ MI

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              **************
              *            *
293 KK        *      CP9   *
              *            *
              **************
```

COMBINE 2 HYDROGRAPHS AT CP9

295 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION CP9
TRANSPOSITION AREA 0.0 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
526.	4.63	(CFS)	101.	61.	61.	61.
		(INCHES)	0.350	0.353	0.353	0.353
		(AC-FT)	50.	50.	50.	50.

CUMULATIVE AREA = 2.67 SQ MI

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

HYDROGRAPH AT STATION CP9
TRANSPOSITION AREA 0.5 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
518.	4.63	(CFS)	100.	61.	61.	61.
		(INCHES)	0.347	0.350	0.350	0.350
		(AC-FT)	49.	50.	50.	50.

CUMULATIVE AREA = 2.67 SQ MI

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

HYDROGRAPH AT STATION CP9
TRANSPOSITION AREA 2.8 SQ MI

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
497.	4.67	(CFS)	97.	59.	59.	59.
		(INCHES)	0.339	0.342	0.342	0.342
		(AC-FT)	48.	49.	49.	49.

CUMULATIVE AREA = 2.67 SQ MI

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

INTERPOLATED HYDROGRAPH AT CP9

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR

498.	4.67	(CFS)	97.	59.	59.	59.
		(INCHES)	0.339	0.342	0.342	0.342
		(AC-FT)	48.	49.	49.	49.

CUMULATIVE AREA = 2.67 SQ MI

*** ***

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**************
*            *
*     ROUT   *     E THROUGH CAP (1, 36-INCH-DIAMETER CULVERT)
*            *
**************
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296 KK

HYDROGRAPH ROUTING DATA

297 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	ELEV	TYPE OF INITIAL CONDITION
RSVRIC	1503.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

298 SV	STORAGE	0.0	1.0	21.1						
299 SE	ELEVATION	1502.00	1506.00	1510.00						
300 SQ	DISCHARGE	0.	8.	16.	32.	48.	57.	60.	64.	67.	72.
301 SE	ELEVATION	1503.00	1504.00	1505.00	1506.00	1507.00	1508.00	1509.00	1510.00	1511.00	1512.00

302 SS SPILLWAY

CREL	1503.00	SPILLWAY CREST ELEVATION
SPWID	0.00	SPILLWAY WIDTH
COQW	0.00	WEIR COEFFICIENT
EXPW	1.50	EXPONENT OF HEAD

303 ST TOP OF DAM

TOPEL	1510.00	ELEVATION AT TOP OF DAM
DAMWID	1400.00	DAM WIDTH
COQD	3.00	WEIR COEFFICIENT
EXPD	1.50	EXPONENT OF HEAD

***

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

(INCLUDING FLOW OVER DAM)

STORAGE	0.00	0.25	0.50	0.75	1.00	6.03	11.05	16.08	21.10	26.13
OUTFLOW	0.00	0.00	8.00	16.00	32.00	48.00	57.00	60.00	64.00	4267.00
ELEVATION	1502.00	1503.00	1504.00	1505.00	1506.00	1507.00	1508.00	1509.00	1510.00	1511.00

STORAGE	31.15
OUTFLOW	11951.39
ELEVATION	1512.00

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

HYDROGRAPH AT STATION ROUT
TRANSPOSITION AREA 0.0 SQ MI

PEAK OUTFLOW IS 333. AT TIME 4.93 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
333.	4.93	(CFS)	85.	53.	53.	53.
		(INCHES)	0.296	0.309	0.309	0.309
		(AC-FT)	42.	44.	44.	44.

PEAK STORAGE TIME MAXIMUM AVERAGE STORAGE

(AC-FT)	(HR)	6-HR	24-HR	72-HR	9.97-HR
22.	4.93	15.	9.	9.	9.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1510.16	4.93	1508.89	1506.81	1506.81	1506.81

CUMULATIVE AREA = 2.67 SQ MI

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

HYDROGRAPH AT STATION ROUT
TRANSPOSITION AREA 0.5 SQ MI

PEAK OUTFLOW IS 322. AT TIME 4.93 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
322.	4.93	(CFS)	84.	53.	53.	53.
		(INCHES)	0.293	0.306	0.306	0.306
		(AC-FT)	42.	44.	44.	44.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
22.	4.93	15.	9.	9.	9.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1510.16	4.93	1508.88	1506.80	1506.80	1506.80

CUMULATIVE AREA = 2.67 SQ MI

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

HYDROGRAPH AT STATION ROUT
TRANSPOSITION AREA 2.8 SQ MI

PEAK OUTFLOW IS 296. AT TIME 4.97 HOURS

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
296.	4.97	(CFS)	82.	52.	52.	52.
		(INCHES)	0.285	0.298	0.298	0.298
		(AC-FT)	41.	42.	42.	42.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	9.97-HR
22.	4.97	15.	9.	9.	9.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	9.97-HR
1510.14	4.97	1508.86	1506.79	1506.79	1506.79

CUMULATIVE AREA = 2.67 SQ MI

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

INTERPOLATED HYDROGRAPH AT ROUT

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	9.97-HR
296.	4.97	(CFS)	82.	52.	52.	52.
		(INCHES)	0.286	0.299	0.299	0.299
		(AC-FT)	41.	43.	43.	43.

CUMULATIVE AREA = 2.67 SQ MI

WASH B 100YR-6HR

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	A	506.	4.03	76.	46.	46.	0.31		
HYDROGRAPH AT	B	267.	4.07	35.	21.	21.	0.17		
2 COMBINED AT	CP1	771.	4.07	112.	67.	67.	0.48		
ROUTED TO	CH1	763.	4.07	111.	67.	67.	0.48		
HYDROGRAPH AT	C	293.	4.23	47.	29.	29.	0.19		
HYDROGRAPH AT	D	29.	4.00	4.	2.	2.	0.02		
3 COMBINED AT	CP2	1047.	4.10	162.	98.	98.	0.69		
ROUTED TO	CH2	1023.	4.23	161.	98.	98.	0.69		
HYDROGRAPH AT	E	311.	4.27	52.	31.	31.	0.20		
HYDROGRAPH AT	M	22.	4.00	3.	2.	2.	0.01		
2 COMBINED AT	CP3	321.	4.27	55.	33.	33.	0.21		
HYDROGRAPH AT	I	266.	4.13	46.	28.	28.	0.19		
HYDROGRAPH AT	J	65.	4.23	9.	5.	5.	0.07		
2 COMBINED AT	CP4	326.	4.13	55.	33.	33.	0.26		
ROUTED TO	CH4	319.	4.30	55.	33.	33.	0.26		
HYDROGRAPH AT	K	159.	4.37	22.	13.	13.	0.18		
HYDROGRAPH AT	L	274.	4.27	41.	25.	25.	0.23		
3 COMBINED AT	CP5	740.	4.30	117.	71.	71.	0.67		
ROUTED TO	CH5	732.	4.40	117.	71.	71.	0.67		
HYDROGRAPH AT	N	44.	4.23	6.	3.	3.	0.04		
4 COMBINED AT	CP3	2024.	4.30	335.	203.	203.	1.61		
ROUTED TO	CH6	2015.	4.33	334.	203.	203.	1.61		
HYDROGRAPH AT	F	249.	4.30	45.	27.	27.	0.16		
HYDROGRAPH AT	O	37.	4.00	4.	3.	3.	0.03		
HYDROGRAPH AT	G	301.	4.33	54.	33.	33.	0.20		
4 COMBINED AT	CP6	2565.	4.33	434.	263.	263.	2.00		
ROUTED TO	CH7	2518.	4.50	434.	263.	263.	2.00		
HYDROGRAPH AT	H	615.	4.37	110.	66.	66.	0.41		
HYDROGRAPH AT	P	61.	4.33	8.	5.	5.	0.06		
3 COMBINED AT	CP7	3115.	4.47	548.	332.	332.	2.47		
ROUTED TO	ROUTE	2758.	4.67	548.	333.	333.	2.47		
DIVERSION TO	DI1	2404.	4.67	478.	290.	290.	2.47		
HYDROGRAPH AT	CP8	354.	4.67	70.	43.	43.	2.47		
HYDROGRAPH AT	R	173.	4.50	28.	17.	17.	0.20		
2 COMBINED AT	CP9	498.	4.67	97.	59.	59.	2.67		

ROUTED TO	ROUT	296.	4.97	82.	52.	52.	2.67

WASH B 100YR-6HR

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION ROUTE
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1507.14	1507.20	1519.50
STORAGE	0.	0.	68.
OUTFLOW	9.	13.	1164.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1520.46	0.96	76.	2875.	0.73	4.63	0.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1507.14	1507.20	1519.50
STORAGE	0.	0.	68.
OUTFLOW	9.	13.	1164.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1520.45	0.95	76.	2841.	0.73	4.67	0.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1507.14	1507.20	1519.50
STORAGE	0.	0.	68.
OUTFLOW	9.	13.	1164.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1520.42	0.92	76.	2752.	0.70	4.67	0.00

WASH B 100YR-6HR

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION ROUT
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1503.00	1503.00	1510.00
STORAGE	0.	0.	21.
OUTFLOW	0.	0.	64.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1510.16	0.16	22.	333.	1.77	4.93	0.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1503.00	1503.00	1510.00
STORAGE	0.	0.	21.
OUTFLOW	0.	0.	64.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1510.16	0.16	22.	322.	1.77	4.93	0.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1503.00	1503.00	1510.00
STORAGE	0.	0.	21.
OUTFLOW	0.	0.	64.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	1510.14	0.14	22.	296.	1.73	4.97	0.00

*** NORMAL END OF HEC-1 ***

SECTION X: FIGURES & PLATES

FIGURE 1 STORAGE CAPACITY AT THE CAP CANAL

FIGURE 2 ROUTING REACH WITH CONCENTRATION POINTS

PLATE 1 SUB-BASIN AND SOILS DELINEATION MAP

LEGEND

SOILS BOUNDARY

WATERSHED & SUB-BASIN BOUNDARY

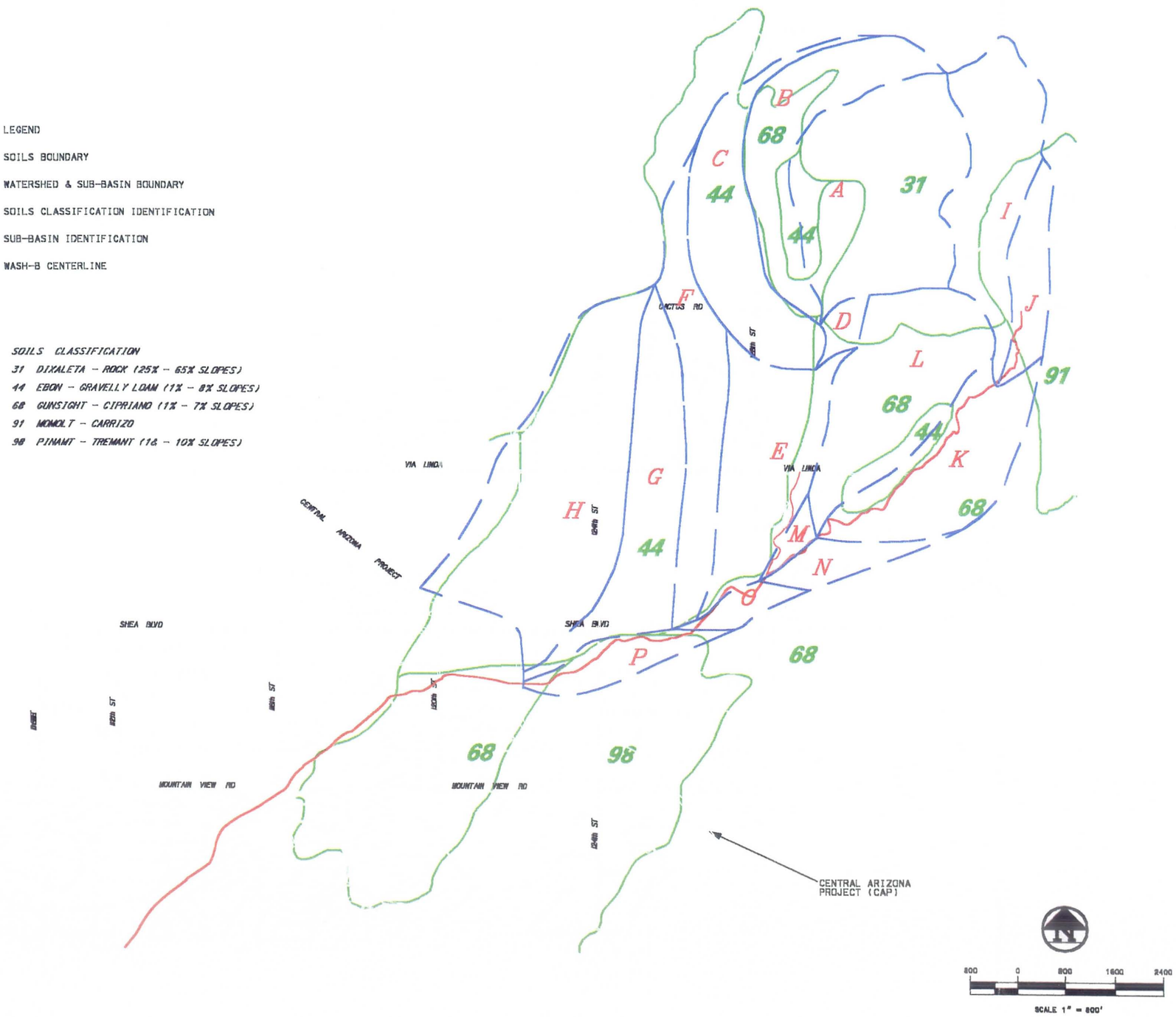
31 SOILS CLASSIFICATION IDENTIFICATION

F SUB-BASIN IDENTIFICATION

WASH-B CENTERLINE

SOILS CLASSIFICATION

31 DIXALETA - ROCK (25% - 65% SLOPES)
44 EBON - GRAVELLY LOAM (1% - 8% SLOPES)
68 GUNSIGHT - CIPRIANO (1% - 7% SLOPES)
91 MOMOLT - CARRIZO
98 PINAMT - TREMANT (1& - 10% SLOPES)



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WASH-B

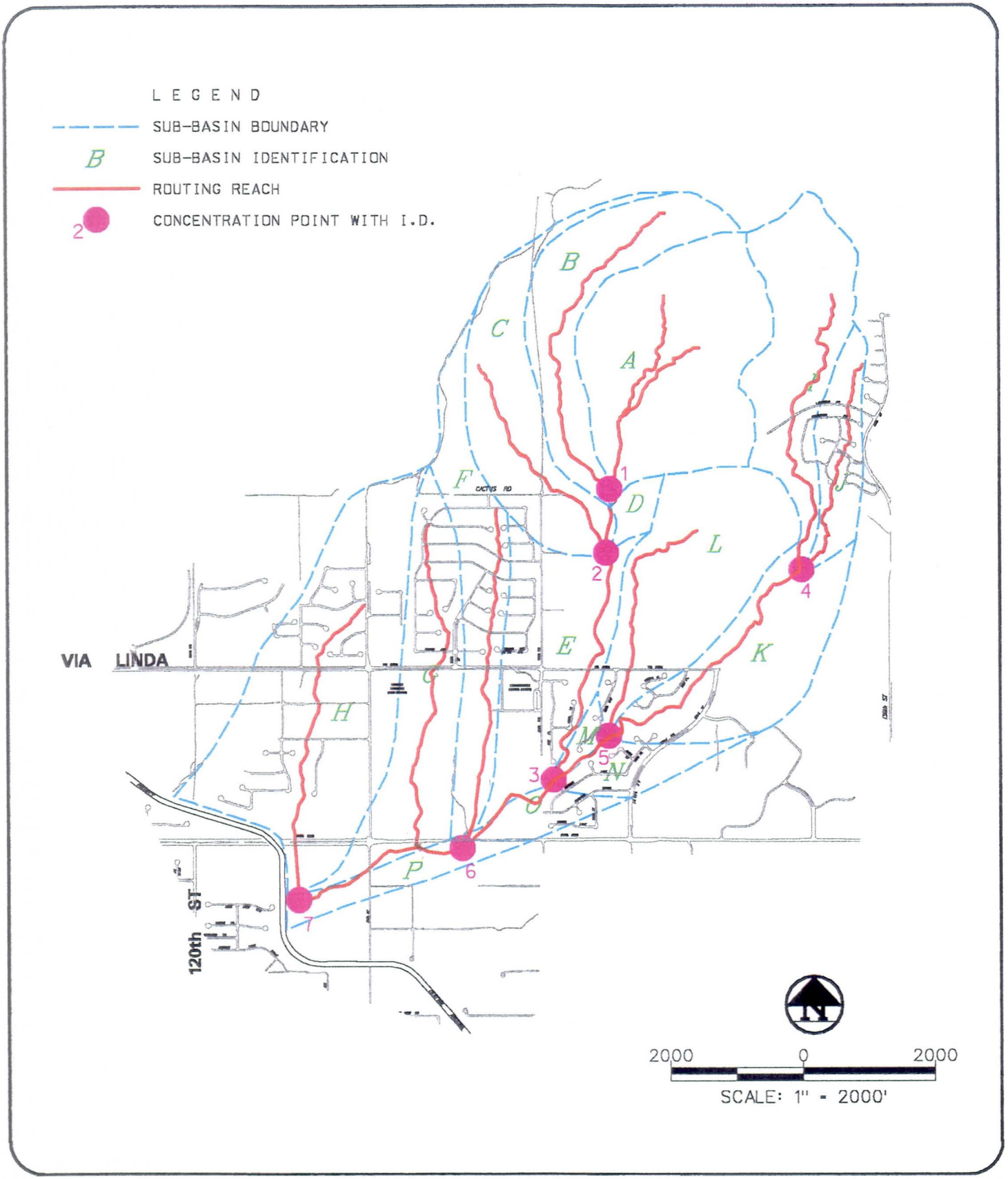
COE & VAN LOO
PLANNING·ENGINEERING·LANDSCAPE ARCHITECTURE

SUB-BASIN & SOILS DELINEATION MAP

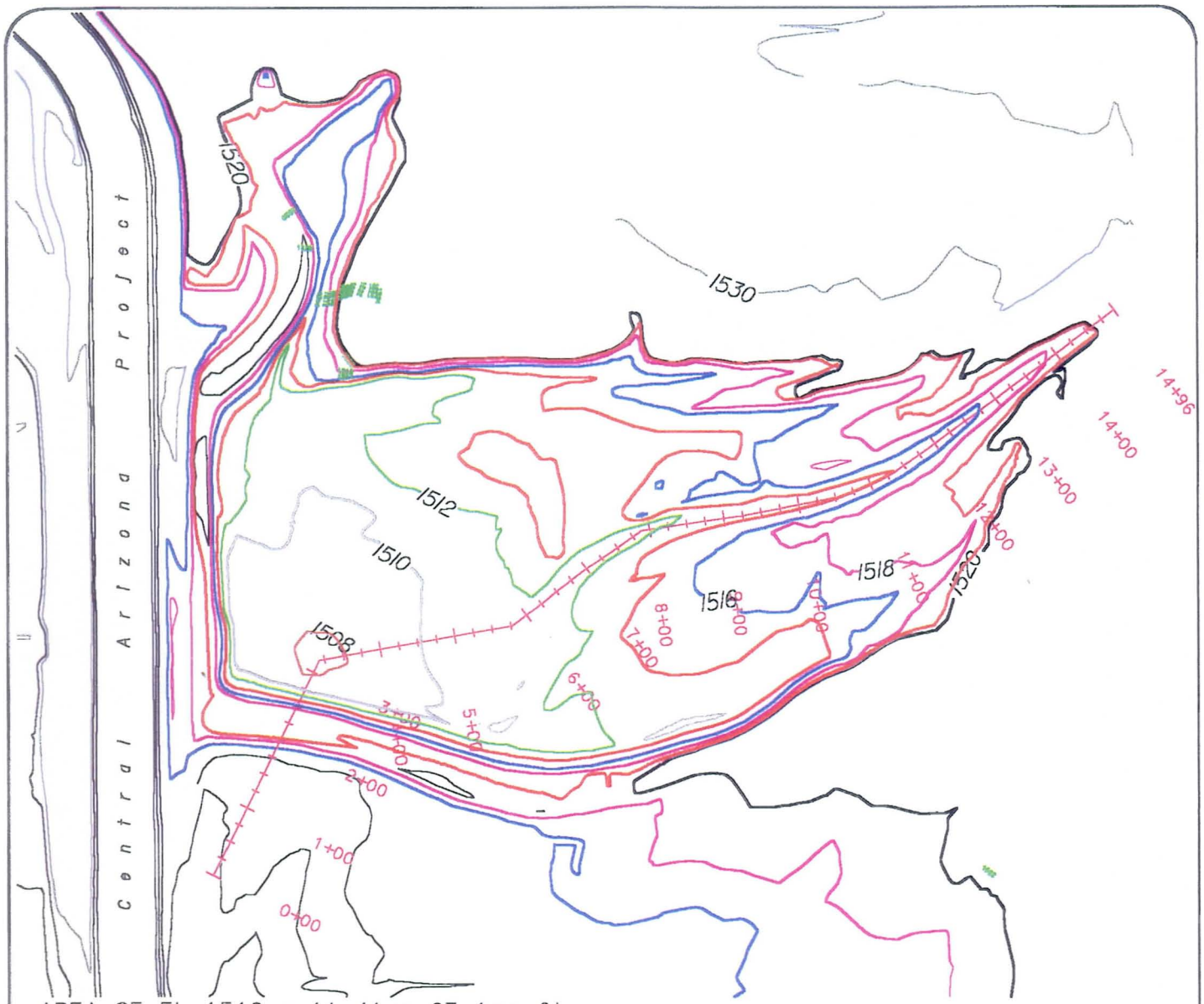
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
TELEPHONE (602) 264-6831

JOB NO. 997002-01

PLATE - 1



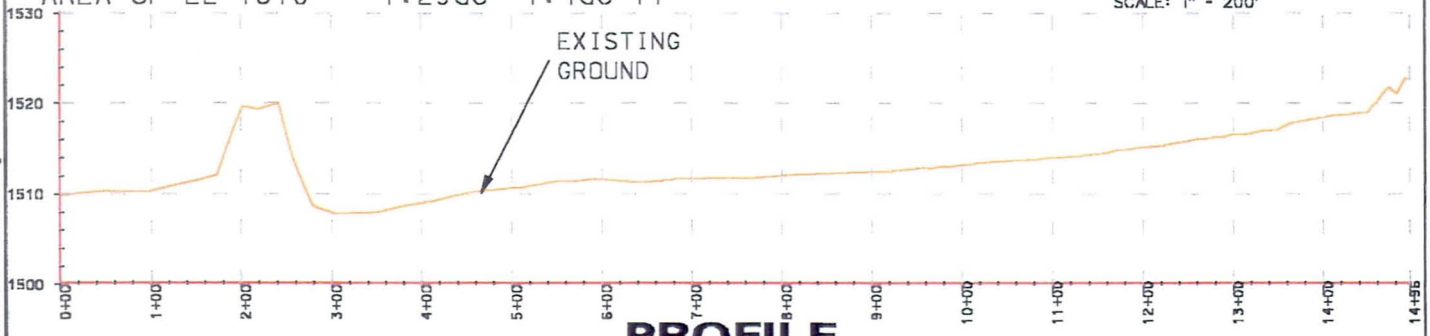
WASH–B	ROUTING REACH WITH CONCENTRATION POINTS	JOB NO. 997002–01
4550 NORTH 12TH STREET PHOENIX, ARIZONA 85014 TELEPHONE (602) 264-6831	COE & VAN LOO PLANNING • ENGINEERING • LANDSCAPE ARCHITECTURE	FIGURE–2



AREA OF EL 1519 = 11.41ac 63.1ac ft
AREA OF EL 1518 = 10.97ac 52.2ac ft
AREA OF EL 1516 = 8.53ac 34.5ac ft
AREA OF EL 1514 = 6.50ac 19.7ac ft
AREA OF EL 1512 = 3.64ac 7.4ac ft
AREA OF EL 1510 = 1.29ac 1.4ac ft

PLAN

200' 100' 0 200'
SCALE: 1" - 200'



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WASH–B	**STORAGE CAPACITY AT C. A. P. & WASH–B**	**JOB NO 997002**
4550 NORTH 12TH STREET PHOENIX, ARIZONA 85014 TELEPHONE (602) 264-6831	**COE & VAN LOO** PLANNING • ENGINEERING • LANDSCAPE ARCHITECTURE	**FIGURE 1**